



Open Source Software Notice

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Scan Server**

April 9, 2019

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1 Preamble

1.1 Open Source Software Notice

This document contains licenses and notices for open source software used in the Virtual Remote Scan Server.

It starts with the texts of some core components, followed by the software packages used in this distribution and one section devoted to the “Linux Firmware”. This section also contains references to common license texts (e.g. “GPL3”). The corresponding license texts are put at the front of that section. Otherwise for each package the license text is reproduced because of possible individual deviations from common license texts (even though they are mainly GPL2 or 3).

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2 Core System

2.1 centos-release-7-6.1810

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

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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
```

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2.2 basesystem-10.0-7

Summary: The skeleton package which defines a simple CentOS Linux system

Name: basesystem

Version: 10.0

License: Public Domain

2.3 rootfiles-8.1.11

Summary: The basic required files for the root user's directory

License: Public Domain

```
# This is a Red Hat maintained package which is specific to
# our distribution. Thus the source is only available from
# within this srpm.
```

2.4 kernel-3.10.0-957

Linux kernel release 3.x <<http://kernel.org/>>

These are the release notes for Linux version 3. Read them carefully, as they tell you what this is all about, explain how to install the kernel, and what to do if something goes wrong.

WHAT IS LINUX?

Linux is a clone of the operating system Unix, written from scratch by Linus Torvalds with assistance from a loosely-knit team of hackers across the Net. It aims towards POSIX and Single UNIX Specification compliance.

It has all the features you would expect in a modern fully-fledged Unix, including true multitasking, virtual memory, shared libraries, demand loading, shared copy-on-write executables, proper memory management, and multistack networking including IPv4 and IPv6.

It is distributed under the GNU General Public License - see the accompanying COPYING file for more details.

ON WHAT HARDWARE DOES IT RUN?

Although originally developed first for 32-bit x86-based PCs (386 or higher), today Linux also runs on (at least) the Compaq Alpha AXP, Sun SPARC and UltraSPARC, Motorola 68000, PowerPC, PowerPC64, ARM, Hitachi SuperH, Cell, IBM S/390, MIPS, HP PA-RISC, Intel IA-64, DEC VAX, AMD x86-64, AXIS CRIS, Xtensa, Tilera TILE, AVR32 and Renesas M32R architectures.

Linux is easily portable to most general-purpose 32- or 64-bit architectures as long as they have a paged memory management unit (PMMU) and a port of the GNU C compiler (gcc) (part of The GNU Compiler Collection, GCC). Linux has also been ported to a number of architectures without a PMMU, although functionality is then obviously somewhat limited.

Linux has also been ported to itself. You can now run the kernel as a userspace application - this is called UserMode Linux (UML).

DOCUMENTATION:

- There is a lot of documentation available both in electronic form on the Internet and in books, both Linux-specific and pertaining to general UNIX questions. I'd recommend looking into the documentation subdirectories on any Linux FTP site for the LDP (Linux Documentation

Project) books. This README is not meant to be documentation on the system: there are much better sources available.

- There are various README files in the Documentation/ subdirectory: these typically contain kernel-specific installation notes for some drivers for example. See Documentation/00-INDEX for a list of what is contained in each file. Please read the Changes file, as it contains information about the problems, which may result by upgrading your kernel.
- The Documentation/DocBook/ subdirectory contains several guides for kernel developers and users. These guides can be rendered in a number of formats: PostScript (.ps), PDF, HTML, & man-pages, among others. After installation, "make psdocs", "make pdfdocs", "make htmdocs", or "make mandocs" will render the documentation in the requested format.

INSTALLING the kernel source:

- If you install the full sources, put the kernel tarball in a directory where you have permissions (eg. your home directory) and unpack it:

```
gzip -cd linux-3.X.tar.gz | tar xvf -
```

or

```
bzip2 -dc linux-3.X.tar.bz2 | tar xvf -
```

Replace "X" with the version number of the latest kernel.

Do NOT use the /usr/src/linux area! This area has a (usually incomplete) set of kernel headers that are used by the library header files. They should match the library, and not get messed up by whatever the kernel-du-jour happens to be.

- You can also upgrade between 3.x releases by patching. Patches are distributed in the traditional gzip and the newer bzip2 format. To install by patching, get all the newer patch files, enter the top level directory of the kernel source (linux-3.X) and execute:

```
gzip -cd ../patch-3.x.gz | patch -p1
```

or

```
bzip2 -dc ../patch-3.x.bz2 | patch -p1
```

Replace "x" for all versions bigger than the version "X" of your current source tree, `_in_order_`, and you should be ok. You may want to remove the backup files (some-file-name~ or some-file-name.orig), and make sure that there are no failed patches (some-file-name# or some-file-name.rej). If there are, either you or I have made a mistake.

Unlike patches for the 3.x kernels, patches for the 3.x.y kernels (also known as the `-stable` kernels) are not incremental but instead apply directly to the base 3.x kernel. For example, if your base kernel is 3.0 and you want to apply the 3.0.3 patch, you must not first apply the 3.0.1 and 3.0.2 patches. Similarly, if you are running kernel version 3.0.2 and want to jump to 3.0.3, you must first reverse the 3.0.2 patch (that is, `patch -R`) `_before_` applying the 3.0.3 patch. You can read more on this in `Documentation/applying-patches.txt`

Alternatively, the script `patch-kernel` can be used to automate this process. It determines the current kernel version and applies any patches found.

```
linux/scripts/patch-kernel linux
```

The first argument in the command above is the location of the kernel source. Patches are applied from the current directory, but an alternative directory can be specified as the second argument.

- Make sure you have no stale `.o` files and dependencies lying around:

```
cd linux
make mrproper
```

You should now have the sources correctly installed.

SOFTWARE REQUIREMENTS

Compiling and running the 3.x kernels requires up-to-date versions of various software packages. Consult `Documentation/Changes` for the minimum version numbers required and how to get updates for these packages. Beware that using excessively old versions of these packages can cause indirect errors that are very difficult to track down, so don't assume that you can just update packages when obvious problems arise during build or operation.

BUILD directory for the kernel:

When compiling the kernel, all output files will per default be stored together with the kernel source code.

Using the option "make O=output/dir" allow you to specify an alternate place for the output files (including .config).

Example:

```
kernel source code: /usr/src/linux-3.X
build directory:    /home/name/build/kernel
```

To configure and build the kernel, use:

```
cd /usr/src/linux-3.X
make O=/home/name/build/kernel menuconfig
make O=/home/name/build/kernel
sudo make O=/home/name/build/kernel modules_install install
```

Please note: If the 'O=output/dir' option is used, then it must be used for all invocations of make.

CONFIGURING the kernel:

Do not skip this step even if you are only upgrading one minor version. New configuration options are added in each release, and odd problems will turn up if the configuration files are not set up as expected. If you want to carry your existing configuration to a new version with minimal work, use "make oldconfig", which will only ask you for the answers to new questions.

- Alternative configuration commands are:

"make config"	Plain text interface.
"make menuconfig"	Text based color menus, radiolists & dialogs.
"make nconfig"	Enhanced text based color menus.
"make xconfig"	X windows (Qt) based configuration tool.
"make gconfig"	X windows (Gtk) based configuration tool.
"make oldconfig"	Default all questions based on the contents of

your existing `./config` file and asking about new config symbols.

"make silentoldconfig"

Like above, but avoids cluttering the screen with questions already answered.
Additionally updates the dependencies.

"make olddefconfig"

Like above, but sets new symbols to their default values without prompting.

"make defconfig"

Create a `./config` file by using the default symbol values from either `arch/$ARCH/defconfig` or `arch/$ARCH/configs/${PLATFORM}_defconfig`, depending on the architecture.

"make \${PLATFORM}_defconfig"

Create a `./config` file by using the default symbol values from
`arch/$ARCH/configs/${PLATFORM}_defconfig`.
Use "make help" to get a list of all available platforms of your architecture.

"make allyesconfig"

Create a `./config` file by setting symbol values to 'y' as much as possible.

"make allmodconfig"

Create a `./config` file by setting symbol values to 'm' as much as possible.

"make allnoconfig"

Create a `./config` file by setting symbol values to 'n' as much as possible.

"make randconfig"

Create a `./config` file by setting symbol values to random values.

"make localmodconfig"

Create a config based on current config and loaded modules (lsmod). Disables any module option that is not needed for the loaded modules.

To create a localmodconfig for another machine, store the lsmod of that machine into a file

and pass it in as a LSMOD parameter.

```
target$ lsmod > /tmp/mylsmod  
target$ scp /tmp/mylsmod host:/tmp
```

```
host$ make LSMOD=/tmp/mylsmod localmodconfig
```

The above also works when cross compiling.

"make localyesconfig" Similar to localmodconfig, except it will convert all module options to built in (=y) options.

You can find more information on using the Linux kernel config tools in Documentation/kbuild/kconfig.txt.

- NOTES on "make config":

- Having unnecessary drivers will make the kernel bigger, and can under some circumstances lead to problems: probing for a nonexistent controller card may confuse your other controllers
- Compiling the kernel with "Processor type" set higher than 386 will result in a kernel that does NOT work on a 386. The kernel will detect this on bootup, and give up.
- A kernel with math-emulation compiled in will still use the coprocessor if one is present: the math emulation will just never get used in that case. The kernel will be slightly larger, but will work on different machines regardless of whether they have a math coprocessor or not.
- The "kernel hacking" configuration details usually result in a bigger or slower kernel (or both), and can even make the kernel less stable by configuring some routines to actively try to break bad code to find kernel problems (kmalloc()). Thus you should probably answer 'n' to the questions for "development", "experimental", or "debugging" features.

COMPILING the kernel:

- Make sure you have at least gcc 3.2 available.
For more information, refer to Documentation/Changes.

Please note that you can still run a.out user programs with this kernel.

- Do a "make" to create a compressed kernel image. It is also possible to do "make install" if you have lilo installed to suit the kernel makefiles, but you may want to check your particular lilo setup first.

To do the actual install, you have to be root, but none of the normal build should require that. Don't take the name of root in vain.

- If you configured any of the parts of the kernel as 'modules', you will also have to do "make modules_install".
- Verbose kernel compile/build output:

Normally, the kernel build system runs in a fairly quiet mode (but not totally silent). However, sometimes you or other kernel developers need to see compile, link, or other commands exactly as they are executed. For this, use "verbose" build mode. This is done by inserting "V=1" in the "make" command. E.g.:

```
make V=1 all
```

To have the build system also tell the reason for the rebuild of each target, use "V=2". The default is "V=0".

- Keep a backup kernel handy in case something goes wrong. This is especially true for the development releases, since each new release contains new code which has not been debugged. Make sure you keep a backup of the modules corresponding to that kernel, as well. If you are installing a new kernel with the same version number as your working kernel, make a backup of your modules directory before you do a "make modules_install".

Alternatively, before compiling, use the kernel config option "LOCALVERSION" to append a unique suffix to the regular kernel version. LOCALVERSION can be set in the "General Setup" menu.

- In order to boot your new kernel, you'll need to copy the kernel image (e.g. .../linux/arch/i386/boot/bzImage after compilation) to the place where your regular bootable kernel is found.
- Booting a kernel directly from a floppy without the assistance of a bootloader such as LIL0, is no longer supported.

If you boot Linux from the hard drive, chances are you use LIL0, which

uses the kernel image as specified in the file `/etc/lilo.conf`. The kernel image file is usually `/vmlinuz`, `/boot/vmlinuz`, `/bzImage` or `/boot/bzImage`. To use the new kernel, save a copy of the old image and copy the new image over the old one. Then, you MUST RERUN LILO to update the loading map!! If you don't, you won't be able to boot the new kernel image.

Reinstalling LILO is usually a matter of running `/sbin/lilo`. You may wish to edit `/etc/lilo.conf` to specify an entry for your old kernel image (say, `/vmlinux.old`) in case the new one does not work. See the LILO docs for more information.

After reinstalling LILO, you should be all set. Shutdown the system, reboot, and enjoy!

If you ever need to change the default root device, video mode, ramdisk size, etc. in the kernel image, use the `'rdev'` program (or alternatively the LILO boot options when appropriate). No need to recompile the kernel to change these parameters.

- Reboot with the new kernel and enjoy.

IF SOMETHING GOES WRONG:

- If you have problems that seem to be due to kernel bugs, please check the file `MAINTAINERS` to see if there is a particular person associated with the part of the kernel that you are having trouble with. If there isn't anyone listed there, then the second best thing is to mail them to me (torvalds@linux-foundation.org), and possibly to any other relevant mailing-list or to the newsgroup.
- In all bug-reports, **please** tell what kernel you are talking about, how to duplicate the problem, and what your setup is (use your common sense). If the problem is new, tell me so, and if the problem is old, please try to tell me when you first noticed it.
- If the bug results in a message like

```
unable to handle kernel paging request at address C0000010
Oops: 0002
EIP: 0010:XXXXXXXX
eax: xxxxxxxx ebx: xxxxxxxx ecx: xxxxxxxx edx: xxxxxxxx
esi: xxxxxxxx edi: xxxxxxxx ebp: xxxxxxxx
ds: xxxx es: xxxx fs: xxxx gs: xxxx
```

```
Pid: xx, process nr: xx
xx xx xx xx xx xx xx xx xx
```

or similar kernel debugging information on your screen or in your system log, please duplicate it **exactly**. The dump may look incomprehensible to you, but it does contain information that may help debugging the problem. The text above the dump is also important: it tells something about why the kernel dumped code (in the above example, it's due to a bad kernel pointer). More information on making sense of the dump is in Documentation/oops-tracing.txt

- If you compiled the kernel with CONFIG_KALLSYMS you can send the dump as is, otherwise you will have to use the "ksymoops" program to make sense of the dump (but compiling with CONFIG_KALLSYMS is usually preferred). This utility can be downloaded from <ftp://ftp.<country>.kernel.org/pub/linux/utils/kernel/ksymoops/> . Alternatively, you can do the dump lookup by hand:
- In debugging dumps like the above, it helps enormously if you can look up what the EIP value means. The hex value as such doesn't help me or anybody else very much: it will depend on your particular kernel setup. What you should do is take the hex value from the EIP line (ignore the "0010:"), and look it up in the kernel namelist to see which kernel function contains the offending address.

To find out the kernel function name, you'll need to find the system binary associated with the kernel that exhibited the symptom. This is the file 'linux/vmlinux'. To extract the namelist and match it against the EIP from the kernel crash, do:

```
nm vmlinux | sort | less
```

This will give you a list of kernel addresses sorted in ascending order, from which it is simple to find the function that contains the offending address. Note that the address given by the kernel debugging messages will not necessarily match exactly with the function addresses (in fact, that is very unlikely), so you can't just 'grep' the list: the list will, however, give you the starting point of each kernel function, so by looking for the function that has a starting address lower than the one you are searching for but is followed by a function with a higher address you will find the one you want. In fact, it may be a good idea to include a bit of "context" in your problem report, giving a few lines around the interesting one.

If you for some reason cannot do the above (you have a pre-compiled kernel image or similar), telling me as much about your setup as possible will help. Please read the REPORTING-BUGS document for details.

- Alternatively, you can use gdb on a running kernel. (read-only; i.e. you cannot change values or set break points.) To do this, first compile the kernel with -g; edit arch/i386/Makefile appropriately, then do a "make clean". You'll also need to enable CONFIG_PROC_FS (via "make config").

After you've rebooted with the new kernel, do "gdb vmlinux /proc/kcore". You can now use all the usual gdb commands. The command to look up the point where your system crashed is "l *0XXXXXXXX". (Replace the XXXes with the EIP value.)

gdb'ing a non-running kernel currently fails because gdb (wrongly) disregards the starting offset for which the kernel is compiled.

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Linus Torvalds

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```
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This is free software, and you are welcome to redistribute it
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```

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'Gnomovision' (which makes passes at compilers) written by James Hacker.

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

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3 Packages

3.1 GeoIP-1.5.0-13

GeoIP 1.5.0

1.5.0

geoipupdate may be used to download our free databases.

Put this into the config file /usr/local/etc/GeoIP.conf
to download the free GeoLite databases GeoLiteCountry, GeoLiteCity and
GeoLiteASNum

LicenseKey 000000000000

UserId 999999

ProductIds 506 533 517

Free users should create symlinks for the GeoIP databases.

For example:

```
cd /usr/local/share/GeoIP
ln -s GeoLiteCity.dat GeoIPCity.dat
ln -s GeoLiteCountry.dat GeoIPCountry.dat
ln -s GeoLiteASNum.dat GeoIPASNum.dat
```

The lookup functions are thread safe.

1.4.8

*** Experimental IPv6 notice ***

- the experimental IPv6 part of libGeoIP may change in the future.
- It is possible, that geoiplookup and geoiplookup6 will merged.

The new perl script geoipupdate-pureperl.pl is a drop in replacement for geoipupdate. Useful, if you like to customize, pre or postprocess new or old databases. To archive the databases or signal apache whatever. Another advantage is, that geoipupdate-pureperl.pl is able to handle proxy requests even with authentication.

IMPORTANT API Change for 1.3.x and above users for GeoIP Region database
GeoIPRegion.region is no longer a pointer but an in-structure

array so test the first byte of region == 0 rather testing if the region pointer is NULL.

IMPORTANT API Change for 1.1.x and above users - as of GeoIP 1.1.0 the GeoIP_country_xxx_by_xxx functions return NULL if a country can not be found (it used to return '--' or 'N/A'. Be sure to check the return value for NULL, to avoid segmentation faults!

GeoIP is a C library that enables the user to find geographical and network information of an IP address.

Included is a free GeoLite Country database

that is updated at the beginning of every month.

To download the latest free GeoLite Country database, go to:

<http://dev.maxmind.com/geoip/geolite>

There is also a free city-level geolocation database, GeoLite City, available from:

<http://dev.maxmind.com/geoip/geolite>

We also offer commercial GeoIP databases with greater accuracy and additional network information, for more details, see:

https://www.maxmind.com/en/geolocation_landing

As of version 1.4.5 geoipupdate can handle updates via HTTP Proxy Server.

If the environ variable http_proxy="http://proxy-host:port" is set.

The username:password (as in FTP URLs) is not supported!

Thanks to Andrew Droffner for the patch!

As of version 1.3.6, the GeoIP C library is thread safe, as long as GEOIP_CHECK_CACHE is not used.

If you use GeoIP to block access from high risk countries in order to reduce fraud or abuse, you may want to also block access from known proxy servers. For more details on our proxy detection service, please visit: <https://www.maxmind.com/en/proxy>

To install, run:

```
./configure
make
make check
make install
```

The GeoIP C library relies on GNU make, not on BSD make

MEMORY CACHING AND OTHER OPTIONS

There are four options available:

GEOIP_STANDARD - read database from filesystem, uses least memory.

GEOIP_MEMORY_CACHE - load database into memory, faster performance but uses more memory

GEOIP_CHECK_CACHE - check for updated database. If database has been updated, reload filehandle and/or memory cache.

GEOIP_INDEX_CACHE - just cache

the most frequently accessed index portion of the database, resulting in faster lookups than GEOIP_STANDARD, but less memory usage than

GEOIP_MEMORY_CACHE - useful for larger databases such as GeoIP Organization and GeoIP City. Note, for GeoIP Country, Region and Netspeed databases, GEOIP_INDEX_CACHE is equivalent to GEOIP_MEMORY_CACHE

GEOIP_MMAP_CACHE - load database into mmap shared memory (MMAP is not avail for WIN32)

The options can be combined using bit operators. For example you can use both GEOIP_MEMORY_CACHE and GEOIP_CHECK_CACHE by calling:

```
GeoIP_open("/path/to/GeoIP.dat", GEOIP_MEMORY_CACHE | GEOIP_CHECK_CACHE);
```

By default, the city name is returned in iso-8859-1 charset. To obtain the city name in utf8 instead, run:

```
GeoIP_set_charset(gi, GEOIP_CHARSET_UTF8);
```

To get the netmask of the netblock of the last lookup, use GeoIP_last_netblock(gi).

EXAMPLES

See

test/

test-geoip.c

test-geoip-region.c

test-geoip-city.c

test-geoip-isp.c
test-geoip-org.c
test-geoip-netspeed.c

for examples of how to use the API. The test-geoip.c program works with both the GeoLite and GeoIP Country databases. The test-geoip-city.c program works with both the GeoLite and GeoIP City databases. The other example programs require the paid databases available
https://www.maxmind.com/en/geolocation_landing

AUTOMATIC UPDATES

MaxMind offers a service where you can have your database updated automatically each week. For more details see:

http://www.maxmind.com/en/license_key

RESOURCES Mailinglists

Please join the very low traffic mailinglists you are interested in.

http://sourceforge.net/mail/?group_id=66844

Preformance Patches.

Patrick McManus provide a patch to enhance the lookupspeed in MEMORY_CACHE mode.

If you feel, that the current MEMORY_CACHE mode is to slow try the patch:

http://sourceforge.net/mailarchive/forum.php?forum_name=geoip-c-discuss&max_rows=25&style=nested&viewmonth=200803

RESOURCES Development version

Please find the latest version of the CPAI on github.

<https://github.com/maxmind/geoip-api-c>

TROUBLESHOOTING

The Windows build is not thread-safe in STANDARD mode b/c the pread is not

thread-safe.

If you run into trouble building your application with GeoIP support, try adding `-fms-extensions` to your `CFLAGS`.

If you use Solaris and there C-Compiler use `-features=extensions` instead. These options enable unnamed union support and fix problems like: `'improper member use: dma_code'` or `'GeoIPRecord'` has no member named `'dma_code'`.

Note that it is recommended that you use GNU make. Also, if you are using OpenBSD, GeoIP requires OpenBSD 3.1 or greater.

if you get "cannot load shared object file: No such file or directory" error, add the directory libGeoIP.so was installed to to `/etc/ld.so.conf` and run `ldconfig`

On Solaris, if you get a
`ld: fatal: relocations remain against allocatable but non-writable sections`
error, try running

```
# make clean
# ./configure --disable-shared
# make
```

If you get a `"ar : command not found"` error, make sure that `ar` is in your path. On Solaris, `ar` is typically found in `/usr/ccs/bin`

If you get a `"geoipupdate.c:24: getopt.h: No such file or directory"` error, run

```
# export CPPFLAGS="-I/usr/local/include"
```

(assuming that `getopt.h` is in `/usr/local/include`)

If you get a `"zlib.h: No such file or directory"` error, make sure that the `zlib` development libraries are installed on your server. These are typically included in a `"zlib-devel"` package.

If you get a `"bad interpreter: No such file or directory"` error when running `./configure`, make sure that there are no DOS returns in the `configure` script. To remove DOS returns, run `perl -pi -e 's!\r!!g' configure`.

If `gcc` fails while consuming a large amount of memory, try

compiling with CFLAGS=-O1 (or -O0) instead of the default -O2.
It seems that some
versions of gcc have a bug and consume 1 GB of memory when optimizing
certain source files (the other source file where this was reported is
from XORG X-Server). It happens at least with gcc 3.3.1 and with gcc
4.2(.0). Thanks to Kai Schl for the report.

If GEOIP_MMAP_CACHE doesn't work on a 64bit machine, try adding
the flag "MAP_32BIT" to the mmap call.

If you get a "passing argument 3 of 'gethostbyname_r' from incompatible pointer
type"
error on AIX, download and/or untar a fresh copy of GeoIP. (To avoid cached
results from a previous ./configure run)

cd ./GeoIP-1.4.6
then edit the file ./configure

and delete these two lines:

```
#define HAVE_GETHOSTBYNAME_R 1  
  
#define GETHOSTBYNAME_R_RETURNS_INT 1
```

then save the configure script

and build it as usual

```
./configure  
make  
sudo make install
```

To submit a patch, please contact support@maxmind.com

3.1.1 License

There are two licenses, one for the C library software, and one for the database.

SOFTWARE LICENSE (C library)

The GeoIP C Library is licensed under the LGPL. For details see the COPYING file.

OPEN DATA LICENSE (GeoLite Country and GeoLite City databases)

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[Note that while the core GeoIP library is licensed under the LGPL, the libGeoIPUpdate library depends on md5.c and types.h which are licensed under the GPL.]

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Version 2.1, February 1999

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That's all there is to it!

3.2 NetworkManager-1.12.0-8

2008-12-11: NetworkManager core daemon has moved to git.freedesktop.org!

```
git clone git://git.freedesktop.org/git/NetworkManager/NetworkManager.git
```

Networking that Just Works

NetworkManager attempts to keep an active network connection available at all times. The point of NetworkManager is to make networking configuration and setup as painless and automatic as possible. NetworkManager is intended to replace default route, replace other routes, set IP addresses, and in general configure networking as NM sees fit (with the possibility of manual override as necessary). In effect, the goal of NetworkManager is to make networking Just Work with a minimum of user hassle, but still allow customization and a high level of manual network control. If you have special needs, we'd like to hear about them, but understand that NetworkManager is not intended for every use-case.

NetworkManager will attempt to keep every network device in the system up and active, as long as the device is available for use (has a cable plugged in, the killswitch isn't turned on, etc). Network connections can be set to 'autoconnect', meaning that NetworkManager will make that connection active whenever it and the hardware is available.

"Settings services" store lists of user- or administrator-defined "connections", which contain all the settings and parameters required to connect to a specific network. NetworkManager will never activate a connection that is not in this list, or that the user has not directed NetworkManager to connect to.

How it works:

The NetworkManager daemon runs as a privileged service (since it must access and control hardware), but provides a D-Bus interface on the system bus to allow for fine-grained control of networking. NetworkManager does not store connections or settings, it is only the mechanism by which those connections are selected and activated.

To store pre-defined network connections, two separate services, the "system settings service" and the "user settings service" store connection information and provide these to NetworkManager, also via D-Bus. Each settings service can determine how and where it persistently stores the connection information; for example, the GNOME applet stores its configuration in GConf, and the system settings service stores its config in distro-specific formats, or in a distro-agnostic format, depending on user/administrator preference.

A variety of other system services are used by NetworkManager to provide network functionality: wpa_supplicant for wireless connections and 802.1x wired connections, pppd for PPP and mobile broadband connections, DHCP clients for dynamic IP addressing, dnsmasq for proxy nameserver and DHCP server functionality for internet connection sharing, and avahi-autoipd for IPv4 link-local addresses. Most communication with these daemons occurs, again, via D-Bus.

Why doesn't my network Just Work?

Driver problems are the #1 cause of why NetworkManager sometimes fails to connect to wireless networks. Often, the driver simply doesn't behave in a consistent manner, or is just plain buggy. NetworkManager supports `_only_` those drivers that are shipped with the upstream Linux kernel, because only those drivers can be easily fixed and debugged. `ndiswrapper`, vendor binary drivers, or other out-of-tree drivers may or may not work well with NetworkManager, precisely because they have not been vetted and improved by the open-source community, and because problems in these drivers usually cannot be fixed.

Sometimes, command-line tools like `'iwconfig'` will work, but NetworkManager will fail. This is again often due to buggy drivers, because these drivers simply aren't expecting the dynamic requests that NetworkManager and `wpa_supplicant` make. Driver bugs should be filed in the bug tracker of the distribution being run, since often distributions customize their kernel and drivers.

Sometimes, it really is NetworkManager's fault. If you think that's the case, please file a bug at <http://bugzilla.gnome.org> and choose the NetworkManager component. Attaching the output of `/var/log/messages` or `/var/log/daemon.log` (wherever your distribution directs syslog's 'daemon' facility output) is often very helpful, and (if you can get) a working `wpa_supplicant` config file helps enormously.

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```
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```

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```
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```

```
<signature of Ty Coon>, 1 April 1989
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3.3 acl-2.2.51-14

Access control list package README

Package home: <http://savannah.nongnu.org/projects/acl>

See the file doc/INSTALL for build, installation and post-install configuration steps.

Refer to the acl(5) manual page for general access control list information and references to other related manual pages.

For more information on the build process, please refer to doc/PORTING.

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That's all there is to it!

3.4 at-3.1.13-24

This is version of 3.1.x of at, for running commands at a specified time. To install, do a

```
$ ./configure
```

You might want to change the default maximum load at which batch jobs are still started by specifying `--with-loadavg_mx=...` as argument to configure. The default is 0.8, so that, normally, no batch job will be started when there's still activity going on. For an SMP system, you will want to increase this.

Then, do

```
$ make
```

and, as root,

```
# make install
```

at jobs are run by the atd daemon, which is normally started at boot time.

Bug reports to:

<http://bugs.debian.org/> (Debian bug tracking system)

or

at@packages.debian.org (Debian at package maintainers)

If at all possible, I'd appreciate you telling me which version you found a bug in; run `at -V` to find out which one.

If you try to use `at(1)` on a system which does not support `setreuid(2)`, i.e. if you get an error which looks vaguely like

```
undefined symbol _setreuid referenced from text segment
```

DO NOT try to install at on your system by removing all that strange PRIV stuff. You will install a rather glaring security hole that way.

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Version 2, June 1991

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```

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```
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```

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

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3.5 attr-2.4.46-13

Extended attribute package README

Package home: <http://savannah.nongnu.org/projects/attr>

See the file doc/INSTALL for build, installation and post-install configuration steps.

Refer to the attr(5) manual page for general extended attribute (EA) information and references to other EA manual pages.

For more information on the build process, please refer to the doc/PORTING document.

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```

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

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3.6 audit-2.8.4-4

This is some background information about the Linux Auditing Framework.

LICENSE

=====

The audit daemon is released as GPL'd code. The audit daemon's libraries libaudit.* and libauparse.* are released under LGPL so that it may be linked with 3rd party software.

BUILDING

=====

See the README-install File.

USAGE

=====

See the man pages for audit, auditctl, audit.rules, ausearch, and aureport.

DISCUSSION

=====

Original lkml thread(s):

<http://marc.theaimsgroup.com/?t=107815888100001&r=1&w=2>

<http://marc.theaimsgroup.com/?t=107901570800002&r=1&w=2>

There is a linux audit mail list where any question whether kernel design, setup and configuration, or usage can be discussed:

<http://www.redhat.com/mailman/listinfo/linux-audit>

DESIGN INFO (Very old)

=====

The main goals were to provide system call auditing with 1) as low overhead as possible, and 2) without duplicating functionality that is already provided by SELinux (and/or other security infrastructures). This framework will work "stand-alone", but is not designed to provide, e.g., CAPP functionality without another security component in place.

There are two main parts, one that is always on (generic logging in audit.c) and one that you can disable at boot- or run-time (per-system-call auditing in auditsc.c). The patch includes changes to security/selinux/avc.c as an example of how system-call auditing can be integrated with other code that identifies auditable events.

Logging:

- 1) Uses a netlink socket for communication with user-space. All messages are logged via the netlink socket if a user-space daemon is listening. If not, the messages are logged via printk to the syslog daemon (by default).
- 2) Messages can be dropped (optionally) based on message rate or memory use (this isn't fully integrated into the selinux/avc.c part of the patch: the avc.c code that currently does this can be eliminated).
- 3) When some part of the kernel generates part of an audit record, the partial record is sent immediately to user-space, AND the system call "auditable" flag is automatically set for that call -- thereby producing extra information at syscall exit (if syscall auditing is enabled).

System-call auditing:

- 1) At task-creation time, an audit context is allocated and linked off the task structure.
- 2) At syscall entry time, if the audit context exists, information is filled in (syscall number, timestamp; but not arguments).
- 3) During the system call, calls to getname() and path_lookup() are intercepted. These routines are called when the kernel is actually looking up information that will be used to make the decision about whether the syscall will succeed or fail. An effort has been made to avoid copying the information that getname generates, since getname is already making a kernel-private copy of the information. [Note that storing copies of all syscall arguments requires complexity and overhead that arguably isn't needed. With this patch, for example, if chroot("foo") fails because you are not root, "foo" will not appear in the audit record because the kernel determined the syscall cannot proceed before it ever needed to look up "foo". This approach avoids storing user-supplied information that could be misleading or unreliable (e.g., due to a cooperative shared-memory attack) in favor of reporting information actually used by the kernel.]
- 4) At syscall exit time, if the "auditable" flag has been set (e.g., because SELinux generated an avc record; or some other part of the kernel detected an auditable event), the syscall-part of the audit record is generated, including file names and inode numbers (if available). Some of this information is currently complementary to the information that selinux/avc.c generates (e.g., file names and some inode numbers), but some is less complete (e.g., getname doesn't return a fully-qualified path, and this patch does not add the overhead of determining one).

[Note that the complete audit record comes to userspace in pieces, which eliminates the need to store messages for arbitrarily long periods inside the kernel.]

5) At task-exit time, the audit context is destroyed.

At steps 1, 2, and 4, simple filtering can be done (e.g., a database role uid might have syscall auditing disabled for performance reasons). The filtering is simple and could be made more complex. However, I tried to implement as much filtering as possible without adding significant overhead (e.g., `d_path()`). In general, the audit framework should rely on some other kernel component (e.g., SELinux) to make the majority of the decisions about what is and is not auditable.

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3.7 authconfig-6.2.8-30

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```

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```
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This is free software, and you are welcome to redistribute it
under certain conditions; type 'show c' for details.
```

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```
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```

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

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3.8 autogen-5.18-5

This is AutoGen, an automated text file generator. It was inspired out of frustration and hassle with maintaining synchronization between option flag lists, global variables and usage information. The desire for more than `#define` macros came about when it became apparent that macros alone were insufficient for reducing the maintenance into a single option list. The impetus to actually start something finally came when I had to maintain a large callout procedure table and associated lookup tables.

Rev 1 of this utility was a set of `#define` macro expansions.

Rev 2 was a shell script that sort-of did a prototype.

Much better than just `#defines`, but still clearly lacking.

Rev 3 had a very kludgy macro definition syntax.

Rev 4 a reworking and simplification of the declarations

Rev 5 the addition of Guile expression processing

Mailing lists can be found on SourceForge:

`autogen-users@lists.sourceforge.net`

*** AutoGen requires: ***

1. POSIX regular expression library. If not available by default, use the `--with-regex-*` options to specify how to find, use and link to it.
2. an ANSI C compiler
3. The Guile version of a Scheme processing language.

*** Installation note: ***

AutoGen does **NOT** contain any compiled-in configuration information. Therefore, in order to use the templates that come bundled with it, you must tell AutoGen how to find those templates when you build applications that use those templates.

1. by doing nothing. If you do not alter the default data directory, AutoGen will search for templates in the directory `../share/autogen`, relative to the executable directory. That should generally work.
2. You can tell AutoGen where to look with an environment variable:

```
export AUTOGEN_TEMPL_DIR=$prefix/share/autogen
```

3. You can use an RC file:

```
autogen -L $prefix/share/autogen --save=$HOME/.autogenrc
```

4. If you have an old Guile library, you will find that its error reporting does not work so well. Consequently, you will see "make check" failures in the output text where you would expect to find file name and line number references for the invalid input. Please upgrade your Guile lib.

5. You can build and install AutoGen, ensuring you have the automake/autoconf/libtool-s needed, and then editing agen5/opts.def thus:

```
echo "homerc = $prefix/share/autogen;" >> agen5/opts.def
```

and then rebuilding AutoGen. However, if you do this latter "fix", you will have an immobile product. I hate that, others like it. It is, however, up to you.

*** Build note: ***

Sometimes, configure believes it has done a good job when it really hasn't. It is possible to configure a system in such a way that the Guile headers and libguile are linked against correctly, but the loader cannot find libguile.so.xxx. This is because GCC will silently find the library for linking, but not set the library dependencies correctly. The consequence is that the configure script believes that standard links will produce working executables. It won't. The simplest solution is:

```
.../configure --disable-shared
```

the best solution is to examine the output of 'guile-config link', duplicate the '-L/path/to/lib' argument, but changing the "-L" to "-R" or "-Wl,-rpath," or "-rpath" or whatever it happens to be that works for your platform, and hand that off to configure as the argument to '--with-libguile-link'. "libtool" won't fix it and it's too hard for me. Sorry. Anyway, for example, assume:

```
guile-config link
```

produces:

```
-L/opt/sfw/lib -lguile -lm
```

now run configure as follows:

```
.../configure \  
  --with-libguile-link='-L/opt/sfw/lib -lguile -lm -R/opt/sfw/lib'
```

Isn't that special?

*** Bootstrap note: ***

I have some private tools referenced in the various bootstrap scripts. Unless you have these tools, bootstrap won't work for you. I intend to fix this as time permits. Meanwhile, there is also a tarball in CVS of all the bootstrap-generated files:

```
noag-boot.sh
```

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```
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```

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```
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```

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3.9 bash-4.2.46-31

Introduction

=====

This is GNU Bash, version 4.2. Bash is the GNU Project's Bourne Again SHell, a complete implementation of the POSIX shell spec, but also with interactive command line editing, job control on architectures that support it, csh-like features such as history substitution and brace expansion, and a slew of other features. For more information on the features of Bash that are new to this type of shell, see the file 'doc/bashref.texi'. There is also a large Unix-style man page. The man page is the definitive description of the shell's features.

See the file POSIX for a discussion of how the Bash defaults differ from the POSIX spec and a description of the Bash 'posix mode'.

There are some user-visible incompatibilities between this version of Bash and previous widely-distributed versions, bash-4.0 and bash-4.1. For details, see the file COMPAT. The NEWS file tersely lists features that are new in this release.

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A number of frequently-asked questions are answered in the file 'doc/FAQ'.

To compile Bash, type './configure', then 'make'. Bash auto-configures the build process, so no further intervention should be necessary. Bash builds with 'gcc' by default if it is available. If you want to use 'cc' instead, type

```
CC=cc ./configure
```

if you are using a Bourne-style shell. If you are not, the following may work:

```
env CC=cc ./configure
```

Read the file INSTALL in this directory for more information about how

to customize and control the build process. The file NOTES contains platform-specific installation and configuration information.

If you are a csh user and wish to convert your csh aliases to Bash aliases, you may wish to use the script 'examples/misc/alias-conv.sh' as a starting point. The script 'examples/misc/cshtobash' is a more ambitious script that attempts to do a more complete job.

Reporting Bugs

=====

Bug reports for bash should be sent to:

bug-bash@gnu.org

using the 'bashbug' program that is built and installed at the same time as bash.

The discussion list 'bug-bash@gnu.org' often contains information about new ports of Bash, or discussions of new features or behavior changes that people would like. This mailing list is also available as a usenet newsgroup: gnu.bash.bug.

When you send a bug report, please use the 'bashbug' program that is built at the same time as bash. If bash fails to build, try building bashbug directly with 'make bashbug'. If you cannot build 'bashbug', please send mail to bug-bash@gnu.org with the following information:

- * the version number and release status of Bash (e.g., 2.05a-release)
- * the machine and OS that it is running on (you may run 'bashversion -l' from the bash build directory for this information)
- * a list of the compilation flags or the contents of 'config.h', if appropriate
- * a description of the bug
- * a recipe for recreating the bug reliably
- * a fix for the bug if you have one!

The 'bashbug' program includes much of this automatically.

If you would like to contact the Bash maintainers directly, send mail to bash-maintainers@gnu.org.

While the Bash maintainers do not promise to fix all bugs, we would like this shell to be the best that we can make it.

Enjoy!

Chet Ramey
chet.ramey@case.edu

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

```
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the Free Software Foundation, either version 3 of the License, or
(at your option) any later version.
```

```
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```
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This is free software, and you are welcome to redistribute it
under certain conditions; type 'show c' for details.
```


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3.10 bind-9.9.4-73

BIND 9

BIND version 9 is a major rewrite of nearly all aspects of the underlying BIND architecture. Some of the important features of BIND 9 are:

- DNS Security
DNSSEC (signed zones)
TSIG (signed DNS requests)
- IP version 6
Answers DNS queries on IPv6 sockets
IPv6 resource records (AAAA)
Experimental IPv6 Resolver Library
- DNS Protocol Enhancements
IXFR, DDNS, Notify, EDNS0
Improved standards conformance
- Views
One server process can provide multiple "views" of the DNS namespace, e.g. an "inside" view to certain clients, and an "outside" view to others.
- Multiprocessor Support
- Improved Portability Architecture

BIND version 9 development has been underwritten by the following organizations:

Sun Microsystems, Inc.
Hewlett Packard
Compaq Computer Corporation
IBM
Process Software Corporation
Silicon Graphics, Inc.
Network Associates, Inc.
U.S. Defense Information Systems Agency
USENIX Association
Stichting NLnet - NLnet Foundation

Nominum, Inc.

For a summary of functional enhancements in previous releases, see the HISTORY file.

For a detailed list of user-visible changes from previous releases, see the CHANGES file.

For up-to-date release notes and errata, see
<http://www.isc.org/software/bind9/releasenotes>

BIND 9.9.4

BIND 9.9.4 is a maintenance release, and patches the security flaws described in CVE-2013-3919 and CVE-2013-4854. It also introduces DNS Response Rate Limiting (DNS RRL) as a compile-time option. To use this feature, configure with the "--enable-rrl" option.

BIND 9.9.3

BIND 9.9.3 is a maintenance release and patches the security flaws described in CVE-2012-5688, CVE-2012-5689 and CVE-2013-2266.

BIND 9.9.2

BIND 9.9.2 is a maintenance release and patches the security flaw described in CVE-2012-4244.

BIND 9.9.1

BIND 9.9.1 is a maintenance release.

BIND 9.9.0

BIND 9.9.0 includes a number of changes from BIND 9.8 and earlier releases. New features include:

- Inline signing, allowing automatic DNSSEC signing of master zones without modification of the zonefile, or "bump in the wire" signing in slaves.
- NXDOMAIN redirection.
- New 'rndc flushtree' command clears all data under a given name from the DNS cache.

- New 'rndc sync' command dumps pending changes in a dynamic zone to disk without a freeze/thaw cycle.
- New 'rndc signing' command displays or clears signing status records in 'auto-dnssec' zones.
- NSEC3 parameters for 'auto-dnssec' zones can now be set prior to signing, eliminating the need to initially sign with NSEC.
- Startup time improvements on large authoritative servers.
- Slave zones are now saved in raw format by default.
- Several improvements to response policy zones (RPZ).
- Improved hardware scalability by using multiple threads to listen for queries and using finer-grained client locking
- The 'also-notify' option now takes the same syntax as 'masters', so it can be used with named masterlists and TSIG keys.
- 'dnssec-signzone -D' writes an output file containing only DNSSEC data, which can be included by the primary zone file.
- 'dnssec-signzone -R' forces removal of signatures that are not expired but were created by a key which no longer exists.
- 'dnssec-signzone -X' allows a separate expiration date to be specified for DNSKEY signatures from other signatures.
- New '-L' option to dnssec-keygen, dnssec-settime, and dnssec-keyfromlabel sets the default TTL for the key.
- dnssec-dsfromkey now supports reading from standard input, to make it easier to convert DNSKEY to DS.
- RFC 1918 reverse zones have been added to the empty-zones table per RFC 6303.
- Dynamic updates can now optionally set the zone's SOA serial number to the current UNIX time.
- DLZ modules can now retrieve the source IP address of the querying client.
- 'request-ixfr' option can now be set at the per-zone level.
- 'dig +rrcomments' turns on comments about DNSKEY records, indicating their key ID, algorithm and function
- Simplified nsupdate syntax and added readline support

Building

BIND 9 currently requires a UNIX system with an ANSI C compiler, basic POSIX support, and a 64 bit integer type.

We've had successful builds and tests on the following systems:

COMPAQ Tru64 UNIX 5.1B
 Fedora Core 6
 FreeBSD 4.10, 5.2.1, 6.2

HP-UX 11.11
Mac OS X 10.5
NetBSD 3.x, 4.0-beta, 5.0-beta
OpenBSD 3.3 and up
Solaris 8, 9, 9 (x86), 10
Ubuntu 7.04, 7.10
Windows XP/2003/2008

NOTE: As of BIND 9.5.1, 9.4.3, and 9.3.6, older versions of Windows, including Windows NT and Windows 2000, are no longer supported.

We have recent reports from the user community that a supported version of BIND will build and run on the following systems:

AIX 4.3, 5L
CentOS 4, 4.5, 5
Darwin 9.0.0d1/ARM
Debian 4, 5, 6
Fedora Core 5, 7, 8
FreeBSD 6, 7, 8
HP-UX 11.23 PA
MacOS X 10.5, 10.6, 10.7
Red Hat Enterprise Linux 4, 5, 6
SCO OpenServer 5.0.6
Slackware 9, 10
SuSE 9, 10

To build, just

```
./configure  
make
```

Do not use a parallel "make".

Several environment variables that can be set before running configure will affect compilation:

CC

The C compiler to use. configure tries to figure out the right one for supported systems.

CFLAGS

C compiler flags. Defaults to include -g and/or -O2

as supported by the compiler. Please include '-g' if you need to set CFLAGS.

STD_CINCLUDES

System header file directories. Can be used to specify where add-on thread or IPv6 support is, for example. Defaults to empty string.

STD_CDEFINES

Any additional preprocessor symbols you want defined. Defaults to empty string.

Possible settings:

Change the default syslog facility of named/lwresd.

-DISC_FACILITY=LOG_LOCAL0

Enable DNSSEC signature chasing support in dig.

-DDIG_SIGCHASE=1 (sets -DDIG_SIGCHASE_TD=1 and
-DDIG_SIGCHASE_BU=1)

Disable dropping queries from particular well known ports.

-DNS_CLIENT_DROPPORT=0

Sibling glue checking in named-checkzone is enabled by default.

To disable the default check set. -DCHECK_SIBLING=0

named-checkzone checks out-of-zone addresses by default.

To disable this default set. -DCHECK_LOCAL=0

To create the default pid files in \${localstatedir}/run rather than \${localstatedir}/run/{named,lwresd}/ set.

-DNS_RUN_PID_DIR=0

Enable workaround for Solaris kernel bug about /dev/poll

-DISC_SOCKET_USE_POLLWATCH=1

The watch timeout is also configurable, e.g.,

-DISC_SOCKET_POLLWATCH_TIMEOUT=20

LDFLAGS

Linker flags. Defaults to empty string.

The following need to be set when cross compiling.

BUILD_CC

The native C compiler.

BUILD_CFLAGS (optional)

BUILD_CPPFLAGS (optional)

Possible Settings:

-DNEED_OPTARG=1 (optarg is not declared in <unistd.h>)

BUILD_LDFLAGS (optional)

BUILD_LIBS (optional)

To build shared libraries, specify "--with-libtool" on the configure command line.

For the server to support DNSSEC, you need to build it with crypto support. You must have OpenSSL 0.9.5a or newer installed and specify "--with-openssl" on the configure command line. If OpenSSL is installed under a nonstandard prefix, you can tell configure where to look for it using "--with-openssl=/prefix".

On some platforms it is necessary to explicitly request large file support to handle files bigger than 2GB. This can be done by "--enable-largefile" on the configure command line.

On some platforms, BIND 9 can be built with multithreading support, allowing it to take advantage of multiple CPUs. You can specify whether to build a multithreaded BIND 9 by specifying "--enable-threads" or "--disable-threads" on the configure command line. The default is operating system dependent.

Support for the "fixed" rrset-order option can be enabled or disabled by specifying "--enable-fixed-rrset" or "--disable-fixed-rrset" on the configure command line. The default is "disabled", to reduce memory footprint.

If your operating system has integrated support for IPv6, it will be used automatically. If you have installed KAME IPv6 separately, use "--with-kame[=PATH]" to specify its location.

"make install" will install "named" and the various BIND 9 libraries. By default, installation is into /usr/local, but this can be changed with the "--prefix" option when running "configure".

You may specify the option "--sysconfdir" to set the directory where configuration files like "named.conf" go by default, and "--localstatedir" to set the default parent directory of "run/named.pid". For backwards compatibility with BIND 8, --sysconfdir defaults to "/etc" and --localstatedir defaults to "/var" if no --prefix option is given. If there is a --prefix option, sysconfdir defaults to "\$prefix/etc" and localstatedir defaults to "\$prefix/var".

To see additional configure options, run "configure --help".
Note that the help message does not reflect the BIND 8
compatibility defaults for sysconfdir and localstatedir.

If you're planning on making changes to the BIND 9 source, you
should also "make depend". If you're using Emacs, you might find
"make tags" helpful.

If you need to re-run configure please run "make distclean" first.
This will ensure that all the option changes take.

Building with gcc is not supported, unless gcc is the vendor's usual
compiler (e.g. the various BSD systems, Linux).

Known compiler issues:

- * gcc-3.2.1 and gcc-3.1.1 is known to cause problems with solaris-x86.
- * gcc prior to gcc-3.2.3 ultrasparc generates incorrect code at -O2.
- * gcc-3.3.5 powerpc generates incorrect code at -O2.
- * Irix, MipsPRO 7.4.1m is known to cause problems.

A limited test suite can be run with "make test". Many of
the tests require you to configure a set of virtual IP addresses
on your system, and some require Perl; see bin/tests/system/README
for details.

SunOS 4 requires "printf" to be installed to make the shared
libraries. sh-utils-1.16 provides a "printf" which compiles
on SunOS 4.

Known limitations

Linux requires kernel build 2.6.39 or later to get the
performance benefits from using multiple sockets.

Documentation

The BIND 9 Administrator Reference Manual is included with the
source distribution in DocBook XML and HTML format, in the
doc/arm directory.

Some of the programs in the BIND 9 distribution have man pages
in their directories. In particular, the command line
options of "named" are documented in /bin/named/named.8.

There is now also a set of man pages for the lwres library.

If you are upgrading from BIND 8, please read the migration notes in doc/misc/migration. If you are upgrading from BIND 4, read doc/misc/migration-4to9.

Frequently asked questions and their answers can be found in FAQ.

Additional information on various subjects can be found in the other README files.

Change Log

A detailed list of all changes to BIND 9 is included in the file CHANGES, with the most recent changes listed first. Change notes include tags indicating the category of the change that was made; these categories are:

[func] New feature

[bug] General bug fix

[security] Fix for a significant security flaw

[experimental] Used for new features when the syntax or other aspects of the design are still in flux and may change

[port] Portability enhancement

[maint] Updates to built-in data such as root server addresses and keys

[tuning] Changes to built-in configuration defaults and constants to improve performance

[protocol] Updates to the DNS protocol such as new RR types

[test] Changes to the automatic tests, not affecting server functionality

[cleanup] Minor corrections and refactoring

[doc] Documentation

In general, [func] and [experimental] tags will only appear in new-feature releases (i.e., those with version numbers ending in zero). Some new functionality may be backported to older releases on a case-by-case basis. All other change types may be applied to all currently-supported releases.

Bug Reports and Mailing Lists

Bugs reports should be sent to

`bind9-bugs@isc.org`

To join the BIND Users mailing list, send mail to

`bind-users-request@isc.org`

archives of which can be found via

<http://www.isc.org/ops/lists/>

If you're planning on making changes to the BIND 9 source code, you might want to join the BIND Workers mailing list. Send mail to

`bind-workers-request@isc.org`

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3.11 binutils-2.27-34.base

README for GNU development tools

This directory contains various GNU compilers, assemblers, linkers, debuggers, etc., plus their support routines, definitions, and documentation.

If you are receiving this as part of a GDB release, see the file gdb/README. If with a binutils release, see binutils/README; if with a libg++ release, see libg++/README, etc. That'll give you info about this package -- supported targets, how to use it, how to report bugs, etc.

It is now possible to automatically configure and build a variety of tools with one command. To build all of the tools contained herein, run the ‘‘configure’’ script here, e.g.:

```
./configure
make
```

To install them (by default in /usr/local/bin, /usr/local/lib, etc), then do:
make install

(If the configure script can't determine your type of computer, give it the name as an argument, for instance ‘‘./configure sun4’’. You can use the script ‘‘config.sub’’ to test whether a name is recognized; if it is, config.sub translates it to a triplet specifying CPU, vendor, and OS.)

If you have more than one compiler on your system, it is often best to explicitly set CC in the environment before running configure, and to also set CC when running make. For example (assuming sh/bash/ksh):

```
CC=gcc ./configure
make
```

A similar example using csh:

```
setenv CC gcc
./configure
make
```

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COPYING.LIB in the various directories, for a description of the GNU General Public License terms under which you can copy the files.

REPORTING BUGS: Again, see gdb/README, binutils/README, etc., for info on where and how to report problems.

3.11.1 Copying

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Version 3, 29 June 2007

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A "Combined Work" is a work produced by combining or linking an
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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:

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3.12 bzip2-1.0.6-13

This is the README for bzip2/libbzip2.

This version is fully compatible with the previous public releases.

This file is part of bzip2/libbzip2, a program and library for
lossless, block-sorting data compression.

bzip2/libbzip2 version 1.0.6 of 6 September 2010

Copyright (C) 1996-2010 Julian Seward <jseward@bzip.org>

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Complete documentation is available in Postscript form (manual.ps),
PDF (manual.pdf) or html (manual.html). A plain-text version of the
manual page is available as bzip2.txt.

HOW TO BUILD -- UNIX

Type 'make'. This builds the library libbz2.a and then the programs
bzip2 and bzip2recover. Six self-tests are run. If the self-tests
complete ok, carry on to installation:

To install in /usr/local/bin, /usr/local/lib, /usr/local/man and
/usr/local/include, type

```
make install
```

To install somewhere else, eg, /xxx/yyy/{bin,lib,man,include}, type

```
make install PREFIX=/xxx/yyy
```

If you are (justifiably) paranoid and want to see what 'make install'
is going to do, you can first do

```
make -n install                                or  
make -n install PREFIX=/xxx/yyy               respectively.
```

The `-n` instructs make to show the commands it would execute, but not actually execute them.

HOW TO BUILD -- UNIX, shared library libbz2.so.

Do `'make -f Makefile-libbz2_so'`. This Makefile seems to work for Linux-ELF (RedHat 7.2 on an x86 box), with gcc. I make no claims that it works for any other platform, though I suspect it probably will work for most platforms employing both ELF and gcc.

bzip2-shared, a client of the shared library, is also built, but not self-tested. So I suggest you also build using the normal Makefile, since that conducts a self-test. A second reason to prefer the version statically linked to the library is that, on x86 platforms, building shared objects makes a valuable register (`%ebx`) unavailable to gcc, resulting in a slowdown of 10%-20%, at least for bzip2.

Important note for people upgrading .so's from 0.9.0/0.9.5 to version 1.0.X. All the functions in the library have been renamed, from (eg) `bzCompress` to `BZ2_bzCompress`, to avoid namespace pollution. Unfortunately this means that the libbz2.so created by `Makefile-libbz2_so` will not work with any program which used an older version of the library. I do encourage library clients to make the effort to upgrade to use version 1.0, since it is both faster and more robust than previous versions.

HOW TO BUILD -- Windows 95, NT, DOS, Mac, etc.

It's difficult for me to support compilation on all these platforms. My approach is to collect binaries for these platforms, and put them on the master web site (<http://www.bzip.org>). Look there. However (FWIW), bzip2-1.0.X is very standard ANSI C and should compile unmodified with MS Visual C. If you have difficulties building, you might want to read `README.COMPILATION.PROBLEMS`.

At least using MS Visual C++ 6, you can build from the unmodified sources by issuing, in a command shell:

```
nmake -f makefile.msc
```

(you may need to first run the MSVC-provided script `VCVARS32.BAT`

so as to set up paths to the MSVC tools correctly).

VALIDATION

Correct operation, in the sense that a compressed file can always be decompressed to reproduce the original, is obviously of paramount importance. To validate bzip2, I used a modified version of Mark Nelson's churn program. Churn is an automated test driver which recursively traverses a directory structure, using bzip2 to compress and then decompress each file it encounters, and checking that the decompressed data is the same as the original.

Please read and be aware of the following:

WARNING:

This program and library (attempts to) compress data by performing several non-trivial transformations on it. Unless you are 100% familiar with *all* the algorithms contained herein, and with the consequences of modifying them, you should NOT meddle with the compression or decompression machinery. Incorrect changes can and very likely *will* lead to disastrous loss of data.

DISCLAIMER:

I TAKE NO RESPONSIBILITY FOR ANY LOSS OF DATA ARISING FROM THE USE OF THIS PROGRAM/LIBRARY, HOWSOEVER CAUSED.

Every compression of a file implies an assumption that the compressed file can be decompressed to reproduce the original. Great efforts in design, coding and testing have been made to ensure that this program works correctly. However, the complexity of the algorithms, and, in particular, the presence of various special cases in the code which occur with very low but non-zero probability make it impossible to rule out the possibility of bugs remaining in the program. DO NOT COMPRESS ANY DATA WITH THIS PROGRAM UNLESS YOU ARE PREPARED TO ACCEPT THE POSSIBILITY, HOWEVER SMALL, THAT THE DATA WILL NOT BE RECOVERABLE.

That is not to say this program is inherently unreliable. Indeed, I very much hope the opposite is true. bzip2/libbzip2 has been carefully constructed and extensively tested.

PATENTS:

To the best of my knowledge, bzip2/libbzip2 does not use any patented algorithms. However, I do not have the resources to carry out a patent search. Therefore I cannot give any guarantee of the above statement.

WHAT'S NEW IN 0.9.0 (as compared to 0.1pl2) ?

- * Approx 10% faster compression, 30% faster decompression
- * -t (test mode) is a lot quicker
- * Can decompress concatenated compressed files
- * Programming interface, so programs can directly read/write .bz2 files
- * Less restrictive (BSD-style) licensing
- * Flag handling more compatible with GNU gzip
- * Much more documentation, i.e., a proper user manual
- * Hopefully, improved portability (at least of the library)

WHAT'S NEW IN 0.9.5 ?

- * Compression speed is much less sensitive to the input data than in previous versions. Specifically, the very slow performance caused by repetitive data is fixed.
- * Many small improvements in file and flag handling.
- * A Y2K statement.

WHAT'S NEW IN 1.0.0 ?

See the CHANGES file.

WHAT'S NEW IN 1.0.2 ?

See the CHANGES file.

WHAT'S NEW IN 1.0.3 ?

See the CHANGES file.

WHAT'S NEW IN 1.0.4 ?

See the CHANGES file.

WHAT'S NEW IN 1.0.5 ?

See the CHANGES file.

WHAT'S NEW IN 1.0.6 ?

See the CHANGES file.

I hope you find bzip2 useful. Feel free to contact me at
jseward@bzip.org
if you have any suggestions or queries. Many people mailed me with
comments, suggestions and patches after the releases of bzip-0.15,
bzip-0.21, and bzip2 versions 0.1pl2, 0.9.0, 0.9.5, 1.0.0, 1.0.1,
1.0.2 and 1.0.3, and the changes in bzip2 are largely a result of this
feedback. I thank you for your comments.

bzip2's "home" is <http://www.bzip.org/>

Julian Seward
jseward@bzip.org
Cambridge, UK.

18	July 1996 (version 0.15)
25	August 1996 (version 0.21)
7	August 1997 (bzip2, version 0.1)
29	August 1997 (bzip2, version 0.1pl2)
23	August 1998 (bzip2, version 0.9.0)
8	June 1999 (bzip2, version 0.9.5)
4	Sept 1999 (bzip2, version 0.9.5d)
5	May 2000 (bzip2, version 1.0pre8)
30	December 2001 (bzip2, version 1.0.2pre1)
15	February 2005 (bzip2, version 1.0.3)
20	December 2006 (bzip2, version 1.0.4)
10	December 2007 (bzip2, version 1.0.5)
6	Sept 2010 (bzip2, version 1.0.6)

3.13 bzip2-1.0.6-13

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This version is fully compatible with the previous public releases.

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lossless, block-sorting data compression.

bzip2/libbzip2 version 1.0.6 of 6 September 2010

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See the CHANGES file.

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See the CHANGES file.

WHAT'S NEW IN 1.0.5 ?

See the CHANGES file.

WHAT'S NEW IN 1.0.6 ?

See the CHANGES file.

I hope you find bzip2 useful. Feel free to contact me at
jseward@bzip.org

if you have any suggestions or queries. Many people mailed me with comments, suggestions and patches after the releases of bzip-0.15, bzip-0.21, and bzip2 versions 0.1pl2, 0.9.0, 0.9.5, 1.0.0, 1.0.1, 1.0.2 and 1.0.3, and the changes in bzip2 are largely a result of this feedback. I thank you for your comments.

bzip2's "home" is <http://www.bzip.org/>

Julian Seward
jseward@bzip.org
Cambridge, UK.

18	July 1996	(version 0.15)
25	August 1996	(version 0.21)
7	August 1997	(bzip2, version 0.1)
29	August 1997	(bzip2, version 0.1pl2)
23	August 1998	(bzip2, version 0.9.0)
8	June 1999	(bzip2, version 0.9.5)
4	Sept 1999	(bzip2, version 0.9.5d)
5	May 2000	(bzip2, version 1.0pre8)
30	December 2001	(bzip2, version 1.0.2pre1)
15	February 2005	(bzip2, version 1.0.3)
20	December 2006	(bzip2, version 1.0.4)
10	December 2007	(bzip2, version 1.0.5)
6	Sept 2010	(bzip2, version 1.0.6)

3.14 checkpolicy-2.5-8

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3.15 chkconfig-1.7.4-1

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```
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3.16 chrony-3.2-2

Clock and Network Simulator (clknetsim)

=====

clknetsim is a tool designed to test programs which synchronize the system clock, either over network or from a hardware reference clock. It simulates a system or a number of systems connected to each other in a network and the tested programs discipline the simulated system clocks. It can be used to quickly test how well the programs control the system clocks in various conditions or to test the network protocols.

The tested programs are not modified in order to be included in the simulation, but they have some system calls redirected by a clknetsim library, which is loaded by the LD_PRELOAD feature of the dynamic linker, to a clknetsim server, which runs the simulation and collects several statistics about each client. The server and the clients run on a single host, they communicate via a UNIX domain socket. The simulation runs as fast as the host system is capable of, with two simulated systems it is usually three or four orders of magnitude faster than real time.

Supported programs:

- chronyd and chronyc from chrony (<http://chrony.tuxfamily.org/>)
- ntpd, ntpdate, sntp and ntpq from ntp (<http://www.ntp.org/>)
- ntpd from busybox (<http://www.busybox.net/>)
- ptp4l, phc2sys and pmc from linuxptp (<http://linuxptp.sourceforge.net/>)

Limitations:

- only Linux is supported
- the fake system calls implement only a minimal functionality required to keep the supported clients working
- the simulated system clock advances only on select(), poll() or usleep() calls, this means the client sees the CPU as infinitely fast
- adjtimex() frequency and tick changes happen immediately, the kernel has infinite HZ
- adjtime() and PLL updates happen in one second intervals in the simulated time instead of the uncorrected simulated system time, all clocks are updated at the same time

Usage

The clknetsim server is started with two required arguments, the first one is

path to a configuration file describing the network and clocks and the second argument is the number of simulated nodes. The simulation is started when all clients are connected.

The clients are started under a non-root user, with preloaded `clknetnsim.so` and the environment variable `CLKNETSIM_NODE` set to the number of the client. Optionally, the environment variable `CLKNETSIM_SOCKET` can be set to the path of the UNIX domain socket which is used to connect to the server, `clknetnsim.sock` in current directory is used by default. The `CLKNETSIM_START_DATE` variable can be used to specify in seconds since 1970 when should the simulated time start, 1262304000 by default (2010-01-01 0:00 UTC). The `CLKNETSIM_CONNECT_TIMEOUT` variable sets the server connection timeout, 10 seconds by default.

The simulated network is available to the clients as one or more Ethernet networks with IPv4 addressing. All nodes have interfaces to all networks. Their addresses are 192.168.122+s.n, where n is the number of the node (starting at 1) and s is the number of the network (starting at 1). The broadcast addresses are 192.168.122+s.255.

At the end of the simulation clock and network statistics are printed. `clknetnsim` has options which can be used to control for how long the simulation should run, or if the frequency, offset or network log should be written. `clknetnsim -h` prints a complete list of available options.

A minimal example how to start a simulation:

```
$ LD_PRELOAD=./clknetnsim.so CLKNETSIM_NODE=1 chronyd -d -f chrony.conf &
$ LD_PRELOAD=./clknetnsim.so CLKNETSIM_NODE=2 ntpd -n -c ntp.conf &
$ ./clknetnsim -o log.offset -l 100000 clknetnsim.conf 2
```

`clknetnsim.conf`:

```
node2_freq = (sum (* 1e-8 (normal)))
node1_delay2 = (+ 1e-1 (* 1e-3 (exponential)))
node2_delay1 = (+ 1e-1 (* 1e-3 (exponential)))
```

`chrony.conf`:

```
pidfile chronyd.pid
local stratum 1
allow
```

`ntp.conf`:

```
pidfile ntpd.pid
server 192.168.123.1
```

The `clknetsim.bash` file contains bash functions which can create the configuration in several network settings, start the simulation, stop the clients and process the results. The `examples` subdirectory contains an example script for each supported client. The above example can be written in a bash script as:

```
CLKNETSIM_PATH=.
. ./clknetsim.bash

generate_config1 2 0.0 "(sum (* 1e-8 (normal)))" "(+ 1e-1 (* 1e-3 (exponential)))"
start_client 1 chrony "local stratum 1"
start_client 2 ntp "server 192.168.123.1"
start_server 2 -o log.offset -l 100000

cat tmp/stats
```

Configuration file

The configuration file is a text file containing a list of assignments, each specified on a separate line, and comments using `#` as delimiter. Each node has several variables, which configure the system clock, the reference clock and the network delays to other nodes in the network. They can be set either to an integer value, a floating-point value or a number generating expression written in a Lisp-style syntax.

Variables:

- `nodeX_freq = float | expr`
the system clock frequency error in terms of gained seconds per second of simulated time, if an expression is specified, the expression is evaluated and frequency updated once per simulated second (or at the rate specified with the `-R` option), the allowed range is `(-0.2, 0.2)`, the default is 0
- `nodeX_delayY = expr`
the network delay for packets sent from node X to node Y in seconds, the expression is evaluated for each sent packet, a negative value means the packet will be dropped, there is no default (packets are dropped)
- `nodeX_offset = float`
the initial time error of the system clock in seconds, the default is 0
- `nodeX_start = float`
the time in seconds when will be the node started, the default is 0
- `nodeX_refclock = expr`
the reference clock time error in seconds, the clock can be accessed by the client via shared memory (NTP SHM protocol) or as a PTP hardware clock (PHC)

- via the `clock_gettime()` function, there is no default (the clock is disabled)
- `nodeX_step = expr`
the extra time step applied once per second (or at the rate specified with the `-R` option) in seconds, there is no default (no extra steps are applied)
- `nodeX_shift_pll = integer`
kernel PLL parameter, the default is 2
- `nodeX_pll_clamp = 1 | 0`
kernel PLL parameter, the default is 0
- `nodeX_fll_mode2 = 1 | 0`
kernel FLL parameter, the default is 0

Functions and their parameters supported in the expressions:

- `(* [expr | float] ...)` - multiplication
- `(+ [expr | float] ...)` - addition
- `(% [expr | float] ...)` - modulo
- `(sum [expr | float] ...)`
- summation over consecutive evaluation of parameters
- `(uniform)`
- random number generator with standard uniform distribution
- `(normal)`
- random number generator with standard normal distribution
- `(exponential)`
- random number generator with exponential distribution ($\lambda = 1$)
- `(poisson lambda)`
- random number generator with poisson distribution
- `(file "datafile")`
- number generator reading floating-point values from the specified file in an infinite loop
- `(pulse high low)`
- pulse wave generator
- `(sine period)`
- sine wave generator
- `(cosine period)`
- cosine wave generator
- `(triangle period)`
- triangle wave generator
- `(equal epsilon [expr | float] ...)`
- returns 1.0 if the values of all parameters are equal within epsilon, 0.0 otherwise
- `(max [expr | float] ...)`
- returns maximum value
- `(min [expr | float] ...)`
- returns minimum value

Variables available in network delay expressions:

- `time`
- current network time
- `from`
- number of the sending node
- `to`
- number of the receiving node
- `port`
- receiving port number
- `length`
- length of the packet

subnet - number of the Ethernet network in which
 the packet was sent

An example:

```
# node1 is an NTP server, it has an accurate and absolutely stable clock
node1_offset = 0
node1_freq = 0

# node2 is an NTP client, it starts with 0.1s offset and has
# 0.01ppm/s frequency wander
node2_offset = 0.1
node2_freq = (sum (* 1e-8 (normal)))

# network delays between the two nodes have 10ms mean and 100us
# jitter in both directions
node1_delay2 = (+ 9.9e-3 (* 100e-6 (exponential)))
node2_delay1 = (+ 9.9e-3 (* 100e-6 (exponential)))
```

Author

Miroslav Lichvar <mlichvar@redhat.com>

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```
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```

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```
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```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
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3.17 coreutils-8.22-23

These are the GNU core utilities. This package is the union of the GNU fileutils, sh-utils, and textutils packages.

Most of these programs have significant advantages over their Unix counterparts, such as greater speed, additional options, and fewer arbitrary limits.

The programs that can be built with this package are:

```
[ arch base64 basename cat chcon chgrp chmod chown chroot cksum comm cp
csplit cut date dd df dir dircolors dirname du echo env expand expr
factor false fmt fold groups head hostid hostname id install join kill
link ln logname ls md5sum mkdir mkfifo mknod mktemp mv nice nl nohup
nproc numfmt od paste pathchk pinky pr printenv printf ptx pwd readlink
realpath rm rmdir runcon seq sha1sum sha224sum sha256sum sha384sum sha512sum
shred shuf sleep sort split stat stdbuf stty sum sync tac tail tee test
timeout touch tr true truncate tsort tty uname unexpand uniq unlink
uptime users vdir wc who whoami yes
```

See the file NEWS for a list of major changes in the current release.

If you obtained this file as part of a "git clone", then see the README-hacking file. If this file came to you as part of a tar archive, then see the file INSTALL for compilation and installation instructions.

These programs are intended to conform to POSIX (with BSD and other extensions), like the rest of the GNU system. By default they conform to older POSIX (1003.2-1992), and therefore support obsolete usages like "head -10" and "chown owner.group file". This default is overridden at build-time by the value of <unistd.h>'s _POSIX2_VERSION macro, and this in turn can be overridden at runtime as described in the documentation under "Standards conformance".

The ls, dir, and vdir commands are all separate executables instead of one program that checks argv[0] because people often rename these programs to things like gls, gnuls, l, etc. Renaming a program file shouldn't affect how it operates, so that people can get the behavior they want with whatever name they want.

Special thanks to Paul Eggert, Brian Matthews, Bruce Evans, Karl Berry, Kaveh Ghazi, and François Pinard for help with debugging and porting these programs. Many thanks to all of the people who have taken the

time to submit problem reports and fixes. All contributed changes are attributed in the commit logs.

And thanks to the following people who have provided accounts for portability testing on many different types of systems: Bob Proulx, Christian Robert, François Pinard, Greg McGary, Harlan Stenn, Joel N. Weber, Mark D. Roth, Matt Schalit, Nelson H. F. Beebe, Réjean Payette, Sam Tardieu.

Thanks to Michael Stone for inflicting test releases of this package on Debian's unstable distribution, and to all the kind folks who used that distribution and found and reported bugs.

Note that each man page is now automatically generated from a template and from the corresponding --help usage message. Patches to the template files (man/*.x) are welcome. However, the authoritative documentation is in texinfo form in the doc directory.

On Mac OS X 10.5.1 (Darwin 9.1), test failure

Mac OS X 10.5.1 (Darwin 9.1) provides only partial (and incompatible) ACL support, so although `./configure && make` succeeds, `make check` exposes numerous failures. The solution is to turn off ACL support manually via `./configure --disable-acl`. For details, see <http://thread.gmane.org/gmane.comp.gnu.coreutils.bugs/12292/focus=12318>.

Test failure with NLS and gettext <= 0.17

Due to a conflict between `libintl.h` and `gnulib`'s new `xprintf` module, when you configure with NLS support, and with a `gettext` installation older than 0.17.1 (not yet released, at the time of this writing), then some tests fail, at least on NetBSD 1.6. To work around it in the mean time, you can configure with `--disable-nls`. For details, see <http://thread.gmane.org/gmane.comp.lib.gnulib.bugs/12015/>.

Pre-C99 build failure

There is a new, implicit build requirement:

To build the coreutils from source, you should have a C99-conforming compiler, due to the use of declarations after non-declaration statements in several files in src/. There is code in configure to find and, if possible, enable an appropriate compiler. However, if configure doesn't find a C99 compiler, it continues nonetheless, and your build will fail. If that happens, simply[*] apply the included patch using the following command, and then run make again:

```
cd src && patch < c99-to-c89.diff
```

[*] however, as of coreutils-7.1, the "c99-to-c89.diff" file is no longer maintained, so even if the patches still apply, the result will be an incomplete conversion. It's been 10 years. Get a decent compiler! ;-)

HPUX 11.x build failure

A known problem exists when compiling on HPUX on both hppa and ia64 in 64-bit mode (i.e. +DD64) on HP-UX 11.0, 11.11, and 11.23. This is not due to a bug in the package but instead due to a bug in the system header file which breaks things in 64-bit mode. The default compilation mode is 32-bit and the software compiles fine using the default mode. To build this software in 64-bit mode you will need to fix the system /usr/include/inttypes.h header file. After correcting that file the software also compiles fine in 64-bit mode. Here is one possible patch to correct the problem:

```
--- /usr/include/inttypes.h.orig Thu May 30 01:00:00 1996
+++ /usr/include/inttypes.h Sun Mar 23 00:20:36 2003
@@ -489,489 @@
-#ifndef __STDC_32_MODE__
+#ifndef __LP64__
```

OSF/1 4.0d build failure

If you use /usr/bin/make on an OSF/1 4.0d system, it will fail due

to the presence of the "[" target. That version of make appears to treat "[" as some syntax relating to locks. To work around that, the best solution is to use GNU make. Otherwise, simply remove all mention of "[\$(EXEEXT)]" from src/Makefile.

```
*****
"make check" failure on IRIX 6.5 and Solaris <= 9
-----
```

Using the vendor make program to run "make check" fails on these two systems. If you want to run all of the tests there, use GNU make.

```
*****
Running tests as root:
-----
```

If you run the tests as root, note that a few of them create files and/or run programs as a non-root user, 'nobody' by default. If you want to use some other non-root username, specify it via the NON_ROOT_USERNAME environment variable. Depending on the permissions with which the working directories have been created, using 'nobody' may fail, because that user won't have the required read and write access to the build and test directories. I find that it is best to unpack and build as a non-privileged user, and then to run the following command as that user in order to run the privilege-requiring tests:

```
sudo env PATH="$PATH" NON_ROOT_USERNAME=$USER make -k check-root
```

If you can run the tests as root, please do so and report any problems. We get much less test coverage in that mode, and it's arguably more important that these tools work well when run by root than when run by less privileged users.

```
*****
Reporting bugs:
-----
```

IMPORTANT: if you take the time to report a test failure, please be sure to include the output of running 'make check'

in verbose mode for each failing test. For example, if the test that fails is tests/df/df-P.sh, then you would run this command:

```
make check TESTS=tests/df/df-P.sh VERBOSE=yes SUBDIRS=. >> log 2>&1
```

For some tests, you can get even more detail by adding `DEBUG=yes`. Then include the contents of the file 'log' in your bug report.

Send bug reports, questions, comments, etc. to bug-coreutils@gnu.org. If you would like to suggest a patch, see the files `README-hacking` and `HACKING` for tips.

There are many tests, but nowhere near as many as we need. Additions and corrections are very welcome.

If you see a problem that you've already reported, feel free to re-report it -- it won't bother me to get a reminder. Besides, the more messages I get regarding a particular problem the sooner it'll be fixed -- usually. If you sent a complete patch and, after a couple weeks you haven't received any acknowledgement, please ping us. A complete patch includes a well-written ChangeLog entry, unified (diff -u format) diffs relative to the most recent test release (or, better, relative to the latest sources in the public repository), an explanation for why the patch is necessary or useful, and if at all possible, enough information to reproduce whatever problem prompted it. Plus, you'll earn lots of karma if you include a test case to exercise any bug(s) you fix. Here are instructions for checking out the latest development sources:

<http://savannah.gnu.org/git/?group=coreutils>

If your patch adds a new feature, please try to get some sort of consensus that it is a worthwhile change. One way to do that is to send mail to coreutils@gnu.org including as much description and justification as you can. Based on the feedback that generates, you may be able to convince us that it's worth adding. Please also consult the list of previously discussed but ultimately rejected feature requests at: http://www.gnu.org/software/coreutils/rejected_requests.html

WARNING: Now that we use the `./bootstrap` script, you should not run `autoreconf` manually. Doing that will overwrite essential source files

with older versions, which may make the package unbuildable or introduce subtle bugs.

WARNING: If you modify files like `configure.in`, `m4/*.m4`, `aclocal.m4`, or any `Makefile.am`, then don't be surprised if what gets regenerated no longer works. To make things work, you'll have to be using appropriate versions of the tools listed in `bootstrap.conf`'s `buildreq` string.

All of these programs except 'test' recognize the '--version' option. When reporting bugs, please include in the subject line both the package name/version and the name of the program for which you found a problem.

For general documentation on the coding and usage standards this distribution follows, see the GNU Coding Standards, http://www.gnu.org/prep/standards_toc.html.

For any copyright year range specified as YYYY-ZZZZ in this package note that the range specifies every single year in that closed interval.

Mail suggestions and bug reports for these programs to the address on the last line of --help output.

=====

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```
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Copyright (C) <year> <name of author>
```

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```
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3.18 cpio-2.11-27

This is GNU cpio, a program to manage archives of files.
As of version 2.0, it supports the features of the System V release 4 cpio, including support for tar archives.

This package also includes rmt, the remote tape server, and mt, a tape drive control program; these two programs will only be compiled if your system supports remote command execution, and tape drive control operations, respectively.

See the file INSTALL for compilation and installation instructions for Unix.

For non-Unix systems [Note: The non-Unix makefiles have not been tested for this release]

makefile.pc is a makefile for Turbo C or C++ or Borland C++ on MS-DOS.

makefile.os2 is a makefile for MS C and GNU C (emx/gcc) on OS/2.
cpio.def is a linker definition file for the MS C OS/2 version.

The main advantages of GNU cpio over Unix versions are:

- * It can access tape drives on other hosts using TCP/IP.
- * '-o' and '-p' can copy symbolic links either as symbolic links or, with '-L', as the files they point to.
- * '-i' automatically recognizes the archive format and tries to recover from corrupted archives.
- * The output of '-itv' looks like 'ls -l'.
- * It accepts long-named options as well as traditional single-character options.

A few features of other versions of cpio are missing from GNU cpio, including:

- * The '-6' option to support Sixth Edition Unix cpio archives with '-i'.
- * An option to limit volume size, like afio -s.

GNU cpio supports the POSIX.1 "ustar" tar format. GNU tar supports a somewhat different, early draft of that format. That draft format has a slightly different magic number in the tar header and doesn't include the path prefix part of the header, which allows storing file names that are longer than 100 characters. GNU cpio knows to recognize the nonstandard GNU tar "ustar" archives.

The following patch to GNU tar 1.11.1 makes GNU tar recognize standard "ustar" archives, such as GNU cpio produces, except that it won't use the path prefix. Without this patch, GNU tar thinks that standard "ustar" archives are old-format tar archives and can not use the extra information that "ustar" format contains. If you use this patch, remember that you will lose the beginnings of paths that are longer than 100 characters. That's why it's not an official part of GNU tar. (Adding support for the path prefix to GNU tar is not trivial.)

```
--- list.c.orig Mon Sep 14 17:04:03 1992
+++ list.c      Wed Oct 14 14:02:28 1992
@@ -439,7 +439,7 @@
         st->st_ctime = from_oct(1+12, header->header.ctime);
     }

-    if (0==strcmp(header->header.magic, TMAGIC)) {
+    if (0==strncmp(header->header.magic, TMAGIC, 5)) {
         /* Unix Standard tar archive */
         *stdp = 1;
         if (wantug) {
```

Mail suggestions and bug reports for GNU cpio to bug-cpio@gnu.org.

3.18.1 Copying

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Version 3, 29 June 2007

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```

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```
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3.19 cracklib-2.9.0-11

This package is an updated/modernized distribution of CrackLib as previously release by Alec Muffett. Pretty much all of the files have been modified in some way to allow for this modernization and to apply numerous bug fixes and patches.

Copyright in the original source is assigned to Alec Muffett, numerous authors have contributed the patches applied to these sources, and are included here without attribution as there are no good records.

The primary reason for the updated release was to apply bug fixes and get them distributed from some central place instead of trying to get all of the various repackagers to apply additional packages.

BUILD/INSTALL NOTE: You must 'make dict', preferably after getting a large wordlist, after install. Otherwise it will not install the dictionaries. This is left as a manual step since on some systems generating the dictionary index can be time consuming.

```
=====
Original CrackLib 2.7 README
=====
```

CrackLib: A ProActive Password Sanity Library
By: Alec Muffett
Address: alecm@crypto.dircon.co.uk
Date: Sun Dec 14 22:16:48 GMT 1997

- This software is not my fault in any way, nor indeed anybody's -

*** What is CrackLib ***

CrackLib is a library containing a C function (well, lots of functions really, but you only need to use one of them) which may be used in a "passwd"-like program.

The idea is simple: try to prevent users from choosing passwords that could be guessed by "Crack" by filtering them out, at source.

CrackLib is an offshoot of the the version 5 "Crack" software, and

contains a considerable number of ideas nicked from the new software.

At the time of writing, Crack 5 is incomplete (still awaiting purchase of my home box) - but I thought I could share this with you.

[Incidentally, if Dell or anyone would like to "donate" a Linuxable 486DX2-66MHz box (EISA/16Mb RAM/640MB HD/AHA1740) as a development platform for Crack, I'd be more than grateful to hear from you. 8-)]

NOTE THIS WELL: CrackLib is NOT a replacement "passwd" program. CrackLib is a LIBRARY. CrackLib is what trendy marketdroid types would probably call an "enabler".

The idea is that you wire it into your own "passwd" program (if you have source); alternatively, you wire it into something like "shadow" from off of the net. You can use it in other things, too.

You can use it almost everywhere.

*** Advantages of CrackLib ***

1) it WORKS!

I wrote something similar ("goodpass") a few years back, which went out with Crack v3.x.

Goodpass was slow and buggy and I think it was used (at least in part) in "npasswd". Hopefully, CrackLib will supplant "goodpass" entirely.

2) it's FAST!

CrackLib finds potential passwords quickly, by using an index file to access dictionary words, and by keeping a table to assist binary searching.

3) it's SMALL!

CrackLib's dictionary is modified-DAWG compressed with a chunksize of 16 words (see Crack v5.0 docs (when it comes out) for details) - and then

the index file is built, with one entry per chunk.

The upshot of all this is that CrackLib can do indexed, binary searches in a 1.4 million word dictionary (raw size ~ 15Mb), but the CrackLib files (data+index+watermarks) occupy only ~ 7Mb. (45% original size)

It's even efficient over NFS !

4) it's MIND-NUMBINGLY THOROUGH!

(is this beginning to read like a B-movie flyer, or what?)

CrackLib makes literally hundreds of tests to determine whether you've chosen a bad password.

- * It tries to generate words from your username and gecos entry to tries to match them against what you've chosen.

- * It checks for simplistic patterns.

- * It then tries to reverse-engineer your password into a dictionary word, and searches for it in your dictionary.

- after all that, it's PROBABLY a safe(-ish) password. 8-)

*** Instructions for building CrackLib...

STEP 0) Engage your brain.

I'm interested in improving the CrackLib software, doing bugfixes, "guessing technique" improvements, and portability enhancements.

I'm NOT interested in unhelpful comments like "well, _my_ operating system doesn't come with a dictionary". If it doesn't, either complain to your vendor, or GO AND GET a dictionary off the net.

CrackLib is NOT a TOOL. It is not a complete package. It is not something you can utilise directly.

It is a resource, an aid, something to enhance the functionality of other software. You need to (either) write OR modify other software to

use it. If you can't do this, then you shouldn't be wasting your time with it.

Regarding bugs and portability problems: please try to work them out for yourself, and then (please) TELL me about them. This will help me improve future versions.

STEP 1) Edit the Makefile to set your preferred value of DICTPATH

This is the directory+filename-prefix that your version of CrackLib will go hunting for, and it must be visible to all programs on all hosts that use CrackLib

Hence, if you want to use a CrackLib binary on a distributed network, these files are probably best placed on an NFS server.

Note: You have to specify a FILENAME PREFIX too, eg:

```
DICTPATH=/usr/local/lib/pw_dict
```

which will generate:

```
/usr/local/lib/pw_dict.pwd  
/usr/local/lib/pw_dict.pwi  
/usr/local/lib/pw_dict.hwm
```

which are the files that CrackLib needs.

These files are NOT byte-order independent, in fact they are probably ARCHITECTURE SPECIFIC, mostly due to speed constraints. If this is a problem, I suggest you use:

```
DICTPATH=/usr/local/lib/pw_dict.sun4  
DICTPATH=/usr/local/lib/pw_dict.i386  
DICTPATH=/usr/local/lib/pw_dict.cray
```

...etc, and build several sets of files, as appropriate.

(Hackers Note: Strictly, only *.pwi and *.hwm should be architecture dependent; however, if you build two dictionaries on two different platforms, you MAY wind up with different *.pwd files too, due to incompatibilities in the std Unix utilities, or from using different

SOURCEDICTs.

I may try to work this out in the next release. In the mean time, if your *.pwd files are EXACTLY identical (use "cmp" to test), you can delete the multiple copies and use softlinks instead.)

STEP 2) Add to the SOURCEDICT variable, any files containing extra words that you wish CrackLib to use. CrackLib merges all of these files together, removes redundant characters, and compresses them. Generally, the output file is 40..60% the size of all the input files, combined.

NOTE: THE DEFAULT VALUE OF "SOURCEDICT" CONTAINS "/usr/dict/words" - this is a file which can be found on many BSD-type Unix systems, containing a list of words, one per line, suitable for use with "cracklib". If you do not have such a file, refer to STEP 0.

STEP 3) do:

```
% make all
```

then do:

```
% make install
```

which will build the CrackLib dictionary in \$DICTPATH.

*** NOTE THIS WELL ***

If you supply massive amounts of text to CrackLib to use as a dictionary, you must have enough free space available for use by the "sort" command, when the dictionary is built.

So: If you do not have (say) about 20Mb free in /usr/tmp (or whatever temporary area your "sort" command uses), have a look at the "util/mkdict" script.

You can usually tweak the "sort" command to use any large area of disk you desire, by use of the "-T" option, and "mkdict" has a hook for this.

STEP 4) Wire a call to "FascistCheck()" into your "passwd" program

- Left as an exercise for the reader.

*** Example of how to invoke CrackLib

Insert a call to the routine FascistCheck, which is defined thusly:

NAME

FascistCheck - check a potential password for guessability

SYNOPSIS

```
char *FascistCheck(char *pw, char *dictpath);
```

DESCRIPTION

FascistCheck() takes 2 arguments:

pw - a string containing the users chosen "potential password"

dictpath - the full path name + filename prefix of the CrackLib dictionary, specified in the installation Makefile. (If you still haven't sussed, I'm talking about DICTPATH).

RETURN VALUE

FascistCheck() returns the NULL pointer for a good password, or a pointer to a diagnostic string if it is a bad password.

BUGS

- it can't catch everything. Just most things.
- it calls getpwuid(getuid()) to look up the user, this MAY affect poorly written programs
- using more than one pw_dict file, eg:

```
char *msg;
```

```

if (msg = FascistCheck(pw, "onepath") ||
    msg = FascistCheck(pw, "anotherpath"))
{
    printf("Bad Password: because %s\n", msg);
}

```

...works, but it's a kludge. AVOID IT IF POSSIBLE.
Using just the one dictionary is more efficient, anyway.

- PWOpen() routines should cope with having more than 1 dictionary open at a time. I'll fix this RSN.

WORKED EXAMPLE

---- modified extract from BSD distribution - "local_passwd.c" ----

```

#ifndef CRACKLIB_DICTPATH /* if possible, get from the same Makefile as CrackLib */
#define CRACKLIB_DICTPATH "/usr/local/lib/pw_dict"
#endif /* see examples on how to import DICTPATH into CRACKLIB_DICTPATH */
...
...
...
for (buf[0] = '\0', tries = 0;;) {
    p = getpass("New password:");
    if (!*p) {
        (void)printf("Password unchanged.\n");
        pw_error(NULL, 0, 0);
    }

    #ifndef CRACKLIB_DICTPATH
    if (strlen(p) <= 5 && (uid != 0 || ++tries < 2)) {
        (void)printf("Please enter a longer password.\n");
        continue;
    }
    for (t = p; *t && islower(*t); ++t);
    if (!*t && (uid != 0 || ++tries < 2)) {
        (void)printf("Please don't use an all-lower case password."
            "\nUnusual capitalization, control characters or digits are suggested.\n");
        continue;
    }
    #else
    {
        char *msg;

```

```

if (msg = (char *) FascistCheck(pwbuf, CRACKLIB_DICTPATH)) {
printf("Please use a different password.\n");
printf("The one you have chosen is unsuitable because %s.\n", msg);
continue; /* go round and round until they get it right */
}
}
#endif /* CRACKLIB_DICTPATH */

(void)strcpy(buf, p);
if (!strcmp(buf, getpass("Retype new password:")))
break;
(void)printf("Mismatch; try again, EOF to quit.\n");
}
---- end of extract ----

```

3.19.1 Copying

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

That's all there is to it!

3.20 cronie-1.4.11-20

17. January 2008 mmaslano (at) redhat (dot) com

Rename the fork on cronie. The source code could be found here:

<http://mmaslano.fedorapeople.org/cronie/> or git archive here:

<git://git.fedorahosted.org/git/cronie.git>

3. October 2007 mmaslano (at) redhat (dot) com

This is a clone of 'original' vixie-cron. It was used in Red Hat|Fedora system and patched for a long time. Now was made clone tagged with version 4.2.

Changes are mainly in git commit messages, some older changes could be found in spec changelog (contrib/vixie-cron.spec).

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* @(#)bitstring.h 8.1 (Berkeley) 7/19/93
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```

3.21 crontabs-1.11-6.20121102git

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3.22 cryptsetup-2.0.3-3

cryptsetup

setup cryptographic volumes for dm-crypt (including LUKS extension)

WEB PAGE:

<https://gitlab.com/cryptsetup/cryptsetup/>

FAQ:

<https://gitlab.com/cryptsetup/cryptsetup/wikis/FrequentlyAskedQuestions>

MAILING LIST:

E-MAIL: dm-crypt@saout.de

URL: <http://www.saout.de/mailman/listinfo/dm-crypt>

DOWNLOAD:

<https://www.kernel.org/pub/linux/utils/cryptsetup/>

SOURCE CODE:

URL: <https://gitlab.com/cryptsetup/cryptsetup/tree/master>

Checkout: `git clone https://gitlab.com/cryptsetup/cryptsetup.git`

NLS (PO TRANSLATIONS):

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3.23 curl-7.29.0-51

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README

Curl is a command line tool for transferring data specified with URL syntax. Find out how to use curl by reading the curl.1 man page or the MANUAL document. Find out how to install Curl by reading the INSTALL document.

libcurl is the library curl is using to do its job. It is readily available to be used by your software. Read the libcurl.3 man page to learn how!

You find answers to the most frequent questions we get in the FAQ document.

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CONTACT

If you have problems, questions, ideas or suggestions, please contact us by posting to a suitable mailing list. See <http://curl.haxx.se/mail/>

All contributors to the project are listed in the THANKS document.

WEB SITE

Visit the curl web site for the latest news and downloads:

<http://curl.haxx.se/>

GIT

To download the very latest source off the GIT server do this:

```
git clone git://github.com/bagder/curl.git
```

(you'll get a directory named curl created, filled with the source code)

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3.24 cyrus-sasl-2.1.26-23

This is the Cyrus SASL API implementation. It can be used on the client or server side to provide authentication and authorization services. See RFC 4422 for more information.

The latest version is available at:
<ftp://ftp.andrew.cmu.edu/pub/cyrus-mail>

There's a mailing list for Cyrus SASL. Subscribe by sending a message to majordomo@lists.andrew.cmu.edu with the body "subscribe cyrus-sasl". The mailing list is available via anonymous IMAP at <imap://cyrus.andrew.cmu.edu/archive.cyrus-sasl> or via the web at <http://asg.web.cmu.edu/archive/mailbox.php3?mailbox=archive.cyrus-sasl>.

If you are looking to port SASLv1 applications to SASLv2, please see <doc/appconvert.html>

Bugs can be searched/reported at: <http://bugzilla.cyrussasl.org>

DOCUMENTATION

Please see <doc/index.html> for the remainder of the documentation.

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```
/* CMU libsas1
 * Tim Martin
 * Rob Earhart
 * Rob Siemborski
 */
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3.25 dbus-1.10.24-12

Sections in this file describe:

- introduction and overview
- low-level vs. high-level API
- version numbers
- options to the configure script
- ABI stability policy

Introduction

===

D-Bus is a simple system for interprocess communication and coordination.

The "and coordination" part is important; D-Bus provides a bus daemon that does things like:

- notify applications when other apps exit
- start services on demand
- support single-instance applications

See <http://www.freedesktop.org/software/dbus/> for lots of documentation, mailing lists, etc.

See also the file HACKING for notes of interest to developers working on D-Bus.

If you're considering D-Bus for use in a project, you should be aware that D-Bus was designed for a couple of specific use cases, a "system bus" and a "desktop session bus." These are documented in more detail in the D-Bus specification and FAQ available on the web site.

If your use-case isn't one of these, D-Bus may still be useful, but only by accident; so you should evaluate carefully whether D-Bus makes sense for your project.

Security

==

If you find a security vulnerability that is not known to the public, please report it privately to dbus-security@lists.freedesktop.org or by reporting a freedesktop.org bug that is marked as restricted to the "D-BUS security group" (you might need to "Show Advanced Fields" to have that option).

On Unix systems, the system bus (`dbus-daemon --system`) is designed

to be a security boundary between users with different privileges.

On Unix systems, the session bus (`dbus-daemon --session`) is designed to be used by a single user, and only accessible by that user.

We do not currently consider D-Bus on Windows to be security-supported, and we do not recommend allowing untrusted users to access Windows D-Bus via TCP.

Note: low-level API vs. high-level binding APIs

===

A core concept of the D-Bus implementation is that "libdbus" is intended to be a low-level API. Most programmers are intended to use the bindings to GLib, Qt, Python, Mono, Java, or whatever. These bindings have varying levels of completeness and are maintained as separate projects from the main D-Bus package. The main D-Bus package contains the low-level libdbus, the bus daemon, and a few command-line tools such as `dbus-launch`.

If you use the low-level API directly, you're signing up for some pain. Think of the low-level API as analogous to Xlib or GDI, and the high-level API as analogous to Qt/GTK+/HTML.

Version numbers

===

D-Bus uses the common "Linux kernel" versioning system, where even-numbered minor versions are stable and odd-numbered minor versions are development snapshots.

So for example, development snapshots: 1.1.1, 1.1.2, 1.1.3, 1.3.4
Stable versions: 1.0, 1.0.1, 1.0.2, 1.2.1, 1.2.3

All pre-1.0 versions were development snapshots.

Development snapshots make no ABI stability guarantees for new ABI introduced since the last stable release. Development snapshots are likely to have more bugs than stable releases, obviously.

Configuration

===

dbus could be build by using autotools or cmake.

When using autotools the configure step is initiated by running `./configure` with or without additional configuration flags. dbus requires GNU Make (on BSD systems, this is typically called `gmake`) or a "make" implementation with compatible extensions.

When using cmake the configure step is initiated by running the `cmake` program with or without additional configuration flags.

Configuration flags

===

When using autotools, run `./configure --help` to see the possible configuration options and environment variables.

When using cmake, inspect `README.cmake` to see the possible configuration options and environment variables.

API/ABI Policy

===

Now that D-Bus has reached version 1.0, the objective is that all applications dynamically linked to `libdbus` will continue working indefinitely with the most recent system and session bus daemons.

- The protocol will never be broken again; any message bus should work with any client forever. However, extensions are possible where the protocol is extensible.
- If the library API is modified incompatibly, we will rename it as in <http://ometer.com/parallel.html> - in other words, it will always be possible to compile against and use the older API, and apps will always get the API they expect.

Interfaces can and probably will be `_added_`. This means both new functions and types in `libdbus`, and new methods exported to applications by the bus daemon.

The above policy is intended to make D-Bus as API-stable as other widely-used libraries (such as `GTK+`, `Qt`, `Xlib`, or your favorite example). If you have questions or concerns they are very welcome on the D-Bus mailing list.

NOTE ABOUT DEVELOPMENT SNAPSHOTS AND VERSIONING

Odd-numbered minor releases (1.1.x, 1.3.x, 2.1.x, etc. - major.minor.micro) are devel snapshots for testing, and any new ABI they introduce relative to the last stable version is subject to change during the development cycle.

Any ABI found in a stable release, however, is frozen.

ABI will not be added in a stable series if we can help it. i.e. the ABI of 1.2.0 and 1.2.5 you can expect to be the same, while the ABI of 1.4.x may add more stuff not found in 1.2.x.

NOTE ABOUT STATIC LINKING

We are not yet firmly freezing all runtime dependencies of the libdbus library. For example, the library may read certain files as part of its implementation, and these files may move around between versions.

As a result, we don't yet recommend statically linking to libdbus. Also, reimplementations of the protocol from scratch might have to work to stay in sync with how libdbus behaves.

To lock things down and declare static linking and reimplementation to be safe, we'd like to see all the internal dependencies of libdbus (for example, files read) well-documented in the specification, and we'd like to have a high degree of confidence that these dependencies are supportable over the long term and extensible where required.

NOTE ABOUT HIGH-LEVEL BINDINGS

Note that the high-level bindings are separate projects from the main D-Bus package, and have their own release cycles, levels of maturity, and ABI stability policies. Please consult the documentation for your binding.

Bootstrapping D-Bus on new platforms ===

A full build of D-Bus, with all regression tests enabled and run, has some dependencies which themselves depend on D-Bus, either for compilation or for some of *their* regression tests: GLib, dbus-glib and dbus-python are currently affected.

To avoid circular dependencies, when bootstrapping D-Bus for the first time

on a new OS or CPU architecture, you can either cross-compile some of those components, or choose the build order and options carefully:

- * build and install D-Bus without tests
 - do not use the `--enable-modular-tests=yes` configure option
 - do not use the `--enable-tests=yes` configure option
- * build and install GLib, again without tests
- * use those versions of libdbus and GLib to build and install dbus-glib
- * ... and use those to install dbus-python
- * rebuild libdbus; this time you can run all of the tests
- * rebuild GLib; this time you can run all of the tests

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3.26 dbus-glib-0.100-7

D-BUS is a simple IPC library based on messages.

See <http://www.freedesktop.org/software/dbus/> for lots of documentation, mailing lists, etc.

Note

===

A core concept of the D-BUS implementation is that "libdbus" is intended to be a low-level API, similar to Xlib. Most programmers are intended to use the bindings to GLib, Qt, Python, Mono, Java, or whatever. These bindings have varying levels of completeness.

Configuration flags

===

These are the dbus-specific configuration flags that can be given to the ./configure program.

--enable-tests	enable unit test code
--enable-ansi	enable -ansi -pedantic gcc flags
--enable-verbose-mode	support verbose debug mode
--enable-asserts	include assertion checks
--enable-checks	include sanity checks on public API
--enable-xml-docs	build XML documentation (requires xmlto)
--enable-gcov	compile with coverage profiling instrumentation (gcc only)
--with-xml=libxml/expat	XML library to use
--with-gnu-ld	assume the C compiler uses GNU ld [default=no]
--with-tags[=TAGS]	include additional configurations [automatic]

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```
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under certain conditions; type 'show c' for details.
```

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```
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
```

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3.27 dbus-python-1.1.1-9

```
=====
dbus-python_: Python bindings for D-Bus
=====
```

.. _dbus-python: <http://www.freedesktop.org/wiki/Software/DBusBindings#python>

Usage

=====

Online documentation can be found at
<<http://dbus.freedesktop.org/doc/dbus-python/>>.

There is an incomplete tutorial in 'doc/tutorial.txt'__
(if you compile dbus-python with 'docutils'_' 'rst2html'_' tool installed or
you're reading this document on the D-Bus website, there's also an
'HTML version'__).

__ doc/tutorial.txt
__ doc/tutorial.html

'API documentation'_' is generated if you compile dbus-python with 'epydoc'_'
version 3 and 'docutils'_' installed. An 'online copy of the API documentation'_'
is also available.

.. _API documentation: <api/index.html>
.. _epydoc: <http://epydoc.sourceforge.net/>
.. _docutils: <http://docutils.sourceforge.net/>
.. _online copy of the API documentation:
 <http://dbus.freedesktop.org/doc/dbus-python/api/>

To develop on dbus-python, see 'doc/HACKING.txt'__ or the 'HTML version'__.

__ doc/HACKING.txt
__ doc/HACKING.html

Problems and alternatives

=====

dbus-python might not be the best D-Bus binding for you to use. dbus-python
does not follow the principle of "In the face of ambiguity, refuse the
temptation to guess", and can't be changed to not do so without seriously
breaking compatibility.

In addition, it uses `libdbus` (which has known problems with multi-threaded use) and attempts to be main-loop-agnostic (which means you have to select a suitable main loop for your application).

Alternative ways to get your Python code onto D-Bus include:

- * `GDBus`, part of the `GIO` module of 'GLib', via `GObject-Introspection` and 'PyGI' (uses the GLib main loop and object model)
- * `QtDBus`, part of 'Qt', via 'PyQt' (uses the Qt main loop and object model)

.. `_GLib`: <http://developer.gnome.org/glib/>

.. `_PyGI`: <https://live.gnome.org/PyGObject>

.. `_Qt`: <https://qt.nokia.com/>

.. `_PyQT`: <http://www.riverbankcomputing.co.uk/software/pyqt/intro>

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3.28 device-mapper-multipath-0.4.9-123

Christophe Varoqui, <christophe.varoqui@opensvc.com>

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Version 2, June 1991

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That's all there is to it!

3.29 dhcp-4.2.5-68

Internet Systems Consortium DHCP Distribution
Version 4.2.5
8 January 2013

README FILE

You should read this file carefully before trying to install or use the ISC DHCP Distribution.

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WHERE TO FIND DOCUMENTATION

Documentation for this software includes this README file, the RELNOTES file, and the manual pages, which are in the server, common, client and relay subdirectories. The README file (this file) includes late-breaking operational and system-specific information that you should read even if you don't want to read the manual pages, and that you should **certainly** read if you run into trouble. Internet standards relating to the DHCP protocol are listed in the References document that is available in html, txt and xml formats in doc/ subdirectory. You will have the best luck reading the manual pages if you build this software and then install it, although you can read them directly out of the distribution if you need to.

DHCP server documentation is in the dhcpd man page. Information about the DHCP server lease database is in the dhcpd.leases man page. Server configuration documentation is in the dhcpd.conf man page as well as the dhcp-options man page. A sample DHCP server configuration is in the file server/dhcpd.conf.example. The source for the dhcpd, dhcpd.leases and dhcpd.conf man pages is in the server/ subdirectory in the distribution. The source for the dhcp-options.5 man page is in the common/ subdirectory.

DHCP Client documentation is in the dhclient man page. DHCP client configuration documentation is in the dhclient.conf man page and the dhcp-options man page. The DHCP client configuration script is documented in the dhclient-script man page. The format of the DHCP client lease database is documented in the dhclient.leases man page. The source for all these man pages is in the client/ subdirectory in the distribution. In addition, the dhcp-options man page should be referred to for information about DHCP options.

DHCP relay agent documentation is in the dhcrelay man page, the source for which is distributed in the relay/ subdirectory.

To read installed manual pages, use the man command. Type "man page" where page is the name of the manual page. This will only work if you have installed the ISC DHCP distribution using the "make install" command (described later).

If you want to read manual pages that aren't installed, you can type "nroff -man page |more" where page is the filename of the unformatted manual page. The filename of an unformatted manual page

is the name of the manual page, followed by '.', followed by some number - 5 for documentation about files, and 8 for documentation about programs. For example, to read the dhcp-options man page, you would type `'nroff -man common/dhcp-options.5 |more'`, assuming your current working directory is the top level directory of the ISC DHCP Distribution.

Please note that the pathnames of files to which our manpages refer will not be correct for your operating system until after you iterate 'make install' (so if you're reading a manpage out of the source directory, it may not have up-to-date information).

RELEASE STATUS

This is ISC DHCP 4.2.5, a maintenance release containing patches.

In this release, the DHCPv6 server should be fully functional on Linux, Solaris, or any BSD. The DHCPv6 client should be similarly functional except on Solaris.

The DHCPv4 server, relay, and client, should be fully functional on Linux, Solaris, any BSD, HP-UX, SCO, NextSTEP, and Irix.

If you are running the DHCP distribution on a machine which is a firewall, or if there is a firewall between your DHCP server(s) and DHCP clients, please read the section on firewalls which appears later in this document.

If you wish to run the DHCP Distribution on Linux, please see the Linux-specific notes later in this document. If you wish to run on an SCO release, please see the SCO-specific notes later in this document. You particularly need to read these notes if you intend to support Windows 95 clients. If you are running HP-UX or Ultrix, please read the notes for those operating systems below. If you are running NeXTSTEP, please see the notes on NeXTSTEP below.

If you start dhcpd and get a message, "no free bpf", that means you need to configure the Berkeley Packet Filter into your operating system kernel. On NetBSD, FreeBSD and BSD/os, type `'man bpf'` for information. On Digital Unix, type `'man pfilt'`.

BUILDING THE DHCP DISTRIBUTION

UNPACKING IT

To build the DHCP Distribution, unpack the compressed tar file using the tar utility and the gzip command - type something like:

```
gunzip dhcp-4.2.5.tar.gz
tar xvf dhcp-4.2.5.tar
```

CONFIGURING IT

Now, cd to the dhcp-4.2.5 subdirectory that you've just created and configure the source tree by typing:

```
./configure
```

If the configure utility can figure out what sort of system you're running on, it will create a custom Makefile for you for that system; otherwise, it will complain. If it can't figure out what system you are using, that system is not supported - you are on your own.

Several options may be enabled or disabled via the configure command. You can get a list of these by typing:

```
./configure --help
```

DYNAMIC DNS UPDATES

A fully-featured implementation of dynamic DNS updates is included in this release. It uses libraries from BIND and, to avoid issues with different versions, includes the necessary BIND version. The appropriate BIND libraries will be compiled and installed in the bind subdirectory as part of the make step. In order to build the necessary libraries you will need to have "gmake" available on your build system.

There is documentation for the DDNS support in the dhcpd.conf manual page - see the beginning of this document for information on finding manual pages.

LOCALLY DEFINED OPTIONS

In previous versions of the DHCP server there was a mechanism whereby options that were not known by the server could be configured using

a name made up of the option code number and an identifier:
"option-*nnn*" This is no longer supported, because it is not future-proof. Instead, if you want to use an option that the server doesn't know about, you must explicitly define it using the method described in the `dhcp-options` man page under the `DEFINING NEW OPTIONS` heading.

BUILDING IT

Once you've run `configure`, just type `'make'`, and after a while you should have a `dhcp` server. If you get compile errors on one of the supported systems mentioned earlier, please let us know. If you get warnings, it's not likely to be a problem - the `DHCP` server compiles completely warning-free on as many architectures as we can manage, but there are a few for which this is difficult. If you get errors on a system not mentioned above, you will need to do some programming or debugging on your own to get the `DHCP` Distribution working.

INSTALLING THE DHCP DISTRIBUTION

Once you have successfully gotten the `DHCP` Distribution to build, you can install it by typing `'make install'`. If you already have an old version of the `DHCP` Distribution installed, you may want to save it before typing `'make install'`.

USING THE DHCP DISTRIBUTION

FIREWALL RULES

If you are running the `DHCP` server or client on a computer that's also acting as a firewall, you must be sure to allow `DHCP` packets through the firewall. In particular, your firewall rules *must* allow packets from IP address `0.0.0.0` to IP address `255.255.255.255` from UDP port 68 to UDP port 67 through. They must also allow packets from your local firewall's IP address and UDP port 67 through to any address your `DHCP` server might serve on UDP port 68. Finally, packets from relay agents on port 67 to the `DHCP` server on port 67, and vice versa, must be permitted.

We have noticed that on some systems where we are using a packet filter, if you set up a firewall that blocks UDP port 67 and 68 entirely, packets sent through the packet filter will not be blocked. However, unicast packets will be blocked. This can result in strange behaviour, particularly on `DHCP` clients, where the initial packet

exchange is broadcast, but renewals are unicast - the client will appear to be unable to renew until it starts broadcasting its renewals, and then suddenly it'll work. The fix is to fix the firewall rules as described above.

PARTIAL SERVERS

If you have a server that is connected to two networks, and you only want to provide DHCP service on one of those networks (e.g., you are using a cable modem and have set up a NAT router), if you don't write any subnet declaration for the network you aren't supporting, the DHCP server will ignore input on that network interface if it can. If it can't, it will refuse to run - some operating systems do not have the capability of supporting DHCP on machines with more than one interface, and ironically this is the case even if you don't want to provide DHCP service on one of those interfaces.

LINUX

There are three big LINUX issues: the all-ones broadcast address, Linux 2.1 ip_bootp_agent enabling, and operations with more than one network interface. There are also two potential compilation/runtime problems for Linux 2.1/2.2: the "SO_ATTACH_FILTER undeclared" problem and the "protocol not configured" problem.

LINUX: PROTOCOL NOT CONFIGURED

If you get the following message, it's because your kernel doesn't have the linux packetfilter or raw packet socket configured:

Make sure CONFIG_PACKET (Packet socket) and CONFIG_FILTER (Socket Filtering) are enabled in your kernel configuration

If this happens, you need to configure your Linux kernel to support Socket Filtering and the Packet socket, or to select a kernel provided by your Linux distribution that has these enabled (virtually all modern ones do by default).

LINUX: BROADCAST

If you are running a recent version of Linux, this won't be a problem, but on older versions of Linux (kernel versions prior to 2.2), there is a potential problem with the broadcast address being sent incorrectly.

In order for dhcpd to work correctly with picky DHCP clients (e.g., Windows 95), it must be able to send packets with an IP destination address of 255.255.255.255. Unfortunately, Linux changes an IP destination of 255.255.255.255 into the local subnet broadcast address (here, that's 192.5.5.223).

This isn't generally a problem on Linux 2.2 and later kernels, since we completely bypass the Linux IP stack, but on old versions of Linux 2.1 and all versions of Linux prior to 2.1, it is a problem - pickier DHCP clients connected to the same network as the ISC DHCP server or ISC relay agent will not see messages from the DHCP server. It *is* possible to run into trouble with this on Linux 2.2 and later if you are running a version of the DHCP server that was compiled on a Linux 2.0 system, though.

It is possible to work around this problem on some versions of Linux by creating a host route from your network interface address to 255.255.255.255. The command you need to use to do this on Linux varies from version to version. The easiest version is:

```
route add -host 255.255.255.255 dev eth0
```

On some older Linux systems, you will get an error if you try to do this. On those systems, try adding the following entry to your /etc/hosts file:

```
255.255.255.255 all-ones
```

Then, try:

```
route add -host all-ones dev eth0
```

Another route that has worked for some users is:

```
route add -net 255.255.255.0 dev eth0
```

If you are not using eth0 as your network interface, you should specify the network interface you *are* using in your route command.

LINUX: IP BOOTP AGENT

Some versions of the Linux 2.1 kernel apparently prevent dhcpd from working unless you enable it by doing the following:

```
echo 1 >/proc/sys/net/ipv4/ip_bootp_agent
```

LINUX: MULTIPLE INTERFACES

Very old versions of the Linux kernel do not provide a networking API that allows dhcpd to operate correctly if the system has more than one broadcast network interface. However, Linux 2.0 kernels with version numbers greater than or equal to 2.0.31 add an API feature: the SO_BINDTODEVICE socket option. If SO_BINDTODEVICE is present, it is possible for dhcpd to operate on Linux with more than one network interface. In order to take advantage of this, you must be running a 2.0.31 or greater kernel, and you must have 2.0.31 or later system headers installed *before* you build the DHCP Distribution.

We have heard reports that you must still add routes to 255.255.255.255 in order for the all-ones broadcast to work, even on 2.0.31 kernels. In fact, you now need to add a route for each interface. Hopefully the Linux kernel gurus will get this straight eventually.

Linux 2.1 and later kernels do not use SO_BINDTODEVICE or require the broadcast address hack, but do support multiple interfaces, using the Linux Packet Filter.

LINUX: OpenWrt

DHCP 4.1 has been tested on OpenWrt 7.09 and 8.09. In keeping with standard practice, client/scripts now includes a dhclient-script file for OpenWrt. However, this is not sufficient by itself to run dhcp on OpenWrt; a full OpenWrt package for DHCP is available at <ftp://ftp.isc.org/isc/dhcp/dhcp-4.1.0-openwrt.tar.gz>

LINUX: 802.1q VLAN INTERFACES

If you're using 802.1q vlan interfaces on Linux, it is necessary to vconfig the subinterface(s) to rewrite the 802.1q information out of packets received by the dhcpd daemon via LPF:

```
vconfig set_flag eth1.523 1 1
```

Note that this may affect the performance of your system, since the Linux kernel must rewrite packets received via this interface. For more information, consult the vconfig man pages.

SCO

ISC DHCP will now work correctly on newer versions of SCO out of the box (tested on OpenServer 5.05b, assumed to work on UnixWare 7).

Older versions of SCO have the same problem as Linux (described earlier). The thing is, SCO *really* doesn't want to let you add a host route to the all-ones broadcast address.

You can try the following:

```
ifconfig net0 xxx.xxx.xxx.xxx netmask 0xNNNNNNNN broadcast 255.255.255.255
```

If this doesn't work, you can also try the following strange hack:

```
ifconfig net0 alias 10.1.1.1 netmask 8.0.0.0
```

Apparently this works because of an interaction between SCO's support for network classes and the weird netmask. The 10.* network is just a dummy that can generally be assumed to be safe. Don't ask why this works. Just try it. If it works for you, great.

HP-UX

HP-UX has the same problem with the all-ones broadcast address that SCO and Linux have. One user reported that adding the following to /etc/rc.config.d/netconf helped (you may have to modify this to suit your local configuration):

```
INTERFACE_NAME[0]=lan0
IP_ADDRESS[0]=1.1.1.1
SUBNET_MASK[0]=255.255.255.0
BROADCAST_ADDRESS[0]="255.255.255.255"
LANCONFIG_ARGS[0]="ether"
DHCP_ENABLE[0]=0
```

ULTRIX

Now that we have Ultrix packet filter support, the DHCP Distribution on Ultrix should be pretty trouble-free. However, one thing you do need to be aware of is that it now requires that the pfilt device be configured into your kernel and present in /dev. If you type 'man packetfilter', you will get some information on how to configure your

kernel for the packet filter (if it isn't already) and how to make an entry for it in /dev.

FreeBSD

Versions of FreeBSD prior to 2.2 have a bug in BPF support in that the ethernet driver swaps the ethertype field in the ethernet header downstream from BPF, which corrupts the output packet. If you are running a version of FreeBSD prior to 2.2, and you find that dhcpd can't communicate with its clients, you should #define BROKEN_FREEBSD_BPF in site.h and recompile.

Modern versions of FreeBSD include the ISC DHCP 3.0 client as part of the base system, and the full distribution (for the DHCP server and relay agent) is available from the Ports Collection in /usr/ports/net/isc-dhcp3, or as a package on FreeBSD installation CDROMs.

NeXTSTEP

The NeXTSTEP support uses the NeXTSTEP Berkeley Packet Filter extension, which is not included in the base NextStep system. You must install this extension in order to get dhcpd or dhclient to work.

SOLARIS

There are two known issues seen when compiling using the Sun compiler.

The first is that older Sun compilers generate an error on some of our uses of the flexible array option. Newer versions only generate a warning, which can be safely ignored. If you run into this error ("type of struct member "buf" can not be derived from structure with flexible array member"), upgrade your tools to Oracle Solaris Studio (previously Sun Studio) 12 or something newer.

The second is the interaction between the configure script and the makefiles for the Bind libraries. Currently we don't pass all environment variables between the DHCP configure and the Bind configure.

If you attempt to specify the compiler you wish to use like this:

```
CC=/opt/SUNWspro/bin/cc ./configure
```

"make" may not build the Bind libraries with that compiler.

In order to use the same compiler for Bind and DHCP we suggest the following commands:

```
CC=/opt/SUNWspro/bin/cc ./configure
CC=/opt/SUNWspro/bin/cc make
```

Solaris 11

We have integrated a patch from Oracle to use sockets instead of DLPI on Solaris 11. This functionality was written for use with Solaris Studio 12.2 and requires the system/header package.

By default this code is disabled in order to minimize disruptions for current users. In order to enable this code you will need to enable both USE_SOCKETS and USE_V4_PKTINFO as part of the configuration step. The command line would be something like:

```
./configure --enable-use-sockets --enable-ipv4-pktinfo
```

Solaris 11 and ATF

We have reports that ATF 0.15 and 0.16 do not build on Solaris 11. The following changes to the ATF source code appear to fix this issue:

```
diff -ru atf-0.15/atf-c/tp_test.c atf-0.15-patched/atf-c/tp_test.c
--- atf-0.15/atf-c/tp_test.c 2011-12-06 06:31:11.000000000 +0100
+++ atf-0.15-patched/atf-c/tp_test.c 2012-06-19 15:54:57.000000000 +0200
@@ -28,6 +28,7 @@
 */
```

```
#include <string.h>
#include <stdio.h>
#include <unistd.h>
```

```
#include <atf-c.h>
```

```
diff -ru atf-0.15/atf-run/requirements.cpp atf-0.15-patched/atf-run/requirements.cpp
--- atf-0.15/atf-run/requirements.cpp 2012-01-13 20:44:25.000000000 +0100
+++ atf-0.15-patched/atf-run/requirements.cpp 2012-06-19 15:41:51.000000000 +0200
@@ -29,7 +29,7 @@
```

```
extern "C" {
#include <sys/param.h>
```

```
-#include <sys/sysctl.h>
+//#include <sys/sysctl.h>
}
```

```
#include <cerrno>
```

Other Solaris Items

One problem which has been observed and is not fixed in this patchlevel has to do with using DLPI on Solaris machines. The symptom of this problem is that the DHCP server never receives any requests. This has been observed with Solaris 2.6 and Solaris 7 on Intel x86 systems, although it may occur with other systems as well. If you encounter this symptom, and you are running the DHCP server on a machine with a single broadcast network interface, you may wish to edit the includes/site.h file and uncomment the #define USE_SOCKETS line. Then type ‘‘make clean; make’’. As an alternative workaround, it has been reported that running ‘snoop’ will cause the dhcp server to start receiving packets. So the practice reported to us is to run snoop at dhcpd startup time, with arguments to cause it to receive one packet and exit.

```
snoop -c 1 udp port 67 > /dev/null &
```

The DHCP client on Solaris will only work with DLPI. If you run it and it just keeps saying it’s sending DHCPREQUEST packets, but never gets a response, you may be having DLPI trouble as described above. If so, we have no solution to offer at this time, aside from the above workaround which should also work here. Also, because Solaris requires you to “plumb” an interface before it can be detected by the DHCP client, you must either specify the name(s) of the interface(s) you want to configure on the command line, or must plumb the interfaces prior to invoking the DHCP client. This can be done with ‘‘ifconfig iface plumb’’, where iface is the name of the interface (e.g., ‘‘ifconfig hme0 plumb’’).

It should be noted that Solaris versions from 2.6 onward include a DHCP client that you can run with ‘‘/sbin/ifconfig iface dhcp start’’ rather than using the ISC DHCP client, including DHCPv6. Consequently, we don’t believe there is a need for the client to run on Solaris, and have not engineered the needed DHCPv6 modifications for the dhclient-script. If you feel this is in error, or have a need, please contact us.

AIX

The AIX support uses the BSD socket API, which cannot differentiate on which network interface a broadcast packet was received; thus the DHCP server and relay will work only on a single interface. (They do work on multi-interface machines if configured to listen on only one of the interfaces.)

We have reports of Windows XP clients having difficulty retrieving addresses from a server running on an AIX machine. This issue was traced to the client requiring messages be sent to the all ones broadcast address (255.255.255.255) while the AIX server was sending to 192.168.0.255.

You may be able to solve this by including a relay between the client and server with the relay configured to use a broadcast of all-ones.

A second option that worked for AIX 5.1 but doesn't seem to work for AIX 5.3 was to:

```
create a host file entry for all-ones (255.255.255.255)
and then add a route:
route add -host all-ones -interface <local-ip-address>
```

The ISC DHCP distribution does not include a dhclient-script for AIX-- AIX comes with a DHCP client. Contribution of a working dhclient-script for AIX would be welcome.

MacOS X

The MacOS X system uses a TCP/IP stack derived from FreeBSD with a user-friendly interface named the System Configuration Framework. As it includes a builtin DHCPv4 client (you are better just using that), this text is only about the DHCPv6 client ('dhclient -6 ...'). The DNS configuration (domain search list and name servers' addresses) is managed by a System Configuration agent, not by /etc/resolv.conf (which is a link to /var/run/resolv.conf, which itself only reflects the internal state; the System Configuration framework's Dynamic Store).

This means that modifying resolv.conf directly doesn't have the intended effect, instead the macos script sample creates its own resolv.conf.dhclient6 in /var/run, and inserts the contents of this file into the Dynamic Store.

When updating the address configuration the System Configuration framework expects the prefix and a default router along with the

configured address. As this extra information is not available via the DHCPv6 protocol the System Configuration framework isn't usable for address configuration, instead ifconfig is used directly.

Note the Dynamic Store (from which /var/run/resolv.conf is built) is recomputed from scratch when the current location/set is changed. Running the dhclient-script reinstalls the resolv.conf.dhclient6 configuration.

SUPPORT

The Internet Systems Consortium DHCP server is developed and distributed by ISC in the public trust, thanks to the generous donations of its sponsors. ISC now also offers commercial quality support contracts for ISC DHCP, more information about ISC Support Contracts can be found at the following URL:

<https://www.isc.org/services/support/>

Please understand that we may not respond to support inquiries unless you have a support contract. ISC will continue its practice of always responding to critical items that effect the entire community, and responding to all other requests for support upon ISC's mailing lists on a best-effort basis.

However, ISC DHCP has attracted a fairly sizable following on the Internet, which means that there are a lot of knowledgeable users who may be able to help you if you get stuck. These people generally read the dhcp-users@isc.org mailing list. Be sure to provide as much detail in your query as possible.

If you are going to use ISC DHCP, you should probably subscribe to the dhcp-users or dhcp-announce mailing lists.

WHERE TO SEND FEATURE REQUESTS: We like to hear your feedback. We may not respond to it all the time, but we do read it. If ISC DHCP doesn't work well for you, or you have an idea that would improve it for your use, please send your suggestion to dhcp-suggest@isc.org. This is also an excellent place to send patches that add new features.

WHERE TO REPORT BUGS: If you want the act of sending in a bug report to result in you getting help in the form of a fixed piece of software, you are asking for help. Your bug report is helpful to us, but fundamentally you are making a support request, so please use the

addresses described in the previous paragraphs. If you are sure that your problem is a bug, and not user error, or if your bug report includes a patch, you can send it to our ticketing system at dhcp-bugs@isc.org. If you have not received a notice that the ticket has been resolved, then we're still working on it.

PLEASE DO NOT REPORT BUGS IN OLD SOFTWARE RELEASES! Fetch the latest release and see if the bug is still in that version of the software, and if it is still present, then report it. ISC release versions always have three numbers, for example: 1.2.3. The 'major release' is 1 here, the 'minor release' is 2, and the 'maintenance release' is 3. ISC will accept bug reports against the most recent two major.minor releases: for example, 1.0.0 and 0.9.0, but not 0.8.* or prior.

PLEASE take a moment to determine where the ISC DHCP distribution that you're using came from. ISC DHCP is sometimes heavily modified by integrators in various operating systems - it's not that we feel that our software is perfect and incapable of having bugs, but rather that it is very frustrating to find out after many days trying to help someone that the sources you're looking at aren't what they're running. When in doubt, please retrieve the source distribution from ISC's web page and install it.

HOW TO REPORT BUGS OR REQUEST HELP

When you report bugs or ask for help, please provide us complete information. A list of information we need follows. Please read it carefully, and put all the information you can into your initial bug report. This will save us a great deal of time and more informative bug reports are more likely to get handled more quickly overall.

1. The specific operating system name and version of the machine on which the DHCP server or client is running.
2. The specific operating system name and version of the machine on which the client is running, if you are having trouble getting a client working with the server.
3. If you're running Linux, the version number we care about is the kernel version and maybe the library version, not the distribution version - e.g., while we don't mind knowing that you're running Redhat version mumble.foo, we must know what kernel version you're running, and it helps if you can tell us what version of the C library you're running, although if you don't know that off the top of your head it may be hard for you to figure it out, so don't go crazy

trying.

4. The specific version of the DHCP distribution you're running, as reported by `dhcpd -t`.

5. Please explain the problem carefully, thinking through what you're saying to ensure that you don't assume we know something about your situation that we don't know.

6. Include your `dhcpd.conf` and `dhcpd.leases` file as MIME attachments if they're not over 100 kilobytes in size each. If they are this large, please make them available to us eg via a hidden `http://` URL or FTP site. If you're not comfortable releasing this information due to sensitive contents, you may encrypt the file to our release signing key, available on our website.

7. Include a log of your server or client running until it encounters the problem - for example, if you are having trouble getting some client to get an address, restart the server with the `-d` flag and then restart the client, and send us what the server prints. Likewise, with the client, include the output of the client as it fails to get an address or otherwise does the wrong thing. Do not leave out parts of the output that you think aren't interesting.

8. If the client or server is dumping core, please run the debugger and get a stack trace, and include that in your bug report. For example, if your debugger is `gdb`, do the following:

```
gdb dhcpd dhcpd.core
(gdb) where
      [...]
(gdb) quit
```

This assumes that it's the `dhcp` server you're debugging, and that the core file is in `dhcpd.core`.

Please see <https://www.isc.org/software/dhcp/> for details on how to subscribe to the ISC DHCP mailing lists.

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```
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#   <info@isc.org>
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```

3.30 diffutils-3.3-4

README for GNU DIFF

This directory contains the GNU diff, diff3, sdiff, and cmp utilities. Their features are a superset of the Unix features and they are significantly faster.

Please see the file COPYING for copying conditions.

Please see the file doc/version.texi for version information.

Please see the file doc/diffutils.texi (or doc/diffutils.info) for documentation that can be printed with TeX, or read with the 'info' program or with Emacs's 'M-x info'. Brief man pages are in man/*, but they are no substitute for the documentation.

Please see the file ABOUT-NLS for notes about translations.

Please see the file INSTALL for generic compilation and installation instructions. Briefly, you can run `./configure; make install`. The command `./configure --help` lists the supported `--enable` and `--with` options.

If you have a problem with internationalization, you might be able to work around it as described in ABOUT-NLS by invoking `./configure --disable-nls`. Many of the problems arise from dynamic linking issues on non-GNU platforms (e.g. with the iconv library). Such problems tend to be shared by other GNU applications on these platforms, and can usually be fixed by carefully tweaking your non-GNU installation. If you have an older version of libiconv, please upgrade to the latest one; see [<ftp://ftp.gnu.org/gnu/libiconv/>](ftp://ftp.gnu.org/gnu/libiconv/). If the problem seems isolated to diffutils, though, please report a bug.

This program requires a Standard C compiler (C89 or later). If you have a nonstandard compiler, please install GCC first.

If you make changes to the source code, you may need appropriate versions of GNU build tools to regenerate the intermediate files. The following versions were used to generate the intermediate files in this distribution:

- * Autoconf 2.59 [<ftp://ftp.gnu.org/gnu/autoconf/autoconf-2.59.tar.gz>](ftp://ftp.gnu.org/gnu/autoconf/autoconf-2.59.tar.gz)
- * Automake 1.8.3 [<ftp://ftp.gnu.org/gnu/automake/automake-1.8.3.tar.gz>](ftp://ftp.gnu.org/gnu/automake/automake-1.8.3.tar.gz)

- * gettext 0.14.1 <ftp://ftp.gnu.org/gnu/gettext/gettext-0.14.1.tar.gz>
- * help2man 1.33 <ftp://ftp.gnu.org/gnu/help2man/help2man-1.33.1.tar.gz>
- * Texinfo 4.7 <ftp://ftp.gnu.org/gnu/texinfo/texinfo-4.7.tar.gz>

For any copyright year range specified as YYYY-ZZZZ in this package note that the range specifies every single year in that closed interval.

Please report bugs to <bug-gnu-utils@gnu.org>.

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3.31 dmidecode-3.1-2

**** INTRODUCTION ****

Dmidecode reports information about your system's hardware as described in your system BIOS according to the SMBIOS/DMI standard. This information typically includes system manufacturer, model name, serial number, BIOS version, asset tag as well as a lot of other details of varying level of interest and reliability depending on the manufacturer. This will often include usage status for the CPU sockets, expansion slots (e.g. AGP, PCI, ISA) and memory module slots, and the list of I/O ports (e.g. serial, parallel, USB).

DMI data can be used to enable or disable specific portions of kernel code depending on the specific hardware. Thus, one use of dmidecode is for kernel developers to detect system "signatures" and add them to the kernel source code when needed.

Beware that DMI data have proven to be too unreliable to be blindly trusted. Dmidecode does not scan your hardware, it only reports what the BIOS told it to.

**** INSTALLATION ****

The home web page for dmidecode is hosted on Savannah:

<http://www.nongnu.org/dmidecode/>

You will find the latest version (including CVS) there, as well as fresh news and other interesting material, such as a list of related projects and articles.

This program was first written for Linux, and has since been reported to work on FreeBSD, NetBSD, OpenBSD, BeOS and Solaris as well.

There's no configure script, so simply run "make" to build dmidecode, and "make install" to install it. You also can use "make uninstall" to remove all the files you installed. By default, files are installed in /usr/local but you can change this behavior by editing the Makefile file and setting prefix to wherever you want. You may change the C compiler and the compilation flags as well.

Optionally, you can run "make strip" prior to "make install" if you want smaller binaries. However, be aware that this will prevent any further attempt to debug the programs.

Two parameters can be set in the Makefile file to make dmidecode work on non-i386 systems. They should be used if your system uses the big endian byte ordering (Motorola) or doesn't support unaligned memory accesses, respectively. For example, compiling for a SPARC processor would require both (but I am not aware of SPARC-based systems implementing SMBIOS). Compiling for an IA64 processor requires the memory alignment workaround, and it is enabled automatically.

**** DOCUMENTATION ****

Each tool has a manual page, found in the "man" subdirectory. Manual pages are installed by "make install". See these manual pages for command line interface details and tool specific information.

For an history of the changes made to dmidecode, see the CHANGELOG file.

If you need help, your best chances are to visit the web page (see the INSTALLATION section above) or to get in touch with the developers directly. Have a look at the AUTHORS file and contact one of the maintainers.

If you want to help with the development of dmidecode, please consider joining the dmidecode-devel discussion list:

<http://lists.nongnu.org/mailman/listinfo/dmidecode-devel>

**** COMMON PROBLEMS ****

IA-64

Non-Linux systems are not yet supported.

MMAP

Note that mmap() is now used by default wherever possible, since this seems to solve a number of problems. This default behavior can be changed in config.h. Just to make sure this is clear, mmap() is not used for performance reasons but to increase the number of systems on which dmidecode can be successfully run.

CYGWIN

Dmidecode used to work under Cygwin. However the /dev/mem interface was

removed at some point in time so it no longer works.

**** MISCELLANEOUS TOOLS ****

Three other tools come along with dmidecode: biosdecode, ownership and vpddecode. These tools are only useful on systems with a BIOS, so they are not built on IA-64 by default.

BIOSDECODE

This one prints all BIOS related information it can find in /dev/mem. It used to be part of dmidecode itself, but as dmidecode was growing, we felt that the non-DMI part had to be moved to a separate tool.

OWNERSHIP

This tool was written on a request by Luc Van de Velde for use with Novell tools in his company. It retrieves the "ownership tag" that can be set on most Compaq computers. Since it uses the same mechanisms dmidecode and biosdecode use, and could be of some use for other people as well, we decided to make it part of the project.

VPDDECODE

This tool prints the contents of the "vital product data" structure as found in most IBM and Lenovo computers. It used to have a lookup table for the machine name, but it was unreliable and hard to maintain so it was ultimately dropped. It has a command line interface.

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```
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```

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```
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```

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

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3.32 dracut-033-554

dracut

dracut is a new initramfs infrastructure.

Information about the initial goals and aims can be found at
<https://fedoraproject.org/wiki/Initrdrewrite>

Unlike existing initramfs's, this is an attempt at having as little as possible hard-coded into the initramfs as possible. The initramfs has (basically) one purpose in life -- getting the rootfs mounted so that we can transition to the real rootfs. This is all driven off of device availability. Therefore, instead of scripts hard-coded to do various things, we depend on udev to create device nodes for us and then when we have the rootfs's device node, we mount and carry on. This helps to keep the time required in the initramfs as little as possible so that things like a 5 second boot aren't made impossible as a result of the very existence of an initramfs. It's likely that we'll grow some hooks for running arbitrary commands in the flow of the script, but it's worth trying to resist the urge as much as we can as hooks are guaranteed to be the path to slow-down.

Most of the initramfs generation functionality in dracut is provided by a bunch of generator modules that are sourced by the main dracut script to install specific functionality into the initramfs. They live in the modules.d subdirectory, and use functionality provided by dracut-functions to do their work.

Some general rules for writing modules:

- * Use one of the `inst` family of functions to actually install files on to the initramfs. They handle mangling the pathnames and (for binaries, scripts, and kernel modules) installing dependencies as appropriate so you do not have to.
- * Scripts that end up on the initramfs should be POSIX compliant. dracut will try to use `/bin/dash` as `/bin/sh` for the initramfs if it is available, so you should install it on your system -- dash aims for strict POSIX compliance to the extent possible.
- * Hooks **MUST** be POSIX compliant -- they are sourced by the `init` script, and having a bashism break your user's ability to boot really sucks.
- * Generator modules should have a two digit numeric prefix -- they run in ascending sort order. Anything in the 90-99 range is stuff that dracut relies on, so try not to break those hooks.
- * Hooks must have a `.sh` extension.

- * Generator modules are described in more detail in README.modules.
- * We have some breakpoints for debugging your hooks. If you pass 'rdbreak' as a kernel parameter, the initramfs will drop to a shell just before switching to a new root. You can pass 'rdbreak=hookpoint', and the initramfs will break just before hooks in that hookpoint run.

Also, there is an attempt to keep things as distribution-agnostic as possible. Every distribution has their own tool here and it's not something which is really interesting to have separate across them. So contributions to help decrease the distro-dependencies are welcome.

Currently dracut lives on kernel.org.

The tarballs can be found here:

<http://www.kernel.org/pub/linux/utils/boot/dracut/>
<ftp://ftp.kernel.org/pub/linux/utils/boot/dracut/>

Git:

<git://git.kernel.org/pub/scm/boot/dracut/dracut.git>
<http://git.kernel.org/pub/scm/boot/dracut/dracut.git>
<https://git.kernel.org/pub/scm/boot/dracut/dracut.git>

<git://github.com/haralddh/dracut.git>

<git://dracut.git.sourceforge.net/gitroot/dracut/dracut>

Git Web:

<http://git.kernel.org/?p=boot/dracut/dracut.git>

<https://haralddh@github.com/haralddh/dracut.git>

<http://dracut.git.sourceforge.net/git/gitweb.cgi?p=dracut/dracut>

Git Web RSS Feed:

<http://git.kernel.org/?p=boot/dracut/dracut.git;a=rss>

Project Page:

<http://www.kernel.org/pub/linux/utils/boot/dracut/dracut.html>

Project Wiki:

<http://dracut.wiki.kernel.org>

See the TODO file for things which still need to be done and HACKING for some instructions on how to get started. There is also a mailing list

that is being used for the discussion -- initramfs@vger.kernel.org.
It is a typical vger list, send mail to majordomo@vger.kernel.org with body
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```
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```
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```

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3.33 e2fsprogs-1.42.9-13

This is the new version (1.42.9) of the second extended file system management programs.

From time to time, I release new versions of e2fsprogs, to fix bugs and to make the utilities more robust. You can always find information about the latest version at the the e2fsprogs web page, which is:

<http://e2fsprogs.sourceforge.net>

The INSTALL file has instructions on building and installing e2fsprogs. Provisions for building Red Hat RPMs and Debian dpkg files are supplied as well.

In case of bugs in these programs, please contact Ted Ts'o at tytso@mit.edu or tytso@alum.mit.edu. See the e2fsck man page for suggestions of what sort of information to include when submitting bug reports for these programs.

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Theodore Ts'o
23-June-2007

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3.34 ebtables-2.0.10-16

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```
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```

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```
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```

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```
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```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
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3.35 elfutils-0.172-2

The elfutils project provides libraries and tools for ELF files and DWARF data.

The project home is <http://elfutils.org/>

Releases are published at <ftp://sourceware.org/pub/elfutils/>
Which can also be found at <https://sourceware.org/elfutils/ftp/>

To build a release do: `./configure && make && make check`
Please check the configure summary to make sure all recommended features are enabled. There should be no failures after make check.

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`git clone git://sourceware.org/git/elfutils.git`

To build a git checkout do:
`autoreconf -i -f && \
./configure --enable-maintainer-mode && \
make && make check`

The developer mailinglist to send patches to is
elfutils-devel@sourceware.org.
<https://sourceware.org/ml/elfutils-devel/>

To subscribe send an email to elfutils-devel-subscribe@sourceware.org
Or use the form at <https://sourceware.org/lists.html#ml-requestor>

See the CONTRIBUTING file for how to propose patches to the code.

See the NOTES files for some design decisions and notes.

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```

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```
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```

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```
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```

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

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3.36 ethtool-4.8-9

`ethtool` is a small utility for examining and tuning your ethernet-based network interface. See the man page for more details.

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```
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```
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```

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

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3.37 expat-2.1.0-10

Expat, Release 2.1.0

This is Expat, a C library for parsing XML, written by James Clark. Expat is a stream-oriented XML parser. This means that you register handlers with the parser before starting the parse. These handlers are called when the parser discovers the associated structures in the document being parsed. A start tag is an example of the kind of structures for which you may register handlers.

Windows users should use the expat_win32bin package, which includes both precompiled libraries and executables, and source code for developers.

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Versions of Expat that have an odd minor version (the middle number in the release above), are development releases and should be considered as beta software. Releases with even minor version numbers are intended to be production grade software.

If you are building Expat from a check-out from the CVS repository, you need to run a script that generates the configure script using the GNU autoconf and libtool tools. To do this, you need to have autoconf 2.58 or newer. Run the script like this:

```
./buildconf.sh
```

Once this has been done, follow the same instructions as for building from a source distribution.

To build Expat from a source distribution, you first run the configuration shell script in the top level distribution directory:

```
./configure
```

There are many options which you may provide to configure (which you can discover by running configure with the `--help` option). But the one of most interest is the one that sets the installation directory.

By default, the configure script will set things up to install libexpat into /usr/local/lib, expat.h into /usr/local/include, and xmlwf into /usr/local/bin. If, for example, you'd prefer to install into /home/me/mystuff/lib, /home/me/mystuff/include, and /home/me/mystuff/bin, you can tell configure about that with:

```
./configure --prefix=/home/me/mystuff
```

Another interesting option is to enable 64-bit integer support for line and column numbers and the over-all byte index:

```
./configure CPPFLAGS=-DXML_LARGE_SIZE
```

However, such a modification would be a breaking change to the ABI and is therefore not recommended for general use - e.g. as part of a Linux distribution - but rather for builds with special requirements.

After running the configure script, the "make" command will build things and "make install" will install things into their proper location. Have a look at the "Makefile" to learn about additional "make" options. Note that you need to have write permission into the directories into which things will be installed.

If you are interested in building Expat to provide document information in UTF-16 encoding rather than the default UTF-8, follow these instructions (after having run "make distclean"):

1. For UTF-16 output as unsigned short (and version/error strings as char), run:

```
./configure CPPFLAGS=-DXML_UNICODE
```

For UTF-16 output as wchar_t (incl. version/error strings), run:

```
./configure CFLAGS="-g -O2 -fshort-wchar" \  
CPPFLAGS=-DXML_UNICODE_WCHAR_T
```

2. Edit the MakeFile, changing:

```
LIBRARY = libexpat.la
```

to:

```
LIBRARY = libexpatw.la
```

(Note the additional "w" in the library name.)

3. Run "make buildlib" (which builds the library only).
Or, to save step 2, run "make buildlib LIBRARY=libexpatw.la".
4. Run "make installlib" (which installs the library only).
Or, if step 2 was omitted, run "make installlib LIBRARY=libexpatw.la".

Using DESTDIR or INSTALL_ROOT is enabled, with INSTALL_ROOT being the default value for DESTDIR, and the rest of the make file using only DESTDIR.

It works as follows:

```
$ make install DESTDIR=/path/to/image
overrides the in-makefile set DESTDIR, while both
$ INSTALL_ROOT=/path/to/image make install
$ make install INSTALL_ROOT=/path/to/image
use DESTDIR=$(INSTALL_ROOT), even if DESTDIR eventually is defined in the
environment, because variable-setting priority is
1) commandline
2) in-makefile
3) environment
```

Note: This only applies to the Expat library itself, building UTF-16 versions of xmlwf and the tests is currently not supported.

Note for Solaris users: The "ar" command is usually located in "/usr/ccs/bin", which is not in the default PATH. You will need to add this to your path for the "make" command, and probably also switch to GNU make (the "make" found in /usr/ccs/bin does not seem to work properly -- appearantly it does not understand .PHONY directives). If you're using ksh or bash, use this command to build:

```
PATH=/usr/ccs/bin:$PATH make
```

When using Expat with a project using autoconf for configuration, you can use the probing macro in conftools/expat.m4 to determine how to include Expat. See the comments at the top of that file for more information.

A reference manual is available in the file doc/reference.html in this distribution.

The homepage for this project is <http://www.libexpat.org/>. There

are links there to connect you to the bug reports page. If you need to report a bug when you don't have access to a browser, you may also send a bug report by email to expat-bugs@mail.libexpat.org.

Discussion related to the direction of future expat development takes place on expat-discuss@mail.libexpat.org. Archives of this list and other Expat-related lists may be found at:

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3.38 file-5.11-35

**** README for file(1) Command ****

@(#) \$File: README,v 1.44 2011/03/24 13:03:39 rrt Exp \$

Mailing List: file@mx.gw.com

Bug tracker: <http://bugs.gw.com/>

E-mail: christos@astron.com

Phone: Do not even think of telephoning me about this program. Send cash first!

This is Release 5.x of Ian Darwin's (copyright but distributable) file(1) command, an implementation of the Unix File(1) command. It knows the 'magic number' of several thousands of file types. This version is the standard "file" command for Linux, *BSD, and other systems. (See "patchlevel.h" for the exact release number).

You can download the latest version of file from:

<ftp://ftp.astron.com/pub/file/>

A public read-only git repository is available at:

<https://github.com/glensc/file>

The major changes for 5.x are CDF file parsing, indirect magic, and overhaul in mime and ascii encoding handling.

The major feature of 4.x is the refactoring of the code into a library, and the re-write of the file command in terms of that library. The library itself, libmagic can be used by 3rd party programs that wish to identify file types without having to fork() and exec() file. The prime contributor for 4.0 was M\ne5ns Rullg\ne5rd.

UNIX is a trademark of UNIX System Laboratories.

The prime contributor to Release 3.8 was Guy Harris, who put in megachanges including byte-order independence.

The prime contributor to Release 3.0 was Christos Zoulas, who put in hundreds of lines of source code changes, including his own ANSIfication of the code (I liked my own ANSIfication better, but his (__P()) is the "Berkeley standard" way of doing it, and I wanted UCB to include the code...), his HP-like "indirection" (a feature of

the HP file command, I think), and his mods that finally got the uncompress (-z) mode finished and working.

This release has compiled in numerous environments; see PORTING for a list and problems.

This fine freeware file(1) follows the USG (System V) model of the file command, rather than the Research (V7) version or the V7-derived 4.[23] Berkeley one. That is, the file /etc/magic contains much of the ritual information that is the source of this program's power. My version knows a little more magic (including tar archives) than System V; the /etc/magic parsing seems to be compatible with the (poorly documented) System V /etc/magic format (with one exception; see the man page).

In addition, the /etc/magic file is built from a subdirectory for easier(?) maintenance. I will act as a clearinghouse for magic numbers assigned to all sorts of data files that are in reasonable circulation. Send your magic numbers, in magic(5) format please, to the maintainer, Christos Zoulas.

COPYING - read this first.

README - read this second (you are currently reading this file).

INSTALL - read on how to install

src/apprentice.c - parses /etc/magic to learn magic
src/apptype.c - used for OS/2 specific application type magic
src/asprintf.c - replacement for OS's that don't have it.
src/ascmagic.c - third & last set of tests, based on hardwired assumptions.
src/cdf.c - parser for Microsoft Compound Document Files
src/cdf_time.c - time converter for CDF.
src/compress.c - handles decompressing files to look inside.
src/encoding.c - handles unicode encodings
src/file.c - the main program
src/file.h - header file
src/fsmagic.c - first set of tests the program runs, based on filesystem info
src/funcs.c - utility functions
src/getopt_long.c - used for OS/2 specific application type magic
src/is_tar.c, tar.h - knows about tarchives (courtesy John Gilmore).
src/names.h - header file for ascmagic.c
src/magic.c - the libmagic api
src/print.c - print results, errors, warnings.
src/readcdf.c - CDF wrapper.
src/readelf.[ch] - Stand-alone elf parsing code.
src/softmagic.c - 2nd set of tests, based on /etc/magic

src/strlcat.c - used for OS/2 specific application type magic
src/strncpy.c - used for OS/2 specific application type magic
src/vasprintf.c - used for OS/2 specific application type magic
doc/file.1 - man page for the command
doc/magic.4 - man page for the magic file, courtesy Guy Harris.
Install as magic.4 on USG and magic.5 on V7 or Berkeley; cf Makefile.
Magdir - directory of /etc/magic pieces

If you submit a new magic entry please make sure you read the following guidelines:

- Initial match is preferably at least 32 bits long, and is a `_unique_` match
 - If this is not feasible, use additional check
 - Match of `<= 16` bits are not accepted
 - Delay printing string as much as possible, don't print output too early
 - Avoid printf arbitrary byte as string, which can be a source of crash and buffer overflow

 - Provide complete information with entry:
 - * One line short summary
 - * Optional long description
 - * File extension, if applicable
 - * Full name and contact method (for discussion when entry has problem)
 - * Further reference, such as documentation of format
-

Parts of this software were developed at SoftQuad Inc., developers of SGML/HTML/XML publishing software, in Toronto, Canada. SoftQuad was swallowed up by Corel in 2002 and does not exist any longer.

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3.39 findutils-4.5.11-6

This package contains the GNU find, xargs, and locate programs. find and xargs comply with POSIX 1003.2, as far as I know (with the exception of the "+" modifier for the "-exec" action, which isn't implemented yet). They also support a large number of additional options, some borrowed from Unix and some unique to GNU.

See the file NEWS for a list of major changes in the current release.

See the file INSTALL for compilation and installation instructions.

To verify the GPG signature of the release, you will need the public key of the findutils maintainer. You can download this from <ftp://ftp.gnu.org/gnu/gnu-keyring.gpg>. Alternatively, you could query a PGP keyserver, but you will need to use one that can cope with subkeys containing photos. Many older key servers cannot do this. I use subkeys.pgp.net. I think that one works. See also the "Downloading" section of <http://www.gnu.org/software/findutils/>.

Special configure options:

--with-afs

Make find support "-fstype afs". Requires /afs, /usr/afsws/lib, and /usr/afsws/include. configure doesn't add AFS support automatically because it adds considerably to find's size, and the AFS libraries need -lucb on Solaris, which breaks find.

--enable-id-cache

Make tables of used UIDs and GIDs at startup instead of using getpwuid or getgrgid when needed. Speeds up -nouser and -nogroup unless you are running NIS or Hesiod, which make password and group calls very expensive.

--enable-debug

Produce output on the standard error output indicating what find is doing. This information includes details about how the command line has been parsed and what files have been stat()ed. This output is normally interesting only to the maintainer, and so is off by default.

DEFAULT_ARG_SIZE=<value>

If this environment variable is defined to a numeric expression during configure, it determines the default argument size limits used by xargs without -s, and by find, when spawning child processes.

Otherwise, the default is set at 128 kibibytes. If the system cannot support the default limit, the system's limit will be used instead.

To gain speed, GNU find avoids statting files whenever possible.

It does this by:

1. Checking the number of links to directories and not statting files that it knows aren't directories until it encounters a test or action that needs the stat info.
2. Rearranging the command line, where possible, so that it can do tests that don't require a stat before tests that do, in hopes that the latter will be skipped because of a -o/-a conjunction. (But it only does this where it will leave the output unchanged.)

The locate program and its helper programs are derived (heavily modified) from James Woods' public domain fast-find code, which is also distributed with the 4.3BSD find. Because POSIX.2 requires 'find foo' to have the same effect as 'find foo -print', the fast-find searching has been moved to a separate program, 'locate'; the same thing has been done in 4.4BSD. If you use locate, you should run the included 'updatedb' script from cron periodically (typically nightly).

Mail suggestions and bug reports for these programs to bug-findutils@gnu.org.

3.39.1 Copying

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Version 3, 29 June 2007

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```

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```
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```

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3.40 fipscheck-1.4.1-6

FIPSCHECK project

=====

This package contains library (libfipscheck) and helper binaries which implement the integrity check of libraries and binaries as required by FIPS-140-2 validated modules.

The integrity check is only one of many requirements needed for validation of a software cryptographic module.

Dependencies

=====

The package depends on the OpenSSL library for its operation.

Commands

=====

```
fipshmac [-d <path-to-destination-dir>] [-s <hmac-suffix>]  
<filenames-to-be-checksummed>
```

This command will create a checksum file in the same directory as the file which is being checksummed. It will prepend '.' and append <hmac-suffix> to the original file name. If the suffix is not specified '.hmac' is used.

* return values (exit codes): 0 - OK
2 - Missing filename
3 - Cannot open the checksum file
4 - Cannot read the file to be checksummed, or the checksum computation failed
5 - Memory allocation error
6,7 - Cannot write to the checksum file

If invoked correctly the fipshmac command will not print anything to the standard output or error. Otherwise it will print an error message to stderr.

If destination directory is specified with -d the resulting files will be put into it and '.' will not be prepended to the file names.

```
fipscheck [-s <hmac-suffix>] <filenames-to-be-checksummed>
```

This command will verify a checksum of a file. The file containing the checksum value is first looked up in the /usr/lib{64,}/fipscheck directory and if not

found there in the same directory as the file which is being checksummed. The checksum file must have '.' prepended and <hmac-suffix> appended to the original file name. The '.' must not be prepended to the file names in the /usr/lib{64,}/fipscheck directory. If the suffix is not specified '.hmac' is used.

* return values (exit codes): 0 - OK
1 - Checksum mismatch
2 - Missing filename
3 - Cannot open the checksum file
4 - Cannot read the file to be checksummed, or the checksum computation failed
5 - Memory allocation error
10 and higher - Failure during self-checking the libfipscheck.so shared library
20 and higher - Failure during self-checking the fipscheck binary

If invoked correctly the fipscheck command will not print anything to the standard output or error. If you set an environment variable FIPSCHECK_DEBUG to value "syslog", it will send eventual error messages to the syslog. If you set it to value "error", it will send them to the stderr.

Library API
=====

See man 3 fipscheck.h manual page for description of the fipscheck library API.

Format of the checksum file
=====

The file contains HMAC-SHA256 encoded in hexadecimal notation with lowercase letters with one EOL character appended.

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3.41 firewalld-0.5.3-5

README for firewalld

=====

firewalld provides a dynamically managed firewall with support for network or firewall zones to define the trust level of network connections or interfaces. It has support for IPv4, IPv6 firewall settings and for ethernet bridges and a separation of runtime and permanent configuration options. It also provides an interface for services or applications to add ip*tables and ebtables rules directly.

Development

To check out the source repository, you can use:

```
git clone https://github.com/firewalld/firewalld.git
```

This will create a local copy of the repository.

Working With The Source Repository

You can use the source repository directly to test out changes. Change into the firewalld base directory and set the following environment variables.

```
export FIREWALLD_DEVEL_ENV=$(pwd)/src
export PYTHONPATH=$FIREWALLD_DEVEL_ENV
```

Install the following requirements or packages:

```
desktop-file-utils: /usr/bin/desktop-file-install
gettext
intltool
glib2: /usr/bin/glib-compile-schemas
glib2-devel: /usr/share/aclocal/gsettings.m4
systemd-units
iptables
ebtables
ipset
```

For use with Python 3:

```
python3-dbus
python3-slip-dbus
python3-decorator
python3-gobject
```

For use with Python 2:

```
dbus-python
python-slip-dbus (http://fedorahosted.org/python-slip)
python-decorator
pygobject3-base (non-cairo parts of pygobject3)
```

To be able to create man pages and documentation from docbook files:

```
docbook-style-xsl
```

Use

```
./autogen.sh
```

in the base directory to create for example `src/firewall/config/__init__.py`

Use

```
make
```

to create the documentation and to update the po files.

Now you are done.

RPM package

For Fedora and RHEL based distributions, there is a spec file in the source repo named `firewalld.spec`. This should be usable for Fedora versions ≥ 16 and RHEL ≥ 7 .

Links

Homepage: <http://www.firewalld.org>
Report a bug: <https://github.com/firewalld/firewalld/issues>

Git repo browser: <https://github.com/firewalld/firewalld>
Git repo: <https://github.com/firewalld/firewalld.git>
Documentation: <http://www.firewalld.org/documentation/>

Mailing lists

For usage:

<https://lists.fedorahosted.org/archives/list/firewalld-users@lists.fedorahosted.org/>

For development:

<https://lists.fedorahosted.org/archives/list/firewalld-devel@lists.fedorahosted.org/>

Directory Structure

config/	Configuration files
config/icmptypes/	Predefined ICMP types
config/services/	Predefined services
config/xmlschema/	XML Schema checks for config files
config/zones/	Predefined zones
config/ipsets/	Predefined ipsets
doc/	Documentation
doc/man/	Base directory for man pages
doc/man/man1/	Man(1) pages
doc/man/man5/	Man(5) pages
patches/	Common patches
po/	Translations
shell-completion/	Base directory for auto completion scripts
shell-completion/bash/	Bash auto completion scripts
src/	Source tree
src/firewall/	Import tree for the service and all applications
src/icons/	Icons in the sizes: 16, 22, 24, 32, 48 and scalable
src/tests/	Test scripts

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```

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```
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```

```
<signature of Ty Coon>, 1 April 1989
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library. If this is what you want to do, use the GNU Lesser General
Public License instead of this License.

3.42 freetype-2.8-12

FreeType 2.8

=====

Homepage: <http://www.freetype.org>

FreeType is a freely available software library to render fonts.

It is written in C, designed to be small, efficient, highly customizable, and portable while capable of producing high-quality output (glyph images) of most vector and bitmap font formats.

Please read the docs/CHANGES file, it contains IMPORTANT INFORMATION.

Read the files 'docs/INSTALL*' for installation instructions; see the file 'docs/LICENSE.TXT' for the available licenses.

The FreeType 2 API reference is located in 'docs/reference'; use the file 'ft2-toc.html' as the top entry point. Additional documentation is available as a separate package from our sites. Go to

<http://download.savannah.gnu.org/releases/freetype/>

and download one of the following files.

freetype-doc-2.8.tar.bz2

freetype-doc-2.8.tar.gz

ftdoc28.zip

To view the documentation online, go to

<http://www.freetype.org/freetype2/documentation.html>

Mailing Lists

=====

The preferred way of communication with the FreeType team is using e-mail lists.

general use and discussion: freetype@nongnu.org

engine internals, porting, etc.: freetype-devel@nongnu.org
announcements: freetype-announce@nongnu.org
git repository tracker: freetype-commit@nongnu.org

The lists are moderated; see

<http://www.freetype.org/contact.html>

how to subscribe.

Bugs

====

Please submit bug reports at

<https://savannah.nongnu.org/bugs/?group=freetype>

Alternatively, you might report bugs by e-mail to 'freetype-devel@nongnu.org'. Don't forget to send a detailed explanation of the problem -- there is nothing worse than receiving a terse message that only says 'it doesn't work'.

Enjoy!

The FreeType Team

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David Turner, Robert Wilhelm, and Werner Lemberg.

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--- end of README ---

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Note that this license is compatible to the GNU General Public License version 3, but not version 2.

- The GNU General Public License version 2, found in 'GPLv2.TXT' (any later version can be used also), for programs which already use the GPL. Note that the FTL is incompatible with GPLv2 due to its advertisement clause.

The contributed BDF and PCF drivers come with a license similar to that of the X Window System. It is compatible to the above two licenses (see file src/bdf/README and src/pcf/README). The same holds for the files 'fthash.c' and 'fthash.h'; their code was part of the BDF driver in earlier FreeType versions.

The gzip module uses the zlib license (see src/gzip/zlib.h) which too is compatible to the above two licenses.

The MD5 checksum support (only used for debugging in development builds) is in the public domain.

--- end of LICENSE.TXT ---

3.43 fuse-2.9.2-11

General Information

=====

FUSE (Filesystem in Userspace) is a simple interface for userspace programs to export a virtual filesystem to the Linux kernel. FUSE also aims to provide a secure method for non privileged users to create and mount their own filesystem implementations.

You can download the source code releases from

`http://sourceforge.net/projects/fuse`

or alternatively you can use CVS to get the very latest development version:

```
cvs -d :pserver:anonymous@fuse.cvs.sourceforge.net:/cvsroot/fuse co fuse
```

Dependencies

=====

Linux kernel version 2.6.X where X >= 9.

Alternatively a kernel module from FUSE release 2.5.* can be used with this release, which supports kernels >= 2.4.21.

Installation

=====

```
./configure
make
make install
modprobe fuse
```

You may also need to add '/usr/local/lib' to '/etc/ld.so.conf' and/or run ldconfig.

You'll also need a fuse kernel module, Linux kernels 2.6.14 or later contain FUSE support.

For more details see the file 'INSTALL'

How To Use

=====

FUSE is made up of three main parts:

- A kernel filesystem module
- A userspace library
- A mount/unmount program

Here's how to create your very own virtual filesystem in five easy steps (after installing FUSE):

- 1) Edit the file `example/fusexmp.c` to do whatever you want...
- 2) Build the `fusexmp` program
- 3) run `'example/fusexmp /mnt/fuse -d'`
- 4) `ls -al /mnt/fuse`
- 5) Be glad

If it doesn't work out, please ask! Also see the file `'include/fuse.h'` for detailed documentation of the library interface.

Security

=====

If you run `'make install'`, the `fusermount` program is installed `set-user-id` to root. This is done to allow normal users to mount their own filesystem implementations.

There must however be some limitations, in order to prevent Bad User from doing nasty things. Currently those limitations are:

- The user can only mount on a mountpoint, for which it has write permission
- The mountpoint is not a sticky directory which isn't owned by the user (like `/tmp` usually is)

- No other user (including root) can access the contents of the mounted filesystem.

Configuration

=====

Some options regarding mount policy can be set in the file
'/etc/fuse.conf'

Currently these options are:

mount_max = NNN

Set the maximum number of FUSE mounts allowed to non-root users.
The default is 1000.

user_allow_other

Allow non-root users to specify the 'allow_other' or 'allow_root'
mount options.

Mount options

=====

Most of the generic mount options described in 'man mount' are supported (ro, rw, suid, nosuid, dev, nodev, exec, noexec, atime, noatime, sync, async, dirsync). Filesystems are mounted with '-onodev,nosuid' by default, which can only be overridden by a privileged user.

These are FUSE specific mount options that can be specified for all filesystems:

default_permissions

By default FUSE doesn't check file access permissions, the filesystem is free to implement its access policy or leave it to the underlying file access mechanism (e.g. in case of network filesystems). This option enables permission checking, restricting access based on file mode. This option is usually useful together with the 'allow_other' mount option.

allow_other

This option overrides the security measure restricting file access to the user mounting the filesystem. So all users (including root) can access the files. This option is by default only allowed to root, but this restriction can be removed with a configuration option described in the previous section.

`allow_root`

This option is similar to 'allow_other' but file access is limited to the user mounting the filesystem and root. This option and 'allow_other' are mutually exclusive.

`kernel_cache`

This option disables flushing the cache of the file contents on every `open()`. This should only be enabled on filesystems, where the file data is never changed externally (not through the mounted FUSE filesystem). Thus it is not suitable for network filesystems and other "intermediate" filesystems.

NOTE: if this option is not specified (and neither 'direct_io') data is still cached after the `open()`, so a `read()` system call will not always initiate a read operation.

`auto_cache`

This option enables automatic flushing of the data cache on `open()`. The cache will only be flushed if the modification time or the size of the file has changed.

`large_read`

Issue large read requests. This can improve performance for some filesystems, but can also degrade performance. This option is only useful on 2.4.X kernels, as on 2.6 kernels requests size is automatically determined for optimum performance.

`direct_io`

This option disables the use of page cache (file content cache) in the kernel for this filesystem. This has several affects:

- Each `read()` or `write()` system call will initiate one or more

read or write operations, data will not be cached in the kernel.

- The return value of the read() and write() system calls will correspond to the return values of the read and write operations. This is useful for example if the file size is not known in advance (before reading it).

max_read=N

With this option the maximum size of read operations can be set. The default is infinite. Note that the size of read requests is limited anyway to 32 pages (which is 128kbyte on i386).

max_readahead=N

Set the maximum number of bytes to read-ahead. The default is determined by the kernel. On linux-2.6.22 or earlier it's 131072 (128kbytes)

max_write=N

Set the maximum number of bytes in a single write operation. The default is 128kbytes. Note, that due to various limitations, the size of write requests can be much smaller (4kbytes). This limitation will be removed in the future.

async_read

Perform reads asynchronously. This is the default

sync_read

Perform all reads (even read-ahead) synchronously.

hard_remove

The default behavior is that if an open file is deleted, the file is renamed to a hidden file (.fuse_hiddenXXX), and only removed when the file is finally released. This relieves the filesystem implementation of having to deal with this problem. This option disables the hiding behavior, and files are removed immediately in an unlink operation (or in a rename operation which overwrites an existing file).

It is recommended that you not use the `hard_remove` option. When `hard_remove` is set, the following libc functions fail on unlinked files (returning `errno` of `ENOENT`):

- `read()`
- `write()`
- `fsync()`
- `close()`
- `f*xattr()`
- `ftruncate()`
- `fstat()`
- `fchmod()`
- `fchown()`

`debug`

Turns on debug information printing by the library.

`fsname=NAME`

Sets the filesystem source (first field in `/etc/mtab`). The default is the program name.

`subtype=TYPE`

Sets the filesystem type (third field in `/etc/mtab`). The default is the program name.

If the kernel supports it, `/etc/mtab` and `/proc/mounts` will show the filesystem type as `"fuse.TYPE"`

If the kernel doesn't support subtypes, the source field will be `"TYPE#NAME"`, or if `fsname` option is not specified, just `"TYPE"`.

`use_ino`

Honor the `'st_ino'` field in `getattr()` and `fill_dir()`. This value is used to fill in the `'st_ino'` field in the `stat()/lstat()/fstat()` functions and the `'d_ino'` field in the `readdir()` function. The filesystem does not have to guarantee uniqueness, however some applications rely on this value being unique for the whole filesystem.

`readdir_ino`

If 'use_ino' option is not given, still try to fill in the 'd_ino' field in `readdir()`. If the name was previously looked up, and is still in the cache, the inode number found there will be used. Otherwise it will be set to '-1'. If 'use_ino' option is given, this option is ignored.

`nonempty`

Allows mounts over a non-empty file or directory. By default these mounts are rejected (from version 2.3.1) to prevent accidental covering up of data, which could for example prevent automatic backup.

`umask=M`

Override the permission bits in 'st_mode' set by the filesystem. The resulting permission bits are the ones missing from the given umask value. The value is given in octal representation.

`uid=N`

Override the 'st_uid' field set by the filesystem.

`gid=N`

Override the 'st_gid' field set by the filesystem.

`blkdev`

Mount a filesystem backed by a block device. This is a privileged option. The device must be specified with the 'fsname=NAME' option.

`entry_timeout=T`

The timeout in seconds for which name lookups will be cached. The default is 1.0 second. For all the timeout options, it is possible to give fractions of a second as well (e.g. `"-oentry_timeout=2.8"`)

`negative_timeout=T`

The timeout in seconds for which a negative lookup will be cached. This means, that if file did not exist (lookup returned `ENOENT`), the lookup will only be redone after the timeout, and the file/directory

will be assumed to not exist until then. The default is 0.0 second, meaning that caching negative lookups are disabled.

`attr_timeout=T`

The timeout in seconds for which file/directory attributes are cached. The default is 1.0 second.

`ac_attr_timeout=T`

The timeout in seconds for which file attributes are cached for the purpose of checking if "auto_cache" should flush the file data on open. The default is the value of 'attr_timeout'

`intr`

Allow requests to be interrupted. Turning on this option may result in unexpected behavior, if the filesystem does not support request interruption.

`intr_signal=NUM`

Specify which signal number to send to the filesystem when a request is interrupted. The default is 10 (USR1).

`modules=M1[:M2...]`

Add modules to the filesystem stack. Modules are pushed in the order they are specified, with the original filesystem being on the bottom of the stack.

Modules distributed with fuse

`iconv`
`'''''`

Perform file name character set conversion. Options are:

`from_code=CHARSET`

Character set to convert from (see `iconv -l` for a list of possible values). Default is UTF-8.

to_code=CHARSET

Character set to convert to. Default is determined by the current locale.

subdir
''''''

Prepend a given directory to each path. Options are:

subdir=DIR

Directory to prepend to all paths. This option is mandatory.

rellinks

Transform absolute symlinks into relative

norellinks

Do not transform absolute symlinks into relative. This is the default.

Reporting bugs
=====

Please send bug reports to the <fuse-devel@lists.sourceforge.net> mailing list.

The list is open, you need not be subscribed to post.

3.43.1 Copying

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That's all there is to it!

3.44 gawk-4.0.2-4

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README:

This is GNU Awk 4.0.2. It is upwardly compatible with Brian Kernighan's
version of Unix awk. It is almost completely compliant with the
2008 POSIX 1003.1 standard for awk. (See the note below about POSIX.)

This is a bug fix release. See NEWS and ChangeLog for details.

Work to be done is described briefly in the FUTURES file. Changes in this
version are summarized in the NEWS file. Please read the LIMITATIONS file.

Read the file POSIX.STD for a discussion of issues where the standard
says one thing but gawk does something different.

To format the documentation with TeX, use at least version 2010-12-23.17
of texinfo.tex. There is a usable copy of texinfo.tex in the doc directory.

INSTALLATION:

Check whether there is a system-specific README file for your system under
the 'README_d' directory. If there's something there that you should
have read and didn't, and you bug me about it, I'm going to yell at you.

See the file INSTALL for installation instructions.

If you have neither bison nor yacc, use the awkgram.c file here. It was
generated with bison, and has no proprietary code in it. (Note that
modifying awkgram.y without bison or yacc will be difficult, at best.
You might want to get a copy of bison from the FSF too.)

If you have an MS-DOS, MS-Windows, or OS/2 system, use the stuff in the 'pc'
directory. Similarly, there is a separate directory for VMS.

Appendix B of 'GAWK: Effective Awk Programming' discusses configuration
in detail. The configuration process is based on GNU Autoconf and

Automake.

After successful compilation, do 'make check' to run the test suite. There should be no output from the 'cmp' invocations except in the cases where there are small differences in floating point values, and possibly in the case of strftime. Several of the tests ignore errors on purpose; those are not a problem. If there are other differences, please investigate and report the problem.

PRINTING THE MANUAL

The 'doc' directory contains a recent version of texinfo.tex, which will be necessary for printing the manual. Use 'make dvi' to get a DVI file from the manual. In the 'doc' directory, use 'make postscript' to get PostScript versions of the manual, the man page, and the reference card. Use 'make pdf' to get PDF versions of the manuals, the man page and the reference card.

BUG REPORTS AND FIXES (Un*x systems):

Please coordinate changes through Arnold Robbins. In particular, see the section in the manual on reporting bugs. Note that comp.lang.awk is about the worst place to post a gawk bug report. Please, use the mechanisms outlined in the manual.

Email should be sent to bug-gawk@gnu.org. This is now a separate mailing list at GNU Central. The advantage to using this address is that bug reports are archived at GNU Central.

Arnold Robbins

BUG REPORTS AND FIXES, non-Unix systems:

MS-DOS with DJGPP:
Scott Deifik
scottd.mail@sbcglobal.net

MS-Windows with MinGW:
Eli Zaretskii
eliz@gnu.org

OS/2:
Andreas Buening
andreas.buening@nexgo.de

VMS:

Pat Rankin

r.pat.rankin@gmail.com

z/OS (OS/390):

Dave Pitts

dpitts@cozx.com

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```
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```

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```
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```

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3.45 gcc-4.8.5-36

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The directory INSTALL contains copies of the installation information as HTML and plain text. The source of this information is gcc/doc/install.texi. The installation information includes details of what is included in the GCC sources and what files GCC installs.

See the file gcc/doc/gcc.texi (together with other files that it includes) for usage and porting information. An online readable version of the manual is in the files gcc/doc/gcc.info*.

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Version 3.1, 31 March 2009

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Version 2.1, February 1999

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3.46 gdbm-1.10-8

GNU dbm README

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* Introduction

This file contains brief information about configuring, testing and using GNU dbm. It is **not** intended as a replacement for the documentation, instead it is provided as a brief reference only. The complete documentation is available in doc/ subdirectory. To read the manpage without installing the package use 'man doc/gdbm.3'. To read texinfo documentation without installing the package, run 'info -f doc/gdbm.info'. After the package is installed the documentation can be accessed by running 'man gdbm' and 'info gdbm'.

* Overview

GNU dbm is a set of database routines that use extendible hashing and works similar to the standard UNIX dbm routines. The library provides also an optional compatibility layer for UNIX-like dbm and ndbm calls.

* Configuration

- a) configure [PARAMETERS]
- b) make

For a list of generic PARAMETERS, see the file INCLUDE. The gdbm-specific parameters are:

**** --enable-memory-mapped-io**

Enable the use of mmap(2) for I/O optimizations. This is the default, if mmap is available. To disable mmap, use --disable-memory-mapped-io.

**** --enable-libgdbm-compat**

Build and install libgdbm_compat, a compatibility layer which provides UNIX-like dbm and ndbm interfaces.

**** --enable-gdbm-export**

Build and install gdbmexport with the specified gdbm 1.8 library.

**** --with-gdbm183-library=LIB**

Build gdbmexport with specified (static) library. LIB must be a loader argument valid for the use with cc(1), e.g.: -lgdbm-1.8.

**** --gdbm183-libdir=DIR**

Build gdbmexport with the gdbm library from the specified directory.

**** --gdbm183-includedir=DIR**

Build gdbmexport with gdbm.h from the specified directory.

*** Installation**

make install

*** Bug reporting**

Please report bugs to <bug-gdbm@gnu.org>

*** Documentation, updates etc.**

For the latest updates, visit <<http://www.gnu.org/software/gdbm>> ,

In particular, a copy of GDBM documentation in various formats is available online at <<http://www.gnu.org/software/gdbm/manual>> .

Latest versions of GDBM can be downloaded from anonymous
<ftp://ftp.gnu.org/gnu/gdbm>.

To track the development, visit
<<http://puszcza.gnu.org.ua/projects/gdbm>> .

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Local Variables:
mode: outline
paragraph-separate: "[
]*\$"
version-control: never
End:

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Version 3, 29 June 2007

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```
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3.47 gettext-0.19.8.1-2

This is the GNU gettext package. It is interesting for authors or maintainers of other packages or programs which they want to see internationalized. As one step the handling of messages in different languages should be implemented. For this task GNU gettext provides the needed tools and library functions.

It is also interesting for translators, because GNU gettext provides the 'msgmerge' program, which prepares a message catalog before a translation update.

Users of GNU packages should also install GNU gettext because some other GNU packages will use the gettext program included in this package to internationalize the messages given by shell scripts.

The homepage of this package is at

<http://www.gnu.org/software/gettext/>

The primary FTP site for its distribution is

<ftp://ftp.gnu.org/pub/gnu/gettext/>

Send comments and bug reports to

bug-gnu-gettext@gnu.org

The configure script provides a non-standard option. It is also available in other packages that use the functionality of GNU gettext. Use

`--disable-nls`

if you absolutely don't want to have messages handling code. You will always get the original messages (mostly English). You could consider using NLS support even when you do not need other tongues. If you do not install any messages catalogs or do not specify to use another but the C locale you will not get translations.

The set of languages for which catalogs should be installed can also be specified while configuring. Of course they must be available but the

intersection of these two sets are computed automatically. You could once and for all define in your profile/cshrc the variable LINGUAS:

```
(Bourne Shell)          LINGUAS="de fr nl"; export LINGUAS
```

```
(C Shell)              setenv LINGUAS "de fr nl"
```

or specify it directly while configuring

```
env LINGUAS="de fr nl" ./configure
```

Consult the manual for more information on language names.

Other files you might look into:

ABOUT-NLS	- current state of the GNU internationalization effort
COPYING	- copying conditions
DEPENDENCIES	- list of prerequisite packages, to be installed before this one
INSTALL	- general compilation and installation rules
NEWS	- major changes in the current version
THANKS	- list of contributors

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```
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3.48 glib2-2.56.1-2

General Information

=====

This is GLib version 2.56.1. GLib is the low-level core library that forms the basis for projects such as GTK+ and GNOME. It provides data structure handling for C, portability wrappers, and interfaces for such runtime functionality as an event loop, threads, dynamic loading, and an object system.

The official download locations are:

<ftp://ftp.gtk.org/pub/glib>
<http://download.gnome.org/sources/glib>

The official web site is:

<http://www.gtk.org/>

Information about mailing lists can be found at

<http://www.gtk.org/mailling-lists.php>

To subscribe, send mail to gtk-list-request@gnome.org with the subject "subscribe".

Installation

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See the file 'INSTALL'

How to report bugs

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Bugs should be reported to the GNOME bug tracking system. (<http://bugzilla.gnome.org>, product glib.) You will need to create an account for yourself.

In the bug report please include:

* Information about your system. For instance:

- What operating system and version
- For Linux, what version of the C library

And anything else you think is relevant.

- * How to reproduce the bug.

If you can reproduce it with one of the test programs that are built in the tests/ subdirectory, that will be most convenient. Otherwise, please include a short test program that exhibits the behavior. As a last resort, you can also provide a pointer to a larger piece of software that can be downloaded.

- * If the bug was a crash, the exact text that was printed out when the crash occurred.
- * Further information such as stack traces may be useful, but is not necessary.

Patches

=====

Patches should also be submitted to bugzilla.gnome.org. If the patch fixes an existing bug, add the patch as an attachment to that bug report.

Otherwise, enter a new bug report that describes the patch, and attach the patch to that bug report.

Patches should be in unified diff form. (The `-up` option to GNU diff.)

Notes about GLib 2.48

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- * The system copy of PCRE is now used by default to implement GRegex. Configure with `--with-pcre=internal` if a system PCRE version is unavailable or undesired.

Notes about GLib 2.46

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- * GTask no longer imposes a fixed limit on the number of tasks that can be `run_in_thread()` simultaneously, since doing this inevitably results in deadlocks in some use cases. Instead, it now has a base number of threads that can be used "for free", but will gradually add more threads to the pool if too much time passes without any tasks completing.

The exact behavior may continue to change in the future, and it's possible that some future version of GLib may not do any rate-limiting at all. As a result, you should no longer assume that GTask will rate-limit tasks itself (or, by extension, that calls to certain async gio methods will automatically be rate-limited for you). If you have a very large number of tasks to run, and don't want them to all run at once, you should rate-limit them yourself.

Notes about GLib 2.40

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- * `g_test_run()` no longer runs tests in exactly the order they are registered; instead, it groups them according to test suites (ie, path components) like the documentation always claimed it did. In some cases, this can result in a sub-optimal ordering of tests, relative to the old behavior. The fix is to change the test paths to properly group together the tests that should run together. (eg, if you want to run `test_foo_simple()`, `test_bar_simple()`, and `test_foo_using_bar()` in that order, they should have test paths like `"/simple/foo"`, `"/simple/bar"`, `"/complex/foo-using-bar"`, not `"/foo/simple"`, `"/bar/simple"`, `"/foo/using-bar"` (which would result in `test_foo_using_bar()` running before `test_bar_simple()`).

(The behavior actually changed in GLib 2.36, but it was not documented at the time, since we didn't realize it mattered.)

Notes about GLib 2.36

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- * It is no longer necessary to call `g_type_init()`. If you are loading GLib as a dynamic module, you should be careful to avoid unloading it, then subsequently loading it again. This never really worked before, but it is now explicitly undefined behavior. Note that if `g_type_init()` was the only explicit use of a GObject API and you are using linker flags such as `--no-add-needed`, then you may have to artificially use some GObject call to keep the linker from optimizing away `-lgobject`. We recommend to use `g_type_ensure (G_TYPE_OBJECT)` for this purpose.
- * This release contains an incompatible change to the `g_get_home_dir()` function. Previously, this function would effectively ignore the HOME environment variable and always return the value from `/etc/passwd`. As of this version, the HOME variable is used if it is set and the value from `/etc/passwd` is only used as a fallback.

- * The 'flowinfo' and 'scope_id' fields of GInetSocketAddress (introduced in GLib 2.32) have been fixed to be in host byte order rather than network byte order. This is an incompatible change, but the previous behavior was clearly broken, so it seems unlikely that anyone was using it.

Notes about GLib 2.34

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- * GIO now looks for thumbnails in XDG_CACHE_HOME, following a recent alignment of the thumbnail spec with the basedir spec.
- * The default values for GThreadPools max_unused_threads and max_idle_time settings have been changed to 2 and 15*1000, respectively.

Notes about GLib 2.32

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- * It is no longer necessary to use g_thread_init() or to link against libgthread. libglib is now always thread-enabled. Custom thread system implementations are no longer supported (including errorcheck mutexes).
- * The thread and synchronisation APIs have been updated. GMutex and GCond can be statically allocated without explicit initialisation, as can new types GRWLock and GRecMutex. The GStatic_____ variants of these types have been deprecated. GPrivate can also be statically allocated and has a nicer API (deprecating GStaticPrivate). Finally, g_thread_create() has been replaced with a substantially simplified g_thread_new().
- * The g_once_init_enter()/_leave() functions have been replaced with macros that allow for a pointer to any gsize-sized object, not just a gsize*. The assertions to ensure that a pointer to a correctly-sized object is being used will not work with generic pointers (ie: (void*) and (gpointer) casts) which would have worked with the old version.
- * It is now mandatory to include glib.h instead of individual headers.
- * The -uninstalled variants of the pkg-config files have been dropped.
- * For a long time, gobject-2.0.pc mistakenly declared a public

dependency on gthread-2.0.pc (when the dependency should have been private). This means that programs got away with calling `g_thread_init()` without explicitly listing gthread-2.0.pc among their dependencies.

gthread has now been removed as a GObject dependency, which will cause such programs to break.

The fix for this problem is either to declare an explicit dependency on gthread-2.0.pc (if you care about compatibility with older GLib versions) or to stop calling `g_thread_init()`.

- * `g_debug()` output is no longer enabled by default. It can be enabled on a per-domain basis with the `G_MESSAGES_DEBUG` environment variable like
 `G_MESSAGES_DEBUG=domain1,domain2`
or
 `G_MESSAGES_DEBUG=all`

Notes about GLib 2.30

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- * GObject includes a generic marshaller, `g_cclosure_marshal_generic`. To use it, simply specify `NULL` as the marshaller in `g_signal_new()`. The generic marshaller is implemented with `libffi`, and consequently GObject depends on `libffi` now.

Notes about GLib 2.28

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- * The GApplication API has changed compared to the version that was included in the 2.25 development snapshots. Existing users will need adjustments.

Notes about GLib 2.26

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- * Nothing noteworthy.

Notes about GLib 2.24

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- * It is now allowed to call `g_thread_init(NULL)` multiple times, and to call glib functions before `g_thread_init(NULL)` is called

(although the later is mainly a change in docs as this worked before too). See the GThread reference documentation for the details.

- * GObject now links to GThread and threads are enabled automatically when `g_type_init()` is called.
- * GObject no longer allows to call `g_object_set()` on construct-only properties while an object is being initialized. If this behavior is needed, setting a custom constructor that just chains up will re-enable this functionality.
- * `GMappedFile` on an empty file now returns `NULL` for the contents instead of returning an empty string. The documentation specifically states that code may not rely on nul-termination here so any breakage caused by this change is a bug in application code.

Notes about GLib 2.22

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- * Repeated calls to `g_simple_async_result_set_op_res_gpointer` used to leak the data. This has been fixed to always call the provided `destroy_notify`.

Notes about GLib 2.20

=====

- * The functions for launching applications (e.g. `g_app_info_launch()` + friends) now passes a FUSE `file:// URI` if possible (requires `gvfs` with the FUSE daemon to be running and operational). With `gvfs 2.26`, FUSE `file:// URIs` will be mapped back to `gio URIs` in the `GFile` constructors. The intent of this change is to better integrate POSIX-only applications, see bug #528670 for the rationale. The only user-visible change is when an application needs to examine an URI passed to it (e.g. as a positional parameter). Instead of looking at the given URI, the application will now need to look at the result of `g_file_get_uri()` after having constructed a `GFile` object with the given URI.

Notes about GLib 2.18

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- * The recommended way of using GLib has always been to only include the toplevel headers `glib.h`, `glib-object.h` and `gio.h`. GLib enforces this by generating an error when individual headers are directly included. To help with the transition, the enforcement is not turned on by

default for GLib headers (it is turned on for GObject and GIO).
To turn it on, define the preprocessor symbol `G_DISABLE_SINGLE_INCLUDES`.

Notes about GLib 2.16

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- * GLib now includes GIO, which adds optional dependencies against libattr and libselinux for extended attribute and SELinux support. Use `--disable-xattr` and `--disable-selinux` to build without these.

Notes about GLib 2.10

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- * The functions `g_snprintf()` and `g_vsnprintf()` have been removed from the `gprintf.h` header, since they are already declared in `glib.h`. This doesn't break documented use of `gprintf.h`, but people have been known to include `gprintf.h` without including `glib.h`.
- * The Unicode support has been updated to Unicode 4.1. This adds several new members to the `GUnicodeBreakType` enumeration.
- * The support for Solaris threads has been retired. Solaris has provided POSIX threads for long enough now to have them available on every Solaris platform.
- * 'make check' has been changed to validate translations by calling `msgfmt` with the `-c` option. As a result, it may fail on systems with older `gettext` implementations (GNU `gettext` < 0.14.1, or Solaris `gettext`). 'make check' will also fail on systems where the C compiler does not support ELF visibility attributes.
- * The `GMemChunk` API has been deprecated in favour of a new 'slice allocator'. See the `g_slice` documentation for more details.
- * A new type, `GInitiallyUnowned`, has been introduced, which is intended to serve as a common implementation of the 'floating reference' concept that is e.g. used by `GtkObject`. Note that changing the inheritance hierarchy of a type can cause problems for language bindings and other code which needs to work closely with the type system. Therefore, switching to `GInitiallyUnowned` should be done carefully. `g_object_compat_control()` has been added to GLib 2.8.5 to help with the transition.

Notes about GLib 2.6.0

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- * GLib 2.6 introduces the concept of 'GLib filename encoding', which is the on-disk encoding on Unix, but UTF-8 on Windows. All GLib functions returning or accepting pathnames have been changed to expect filenames in this encoding, and the common POSIX functions dealing with pathnames have been wrapped. These wrappers are declared in the header `<glib/gstdio.h>` which must be included explicitly; it is not included through `<glib.h>`.

On current (NT-based) Windows versions, where the on-disk file names are Unicode, these wrappers use the wide-character API in the C library. Thus applications can handle file names containing any Unicode characters through GLib's own API and its POSIX wrappers, not just file names restricted to characters in the system codepage.

To keep binary compatibility with applications compiled against older versions of GLib, the Windows DLL still provides entry points with the old semantics using the old names, and applications compiled against GLib 2.6 will actually use new names for the functions. This is transparent to the programmer.

When compiling against GLib 2.6, applications intended to be portable to Windows must take the UTF-8 file name encoding into consideration, and use the `gstdio` wrappers to access files whose names have been constructed from strings returned from GLib.

- * Likewise, `g_get_user_name()` and `g_get_real_name()` have been changed to return UTF-8 on Windows, while keeping the old semantics for applications compiled against older versions of GLib.
- * The GLib uses an `'_'` prefix to indicate private symbols that must not be used by applications. On some platforms, symbols beginning with prefixes such as `_g` will be exported from the library, on others not. In no case can applications use these private symbols. In addition to that, GLib+ 2.6 makes several symbols private which were not in any installed header files and were never intended to be exported.
- * To reduce code size and improve efficiency, GLib, when compiled with the GNU toolchain, has separate internal and external entry points for exported functions. The internal names, which begin with `IA__`, may be seen when debugging a GLib program.
- * On Windows, GLib no longer opens a console window when printing

warning messages if stdout or stderr are invalid, as they are in "Windows subsystem" (GUI) applications. Simply redirect stdout or stderr if you need to see them.

- * The child watch functionality tends to reveal a bug in many thread implementations (in particular the older LinuxThreads implementation on Linux) where it's not possible to call `waitpid()` for a child created in a different thread. For this reason, for maximum portability, you should structure your code to fork all child processes that you want to wait for from the main thread.
- * A problem was recently discovered with `g_signal_connect_object()`; it doesn't actually disconnect the signal handler once the object being connected to dies, just disables it. See the API docs for the function for further details and the correct workaround that will continue to work with future versions of GLib.

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3.49 glibc-2.17-260

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See the file "version.h" for what release version you have.

The GNU C Library is the standard system C library for all GNU systems, and is an important part of what makes up a GNU system. It provides the system API for all programs written in C and C-compatible languages such as C++ and Objective C; the runtime facilities of other programming languages use the C library to access the underlying operating system.

In GNU/Linux systems, the C library works with the Linux kernel to implement the operating system behavior seen by user applications. In GNU/Hurd systems, it works with a microkernel and Hurd servers.

The GNU C Library implements much of the POSIX.1 functionality in the GNU/Hurd system, using configurations i[34567]86-*-gnu. The current GNU/Hurd support requires out-of-tree patches that will eventually be incorporated into an official GNU C Library release.

When working with Linux kernels, this version of the GNU C Library requires Linux kernel version 2.6.16 or later.

Also note that the shared version of the libgcc_s library must be installed for the pthread library to work correctly.

The GNU C Library supports these configurations for using Linux kernels:

```
i[4567]86-*-linux-gnu
x86_64-*-linux-gnu Can build either x86_64 or x32
powerpc-*-linux-gnu Hardware floating point required
powerpc64-*-linux-gnu
s390-*-linux-gnu
s390x-*-linux-gnu
sh[34]-*-linux-gnu
sparc-*-linux-gnu
sparc64-*-linux-gnu
```

The code for other CPU configurations supported by volunteers outside of the core glibc maintenance effort is contained in the 'ports' add-on, located in the 'ports' subdirectory of the source tree.

```
aarch64-*-linux-gnu
alpha-*-linux-gnu
```

am33*-*-linux-gnu Not currently functional
arm*-*-linux-gnueabi
hppa*-*-linux-gnu Not currently functional without patches.
ia64*-*-linux-gnu
m68k*-*-linux-gnu
mips*-*-linux-gnu
mips64*-*-linux-gnu
powerpc*-*-linux-gnu Software floating point (--without-fp)
tilegx*-*-linux-gnu
tilepro*-*-linux-gnu

If you are interested in doing a port, please contact the glibc maintainers; see <http://www.gnu.org/software/libc/> for more information.

See the file INSTALL to find out how to configure, build, and install the GNU C Library. You might also consider reading the WWW pages for the C library at <http://www.gnu.org/software/libc/>.

The GNU C Library is (almost) completely documented by the Texinfo manual found in the 'manual/' subdirectory. The manual is still being updated and contains some known errors and omissions; we regret that we do not have the resources to work on the manual as much as we would like. For corrections to the manual, please file a bug in the 'manual' component, following the bug-reporting instructions below. Please be sure to check the manual in the current development sources to see if your problem has already been corrected.

Please see <http://www.gnu.org/software/libc/bugs.html> for bug reporting information. We are now using the Bugzilla system to track all bug reports. This web page gives detailed information on how to report bugs properly.

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3.50 gmp-6.0.0-15

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THE GNU MP LIBRARY

GNU MP is a library for arbitrary precision arithmetic, operating on signed integers, rational numbers, and floating point numbers. It has a rich set of functions, and the functions have a regular interface.

GNU MP is designed to be as fast as possible, both for small operands and huge operands. The speed is achieved by using fullwords as the basic arithmetic

type, by using fast algorithms, with carefully optimized assembly code for the most common inner loops for lots of CPUs, and by a general emphasis on speed (instead of simplicity or elegance).

GNU MP is believed to be faster than any other similar library. Its advantage increases with operand sizes for certain operations, since GNU MP in many cases has asymptotically faster algorithms.

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OVERVIEW OF GNU MP

There are five classes of functions in GNU MP.

1. Signed integer arithmetic functions (mpz). These functions are intended to be easy to use, with their regular interface. The associated type is 'mpz_t'.
2. Rational arithmetic functions (mpq). For now, just a small set of functions necessary for basic rational arithmetics. The associated type is 'mpq_t'.
3. Floating-point arithmetic functions (mpf). If the C type 'double' doesn't give enough precision for your application, declare your variables as 'mpf_t' instead, set the precision to any number desired, and call the functions in the mpf class for the arithmetic operations.
4. Positive-integer, hard-to-use, very low overhead functions are in the mpn class. No memory management is performed. The caller must ensure enough space is available for the results. The set of functions is not regular, nor is the calling interface. These functions accept input arguments in the form of pairs consisting of a pointer to the least significant word, and an integral size telling how many limbs (= words) the pointer points to.

Almost all calculations, in the entire package, are made by calling these low-level functions.

5. Berkeley MP compatible functions.

To use these functions, include the file "mp.h". You can test if you are using the GNU version by testing if the symbol `__GNU_MP__` is defined.

For more information on how to use GNU MP, please refer to the documentation. It is composed from the file `doc/gmp.texi`, and can be displayed on the screen or printed. How to do that, as well how to build the library, is described in the `INSTALL` file in this directory.

REPORTING BUGS

If you find a bug in the library, please make sure to tell us about it!

You should first check the GNU MP web pages at <https://gmplib.org/>, under "Status of the current release". There will be patches for all known serious bugs there.

Report bugs to gmp-bugs@gmplib.org. What information is needed in a useful bug report is described in the manual. The same address can be used for suggesting modifications and enhancements.

```
-----  
Local variables:  
mode: text  
fill-column: 78  
End:
```

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```
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```

```
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3.51 gnupg2-2.0.22-5

The GNU Privacy Guard 2

=====

Version 2.0

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INTRODUCTION

=====

GnuPG is GNU's tool for secure communication and data storage. It can be used to encrypt data and to create digital signatures. It includes an advanced key management facility and is compliant with the proposed OpenPGP Internet standard as described in RFC4880 and the S/MIME standard as described by several RFCs.

GnuPG is distributed under the terms of the GNU General Public License. See the file COPYING for details. GnuPG works best on GNU/Linux or *BSD systems. Most other Unices are also supported but are not as well tested as the Free Unices.

GnuPG 2.0 is the stable version of GnuPG integrating support for OpenPGP and S/MIME. It does not conflict with an installed 1.4 OpenPGP-only version.

BUILD INSTRUCTIONS

=====

GnuPG 2.0 depends on the following packages:

libgpg-error	(ftp://ftp.gnupg.org/gcrypt/libgpg-error/)
libgcrypt	(ftp://ftp.gnupg.org/gcrypt/libgcrypt/)
libksba	(ftp://ftp.gnupg.org/gcrypt/libksba/)
libassuan >= 2.0	(ftp://ftp.gnupg.org/gcrypt/libassuan/)

You also need the Pinentry package for most function of GnuPG; however it is not a build requirement. Pinentry is available at <ftp://ftp.gnupg.org/gcrypt/pinentry/> .

You should get the latest versions of course, the GnuPG configure script complains if a version is not sufficient.

After building and installing the above packages in the order as given above, you may now continue with GnuPG installation (you may also just try to build GnuPG to see whether your already installed versions are sufficient).

As with all packages, you just have to do

```
./configure
make
make install
```

(Before doing install you might need to become root.)

If everything succeeds, you have a working GnuPG with support for S/MIME and smartcards. Note that there is no binary gpg but a gpg2 so that this package won't conflict with a GnuPG 1.4 installation. gpg2 behaves just like gpg.

In case of problem please ask on gnupg-users@gnupg.org for advise.

Note that the PKITS tests are always skipped unless you copy the PKITS test data file into the tests/pkits directory.

INCOMPATIBLE CHANGES

=====

- With 2.0.20 the sddaemon option 'disable-keypad' has been renamed to 'disable-pinpad'. If you are using this option in sddaemon.conf you should rename it there. In case you are using this option to work around a problem with your card reader, you may want to test whether this version of GnuPG works better with your reader.

DOCUMENTATION

=====

The complete documentation is in the texinfo manual named 'gnupg.info'. Run "info gnupg" to read it. If you want a printable copy of the manual, change to the "doc" directory and enter "make pdf"

For a HTML version enter "make html" and point your browser to [gnupg.html/index.html](http://www.gnupg.org/documentation/manuals/gnupg/). Standard man pages for all components are provided as well. An online version of the manual is available at <http://www.gnupg.org/documentation/manuals/gnupg/> . A version of the manual pertaining to the current development snapshot is at <http://www.gnupg.org/documentation/manuals/gnupg-devel/> .

GNUPG 1.4 AND GNUPG 2.0

=====

GnuPG 2.0 is a newer version of GnuPG with additional support for S/MIME. It has a different design philosophy that splits functionality up into several modules. Both versions may be installed simultaneously without any conflict (gpg is called gpg2 in GnuPG 2). In fact, the gpg version from GnuPG 1.4 is able to make use of the gpg-agent as included in GnuPG 2 and allows for seamless passphrase caching. The advantage of GnuPG 1.4 is its smaller size and no dependency on other modules at run and build time.

HOW TO GET MORE INFORMATION

=====

The primary WWW page is "<http://www.gnupg.org>"
The primary FTP site is "<ftp://ftp.gnupg.org/gcrypt/>"

See <http://www.gnupg.org/download/mirrors.html> for a list of mirrors and use them if possible. You may also find GnuPG mirrored on some of the regular GNU mirrors.

We have some mailing lists dedicated to GnuPG:

gnupg-announce@gnupg.org	For important announcements like new versions and such stuff. This is a moderated list and has very low traffic. Do not post to this list.
gnupg-users@gnupg.org	For general user discussion and help (English).
gnupg-de@gnupg.org	German speaking counterpart of gnupg-users.

gnupg-ru@gnupg.org Russian speaking counterpart of
gnupg-users.

gnupg-devel@gnupg.org GnuPG developers main forum.

You subscribe to one of the list by sending mail with a subject of "subscribe" to x-request@gnupg.org, where x is the name of the mailing list (gnupg-announce, gnupg-users, etc.). An archive of the mailing lists is available at <<http://www.gnupg.org/documentation/mailling-lists.html>>.

Please direct bug reports to <http://bugs.gnupg.org> or post them direct to the mailing list <gnupg-devel@gnupg.org>.

Please direct questions about GnuPG to the users mailing list or one of the pgp newsgroups; please do not direct questions to one of the authors directly as we are busy working on improvements and bug fixes. The English and German mailing lists are watched by the authors and we try to answer questions when time allows us to do so.

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3.52 gobject-introspection-1.56.1-1

GObject Introspection

=====

The goal of the project is to describe the APIs and collect them in a uniform, machine readable format.

GIR XML format

=====

There's an XML format called GIR used by GObjectIntrospection.

The purpose of it is to provide a common structure to access the complete available API that a library or other unit of code exports.

It is meant to be language agnostic using namespaces to separate core, language or library specific functionality.

There are currently only C based tools that work on the format, but it's meant to be usable to use in other situations, for instance to/from another set of languages.

Typelib

=====

The typelib is an on-disk version of the GIR designed to be fast, memory efficient and complete enough so that language bindings can be written on top of it without other sources of information.

It is normally compiled from a GIR when a library/program is installed and accessed from the language binding or another application who wishes to use the information.

Tools

=====

The following tools are shipped with GObject Introspection:

- g-ir-scanner, a tool which generates GIR XML files by parsing headers, GTK-Doc comment blocks including annotations and introspecting GObject based libraries.
- g-ir-compiler, a typelib compiler. It converts one or more GIR files into one or more typelib blobs.
- g-ir-generate, an GIR generator, using the repository API. It generates GIR files from binary typelib which can be in a shared object, or a raw typelib blob.
- g-ir-annotation-tool, extracts annotations from source code files
- g-ir-doc-tool, generates API reference documentation from a GIR XML file.

API library

=====

There's also a C based library called libgirepository which provides an API to access to the typelib metadata. It also contains an API to invoke functions, given the function info object. The implementation is based on libffi (3.0 or higher of libffi required, can be found at <http://sourceware.org/libffi>).

There are a number of GIR test files in tests/, and a script to do roundtrip tests (GIR -> typelib -> GIR).

Helping out

=====

The introspection framework needs a lot more work, see TODO.

Homepage

=====

<http://live.gnome.org/GObjectIntrospection>

Reporting bugs

=====

Bugs should be reported in <https://gitlab.gnome.org/GNOME/gobject-introspection/issues>.

Contact

=====

Mail: gtk-devel-list@gnome.org
IRC: [#introspection@irc.gnome.org](https://www.gnome.org/irc/#introspection)

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```
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.
```

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```
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
```

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3.53 gpgme-1.3.2-5

GPGME - GnuPG Made Easy

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Introduction

GnuPG Made Easy (GPGME) is a C language library that allows to add support for cryptography to a program. It is designed to make access to public key crypto engines like GnuPG or GpgSM easier for applications. GPGME provides a high-level crypto API for encryption, decryption, signing, signature verification and key management.

GPGME uses GnuPG and GpgSM as its backends to support OpenPGP and the Cryptographic Message Syntax (CMS).

GPGME runs best on GNU/Linux or *BSD systems. Other Unices may require small portability fixes, send us your patches.

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Installation

See the file INSTALL for generic installation instructions.

Check that you have unmodified sources. See below on how to do this. Don't skip it - this is an important step!

To build GPGME, you need to install libgpg-error (≥ 1.8) and Libassuan ($\geq 2.0.2$).

For support of the OpenPGP protocol (default), you should use the latest version of GnuPG (≥ 1.4), available at:
<ftp://ftp.gnupg.org/gcrypt/gnupg/>
For support of the CMS (Cryptographic Message Syntax) protocol, you need a GnuPG version ≥ 2.0 .

If configure can't find the 'gpg' binary in your path, you can specify the location with the `--with-gpg=/path/to/gpg` argument to configure.

If configure can't find the 'gpgsm' binary in your path, you can specify the location with the `--with-gpgsm=/path/to/gpgsm` argument to configure.

For building the GIT version of GPGME please see the file README.GIT for more information.

How to Verify the Source

In order to check that the version of GPGME which you are going to install is an original and unmodified one, you can do it in one of the following ways:

- a) If you have a trusted Version of GnuPG installed, you can simply check the supplied signature:

```
$ gpg --verify gpgme-x.y.z.tar.gz.sig
```

This checks that the detached signature `gpgme-x.y.z.tar.gz.sig` is indeed a signature of `gpgme-x.y.z.tar.gz`. The key used to create this signature is either of:

```
"pub 2048R/4F25E3B6 2011-01-12 Werner Koch (dist sig)"
"pub 1024D/87978569 1999-05-13
    Marcus Brinkmann <Marcus.Brinkmann@ruhr-uni-bochum.de>
    Marcus Brinkmann <mb@g10code.com>"
```

If you do not have this key, you can get it from any keyserver. You have to make sure that this is really the key and not a faked one. You can do this by comparing the output of:

```
$ gpg --fingerprint 0x4F25E3B6
```

with the fingerprint published elsewhere.

- b) If you don't have any of the above programs, you have to verify the SHA1 checksum:

```
$ shasum gpgme-x.y.z.tar.gz
```

This should yield an output *_similar_* to this:

```
fd9351b26b3189c1d577f0970f9dcadc3412def1  gpgme-x.y.z.tar.gz
```

Now check that this checksum is *_exactly_* the same as the one published via the announcement list and probably via Usenet.

Documentation

For information how to use the library you can read the info manual, which is also a reference book, in the doc/ directory. The programs in the tests/gpg/ directory may also prove useful.

Please subscribe to the gnupg-devel@gnupg.org mailing list if you want to do serious work.

3.53.1 Copying

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3.54 grep-2.20-3

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This is GNU grep, the "fastest grep in the west" (we hope). All bugs reported in previous releases have been fixed. Many exciting new bugs have probably been introduced in this revision.

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GNU grep is based on a fast lazy-state deterministic matcher (about twice as fast as stock Unix egrep) hybridized with a Boyer-Moore-Gosper search for a fixed string that eliminates impossible text from being considered by the full regexp matcher without necessarily having to look at every character. The result is typically many times faster than Unix grep or egrep. (Regular expressions containing backreferencing will run more slowly, however.)

See the files AUTHORS and THANKS for a list of authors and other contributors.

See the file INSTALL for compilation and installation instructions.

See the file NEWS for a description of major changes in this release.

See the file TODO for ideas on how you could help us improve grep.

See the file README-alpha for information on grep development and the CVS repository.

Send bug reports to bug-grep@gnu.org.

KNOWN BUGS:

Several tests in `fmbtest.sh` and `foad1.sh` fail under the `cs_CZ.UTF-8` locale and have been disabled.

The combination of `-o` and `-i` options is broken and the known failing cases are disabled in `foad1.sh`

The option `-i` does not work properly in some multibyte locales such as `tr_TR.UTF-8` where the upper case and lower case forms of a character are not necessarily of the same byte length.

Additional bug reports can be found at:

<http://savannah.gnu.org/bugs/?group=grep>

You can also browse the `bug-grep` mailing list archive at:

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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>
```

```
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the Free Software Foundation, either version 3 of the License, or
(at your option) any later version.
```

```
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MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the
GNU General Public License for more details.
```

```
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```

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".

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3.55 groff-1.22.2-8

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This is the GNU ‘groff’ document formatting system. The version number is given in the file VERSION.

Included in this release are implementations of ‘troff’, ‘pic’, ‘eqn’, ‘tbl’, ‘grn’, ‘refer’, ‘-man’, ‘-mdoc’, ‘-mom’, and ‘-ms’ macros, and drivers for ‘PostScript’, ‘PDF’, ‘TeX DVI’ format, ‘HP LaserJet 4’ printers, ‘Canon CAPSL’ printers, ‘HTML’ and ‘XHTML’ formats (beta status), and typewriter-like devices. Also included is a modified version of the Berkeley ‘-me’ macros, the enhanced version ‘gxditview’ of the X11 ‘xditview’ previewer, and an implementation of the ‘-mm’ macros contributed by Joergen Haegg (jh@axis.se).

See the file ‘INSTALL’ for installation instructions. You require a C++ compiler.

The file ‘NEWS’ describes recent user-visible changes to ‘groff’.

‘groff’ is free software. See the file ‘COPYING’ for copying permission.

The file ‘PROBLEMS’ describes various problems that have been encountered in compiling, installing, and running ‘groff’.

The file ‘MORE.STUFF’ contains information about add-on packages useful for groff.

The most recent released version of ‘groff’ is always available by anonymous ftp from ‘ftp.gnu.org’ in the directory ‘gnu/groff’.

The current development version of ‘groff’ is available from a ‘CVS’ repository. You can access it by first selecting a parent directory in which to create a working copy (call it, say, ‘~/cvswork’), and then executing the commands

```
cd ~/cvswork
```

```
cvs -d:pserver:anonymous@cvs.savannah.gnu.org/sources/groff -z5 co groff
```

This creates a subdirectory, ‘~/cvswork/groff’, with a ‘checked out’ copy of the ‘CVS’ repository. An update of this working copy may be achieved, at any later time by invoking the commands

```
cd ~/cvswork/groff
cvs -z5 update -dP
```

Please read the ‘CVS’ info pages for further details.

Finally, it is possible to access the ‘CVS’ with a web browser by pointing it to

```
http://savannah.gnu.org/cvs/?group=groff
```

Alternatively, you can download snapshots (which are updated twice a day). The complete ‘groff’ source as a single file is available at

```
http://groff.ffii.org/groff/devel/groff-current.tar.gz
```

A diff file relative to ‘groff-<version>’, the latest official ‘groff’ release, is available at

```
http://groff.ffii.org/groff/devel/groff-<version>-current.diff.gz
```

Assuming that ‘groff-<version>.tar.gz’ and ‘groff-<version>-current.diff.gz’ are in the same directory, do the following to apply the diff file:

```
tar xzvf groff-<version>.tar.gz
cd groff-<version>
gunzip -c ../groff-<version>-current.diff.gz | patch -p1
```

Depending on your requirements, you may need at least some of the following tools to build ‘groff’ directly from its source:

```
ghostscript
the psutils package
the netpbm package
texinfo 4.8
bison >= 1.875b or byacc
```

Note that ‘texinfo’ and ‘bison’ or ‘byacc’ are required only for

building from 'CVS' sources (either a checked out working copy, or a daily snapshot). They are not required for building from a stable release tarball. Also note that the version numbers stated are the minimum supported. No version of 'texinfo' < 4.8 works, and the original release of 'bison' 1.875 is known not to work; you *may* find that 'bison' releases < 1.875 work, but in case of difficulty, please update to a later version *before* posting a bug report.

For *all* sources, you need ghostscript for creation of either 'PDF' or 'HTML' output; the 'netpbm' and 'psutils' packages are required only for 'HTML' output (and for compilation from the CVS). If you don't intend to produce output in either of these formats, then these packages are unnecessary.

Additionally, producing 'PDF' output directly with the 'gropdf' device needs a working installation of Perl. The same is true for the 'chem' preprocessor.

In Linux Debian, the installation of 'texinfo' is dangerous. For it creates a file 'install-info' that blocks the system installation. So the created '/usr/local/bin/install-info' must be renamed.

The 'groff' configure script searches for the X11 headers and libraries 'Xaw' and 'Xmu'. So the corresponding developer packages of your system must be installed, otherwise 'groff' does not install 'gxditview' and the '-TX*' devices. In Debian, the developer packages are 'libxaw7-dev' and 'libxmu-dev'.

Please report bugs using the form in the file 'BUG-REPORT'; the idea of this is to make sure that FSF has all the information it needs to fix the bug. At the very least, read the 'BUG-REPORT' form and make sure that you supply all the information that it asks for. Even if you are not sure that something is a bug, report it using 'BUG-REPORT': this enables us to determine whether it really is a bug or not.

Three mailing lists are available:

bug-groff@gnu.org	for reporting bugs
groff@gnu.org	for general discussion of groff
groff-commit@gnu.org	a read-only list showing commitments to the CVS repository

To subscribe, send a mail to <list>-request@<domain> (example:

groff-request@gnu.org for the 'groff' list) with the word 'subscribe' in either the subject or body of the email (don't include the quotes). Alternatively, you may subscribe by visiting the web pages at

<http://lists.gnu.org/mailman/listinfo/bug-groff>
<http://lists.gnu.org/mailman/listinfo/groff>
<http://lists.gnu.org/mailman/listinfo/groff-commit>

Each of these web pages also provides a link to a browseable archive of postings to the corresponding mailing list.

GNU 'groff' was written by James Clark <jjc@jclark.com>. It is now maintained by Ted Harding <ted.harding@nessie.mcc.ac.uk> and Werner Lemberg <wl@gnu.org>.

3.55.1 Copying

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3.56 grub2-2.02-0.76

This is GRUB 2, the second version of the GRand Unified Bootloader. GRUB 2 is rewritten from scratch to make GNU GRUB cleaner, safer, more robust, more powerful, and more portable.

See the file NEWS for a description of recent changes to GRUB 2.

See the file INSTALL for instructions on how to build and install the GRUB 2 data and program files.

Please visit the official web page of GRUB 2, for more information. The URL is <<http://www.gnu.org/software/grub/grub.html>>.

More extensive documentation is available in the Info manual, accessible using 'info grub' after building and installing GRUB 2. Please look at the GRUB Wiki <<http://grub.enbug.org>> for testing procedures.

There are a number of important user-visible differences from the first version of GRUB, now known as GRUB Legacy. For a summary, please see:

```
info grub Introduction 'Changes from GRUB Legacy'
```

3.56.1 Copying

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```
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```

```
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```

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```
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```

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3.57 grubby-8.28-25

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```
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'Gnomovision' (which makes passes at compilers) written by James Hacker.
```

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

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3.58 gzip-1.5-10

This is the file README for the gzip distribution.

The GNU gzip home page is <http://www.gnu.org/software/gzip>.

gzip (GNU zip) is a compression utility designed to be a replacement for 'compress'. Its main advantages over compress are much better compression and freedom from patented algorithms. The GNU Project uses it as the standard compression program for its system.

gzip currently uses by default the LZ77 algorithm used in zip 1.9 (the portable pkzip compatible archiver). The gzip format was however designed to accommodate several compression algorithms. See below for a comparison of zip and gzip.

gunzip can currently decompress files created by gzip, compress or pack. The detection of the input format is automatic. For the gzip format, gunzip checks a 32 bit CRC. 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 because there is some redundancy in the .Z compression format. 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.

gzip produces files with a .gz extension. Previous versions of gzip used the .z extension, which was already used by the 'pack' Huffman encoder. gunzip is able to decompress .z files (packed or gzip'ed).

Several planned features are not yet supported (see the file TODO). See the file NEWS for a summary of changes since the last release. See the file INSTALL for installation instructions.

WARNING: gzip is sensitive to compiler bugs, particularly when optimizing. Use "make check" to check that gzip was compiled correctly. Try compiling gzip without any optimization if you have a problem.

Please send all comments and bug reports by electronic mail to <bug-gzip@gnu.org>.

Bug reports should ideally include:

- * The complete output of "gzip -V" (or the contents of revision.h if you can't get gzip to compile)
- * The hardware and operating system (try "uname -a")
- * The compiler used to compile (if it is gcc, use "gcc -v")
- * A description of the bug behavior
- * The input to gzip, that triggered the bug

If you send me patches for machines I don't have access to, please test them very carefully. gzip is used for backups, it must be extremely reliable.

The znew and gzexe shell scripts provided with gzip benefit from (but do not require) the (non-GNU) cpmode utility to transfer file attributes.

The sample programs zread.c, sub.c and add.c in subdirectory sample are provided as examples of useful complements to gzip. Read the comments inside each source file. The perl script ztouch is also provided as example (not installed by default since it relies on perl).

gzip is free software, you can redistribute it and/or modify it under the terms of the GNU General Public License, a copy of which is provided under the name COPYING. The latest version of gzip are always available from <ftp://ftp.gnu.org/gnu/gzip> or in any of the gnu mirror sites.

- sources in gzip-*.tar (or .shar or .tar.gz).
- MSDOS lha self-extracting exe in gzip-msdos-*.exe. Once extracted, copy gzip.exe to gunzip.exe and zcat.exe, or use "gzip -d" to decompress. gzip386.exe runs much faster but only on 386 and above; it was compiled with djgpp 1.10 available in directory [omnigate.clarkson.edu:/pub/msdos/djgpp](http://omnigate.clarkson.edu/pub/msdos/djgpp).

A VMS executable is in [ftp://ftp.spc.edu/\[.macro32.savesets\]gzip-1-*.zip](ftp://ftp.spc.edu/[.macro32.savesets]gzip-1-*.zip) (use [.macro32]unzip.exe to extract). A PRIMOS executable is available in <ftp://ftp.lysator.liu.se/pub/primos/run/gzip.run>.

Some ftp servers can automatically make a tar.Z from a tar file. If you are getting gzip for the first time, you can ask for a tar.Z file instead of the much larger tar file.

Many thanks to those who provided me with bug reports and feedback. See the files THANKS and ChangeLog for more details.

Note about zip vs. gzip:

The name 'gzip' was a very unfortunate choice, because zip and gzip are two really different programs, although the actual compression and decompression sources were written by the same persons. A different name should have been used for gzip, but it is too late to change now.

zip is an archiver: it compresses several files into a single archive file. gzip is a simple compressor: each file is compressed separately. Both share the same compression and decompression code for the 'deflate' method. unzip can also decompress old zip archives (implode, shrink and reduce methods). gunzip can also decompress files created by compress and pack. zip 1.9 and gzip do not support compression methods other than deflation. (zip 1.0 supports shrink and implode). Better compression methods may be added in future versions of gzip. zip will always stick to absolute compatibility with pkzip, it is thus constrained by PKWare, which is a commercial company. The gzip header format is deliberately different from that of pkzip to avoid such a constraint.

On Unix, gzip is mostly useful in combination with tar. GNU tar 1.11.2 and later has a -z option to invoke gzip automatically. "tar -z" compresses better than zip, since gzip can then take advantage of redundancy between distinct files. The drawback is that you must scan the whole tar.gz file in order to extract a single file near the end; unzip can directly seek to the end of the zip file. There is no overhead when you extract the whole archive anyway. If a member of a .zip archive is damaged, other files can still be recovered. If a .tar.gz file is damaged, files beyond the failure point cannot be recovered. (Future versions of gzip will have error recovery features.)

gzip and gunzip are distributed as a single program. zip and unzip are, for historical reasons, two separate programs, although the authors of these two programs work closely together in the Info-ZIP team. zip and unzip are not associated with the GNU project. See <http://info-zip.org/> for more about zip and unzip.

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3.59 hardlink-1.0-19

hardlink is used to create a tree of hard links.

It's used by kernel installation to dramatically reduce the amount of disk space used by each kernel package installed.

License: GPL+

3.60 hostname-3.13-3

hostname -- set the host name or show the host/domain name

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3.61 hwdata-0.252-9.1

To update the various IDs files, run 'make download'.

Requisites:

- unoconf - python script using libreoffice to convert all office documents to anything else
- * used to update pnp.ids from MS database.
- perl - to run ids-update.pl

ids-update.pl is a script downloaded from systemd's upstream with:

```
$ curl -o ids-update.pl -O
http://cgit.freedesktop.org/systemd/systemd/plain/hwdb/ids-update.pl?id=1d09582a
b9d8bc619de3a01f01d614eab44d31c0
```

It generates various hwdb files.

3.61.1 Copying

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3.62 icu4c-50-1-2

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```

```
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```
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```

```

listed
# below with further processing for compound word breaking. The frequency
is generated
# with an iterative training against Google web corpora.
#
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3.63 iproute-4.11.0-14

This is a set of utilities for Linux networking.

Information:

<http://www.linuxfoundation.org/collaborate/workgroups/networking/iproute2>

Download:

<http://www.kernel.org/pub/linux/utils/net/iproute2/>

Repository:

<git://git.kernel.org/pub/scm/linux/kernel/git/shemminger/iproute2.git>

How to compile this.

1. libdbm

arpd needs to have the db4 development libraries. For Debian users this is the package with a name like libdb4.x-dev. DBM_INCLUDE points to the directory with db_185.h which is the include file used by arpd to get to the old format Berkeley database routines. Often this is in the db-devel package.

2. make

The makefile will automatically build a Config file which contains whether or not ATM is available, etc.

3. To make documentation, cd to doc/ directory , then look at start of Makefile and set correct values for
PAGESIZE=a4 , ie: a4 , letter ... (string)
PAGESPERPAGE=2 , ie: 1 , 2 ... (numeric)
and make there. It assumes, that latex, dvips and psnup are in your path.
4. This package includes matching sanitized kernel headers because the build environment may not have up to date versions. See Makefile if you have special requirements and need to point at different kernel include files.

Stephen Hemminger
stephen@networkplumber.org

Alexey Kuznetsov

kuznet@ms2.inr.ac.ru

3.63.1 Copying

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3.64 ipset-6.38-3

This is the ipset source tree. Follow the next steps to install ipset. If you upgrade from an earlier 5.x release, please read the UPGRADE instructions too.

0. You need the source tree of your kernel (version $\geq 2.6.32$) and it have to be configured with ip6tables support enabled, modules compiled. For kernel versions $< 2.6.39$ please apply the netlink.patch against your kernel tree, which adds the new subsystem identifier for ipset.

Recompile and install the patched kernel and its modules. Please note, you have to run the patched kernel for ipset to work.

The ipset source code depends on the libmnl library so the library must be installed. You can download the libmnl library from

`git://git.netfilter.org/libmnl.git`

1. Initialize the compiling environment for ipset. The packages automake, autoconf, pkg-config and libtool are required.

```
% ./autogen.sh
```

2. Run './configure' and then compile the ipset binary and the kernel modules.

Configure parameters can be used to to override the default path to the kernel source tree (/lib/modules/'uname -r'/build), the maximum number of sets (256), the default hash sizes (1024). See './configure --help'.

```
% ./configure
% make
% make modules
```

3. Install the binary and the kernel modules

```
# make install
# make modules_install
```

After installing the modules, you can run the testsuite as well. Please note, several assumptions must be met for the testsuite:

- no sets defined
- iptables/ip6tables rules are not set up
- the destination for kernel logs is /var/log/kern.log
- the networks 10.255.255.0/24 and 1002:1002:1002:1002::/64 are not in use
- sendip utility is installed

```
# make tests
```

4. Cleanup the source tree

```
% make clean
% make modules_clean
```

That's it!

Read the ipset(8) and iptables(8), ip6tables(8) manpages on how to use ipset and its match and target from iptables.

Compatibilities and incompatibilities:

- The ipset 6.x userspace utility contains a backward compatibility interface to support the commandline syntax of ipset 4.x. The commandline syntax of ipset 6.x is fully compatible with 5.x.
- The ipset 6.x userspace utility can't talk to the kernel part of ipset 5.x or 4.x.
- The ipset 6.x kernel part can't talk to the userspace utility from ipset 5.x or 4.x.
- The ipset 6.x kernel part can work together with the set match and SET target from iptables 1.4.7 and below, however if you need the IPv6 support from ipset 6.x, then you have to use iptables 1.4.9 or above.

The ipset 6.x can interpret the commandline syntax of ipset 4.x, however some internal changes mean different behaviour:

- The "--matchunset" flag for the macipmap type is ignored and not used anymore.
- The "--probes" and "--resize" parameters of the hash types are ignored and not used anymore.
- The "--from", "--to" and "--network" parameters of the ipporthash, ipportiphhash and ipportnethash types are ignored and not used anymore.
- The hash types are not resized when new entries are added by the SET target. If you use a set together with the SET target, create it with

- the proper size because it won't be resized automatically.
- The `iptree`, `iptreemap` types are not implemented in `ipset 6.x`. The types are automatically substituted with the `hash:ip` type.

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3.65 iptables-1.4.21-28

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```
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```

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```
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```

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

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3.66 irqbalance-1.0.7-11

Arjen Van De Ven <arjanvandeven@gmail.com>

Neil Horman <nhorman@gmail.com>

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```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
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3.67 jansson-2.10

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3.68 json-c-0.11-4

Building on Unix with git, gcc and autotools

Home page for json-c:

<https://github.com/json-c/json-c/wiki>

Caution: do NOT use sources from svn.metaparadigm.com, they are old.

Prerequisites:

gcc (or another C compiler)

libtool

If you're not using a release tarball, you'll also need:

autoconf (autoreconf)

automake

Github repo for json-c:

<https://github.com/json-c/json-c>

```
$ git clone https://github.com/json-c/json-c.git
```

```
$ cd json-c
```

```
$ sh autogen.sh
```

Then

```
$ ./configure
```

```
$ make
```

```
$ make install
```

To build and run the test programs run

```
$ make check
```

Linking to libjson-c

If your system has pkgconfig then you can just add this to your makefile

```
CFLAGS += $(shell pkg-config --cflags json-c)
```

```
LDLAGS += $(shell pkg-config --libs json-c)
```

Without pkgconfig, you would do something like this:

```
JSON_C_DIR=/path/to/json_c/install
```



```
CFLAGS += -I$(JSON_C_DIR)/include/json-c
LDFLAGS+= -L$(JSON_C_DIR)/lib -ljson-c
```

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3.69 kbd-1.15.5-15

This is kbd-1.15.3.tar.gz

This package contains keytable files and keyboard utilities compatible with kernel version 1.1.54 and later. Setfont requires 1.1.92 or later. Major changes in keyboard and console handling occurred in 1.3.1. The current version of kbd might not work anymore on kernels older than that.

This distribution contains no binaries - the sources depend on the kernel version - compile them yourself.

The home site of this package is
<ftp://ftp.kernel.org/pub/linux/utils/kbd/>
<ftp://ftp.altlinux.org/pub/people/legion/kbd/>

Report problems with this package to Alexey Gladkov <gladkov.alexey@gmail.com>.

Apr 2011

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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
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Dustin Kirkland <kirkland@canonical.com>

The files

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3.70 keyutils-1.5.8-3

These tools are used to control the key management system built into the Linux kernel.

To build and install the tools and manual pages, run:

```
make
make install
```

If your glibc does not contain definitions for the new error codes and system calls, then try:

```
make NO_GLIBC_KEYERR=1
```

The tools are licensed under the GPL and the utility library under the LGPL. Copies of these are included in this tarball.

3.71 kmod-20-23

kmod - Linux kernel module handling

Information

=====

Mailing list:

linux-modules@vger.kernel.org (no subscription needed)

Signed packages:

<http://www.kernel.org/pub/linux/utils/kernel/kmod/>

Git:

<git://git.kernel.org/pub/scm/utils/kernel/kmod/kmod.git>

<http://git.kernel.org/pub/scm/utils/kernel/kmod/kmod.git>

<https://git.kernel.org/pub/scm/utils/kernel/kmod/kmod.git>

Gitweb:

<http://git.kernel.org/?p=utils/kernel/kmod/kmod.git>

Irc:

#kmod on irc.freenode.org

License:

LGPLv2.1+ for libkmod, testsuite and helper libraries

GPLv2+ for tools/*

OVERVIEW

=====

kmod is a set of tools to handle common tasks with Linux kernel modules like insert, remove, list, check properties, resolve dependencies and aliases.

These tools are designed on top of libkmod, a library that is shipped with kmod. See libkmod/README for more details on this library and how to use it. The aim is to be compatible with tools, configurations and indexes from module-init-tools project.

Compilation and installation

=====

In order to compile the source code you need following software packages:

- GCC compiler
- GNU C library

Optional dependencies:

- ZLIB library
- LZMA library

Typical configuration:

```
./configure CFLAGS="-g -O2" --prefix=/usr \
--sysconfdir=/etc --libdir=/usr/lib
```

Configure automatically searches for all required components and packages.

To compile and install run:

```
make && make install
```

Hacking

=====

Run 'bootstrap' script before configure. If you want to accept the recommended flags, you just need to run 'bootstrap-configure'.

Make sure to read the CODING-STYLE file and the other READMEs: libkmod/README and testsuite/README.

Compatibility with module-init-tools

=====

kmod replaces module-init-tools, which is end-of-life. Most of its tools are rewritten on top of libkmod so it can be used as a drop in replacements. Somethings however were changed. Reasons vary from "the feature was already long deprecated on module-init-tools" to "it would be too much trouble to support it".

There are several features that are being added in kmod, but we don't keep track of them here.

modprobe

* 'modprobe -l' was marked as deprecated and does not exist anymore

* 'modprobe -t' is gone, together with 'modprobe -l'

* modprobe doesn't parse configuration files with names not ending in '.alias' or '.conf'. modprobe used to warn about these files.

* modprobe doesn't parse 'config' and 'include' commands in configuration files.

* modprobe from m-i-t does not honour softdeps for install commands. E.g.:
config:

```
install bli "echo bli"
install bla "echo bla"
softdep bla pre: bli
```

With m-i-t, the output of 'modprobe --show-depends bla' will be:
install "echo bla"

While with kmod:
install "echo bli"
install "echo bla"

* kmod doesn't dump the configuration as is in the config files. Instead it dumps the configuration as it was parsed. Therefore, comments and file names are not dumped, but on the good side we know what the exact configuration kmod is using. We did this because if we only want to know the entire content of configuration files, it's enough to use find(1) in modprobe.d directories

depmod

* there's no 'depmod -m' option: legacy modules.*map files are gone

lsmod

* module-init-tools used /proc/modules to parse module info. kmod uses /sys/module/*, but there's a fallback to /proc/modules if the latter isn't available

3.71.1 Copying

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Version 2.1, February 1999

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

That's all there is to it!

3.72 krb5-1.15.1-37

Socket wrapper library

=====

This library makes possible to run several instances of the full software stack on the same machine and perform locally functional testing of complex network configurations. It passes all socket communication over unix domain sockets.

The user defines a directory where to put all the unix sockets using the environment variable "SOCKET_WRAPPER_DIR=/path/to/socket_dir". When a server opens a port or a client wants to connect, socket_wrapper will translate IP addresses to a special socket_wrapper name and look for the relevant unix socket in the SOCKET_WRAPPER_DIR.

Additionally, the default interface to be used by an application is defined with "SOCKET_WRAPPER_DEFAULT_IFACE=<ID>" where <ID> is between 2 and 254. This is analogous to use the IPv4 addresses "127.0.0.<ID>" or IPv6 addresses "fd00::5357:5f<IDx>" (where <IDx> is a hexadecimal presentation of <ID>). You should always set the default interface. If you listen on INADDR_ANY then it will use the default interface to listen on.

Exmaple:

```
LD_PRELOAD=libsocket_wrapper.so \  
SOCKET_WRAPPER_DIR=/path/to/socket_dir \  
./mydaemon
```

The following environment variables could also be set:

SOCKET_WRAPPER_DEFAULT_IFACE

The default interface to use if nothing has been set trough the functions.
Set it to '11' for '127.0.0.11'.

SOCKET_WRAPPER_PCAP_FILE

If set then all traffic will be written to the specified pcap file.

SOCKET_WRAPPER_DEBUGLEVEL

If you socket_wrapper with with debug symbols you can turn on logging by setting this to an integer between 1 and 3.

0 = ERROR

1 = WARNING

2 = DEBUG
3 = TRACE

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3.73 less-458-9

Less, version 458

This is the distribution of less, version 458, released 04 Apr 2013.
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Please report any problems to bug-less@gnu.org.
See <http://www.greenwoodsoftware.com/less> for the latest info.

=====

This is the distribution of "less", a paginator similar to "more" or "pg".

The formatted manual page is in less.man.
The manual page nroff source is in less.nro.
Major changes made since the last posted version are in NEWS.

=====

INSTALLATION (Unix systems only):

1. Move the distributed source to its own directory and unpack it,
if you have not already done so.
2. Type "sh configure".
This will generate a Makefile and a defines.h.
Warning: if you have a GNU sed, make sure it is version 2.05 or later.

The file INSTALL describes the usage of the configure program in
general. In addition, these options to configure are supported:

--with-editor=program
Specifies the default editor program used by the "v" command.
The default is "vi".

`--with-regex=lib`

Specifies the regular expression library used by less for pattern matching. The default is "auto", which means the configure program finds a regular expression library automatically. Other values are:

<code>posix</code>	Use the POSIX-compatible regcomp.
<code>pcre</code>	Use the PCRE library.
<code>regcmp</code>	Use the regcmp library.
<code>re_comp</code>	Use the re_comp library.
<code>regcomp</code>	Use the V8-compatible regcomp.
<code>regcomp-local</code>	Use Henry Spencer's V8-compatible regcomp (source is supplied with less).
<code>none</code>	No regular expressions, only simple string matching.

`--with-secure`

Builds a "secure" version of less, with some features disabled to prevent users from viewing other files, accessing shell commands, etc.

3. It is a good idea to look over the generated Makefile and defines.h and make sure they look ok. If you know of any peculiarities of your system that configure might not have detected, you may fix the Makefile now. Take particular notice of the list of "terminal" libraries in the LIBS definition in the Makefile; these may need to be edited. The terminal libraries will be some subset of
`-lncurses -lcurses -ltermcap -ltermplib`

If you wish, you may edit defines.h to remove some optional features. If you choose not to include some features in your version, you may wish to edit the manual page "less.nro" and the help page "less.hlp" to remove the descriptions of the features which you are removing. If you edit less.hlp, you should run "make -f Makefile.aut help.c".

4. Type "make" and watch the fun.
5. If the make succeeds, it will generate the programs "less", "lesskey" and "lessecho" in your current directory. Test the generated programs.
6. When satisfied that it works, if you wish to install it in a public place, type "make install".

The default install destinations are:

Executables (less, lesskey, lessecho) in /usr/local/bin

Documentation (less.nro, lesskey.nro) in /usr/local/man/man1
If you want to install any of these files elsewhere, define
bindir and/or mandir to the appropriate directories.

If you have any problems building or running "less", suggestions,
complaints, etc., you may mail to bug-less@gnu.org.

Note to hackers: comments noting possible improvements are enclosed
in double curly brackets {{ like this }}.

(Note that the above note was originally written at a time when
"hackers" most commonly meant "enthusiastic and dedicated computer
programmers", not "persons who attempt to circumvent computer security".)

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INSTALLATION (MS-DOS systems only,

with Microsoft C, Borland C, or DJGPP)

1. Move the distributed source to its own directory.
Depending on your compiler, you may need to convert the source
to have CR-LF rather than LF as line terminators.
2. If you are using Microsoft C, rename MAKEFILE.DSU to MAKEFILE.
If you are using Borland C, rename MAKEFILE.DSB to MAKEFILE.
If you are using DJGPP, rename MAKEFILE.DSG to MAKEFILE.
3. Look at MAKEFILE to make sure that the definitions for CC and LIBDIR
are correct. CC should be the name of your C compiler and
LIBDIR should be the directory where the C libraries reside (for
Microsoft C only). If these definitions need to be changed, you can
either modify the definitions directly in MAKEFILE, or set your
environment variables CC and/or LIBDIR to override the definitions
in MAKEFILE.
4. If you wish, you may edit DEFINES.DS to remove some optional features.
If you choose not to include some features in your version, you may
wish to edit the manual page LESS.MAN and the help page HELP.C
to remove the descriptions of the features which you are removing.
5. Run your "make" program and watch the fun.
If your "make" requires a flag to import environment variables,
you should use that flag.

If your compiler runs out of memory, try running "make -n >cmds.bat" and then run cmds.bat.

6. If the make succeeds, it will generate the programs "LESS.EXE" and "LESSKEY.EXE" in your current directory. Test the generated programs.
7. When satisfied that it works, you may wish to install LESS.EXE and LESSKEY.EXE in a directory which is included in your PATH.

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INSTALLATION (Windows-95, Windows-98 and Windows-NT systems only,
with Borland C or Microsoft Visual C++)

1. Move the distributed source to its own directory.
2. If you are using Borland C, rename Makefile.wnb to Makefile.
If you are using Microsoft Visual C++, rename Makefile.wnm to Makefile.
3. Check the Makefile to make sure the definitions look ok.
4. If you wish, you may edit defines.wn to remove some optional features.
If you choose not to include some features in your version, you may wish to edit the manual page less.man and the help page help.c to remove the descriptions of the features which you are removing.
5. Type "make" and watch the fun.
6. If the make succeeds, it will generate the programs "less.exe" and "lesskey.exe" in your current directory. Test the generated programs.
7. When satisfied that it works, if you wish to install it in a public place, type "make install".
See step 6 of the Unix installation instructions for details on how to change the default installation directories.

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INSTALLATION (OS/2 systems only,
with EMX C)

1. Move the distributed source to its own directory.

2. Rename Makefile.o2e to Makefile.
3. Check the Makefile to make sure the definitions look ok.
4. If you wish, you may edit defines.o2 to remove some optional features. If you choose not to include some features in your version, you may wish to edit the manual page less.man and the help page help.c to remove the descriptions of the features which you are removing.
5. Type "make" and watch the fun.
6. If the make succeeds, it will generate the programs "less.exe" and "lesskey.exe" in your current directory. Test the generated programs.
7. Make sure you have the emx runtime installed. You need the emx DLLs emx.dll and emxlibcs.dll and also the termcap database, termcap.dat. Make sure you have termcap.dat either in the default location or somewhere in a directory listed in the PATH or INIT environment variables.
8. When satisfied that it works, you may wish to install less.exe, lesskey.exe and scrsz.exe in a directory which is included in your PATH. scrsz.exe is required only if you use a terminal emulator such as xterm or rxvt.

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INSTALLATION (OS-9 systems only,
with Microware C or Ultra C)

1. Move the distributed source to its own directory.
2. If you are using Microware C, rename Makefile.o9c to Makefile. If you are using Ultra C, rename Makefile.o9u to Makefile.
3. Check the Makefile to make sure the definitions look ok.
4. If you wish, you may edit defines.o9 to remove some optional features. If you choose not to include some features in your version, you may wish to edit the manual page less.man and the help page help.c to remove the descriptions of the features which you are removing.

5. Type "dmake" and watch the fun.
The standard OS-9 "make" will probably not work. If you don't have dmake, you can get a copy from os9archive.rtsi.com.
6. If the make succeeds, it will generate the programs "less" and "lesskey" in your current directory. Test the generated programs.
7. When satisfied that it works, if you wish to install it in a public place, type "dmake install".
See step 6 of the Unix installation instructions for details on how to change the default installation directories.

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ACKNOWLEDGMENTS:

Some versions of the less distribution are packaged using Info-ZIP's compression utility.
Info-ZIP's software is free and can be obtained as source code or executables from various anonymous-ftp sites, including ftp.uu.net:/pub/archiving/zip.

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```
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3.74 libaio-0.3.109-13

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3.75 libassuan-2.1.0-3

Libassuan
=====

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Please send bug report to the gnupg-devel mailing list or enter them into the gnupg bug tracker at <http://bugs.gnupg.org> using the category "libassuan".

The primary FTP site is <ftp://ftp.gnupg.org/gcrypt/libassuan>.

Notes for Windows CE:

Libassuan supports WindowsCE (tested with WindowsMobile 6.5). To install it, copy libassuan-0.dll into a location where DLL are found and install the included gpgcedev driver: First copy "gpgcedev.dll" into the root directory, second run the included program gpgcemgr on the device: "gpgcemgr --register". This creates the necessary registry keys. In case the copy step fails, the driver may still be in use: Close all applications using that driver, run "gpgcemgr --deactivate" to deactivate the running driver and try again.

Registry keys created by "gpgcemgr --register" are:

```
Drivers\\GnuPG_Device\\dll    -> "gpgcedev.dll"
Drivers\\GnuPG_Device\\prefix -> "GPG"
Drivers\\GnuPG_Device\\Index  -> 1          (dword)
```

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That's all there is to it!

3.76 libcap-2.22-9

This is a library for getting and setting POSIX.1e (formerly POSIX 6) draft 15 capabilities.

This library would not have been possible without the help of

Aleph1, Roland Buresund and Andrew Main, Alexander Kjeldaas.

More information on capabilities in the Linux kernel can be found at

<http://sites.google.com/site/fullycapable/>

INSTALLATION

Linux-Caps % make

builds the library and the programs

Linux-Caps % make install

installs the library libcap.XX.Y in /lib[64]/

the binaries in /sbin/

the <sys/capability.h> file in /usr/include

* for some example programs look in progs.

Cheers

Andrew G. Morgan <morgan@kernel.org>

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```

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3.77 libcap-ng-0.7.5-4

The libcap-ng library should make programming with posix capabilities easier. The library has some utilities to help you analyse a system for apps that may have too much privileges.

NOTE: to distributions. There is a "make check" target. It only works if the headers match the kernel. IOW, if you have a chroot build system that is using a much older kernel, the macros in the kernel header files will do the wrong thing when the capng_init function probes the kernel and decides we are doing v1 rather than v3 protocol. If that is your case, just don't do the "make check" as part of the build process.

Report any bugs in this package to sgrubb@redhat.com or better yet, file them here: <https://bugzilla.redhat.com/>

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3.78 libcgroup-0.41-20

Design

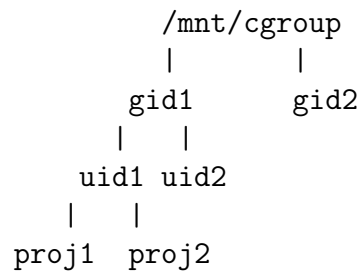
=====

After cgroup system has taken shape, its time to have some basic tools in user space which can enable a user to use the resource management functionality effectively.

One of the needed functionality is rule based placement of a task. In general, there can be either uid or gid or exec based rules. Admin/root will control/enforce uid/gid based rules and exec based rules can be defined by user in a config file residing in user's home dir and fully controlled by user.

uid/gid based rules will be defined in /etc/cgrules.conf config file and this file will be managed by root.

Basic idea is that to begin with provide facility to implement rules based on uid and gid. So a hierarchy might look like as follows.



Admin will write rules to control the resources among users. Then users can manage their own cgroup at their own (proj1 and proj2) and control the resources as they want.

Following are the few methods using which tasks can be placed in right cgroups.

- Use pam_cgroup PAM plugin which will make sure users are placed in right cgroup at login time and any tasks launch after login, will continue to run in user's cgroup.
- Use command line tool "cgexec" to launch the task in right cgroup.
- Modify the program and use libcgroup provided APIs for placing a task in right cgroup before doing exec().

- Use "cgclassify" tool to classify a already running task.
- May be, a user space daemon can also be implemented which will listen to kernel events and place the task in right group based on the rules. This method involves few concerns.
- Reliability of netlink socket. Messages can be dropped.
- Change the netlink with a cgroup controller which exports the events.
- Delay incurred since the event took place and task was actually placed in right cgroup.
- daemon will interfere with container's tasks which is not desired.

HOWTO

=====

Section 1:

To use "cgexec" to place the task in right cgroup.

- make cgexec
- Run a task using cgexec. Following is the cgexec syntax.

cgexec [-g <list of controllers>:<relative path to cgroup>] command [arguments]

Note: Cgroup controllers and path are optional. If user does not know the right cgroup, cgexec will automatically place the task in right cgroup based on /etc/cgrules.conf

Example:

```
cgexec -g *:test1 ls
```

```
cgexec -g cpu,memory:test1 ls -l
```

```
cgexec -g cpu,memory:test1 -g swap:test2 ls -l
```

Section 2

To use "cgclassify" to place task in right cgroup.

- make cgclassify
- Pick a task's pid to be classified, and run cgclassify <list of pids>

Example:

```
cgclassify 2140 4325
```

Note: After classification check out whether tasks 2140 and 4325 are in the right cgroup or not (Based on rules in /etc/cgrules.conf)

Section 3:

To use a pam plugin which will automatically place the task in right cgroup upon login.

- Build pam_cgroup.so
- ```
make pam_cgroup.so
```
- Copy pam\_cgroup.so to /lib/security/
  - Edit /etc/pam.d/su to make use of pam\_cgroup.so session module upon execution of su.

example:

Add following line at the end of /etc/pam.d/su file

```
session optional pam_cgroup.so
```

- Now launch a shell for a user "xyz" using su and the resulting shell should be running in the cgroup designated for the user as specified by cgrules.conf

ex. "su test1"

Try similar things with other services like sshd.

Note: pam\_cgroup.so moves the service providing process in the right cgroup and not the process which will be launched later. Due to parent child relationship, yet to be forked/execed process will launch in right group.

Ex. Lets say user root does "su test1". In this case process "su" is the one providing service (launching a shell) for user "test1". pam\_cgroup.so will move process "su" to the user "test1"'s cgroup (Decided by the uid and gid of "test1"). Now once su forks/execs a shell for user test1, final shell is effectively running in the cgroup it should have been running based on /etc/cgrules.conf for user test1.

#### Section 4:

-----

To use cgrulesengd which will move a task to right cgroup based on rules in /etc/cgrules.conf do following.

- build and install latest libcgroup.so
- build cgrulesengd
- make cgrulesengd
- specify some uid/gid based rules in /etc/cgrules.conf
- Mount some controllers and create an hierarchy of cgroups (matching your rules).
- Run cgrulesengd.
- ./cgrulesengd
- Launch some task or login as a user to the sytem. Daemon should automatically place the task in right cgroup.

#### FAQ

===

Q. Why admin should not control "exec" based rules.

A. Unix file system provides access control only based on uid/gid. So even if admin starts putting tasks based on uid/gid, it can't enforce it. For example, consider following scenario.

Lets say an admin creates following cgroup hierarchy.

```
/container
| |
| database browser
| | | |
| user1 user2 user1 user2
```

Now admin wants to run all the database jobs under /container/database/ and all the firefox jobs under /container/browser/. Based on which user launched it, jobs should go in either user1 or user2 dir.

Now assume that database subdir has to more cpu resources as compared to browser subdir. Then a user, say user2, can always move his browser job also to /container/database/user2 dir to get more cpu resources and admin will not be able to control that.

[Note: user2 will control what tasks can be added in /container/database/user2 and will control what further subdirs can be created under user2 dir. Root should not restrict the control to root only for practical purposes. Its

something like that till /container/databse, admin controls the resources and below that how resources are further subdivided among various projects should be controlled by respective user].

In the light of above, it seems to make more sense that admin should enforce rules only based on uid and gid. Probably later we can have a per user exec based rules config file (~/.cgrules.conf), which can be parsed by cgrulesd and then jobs launched by user will be placed in right cgroup based on combination of rules in /etc/cgrules.conf and ~/.cgrules.conf.

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### 3.79 libcroco-0.6.12-4

Initial Author: Dodji Seketeli. <dodji@gnome.org>

What is The Croco Project ?

-----

Libcroco is a standalone css2 parsing and manipulation library.  
The parser provides a low level event driven SAC like api  
and a css object model like api.  
Libcroco provides a CSS2 selection engine and an experimental  
xml/css rendering engine.

This library is being written to bring the css support  
to the mlview xml editor project but it can be used  
for other applications as well.

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(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the

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```

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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!

### 3.80 libdaemon-0.14-7

libdaemon 0.14

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- \* [2]News
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#### News

Sun Oct 18 2009:

[10]Version 0.14 released; changes include: add daemon\_set\_verbosity() call; numerous updates

Tue Jul 29 2008:

[11]Version 0.13 released; changes include: add daemon\_reset\_sigs() and daemon\_unblock\_sigs() calls for resetting signal handlers to sensible states; improve error handling.

Tue Jul 10 2007:

[12]Version 0.12 released; changes include: make daemon\_close\_all()

actually work properly.

Fri Jun 22 2007:

[13]Version 0.11 released; changes include: automatically detect whether lynx is installed; properly set errno on every error condition; add new function daemon\_close\_all() to close all open file descriptors except a given set; add daemon\_logv(), which is identical to daemon\_log(), but takes a va\_list argument; add daemon\_execv() in similar style; other fixes

Thu Nov 24 2005:

[14]Version 0.10 released; changes include: make logging compatible with daemons running in a chroot() environment

Fri Nov 18 2005:

[15]Version 0.9 released; changes include: portability (FreeBSD, NetBSD, OpenBSD, Darwin, Solaris, Cygwin); some minor header file cleanups; fix access mode of PID files; other cleanups; license change from GPL to LGPL

Sat Jun 4 2005:

[16]Version 0.8 released; changes include: proper PID file locking

Sat Dec 18 2004:

[17]Version 0.7 released; changes include: minor cleanups; C++ compatibility; gcc 2.95 compatibility

Wed Apr 7 2004:

[18]Version 0.6 released; changes include: backgrounding fixes, minor other stuff

Tue Feb 10 2004:

[19]Version 0.5 released; changes include: signal handling fix, forking fix

Sat Jan 10 2004:



[20]Version 0.4 released; changes include: new module dexec.c; added pkg-config support.

Mon Oct 20 2003:

[21]Version 0.3 released; changes include: documentation update, build fixes, RPM spec file added, added new function `int daemon_pid_file_kill_wait()`.

Thu July 10 2003:

[22]Version 0.2 released; changes include: ugly umask error fix, documentation update

Mon July 7 2003:

[23]Version 0.1 released

## Overview

libdaemon is a lightweight C library that eases the writing of UNIX daemons. It consists of the following parts:

- \* A wrapper around `fork()` which does the correct daemonization procedure of a process
- \* A wrapper around `syslog()` for simpler and compatible log output to Syslog or STDERR
- \* An API for writing PID files
- \* An API for serializing UNIX signals into a pipe for usage with `select()` or `poll()`
- \* An API for running subprocesses with STDOUT and STDERR redirected to syslog.

APIs like these are used in most daemon software available. It is not that simple to get it done right and code duplication is not a goal.

libdaemon is currently used by [24]ifplugd, [25]Avahi, [26]ivam2, [27]Nautilus-Share and [28]aeswepd.

## Current Status

Version 0.14 is feature complete.

## Documentation

An extensive API reference is [29]available

## Requirements

libdaemon was developed and tested on Debian GNU/Linux "testing" from July 2003, it should work on most other Linux distributions (and some Unix versions) since it uses GNU Autoconf and GNU libtool for source code configuration and shared library management.

libdaemon is known to work on modern Linux systems, FreeBSD, NetBSD, OpenBSD, Darwin, Solaris and Windows/Cygwin.

## Installation

As this package is made with the GNU autotools you should run `./configure` inside the distribution directory for configuring the source tree. After that you should run `make` for compilation and `make install` (as root) for installation of libdaemon.

Please use `gmake` instead of traditional `make` for compilation on non-Linux systems.

## Acknowledgements

Sebastien Estienne, for a lot of portability work.

## Download

The newest release is always available from [30]<http://0pointer.de/lennart/projects/libdaemon/>

Get libdaemon's development sources from the [31]GIT [32]repository ([33]gitweb):

```
git clone git://git.0pointer.de/libdaemon
```

You may find an up to date Debian package of libdaemon on the [34]Debian package repository.

If you want to be notified whenever I release a new version of this software use the subscription feature of [35]Freshmeat.

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Lennart Poettering <mzqnrzba (at) 0pointer (dot) de>, October 2009

## References

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27. <http://gentoo.ovibes.net/nautilus-share/mediawiki-1.4.4/index.php/Accueil>
28. <http://0pointer.de/lennart/projects/aeswepd/>
29. <reference/html/index.html>
30. <http://0pointer.de/lennart/projects/libdaemon/>
31. <http://git.or.cz/>
32. <git://git.0pointer.de/libdaemon>
33. <http://git.0pointer.de/?p=libdaemon.git>
34. <http://packages.debian.org/libdaemon0>
35. <http://freshmeat.net/projects/libdaemon/>

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(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.)

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### 3.81 libdb-5.3.21-24

# @(#)README 8.27 (Berkeley) 9/1/94

This is version 1.85 of the Berkeley DB code.

For information on compiling and installing this software, see the file PORT/README.

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Email questions may be addressed to Keith Bostic at bostic@cs.berkeley.edu.

=====

Distribution contents:

Makefile.inc Ignore this, it's the 4.4BSD subsystem Makefile.

PORT The per OS/architecture directories to use to build libdb.a, if you're not running 4.4BSD. See the file PORT/README for more information.

README This file.

btree The B+tree routines.

changelog List of changes, per version.

db The dbopen(3) interface routine.

docs Various USENIX papers, and the formatted manual pages.

hash The extended linear hashing routines.

man The unformatted manual pages.

mpool The memory pool routines.

recno The fixed/variable length record routines.

test Test package.

=====

Debugging:

If you're running a memory checker (e.g. Purify) on DB, make sure that you recompile it with "-DPURIFY" in the CFLAGS, first. By default, allocated pages are not initialized by the DB code, and they will show up as reads of uninitialized memory in the buffer write routines.



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```
/*-
 * Id
 */
```

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```

## 3.82 libdnet-1.12-13.1

libdnet

-----

libdnet provides a simplified, portable interface to several low-level networking routines, including network address manipulation, kernel arp(4) cache and route(4) table lookup and manipulation, network firewalling, network interface lookup and manipulation, IP tunnelling, and raw IP packet and Ethernet frame transmission.

WWW: <http://libdnet.sourceforge.net/>

\$Id: README 578 2005-02-14 21:00:17Z dugsong \$

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### 3.83 libdrm-2.4.91-3

libdrm - userspace library for drm

This is libdrm, a userspace library for accessing the DRM, direct rendering manager, on Linux, BSD and other operating systems that support the ioctl interface. The library provides wrapper functions for the ioctls to avoid exposing the kernel interface directly, and for chipsets with drm memory manager, support for tracking relocations and buffers. libdrm is a low-level library, typically used by graphics drivers such as the Mesa DRI drivers, the X drivers, libva and similar projects. New functionality in the kernel DRM drivers typically requires a new libdrm, but a new libdrm will always work with an older kernel.

Compiling

-----

libdrm has two build systems, a legacy autotools build system, and a newer meson build system. The meson build system is much faster, and offers a slightly different interface, but otherwise provides an equivalent feature set.

To use it:

```
meson builddir/
```

By default this will install into /usr/local, you can change your prefix with --prefix=/usr (or 'meson configure builddir/ -Dprefix=/usr' after the initial meson setup).

Then use ninja to build and install:

```
ninja -C builddir/ install
```

If you are installing into a system location you will need to run install separately, and as root.

Alternatively you can invoke autotools configure:

```
./configure
```

By default, libdrm will install into the /usr/local/ prefix. If you

want to install this DRM to replace your system copy, pass `--prefix=/usr` and `--exec-prefix=/` to `configure`. If you are building `libdrm` from a git checkout, you first need to run the `autogen.sh` script. You can pass any options to `autogen.sh` that you would otherwise pass to `configure`, or you can just re-run `configure` with the options you need once `autogen.sh` finishes.

Next step is to build `libdrm`:

```
make
```

and once `make` finishes successfully, install the package using

```
make install
```

If you are installing into a system location, you will need to be root to perform the install step.

### **3.84 libedit-3.0-12.20121213cvs**



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Author: Rainer Gerhards <rgerhards@adiscon.com>, Adiscon GmbH

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### **3.86 libfastjson-0.99.4-3**

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## 3.87 libffi-3.0.13-18

Status

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libffi-3.0.13 was released on March 17, 2013. Check the libffi web page for updates: <URL:<http://sourceware.org/libffi/>>.

What is libffi?

=====

Compilers for high level languages generate code that follow certain conventions. These conventions are necessary, in part, for separate compilation to work. One such convention is the "calling convention". The "calling convention" is essentially a set of assumptions made by the compiler about where function arguments will be found on entry to a function. A "calling convention" also specifies where the return value for a function is found.

Some programs may not know at the time of compilation what arguments are to be passed to a function. For instance, an interpreter may be told at run-time about the number and types of arguments used to call a given function. Libffi can be used in such programs to provide a bridge from the interpreter program to compiled code.

The libffi library provides a portable, high level programming interface to various calling conventions. This allows a programmer to call any function specified by a call interface description at run time.

FFI stands for Foreign Function Interface. A foreign function interface is the popular name for the interface that allows code written in one language to call code written in another language. The libffi library really only provides the lowest, machine dependent layer of a fully featured foreign function interface. A layer must exist above libffi that handles type conversions for values passed between the two languages.

Supported Platforms

=====

Libffi has been ported to many different platforms.

For specific configuration details and testing status, please refer to the wiki page here:

[http://www.moxielogic.org/wiki/index.php?title=Libffi\\_3.0.13](http://www.moxielogic.org/wiki/index.php?title=Libffi_3.0.13)

At the time of release, the following basic configurations have been tested:

| Architecture   | Operating System | Compiler                |
|----------------|------------------|-------------------------|
| AArch64        | Linux            | GCC                     |
| Alpha          | Linux            | GCC                     |
| Alpha          | Tru64            | GCC                     |
| ARM            | Linux            | GCC                     |
| ARM            | iOS              | GCC                     |
| AVR32          | Linux            | GCC                     |
| Blackfin       | uClinux          | GCC                     |
| HPPA           | HPUX             | GCC                     |
| IA-64          | Linux            | GCC                     |
| M68K           | FreeMiNT         | GCC                     |
| M68K           | Linux            | GCC                     |
| M68K           | RTEMS            | GCC                     |
| Meta           | Linux            | GCC                     |
| MicroBlaze     | Linux            | GCC                     |
| MIPS           | IRIX             | GCC                     |
| MIPS           | Linux            | GCC                     |
| MIPS           | RTEMS            | GCC                     |
| MIPS64         | Linux            | GCC                     |
| Moxie          | Bare metal       | GCC                     |
| PowerPC 32-bit | AIX              | IBM XL C                |
| PowerPC 64-bit | AIX              | IBM XL C                |
| PowerPC        | AMIGA            | GCC                     |
| PowerPC        | Linux            | GCC                     |
| PowerPC        | Mac OSX          | GCC                     |
| PowerPC        | FreeBSD          | GCC                     |
| PowerPC 64-bit | FreeBSD          | GCC                     |
| PowerPC 64-bit | Linux            | GCC                     |
| S390           | Linux            | GCC                     |
| S390X          | Linux            | GCC                     |
| SPARC          | Linux            | GCC                     |
| SPARC          | Solaris          | GCC                     |
| SPARC          | Solaris          | Oracle Solaris Studio C |
| SPARC64        | Linux            | GCC                     |

|                         |                |                         |  |
|-------------------------|----------------|-------------------------|--|
| SPARC64                 | FreeBSD        | GCC                     |  |
| SPARC64                 | Solaris        | Oracle Solaris Studio C |  |
| TILE-Gx/TILEPro         | Linux          | GCC                     |  |
| X86                     | FreeBSD        | GCC                     |  |
| X86                     | GNU HURD       | GCC                     |  |
| X86                     | Interix        | GCC                     |  |
| X86                     | kFreeBSD       | GCC                     |  |
| X86                     | Linux          | GCC                     |  |
| X86                     | Mac OSX        | GCC                     |  |
| X86                     | OpenBSD        | GCC                     |  |
| X86                     | OS/2           | GCC                     |  |
| X86                     | Solaris        | GCC                     |  |
| X86                     | Solaris        | Oracle Solaris Studio C |  |
| X86                     | Windows/Cygwin | GCC                     |  |
| X86                     | Windows/MingW  | GCC                     |  |
| X86-64                  | FreeBSD        | GCC                     |  |
| X86-64                  | Linux          | GCC                     |  |
| X86-64                  | Linux/x32      | GCC                     |  |
| X86-64                  | OpenBSD        | GCC                     |  |
| X86-64                  | Solaris        | Oracle Solaris Studio C |  |
| X86-64                  | Windows/MingW  | GCC                     |  |
| Xtensa                  | Linux          | GCC                     |  |
| -----+-----+-----+----- |                |                         |  |

Please send additional platform test results to  
libffi-discuss@sourceware.org and feel free to update the wiki page  
above.

## Installing libffi

First you must configure the distribution for your particular  
system. Go to the directory you wish to build libffi in and run the  
"configure" program found in the root directory of the libffi source  
distribution.

You may want to tell configure where to install the libffi library and  
header files. To do that, use the --prefix configure switch. Libffi  
will install under /usr/local by default.

If you want to enable extra run-time debugging checks use the the  
--enable-debug configure switch. This is useful when your program dies  
mysteriously while using libffi.

Another useful configure switch is `--enable-purify-safety`. Using this will add some extra code which will suppress certain warnings when you are using Purify with libffi. Only use this switch when using Purify, as it will slow down the library.

It's also possible to build libffi on Windows platforms with Microsoft's Visual C++ compiler. In this case, use the `msvcc.sh` wrapper script during configuration like so:

```
path/to/configure CC=path/to/msvcc.sh LD=link CPP=\"cl -nologo -EP\"
```

For 64-bit Windows builds, use `CC="path/to/msvcc.sh -m64"`. You may also need to specify `--build` appropriately. When building with MSVC under a MingW environment, you may need to remove the line in `configure` that sets `'fix_srcfile_path'` to a `'cygpath'` command. (`'cygpath'` is not present in MingW, and is not required when using MingW-style paths.)

For iOS builds, the `'libffi.xcodeproj'` Xcode project is available.

`Configure` has many other options. Use `"configure --help"` to see them all.

Once `configure` has finished, type `"make"`. Note that you must be using GNU make. You can ftp GNU make from `ftp.gnu.org:/pub/gnu/make`.

To ensure that libffi is working as advertised, type `"make check"`. This will require that you have DejaGNU installed.

To install the library and header files, type `"make install"`.

## History

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See the `ChangeLog` files for details.

3.0.13 Mar-17-13

Add Meta support.

Add missing Moxie bits.

Fix stack alignment bug on 32-bit x86.

Build fix for m68000 targets.

Build fix for soft-float Power targets.

Fix the install dir location for some platforms when building with GCC (OS X, Solaris).

Fix Cygwin regression.

### 3.0.12 Feb-11-13

- Add Moxie support.
- Add AArch64 support.
- Add Blackfin support.
- Add TILE-Gx/TILEPro support.
- Add MicroBlaze support.
- Add Xtensa support.
- Add support for PaX enabled kernels with MPROTECT.
- Add support for native vendor compilers on Solaris and AIX.
- Work around LLVM/GCC interoperability issue on x86\_64.

### 3.0.11 Apr-11-12

- Lots of build fixes.
- Add Amiga newer MacOS support.
- Add support for variadic functions (ffi\_prep\_cif\_var).
- Add Linux/x32 support.
- Add thiscall, fastcall and MSVC cdecl support on Windows.
- Add Amiga and newer MacOS support.
- Add m68k FreeMiNT support.
- Integration with iOS' xcode build tools.
- Fix Octeon and MC68881 support.
- Fix code pessimizations.

### 3.0.10 Aug-23-11

- Add support for Apple's iOS.
- Add support for ARM VFP ABI.
- Add RTEMS support for MIPS and M68K.
- Fix instruction cache clearing problems on ARM and SPARC.
- Fix the N64 build on mips-sgi-irix6.5.
- Enable builds with Microsoft's compiler.
- Enable x86 builds with Oracle's Solaris compiler.
- Fix support for calling code compiled with Oracle's Sparc Solaris compiler.
- Testsuite fixes for Tru64 Unix.
- Additional platform support.

### 3.0.9 Dec-31-09

- Add AVR32 and win64 ports. Add ARM softfp support.
- Many fixes for AIX, Solaris, HP-UX, \*BSD.
- Several PowerPC and x86-64 bug fixes.
- Build DLL for windows.

3.0.8 Dec-19-08

Add \*BSD, BeOS, and PA-Linux support.

3.0.7 Nov-11-08

Fix for ppc FreeBSD.  
(thanks to Andreas Tobler)

3.0.6 Jul-17-08

Fix for closures on sh.  
Mark the sh/sh64 stack as non-executable.  
(both thanks to Kaz Kojima)

3.0.5 Apr-3-08

Fix libffi.pc file.  
Fix #define ARM for IcedTea users.  
Fix x86 closure bug.

3.0.4 Feb-24-08

Fix x86 OpenBSD configury.

3.0.3 Feb-22-08

Enable x86 OpenBSD thanks to Thomas Heller, and  
x86-64 FreeBSD thanks to Björn König and Andreas Tobler.  
Clean up test instruction in README.

3.0.2 Feb-21-08

Improved x86 FreeBSD support.  
Thanks to Björn König.

3.0.1 Feb-15-08

Fix instruction cache flushing bug on MIPS.  
Thanks to David Daney.

3.0.0 Feb-15-08

Many changes, mostly thanks to the GCC project.  
Cygnus Solutions is now Red Hat.

[10 years go by...]

1.20 Oct-5-98

Raffaele Sena produces ARM port.

1.19 Oct-5-98

Fixed x86 long double and long long return support.  
m68k bug fixes from Andreas Schwab.  
Patch for DU assembler compatibility for the Alpha from Richard Henderson.

1.18 Apr-17-98

Bug fixes and MIPS configuration changes.

1.17 Feb-24-98

Bug fixes and m68k port from Andreas Schwab. PowerPC port from Geoffrey Keating. Various bug x86, Sparc and MIPS bug fixes.

1.16 Feb-11-98

Richard Henderson produces Alpha port.

1.15 Dec-4-97

Fixed an n32 ABI bug. New libtool, auto\* support.

1.14 May-13-97

libtool is now used to generate shared and static libraries.  
Fixed a minor portability problem reported by Russ McManus  
<mcmannr@eq.gs.com>.

1.13 Dec-2-96

Added --enable-purify-safety to keep Purify from complaining  
about certain low level code.  
Sparc fix for calling functions with < 6 args.  
Linux x86 a.out fix.

1.12 Nov-22-96

Added missing ffi\_type\_void, needed for supporting void return  
types. Fixed test case for non MIPS machines. Cygnus Support  
is now Cygnus Solutions.

1.11 Oct-30-96

Added notes about GNU make.

1.10 Oct-29-96

Added configuration fix for non GNU compilers.

1.09 Oct-29-96

Added --enable-debug configure switch. Clean-ups based on LCLint  
feedback. ffi\_mips.h is always installed. Many configuration  
fixes. Fixed ffitest.c for sparc builds.



1.08 Oct-15-96

Fixed n32 problem. Many clean-ups.

1.07 Oct-14-96

Gordon Irlam rewrites v8.S again. Bug fixes.

1.06 Oct-14-96

Gordon Irlam improved the sparc port.

1.05 Oct-14-96

Interface changes based on feedback.

1.04 Oct-11-96

Sparc port complete (modulo struct passing bug).

1.03 Oct-10-96

Passing struct args, and returning struct values works for all architectures/calling conventions. Expanded tests.

1.02 Oct-9-96

Added SGI n32 support. Fixed bugs in both o32 and Linux support. Added "make test".

1.01 Oct-8-96

Fixed float passing bug in mips version. Restructured some of the code. Builds cleanly with SGI tools.

1.00 Oct-7-96

First release. No public announcement.

#### Authors & Credits

=====

libffi was originally written by Anthony Green <green@redhat.com>.

The developers of the GNU Compiler Collection project have made innumerable valuable contributions. See the ChangeLog file for details.

Some of the ideas behind libffi were inspired by Gianni Mariani's free gencall library for Silicon Graphics machines.

The closure mechanism was designed and implemented by Kresten Krab Thorup.

Major processor architecture ports were contributed by the following developers:

aarch64 Marcus Shawcroft, James Greenhalgh  
alpha Richard Henderson  
arm Raffaele Sena  
blackfin Alexandre Keunecke I. de Mendonca  
cris Simon Posnjak, Hans-Peter Nilsson  
frv Anthony Green  
ia64 Hans Boehm  
m32r Kazuhiro Inaoka  
m68k Andreas Schwab  
microblaze Nathan Rossi  
mips Anthony Green, Casey Marshall  
mips64 David Daney  
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pa Randolph Chung, Dave Anglin, Andreas Tobler  
powerpc Geoffrey Keating, Andreas Tobler,  
David Edelsohn, John Hornkvist  
powerpc64 Jakub Jelinek  
s390 Gerhard Tonn, Ulrich Weigand  
sh Kaz Kojima  
sh64 Kaz Kojima  
sparc Anthony Green, Gordon Irlam  
tile-gx/tilepro Walter Lee  
x86 Anthony Green, Jon Beniston  
x86-64 Bo Thorsen  
xtensa Chris Zankel

Jesper Skov and Andrew Haley both did more than their fair share of stepping through the code and tracking down bugs.

Thanks also to Tom Tromey for bug fixes, documentation and configuration help.

Thanks to Jim Blandy, who provided some useful feedback on the libffi interface.

Andreas Tobler has done a tremendous amount of work on the testsuite.

Alex Oliva solved the executable page problem for SELinux.

The list above is almost certainly incomplete and inaccurate. I'm happy to make corrections or additions upon request.

If you have a problem, or have found a bug, please send a note to the author at [green@moxielogic.com](mailto:green@moxielogic.com), or the project mailing list at [libffi-discuss@sourceware.org](mailto:libffi-discuss@sourceware.org).

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### 3.88 libgcrypt-1.5.3-14

Libgcrypt - The GNU Crypto Library

-----  
Version 1.5

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Overview

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Libgcrypt is a general purpose crypto library based on the code used in GnuPG. Libgcrypt depends on the library 'libgpg-error', which must be installed correctly before Libgcrypt is to be built. Libgcrypt is distributed under the LGPL, see the section "License" below for details.

Build Instructions

-----

The download canonical location for libgcrypt is:

`ftp://ftp.gnupg.org/gcrypt/libgcrypt/`

To build libgcrypt you need libgpg-error:

`ftp://ftp.gnupg.org/gcrypt/libgpg-error/`

You should get the latest versions of course.

After building and installing the libgpg-error package, you may

continue with Libgcrypt installation As with allmost all GNU packages, you just have to do

```
./configure
make
make check
make install
```

The "make check" is not required but a good idea to see whether the library works as expected. The check takes some while and prints some benchmarking results. Before doing "make install" you probably need to become root.

To build libgcrypt for Microsoft Windows, you need to have the mingw32 cross-building toolchain installed. Instead of running a plain configure you use

```
./autogen.sh --build-w32
make
make install
```

By default this command sequences expectsd a libgpg-error installed below \$HOME/w32root and installs libgcrypt to that directory too. See the autogen.sh code for details.

The documentation is available as an Info file (gcrypt.info). To build documentation in PDF, run this:

```
cd doc
make pdf
```

## Mailing List

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You may want to join the developer's mailing list `gcrypt-devel@gnupg.org` by sending mail with a subject of "subscribe" to `gcrypt-devel-request@gnupg.org`. An archive of this list is available at <http://lists.gnupg.org> .

## Configure options

-----

Here is a list of configure options which are sometimes useful for installation.

`--enable-m-guard`

Enable the integrated malloc checking code. Please note that this feature does not work on all CPUs (e.g. SunOS 5.7 on UltraSparc-2) and might give you a bus error.

`--disable-asm`

Do not use assembler modules. It is not possible to use this on some CPU types.

`--enable-ld-version-script`

Libgcrypt tries to build a library where internal symbols are not exported. This requires support from ld and is currently enabled for a few OSes. If you know that your ld supports the so called ELF version scripts, you can use this option to force its use. OTOH, if you get error message from the linker, you probably want to use this option to disable the use of version scripts. Note, that you should never ever use an undocumented symbol or one which is prefixed with an underscore.

`--enable-ciphers=list`

`--enable-pubkey-ciphers=list`

`--enable-digests=list`

If not otherwise specified, all algorithms included in the libgcrypt source tree are built.

An exception are algorithms, which depend on features not provided by the system, like 64bit data types. With these switches it is possible

to select exactly those algorithm modules, which should be built. The algorithms are to be separated by spaces, commas or colons. To view the list used with the current build the program tests/version may be used.

`--disable-endian-check`

Don't let configure test for the endianness but try to use the OS provided macros at compile time. This is helpful to create OS X fat binaries.

`--enable-random-daemon`  
 Include support for a global random daemon and build the daemon. This is an experimental feature.

`--enable-mpi-path=EXTRA_PATH`  
 Prepend EXTRA\_PATH to list of CPU specific optimizations. For example, if you want to add optimizations for an Intel Pentium 4 compatible CPU, you may use  
`--enable-mpi-path=pentium4/sse2:pentium4/mmx`  
 Take care: The generated library may crash on non-compatible CPUs.

`--enable-random=NAME`  
 Force the use of the random gathering module NAME. Default is either to use /dev/random or the auto mode. Possible values for NAME are:  
 egd - Use the module which accesses the Entropy Gathering Daemon. See the webpages for more information about it.  
 unix - Use the standard Unix module which does not have a very good performance.  
 linux - Use the module which accesses /dev/random. This is the first choice and the default one for GNU/Linux or \*BSD.  
 auto - Compile linux, egd and unix in and automatically select at runtime.

`--enable-hmac-binary-check`  
 Include support to check the binary at runtime against a HMAC checksum. This works only in FIPS mode and on systems providing the dladdr function.

`--disable-padlock-support`  
 Disable support for the PadLock engine of VIA processors. The default is to use PadLock if available. Try this if you get problems with assembler code.

`--disable-aesni-support`  
 Disable support for the AES-NI instructions of newer Intel CPUs. The default is to use AES-NI if available. Try this if you get problems with



assembler code.

#### `--disable-0-flag-munging`

Some code is too complex for some compilers while in higher optimization modes, thus the compiler invocation is modified to use a lower optimization level. Usually this works very well but on some platforms these rules break the invocation. This option may be used to disable the feature under the assumption that either good CFLAGS are given or the compiler can grok the code.

### Build Problems

-----

We can't check all assembler files, so if you have problems assembling them (or the program crashes) use `--disable-asm` with `./configure`. If you opt to delete individual replacement files in hopes of using the remaining ones, be aware that the configure scripts may consider several subdirectories to get all available assembler files; be sure to delete the correct ones. Never delete `udiv-qrnnd.S` in any CPU directory, because there may be no C substitute (in `mpi/genereic`). Don't forget to delete "config.cache" and run `./config.status --recheck`. We got a few reports about problems using versions of gcc earlier than 2.96 along with a non-GNU assembler (`as`). If this applies to your platform, you can either upgrade gcc to a more recent version, or use the GNU assembler.

Some make tools are broken - the best solution is to use GNU's make. Try gmake or grab the sources from a GNU archive and install them.

Specific problems on some machines:

- \* IBM RS/6000 running AIX

Due to a change in gcc (since version 2.8) the MPI stuff may not build. In this case try to run configure using:

```
CFLAGS="-g -O2 -mcpu=powerpc" ./configure
```

\* SVR4.2 (ESIX V4.2 cc)

Due to problems with the ESIX as(1), you probably want to do:  
CFLAGS="-O -K pentium" ./configure --disable-asm

\* SunOS 4.1.4

./configure ac\_cv\_sys\_symbol\_underscore=yes

\* Sparc64 CPUs

We have reports about failures in the AES module when  
compiling using gcc (e.g. version 4.1.2) and the option -O3;  
using -O2 solves the problem.

## License

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## Contact

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See the file AUTHORS.

Commercial grade support for Libgcrypt is available; please see  
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That's all there is to it!

### 3.89 libgpg-error-1.12-3

libgpg-error  
=====

This is a library that defines common error values for all GnuPG components. Among these are GPG, GPGSM, GPGME, GPG-Agent, libgcrypt, Libksba, DirMngr, Pinentry, SmartCard Daemon and more.

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However, some files (for example src/mkerrnos.awk) used in the build process of the library are covered by a different license. Please see the header of these files and the file COPYING for copyright and warranty information on these files. A special exception in the copyright license of these files makes sure that the output in the build process, which is used in libgpg-error, is not affected by the GPL.

Installation  
-----

Please read the file INSTALL!

Here is a quick summary:

- 1) Check that you have unmodified sources. You can find instructions how to verify the sources below. Don't skip this - it is an important step!
- 2) Unpack the archive. With GNU tar you can do it this way:  
"tar xjvf libgpg-error-x.y.tar.bz2"
- 3) "cd libgpg-error-x.y"
- 4) "./configure"
- 5) "make"



6) "make install"

#### How to Verify the Source

-----

In order to check that the version of libgpg-error which you are going to install is an original and unmodified copy of the original, you can do it in one of the following ways:

- a) If you already have a trusted version of GnuPG installed, you can simply check the supplied signature:

```
$ gpg --verify libgpg-error-x.y.tar.bz2.sig
```

This checks that the detached signature libgpg-error-x.y.tar.bz2.sig is indeed a signature of libgpg-error-x.y.tar.bz2.

Please note that you have to use an old version of GnuPG to do all this stuff. *\*Never\** use the version which was built using the library you are trying to verify!

- b) If you don't have any a trusted version of GnuPG, you can attempt to verify the SHA1 checksum, using a trusted version of the shasum program:

```
$ shasum libgpg-error-x.y.tar.bz2
```

This should yield an output *\_similar\_* to this:

```
610064e5b77700f5771c8fde2691c4365e1ca100 libgpg-error-x.y.tar.bz2
```

Now check that this checksum is *\_exactly\_* the same as the one published via the announcement list and probably via Usenet.

#### Hints

-----

To build for Windows you may use the convenience command:

```
./autogen.sh --build-w32
```

which runs configure with suitable options. For WindowsCE the command is:

```
./autogen.sh --build-w32ce
```

There is also `_experimental_` support for building a 64 bit Windows version:

```
./autogen.sh --build-w64
```

## Known Problems

-----

On Windows, WSA Error Codes can be provided as system error codes and will be transparently converted to the corresponding gpg error codes. There are two problems with this support:

- \* Not all error codes corresponding to WSA Error codes have a detailed description when printed with `gpg_strerror`. Some will default to "Unknown error" for pretty printing. For example, `WSAEHOSTDOWN` will be translated to `GPG_ERR_EHOSTDOWN`, but there is no corresponding `EHOSTDOWN` in Windows and thus `gpg_strerror` will default to "Unknown error" as printed by the system's `strerror` function for the argument `WSAEHOSTDOWN`. (This could be fixed by adding our own error strings replacing or extending the system error strings, including their translations).
- \* The translation to a gpg error code and back to a system error code in some cases does not preserve information. For example, the error code `WSAEACCES` translates to `GPG_ERR_EACCES`, which translates back to `EACCES`.

Any WSA Error code has either the first problem or the second (but not both), depending on if there is a corresponding Windows error code.

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### 3.91 libmnl-1.0.3-7

= What is libmnl? =

libmnl is a minimalistic user-space library oriented to Netlink developers. There are a lot of common tasks in parsing, validating, constructing of both the Netlink header and TLVs that are repetitive and easy to get wrong. This library aims to provide simple helpers that allows you to re-use code and to avoid re-inventing the wheel. The main features of this library are:

- \* Small: the shared library requires around 30KB for an x86-based computer.
- \* Simple: this library avoids complexity and elaborated abstractions that tend to hide Netlink details.
- \* Easy to use: the library simplifies the work for Netlink-wise developers. It provides functions to make socket handling, message building, validating, parsing and sequence tracking, easier.
- \* Easy to re-use: you can use the library to build your own abstraction layer on top of this library.
- \* Decoupling: the interdependency of the main bricks that compose the library is reduced, i.e. the library provides many helpers, but the programmer is not forced to use them.

= Example files =

You can find several example files under examples/ that you can compile by invoking 'make check'.

--

08/sep/2010

Pablo Neira Ayuso <pablo@netfilter.org>



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### **3.92 libmpc-1.0.1-3**

mpc is a complex floating-point library with exact rounding.

It is based on the GNU MPFR floating-point library (<http://www.mpfr.org/>), which is itself based on the GNU MP library (<http://gmplib.org/>).

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### 3.93 libmspack-0.5-0.6.alpha

libmspack 0.5alpha

The purpose of libmspack is to provide compressors and decompressors, archivers and dearchivers for Microsoft compression formats: CAB, CHM, WIM, LIT, HLP, KWAJ and SZDD. It is also designed to be easily embeddable, stable, robust and resource-efficient.

The library is not intended as a generalised "any archiver" interface. Users of the library must explicitly choose the format they intend to work with.

All special features of the above formats will be covered as fully as possible -- for example, CAB's multi-part cabinet sets, or CHM's fast lookup indices. All compression methods used by the formats will be implemented as completely as possible.

However, other than what is required for access to these formats and their features, no other functionality is intended. There is no file metadata translation functionality. All file I/O is abstracted, although a default implementation using the standard C library is provided.

#### DOCUMENTATION

The API documentation is stored in the doc/ directory. It is generated automatically from mspack.h with doxygen. It is also available online at <http://www.cabextract.org.uk/libmspack/doc/>

#### BUILDING / INSTALLING

```
./configure
make
make install
```

This will install the main libmspack library and mspack.h header file. Some other libraries and executables are built, but not installed.

If building from the Subversion repository, running rebuild.sh will create all the automatically generated files like the configure script, and will then ./configure, make and make distcheck. Running cleanup.sh will perform a thorough clean, deleting all automatically generated files.

In addition to gcc, you also need the following for building from Subversion:

- at least autoconf 2.57
- at least automake 1.7
- libtool

This is an alpha release. Unless you are in a position to package the libmspack library for the environment you intend to run your application, it is recommended that you do not rely on users of your software having the binary library installed and instead you should include the libmspack source files directly in your application's build environment.

## LEGAL ISSUES

The the best of my knowledge, libmspack does not infringe on any compression or decompression patents. However, this is not legal advice, and it is recommended that you perform your own patent search.

libmspack is licensed under the LGPL - see COPYING.LIB in this directory.

The LGPL requires you to build libmspack as a stand alone library then link your code to it using a linker. I personally grant you some extra rights: you can incorporate libmspack's source code wholly or partially in your own code, without having to build and link libmspack as an independent library, provided you meet ALL of the following conditions:

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3. When distributing your code, you MUST make clear your code uses libmspack, and either include the full libmspack distribution with your code, or provide access to it as per clause 4 of the LGPL.

## EXAMPLE CODE

There are a number of useful programs in the test/ directory which exercise and demonstrate libmspack's features.

|              |                                                                |
|--------------|----------------------------------------------------------------|
| cabd_c10     | - Tests the CAB decompressor on the C10 collection.            |
| cabd_compare | - Compares the CAB decompressor with Microsoft's EXTRACT.EXE   |
| cabd_md5     | - Prints the MD5 checksums of all files within a CAB file/set. |

|                              |                                                                                                                                                     |
|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| <code>cabd_memory</code>     | - An mspack_system implementation that reads/writes to memory.                                                                                      |
| <code>cabd_test</code>       | - Regression tests for libmspack's CAB decompression.                                                                                               |
| <code>cabrip</code>          | - Extracts any CAB files embedded in another file.                                                                                                  |
| <code>chmd_compare</code>    | - Compares the CHM decompressor to Microsoft's HH.EXE                                                                                               |
| <code>chmd_find</code>       | - Fast-finds a file within a CHM file.                                                                                                              |
| <code>chmd_md5</code>        | - Prints the MD5 checksums of all files within a CHM file.                                                                                          |
| <code>chmd_order</code>      | - Tests extracting files in a CHM file in four different ways.                                                                                      |
| <code>chminfo</code>         | - Prints verbose information about CHM file structures.                                                                                             |
| <code>chmx</code>            | - Extracts all files in a CHM file to disk.                                                                                                         |
| <code>expand</code>          | - Extracts an SZDD or KWAJ file.                                                                                                                    |
| <code>msdecompile_md5</code> | - Runs Microsoft's HH.EXE -DECOMPILE via WINE.                                                                                                      |
| <code>msexpand_md5</code>    | - Runs Microsoft's EXTRACT.EXE via WINE.                                                                                                            |
| <code>multifh</code>         | - An mspack_system implementation that can simultaneously work on in-memory images, raw file descriptors, open file handles and regular disk files. |

Here is a simple example of usage, which will create a CAB decompressor, then use that to open an existing Microsoft CAB file called "example.cab", and list the names of all the files contained in that cab.

```
#include <stdio.h>
#include <unistd.h>
#include <mspack.h>

int main() {
 struct mscab_decompressor *cabd;
 struct mscabd_cabinet *cab;
 struct mscabd_file *file;
 int test;

 MSPACK_SYS_SELFTEST(test);
 if (test != MSPACK_ERR_OK) exit(0);

 if ((cabd = mspack_create_cab_decompressor(NULL))) {
 if ((cab = cabd->open(cabd, "example.cab"))) {
 for (file = cab->files; file; file = file->next) {
 printf("%s\n", file->filename);
 }
 cabd->close(cabd, cab);
 }
 mspack_destroy_cab_decompressor(cabd);
 }
 return 0;
}
```

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### 3.94 libndp-1.2-7

# libndp - Library for Neighbor Discovery Protocol #

This package contains a library which provides a wrapper for IPv6 Neighbor Discovery Protocol. It also provides a tool named ndptool for sending and receiving NDP messages.

## Install

```
$./autogen.sh
$./configure
$ make
$ sudo make install
```

## Authors

\* Jiri Pirko <jiri@resnulli.us>

## Internet Resources

\* Project Home: <http://www.libndp.org/>  
\* Git Source Tree: <https://github.com/jpirko/libndp>

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### 3.95 libnetfilter\_conntrack-1.0.6-1

libnetfilter\_conntrack - userspace library for the connection tracking system  
(C) 2005-2011 Pablo Neira Ayuso <pablo@netfilter.org>

=====

= Connection Tracking System =

The connection tracking system is a in-kernel subsystem that stores information about the state of a connection in a memory structure that contains the source and destination IP addresses, port number pairs, protocol types, state, and timeout. With this extra information, we can define more intelligent filtering policies.

Moreover, there are some application protocols, such as FTP, TFTP, IRC, PPTP that have aspects that are hard to track for a firewall that follows the traditional static filtering approach. The connection tracking system defines a mechanism to track such aspects.

The connection tracking system does not alter the packets themselves; the default behavior always lets the packets continue their travel through the network stack, although there are a couple of very specific exceptions where packets can be dropped (e.g., under memory exhaustion). So keep in mind that the connection tracking system just tracks packets; it does not filter.

For further information on the connection tracking system, please see the reference section at the bottom of this document.

= What is libnetfilter\_conntrack? =

libnetfilter\_conntrack is an userspace library that provides an interface to the in-kernel connection tracking system.

= License =

libnetfilter\_conntrack is released under GPLv2 or any later at your option.

= Prerequisites for libnetfilter\_conntrack =

Linux kernel version >= 2.6.18 (<http://www.kernel.org>) and enable support for:

- \* connection tracking system (quite obvious ;)
- \* nfnetlink
- \* ctnetlink (ip\_conntrack\_netlink)

\* connection tracking event notification API

= Documentation =

You can generate the doxygen-based documentation by invoking:

```
$ doxygen doxygen.cfg
```

= Examples =

You can find a set of handy examples on the use of `libnetfilter_conntrack` under the directory `utils/` distributed with this library. You can compile them by invoking:

```
$ make check
```

= Heads Up =

`libnetfilter_conntrack` used to provided two different APIs: The old one had several limitations, for that reason, it was deprecated time ago. The existing library only provides the new API that solves former deficiencies. Thus, make sure you use recent versions of `libnetfilter_conntrack` and, in case that you are using the old API, consider porting your application to the new one.

Since `libnetfilter_conntrack`  $\geq$  0.9.1, you can use the same handler obtained via `nfct_open()` to register conntrack and expectation callbacks (before this version, this was not possible).

= References =

- [1] Pablo Neira Ayuso. Netfilter's Connection Tracking System:  
<http://people.netfilter.org/pablo/docs/login.pdf>

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### 3.96 libnfnetlink-1.0.1-4

libnfnetlink - userspace library for handling of netfilter netlink messages  
(C) 2001-2005 Netfilter Core Team <coreteam@netfilter.org>

=====

What is nfnetlink?

nfnetlink is a netlink(7) based kernel/userspace transport layer. It provides a unified kernel/userspace interface for the various netfilter subsystems, such as connection tracking, logging and queueing.

What is libnfnetlink?

libnfnetlink is a userspace library that provides some low-level nfnetlink handling functions. It is used as a foundation for other, netfilter subsystem specific libraries such as libnfnetlink\_conntrack, libnfnetlink\_log and libnfnetlink\_queue.

Prerequisites for libnfnetlink

You will need kernel headers from a kernel that has nfnetlink support. The first official kernel release to include nfnetlink support is 2.6.14. You can specify the location of your kernel sources using the "--with-kernel=" configure option.

Where can I find documentation?

At the moment, you will have to RTFS. Sorry, but we have barely enough manpower to keep development ongoing. If you want to contribute documentation, please contact us.

It has bugs. Where do I report them?

Please report all libnfnetlink bugs to <https://bugzilla.netfilter.org/>, using the "libnfnetlink" Product.

License



This library is released under GPLv2+.

Where do I get support?

The [netfilter@lists.netfilter.org](mailto:netfilter@lists.netfilter.org) and [netfilter-devel@lists.netfilter.org](mailto:netfilter-devel@lists.netfilter.org) mailinglists server as support forum.

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```
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```
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```

```
<signature of Ty Coon>, 1 April 1989
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### 3.97 libnl3-3.2.28-4

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### 3.98 libpciaccess-0.14-1

xorg/lib/libpciaccess - Generic PCI access library

Documentation of the libpciaccess API's can be generated from the sources via the doxygen command. Information about porting Xorg drivers to libpciaccess is located at:

<http://www.x.org/wiki/PciReworkHowto>

For historical reference, the original proposal for this work is at:

<http://www.x.org/wiki/PciReworkProposal>

All questions regarding this software should be directed at the Xorg mailing list:

<http://lists.freedesktop.org/mailman/listinfo/xorg>

Please submit bug reports to the Xorg bugzilla:

[https://bugs.freedesktop.org/enter\\_bug.cgi?product=xorg](https://bugs.freedesktop.org/enter_bug.cgi?product=xorg)

The master development code repository can be found at:

<git://anongit.freedesktop.org/git/xorg/lib/libpciaccess>

<http://cgit.freedesktop.org/xorg/lib/libpciaccess>

For patch submission instructions, see:

<http://www.x.org/wiki/Development/Documentation/SubmittingPatches>

For more information on the git code manager, see:

<http://wiki.x.org/wiki/GitPage>

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### 3.99 libpipeline-1.2.3-3

libpipeline, a pipeline manipulation library

=====

libpipeline is a C library for setting up and running pipelines of processes, without needing to involve shell command-line parsing which is often error-prone and insecure. This alleviates programmers of the need to laboriously construct pipelines using lower-level primitives such as `fork(2)` and `execve(2)`.

Full programmers' documentation may be found using 'man libpipeline'.

Installation

-----

If you need to install libpipeline starting from source code, then you will need these separate packages installed before configuring libpipeline in order to run its test suite:

pkg-config (<http://www.freedesktop.org/wiki/Software/pkg-config>)  
check (<http://check.sourceforge.net/>)

See the INSTALL file for general installation instructions.

Building programs with libpipeline

-----

libpipeline supplies a pkg-config file which lists appropriate compiler and linker flags for building programs using it. The output of 'pkg-config --cflags libpipeline' should be passed to the compiler (typically CFLAGS) and the output of 'pkg-config --libs libpipeline' should be passed to the linker (typically LDFLAGS).

If your program uses the GNU Autotools, then you can put this in `configure.ac`:

```
PKG_CHECK_MODULES([libpipeline], [libpipeline])
```

... and this in the appropriate `Makefile.am` (replacing 'program' with the Automake-canonicalised name for your program):

```
AM_CFLAGS = $(libpipeline_CFLAGS)
program_LDADD = $(libpipeline_LIBS)
```

The details may vary for particular build systems, but this should be a reasonable start.

When building with GCC, you should use at least the `-Wformat` option (included in `-Wall`) to ensure that the 'sentinel' function attribute is checked. This means that your program will produce a warning if it calls any of the several `libpipeline` functions that require a trailing `NULL` without passing that trailing `NULL`.

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Credits

-----

Thanks to Scott James Remnant for code review, Ian Jackson for an extensive design review, and Kees Cook and Matthias Klose for helpful conversations.

-- Colin Watson <cjwatson@debian.org>

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```
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### 3.100 libpng-1.5.13-7

README for libpng version 1.5.13 - September 27, 2012 (shared library 15.0)  
See the note about version numbers near the top of png.h

See INSTALL for instructions on how to install libpng.

Libpng comes in several distribution formats. Get libpng-\*.tar.gz, libpng-\*.tar.xz or libpng-\*.tar.bz2 if you want UNIX-style line endings in the text files, or lpng\*.zip if you want DOS-style line endings.

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\*\*\*\*

Note that some of the changes to the png\_info structure render this version of the library binary incompatible with libpng-0.89 or earlier versions if you are using a shared library. The type of the "filler" parameter for png\_set\_filler() has changed from png\_byte to png\_uint\_32, which will affect shared-library applications that use this function.

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It is important to note that the APIs do not make current programs that access the info\_struct directly incompatible with the new library. However, it is strongly suggested that new programs use the new APIs (as shown in example.c and pngtest.c), and older programs be converted to the new format, to facilitate upgrades in the future.

\*\*\*\*

Additions since 0.90 include the ability to compile libpng as a Windows DLL, and new APIs for accessing data in the info\_struct. Experimental functions include the ability to set weighting and cost

factors for row filter selection, direct reads of integers from buffers on big-endian processors that support misaligned data access, faster methods of doing alpha composition, and more accurate 16->8 bit color conversion.

The additions since 0.89 include the ability to read from a PNG stream which has had some (or all) of the signature bytes read by the calling application. This also allows the reading of embedded PNG streams that do not have the PNG file signature. As well, it is now possible to set the library action on the detection of chunk CRC errors. It is possible to set different actions based on whether the CRC error occurred in a critical or an ancillary chunk.

The changes made to the library, and bugs fixed are based on discussions on the PNG-implement mailing list and not on material submitted privately to Guy, Andreas, or Glenn. They will forward any good suggestions to the list.

For a detailed description on using libpng, read libpng-manual.txt. For examples of libpng in a program, see example.c and pngtest.c. For usage information and restrictions (what little they are) on libpng, see png.h. For a description on using zlib (the compression library used by libpng) and zlib's restrictions, see zlib.h

I have included a general makefile, as well as several machine and compiler specific ones, but you may have to modify one for your own needs.

You should use zlib 1.0.4 or later to run this, but it MAY work with versions as old as zlib 0.95. Even so, there are bugs in older zlib versions which can cause the output of invalid compression streams for some images. You will definitely need zlib 1.0.4 or later if you are taking advantage of the MS-DOS "far" structure allocation for the small and medium memory models. You should also note that zlib is a compression library that is useful for more things than just PNG files. You can use zlib as a drop-in replacement for fread() and fwrite() if you are so inclined.

zlib should be available at the same place that libpng is, or at.  
<ftp://ftp.info-zip.org/pub/infozip/zlib>

You may also want a copy of the PNG specification. It is available as an RFC, a W3C Recommendation, and an ISO/IEC Standard. You can find these at <http://www.libpng.org/pub/png/documents/>

This code is currently being archived at [libpng.sf.net](http://libpng.sf.net) in the [DOWNLOAD] area, and on CompuServe, Lib 20 (PNG SUPPORT) at GO GRAPHSUP. If you can't find it in any of those places, e-mail me, and I'll help you find it.

If you have any code changes, requests, problems, etc., please e-mail them to me. Also, I'd appreciate any make files or project files, and any modifications you needed to make to get libpng to compile, along with a #define variable to tell what compiler/system you are on. If you needed to add transformations to libpng, or wish libpng would provide the image in a different way, drop me a note (and code, if possible), so I can consider supporting the transformation. Finally, if you get any warning messages when compiling libpng (note: not zlib), and they are easy to fix, I'd appreciate the fix. Please mention "libpng" somewhere in the subject line. Thanks.

This release was created and will be supported by myself (of course based in a large way on Guy's and Andreas' earlier work), and the PNG development group.

Send comments/corrections/commendations to [png-mng-implement](mailto:png-mng-implement@lists.sourceforge.net) at [lists.sourceforge.net](http://lists.sourceforge.net) (subscription required; visit <https://lists.sourceforge.net/lists/listinfo/png-mng-implement> to subscribe) or to [glennrp](mailto:glennrp@users.sourceforge.net) at [users.sourceforge.net](http://users.sourceforge.net)

You can't reach Guy, the original libpng author, at the addresses given in previous versions of this document. He and Andreas will read mail addressed to the [png-implement](mailto:png-implement@lists.sourceforge.net) list, however.

Please do not send general questions about PNG. Send them to [png-mng-misc](mailto:png-mng-misc@lists.sf.net) at [lists.sf.net](http://lists.sf.net) (subscription required; visit <https://lists.sourceforge.net/lists/listinfo/png-mng-misc> to subscribe). If you have a question about something in the PNG specification that is related to using libpng, send it to me. Send me any questions that start with "I was using libpng, and ...". If in doubt, send questions to me. I'll bounce them to others, if necessary.

Please do not send suggestions on how to change PNG. We have been discussing PNG for sixteen years now, and it is official and finished. If you have suggestions for libpng, however, I'll gladly listen. Even if your suggestion is not used immediately, it may be used later.



## Files in this distribution:

|                   |                                                                                                                  |
|-------------------|------------------------------------------------------------------------------------------------------------------|
| ANNOUNCE          | => Announcement of this version, with recent changes                                                             |
| CHANGES           | => Description of changes between libpng versions                                                                |
| KNOWNBUG          | => List of known bugs and deficiencies                                                                           |
| LICENSE           | => License to use and redistribute libpng                                                                        |
| README            | => This file                                                                                                     |
| TODO              | => Things not implemented in the current library                                                                 |
| Y2KINFO           | => Statement of Y2K compliance                                                                                   |
| example.c         | => Example code for using libpng functions                                                                       |
| libpng.3          | => manual page for libpng (includes libpng-manual.txt)                                                           |
| libpng-manual.txt | => Description of libpng and its functions                                                                       |
| libpngpf.3        | => manual page for libpng's private functions                                                                    |
| png.5             | => manual page for the PNG format                                                                                |
| png.c             | => Basic interface functions common to library                                                                   |
| png.h             | => Library function and interface declarations (public)                                                          |
| pngpriv.h         | => Library function and interface declarations (private)                                                         |
| pngconf.h         | => System specific library configuration (public)                                                                |
| pngstruct.h       | => png_struct declaration (private)                                                                              |
| pnginfo.h         | => png_info struct declaration (private)                                                                         |
| pngdebug.h        | => debugging macros (private)                                                                                    |
| pngerror.c        | => Error/warning message I/O functions                                                                           |
| pngget.c          | => Functions for retrieving info from struct                                                                     |
| pngmem.c          | => Memory handling functions                                                                                     |
| pngbar.png        | => PNG logo, 88x31                                                                                               |
| pngnow.png        | => PNG logo, 98x31                                                                                               |
| pngpread.c        | => Progressive reading functions                                                                                 |
| pngread.c         | => Read data/helper high-level functions                                                                         |
| pngrio.c          | => Lowest-level data read I/O functions                                                                          |
| pngtran.c         | => Read data transformation functions                                                                            |
| pngutil.c         | => Read data utility functions                                                                                   |
| pngset.c          | => Functions for storing data into the info_struct                                                               |
| pngtest.c         | => Library test program                                                                                          |
| pngtest.png       | => Library test sample image                                                                                     |
| pngtrans.c        | => Common data transformation functions                                                                          |
| pngwio.c          | => Lowest-level write I/O functions                                                                              |
| pngwrite.c        | => High-level write functions                                                                                    |
| pngwtran.c        | => Write data transformations                                                                                    |
| pngutil.c         | => Write utility functions                                                                                       |
| contrib           | => Contributions                                                                                                 |
| gregbook          | => source code for PNG reading and writing, from<br>Greg Roelofs' "PNG: The Definitive Guide",<br>O'Reilly, 1999 |
| msvctest          | => Builds and runs pngtest using a MSVC workspace                                                                |

|           |    |                                                                                                       |
|-----------|----|-------------------------------------------------------------------------------------------------------|
| pngminus  | => | Simple pnm2png and png2pnm programs                                                                   |
| pngsuite  | => | Test images                                                                                           |
| visupng   | => | Contains a MSVC workspace for VisualPng                                                               |
| projects  | => | Contains project files and workspaces for building a DLL                                              |
| cbuilder5 | => | Contains a Borland workspace for building libpng and zlib                                             |
| visualc6  | => | Contains a Microsoft Visual C++ (MSVC) workspace for building libpng and zlib                         |
| visualc71 | => | Contains a Microsoft Visual C++ (MSVC) workspace for building libpng and zlib                         |
| xcode     | => | Contains an Apple xcode workspace for building libpng and zlib                                        |
| scripts   | => | Directory containing scripts for building libpng:<br>(see scripts/README.txt for the list of scripts) |

Good luck, and happy coding.

-Glenn Randers-Pehrson (current maintainer, since 1998)  
Internet: glennrp at users.sourceforge.net

-Andreas Eric Dilger (former maintainer, 1996-1997)  
Internet: adilger at enel.ucalgary.ca  
Web: <http://www-mddsp.enel.ucalgary.ca/People/adilger/>

-Guy Eric Schalnatz (original author and former maintainer, 1995-1996)  
(formerly of Group 42, Inc)  
Internet: gschal at infinnet.com

### 3.101 libpng-1.5.13-7

README for libpng version 1.5.13 - September 27, 2012 (shared library 15.0)  
See the note about version numbers near the top of png.h

See INSTALL for instructions on how to install libpng.

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If you have any code changes, requests, problems, etc., please e-mail them to me. Also, I'd appreciate any make files or project files, and any modifications you needed to make to get libpng to compile, along with a #define variable to tell what compiler/system you are on. If you needed to add transformations to libpng, or wish libpng would provide the image in a different way, drop me a note (and code, if possible), so I can consider supporting the transformation. Finally, if you get any warning messages when compiling libpng (note: not zlib), and they are easy to fix, I'd appreciate the fix. Please mention "libpng" somewhere in the subject line. Thanks.

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| TODO              | => Things not implemented in the current library                                                                 |
| Y2KINFO           | => Statement of Y2K compliance                                                                                   |
| example.c         | => Example code for using libpng functions                                                                       |
| libpng.3          | => manual page for libpng (includes libpng-manual.txt)                                                           |
| libpng-manual.txt | => Description of libpng and its functions                                                                       |
| libpngpf.3        | => manual page for libpng's private functions                                                                    |
| png.5             | => manual page for the PNG format                                                                                |
| png.c             | => Basic interface functions common to library                                                                   |
| png.h             | => Library function and interface declarations (public)                                                          |
| pngpriv.h         | => Library function and interface declarations (private)                                                         |
| pngconf.h         | => System specific library configuration (public)                                                                |
| pngstruct.h       | => png_struct declaration (private)                                                                              |
| pnginfo.h         | => png_info struct declaration (private)                                                                         |
| pngdebug.h        | => debugging macros (private)                                                                                    |
| pngerror.c        | => Error/warning message I/O functions                                                                           |
| pngget.c          | => Functions for retrieving info from struct                                                                     |
| pngmem.c          | => Memory handling functions                                                                                     |
| pngbar.png        | => PNG logo, 88x31                                                                                               |
| pngnow.png        | => PNG logo, 98x31                                                                                               |
| pngpread.c        | => Progressive reading functions                                                                                 |
| pngread.c         | => Read data/helper high-level functions                                                                         |
| pngrio.c          | => Lowest-level data read I/O functions                                                                          |
| pngtran.c         | => Read data transformation functions                                                                            |
| pngutil.c         | => Read data utility functions                                                                                   |
| pngset.c          | => Functions for storing data into the info_struct                                                               |
| pngtest.c         | => Library test program                                                                                          |
| pngtest.png       | => Library test sample image                                                                                     |
| pngtrans.c        | => Common data transformation functions                                                                          |
| pngwio.c          | => Lowest-level write I/O functions                                                                              |
| pngwrite.c        | => High-level write functions                                                                                    |
| pngwtran.c        | => Write data transformations                                                                                    |
| pngutil.c         | => Write utility functions                                                                                       |
| contrib           | => Contributions                                                                                                 |
| gregbook          | => source code for PNG reading and writing, from<br>Greg Roelofs' "PNG: The Definitive Guide",<br>O'Reilly, 1999 |
| msvctest          | => Builds and runs pngtest using a MSVC workspace                                                                |

|           |    |                                                                                                       |
|-----------|----|-------------------------------------------------------------------------------------------------------|
| pngminus  | => | Simple pnm2png and png2pnm programs                                                                   |
| pngsuite  | => | Test images                                                                                           |
| visupng   | => | Contains a MSVC workspace for VisualPng                                                               |
| projects  | => | Contains project files and workspaces for building a DLL                                              |
| cbuilder5 | => | Contains a Borland workspace for building libpng and zlib                                             |
| visualc6  | => | Contains a Microsoft Visual C++ (MSVC) workspace for building libpng and zlib                         |
| visualc71 | => | Contains a Microsoft Visual C++ (MSVC) workspace for building libpng and zlib                         |
| xcode     | => | Contains an Apple xcode workspace for building libpng and zlib                                        |
| scripts   | => | Directory containing scripts for building libpng:<br>(see scripts/README.txt for the list of scripts) |

Good luck, and happy coding.

-Glenn Randers-Pehrson (current maintainer, since 1998)  
Internet: glennrp at users.sourceforge.net

-Andreas Eric Dilger (former maintainer, 1996-1997)  
Internet: adilger at enel.ucalgary.ca  
Web: <http://www-mddsp.enel.ucalgary.ca/People/adilger/>

-Guy Eric Schalnat (original author and former maintainer, 1995-1996)  
(formerly of Group 42, Inc)  
Internet: gschal at infinnet.com

### 3.102 libpwquality-1.2.3-5

This is a libpwquality library for password quality checking and generation of random passwords that pass the checks.

NOTES:

This library uses the cracklib as a dependency.

See the pwquality.h header file for the API.

There are simple tools that use the libpwquality:

`pwscore` - reads the password to be checked from the standard input  
Optional argument is an user name for additional checks.

`pwmake` - generates a random password  
Required argument is number of bits of entropy used to generate the password.

The pwquality Python wrapper module can be used to call the libpwquality functionality from Python.

And finally there is pam\_pwquality Linux PAM module that can be used instead of pam\_cracklib to disallow weak new passwords when user's login password is changed.



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### 3.103 libseccomp-2.3.1-3

libseccomp: An Enhanced Seccomp (mode 2) Helper Library

=====

<https://github.com/seccomp/libseccomp>

The libseccomp library provides an easy to use, platform independent, interface to the Linux Kernel's syscall filtering mechanism. The libseccomp API is designed to abstract away the underlying BPF based syscall filter language and present a more conventional function-call based filtering interface that should be familiar to, and easily adopted by, application developers.

#### \* Online Resources

The library source repository currently lives on GitHub at the following URL:

-> <https://github.com/seccomp/libseccomp>

The project mailing list is currently hosted on Google Groups at the URL below, please note that a Google account is not required to subscribe to the mailing list.

-> <https://groups.google.com/forum/#!forum/libseccomp>

-> <https://groups.google.com/forum/#!forum/libseccomp/join>

#### \* Documentation

The "doc/" directory contains all of the currently available documentation, mostly in the form of manpages. The top level directory also contains a README file (this file) as well as the LICENSE, CREDITS, SUBMITTING\_PATCHES, and CHANGELOG files.

Those who are interested in contributing to the the project are encouraged to read the SUBMITTING\_PATCHES in the top level directory.

#### \* Building and Installing the Library

If you are building the libseccomp library from an official release tarball, you should follow the familiar three step process used by most autotools based applications:

```
./configure
make [V=0|1]
make install
```

However, if you are building the library from sources retrieved from the source repository you may need to run the `autogen.sh` script before running `configure`. In both cases, running `./configure -h` will display a list of build-time configuration options.

#### \* Testing the Library

There are a number of tests located in the `"tests/"` directory and a make target which can be used to help automate their execution. If you want to run the standard regression tests you can execute the following after building the library:

```
make check
```

Be warned that the test run can take a while to run and produces a lot of output.

#### \* Other Useful Tools

The `"tools/"` directory includes a number of tools which may be helpful in the development of the library, or applications using the library. Not all of these tools are installed by default.

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(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.)

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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.

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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.

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- 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.

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### **3.105 libsemanage-2.5-14**

### 3.105.1 Copying

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(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.)

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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.

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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.)

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- 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)



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**3.106 libsepol-2.5-10**

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### 3.107 libssh2-1.4.3-12

libssh2 - SSH2 library

=====

libssh2 is a library implementing the SSH2 protocol, available under the revised BSD license.

Web site: <http://www.libssh2.org/>

Mailing list: <http://cool.haxx.se/mailman/listinfo/libssh2-devel>

Generic installation instructions are in INSTALL. Some ./configure options deserve additional comments:

\* --enable-crypt-none

The SSH2 Transport allows for unencrypted data transmission using the "none" cipher. Because this is such a huge security hole, it is typically disabled on SSH2 implementations and is disabled in libssh2 by default as well.

Enabling this option will allow for "none" as a negotiable method, however it still requires that the method be advertized by the remote end and that no more-preferable methods are available.

\* --enable-mac-none

The SSH2 Transport also allows implementations to forego a message authentication code. While this is less of a security risk than using a "none" cipher, it is still not recommended as disabling MAC hashes removes a layer of security.

Enabling this option will allow for "none" as a negotiable method, however it still requires that the method be advertized by the remote end and that no more-preferable methods are available.

\* --disable-gex-new

The diffie-hellman-group-exchange-sha1 (dh-gex) key

exchange method originally defined an exchange negotiation using packet type 30 to request a generation pair based on a single target value. Later refinement of dh-gex provided for range and target values. By default libssh2 will use the newer range method.

If you experience trouble connecting to an old SSH server using dh-gex, try this option to fallback on the older more reliable method.

```
* --with-libgcrypt
* --without-libgcrypt
* --with-libgcrypt-prefix=DIR
```

libssh2 can use the Libgcrypt library (<http://www.gnupg.org/>) for cryptographic operations. Either Libgcrypt or OpenSSL is required.

Configure will attempt to locate Libgcrypt automatically.

If your installation of Libgcrypt is in another location, specify it using `--with-libgcrypt-prefix`.

```
* --with-openssl
* --without-openssl
* --with-libssl-prefix=[DIR]
```

libssh2 can use the OpenSSL library (<http://www.openssl.org>) for cryptographic operations. Either Libgcrypt or OpenSSL is required.

Configure will attempt to locate OpenSSL in the default location.

If your installation of OpenSSL is in another location, specify it using `--with-libssl-prefix`.

```
* --with-libz
* --without-libz
* --with-libz-prefix=[DIR]
```

If present, libssh2 will attempt to use the zlib

(<http://www.zlib.org>) for payload compression, however zlib is not required.

If your installation of Libz is in another location, specify it using `--with-libz-prefix`.

\* `--enable-debug`

Will make the build use more pedantic and strict compiler options as well as enable the `libssh2_trace()` function (for showing debug traces).

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```
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*/
```

### 3.108 libtasn1-4.10-1

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The manual is in doc/. You can also browse the manual and see updates about the project on the homepage:

<http://www.gnu.org/software/libtasn1/>

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### 3.109 libteam-1.27-5

# SUBMITTING PATCHES / PULL REQUESTS - README!!! #

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# libteam - Library for controlling team network device #

The purpose of the Team driver is to provide a mechanism to team multiple NICs (ports) into one logical one (teamdev) at L2 layer. The process is called "channel bonding", "Ethernet bonding", "channel teaming", "link aggregation", etc. This is already implemented in the Linux kernel by the bonding driver.

One thing to note is that Team driver project does try to provide the similar functionality as the bonding driver, however architecturally it is quite different from bonding driver. Team driver is modular, userspace driven, very lean and efficient, and it does have some distinct advantages over bonding. The way Team is configured differs dramatically from the way bonding is.

## Install

```
$./autogen.sh
$./configure
$ make
$ sudo make install
```

## Authors

\* Jiri Pirko <jiri@resnulli.us>

## Internet Resources

```
* Project Home: http://www.libteam.org/
* Git Source Tree: https://github.com/jpirko/libteam/
* Wiki: https://github.com/jpirko/libteam/wiki
* Tutorial: https://github.com/jpirko/libteam/wiki/Tutorial
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```

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

That's all there is to it!

## 3.110 libtool-2.4.2-22

GNU Libtool

\*\*\*\*\*

### 1. Introduction

=====

This is GNU Libtool, a generic library support script. Libtool hides the complexity of using shared libraries behind a consistent, portable interface.

Libtool's home page is:

<http://www.gnu.org/software/libtool/libtool.html>

See the file NEWS for a description of recent changes to Libtool.

Please note that you can build GNU Libtool from this directory using a vendor Make program as long as this is an official release tarball; otherwise you will need GNU Make for sane VPATH support. See the file INSTALL for complete generic instructions on how to build and install Libtool. Also, see the file doc/notes.txt for some platform-specific information.

See the info node (libtool)Tested Platforms. (or the file doc/PLATFORMS) for a list of platforms that Libtool already supports.

Please try it on all the platforms you have access to:

- \* If it builds and passes the test suite ('gmake check'), please send a short note to the libtool mailing list <libtool@gnu.org> with a subject line including the string '[PLATFORM]', and containing the details from the end of './libtool --help' in the body.
- \* Otherwise, see 'Reporting Bugs' below for how to help us fix any problems you discover.

To use Libtool, add the new generic library building commands to your Makefile, Makefile.in, or Makefile.am. See the documentation for details.

### 2. Reporting Bugs

=====

If this distribution doesn't work for you, before you report the problem, at least try upgrading to the latest released version first, and see whether the issue persists. If you feel able, you can also check whether the issue has been fixed in the development sources for the next release (see 'Obtaining the Latest Sources' below).

Once you've determined that your bug is still not fixed in the latest version, please send a full report to <bug-libtool@gnu.org>, including:

1. the information from the end of the help message given by './libtool --help', and the verbose output of any failed tests (see 'The Test Suites' immediately below);
2. complete instructions for how to reproduce your bug, along with the results you were expecting, and how they differ from what you actually see;
3. a workaround or full fix for the bug, if you have it;
4. a copy of 'tests/testsuite.log' if you are experiencing failures in the Autotest testsuite.
5. new test cases for the testsuite that demonstrate the bug are especially welcome, and will help to ensure that future releases don't reintroduce the problem - if you're not able to write a complete testsuite case, a simple standalone shell script is usually good enough to help us write a test for you.

If you have any other suggestions, or if you wish to port Libtool to a new platform, please send email to the mailing list <libtool@gnu.org>.

Please note that if you send us an non-trivial code for inclusion in a future release, we may ask you for a copyright assignment (for brief details see the 'Copyright Assignment' section on our 'Contributing' webpage <<http://www.gnu.org/software/libtool/contribute.html>>).

### 3. The Test Suites

=====

Libtool comes with two integrated sets of tests to check that your build is sane. You can run both test suites like this, assuming that 'gmake' refers to GNU make:

```
gmake -k check
```

If you want to run the old testsuite only, do it like this:

```
gmake check TESTSUITEFLAGS=-V
```

If you want to run the new testsuite only, do it like this:

```
gmake check-local
```

The tests of the old test suite run in groups in the various demo subdirectories, so if one of the tests early in a group FAILs, the rest of the tests in that group will be SKIPPed. If you see a FAIL further into a group, even if a test with the same name PASSes in another test group, you need to take note of the name of the first test in the group if you want to rerun the group with FAILures to get verbose output.

To run a test group of the old test suite in isolation (say, you think you have fixed a bug, but don't want to rerun the entire suite), you can do it like this:

```
gmake check TESTSUITEFLAGS=-V TESTS="tests/cdemo-static.test \
tests/cdemo-static-make.test tests/cdemo-static-exec.test"
```

Providing that you have a FAIL from the most recent group from a particular demo directory (like the cdemo-static.test group above), you can explore the state of the directory to help with debugging.

If you wish to report a test group failure to the libtool list, you need to send the verbose output of the FAILing group, along with the information from the end of '\$(top\_builddir)/libtool --help' to the bug report mailing list, <bug-libtool@gnu.org> with a subject line that includes the string '[TEST FAILURE]'. The file test-suite.log contains the verbose output from all failed tests.

In order to enable debug shell tracing, you can set VERBOSE=debug when running the old test suite.

In the long run, Libtool will move to using only the new, Autotest-driven testsuite. Its usage is documented in:

```
info Autoconf 'testsuite Invocation'
```

but simple help may also be obtained through:

```
gmake check-local TESTSUITEFLAGS='--help'
```

For verbose output, add the flag '-v', for running only a subset of the independent tests, merely specify them by number or by keyword, both of which are displayed with the '--list' flag. For example, the 'libtool' keyword is used for the tests that exercise only this script. So it is possible to test an installed script, possibly from a different Libtool release, with:

```
gmake check-local \
 TESTSUITEFLAGS="-k libtool LIBTOOL=/path/to/libtool"
```

Some tests, like the one exercising max\_cmd\_len limits, make use of this to invoke the testsuite recursively on a subset of tests. For these tests, the variable INNER\_TESTSUITEFLAGS may be used. It will be expanded right after the '-k libtool', without separating whitespace, so that further limiting of the recursive set of tests is possible. For example, to run only the template tests within the max\_cmd\_len, use:

```
gmake check-local TESTSUITEFLAGS="-v -x -k max_cmd_len \
 INNER_TESTSUITEFLAGS=',template -v -x'"
```

If you wish to report test failures to the libtool list, you need to send the file 'tests/testsuite.log' to the bug report mailing list, <bug-libtool@gnu.org>.

#### 4. Obtaining the Latest Sources

=====

\* With the exception of ancient releases, all official GNU Libtool releases have a detached GPG signature file. With this you can verify that the corresponding file (i.e. without the '.sig' suffix) is the same file that was released by the owner of it's GPG key ID. First, be sure to download both the .sig file and the corresponding release, then run a command like this:

```
gpg --verify libtool-x.y.z.tar.gz.sig
```

If that command fails because you don't have the required public key, then run this command to import it:

```
gpg --keyserver keys.gnupg.net --recv-keys 2983D606
```

and then rerun the 'gpg --verify' command.

- \* Official stable releases of GNU Libtool, along with these detached signature files are available from:

`ftp://ftp.gnu.org/gnu/libtool`

To reduce load on the main server, please use one of the mirrors listed at:

`http://www.gnu.org/order/ftp.html`

- \* Alpha quality pre-releases of GNU Libtool, also with detached signature files are available from:

`ftp://alpha.gnu.org/gnu/libtool`

and some of the mirrors listed at:

`http://www.gnu.org/order/ftp.html`

- \* Nightly snapshots of the unreleased development trunk of GNU Libtool are available from:

`http://pogma.com/libtool`

These files do not have signatures, but will allow you to easily determine whether the most recent development code still exhibits any bugs you have discovered, without requiring you to install a complete build environment and the extra tools needed to bootstrap a version control checkout.

- \* The master libtool repository is stored in git.

If you are a member of the savannah group for GNU Libtool, a writable copy of the libtool repository can be obtained by:

`git clone <savannah-user>@git.sv.gnu.org:/srv/git/libtool.git`

If you are behind a firewall that blocks the git protocol, you may find it useful to use

`git config --global url.http://git.sv.gnu.org/r/.insteadof \`  
`git://git.sv.gnu.org/`

to force git to transparently rewrite all savannah git references to

use http.

If you are not a member of the savannah group for GNU Libtool, you can still fetch a read-only copy with either:

```
git clone git://git.sv.gnu.org/libtool.git
```

or using the CVS pserver protocol:

```
cvs -d:pserver:anonymous@pserver.git.sv.gnu.org:/srv/git/libtool.git \
co -d libtool HEAD
```

\* Before you can build from git, you need to bootstrap. This requires:

- Autoconf 2.62 or later
- Automake 1.11.1 or later
- Help2man 1.29 or later
- Xz 4.999.8beta or later (from <<http://tukaani.org/xz>>)
- Texinfo 4.8 or later
- Any prerequisites of the above (such as m4, perl, tex)

Note that these bootstrapping dependencies are much stricter than those required to use a distributed release for your own packages. After installation, GNU Libtool is designed to work either standalone, or optionally with:

- Autoconf 2.59 or later
- Automake 1.9.6 or later

\* The 'bootstrap' script sets up the source directory for you to hack, though it may take quite some time to run. If you don't intend to re-run the test suite, you can speed up the 'bootstrap' step by an order of magnitude if you call it like this instead:

```
reconfdirs='. libltdl' ./bootstrap
```

## 5. Version Numbering

=====

People have complained that they find the version numbering scheme under which libtool is released confusing... so we've changed it!

It works like this:

<major-number>.<minor-number>

Releases with a <major-number> less than 1 were not yet feature complete. Releases with a <major-number> of 1 used the old numbering scheme that everyone disliked so much. Releases with a <major-number> of 2 use the new scheme described here. If libtool ever undergoes a major rewrite or substantial restructuring, the <major-number> will be incremented again.

If we make a patch release to fix bugs in a stable release, we use a third number, so:

<major-number>.<minor-number>.<micro-number>

Version numbers are chosen to make it easy for users to decide two things:

Q: How 'developed' is this release?

A: The higher the number, the better!

Q: How 'stable' is this release?

A: - If the <minor-number> is even, it is a stable release, '2.0'.

- If the <minor-number> is odd, it is a development version with new features compared to the last stable release, '2.1a'.

- If it has an 'odd'[1] letter after the version number, it is a snapshot direct from CVS, '2.1a'.

- If it has an 'even'[1] letter after the version number, it is an alpha quality release, '2.1b'.

- If it has three numbers in the version, it is a patch release, fixing bugs from the stable release (with no new features), '2.0.1'.

[1] We always increment the letter in the repository before \*and\* after making a release tarball. This means that "odd" letters (a,c,e,g...) only exist in the repository, and "even" letters are used instantaneously for an alpha release. Since the odd lettered version numbers cover many states of the tree, we also qualify them by adding the cvs version of the ChangeLog:

```
$ libtool --version
ltmain.sh (GNU libtool 1.1603 2004/09/12 22:02:07) 2.1a
```

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For more details about version numbers, see:



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--

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Written by Gary V. Vaughan, 2004

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Local Variables:

mode: text

fill-column: 72

End:

vim:tw=72

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```
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under certain conditions; type 'show c' for details.
```

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```
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```

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

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### 3.111 libunistring-0.9.3-9

GNU LIBUNISTRING - Unicode string library

This library provides functions for manipulating Unicode strings and for manipulating C strings according to the Unicode standard.

It consists of the following parts:

|            |                                               |
|------------|-----------------------------------------------|
| unistr.h   | elementary string functions                   |
| uniconv.h  | conversion from/to legacy encodings           |
| unistdio.h | formatted output to strings                   |
| uniname.h  | character names                               |
| unictype.h | character classification and properties       |
| uniwidth.h | string width when using nonproportional fonts |
| uniwbrk.h  | word breaks                                   |
| unilbrk.h  | line breaking algorithm                       |
| uninorm.h  | normalization (composition and decomposition) |
| unicase.h  | case folding                                  |
| uniregex.h | regular expressions (not yet implemented)     |

libunistring is for you if your application involves non-trivial text processing, such as upper/lower case conversions, line breaking, operations on words, or more advanced analysis of text. Text provided by the user can, in general, contain characters of all kinds of scripts. The text processing functions provided by this library handle all scripts and all languages.

libunistring is for you if your application already uses the ISO C / POSIX `<ctype.h>`, `<wctype.h>` functions and the text it operates on is provided by the user and can be in any language.

libunistring is also for you if your application uses Unicode strings as internal in-memory representation.

Installation

-----

As usual for GNU packages:

```
$./configure --prefix=/usr/local
$ make
$ make install
```

## Copyright

-----

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The documentation is under another license; see in the documentation.

## Download

-----

<http://ftp.gnu.org/gnu/libunistring/libunistring-0.9.3.tar.gz>

## Homepage

-----

<http://www.gnu.org/software/libunistring/>

## Bug reports to

-----

[<bug-libunistring@gnu.org>](mailto:bug-libunistring@gnu.org)

Bruno Haible [<bruno@clisp.org>](mailto:bruno@clisp.org)

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Version 3, 29 June 2007

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### 3.112 libuser-0.60-9

About

=====

The libuser library implements a standardized interface for manipulating and administering user and group accounts. The library uses pluggable back-ends to interface to its data sources.

Sample applications modeled after those included with the shadow password suite are included.

New releases will be available at <https://fedorahosted.org/libuser/> .

Bugs

=====

Please consider reporting the bug to your distribution's bug tracking system.

Otherwise, report bugs at <https://fedorahosted.org/libuser/> . Bug reports with patches are especially welcome.



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[This is the first released version of the library GPL. It is  
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### 3.113 libutempter-1.1.6-4

The libutempter library provides interface for terminal emulators such as screen and xterm to record user sessions to utmp and wtmp files.

The utempter is a privileged helper used by libutempter library to manipulate utmp and wtmp files.

This implementation is based on ideas of RedHat's utempter by Erik Troan (version 0.5.2 at the moment of writing).

There are two interfaces supported: old and new.

Old API is provided for backwards compatibility with old RedHat's utempter. New API is recommended for new applications because it is more clean than the old one.

There are no plans to drop or make incompatible changes to these interfaces.

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### 3.114 libverto-0.2.5-4

libverto

libverto exists to solve an important problem: many applications and libraries are unable to write asynchronous code because they are unable to pick an event loop. This is particularly true of libraries who want to be useful to many applications who use loops that do not integrate with one another or which use home-grown loops. libverto provides a loop-neutral async api which allows the library to expose asynchronous interfaces and offload the choice of the main loop to the application.

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### 3.115 libxml2-2.9.1-6

XML toolkit from the GNOME project

Full documentation is available on-line at  
<http://xmlsoft.org/>

This code is released under the MIT Licence see the Copyright file.

To build on an Unixised setup:

`./configure ; make ; make install`

To build on Windows:

see instructions on win32/Readme.txt

To assert build quality:

on an Unixised setup:

`run make tests`

otherwise:

There is 3 standalone tools `runtest.c` `runsuite.c` `testapi.c`, which should compile as part of the build or as any application would. Launch them from this directory to get results, `runtest` checks the proper fonctionning of libxml2 main APIs while `testapi` does a full coverage check. Report failures to the list.

To report bugs, follow the instructions at:

<http://xmlsoft.org/bugs.html>

A mailing-list `xml@gnome.org` is available, to subscribe:

<http://mail.gnome.org/mailman/listinfo/xml>

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Daniel Veillard

\$Id\$

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### 3.116 libxslt-1.1.28-5

XSLT support for libxml2 (XML toolkit from the GNOME project)

Full documentation is available on-line at  
<http://xmlsoft.org/XSLT/>

This code is released under the MIT Licence see the Copyright file.

To report bugs, follow the instructions at:  
<http://xmlsoft.org/XSLT/bugs.html>

A mailing-list [xslt@gnome.org](mailto:xslt@gnome.org) is available, to subscribe:  
<http://mail.gnome.org/mailman/listinfo/xslt>

The list archive is at:  
<http://mail.gnome.org/archives/xslt/>

All technical answers asked privately will be automatically answered on the list and archived for public access unless privacy is explicitly required and justified.

Daniel Veillard

\$Id\$

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### 3.117 linux-firmware-20180911-69.git85c5d90

Linux firmware

=====

<<http://git.kernel.org/?p=linux/kernel/git/firmware/linux-firmware.git>>

<git://git.kernel.org/pub/scm/linux/kernel/git/firmware/linux-firmware.git>

This repository contains all these firmware images which have been extracted from older drivers, as well various new firmware images which we were never permitted to include in a GPL'd work, but which we have been permitted to redistribute under separate cover.

To submit firmware to this repository, please send either a git binary diff or preferably a git pull request to:

[linux-firmware@kernel.org](mailto:linux-firmware@kernel.org)

and also cc: to related mailing lists.

If your commit adds new firmware, it must update the WHENCE file to clearly state the license under which the firmware is available, and that it is redistributable. Being redistributable includes ensuring the firmware license provided includes an implicit or explicit patent grant to end users to ensure full functionality of device operation with the firmware. If the license is long and involved, it's permitted to include it in a separate file and refer to it from the WHENCE file ('See LICENSE.foo for details.').

And if it were possible, a changelog of the firmware itself.

Run 'make check' to check that WHENCE is consistent with the repository contents.

Ideally, your commit should contain a Signed-Off-By: from someone authoritative on the licensing of the firmware in question (i.e. from within the company that owns the code).

WARNING:

=====

Don't send any "CONFIDENTIALITY STATEMENT" in your e-mail, patch or request. Otherwise your firmware will never be accepted.

Maintainers are really busy, so don't expect a prompt reply.

**3.118 logrotate-3.8.6-17**

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Version 2, June 1991

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```

```
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## 3.119 lshw-B.02.18-12

lshw: HardWare LiSter for Linux

=====

lshw is a small tool to provide detailed information on the hardware configuration of the machine. It can report exact memory configuration, firmware version, mainboard configuration, CPU version and speed, cache configuration, bus speed, etc. on DMI-capable x86 or EFI (IA-64) systems and on some ARM and PowerPC machines (PowerMac G4 is known to work).

Information can be output in plain text, XML or HTML.

It currently supports DMI (x86 and EFI only), OpenFirmware device tree (PowerPC only), PCI/AGP, ISA PnP (x86), CPUID (x86), IDE/ATA/ATAPI, PCMCIA (only tested on x86), USB and SCSI.

Installation

-----

### 1. Requirements

- Linux 2.4.x, 2.6.x or 3.x (2.2.x might work, though)
- a PA-RISC-, Alpha-, IA-64- (Itanium-), PowerPC-, ARM- or x86- based machine
- an ANSI (or close enough to ANSI compliance) C++ compiler (tested with g++ 2.95.4 and 3.x)
- for the (optional) GTK+ graphical user interface, you will need a complete GTK+ development environment (gtk2-devel on RedHat/Fedora derivatives)

### 2. To compile it, just use:

```
$ make
```

### 3. If you want to build the optional GUI, do:

```
$ make
$ make gui
```

### 4. the lshw home page is <http://lshw.ezix.org/>

5. send bug reports, requests for help, feature requests, comments, etc. to [bugs@ezix.org](mailto:bugs@ezix.org). The author can be contacted directly ([lyonel@ezix.org](mailto:lyonel@ezix.org))

Please make sure you include enough information in your bug report: XML output from lshw is preferred over text or HTML, indicate the affected version

of lshw, your platform (i386, x86-64, PA-RISC, PowerPC, etc.) and your distribution.

#### NOTE TO DISTRIBUTIONS

-----

By default, lshw includes its own lists of PCI IDs, USB IDs, etc. but will also look for this information in

```
 /usr/share/lshw/,
 /usr/local/share/,
/usr/share/,
/etc/,
/usr/share/hwdata/,
/usr/share/misc/
```

Statically-linked and/or compressed binaries can be built by using

```
$ make static
```

or

```
$ make compressed
```

in the 'src/' directory

Building compressed binaries requires 'upx' (cf. <http://upx.sourceforge.net/>).

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```
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```

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```
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.
```

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be called something other than 'show w' and 'show c'; they could even be  
mouse-clicks or menu items--whatever suits your program.

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```
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
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## 3.120 lua-5.1.4-15

README for Lua 5.1

See INSTALL for installation instructions.

See HISTORY for a summary of changes since the last released version.

### \* What is Lua?

-----

Lua is a powerful, light-weight programming language designed for extending applications. Lua is also frequently used as a general-purpose, stand-alone language. Lua is free software.

For complete information, visit Lua's web site at <http://www.lua.org/> .

For an executive summary, see <http://www.lua.org/about.html> .

Lua has been used in many different projects around the world.

For a short list, see <http://www.lua.org/uses.html> .

### \* Availability

-----

Lua is freely available for both academic and commercial purposes.

See COPYRIGHT and <http://www.lua.org/license.html> for details.

Lua can be downloaded at <http://www.lua.org/download.html> .

### \* Installation

-----

Lua is implemented in pure ANSI C, and compiles unmodified in all known platforms that have an ANSI C compiler. In most Unix-like platforms, simply do "make" with a suitable target. See INSTALL for detailed instructions.

### \* Origin

-----

Lua is developed at Lua.org, a laboratory of the Department of Computer Science of PUC-Rio (the Pontifical Catholic University of Rio de Janeiro in Brazil).

For more information about the authors, see <http://www.lua.org/authors.html> .

(end of README)

### 3.121 lvm2-2.02.180-10

This tree contains the LVM2 and device-mapper tools and libraries.

For more information about LVM2 read the changelog in the WHATS\_NEW file.  
Installation instructions are in INSTALL.

There is no warranty - see COPYING and COPYING.LIB.

Tarballs are available from:

```
ftp://sourceware.org/pub/lvm2/
ftp://sources.redhat.com/pub/lvm2/
https://github.com/lvmteam/lvm2/releases
```

The source code is stored in git:

```
https://sourceware.org/git/?p=lvm2.git
git clone git://sourceware.org/git/lvm2.git
```

mirrored to:

```
https://github.com/lvmteam/lvm2
git clone https://github.com/lvmteam/lvm2.git
git clone git@github.com:lvmteam/lvm2.git
```

Mailing list for general discussion related to LVM2:

```
linux-lvm@redhat.com
Subscribe from https://www.redhat.com/mailman/listinfo/linux-lvm
```

Mailing lists for LVM2 development, patches and commits:

```
lvm-devel@redhat.com
Subscribe from https://www.redhat.com/mailman/listinfo/lvm-devel

lvm2-commits@lists.fedorahosted.org (Read-only archive of commits)
Subscribe from https://fedorahosted.org/mailman/listinfo/lvm2-commits
```

Mailing list for device-mapper development, including kernel patches  
and multipath-tools:

```
dm-devel@redhat.com
Subscribe from https://www.redhat.com/mailman/listinfo/dm-devel
```

Website:

```
https://sourceware.org/lvm2/
```

Report upstream bugs at:

```
https://bugzilla.redhat.com/enter_bug.cgi?product=LVM%20and%20device-mapper
or open issues at:
```

<https://github.com/lvmteam/lvm2/issues>

The source code repository used until 7th June 2012 is accessible here:  
<http://sources.redhat.com/cgi-bin/cvsweb.cgi/LVM2/?cvsroot=lvm2>.



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Version 2.1, February 1999

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

That's all there is to it!

## 3.122 lz4-1.7.5-2

LZ4 - Extremely fast compression

=====

LZ4 is lossless compression algorithm,  
providing compression speed at 400 MB/s per core,  
scalable with multi-cores CPU.  
It features an extremely fast decoder,  
with speed in multiple GB/s per core,  
typically reaching RAM speed limits on multi-core systems.

Speed can be tuned dynamically, selecting an "acceleration" factor  
which trades compression ratio for more speed up.  
On the other end, a high compression derivative, LZ4\_HC, is also provided,  
trading CPU time for improved compression ratio.  
All versions feature the same decompression speed.

LZ4 library is provided as open-source software using BSD 2-Clause license.

| Branch | Status                                                                                                                            |
|--------|-----------------------------------------------------------------------------------------------------------------------------------|
| master | [Build Status][travisMasterBadge][travisLink] [Build status][AppveyorMasterBadge][AppveyorLink] [coverity][coverBadge][coverlink] |
| dev    | [Build Status][travisDevBadge][travisLink] [Build status][AppveyorDevBadge][AppveyorLink]                                         |

[travisMasterBadge]: <https://travis-ci.org/lz4/lz4.svg?branch=master> "Continuous Integration test suite"  
[travisDevBadge]: <https://travis-ci.org/lz4/lz4.svg?branch=dev> "Continuous Integration test suite"  
[travisLink]: <https://travis-ci.org/lz4/lz4>  
[AppveyorMasterBadge]:  
<https://ci.appveyor.com/api/projects/status/jc2yhgywc7qqtsko/branch/master?svg=true> "Windows test suite"  
[AppveyorDevBadge]:  
<https://ci.appveyor.com/api/projects/status/jc2yhgywc7qqtsko/branch/dev?svg=true> "Windows test suite"  
[AppveyorLink]: <https://ci.appveyor.com/project/YannCollet/lz4-1lndh>  
[coverBadge]: <https://scan.coverity.com/projects/4735/badge.svg> "Static code analysis of Master branch"

[coverlink]: <https://scan.coverity.com/projects/4735>

> **\*\*Branch Policy:\*\***

- > - The "master" branch is considered stable, at all times.
- > - The "dev" branch is the one where all contributions must be merged before being promoted to master.
- > + If you plan to propose a patch, please commit into the "dev" branch, or its own feature branch.  
Direct commit to "master" are not permitted.

## Benchmarks

-----

The benchmark uses [lzbench], from @inikep  
compiled with GCC v6.2.0 on Linux 64-bits.

The reference system uses a Core i7-3930K CPU @ 4.5GHz.

Benchmark evaluates the compression of reference [Silesia Corpus]  
in single-thread mode.

[lzbench]: <https://github.com/inikep/lzbench>

[Silesia Corpus]: <http://sun.aei.polsl.pl/~sdeor/index.php?page=silesia>

| Compressor                      | Ratio            | Compression         | Decompression        |
|---------------------------------|------------------|---------------------|----------------------|
| -----                           | -----            | -----               | -----                |
| memcpy                          | 1.000            | 7300 MB/s           | 7300 MB/s            |
| <b>**LZ4 fast 8 (v1.7.3)**</b>  | 1.799            | <b>**911 MB/s**</b> | <b>**3360 MB/s**</b> |
| <b>**LZ4 default (v1.7.3)**</b> | <b>**2.101**</b> | <b>**625 MB/s**</b> | <b>**3220 MB/s**</b> |
| LZO 2.09                        | 2.108            | 620 MB/s            | 845 MB/s             |
| QuickLZ 1.5.0                   | 2.238            | 510 MB/s            | 600 MB/s             |
| Snappy 1.1.3                    | 2.091            | 450 MB/s            | 1550 MB/s            |
| LZF v3.6                        | 2.073            | 365 MB/s            | 820 MB/s             |
| [Zstandard] 1.1.1 -1            | 2.876            | 330 MB/s            | 930 MB/s             |
| [Zstandard] 1.1.1 -3            | 3.164            | 200 MB/s            | 810 MB/s             |
| [zlib] deflate 1.2.8 -1         | 2.730            | 100 MB/s            | 370 MB/s             |
| <b>**LZ4 HC -9 (v1.7.3)**</b>   | <b>**2.720**</b> | 34 MB/s             | <b>**3240 MB/s**</b> |
| [zlib] deflate 1.2.8 -6         | 3.099            | 33 MB/s             | 390 MB/s             |

[zlib]: <http://www.zlib.net/>

[Zstandard]: <http://www.zstd.net/>

LZ4 is also compatible and well optimized for x32 mode, for which it provides +10% speed performance.

## Documentation

---

The raw LZ4 block compression format is detailed within [lz4\_Block\_format].

To compress an arbitrarily long file or data stream, multiple blocks are required.

Organizing these blocks and providing a common header format to handle their content

is the purpose of the Frame format, defined into [lz4\_Frame\_format].

Interoperable versions of LZ4 must respect this frame format.

[lz4\_Block\_format]: doc/lz4\_Block\_format.md

[lz4\_Frame\_format]: doc/lz4\_Frame\_format.md

## Other source versions

---

Beyond the C reference source,

many contributors have created versions of lz4 in multiple languages (Java, C#, Python, Perl, Ruby, etc.).

A list of known source ports is maintained on the [LZ4 Homepage].

[LZ4 Homepage]: <http://www.lz4.org>

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```

```
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Ty Coon, President of Vice
```

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They can serve as source of inspiration,  
but they should not be copy/pasted into 3rd party projects,  
as this scenario is not supported.



### 3.123 make-3.82-23

This directory contains the 3.82 release of GNU Make.

See the file NEWS for the user-visible changes from previous releases. In addition, there have been bugs fixed.

Please check the system-specific notes below for any caveats related to your operating system.

For general building and installation instructions, see the file INSTALL.

If you need to build GNU Make and have no other 'make' program to use, you can use the shell script 'build.sh' instead. To do this, first run 'configure' as described in INSTALL. Then, instead of typing 'make' to build the program, type 'sh build.sh'. This should compile the program in the current directory. Then you will have a Make program that you can use for './make install', or whatever else.

Some systems' Make programs are broken and cannot process the Makefile for GNU Make. If you get errors from your system's Make when building GNU Make, try using 'build.sh' instead.

GNU Make is free software. See the file COPYING for copying conditions.

#### Downloading

-----

GNU Make can be obtained in many different ways. See a description here:

<http://www.gnu.org/software/software.html>

#### Documentation

-----

GNU make is fully documented in the GNU Make manual, which is contained in this distribution as the file make.texinfo. You can also find on-line and preformatted (PostScript and DVI) versions at the FSF's web site. There is information there about ordering hardcopy documentation.

<http://www.gnu.org/>

<http://www.gnu.org/doc/doc.html>  
<http://www.gnu.org/manual/manual.html>

## Development

-----

GNU Make development is hosted by Savannah, the FSF's online development management tool. Savannah is here:

<http://savannah.gnu.org>

And the GNU Make development page is here:

<http://savannah.gnu.org/projects/make/>

You can find most information concerning the development of GNU Make at this site.

## Bug Reporting

-----

You can send GNU make bug reports to <[bug-make@gnu.org](mailto:bug-make@gnu.org)>. Please see the section of the GNU make manual entitled 'Problems and Bugs' for information on submitting useful and complete bug reports.

You can also use the online bug tracking system in the Savannah GNU Make project to submit new problem reports or search for existing ones:

<http://savannah.gnu.org/bugs/?group=make>

If you need help using GNU make, try these forums:

[help-make@gnu.org](mailto:help-make@gnu.org)  
[help-utils@gnu.org](mailto:help-utils@gnu.org)  
[news:gnu.utils.help](mailto:news:gnu.utils.help)  
[news:gnu.utils.bug](mailto:news:gnu.utils.bug)

<http://savannah.gnu.org/support/?group=make>

You may also find interesting patches to GNU Make available here:

<http://savannah.gnu.org/patch/?group=make>

Note these patches are provided by our users as a service and we make no statements regarding their correctness. Please contact the authors directly if you have a problem or suggestion for a patch available on this page.

#### CVS Access

-----

The GNU make source repository is available via anonymous CVS from the GNU Subversions CVS server; look here for details:

<http://savannah.gnu.org/cvs/?group=make>

Please note: you won't be able to build GNU make from CVS without installing appropriate maintainer's tools, such as GNU m4, automake, autoconf, Perl, GNU make, and GCC. See the README.cvs file for hints on how to build GNU make once these tools are available. We make no guarantees about the contents or quality of the latest code in the CVS repository: it is not unheard of for code that is known to be broken to be checked in. Use at your own risk.

#### System-specific Notes

-----

It has been reported that the XLC 1.2 compiler on AIX 3.2 is buggy such that if you compile make with 'cc -O' on AIX 3.2, it will not work correctly. It is said that using 'cc' without '-O' does work.

The standard /bin/sh on SunOS 4.1.3\_U1 and 4.1.4 is broken and cannot be used to configure GNU make. Please install a different shell such as bash or pdksh in order to run "configure". See this message for more information:

<http://mail.gnu.org/archive/html/bug-autoconf/2003-10/msg00190.html>

One area that is often a problem in configuration and porting is the code to check the system's current load average. To make it easier to test and debug this code, you can do 'make check-loadavg' to see if it works properly on your system. (You must run 'configure' beforehand, but you need not build Make itself to run this test.)

Another potential source of porting problems is the support for large

files (LFS) in configure for those operating systems that provide it. Please report any bugs that you find in this area. If you run into difficulties, then as a workaround you should be able to disable LFS by adding the '--disable-largefile' option to the 'configure' script.

On systems that support micro- and nano-second timestamp values and where stat(2) provides this information, GNU make will use it when comparing timestamps to get the most accurate possible result. However, note that many current implementations of tools that \*set\* timestamps do not preserve micro- or nano-second granularity. This means that "cp -p" and other similar tools (tar, etc.) may not exactly duplicate timestamps with micro- and nano-second granularity on some systems. If your build system contains rules that depend on proper behavior of tools like "cp -p", you should consider using the .LOW\_RESOLUTION\_TIME pseudo-target to force make to treat them properly. See the manual for details.

## Ports

-----

- See README.customs for details on integrating GNU make with the Customs distributed build environment from the Pmake distribution.
- See readme.vms for details about GNU Make on OpenVMS.
- See README.Amiga for details about GNU Make on AmigaDOS.
- See README.W32 for details about GNU Make on Windows NT, 95, or 98.
- See README.DOS for compilation instructions on MS-DOS and MS-Windows using DJGPP tools.

A precompiled binary of the MSDOS port of GNU Make is available as part of DJGPP; see the WWW page <http://www.delorie.com/djgpp/> for more information.

Please note there are two separate ports of GNU make for Microsoft systems: a native Windows tool built with (for example) MSVC or Cygwin, and a DOS-based tool built with DJGPP. Please be sure you are looking at the right README!

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### 3.124 man-db-2.6.3-11

README for the man-db manual pager suite

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Please read the man-db manual, included in the manual subdirectory of this distribution. It contains configuration details and other aspects of this manual pager suite that are not duplicated or relevant in this README. Check manual/README for details of the formatters required.

Read docs/INSTALL.autoconf for generic options to configure.  
Read docs/INSTALL.quick if you know all about man-db.  
Read NEWS for visible changes since the last public release.  
Read ChangeLog for details of recent source code changes.  
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The C source requires an ANSI C compiler.

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Notice regarding current state of FHS (Linux/?BSD)

=====

As of May 13th, 2001, the last public release of the Filesystem Hierarchy Standard proposed the root of the manual page hierarchy as '/usr/share' and the root of the writable cat hierarchy as '/var/cache/man' for the purposes of man->cat filename translation. As such, the following are defined in ./include/manconfig.h.in:

```
#define FHS_CAT_ROOT "/var/cache/man" /* required by fsstnd() */
#define FHS_MAN_ROOT "/usr/share" /* required by fsstnd() */
```

For compatibility with the old FSSTND, the following locations are also defined:

```
#define CAT_ROOT "/var/catman" /* required by fsstnd() */
#define MAN_ROOT "/usr" /* required by fsstnd() */
```

Should these locations change, simply define the paths accordingly and recompile. Other FHS changes relating to man/cat paths will not be compatible with this version of man-db.

Non-generic arguments to configure

=====

To allow the configuration program, configure, to be non-interactive, it can be passed various options to alter the default settings. Generic configure options are discussed in docs/INSTALL.autoconf. The following list of options is extracted from the man-db manual. It is strongly recommended that relevant sections of the manual are read if any of these options are used.

`--enable-setuid[=ARG]`

By default, man will be installed as a setuid program to user man. Use this option with an argument to change the setuid owner.

`--disable-setuid`

Use this option to install man as a non-setuid program and to change the default cat and database files' access flags to allow users to modify them.

`--enable-mandirs=OS`

By default, man-db supports manual page directories in any of several layouts used by free and proprietary versions of UNIX. However, in certain cases, this can cause man-db to find the wrong page by mistake, especially when the names of some manual pages on the system contain periods. Use this option with an argument of GNU, HPUX, IRIX, Solaris, or BSD (or more than one of these, separated by commas) to support only the layouts typically used on each of those systems. Note that man-db is not currently capable of writing cat pages in the proper BSD layout.

`--with-device=DEVICE`

Use this flag to alter the default output device used by NROFF. DEVICE is passed to NROFF with the -T option. configure will test that NROFF will run with the supplied device argument.

`--with-db=LIBRARY`

configure will look for database interface libraries in the order gdbm, Berkeley DB and finally ndbm and will #define appropriate variables relative to the first one found. To override the built-in order on platforms having a choice of interface library, use this option to specify which library to use.

`--enable-automatic-create`

If this flag is used, man will automatically create index databases for users' private manual page hierarchies.

`--disable-automatic-update`

Normally, man will update entries in index databases if it finds newly installed manual pages (if the --update flag is used) or delete entries if manual pages are removed. This flag suppresses this behaviour.

`--disable-cats`

Normally, man will automatically try to create cat files corresponding to manual files when a manual page is read. This flag suppresses this behaviour.



## INSTALL

=====

Running configure.

- o READ 'docs/INSTALL.autoconf' regarding ./configure options
- o RUN './configure --help' to see what --enable and --with options may be useful.
- o RUN './configure' with the appropriate options and environment variable settings

BROWSE or EDIT the following files that were created by the configuration process.

- o 'include/manconfig.h' regarding paths to support programs, the default section list and other specific definitions.
- o 'include/comp\_src.h' if the default compressor support is inadequate for your requirements. (usually .Z [compress], .z, .gz [gzip])

configure will determine your system's ability to use native language support (NLS) message catalogues. You may set the environment variable LINGUAS to limit the set of translations installed. LINGUAS should contain a space-separated list of two-letter language identifiers. To compile man-db with no support for message catalogues, simply pass the --disable-nls option to configure. N.B. This is not related to man's ability to display NLS manual pages, support for which is compiled in by default.

Running make.

- o RUN 'make' to compile man-db with the set of translations chosen when running './configure'.

Sort out the man-db configuration file.

- o RUN './src/man -l man/man5/manpath.5' from the root of this distribution to read the man-db configuration file details.
- o EDIT './src/man\_db.conf' to your local requirements.

Install the package.

- o (gain superuser privileges for the rest of the steps)
- o RUN 'make install' to install the utilities and manual pages.

Initialise the 'index' databases for all manpaths marked as global in the man-db configuration file.

- o RUN 'mandb' (This step is equivalent to running straycats and makewhatis too).

The following steps are optional / dependent on local conventions.

- o ACKNOWLEDGE any warnings emitted by mandb. Bogus manual pages are not included in the database and may be a waste of space. Those pages without correctly formatted 'whatis' lines are included, but will have a whatis entry of "(unknown)"
- o CD tools and RUN 'mkcatdirs -t' to see if you have all of the required cat directories. 'mkcatdirs' without an option will display a usage message.
- o CD tools and RUN 'checkman' with an argument of colon separated manual page hierarchies to cross check for duplicated manual pages. If no argument is given, your default \$MANPATH will be used.

The output of checkman may be piped into a file and used as an argument to 'rm', the 'is newer than' messages are directed to standard error. e.g. 'checkman > dups'

If you are confident that the duplicates found are indeed duplicates, you can back them up and delete them to save space.

At this point, running checkman again may yield further duplicates that were ignored the first time.

- o RUN 'catman' with appropriate options to create any/all cat files that you would like pre-formatted.

Multiple build directories

=====

It is possible to build man-db in a directory other than the directory containing this file (and all of the program sources). This is particularly useful if compiling on multiple architectures or testing various configuration options as only a single copy of the sources is required.

To enable this support, simply change directory to where you would like to build the package and run the configure program in this directory \*from there\*. Further information about this support can be found in the generic install document 'docs/INSTALL.autoconf'.

#### Makefile targets and variables

=====

The standard GNU Makefile targets: all, install, uninstall, mostlyclean, clean, distclean, realclean and TAGS are available in every Makefile-supported directory. In addition, the master Makefile has the dist target to create a compressed and tarred distribution file.

During the configuration process, 'configure' sets the installation variables, 'prefix' and 'exec\_prefix'. These are then used to form other variables such as 'bindir' and 'sysconfdir'. To change any of these or other standard GNU install variables dynamically, issue the 'make' command with variable expressions as arguments, eg. 'make prefix=/usr/local/packages'

N.B. If prefix=/usr (either statically or dynamically), then sysconfdir=/etc instead of the usual \$(prefix)/etc. To force sysconfdir to be /usr/etc, set it on the make command line.

#### Default preprocessors

=====

man-db uses a manual page directed preprocessor system, that is, each manual page may request preprocessing by a selection of preprocessors. Some systems' manual pages do not come with this information built in. In such circumstances, it is advisable to set a default list of preprocessors that each manual page should be passed through, so that those requiring special processing are readable. To achieve this, set DEFAULT\_MANROFFSEQ (found in include/manconfig.h) to the appropriate preprocessor string, after running configure, but prior to compilation. This is not necessary for the following systems whose default preprocessing requirements are known.

Known not to require DEFAULT\_MANROFFSEQ:  
Linux, SunOS  
Known to require #define DEFAULT\_MANROFFSEQ "t":  
Ultrix  
Known to require #define DEFAULT\_MANROFFSEQ "te":  
HP-UX, OSF/1

If unsure of the default preprocessors required by a system, the standard system's man(1) manual page may provide an answer.

Contacting the maintainer

=====

The current maintainer of man-db is Colin Watson <cjwatson@debian.org>. Please feel free to contact me with any queries or problems you may have. If you are using the Debian GNU/Linux or GNU/Hurd system, I welcome bug reports against the man-db package by way of the Debian bug tracking system (<http://bugs.debian.org/>).

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

That's all there is to it!



### 3.125 microcode-ctl-2.1-47

```

>>> What it does

Deploy an Intel and AMD microcode. This tool is obsolete and the microcode
is the subject to be distributed via kernel-firmware, however Intel still
does not supply the microcode in a form consumable by the Linux's microcode
driver. So that this tool transform Intel's microcode as well as deploy it.

>>> Contributors

Credit where credit is due; the following people contributed ideas or
patches. Thanks :)

Kay Sievers <kay.sievers@vrfy.org>

>>> Special thanks

o Advanced Micro Devices, Inc and Intel Corporation, for supplying
 microcode update data and publishing the specifications that enabled us
 to write microcode driver for Linux.

- Anton Arapov <aarapov@redhat.com> https://pagure.io/microcode_ctl/
```

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### **3.126 mozjs17-17.0.0-20**

This directory contains SpiderMonkey 17.

This release is based on revision c7f42dec3730 of Mozilla ESR17:

<http://hg.mozilla.org/releases/mozilla-esr17/>

The changes in the patches/ directory were applied.

MDN hosts the latest SpiderMonkey 17 release notes:

<https://developer.mozilla.org/en-US/docs/SpiderMonkey/17>

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#####

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|                |                                                                 |
|----------------|-----------------------------------------------------------------|
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| BUGS           | - bugs in MPFR - please read this file!                         |
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| ChangeLog      | - the log of changes                                            |
| INSTALL        | - how to install MPFR (see also mpfr.texi)                      |
| Makefile*      | - files for building the library                                |
| NEWS           | - new features with respect to previous versions                |
| PATCHES        | - empty file (until patches are applied)                        |
| README         | - this file                                                     |
| TODO           | - what remains to do (any help is welcome!)                     |
| VERSION        | - version of MPFR (next release version if taken by Subversion) |
| ac*.m4         | - automatic configuration files                                 |
| compile        | - auxiliary installation file                                   |
| config.*       | - auxiliary installation files                                  |
| configure*     | - configuration files                                           |

|            |                                                         |
|------------|---------------------------------------------------------|
| depcomp    | - auxiliary installation file                           |
| doc/       | - directory containing the documentation (manual, FAQ)  |
| examples/  | - directory containing examples                         |
| install-sh | - installation file                                     |
| ltmain.sh  | - auxiliary installation file                           |
| m4/        | - directory containing additional configuration files   |
| missing    | - auxiliary installation file                           |
| src/       | - directory containing the MPFR source                  |
| tests/     | - directory containing the testsuite (for "make check") |
| tools/     | - directory containing various tools                    |
| tune/      | - directory containing files for tuning MPFR            |

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```
svn checkout svn://scm.gforge.inria.fr/svn/mpfr/trunk mpfr
```

or

```
svn checkout https://scm.gforge.inria.fr/svn/mpfr/trunk mpfr
```

(the last argument can be any directory name). You can use

```
svn ls svn://scm.gforge.inria.fr/svn/mpfr/branches
svn ls svn://scm.gforge.inria.fr/svn/mpfr/tags
```

to get the list of branches or tags (releases), then checkout a particular branch or tag instead of the trunk. Alternatively, you can now use the "https:" scheme (a.k.a. DAV) instead of "svn:". For more information about Subversion, please see:

- \* <http://svnbook.red-bean.com/> (the official Subversion book);
- \* <http://gcc.gnu.org/wiki/SvnHelp> (written for GCC developers, but interesting general information can be found there);
- \* <http://subversion.apache.org/faq.html> (the Subversion FAQ).

Subversion users should read the file "doc/README.dev" (provided via SVN only).

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Version 3, 29 June 2007

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```

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-- $Id: README,v 1.23 2006/04/22 22:19:37 tom Exp $

```

README file for the ncurses package

See the file ANNOUNCE for a summary of ncurses features and ports.  
See the file INSTALL for instructions on how to build and install ncurses.  
See the file NEWS for a release history and bug-fix notes.  
See the file TO-DO for things that still need doing, including known bugs.

Browse the file misc/ncurses-intro.html for narrative descriptions of how  
to use ncurses and the panel, menu, and form libraries.

Browse the file doc/html/hackguide.html for a tour of the package internals.

ROADMAP AND PACKAGE OVERVIEW:

You should be reading this file in a directory called: `ncurses-d.d`, where `d.d` is the current version number (see the `dist.mk` file in this directory for that). There should be a number of subdirectories, including `'c++'`, `'form'`, `'man'`, `'menu'`, `'misc'`, `'ncurses'`, `'panel'`, `'progs'`, `'test'`, `'tack'` and `'Ada95'`. (The `'tack'` program may be distributed separately).

A full build/install of this package typically installs several libraries, a handful of utilities, and a database hierarchy. Here is an inventory of the pieces:

The libraries are:

|                             |                                |
|-----------------------------|--------------------------------|
| <code>libncurses.a</code>   | (normal)                       |
| <code>libncurses.so</code>  | (shared)                       |
| <code>libncurses_g.a</code> | (debug and trace code enabled) |
| <code>libncurses_p.a</code> | (profiling enabled)            |
|                             |                                |
| <code>libpanel.a</code>     | (normal)                       |
| <code>libpanel.so</code>    | (shared)                       |
| <code>libpanel_g.a</code>   | (debug and trace code enabled) |
|                             |                                |
| <code>libmenu.a</code>      | (normal)                       |
| <code>libmenu.so</code>     | (shared)                       |
| <code>libmenu_g.a</code>    | (debug enabled)                |
|                             |                                |
| <code>libform.a</code>      | (normal)                       |
| <code>libform.so</code>     | (shared)                       |
| <code>libform_g.a</code>    | (debug enabled)                |

If you configure using the `--enable-widec` option, a `"w"` is appended to the library names (e.g., `libncursesw.a`), and the resulting libraries support wide-characters, e.g., via a UTF-8 locale. The corresponding header files are compatible with the non-wide-character configuration; wide-character features are provided by `ifdef`'s in the header files. The wide-character library interfaces are not binary-compatible with the non-wide-character version.

The `ncurses` libraries implement the `curses` API. The `panel`, `menu` and `forms` libraries implement clones of the SVr4 `panel`, `menu` and `forms` APIs. The source code for these lives in the `'ncurses'`, `'panel'`, `'menu'`, and `'form'` directories respectively.

In the `'c++'` directory, you'll find code that defines an interface to the

curses, forms, menus and panels library packaged as C++ classes, and a demo program in C++ to test it. These class definition modules are not installed by the 'make install.libs' rule as libncurses++.

In the 'Ada95' directory, you'll find code and documentation for an Ada95 binding of the curses API, to be used with the GNAT compiler. This binding is built by a normal top-level 'make' if configure detects an usable version of GNAT (3.11 or above). It is not installed automatically. See the Ada95 directory for more build and installation instructions and for documentation of the binding.

To do its job, the ncurses code needs your terminal type to be set in the environment variable TERM (normally set by your OS; under UNIX, `getty(1)` typically does this, but you can override it in your `.profile`); and, it needs a database of terminal descriptions in which to look up your terminal type's capabilities.

In older (V7/BSD) versions of curses, the database was a flat text file, `/etc/termcap`; in newer (USG/USL) versions, the database is a hierarchy of fast-loading binary description blocks under `/usr/lib/terminfo`. These binary blocks are compiled from an improved editable text representation called 'terminfo' format (documented in `man/terminfo.5`). The ncurses library can use either `/etc/termcap` or the compiled binary terminfo blocks, but prefers the second form.

In the 'misc' directory, there is a text file `terminfo.src`, in editable terminfo format, which can be used to generate the terminfo binaries (that's what `install.data` does). If the package was built with the `--enable-termcap` option enabled, and the ncurses library cannot find a terminfo description for your terminal, it will fall back to the termcap file supplied with your system (which the ncurses package installation leaves strictly alone).

The utilities are as follows:

|                      |                                                    |
|----------------------|----------------------------------------------------|
| <code>tic</code>     | -- terminfo source to binary compiler              |
| <code>infocmp</code> | -- terminfo binary to source decompiler/comparator |
| <code>clear</code>   | -- emits clear-screen for current terminal         |
| <code>tput</code>    | -- shell-script access to terminal capabilities.   |
| <code>toe</code>     | -- table of entries utility                        |
| <code>tset</code>    | -- terminal-initialization utility                 |

The first two (`tic` and `infocmp`) are used for manipulating terminfo

descriptions; the next two (clear and tput) are for use in shell scripts. The last (tset) is provided for 4.4BSD compatibility. The source code for all of these lives in the 'progs' directory.

Detailed documentation for all libraries and utilities can be found in the 'man' and 'doc' directories. An HTML introduction to ncurses, panels, and menus programming lives in the 'doc/html' directory. Manpages in HTML format are under 'doc/html/man'.

The 'test' directory contains programs that can be used to verify or demonstrate the functions of the ncurses libraries. See test/README for descriptions of these programs. Notably, the 'ncurses' utility is designed to help you systematically exercise the library functions.

#### AUTHORS:

Pavel Curtis:  
wrote the original ncurses

Zeyd M. Ben-Halim:  
port of original to Linux and many enhancements.

Thomas Dickey (maintainer for 1.9.9g through 4.1, resuming with FSF's 5.0):  
configuration scripts, porting, mods to adhere to XSI Curses in the areas of background color, terminal modes. Also memory leak testing, the wresize, default colors and key definition extensions and numerous bug fixes (more than half of those enumerated in NEWS beginning with the internal release 1.8.9).

Florian La Roche (official maintainer for FSF's ncurses 4.2)  
Beginning with release 4.2, ncurses is distributed under an MIT-style license.

Eric S. Raymond:  
the man pages, infocmp(1), tput(1), clear(1), captinfo(1), tset(1), toe(1), most of tic(1), trace levels, the HTML intro, wgetnstr() and many other entry points, the cursor-movement optimization, the scroll-pack optimizer for vertical motions, the mouse interface and xterm mouse support, and the ncurses test program.

Juergen Pfeifer  
The menu and form libraries, C++ bindings for ncurses, menus, forms and panels, as well as the Ada95 binding. Ongoing support for panel.

## CONTRIBUTORS:

Alexander V. Lukyanov

for numerous fixes and improvements to the optimization logic.

David MacKenzie

for first-class bug-chasing and methodical testing.

Ross Ridge

for the code that hacks termcap parameterized strings into terminfo.

Warren Tucker and Gerhard Fuernkranz,

for writing and sending the panel library.

Hellmuth Michaelis,

for many patches and testing the optimization code.

Eric Newton, Ulrich Drepper, and Anatoly Ivasyuk:

the C++ code.

Jonathan Ross,

for lessons in using sed.

Keith Bostic (maintainer of 4.4BSD curses)

for help, criticism, comments, bug-finding, and being willing to deep-six BSD curses for this one when it grew up.

Richard Stallman,

for his commitment to making ncurses free software.

Countless other people have contributed by reporting bugs, sending fixes, suggesting improvements, and generally whining about ncurses :-)

## BUGS:

See the INSTALL file for bug and developer-list addresses.

The Hacker's Guide in the doc directory includes some guidelines on how to report bugs in ways that will get them fixed most quickly.

### 3.129 nsp-4-19-0

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### 3.130 nss-3.36.0-7.1

#### # Network Security Services

Network Security Services (NSS) is a set of libraries designed to support cross-platform development of security-enabled client and server applications. NSS supports SSL v3-TLS 1.2 (experimental TLS 1.3), PKCS #5, PKCS#7, PKCS #11, PKCS #12, S/MIME, X.509 v3 certificates, and other security standards.

#### ## Getting started

In order to get started create a new directory on that you will be uses as your local work area, and check out NSS and NSPR. (Note that there's no git mirror of NSPR and you require mercurial to get the latest NSPR source.)

```
git clone https://github.com/nss-dev/nss.git
hg clone https://hg.mozilla.org/projects/nspr
```

NSS can also be cloned with mercurial

```
hg clone https://hg.mozilla.org/projects/nss
```

#### ## Building NSS

**\*\*This build system is under development. It does not yet support all the features or platforms that NSS supports. To build on anything other than Mac or Linux please use the legacy build system as described below.\*\***

Build requirements:

- \* [gyp](https://gyp.gsrc.io/)
- \* [ninja](https://ninja-build.org/)

After changing into the NSS directory a typical build is done as follows

```
./build.sh
```

Once the build is done the build output is found in the directory `'../dist/Debug'` for debug builds and `'../dist/Release'` for opt builds. Exported header files can be found in the `'include'` directory, library files in directory `'lib'`, and tools in directory `'bin'`. In order to run the tools, set your system environment to use the libraries of your build from the "lib"

directory, e.g., using the 'LD\_LIBRARY\_PATH' or 'DYLD\_LIBRARY\_PATH'.

See [help.txt](https://hg.mozilla.org/projects/nss/raw-file/tip/help.txt) for more information on using build.sh.

## ## Building NSS (legacy build system)

After changing into the NSS directory a typical build of 32-bit NSS is done as follows:

```
make nss_build_all
```

The following environment variables might be useful:

- \* 'BUILD\_OPT=1' to get an optimised build

- \* 'USE\_64=1' to get a 64-bit build (recommended)

The complete list of environment variables can be found [here]

([https://developer.mozilla.org/en-US/docs/Mozilla/Projects/NSS/Reference/NSS\\_environment\\_variables](https://developer.mozilla.org/en-US/docs/Mozilla/Projects/NSS/Reference/NSS_environment_variables)).

To clean the build directory run:

```
make nss_clean_all
```

## ## Tests

### ### Setup

Make sure that the address '\$HOST.\$DOMSUF' on your computer is available. This is necessary because NSS tests generate certificates and establish TLS connections, which requires a fully qualified domain name.

You can test this by

calling 'ping \$HOST.\$DOMSUF'. If this is working, you're all set. If it's not, set or export:

```
HOST=nss
DOMSUF=local
```

Note that you might have to add 'nss.local' to '/etc/hosts' if it's not there. The entry should look something like '127.0.0.1 nss.local nss'.

### ### Running tests

**\*\*Runnnng all tests will take a while!\*\***

```
cd tests
./all.sh
```

Make sure that all environment variables set for the build are set while running the tests as well. Test results are published in the folder `'../../test_results/'`.

Individual tests can be run with the `'NSS_TESTS'` environment variable, e.g. `'NSS_TESTS=ssl_gtests ./all.sh'` or by changing into the according directory and running the bash script there `'cd ssl_gtests && ./ssl_gtests.sh'`. The following tests are available:

cipher lowhash libpkix cert dbtests tools fips sdr crmf smime ssl ocsf merge pkits chains ec gtests ssl\_gtests bogo

To make tests run faster it's recommended to set `'NSS_CYCLES=standard'` to run only the standard cycle.

### ## Releases

NSS releases can be found at [Mozilla's download server](<https://ftp.mozilla.org/pub/security/nss/releases/>). Because NSS depends on the base library NSPR you should download the archive that combines both NSS and NSPR.

### ## Contributing

[Bugzilla](<https://bugzilla.mozilla.org/>) is used to track NSS development and bugs. File new bugs in the NSS product.

A list with good first bugs to start with are [listed here]

([https://bugzilla.mozilla.org/buglist.cgi?keywords=good-first-bug%2C%20&keywords\\_type=allwords&list\\_id=13238861&resolution=---&query\\_format=advanced&product=NSS](https://bugzilla.mozilla.org/buglist.cgi?keywords=good-first-bug%2C%20&keywords_type=allwords&list_id=13238861&resolution=---&query_format=advanced&product=NSS)).

### ### NSS Folder Structure

The nss directory contains the following important subdirectories:

- 'coreconf' contains the build logic.
- 'lib' contains all library code that is used to create the runtime libraries.
- 'cmd' contains a set of various tool programs that are built with NSS. Several tools are general purpose and can be used to inspect and manipulate the storage files that software using the NSS library creates and modifies. Other tools are only used for testing purposes.
- 'test' and 'gtests' contain the NSS test suite. While 'test' contains shell scripts to drive test programs in 'cmd', 'gtests' holds a set of [gtests](https://github.com/google/googletest).

A more comprehensible overview of the NSS folder structure and API guidelines can be found [here] (https://developer.mozilla.org/en-US/docs/Mozilla/Projects/NSS/NSS\_API\_Guidelines).

## ## Build mechanisms related to FIPS compliance

NSS supports build configurations for FIPS-140 compliance, and alternative build configurations that disable functionality specific to FIPS-140 compliance.

This section documents the environment variables and build parameters that control these configurations.

### ### Build FIPS startup tests

The C macro `NSS_NO_INIT_SUPPORT` controls the FIPS startup self tests. If `NSS_NO_INIT_SUPPORT` is defined, the startup tests are disabled.

The legacy build system (make) by default disables these tests. To enable these tests, set environment variable `NSS_FORCE_FIPS=1` at build time.

The gyp build system by default disables these tests. To enable these tests, pass parameter `--enable-fips` to `build.sh`.

### ### Building either FIPS compliant or alternative compliant code

The C macro `NSS_FIPS_DISABLED` can be used to disable some FIPS compliant code and enable alternative implementations.

The legacy build system (make) never defines `NSS_FIPS_DISABLED` and always uses

the FIPS compliant code.

The gyp build system by default defines `NSS_FIPS_DISABLED`.

To use the FIPS compliant code, pass parameter `--enable-fips` to `build.sh`.

### ### Test execution

The NSS test suite may contain tests that are included, excluded, or are different based on the FIPS build configuration. To execute the correct tests, it's necessary to determine which build configuration was used.

The legacy build system (make) uses environment variables to control all aspects of the build configuration, including FIPS build configuration.

Because the gyp build system doesn't use environment variables to control the build configuration, the NSS tests cannot rely on environment variables to determine the build configuration.

A helper binary named `nss-build-flags` is produced as part of the NSS build, which prints the C macro symbols that were defined at build time, and which are relevant to test execution.

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### 3.131 nss-pem-1.0.3-5

nss-pem  
=====

PEM file reader for Network Security Services (NSS), implemented as a PKCS#11 module.

Build Instructions  
-----

```
mkdir build
cd build
cmake ../src
make -j
```



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## 3.132 nss-softokn-3.36.0-5

### # Network Security Services

Network Security Services (NSS) is a set of libraries designed to support cross-platform development of security-enabled client and server applications. NSS supports SSL v3-TLS 1.2 (experimental TLS 1.3), PKCS #5, PKCS#7, PKCS #11, PKCS #12, S/MIME, X.509 v3 certificates, and other security standards.

### ## Getting started

In order to get started create a new directory on that you will be uses as your local work area, and check out NSS and NSPR. (Note that there's no git mirror of NSPR and you require mercurial to get the latest NSPR source.)

```
git clone https://github.com/nss-dev/nss.git
hg clone https://hg.mozilla.org/projects/nspr
```

NSS can also be cloned with mercurial

```
hg clone https://hg.mozilla.org/projects/nss
```

### ## Building NSS

**\*\*This build system is under development. It does not yet support all the features or platforms that NSS supports. To build on anything other than Mac or Linux please use the legacy build system as described below.\*\***

Build requirements:

- \* [gyp] (<https://gyp.gsrc.io/>)
- \* [ninja] (<https://ninja-build.org/>)

After changing into the NSS directory a typical build is done as follows

```
./build.sh
```

Once the build is done the build output is found in the directory `'../dist/Debug'` for debug builds and `'../dist/Release'` for opt builds. Exported header files can be found in the `'include'` directory, library files in directory `'lib'`, and tools in directory `'bin'`. In order to run the tools, set your system environment to use the libraries of your build from the "lib"

directory, e.g., using the 'LD\_LIBRARY\_PATH' or 'DYLD\_LIBRARY\_PATH'.

See [help.txt](https://hg.mozilla.org/projects/nss/raw-file/tip/help.txt) for more information on using build.sh.

## ## Building NSS (legacy build system)

After changing into the NSS directory a typical build of 32-bit NSS is done as follows:

```
make nss_build_all
```

The following environment variables might be useful:

- \* 'BUILD\_OPT=1' to get an optimised build

- \* 'USE\_64=1' to get a 64-bit build (recommended)

The complete list of environment variables can be found [here]

([https://developer.mozilla.org/en-US/docs/Mozilla/Projects/NSS/Reference/NSS\\_environment\\_variables](https://developer.mozilla.org/en-US/docs/Mozilla/Projects/NSS/Reference/NSS_environment_variables)).

To clean the build directory run:

```
make nss_clean_all
```

## ## Tests

### ### Setup

Make sure that the address '\$HOST.\$DOMSUF' on your computer is available. This is necessary because NSS tests generate certificates and establish TLS connections, which requires a fully qualified domain name.

You can test this by

calling 'ping \$HOST.\$DOMSUF'. If this is working, you're all set. If it's not, set or export:

```
HOST=nss
DOMSUF=local
```

Note that you might have to add 'nss.local' to '/etc/hosts' if it's not there. The entry should look something like '127.0.0.1 nss.local nss'.

### ### Running tests

**\*\*Runnnng all tests will take a while!\*\***

```
cd tests
./all.sh
```

Make sure that all environment variables set for the build are set while running the tests as well. Test results are published in the folder `'../../test_results/'`.

Individual tests can be run with the `'NSS_TESTS'` environment variable, e.g. `'NSS_TESTS=ssl_gtests ./all.sh'` or by changing into the according directory and running the bash script there `'cd ssl_gtests && ./ssl_gtests.sh'`. The following tests are available:

cipher lowhash libpkix cert dbtests tools fips sdr crmf smime ssl ocp merge pkits chains ec gtests ssl\_gtests bogo

To make tests run faster it's recommended to set `'NSS_CYCLES=standard'` to run only the standard cycle.

### ## Releases

NSS releases can be found at [Mozilla's download server](<https://ftp.mozilla.org/pub/security/nss/releases/>). Because NSS depends on the base library NSPR you should download the archive that combines both NSS and NSPR.

### ## Contributing

[Bugzilla](<https://bugzilla.mozilla.org/>) is used to track NSS development and bugs. File new bugs in the NSS product.

A list with good first bugs to start with are [listed here]

([https://bugzilla.mozilla.org/buglist.cgi?keywords=good-first-bug%2C%20&keywords\\_type=allwords&list\\_id=13238861&resolution=---&query\\_format=advanced&product=NSS](https://bugzilla.mozilla.org/buglist.cgi?keywords=good-first-bug%2C%20&keywords_type=allwords&list_id=13238861&resolution=---&query_format=advanced&product=NSS)).

### ### NSS Folder Structure

The nss directory contains the following important subdirectories:

- 'coreconf' contains the build logic.
- 'lib' contains all library code that is used to create the runtime libraries.
- 'cmd' contains a set of various tool programs that are built with NSS. Several tools are general purpose and can be used to inspect and manipulate the storage files that software using the NSS library creates and modifies. Other tools are only used for testing purposes.
- 'test' and 'gtests' contain the NSS test suite. While 'test' contains shell scripts to drive test programs in 'cmd', 'gtests' holds a set of [gtests](https://github.com/google/googletest).

A more comprehensible overview of the NSS folder structure and API guidelines can be found [here] ([https://developer.mozilla.org/en-US/docs/Mozilla/Projects/NSS/NSS\\_API\\_Guidelines](https://developer.mozilla.org/en-US/docs/Mozilla/Projects/NSS/NSS_API_Guidelines)).

## ## Build mechanisms related to FIPS compliance

NSS supports build configurations for FIPS-140 compliance, and alternative build configurations that disable functionality specific to FIPS-140 compliance.

This section documents the environment variables and build parameters that control these configurations.

### ### Build FIPS startup tests

The C macro `NSS_NO_INIT_SUPPORT` controls the FIPS startup self tests. If `NSS_NO_INIT_SUPPORT` is defined, the startup tests are disabled.

The legacy build system (make) by default disables these tests. To enable these tests, set environment variable `NSS_FORCE_FIPS=1` at build time.

The gyp build system by default disables these tests. To enable these tests, pass parameter `--enable-fips` to `build.sh`.

### ### Building either FIPS compliant or alternative compliant code

The C macro `NSS_FIPS_DISABLED` can be used to disable some FIPS compliant code and enable alternative implementations.

The legacy build system (make) never defines `NSS_FIPS_DISABLED` and always uses

the FIPS compliant code.

The gyp build system by default defines `NSS_FIPS_DISABLED`.

To use the FIPS compliant code, pass parameter `--enable-fips` to `build.sh`.

### ### Test execution

The NSS test suite may contain tests that are included, excluded, or are different based on the FIPS build configuration. To execute the correct tests, it's necessary to determine which build configuration was used.

The legacy build system (make) uses environment variables to control all aspects of the build configuration, including FIPS build configuration.

Because the gyp build system doesn't use environment variables to control the build configuration, the NSS tests cannot rely on environment variables to determine the build configuration.

A helper binary named `nss-build-flags` is produced as part of the NSS build, which prints the C macro symbols that were defined at build time, and which are relevant to test execution.



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### 3.134 ntp-4.2.6p5-28

Submit patches, bug reports, and enhancement requests via

<http://bugs.ntp.org>

The ntp Distribution Base Directory

This directory and its subdirectories contain the Network Time Protocol Version 4 (NTP) distribution for Unix and Windows/NT systems. This release may still work on VxWorks, too.

The contents of the base directory are given in this file. The contents of subdirectories are given in the README files in each subdirectory.

A complete explanation of the configure, compile and install process, as well as setting up an NTP subnet, is in the HTML pages in the ./html/ directory. For more information on NTP and how to get a working setup, read WHERE-TO-START.

For Windows/NT, visit [html/build/hints/winnt.html](http://html/build/hints/winnt.html) .

The base directory ./ contains the autoconfiguration files, source directories and related stuff:

COPYRIGHT Excerpt from the HTML file ./html/copyright.html. This file specifies copyright conditions, together with a list of major authors and electric addresses.

INSTALL Generic installation instructions for autoconf-based programs. Unless you really know what you are doing, you should read the directions in the HTML pages, starting with ./html/index.html.

NEWS What's new in this release.

README This file.

README.bk Instructions for folks who use the BitKeeper-repository version of NTP.

README.hackers Notes to folks who want to hack on the code.

TODO List of items the NTP developers are working on.

WHERE-TO-START Hints on what to read in order to get a working configuration.

Makefile.am Automake file configuration file. Edit only if you have the GNU automake and autoconf utilities installed.

Makefile.in Autoconf make file template for Unix.

adjtimed Directory containing the sources for the adjtime daemon for HP/UX systems prior to HP-UX 10.0.

authstuff Directory containing sources for miscellaneous programs to test, calibrate and certify the cryptographic mechanisms for DES and MD5 based authentication. These programs do not include the cryptographic routines themselves, so are free of U.S. export restrictions.

build A script to build the distribution in A. 'config.guess' subdirectory (more or less).

clockstuff Directory containing sources for miscellaneous programs to test certain auxiliary programs used with some kernel configurations, together with a program to calculate propagation delays for use with radio clocks and national time dissemination services such as WWV/WWVH, WWVB and CHU.

conf Directory containing a motley collection of configuration files for various systems. For example only.

config.guess Script used to identify the machine architecture and operating system.

config.h.in Configuration file generated automatically from configure.in. Do not edit.

configure Script used to configure the distribution. See the HTML pages (./html/index.html) for a complete description of the options available.

configure.in Master configuration template. Edit only if you have the GNU automake and autoconf utilities installed.

dot.emacs C-mode indentation rules for code "Just the way Dave likes it".

flock\_build (UDe1 only) Build the distribution on a number of different platforms.

html Directory containing a complete set of documentation on building and configuring a NTP server or client. The documentation is in the form of HTML files suitable for browsing and contains links to additional documentation at various web sites. If a browser is unavailable, an ordinary text editor can be used.

include Directory containing include header files used by most programs in the distribution.

install-sh Script to install a program, script or data file.

kernel Directory containing sources for kernel programs such as line disciplines and STREAMS modules used with the CHU decoder and precision PPS signals.

libntp Directory containing library source code used by most programs in the distribution.

ntpdate Directory containing sources for a program to set the local machine time from one or more remote machines running NTP. Operates like rdate, but much more accurate.

ntpq Directory containing sources for a utility program to query local and remote NTP peers for state variables and related timekeeping information. This program conforms to Appendix A of the NTP Version 3 Specification RFC 1305.

ntptrace Directory containing sources for a utility program that can be used to reveal the chain of NTP peers from a designated peer to the primary server at the root of the timekeeping subnet.

parse Directory containing files belonging to the generic parse reference clock driver. For reasonably simple clocks it is possible to get away with about 3-4Kb of code. additionally the SunOS 4.x/Solaris 5.3 streams module for parse squats here.



patches Directory containing patches already applied to this distribution. These are included for record and to help in possible porting problems.

scripts Directory containing scripts to build the configuration files in this directory and then the makefiles used in various dependent directories. the subdirectories monitoring and support hold various perl and shell scripts for visualizing synchronization and daemon startup.

stamp.h.in Configuration file generated automatically from configure.in. Do not edit.

util                    Directory containing sources for various utility and testing programs.

David L. Mills (mills@udel.edu)  
21 June 1998

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ntpstat is released under the terms of the GNU  
General Public License version 2 (<http://www.fsf.org/>)  
ntpstat is copyright (c) G. Richard Keech 2001

### 3.135 numactl-2.0.9-7

Simple NUMA policy support. It consists of a numactl program to run other programs with a specific NUMA policy and a libnuma shared library ("NUMA API") to set NUMA policy in applications.

The libnuma binary interface is supposed to stay binary compatible. Incompatible changes will use new symbol version numbers.

In addition there are various test and utility programs, like numastat to display NUMA allocation statistics and memhog.

In test there is a small regression test suite. Note that regress assumes a unloaded machine with memory free on each node. Otherwise you will get spurious failures in the non strict policies (preferred, interleave)

See the manpages numactl.8 and numa.3 for details.

Copyright:

numactl and the demo programs are under the GNU General Public License, v.2  
libnuma is under the GNU Lesser General Public License, v2.1.

The manpages are under the same license as the Linux manpages (see the files)

numademo links with a library derived from the C version of STREAM by John D. McCalpin and Joe R. Zagar for one sub benchmark. See stream\_lib.c for the license. In particular when you publish numademo output you might need to pay attention there or filter out the STREAM results.

It also uses a public domain Mersenne Twister implementation from Michael Brundage.

Version 2.0.9: (C)2013 SGI

Author:

Andi Kleen, SUSE Labs

Version 2.0.0 by Cliff Wickman, Christoph Lameter and Lee Schermerhorn  
cpw@sgi.com clameter@sgi.com lee.schermerhorn@hp.com

### 3.136 open-vm-tools-10.2.5-3

Project information:

open-vm-tools <<http://open-vm-tools.sourceforge.net/>>

These are the release notes for the open-vm-tools. Read them carefully, as they explain how to build this project for different platforms and various different Linux distributions.

=====

General information:

(\*)What are the open-vm-tools?

The open-vm-tools are a subset of the VMware Tools, currently composed of kernel modules for Linux and user-space programs for all VMware supported Unix like guest operating systems.

(\*)Where do I find documentation for the open-vm-tools beyond this README? Please refer to the main project web site for all the latest documentation at: <<http://open-vm-tools.sourceforge.net/>>

(\*)How do I build the open-vm-tools?

The open-vm-tools uses the GNU Automake tool for generating Makefiles to build all sources. More information about Automake can be found here: <<http://sources.redhat.com/automake/>>

For more information on building this project see the "Project build information" section of this document.

=====

Project build information:

(\*)Getting configure options & help:

If you are looking for help or additional settings for the building of this project the following configure command will display a list of help options: `./configure --help`

(\*)Using configure:

When using configure in the steps below it is only necessary to call `./configure` once unless there was a problem after the first invocation.

(\*)Building Unix user-space programs:

1) `./configure`

- 2) Run "make" to build Unix userland programs
- 3) Run "make modules" to build kernel modules

(\*)Packaging:

If you are interested in creating a Tools package, please see

<<https://sourceforge.net/apps/mediawiki/open-vm-tools/index.php?title=Packaging>>  
for more information.

=====

Build suggestions:

Each Linux distribution puts binaries, libraries and development headers in different locations. This leads to having to setup different paths for the compiler and linker for the Automake system. Below is a list of known configurations to build for platforms that do not "just work" out of the box or the tar-ball as the case may be.

General Build note:

Please make note that the "--disable-multimon" flag should only be used when there are no libXinerama libraries installed, or you do not want to enable multi monitor support.

Your operating system version will influence which kernel modules can be built. Here are the minimum OS versions for each module:

|             |             |             |             |             |
|-------------|-------------|-------------|-------------|-------------|
| -----       |             |             |             |             |
| vmsync      | vmblock     | vmxnet      | vmmemctl    | vmhgfs      |
| -----       | -----       | -----       | -----       | -----       |
| Linux 2.6.6 | Linux 2.4.0 | Linux 2.2.0 | Linux 2.2.0 | Linux 2.4.0 |
| FreeBSD N/A | FreeBSD 6.0 | FreeBSD 4.9 | FreeBSD 3.2 |             |
| -----       |             |             |             |             |

(\*)Suse Enterprise 10.1 (i386 & x86\_64):

i386:

./configure LDFLAGS="-L/opt/gnome/lib"

x86\_64:

./configure LDFLAGS="-L/opt/gnome/lib64"

(\*)OpenSolaris "Nevada" (i386 & x86\_64):

Before building open-vm-tools on Solaris, you will need to make sure that libdnet (<http://libdnet.sourceforge.net/>) is installed and that the 'dnet-config' script is on your shell's PATH.

Make sure that the GNU tools are in your shell's PATH. The default GNU tools location on OpenSolaris is: "/usr/sfw/bin". Once the PATH is set in your build shell then the following configure command should work:

```
./configure --disable-multimon
```

```
(*)FreeBSD 6.2 (i386 & x86_64):
./configure LDFLAGS="-L/usr/local/lib"
```

=====

Other resources:

There are also open-source video & mouse drivers for Xorg/XFree86 that provide better performance and additional features to Linux, Solaris, and BSD derivatives guests running X11.

The drivers 'xf86-input-vmmouse' and 'xf86-video-vmware' are included with recent Xorg releases, and it shouldn't be necessary to do anything extra to obtain them. If you want to obtain them separately, they can be downloaded at: <<http://xorg.freedesktop.org/releases/individual/driver/>>

=====

Guest operating systems used to test on this release:

```
(*)Fedora Core 8 (i386 & x86_64)
(*)Redhat 9.0 (i386)
(*)Redhat Enterprise 4 U5 (i386 & x86_64)
(*)Redhat Enterprise 5 (i386 & x86_64)
(*)FreeBSD 5.4 (i386 & x86_64)
(*)FreeBSD 6.2 (i386 & x86_64)
(*)OpenSolaris 10 "Nevada" (i386 & x86_64)
(*)Open SuSE 10.3 (i386 & x86_64)
(*)Ubuntu 6.04 (i386 & x86_64)
(*)Ubuntu 7.10 (i386 & x86_64)
```

=====

Known issues:

=====

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Version 2.1, February 1999

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```
>>> freebsd-base64-4.8
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```
>>> freebsd-base64-4.8
```

base64.c -- routines to encode/decode base64 data

\$OpenLDAP: pkg/ldap/libraries/liblutil/base64.c,v 1.15 2006/01/03 22:12:11 kurt  
Exp \$ /

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[OPENVMTTOOLS1025GAVS022118]

### 3.137 openldap-2.4.44-21

#### OpenLDAP 2.4 README

For a description of what this distribution contains, see the ANNOUNCEMENT file in this directory. For a description of changes from previous releases, see the CHANGES file in this directory.

This is 2.4 release, it includes significant changes from prior releases.

#### REQUIRED SOFTWARE

Building OpenLDAP Software requires a number of software packages to be preinstalled. Additional information regarding prerequisite software can be found in the OpenLDAP Administrator's Guide.

Base system (libraries and tools):

- Standard C compiler (required)

- Cyrus SASL 2.1.21+ (recommended)

- OpenSSL 0.9.7+ (recommended)

- Reentrant POSIX REGEX software (required)

SLAPD:

BDB and HDB backends require Oracle Berkeley DB 4.4 - 4.8, or 5.0 - 5.1. It is highly recommended to apply the patches from Oracle for a given release.

CLIENTS/CONTRIB ware:

- Depends on package. See per package README.

#### MAKING AND INSTALLING THE DISTRIBUTION

Please see the INSTALL file for basic instructions. More detailed instructions can be found in the OpenLDAP Administrator's Guide (see DOCUMENTATION section).

#### DOCUMENTATION

The OpenLDAP Administrator's Guide is available in the guide.html file in the doc/guide/admin directory. The guide and a number of other documents are available at [<http://www.openldap.org/doc/admin/guide.html>](http://www.openldap.org/doc/admin/guide.html).

The distribution also includes manual pages for most programs

and library APIs. See ldap(3) for details.

The OpenLDAP website is available and contains the latest LDAP news, releases announcements, pointers to other LDAP resources, etc.. It is located at <<http://www.OpenLDAP.org/>>.

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### 3.138 openssh-7.4p1-16

`pam_ssh_agent_auth` is a PAM module which permits PAM authentication via your keyring in a forwarded `ssh-agent`.

Release 0.10.3 is stable, and has been tested on FreeBSD, Solaris 10, Solaris 11, RHEL5, RHEL6, Debian Wheezy, Ubuntu 12.04 (LTS), Ubuntu 13.10, Ubuntu 14.04 and Mac OS-X 10.10, 10.11, and macos 10.12.

This module can be used to provide authentication for anything run locally that supports PAM. It was written specifically with the intention of permitting authentication for `sudo` without password entry, and also has been proven useful for use with `su` as an alternative to `wheel`.

It serves as middle ground between the two most common, and suboptimal alternatives for large-scale system administration: allowing `rootlogin` via `ssh`, or using `NOPASSWD` in `sudoers`. This module allows for `ssh` public-key authentication, and it does this by leveraging an authentication mechanism you are probably already using, `ssh-agent`.

There are caveats of course, `ssh-agent` forwarding has it's own security risks which must be carefully considered for your environment. In cases where there are not untrustworthy intermediate servers, and you wish to retain traceability, accountability, and required authentication for privileged command invocation, the benefits should outweigh the risks. Release 0.10.3 can be downloaded from SourceForge: [https://sourceforge.net/project/showfiles.php?group\\_id=249556](https://sourceforge.net/project/showfiles.php?group_id=249556) And from github: [https://github.com/jbeverly/pam\\_ssh\\_agent\\_auth](https://github.com/jbeverly/pam_ssh_agent_auth)

If you encounter any issues with usability or security, please github issues [https://github.com/jbeverly/pam\\_ssh\\_agent\\_auth/issues](https://github.com/jbeverly/pam_ssh_agent_auth/issues) to report problems.

Note that if you wish to use this for `sudo`, you will need a version of `sudo` that preserves the `env_keep` environment during authentication; and ideally a version incorporating my minor patch which ensures `RUSER` is set during PAM authentication.

If building from github, ensure you populate the submodules with '`git submodule init; git submodule update`'

Also note that future development of this pam module is moving to a 2.0 repo located here: [https://github.com/jbeverly/pam\\_ssh\\_agent\\_auth-2.0](https://github.com/jbeverly/pam_ssh_agent_auth-2.0), which will remain based on openssh portable upstream, to hopefully avoid the kind of drift this module experienced over the many years.

LEGACY NOTICE: (very old)

sudo 1.6.8p12 does not work correctly with this PAM module, because it clears the environment (even env\_keep variables) prior to attempting PAM authentication.

sudo 1.7.2p1 or later is preferred, as it correctly sets PAM\_RUSER for authentication.

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[Tatu continues]

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```

* @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>
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### 3.139 openssl-1.0.2k-16

OpenSSL 1.0.2k 26 Jan 2017

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#### DESCRIPTION

-----

The OpenSSL Project is a collaborative effort to develop a robust, commercial-grade, fully featured, and Open Source toolkit implementing the Secure Sockets Layer (SSLv3) and Transport Layer Security (TLS) protocols as well as a full-strength general purpose cryptographic library. The project is managed by a worldwide community of volunteers that use the Internet to communicate, plan, and develop the OpenSSL toolkit and its related documentation.

OpenSSL is descended from the SSLeay library developed by Eric A. Young and Tim J. Hudson. The OpenSSL toolkit is licensed under a dual-license (the OpenSSL license plus the SSLeay license), which means that you are free to get and use it for commercial and non-commercial purposes as long as you fulfill the conditions of both licenses.

#### OVERVIEW

-----

The OpenSSL toolkit includes:

##### libssl.a:

Provides the client and server-side implementations for SSLv3 and TLS.

##### libcrypto.a:

Provides general cryptographic and X.509 support needed by SSL/TLS but not logically part of it.

##### openssl:

A command line tool that can be used for:  
Creation of key parameters  
Creation of X.509 certificates, CSRs and CRLs  
Calculation of message digests  
Encryption and decryption

SSL/TLS client and server tests  
Handling of S/MIME signed or encrypted mail  
And more...

## INSTALLATION

-----

See the appropriate file:

|               |                         |
|---------------|-------------------------|
| INSTALL       | Linux, Unix, etc.       |
| INSTALL.DJGPP | DOS platform with DJGPP |
| INSTALL.NW    | Netware                 |
| INSTALL.OS2   | OS/2                    |
| INSTALL.VMS   | VMS                     |
| INSTALL.W32   | Windows (32bit)         |
| INSTALL.W64   | Windows (64bit)         |
| INSTALL.WCE   | Windows CE              |

## SUPPORT

-----

See the OpenSSL website [www.openssl.org](http://www.openssl.org) for details on how to obtain commercial technical support.

If you have any problems with OpenSSL then please take the following steps first:

- Download the latest version from the repository to see if the problem has already been addressed
- Configure with no-asm
- Remove compiler optimisation flags

If you wish to report a bug then please include the following information and create an issue on GitHub:

- On Unix systems:
  - Self-test report generated by 'make report'
- On other systems:
  - OpenSSL version: output of 'openssl version -a'
  - OS Name, Version, Hardware platform
  - Compiler Details (name, version)
- Application Details (name, version)
- Problem Description (steps that will reproduce the problem, if known)
- Stack Traceback (if the application dumps core)

Just because something doesn't work the way you expect does not mean it is necessarily a bug in OpenSSL.

#### HOW TO CONTRIBUTE TO OpenSSL

-----

See CONTRIBUTING

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-----

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=====

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\*

\*/

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-----

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```

### 3.140 os-prober-1.58-9

This is a small package that may be depended on by any bootloader installer package to detect other filesystems with operating systems on them, and work out how to boot other linux installs.

os-prober

-----

All one has to do is Depend on os-prober, and then run the os-prober command. This command takes no arguments: it will scan all disks available on the system for other operating systems, and output a list of strings such as:

```
/dev/sda1:Windows NT/2000/XP:WinNT:chain
```

```
^-----^ ^-----^ ^----^ ^----^
```

|       |                                         |            |                                                                                                                                                             |
|-------|-----------------------------------------|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| part. | OS name for boot loader's pretty output | short name | May change: type of boot loader required. Usually there is only a 'linux' style bootloader or a chain one for other partitions with their own boot sectors. |
|-------|-----------------------------------------|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|

Tests are executable programs in the directory /usr/lib/os-probes/. Each test is called once per partition, with the partition to check as its parameter, and may output a string as described above, or nothing if it does not recognise an OS on that partition. Tests return an exit code of 0 if they successfully found an OS, and no further tests will be run on that partition; or return an exit code of 1 to indicate that no OS was found, and let the next test run.

Tests that require the partition to be mounted can be placed in /usr/lib/os-probes/mounted/. These tests are passed the following parameters: partition, mount point, filesystem.

Bootloader installer packages will then have to process this output (fairly trivial) to create valid configuration entries for the bootloader.

Note that os-prober can find other Linux installations, as well as other operating systems. It does not try to work out all the information needed to boot Linux (initrd, kernel params, etc). That task is left to linux-boot-prober.

linux-boot-prober

-----

the `linux-boot-prober` command should be run with a single argument consisting of a partition that is known to have a linux root filesystem on it, as returned by the `os-prober` command. It will try to work out how to boot that linux installation, and if it is successful, will output one or more lines in the form:

```
/dev/sda2:/dev/sda1:Linux:/vmlinuz:/initrd.gz:root=/dev/sda1
^-----^ ^-----^ ^----^ ^-----^ ^-----^ ^-----^
root boot label kernel initrd kernel params
part. part.
```

The root partition and boot partition may of course be the same. No guarantee is made that any partitions referred to in the kernel parameters will still be in the same place after Debian is installed, or that the `/etc/fstab` of the system will be right, or that the system will even boot. The `initrd` field may be empty if there is no `initrd`. The label is whatever label was used in the boot loader for this linux installation, and it may be quite long or very short (or nonexistent), and may be inaccurate, confusing, or non-unique. See `TODO` for other limitations.

The tests used by `linux-boot-prober` are in the directory `/usr/lib/linux-boot-probes/` and also in `/usr/lib/linux-boot-probes/mounted`, and they are called in a similar way as the `os-probes` described above. The mounted probes are passed parameters for the root partition, the boot partition, and the directory the filesystems are mounted in.

`linux-boot-prober` skips over partitions that are currently mounted on `/`, `/target`, or `/target/boot`.

### **3.141 p11-kit-0.23.5-3**

P11-KIT

Provides a way to load and enumerate PKCS#11 modules. Provides a standard configuration setup for installing PKCS#11 modules in such a way that they're discoverable.

Also solves problems with coordinating the use of PKCS#11 by different components or libraries living in the same process.

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## 3.142 pam-1.1.8-22

Hello!

Thanks for downloading Linux-PAM.

NOTES:

How to use it is as follows:

```
./configure --help | less
./configure <your-options>
make
```

To make sure everything was compiled correct, run:

```
make check
```

If a test fails, you should not continue to install this build.  
These tests require a suitable file `/etc/pam.d/other`; if necessary,  
create such a file containing, e.g., these five lines (not indented)

```
#!/PAM-1.0
auth required pam_deny.so
account required pam_deny.so
password required pam_deny.so
session required pam_deny.so
```

Note, if you are worried - don't even think about doing the next line  
(most Linux distributions already support PAM out of the box, so if  
something goes wrong with installing the code from this version your  
box may stop working..)

```
make install
```

That said, please report problems to the bug reporting database  
on [sourceforge.net](http://sourceforge.net).

You can run additional checks after installing by executing

```
make xtests
```

as root.

WARNING: Running "make xtests" can overwrite configuration data or make the system insecure/unfunctional for a short time! Backup all important data before!

If you do not wish to make the modules dynamically loadable, but build a static libpam including all PAM modules, you have to call:

```
./configure --enable-static-modules --disable-pie
```

To run the build checks with static modules, you need to run the following command: `make -C test check && make check`

To regenerate manual pages from the XML source files you need the docbook-xsl stylesheets in version 1.69.1 or newer, older versions had a bug which generates a broken layout.



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---

### 3.143 parted-3.1-29

GNU Parted

-----

GNU Parted is a program for manipulating partition tables.

WARNING: USING PARTED TO PERFORM FILE SYSTEM OPERATIONS IS NO LONGER SUPPORTED

-----

Parted (post-2.4) no longer has the ability to create and modify file systems. Use file-system-specific tools to create and operate on file systems. For example, use the e2fsprogs programs to operate on ext2, ext3 and ext4 file systems. Use programs from the reiserfsprogs package if you want to manipulate reiserfs file systems. Although Parted lets you do some of the same things, the file-system-related code in parted is not as robust as the code in more specialized, FS-specific packages.

Most FS-related functionality was removed after Parted 2.4. Thus, the following commands are no longer supported: mkpartfs, mkfs, cp, move, check, resize.

See the file NEWS for a list of major changes in the current release.

\* documentation is in the doc/ directory. The User's documentation is in texinfo format, and is built into a format viewable by info/pinfo when you run make. To view the distributed texinfo documentation, run this:

```
$ info -f parted.info
```

Or view it on-line at:

<http://www.gnu.org/software/parted/manual/parted.html>

- \* the GNU Parted home page is <http://www.gnu.org/software/parted>
- \* the GNU Parted FAQ can be found at <http://www.gnu.org/software/parted/faq.html>
- \* send bug reports, requests for help, feature requests, comments, etc. to [bug-parted@gnu.org](mailto:bug-parted@gnu.org).

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## NOTE TO DISTRIBUTIONS

-----

(1) When compiling Parted for distribution for general use, we recommend using the default configuration:

```
CFLAGS=-Os ./configure
```

This includes `--enable-debug` (by default), which contains many assertions. Obviously, these "waste" space, but in the past, they have caught potentially dangerous bugs before they would have done damage, so we think it's worth it. Also, it means we get more bug reports ;)

(2) When doing dependencies, remember that `libreiserfs` is a *\*soft\** dependency, so I guess that means Debian-look-alikes should do a "suggests", but not a "requires".

(3) When space is important, we suggest `--without-readline`, `--disable-shared`, and possibly `--disable-nls` and `--disable-dynamic-loading`.

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Version 3, 29 June 2007

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**3.144 passwd-0.79-4**

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```
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```

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```
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'Gnomovision' (which makes passes at compilers) written by James Hacker.
```

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

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### 3.145 pciutils-3.5.1-3

This package contains the PCI Utilities, version 3.5.1.

Copyright (c) 1997--2016 Martin Mares <mj@ucw.cz>

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#### 1. What's that?

~~~~~

The PCI Utilities package contains a library for portable access to PCI bus configuration registers and several utilities based on this library.

It runs on the following systems:

Linux (via /sys/bus/pci, /proc/bus/pci or i386 ports)  
FreeBSD (via /dev/pci)  
NetBSD (via libpci)  
OpenBSD (via /dev/pci)  
GNU/kFreeBSD (via /dev/pci)  
Solaris/i386 (direct port access)  
Aix (via /dev/pci and odmget)  
GNU Hurd (direct port access)  
Windows (direct port access, see README.Windows for caveats)  
CYGWIN (direct port access)  
BeOS (via syscalls)  
Haiku (via /dev/misc/poke)  
Darwin (via IOKit)

It should be very easy to add support for other systems as well (volunteers wanted; if you want to try that, I'll be very glad to see the patches and include them in the next version).

The utilities include: (See manual pages for more details)

- lspci: displays detailed information about all PCI buses and devices.
- setpci: allows to read from and write to PCI device configuration registers. For example, you can adjust the latency timers with it.  
CAUTION: There is a couple of dangerous points and caveats, please read the manual page first!

- update-pciids: download the current version of the pci.ids file.

## 2. Compiling and (un)installing

~~~~~

Just run "make" to compile the package and then "make install" to install it. Please note that GNU make is needed on most platforms.

If you want to change the default installation location, please override the PREFIX variable specified in the Makefile -- e.g., you can use "make PREFIX=/opt/pciutils install" to create a separate installation not interfering with the rest of your system. Setting the DESTDIR variable will allow you to install to a different directory from the one you intend to eventually run it from. This is useful for people who are packaging pciutils to install on other computers.

There are several options which can be set in the Makefile or overridden when running make:

ZLIB=yes/no Enable support for compressed pci.ids (requires zlib). If it is enabled, pciutils will use pci.ids.gz in preference to pci.ids, even if the pci.ids file is newer. If the pci.ids.gz file is missing, it will use pci.ids instead. If you do not specify this option, the configure script will try to guess automatically based on the presence of zlib.

DNS=yes/no Enable support for querying the central database of PCI IDs using DNS. Requires libresolv (which is available on most systems as a part of the standard libraries) and tries to autodetect its presence if the option is not specified.

SHARED=yes/ Build libpci as a shared library. Requires GCC 4.0 or newer.  
no/local The ABI of the shared library is intended to remain backward compatible for a long time (we use symbol versioning to achieve that, like GNU libc does). The value 'local' includes the right directory name in the binaries, so the utilities can be run without installation. This is not recommended for any production builds.

"make install-lib" installs the library together with its header files for use by other programs.

When you are bored of dumping PCI registers, just use "make uninstall".

### 3. Getting new IDs

~~~~~

The database of PCI IDs (the `pci.ids` file) gets out of date much faster than I release new versions of this package, so it is maintained separately.

It lives at <http://pci-ids.ucw.cz/>, where you can browse the database, download the most recent `pci.ids` file (e.g., by running the `update-ids` utility) and also submit new entries.

Alternatively, you can use `'lspci -q'` to query the central database for new entries via network.

The `pci.ids` file is also mirrored at <https://github.com/pciutils/pciids>.

On Linux systems with a recent enough version of `libudev`, `UDEVD`'s `HWDB` database is consulted when `pci.ids` lacks the device.

### 4. Getting new versions

~~~~~

The current version of `pciutils` is available at:

<http://mj.ucw.cz/sw/pciutils/>

The tarball can be downloaded at the following places:

<ftp://atrey.karlin.mff.cuni.cz/pub/linux/pci/>

<ftp://ftp.kernel.org/pub/software/utils/pciutils/> (expect a couple of hours delay)

There is also a public GIT tree at:

<git://git.kernel.org/pub/scm/utils/pciutils/pciutils.git>

<https://github.com/pciutils/pciutils>

### 5. Using the library

~~~~~

So far, there is only a little documentation for the library except for the general introduction in the `pciutils(7)` man page. If you want to use the library in your programs, please follow the comments in `lib/pci.h` and in the example program `example.c`.



## 6. Feedback

~~~~~

If you have any bug reports or suggestions, send them to the author.

If you have any new IDs, I'll be very glad to add them to the database.  
Just submit them at <http://pci-ids.ucw.cz/>.

Announcements of new versions are sent to [linux-pci@vger.kernel.org](mailto:linux-pci@vger.kernel.org)  
(see <http://vger.kernel.org/> for instructions).

Have fun

Martin

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```

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<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
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### 3.146 pcre-8.32-17

README file for PCRE (Perl-compatible regular expression library)

---

The latest release of PCRE is always available in three alternative formats from:

```
ftp://ftp.csx.cam.ac.uk/pub/software/programming/pcre/pcre-xxx.tar.gz
ftp://ftp.csx.cam.ac.uk/pub/software/programming/pcre/pcre-xxx.tar.bz2
ftp://ftp.csx.cam.ac.uk/pub/software/programming/pcre/pcre-xxx.zip
```

There is a mailing list for discussion about the development of PCRE at  
  
pcre-dev@exim.org

Please read the NEWS file if you are upgrading from a previous release.  
The contents of this README file are:

- The PCRE APIs
- Documentation for PCRE
- Contributions by users of PCRE
- Building PCRE on non-Unix-like systems
- Building PCRE without using autotools
- Building PCRE using autotools
- Retrieving configuration information
- Shared libraries
- Cross-compiling using autotools
- Using HP's ANSI C++ compiler (aCC)
- Using PCRE from MySQL
- Making new tarballs
- Testing PCRE
- Character tables
- File manifest

The PCRE APIs

---

PCRE is written in C, and it has its own API. There are three sets of functions, one for the 8-bit library, which processes strings of bytes, one for the 16-bit library, which processes strings of 16-bit values, and one for the 32-bit library, which processes strings of 32-bit values. The distribution also includes a set of C++ wrapper functions (see the pcrecpp man page for details),

courtesy of Google Inc., which can be used to call the 8-bit PCRE library from C++.

In addition, there is a set of C wrapper functions (again, just for the 8-bit library) that are based on the POSIX regular expression API (see the `pcreposix` man page). These end up in the library called `libpcreposix`. Note that this just provides a POSIX calling interface to PCRE; the regular expressions themselves still follow Perl syntax and semantics. The POSIX API is restricted, and does not give full access to all of PCRE's facilities.

The header file for the POSIX-style functions is called `pcreposix.h`. The official POSIX name is `regex.h`, but I did not want to risk possible problems with existing files of that name by distributing it that way. To use PCRE with an existing program that uses the POSIX API, `pcreposix.h` will have to be renamed or pointed at by a link.

If you are using the POSIX interface to PCRE and there is already a POSIX `regex` library installed on your system, as well as worrying about the `regex.h` header file (as mentioned above), you must also take care when linking programs to ensure that they link with PCRE's `libpcreposix` library. Otherwise they may pick up the POSIX functions of the same name from the other library.

One way of avoiding this confusion is to compile PCRE with the addition of `-Dregcomp=PCREregcomp` (and similarly for the other POSIX functions) to the compiler flags (CFLAGS if you are using "configure" -- see below). This has the effect of renaming the functions so that the names no longer clash. Of course, you have to do the same thing for your applications, or write them using the new names.

#### Documentation for PCRE

-----

If you install PCRE in the normal way on a Unix-like system, you will end up with a set of man pages whose names all start with "pcre". The one that is just called "pcre" lists all the others. In addition to these man pages, the PCRE documentation is supplied in two other forms:

1. There are files called `doc/pcre.txt`, `doc/pcregrep.txt`, and `doc/pcretest.txt` in the source distribution. The first of these is a concatenation of the text forms of all the section 3 man pages except those that summarize individual functions. The other two are the text forms of the section 1 man pages for the `pcregrep` and `pcretest` commands. These text forms are provided for ease of scanning with text editors or

similar tools. They are installed in <prefix>/share/doc/pcre, where <prefix> is the installation prefix (defaulting to /usr/local).

2. A set of files containing all the documentation in HTML form, hyperlinked in various ways, and rooted in a file called index.html, is distributed in doc/html and installed in <prefix>/share/doc/pcre/html.

Users of PCRE have contributed files containing the documentation for various releases in CHM format. These can be found in the Contrib directory of the FTP site (see next section).

#### Contributions by users of PCRE

-----

You can find contributions from PCRE users in the directory

<ftp://ftp.csx.cam.ac.uk/pub/software/programming/pcre/Contrib>

There is a README file giving brief descriptions of what they are. Some are complete in themselves; others are pointers to URLs containing relevant files. Some of this material is likely to be well out-of-date. Several of the earlier contributions provided support for compiling PCRE on various flavours of Windows (I myself do not use Windows). Nowadays there is more Windows support in the standard distribution, so these contributions have been archived.

#### Building PCRE on non-Unix-like systems

-----

For a non-Unix-like system, please read the comments in the file NON-AUTOTOOLS-BUILD, though if your system supports the use of "configure" and "make" you may be able to build PCRE using autotools in the same way as for many Unix-like systems.

PCRE can also be configured using the GUI facility provided by CMake's cmake-gui command. This creates Makefiles, solution files, etc. The file NON-AUTOTOOLS-BUILD has information about CMake.

PCRE has been compiled on many different operating systems. It should be straightforward to build PCRE on any system that has a Standard C compiler and library, because it uses only Standard C functions.

## Building PCRE without using autotools

-----

The use of autotools (in particular, libtool) is problematic in some environments, even some that are Unix or Unix-like. See the NON-AUTOTOOLS-BUILD file for ways of building PCRE without using autotools.

## Building PCRE using autotools

-----

If you are using HP's ANSI C++ compiler (aCC), please see the special note in the section entitled "Using HP's ANSI C++ compiler (aCC)" below.

The following instructions assume the use of the widely used "configure; make; make install" (autotools) process.

To build PCRE on system that supports autotools, first run the "configure" command from the PCRE distribution directory, with your current directory set to the directory where you want the files to be created. This command is a standard GNU "autoconf" configuration script, for which generic instructions are supplied in the file INSTALL.

Most commonly, people build PCRE within its own distribution directory, and in this case, on many systems, just running "./configure" is sufficient. However, the usual methods of changing standard defaults are available. For example:

```
CFLAGS='-O2 -Wall' ./configure --prefix=/opt/local
```

This command specifies that the C compiler should be run with the flags '-O2 -Wall' instead of the default, and that "make install" should install PCRE under /opt/local instead of the default /usr/local.

If you want to build in a different directory, just run "configure" with that directory as current. For example, suppose you have unpacked the PCRE source into /source/pcre/pcre-xxx, but you want to build it in /build/pcre/pcre-xxx:

```
cd /build/pcre/pcre-xxx
/source/pcre/pcre-xxx/configure
```

PCRE is written in C and is normally compiled as a C library. However, it is possible to build it as a C++ library, though the provided building apparatus does not have any features to support this.

There are some optional features that can be included or omitted from the PCRE library. They are also documented in the `pcrebuild` man page.

- . By default, both shared and static libraries are built. You can change this by adding one of these options to the "configure" command:

```
--disable-shared
--disable-static
```

(See also "Shared libraries on Unix-like systems" below.)

- . By default, only the 8-bit library is built. If you add `--enable-pcre16` to the "configure" command, the 16-bit library is also built. If you add `--enable-pcre32` to the "configure" command, the 32-bit library is also built. If you want only the 16-bit or 32-bit library, use `--disable-pcre8` to disable building the 8-bit library.
- . If you are building the 8-bit library and want to suppress the building of the C++ wrapper library, you can add `--disable-cpp` to the "configure" command. Otherwise, when "configure" is run without `--disable-pcre8`, it will try to find a C++ compiler and C++ header files, and if it succeeds, it will try to build the C++ wrapper.
- . If you want to include support for just-in-time compiling, which can give large performance improvements on certain platforms, add `--enable-jit` to the "configure" command. This support is available only for certain hardware architectures. If you try to enable it on an unsupported architecture, there will be a compile time error.
- . When JIT support is enabled, `pcregrep` automatically makes use of it, unless you add `--disable-pcregrep-jit` to the "configure" command.
- . If you want to make use of the support for UTF-8 Unicode character strings in the 8-bit library, or UTF-16 Unicode character strings in the 16-bit library, or UTF-32 Unicode character strings in the 32-bit library, you must add `--enable-utf` to the "configure" command. Without it, the code for handling UTF-8, UTF-16 and UTF-32 is not included in the relevant library. Even when `--enable-utf` is included, the use of a UTF encoding still has to be enabled by an option at run time. When PCRE is compiled with this option, its input can only either be ASCII or UTF-8/16/32, even when running on EBCDIC platforms. It is not possible to use both `--enable-utf` and `--enable-ebcdic` at the same time.
- . There are no separate options for enabling UTF-8, UTF-16 and UTF-32

independently because that would allow ridiculous settings such as requesting UTF-16 support while building only the 8-bit library. However, the option `--enable-utf8` is retained for backwards compatibility with earlier releases that did not support 16-bit or 32-bit character strings. It is synonymous with `--enable-utf`. It is not possible to configure one library with UTF support and the other without in the same configuration.

- . If, in addition to support for UTF-8/16/32 character strings, you want to include support for the `\P`, `\p`, and `\X` sequences that recognize Unicode character properties, you must add `--enable-unicode-properties` to the "configure" command. This adds about 30K to the size of the library (in the form of a property table); only the basic two-letter properties such as `Lu` are supported.
- . You can build PCRE to recognize either CR or LF or the sequence CRLF or any of the preceding, or any of the Unicode newline sequences as indicating the end of a line. Whatever you specify at build time is the default; the caller of PCRE can change the selection at run time. The default newline indicator is a single LF character (the Unix standard). You can specify the default newline indicator by adding `--enable-newline-is-cr` or `--enable-newline-is-lf` or `--enable-newline-is-crlf` or `--enable-newline-is-anycrlf` or `--enable-newline-is-any` to the "configure" command, respectively.

If you specify `--enable-newline-is-cr` or `--enable-newline-is-crlf`, some of the standard tests will fail, because the lines in the test files end with LF. Even if the files are edited to change the line endings, there are likely to be some failures. With `--enable-newline-is-anycrlf` or `--enable-newline-is-any`, many tests should succeed, but there may be some failures.

- . By default, the sequence `\R` in a pattern matches any Unicode line ending sequence. This is independent of the option specifying what PCRE considers to be the end of a line (see above). However, the caller of PCRE can restrict `\R` to match only CR, LF, or CRLF. You can make this the default by adding `--enable-bsr-anycrlf` to the "configure" command (`bsr` = "backslash R").
- . When called via the POSIX interface, PCRE uses `malloc()` to get additional storage for processing capturing parentheses if there are more than 10 of them in a pattern. You can increase this threshold by setting, for example,

`--with-posix-malloc-threshold=20`

on the "configure" command.

- . PCRE has a counter that can be set to limit the amount of resources it uses. If the limit is exceeded during a match, the match fails. The default is ten million. You can change the default by setting, for example,

```
--with-match-limit=500000
```

on the "configure" command. This is just the default; individual calls to `pcre_exec()` can supply their own value. There is more discussion on the `pcreapi` man page.

- . There is a separate counter that limits the depth of recursive function calls during a matching process. This also has a default of ten million, which is essentially "unlimited". You can change the default by setting, for example,

```
--with-match-limit-recursion=500000
```

Recursive function calls use up the runtime stack; running out of stack can cause programs to crash in strange ways. There is a discussion about stack sizes in the `prestack` man page.

- . The default maximum compiled pattern size is around 64K. You can increase this by adding `--with-link-size=3` to the "configure" command. In the 8-bit library, PCRE then uses three bytes instead of two for offsets to different parts of the compiled pattern. In the 16-bit library, `--with-link-size=3` is the same as `--with-link-size=4`, which (in both libraries) uses four-byte offsets. Increasing the internal link size reduces performance. In the 32-bit library, the only supported link size is 4.
- . You can build PCRE so that its internal `match()` function that is called from `pcre_exec()` does not call itself recursively. Instead, it uses memory blocks obtained from the heap via the special functions `pcre_stack_malloc()` and `pcre_stack_free()` to save data that would otherwise be saved on the stack. To build PCRE like this, use

```
--disable-stack-for-recursion
```

on the "configure" command. PCRE runs more slowly in this mode, but it may be necessary in environments with limited stack sizes. This applies only to the normal execution of the `pcre_exec()` function; if JIT support is being successfully used, it is not relevant. Equally, it does not apply to `pcre_dfa_exec()`, which does not use deeply nested recursion. There is a discussion about stack sizes in the `prestack` man page.

- . For speed, PCRE uses four tables for manipulating and identifying characters



whose code point values are less than 256. By default, it uses a set of tables for ASCII encoding that is part of the distribution. If you specify

`--enable-rebuild-chartables`

a program called `dftables` is compiled and run in the default C locale when you obey "make". It builds a source file called `pcre_chartables.c`. If you do not specify this option, `pcre_chartables.c` is created as a copy of `pcre_chartables.c.dist`. See "Character tables" below for further information.

- . It is possible to compile PCRE for use on systems that use EBCDIC as their character code (as opposed to ASCII/Unicode) by specifying

`--enable-ebcdic`

This automatically implies `--enable-rebuild-chartables` (see above). However, when PCRE is built this way, it always operates in EBCDIC. It cannot support both EBCDIC and UTF-8/16/32. There is a second option, `--enable-ebcdic-nl25`, which specifies that the code value for the EBCDIC NL character is 0x25 instead of the default 0x15.

- . In environments where `valgrind` is installed, if you specify

`--enable-valgrind`

PCRE will use `valgrind` annotations to mark certain memory regions as unaddressable. This allows it to detect invalid memory accesses, and is mostly useful for debugging PCRE itself.

- . In environments where the `gcc` compiler is used and `lcov` version 1.6 or above is installed, if you specify

`--enable-coverage`

the build process implements a code coverage report for the test suite. The report is generated by running "make coverage". If `ccache` is installed on your system, it must be disabled when building PCRE for coverage reporting. You can do this by setting the environment variable `CCACHE_DISABLE=1` before running "make" to build PCRE.

- . The `pcregrep` program currently supports only 8-bit data files, and so requires the 8-bit PCRE library. It is possible to compile `pcregrep` to use `libz` and/or `libbz2`, in order to read `.gz` and `.bz2` files (respectively), by specifying one or both of

```
--enable-pcregrep-libz
--enable-pcregrep-libbz2
```

Of course, the relevant libraries must be installed on your system.

- . The default size of internal buffer used by pcregrep can be set by, for example:

```
--with-pcregrep-bufsize=50K
```

The default value is 20K.

- . It is possible to compile pcretest so that it links with the libreadline or libedit libraries, by specifying, respectively,

```
--enable-pcretest-libreadline or --enable-pcretest-libedit
```

If this is done, when pcretest's input is from a terminal, it reads it using the `readline()` function. This provides line-editing and history facilities. Note that libreadline is GPL-licenced, so if you distribute a binary of pcretest linked in this way, there may be licensing issues. These can be avoided by linking with libedit (which has a BSD licence) instead.

Enabling libreadline causes the `-lreadline` option to be added to the pcretest build. In many operating environments with a sytem-installed readline library this is sufficient. However, in some environments (e.g. if an unmodified distribution version of readline is in use), it may be necessary to specify something like `LIBS="-lncurses"` as well. This is because, to quote the readline INSTALL, "Readline uses the termcap functions, but does not link with the termcap or curses library itself, allowing applications which link with readline the to choose an appropriate library." If you get error messages about missing functions `tgetstr`, `tgetent`, `tputs`, `tgetflag`, or `tgoto`, this is the problem, and linking with the ncurses library should fix it.

The "configure" script builds the following files for the basic C library:

|                |                                                                                      |
|----------------|--------------------------------------------------------------------------------------|
| . Makefile     | the makefile that builds the library                                                 |
| . config.h     | build-time configuration options for the library                                     |
| . pcre.h       | the public PCRE header file                                                          |
| . pcre-config  | script that shows the building settings such as CFLAGS that were set for "configure" |
| . libpcre.pc   | ) data for the pkg-config command                                                    |
| . libpcre16.pc | )                                                                                    |

```
. libpcre32.pc)
. libpcreposix.pc)
. libtool script that builds shared and/or static libraries
```

Versions of `config.h` and `pcre.h` are distributed in the PCRE tarballs under the names `config.h.generic` and `pcre.h.generic`. These are provided for those who have to build PCRE without using "configure" or CMake. If you use "configure" or CMake, the `.generic` versions are not used.

When building the 8-bit library, if a C++ compiler is found, the following files are also built:

```
. libpcrecpp.pc data for the pkg-config command
. pcrecpparg.h header file for calling PCRE via the C++ wrapper
. pcre_stringpiece.h header for the C++ "stringpiece" functions
```

The "configure" script also creates `config.status`, which is an executable script that can be run to recreate the configuration, and `config.log`, which contains compiler output from tests that "configure" runs.

Once "configure" has run, you can run "make". This builds the the libraries `libpcre`, `libpcre16` and/or `libpcre32`, and a test program called `pcretest`. If you enabled JIT support with `--enable-jit`, a test program called `pcre_jit_test` is built as well.

If the 8-bit library is built, `libpcreposix` and the `pcregrep` command are also built, and if a C++ compiler was found on your system, and you did not disable it with `--disable-cpp`, "make" builds the C++ wrapper library, which is called `libpcrecpp`, as well as some test programs called `pcrecpp_unittest`, `pcre_scanner_unittest`, and `pcre_stringpiece_unittest`.

The command "make check" runs all the appropriate tests. Details of the PCRE tests are given below in a separate section of this document.

You can use "make install" to install PCRE into live directories on your system. The following are installed (file names are all relative to the `<prefix>` that is set when "configure" is run):

```
Commands (bin):
 pcretest
 pcregrep (if 8-bit support is enabled)
 pcre-config
```

```
Libraries (lib):
```

libpcre16        (if 16-bit support is enabled)  
libpcre32        (if 32-bit support is enabled)  
libpcre          (if 8-bit support is enabled)  
libpcreposix     (if 8-bit support is enabled)  
libpcrecpp       (if 8-bit and C++ support is enabled)

Configuration information (lib/pkgconfig):

libpcre16.pc  
libpcre32.pc  
libpcre.pc  
libpcreposix.pc  
libpcrecpp.pc (if C++ support is enabled)

Header files (include):

pcre.h  
pcreposix.h  
pcre\_scanner.h        )  
pcre\_stringpiece.h    ) if C++ support is enabled  
pcrecpp.h             )  
pcrecpparg.h          )

Man pages (share/man/man{1,3}):

pcregrep.1  
pcretest.1  
pcre-config.1  
pcre.3  
pcre\*.3 (lots more pages, all starting "pcre")

HTML documentation (share/doc/pcre/html):

index.html  
\*.html (lots more pages, hyperlinked from index.html)

Text file documentation (share/doc/pcre):

AUTHORS  
COPYING  
ChangeLog  
LICENCE  
NEWS  
README  
pcre.txt              (a concatenation of the man(3) pages)  
pcretest.txt         the pcretest man page  
pcregrep.txt         the pcregrep man page  
pcre-config.txt      the pcre-config man page

If you want to remove PCRE from your system, you can run "make uninstall". This removes all the files that "make install" installed. However, it does not remove any directories, because these are often shared with other programs.

#### Retrieving configuration information

-----

Running "make install" installs the command `pcre-config`, which can be used to recall information about the PCRE configuration and installation. For example:

```
pcre-config --version
```

prints the version number, and

```
pcre-config --libs
```

outputs information about where the library is installed. This command can be included in makefiles for programs that use PCRE, saving the programmer from having to remember too many details.

The `pkg-config` command is another system for saving and retrieving information about installed libraries. Instead of separate commands for each library, a single command is used. For example:

```
pkg-config --cflags pcre
```

The data is held in `*.pc` files that are installed in a directory called `<prefix>/lib/pkgconfig`.

#### Shared libraries

-----

The default distribution builds PCRE as shared libraries and static libraries, as long as the operating system supports shared libraries. Shared library support relies on the "libtool" script which is built as part of the "configure" process.

The libtool script is used to compile and link both shared and static libraries. They are placed in a subdirectory called `.libs` when they are newly built. The programs `pcrttest` and `pcrgrep` are built to use these uninstalled libraries (by means of wrapper scripts in the case of shared libraries). When you use "make install" to install shared libraries, `pcrgrep` and `pcrttest` are

automatically re-built to use the newly installed shared libraries before being installed themselves. However, the versions left in the build directory still use the uninstalled libraries.

To build PCRE using static libraries only you must use `--disable-shared` when configuring it. For example:

```
./configure --prefix=/usr/gnu --disable-shared
```

Then run "make" in the usual way. Similarly, you can use `--disable-static` to build only shared libraries.

#### Cross-compiling using autotools

-----

You can specify `CC` and `CFLAGS` in the normal way to the "configure" command, in order to cross-compile PCRE for some other host. However, you should NOT specify `--enable-rebuild-chartables`, because if you do, the `dftables.c` source file is compiled and run on the local host, in order to generate the inbuilt character tables (the `pcre_chartables.c` file). This will probably not work, because `dftables.c` needs to be compiled with the local compiler, not the cross compiler.

When `--enable-rebuild-chartables` is not specified, `pcre_chartables.c` is created by making a copy of `pcre_chartables.c.dist`, which is a default set of tables that assumes ASCII code. Cross-compiling with the default tables should not be a problem.

If you need to modify the character tables when cross-compiling, you should move `pcre_chartables.c.dist` out of the way, then compile `dftables.c` by hand and run it on the local host to make a new version of `pcre_chartables.c.dist`. Then when you cross-compile PCRE this new version of the tables will be used.

#### Using HP's ANSI C++ compiler (aCC)

-----

Unless C++ support is disabled by specifying the `--disable-cpp` option of the "configure" script, you must include the `-AA` option in the `CXXFLAGS` environment variable in order for the C++ components to compile correctly.

Also, note that the `aCC` compiler on PA-RISC platforms may have a defect whereby needed libraries fail to get included when specifying the `-AA` compiler

option. If you experience unresolved symbols when linking the C++ programs, use the workaround of specifying the following environment variable prior to running the "configure" script:

```
CXXLD_FLAGS="-lstd_v2 -lCsup_v2"
```

#### Using Sun's compilers for Solaris

---

A user reports that the following configurations work on Solaris 9 sparcv9 and Solaris 9 x86 (32-bit):

```
Solaris 9 sparcv9: ./configure --disable-cpp CC=/bin/cc CFLAGS="-m64 -g"
Solaris 9 x86: ./configure --disable-cpp CC=/bin/cc CFLAGS="-g"
```

#### Using PCRE from MySQL

---

On systems where both PCRE and MySQL are installed, it is possible to make use of PCRE from within MySQL, as an alternative to the built-in pattern matching. There is a web page that tells you how to do this:

```
http://www.mysqludf.org/lib_mysqludf_preg/index.php
```

#### Making new tarballs

---

The command "make dist" creates three PCRE tarballs, in tar.gz, tar.bz2, and zip formats. The command "make distcheck" does the same, but then does a trial build of the new distribution to ensure that it works.

If you have modified any of the man page sources in the doc directory, you should first run the PrepareRelease script before making a distribution. This script creates the .txt and HTML forms of the documentation from the man pages.

#### Testing PCRE

---

To test the basic PCRE library on a Unix-like system, run the RunTest script. There is another script called RunGrepTest that tests the options of the

`pcregrep` command. If the C++ wrapper library is built, three test programs called `pcrecpp_unittest`, `pcre_scanner_unittest`, and `pcre_stringpiece_unittest` are also built. When JIT support is enabled, another test program called `pcre_jit_test` is built.

Both the scripts and all the program tests are run if you obey "make check" or "make test". For other environments, see the instructions in `NON-AUTOTOOLS-BUILD`.

The `RunTest` script runs the `pcretest` test program (which is documented in its own man page) on each of the relevant `testinput` files in the `testdata` directory, and compares the output with the contents of the corresponding `testoutput` files. Some tests are relevant only when certain build-time options were selected. For example, the tests for UTF-8/16/32 support are run only if `--enable-utf` was used. `RunTest` outputs a comment when it skips a test.

Many of the tests that are not skipped are run up to three times. The second run forces `pcre_study()` to be called for all patterns except for a few in some tests that are marked "never study" (see the `pcretest` program for how this is done). If JIT support is available, the non-DFA tests are run a third time, this time with a forced `pcre_study()` with the `PCRE_STUDY_JIT_COMPILE` option.

The entire set of tests is run once for each of the 8-bit, 16-bit and 32-bit libraries that are enabled. If you want to run just one set of tests, call `RunTest` with either the `-8`, `-16` or `-32` option.

`RunTest` uses a file called `testtry` to hold the main output from `pcretest`. Other files whose names begin with "test" are used as working files in some tests. To run `pcretest` on just one or more specific test files, give their numbers as arguments to `RunTest`, for example:

```
RunTest 2 7 11
```

You can also call `RunTest` with the single argument "list" to cause it to output a list of tests.

The first test file can be fed directly into the `perltest.pl` script to check that Perl gives the same results. The only difference you should see is in the first few lines, where the Perl version is given instead of the PCRE version.

The second set of tests check `pcre_fullinfo()`, `pcre_study()`, `pcre_copy_substring()`, `pcre_get_substring()`, `pcre_get_substring_list()`, error detection, and run-time flags that are specific to PCRE, as well as the POSIX wrapper API. It also uses the debugging flags to check some of the internals of



`pcre_compile()`.

If you build PCRE with a locale setting that is not the standard C locale, the character tables may be different (see next paragraph). In some cases, this may cause failures in the second set of tests. For example, in a locale where the `isprint()` function yields TRUE for characters in the range 128-255, the use of `[:isascii:]` inside a character class defines a different set of characters, and this shows up in this test as a difference in the compiled code, which is being listed for checking. Where the comparison test output contains `[\x00-\x7f]` the test will contain `[\x00-\xff]`, and similarly in some other cases. This is not a bug in PCRE.

The third set of tests checks `pcre_maketables()`, the facility for building a set of character tables for a specific locale and using them instead of the default tables. The tests make use of the "fr\_FR" (French) locale. Before running the test, the script checks for the presence of this locale by running the "locale" command. If that command fails, or if it doesn't include "fr\_FR" in the list of available locales, the third test cannot be run, and a comment is output to say why. If running this test produces instances of the error

```
** Failed to set locale "fr_FR"
```

in the comparison output, it means that locale is not available on your system, despite being listed by "locale". This does not mean that PCRE is broken.

[If you are trying to run this test on Windows, you may be able to get it to work by changing "fr\_FR" to "french" everywhere it occurs. Alternatively, use `RunTest.bat`. The version of `RunTest.bat` included with PCRE 7.4 and above uses Windows versions of test 2. More info on using `RunTest.bat` is included in the document entitled NON-UNIX-USE.]

The fourth and fifth tests check the UTF-8/16/32 support and error handling and internal UTF features of PCRE that are not relevant to Perl, respectively. The sixth and seventh tests do the same for Unicode character properties support.

The eighth, ninth, and tenth tests check the `pcre_dfa_exec()` alternative matching function, in non-UTF-8/16/32 mode, UTF-8/16/32 mode, and UTF-8/16/32 mode with Unicode property support, respectively.

The eleventh test checks some internal offsets and code size features; it is run only when the default "link size" of 2 is set (in other cases the sizes change) and when Unicode property support is enabled.

The twelfth test is run only when JIT support is available, and the thirteenth

test is run only when JIT support is not available. They test some JIT-specific features such as information output from pcretest about JIT compilation.

The fourteenth, fifteenth, and sixteenth tests are run only in 8-bit mode, and the seventeenth, eighteenth, and nineteenth tests are run only in 16/32-bit mode.

These are tests that generate different output in the two modes. They are for general cases, UTF-8/16/32 support, and Unicode property support, respectively.

The twentieth test is run only in 16/32-bit mode. It tests some specific 16/32-bit features of the DFA matching engine.

The twenty-first and twenty-second tests are run only in 16/32-bit mode, when the link size is set to 2 for the 16-bit library. They test reloading pre-compiled patterns.

The twenty-third and twenty-fourth tests are run only in 16-bit mode. They are for general cases, and UTF-16 support, respectively.

The twenty-fifth and twenty-sixth tests are run only in 32-bit mode. They are for general cases, and UTF-32 support, respectively.

#### Character tables

-----

For speed, PCRE uses four tables for manipulating and identifying characters whose code point values are less than 256. The final argument of the `pcre_compile()` function is a pointer to a block of memory containing the concatenated tables. A call to `pcre_maketables()` can be used to generate a set of tables in the current locale. If the final argument for `pcre_compile()` is passed as `NULL`, a set of default tables that is built into the binary is used.

The source file called `pcre_chartables.c` contains the default set of tables. By default, this is created as a copy of `pcre_chartables.c.dist`, which contains tables for ASCII coding. However, if `--enable-rebuild-chartables` is specified for `./configure`, a different version of `pcre_chartables.c` is built by the program `dftables` (compiled from `dftables.c`), which uses the ANSI C character handling functions such as `isalnum()`, `isalpha()`, `isupper()`, `islower()`, etc. to build the table sources. This means that the default C locale which is set for your system will control the contents of these default tables. You can change the default tables by editing `pcre_chartables.c` and then re-building PCRE. If

you do this, you should take care to ensure that the file does not get automatically re-generated. The best way to do this is to move `pcre_chartables.c.dist` out of the way and replace it with your customized tables.

When the `dftables` program is run as a result of `--enable-rebuild-chartables`, it uses the default C locale that is set on your system. It does not pay attention to the `LC_XXX` environment variables. In other words, it uses the system's default locale rather than whatever the compiling user happens to have set. If you really do want to build a source set of character tables in a locale that is specified by the `LC_XXX` variables, you can run the `dftables` program by hand with the `-L` option. For example:

```
./dftables -L pcre_chartables.c.special
```

The first two 256-byte tables provide lower casing and case flipping functions, respectively. The next table consists of three 32-byte bit maps which identify digits, "word" characters, and white space, respectively. These are used when building 32-byte bit maps that represent character classes for code points less than 256.

The final 256-byte table has bits indicating various character types, as follows:

|     |                                                 |
|-----|-------------------------------------------------|
| 1   | white space character                           |
| 2   | letter                                          |
| 4   | decimal digit                                   |
| 8   | hexadecimal digit                               |
| 16  | alphanumeric or <code>'_'</code>                |
| 128 | regular expression metacharacter or binary zero |

You should not alter the set of characters that contain the 128 bit, as that will cause PCRE to malfunction.

#### File manifest

-----

The distribution should contain the files listed below. Where a file name is given as `pcre[16|32]_xxx` it means that there are three files, one with the name `pcre_xxx`, one with the name `pcre16_xx`, and a third with the name `pcre32_xxx`.

(A) Source files of the PCRE library functions and their headers:

|                            |                                                                                                                                                              |
|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| dftables.c                 | auxiliary program for building pcre_chartables.c<br>when --enable-rebuild-chartables is specified                                                            |
| pcre_chartables.c.dist     | a default set of character tables that assume ASCII<br>coding; used, unless --enable-rebuild-chartables is<br>specified, by copying to pcre[16]_chartables.c |
| pcreposix.c                | )                                                                                                                                                            |
| pcre[16 32]_byte_order.c   | )                                                                                                                                                            |
| pcre[16 32]_compile.c      | )                                                                                                                                                            |
| pcre[16 32]_config.c       | )                                                                                                                                                            |
| pcre[16 32]_dfa_exec.c     | )                                                                                                                                                            |
| pcre[16 32]_exec.c         | )                                                                                                                                                            |
| pcre[16 32]_fullinfo.c     | )                                                                                                                                                            |
| pcre[16 32]_get.c          | ) sources for the functions in the library,                                                                                                                  |
| pcre[16 32]_globals.c      | ) and some internal functions that they use                                                                                                                  |
| pcre[16 32]_jit_compile.c  | )                                                                                                                                                            |
| pcre[16 32]_maketables.c   | )                                                                                                                                                            |
| pcre[16 32]_newline.c      | )                                                                                                                                                            |
| pcre[16 32]_refcount.c     | )                                                                                                                                                            |
| pcre[16 32]_string_utils.c | )                                                                                                                                                            |
| pcre[16 32]_study.c        | )                                                                                                                                                            |
| pcre[16 32]_tables.c       | )                                                                                                                                                            |
| pcre[16 32]_ucd.c          | )                                                                                                                                                            |
| pcre[16 32]_version.c      | )                                                                                                                                                            |
| pcre[16 32]_xclass.c       | )                                                                                                                                                            |
| pcre_ord2utf8.c            | )                                                                                                                                                            |
| pcre_valid_utf8.c          | )                                                                                                                                                            |
| pcre16_ord2utf16.c         | )                                                                                                                                                            |
| pcre16_utf16_utils.c       | )                                                                                                                                                            |
| pcre16_valid_utf16.c       | )                                                                                                                                                            |
| pcre32_utf32_utils.c       | )                                                                                                                                                            |
| pcre32_valid_utf32.c       | )                                                                                                                                                            |
| pcre[16 32]_printint.c     | ) debugging function that is used by pcretest,<br>) and can also be #included in pcre_compile()                                                              |
| pcre.h.in                  | template for pcre.h when built by "configure"                                                                                                                |
| pcreposix.h                | header for the external POSIX wrapper API                                                                                                                    |
| pcre_internal.h            | header for internal use                                                                                                                                      |
| sljit/*                    | 16 files that make up the JIT compiler                                                                                                                       |
| ucp.h                      | header for Unicode property handling                                                                                                                         |
| config.h.in                | template for config.h, which is built by "configure"                                                                                                         |

|                       |                                                                               |
|-----------------------|-------------------------------------------------------------------------------|
| pcrecpp.h             | public header file for the C++ wrapper                                        |
| pcrecpparg.h.in       | template for another C++ header file                                          |
| pcre_scanner.h        | public header file for C++ scanner functions                                  |
| pcrecpp.cc            | )                                                                             |
| pcre_scanner.cc       | ) source for the C++ wrapper library                                          |
| pcre_stringpiece.h.in | template for pcre_stringpiece.h, the header for the C++ stringpiece functions |
| pcre_stringpiece.cc   | source for the C++ stringpiece functions                                      |

(B) Source files for programs that use PCRE:

|            |                                              |
|------------|----------------------------------------------|
| pcredemo.c | simple demonstration of coding calls to PCRE |
| pcregrep.c | source of a grep utility that uses PCRE      |
| pcrtest.c  | comprehensive test program                   |

(C) Auxiliary files:

|                     |                                                                  |
|---------------------|------------------------------------------------------------------|
| 132html             | script to turn "man" pages into HTML                             |
| AUTHORS             | information about the author of PCRE                             |
| ChangeLog           | log of changes to the code                                       |
| CleanTxt            | script to clean nroff output for txt man pages                   |
| Detrail             | script to remove trailing spaces                                 |
| HACKING             | some notes about the internals of PCRE                           |
| INSTALL             | generic installation instructions                                |
| LICENCE             | conditions for the use of PCRE                                   |
| COPYING             | the same, using GNU's standard name                              |
| Makefile.in         | ) template for Unix Makefile, which is built by<br>) "configure" |
| Makefile.am         | ) the automake input that was used to create<br>) Makefile.in    |
| NEWS                | important changes in this release                                |
| NON-UNIX-USE        | the previous name for NON-AUTOTOOLS-BUILD                        |
| NON-AUTOTOOLS-BUILD | notes on building PCRE without using autotools                   |
| PrepareRelease      | script to make preparations for "make dist"                      |
| README              | this file                                                        |
| RunTest             | a Unix shell script for running tests                            |
| RunGrepTest         | a Unix shell script for pcregrep tests                           |
| aclocal.m4          | m4 macros (generated by "aclocal")                               |
| config.guess        | ) files used by libtool,                                         |
| config.sub          | ) used only when building a shared library                       |
| configure           | a configuring shell script (built by autoconf)                   |
| configure.ac        | ) the autoconf input that was used to build                      |

|                              |                                                     |
|------------------------------|-----------------------------------------------------|
|                              | ) "configure" and config.h                          |
| depcomp                      | ) script to find program dependencies, generated by |
|                              | ) automake                                          |
| doc/*.3                      | man page sources for PCRE                           |
| doc/*.1                      | man page sources for pcregrep and pcretest          |
| doc/index.html.src           | the base HTML page                                  |
| doc/html/*                   | HTML documentation                                  |
| doc/pcre.txt                 | plain text version of the man pages                 |
| doc/pcretest.txt             | plain text documentation of test program            |
| doc/perltest.txt             | plain text documentation of Perl test program       |
| install-sh                   | a shell script for installing files                 |
| libpcre16.pc.in              | template for libpcre16.pc for pkg-config            |
| libpcre32.pc.in              | template for libpcre32.pc for pkg-config            |
| libpcre.pc.in                | template for libpcre.pc for pkg-config              |
| libpcreposix.pc.in           | template for libpcreposix.pc for pkg-config         |
| libpcrecpp.pc.in             | template for libpcrecpp.pc for pkg-config           |
| ltmain.sh                    | file used to build a libtool script                 |
| missing                      | ) common stub for a few missing GNU programs while  |
|                              | ) installing, generated by automake                 |
| mkinstalldirs                | script for making install directories               |
| perltest.pl                  | Perl test program                                   |
| pcre-config.in               | source of script which retains PCRE information     |
| pcre_jit_test.c              | test program for the JIT compiler                   |
| pcrecpp_unittest.cc          | )                                                   |
| pcre_scanner_unittest.cc     | ) test programs for the C++ wrapper                 |
| pcre_stringpiece_unittest.cc | )                                                   |
| testdata/testinput*          | test data for main library tests                    |
| testdata/testoutput*         | expected test results                               |
| testdata/grep*               | input and output for pcregrep tests                 |
| testdata/*                   | other supporting test files                         |

#### (D) Auxiliary files for cmake support

```

cmake/COPYING-CMAKE-SCRIPTS
cmake/FindPackageHandleStandardArgs.cmake
cmake/FindEditline.cmake
cmake/FindReadline.cmake
CMakeLists.txt
config-cmake.h.in

```

#### (E) Auxiliary files for VPASCAL

```

makevp.bat
makevp_c.txt

```

makevp\_1.txt  
pcregrep.pas

(F) Auxiliary files for building PCRE "by hand"

|                  |                                                    |
|------------------|----------------------------------------------------|
| pcre.h.generic   | ) a version of the public PCRE header file         |
|                  | ) for use in non-"configure" environments          |
| config.h.generic | ) a version of config.h for use in non-"configure" |
|                  | ) environments                                     |

(F) Miscellaneous

|             |                                          |
|-------------|------------------------------------------|
| RunTest.bat | a script for running tests under Windows |
|-------------|------------------------------------------|

Philip Hazel  
Email local part: ph10  
Email domain: cam.ac.uk  
Last updated: 27 October 2012

### **3.146.1 Copying**

PCRE LICENCE

Please see the file LICENCE in the PCRE distribution for licensing details.

End



### 3.146.2 License

#### PCRE LICENCE

-----

PCRE is a library of functions to support regular expressions whose syntax and semantics are as close as possible to those of the Perl 5 language.

Release 8 of PCRE is distributed under the terms of the "BSD" licence, as specified below. The documentation for PCRE, supplied in the "doc" directory, is distributed under the same terms as the software itself.

The basic library functions are written in C and are freestanding. Also included in the distribution is a set of C++ wrapper functions, and a just-in-time compiler that can be used to optimize pattern matching. These are both optional features that can be omitted when the library is built.

#### THE BASIC LIBRARY FUNCTIONS

-----

Written by: Philip Hazel  
Email local part: ph10  
Email domain: cam.ac.uk

University of Cambridge Computing Service,  
Cambridge, England.

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#### PCRE JUST-IN-TIME COMPILATION SUPPORT

-----

Written by: Zoltan Herczeg  
Email local part: hzmester  
Email domain: freemail.hu

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#### STACK-LESS JUST-IN-TIME COMPILER

-----  
Written by:           Zoltan Herczeg  
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Email domain:       freemail.hu

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#### THE C++ WRAPPER FUNCTIONS

-----

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End

### 3.147 perl-5.16.3-294

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#### ABOUT PERL

=====

Perl is a general-purpose programming language originally developed for text manipulation and now used for a wide range of tasks including system administration, web development, network programming, GUI development, and more.

The language is intended to be practical (easy to use, efficient, complete) rather than beautiful (tiny, elegant, minimal). Its major features are that it's easy to use, supports both procedural and object-oriented (OO) programming, has powerful built-in support for text processing, and has one of the world's most impressive collections of third-party modules.

For an introduction to the language's features, see `pod/perlintro.pod`.

For a discussion of the important changes in this release, see `pod/perldelta.pod`.

There are also many Perl books available, covering a wide variety of topics, from various publishers. See `pod/perlbook.pod` for more information.

#### INSTALLATION

=====

If you're using a relatively modern operating system and want to install this version of Perl locally, run the following commands:

```
./Configure -des -Dprefix=$HOME/localperl
make test
make install
```

This will configure and compile perl for your platform, run the regression tests, and install perl in a subdirectory "localperl" of your home directory.

If you run into any trouble whatsoever or you need to install a customized version of Perl, you should read the detailed instructions in the "INSTALL" file that came with this distribution. Additionally, there are a number of "README" files with hints and tips about building and using Perl on a wide variety of platforms, some more common than others.

Once you have Perl installed, a wealth of documentation is available to you through the 'perldoc' tool. To get started, run this command:

```
perldoc perl
```

#### IF YOU RUN INTO TROUBLE

=====

Perl is a large and complex system that's used for everything from knitting to rocket science. If you run into trouble, it's quite likely that someone else has already solved the problem you're facing. Once you've exhausted the documentation, please report bugs to us using the 'perlbug' tool. For more information about perlbug, either type 'perldoc perlbug' or just 'perlbug' on a line by itself.

While it was current when we made it available, Perl is constantly evolving and there may be a more recent version that fixes bugs you've run into or adds new features that you might find useful.

You can always find the latest version of perl on a CPAN (Comprehensive Perl Archive Network) site near you at <http://www.cpan.org/src/>

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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,
```

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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!

### 3.148 perl-Carp-1.26-244

#### NAME

Carp - alternative warn and die for modules

#### DESCRIPTION

The Carp routines are useful in your own modules because they act like `die()` or `warn()`, but with a message which is more likely to be useful to a user of your module. In the case of `cluck`, `confess`, and `longmess` that context is a summary of every call in the call-stack. For a shorter message you can use `carp` or `croak` which report the error as being from where your module was called. There is no guarantee that that is where the error was, but it is a good educated guess.

You can also alter the way the output and logic of Carp works, by changing some global variables in the Carp namespace.

#### INSTALLATION

```
perl Makefile.PL
make
make test
make install
```

#### AUTHOR

The Carp module first appeared in Larry Wall's perl 5.000 distribution. Since then it has been modified by several of the perl 5 porters. Andrew Main (Zefram) <zefram@fysh.org> divested Carp into an independent distribution.

#### COPYRIGHT

Copyright (C) 1994-2012 Larry Wall

Copyright (C) 2011, 2012 Andrew Main (Zefram) <zefram@fysh.org>

#### LICENSE

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## 3.149 perl-Encode-2.51-7

### NAME

Encode - character encodings

### SYNOPSIS

```
use Encode;
```

### DESCRIPTION

The "Encode" module provides the interfaces between Perl's strings and the rest of the system. Perl strings are sequences of characters.

See "perldoc Encode" for the rest of the story

### INSTALLATION

To install this module, type the following:

```
perl Makefile.PL
make
make test
make install
```

To install scripts under bin/ directories also,

```
perl Makefile.PL MORE_SCRIPTS
make && make test && make install
```

By default, only enc2xs and piconv are installed.

To install \*.ucm files also, say

```
perl Makefile.PL INSTALL_UCM
make && make test && make install
```

By default, \*.ucm are not installed.

### DEPENDENCIES

This module requires perl5.7.3 or later.

### MAINTAINER

This project was originated by Nick Ing-Simmons and later maintained by Dan Kogai <dankogai@dan.co.jp>. See AUTHORS for the full list of people involved.

#### QUESTIONS?

If you have any questions which "perldoc Encode" does not answer, please feel free to ask at [perl-unicode@perl.org](mailto:perl-unicode@perl.org).

## 3.150 perl-Exporter-5.68-3

### NAME

Exporter - Implements default import method for modules

### SYNOPSIS

In module YourModule.pm:

```
package YourModule;
require Exporter;
@ISA = qw(Exporter);
@EXPORT_OK = qw(munge frobnicate); # symbols to export on request
```

or

```
package YourModule;
use Exporter 'import'; # gives you Exporter's import() method directly
@EXPORT_OK = qw(munge frobnicate); # symbols to export on request
```

In other files which wish to use "YourModule":

```
use YourModule qw(frobnicate); # import listed symbols
frobnicate ($left, $right) # calls YourModule::frobnicate
```

Take a look at "Good Practices" for some variants you will like to use in modern Perl code.

### DESCRIPTION

The Exporter module implements an "import" method which allows a module to export functions and variables to its users' namespaces. Many modules use Exporter rather than implementing their own "import" method because Exporter provides a highly flexible interface, with an implementation optimised for the common case.

Perl automatically calls the "import" method when processing a "use" statement for a module. Modules and "use" are documented in perlfunc and perlmod. Understanding the concept of modules and how the "use" statement operates is important to understanding the Exporter.

#### How to Export

The arrays @EXPORT and @EXPORT\_OK in a module hold lists of symbols that are going to be exported into the users name space by default, or which they can request to be exported, respectively. The symbols can represent functions, scalars, arrays, hashes, or typeglobs. The symbols must be



given by full name with the exception that the ampersand in front of a function is optional, e.g.

```
@EXPORT = qw(afunc $scalar @array); # afunc is a function
@EXPORT_OK = qw(&bfunc %hash *typeglob); # explicit prefix on &bfunc
```

If you are only exporting function names it is recommended to omit the ampersand, as the implementation is faster this way.

### Selecting What To Export

Do not export method names!

Do not export anything else by default without a good reason!

Exports pollute the namespace of the module user. If you must export try to use @EXPORT\_OK in preference to @EXPORT and avoid short or common symbol names to reduce the risk of name clashes.

Generally anything not exported is still accessible from outside the module using the "YourModule::item\_name" (or "\$blessed\_ref->method") syntax. By convention you can use a leading underscore on names to informally indicate that they are 'internal' and not for public use.

(It is actually possible to get private functions by saying:

```
my $subref = sub { ... };
$subref->(@args); # Call it as a function
$obj->$subref(@args); # Use it as a method
```

However if you use them for methods it is up to you to figure out how to make inheritance work.)

As a general rule, if the module is trying to be object oriented then export nothing. If it's just a collection of functions then @EXPORT\_OK anything but use @EXPORT with caution. For function and method names use barewords in preference to names prefixed with ampersands for the export lists.

Other module design guidelines can be found in perlmod.

### How to Import

In other files which wish to use your module there are three basic ways for them to load your module and import its symbols:

```
"use YourModule;"
```

This imports all the symbols from YourModule's @EXPORT into the namespace of the "use" statement.

```
"use YourModule ();"
```

This causes perl to load your module but does not import any symbols.

```
"use YourModule qw(...);"
```

This imports only the symbols listed by the caller into their namespace. All listed symbols must be in your @EXPORT or @EXPORT\_OK, else an error occurs. The advanced export features of Exporter are accessed like this, but with list entries that are syntactically distinct from symbol names.

Unless you want to use its advanced features, this is probably all you need to know to use Exporter.

## Advanced features

### Specialised Import Lists

If any of the entries in an import list begins with !, : or / then the list is treated as a series of specifications which either add to or delete from the list of names to import. They are processed left to right. Specifications are in the form:

|              |                                                 |
|--------------|-------------------------------------------------|
| [!]name      | This name only                                  |
| [!]:DEFAULT  | All names in @EXPORT                            |
| [!]:tag      | All names in \$EXPORT_TAGS{tag} anonymous list  |
| [!]/pattern/ | All names in @EXPORT and @EXPORT_OK which match |

A leading ! indicates that matching names should be deleted from the list of names to import. If the first specification is a deletion it is treated as though preceded by :DEFAULT. If you just want to import extra names in addition to the default set you will still need to include :DEFAULT explicitly.

e.g., Module.pm defines:

```
@EXPORT = qw(A1 A2 A3 A4 A5);
@EXPORT_OK = qw(B1 B2 B3 B4 B5);
%EXPORT_TAGS = (T1 => [qw(A1 A2 B1 B2)], T2 => [qw(A1 A2 B3 B4)]);
```

Note that you cannot use tags in @EXPORT or @EXPORT\_OK.  
Names in EXPORT\_TAGS must also appear in @EXPORT or @EXPORT\_OK.

An application using Module can say something like:

```
use Module qw(:DEFAULT :T2 !B3 A3);
```

Other examples include:

```
use Socket qw(!/[AP]F_/ !SOMAXCONN !SOL_SOCKET);
use POSIX qw(:errno_h :termios_h !TCSADRAIN !/^EXIT/);
```

Remember that most patterns (using //) will need to be anchored with a leading ^, e.g., "/^EXIT/" rather than "/EXIT/".

You can say "BEGIN { \$Exporter::Verbose=1 }" to see how the specifications are being processed and what is actually being imported into modules.

Exporting without using Exporter's import method

Exporter has a special method, 'export\_to\_level' which is used in situations where you can't directly call Exporter's import method. The export\_to\_level method looks like:

```
MyPackage->export_to_level($where_to_export, $package, @what_to_export);
```

where \$where\_to\_export is an integer telling how far up the calling stack to export your symbols, and @what\_to\_export is an array telling what symbols \*to\* export (usually this is @\_). The \$package argument is currently unused.

For example, suppose that you have a module, A, which already has an import function:

```
package A;

@ISA = qw(Exporter);
@EXPORT_OK = qw ($b);

sub import
{
 $A::b = 1; # not a very useful import method
}
```

and you want to Export symbol \$A::b back to the module that called package A. Since Exporter relies on the import method to work, via

inheritance, as it stands `Exporter::import()` will never get called. Instead, say the following:

```
package A;
@ISA = qw(Exporter);
@EXPORT_OK = qw ($b);

sub import
{
 $A::b = 1;
 A->export_to_level(1, @_);
}
```

This will export the symbols one level 'above' the current package - ie: to the program or module that used package A.

Note: Be careful not to modify `@_` at all before you call `export_to_level` - or people using your package will get very unexplained results!

#### Exporting without inheriting from Exporter

By including Exporter in your `@ISA` you inherit an Exporter's `import()` method but you also inherit several other helper methods which you probably don't want. To avoid this you can do

```
package YourModule;
use Exporter qw(import);
```

which will export Exporter's own `import()` method into YourModule. Everything will work as before but you won't need to include Exporter in `@YourModule::ISA`.

Note: This feature was introduced in version 5.57 of Exporter, released with perl 5.8.3.

#### Module Version Checking

The Exporter module will convert an attempt to import a number from a module into a call to `"$module_name->require_version($value)"`. This can be used to validate that the version of the module being used is greater than or equal to the required version.

The Exporter module supplies a default `"require_version"` method which checks the value of `$VERSION` in the exporting module.

Since the default `"require_version"` method treats the `$VERSION` number as

a simple numeric value it will regard version 1.10 as lower than 1.9. For this reason it is strongly recommended that you use numbers with at least two decimal places, e.g., 1.09.

### Managing Unknown Symbols

In some situations you may want to prevent certain symbols from being exported. Typically this applies to extensions which have functions or constants that may not exist on some systems.

The names of any symbols that cannot be exported should be listed in the `@EXPORT_FAIL` array.

If a module attempts to import any of these symbols the Exporter will give the module an opportunity to handle the situation before generating an error. The Exporter will call an `export_fail` method with a list of the failed symbols:

```
@failed_symbols = $module_name->export_fail(@failed_symbols);
```

If the "export\_fail" method returns an empty list then no error is recorded and all the requested symbols are exported. If the returned list is not empty then an error is generated for each symbol and the export fails. The Exporter provides a default "export\_fail" method which simply returns the list unchanged.

Uses for the "export\_fail" method include giving better error messages for some symbols and performing lazy architectural checks (put more symbols into `@EXPORT_FAIL` by default and then take them out if someone actually tries to use them and an expensive check shows that they are usable on that platform).

### Tag Handling Utility Functions

Since the symbols listed within `%EXPORT_TAGS` must also appear in either `@EXPORT` or `@EXPORT_OK`, two utility functions are provided which allow you to easily add tagged sets of symbols to `@EXPORT` or `@EXPORT_OK`:

```
%EXPORT_TAGS = (foo => [qw(aa bb cc)], bar => [qw(aa cc dd)]);
```

```
Exporter::export_tags('foo'); # add aa, bb and cc to @EXPORT
Exporter::export_ok_tags('bar'); # add aa, cc and dd to @EXPORT_OK
```

Any names which are not tags are added to `@EXPORT` or `@EXPORT_OK` unchanged but will trigger a warning (with "-w") to avoid misspelt tags names being silently added to `@EXPORT` or `@EXPORT_OK`. Future versions may

make this a fatal error.

#### Generating combined tags

If several symbol categories exist in %EXPORT\_TAGS, it's usually useful to create the utility ":all" to simplify "use" statements.

The simplest way to do this is:

```
%EXPORT_TAGS = (foo => [qw(aa bb cc)], bar => [qw(aa cc dd)]);

add all the other ":class" tags to the ":all" class,
deleting duplicates
{
 my %seen;

 push @{$EXPORT_TAGS{all}},
 grep { !$seen{$_}++ } @{$EXPORT_TAGS{$_}} foreach keys %EXPORT_TAGS;
}
```

CGI.pm creates an ":all" tag which contains some (but not really all) of its categories. That could be done with one small change:

```
add some of the other ":class" tags to the ":all" class,
deleting duplicates
{
 my %seen;

 push @{$EXPORT_TAGS{all}},
 grep { !$seen{$_}++ } @{$EXPORT_TAGS{$_}}
 foreach qw/html2 html3 netscape form cgi internal/;
}
```

Note that the tag names in %EXPORT\_TAGS don't have the leading ': '.

#### "AUTOLOAD"ed Constants

Many modules make use of "AUTOLOAD"ing for constant subroutines to avoid having to compile and waste memory on rarely used values (see perlsub for details on constant subroutines). Calls to such constant subroutines are not optimized away at compile time because they can't be checked at compile time for constancy.

Even if a prototype is available at compile time, the body of the subroutine is not (it hasn't been "AUTOLOAD"ed yet). perl needs to examine both the "()" prototype and the body of a subroutine at compile

time to detect that it can safely replace calls to that subroutine with the constant value.

A workaround for this is to call the constants once in a "BEGIN" block:

```
package My ;

use Socket ;

foo(SO_LINGER); ## SO_LINGER NOT optimized away; called at runtime
BEGIN { SO_LINGER }
foo(SO_LINGER); ## SO_LINGER optimized away at compile time.
```

This forces the "AUTOLOAD" for "SO\_LINGER" to take place before SO\_LINGER is encountered later in "My" package.

If you are writing a package that "AUTOLOAD"s, consider forcing an "AUTOLOAD" for any constants explicitly imported by other packages or which are usually used when your package is "use"d.

## Good Practices

### Declaring @EXPORT\_OK and Friends

When using "Exporter" with the standard "strict" and "warnings" pragmas, the "our" keyword is needed to declare the package variables @EXPORT\_OK, @EXPORT, @ISA, etc.

```
our @ISA = qw(Exporter);
our @EXPORT_OK = qw(munge frobnicate);
```

If backward compatibility for Perls under 5.6 is important, one must write instead a "use vars" statement.

```
use vars qw(@ISA @EXPORT_OK);
@ISA = qw(Exporter);
@EXPORT_OK = qw(munge frobnicate);
```

### Playing Safe

There are some caveats with the use of runtime statements like "require Exporter" and the assignment to package variables, which can very subtle for the unaware programmer. This may happen for instance with mutually recursive modules, which are affected by the time the relevant constructions are executed.

The ideal (but a bit ugly) way to never have to think about that is to

use "BEGIN" blocks. So the first part of the "SYNOPSIS" code could be rewritten as:

```
package YourModule;

use strict;
use warnings;

our (@ISA, @EXPORT_OK);
BEGIN {
 require Exporter;
 @ISA = qw(Exporter);
 @EXPORT_OK = qw(munge frobnicate); # symbols to export on request
}
```

The "BEGIN" will assure that the loading of Exporter.pm and the assignments to @ISA and @EXPORT\_OK happen immediately, leaving no room for something to get awry or just plain wrong.

With respect to loading "Exporter" and inheriting, there are alternatives with the use of modules like "base" and "parent".

```
use base qw(Exporter);
or
use parent qw(Exporter);
```

Any of these statements are nice replacements for "BEGIN { require Exporter; @ISA = qw(Exporter); }" with the same compile-time effect. The basic difference is that "base" code interacts with declared "fields" while "parent" is a streamlined version of the older "base" code to just establish the IS-A relationship.

For more details, see the documentation and code of base and parent.

Another thorough remedy to that runtime vs. compile-time trap is to use Exporter::Easy, which is a wrapper of Exporter that allows all boilerplate code at a single gulp in the use statement.

```
use Exporter::Easy (
 OK => [qw(munge frobnicate)],
);
@ISA setup is automatic
all assignments happen at compile time
```



## What not to Export

You have been warned already in "Selecting What To Export" to not export:

- \* method names (because you don't need to and that's likely to not do what you want),
- \* anything by default (because you don't want to surprise your users... badly)
- \* anything you don't need to (because less is more)

There's one more item to add to this list. Do not export variable names. Just because "Exporter" lets you do that, it does not mean you should.

```
@EXPORT_OK = qw($svar @avar %hvar); # DON'T!
```

Exporting variables is not a good idea. They can change under the hood, provoking horrible effects at-a-distance, that are too hard to track and to fix. Trust me: they are not worth it.

To provide the capability to set/get class-wide settings, it is best instead to provide accessors as subroutines or class methods instead.

## SEE ALSO

"Exporter" is definitely not the only module with symbol exporter capabilities. At CPAN, you may find a bunch of them. Some are lighter. Some provide improved APIs and features. Peek the one that fits your needs. The following is a sample list of such modules.

```
Exporter::Easy
Exporter::Lite
Exporter::Renaming
Exporter::Tidy
Sub::Exporter / Sub::Installer
Perl6::Export / Perl6::Export::Attrs
```

## LICENSE

This library is free software. You can redistribute it and/or modify it under the same terms as Perl itself.

### 3.151 perl-File-Path-2.09-2

This file is the README for File::Path version 2.09

#### INSTALLATION

```
perl Makefile.PL
make
make test
make install
```

#### TESTING

This module requires the following modules for thorough testing:

(These are core, you should be ok)

```
Cwd
File::Path
File::Spec::Functions
Test::More
```

(These are optional)

```
Test::Output
Test::Pod
Test::Pod::Coverage
```

For more advanced testing, it is possible to run the eg/setup-extra-tests program as root. This will create a directory 'EXTRA' that contains a mixture of files and directories owned both by root and a specified user (uid or login name).

```
sudo perl eg/setup-extra-tests -u david
make test
```

This is used to exercise parts of the code that ordinarily wouldn't be visited. That is, as root, some files and directories will be created that the user 'david', which will run the test suite, will not be able to remove.

It would be nice to do something tricky like this for Win32, which has a much richer privilege scheme.

#### BUGS

Please report all bugs on the RT queue:

L<<http://rt.cpan.org/NoAuth/Bugs.html?Dist=File-Path>>

You can also send pull requests to the Github repository:

L<<https://github.com/dland/File-Path>>

#### AUTHORS

Tim Bunce and Charles Bailey.

Currently maintained by David Landgren <david@landgren.net>.

#### COPYRIGHT

This module is copyright (C) Charles Bailey, Tim Bunce and David Landgren 1995-2013. All rights reserved.

#### LICENSE

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### 3.152 perl-File-Temp-0.23.01-3

#### NAME

File::Temp - return name and handle of a temporary file safely

#### VERSION

version 0.2301

#### SYNOPSIS

```
use File::Temp qw/ tempfile tempdir /;

$fh = tempfile();
($fh, $filename) = tempfile();

($fh, $filename) = tempfile($template, DIR => $dir);
($fh, $filename) = tempfile($template, SUFFIX => '.dat');
($fh, $filename) = tempfile($template, TMPDIR => 1);

binmode($fh, ":utf8");

$dir = tempdir(CLEANUP => 1);
($fh, $filename) = tempfile(DIR => $dir);
```

#### Object interface:

```
require File::Temp;
use File::Temp ();
use File::Temp qw/ :seekable /;

$fh = File::Temp->new();
$fname = $fh->filename;

$fh = File::Temp->new(TEMPLATE => $template);
$fname = $fh->filename;

$tmp = File::Temp->new(UNLINK => 0, SUFFIX => '.dat');
print $tmp "Some data\n";
print "Filename is $tmp\n";
$tmp->seek(0, SEEK_END);
```

The following interfaces are provided for compatibility with existing APIs. They should not be used in new code.

#### MkTemp family:

```

use File::Temp qw/ :mktemp /;

($fh, $file) = mkstemp("tmpfileXXXXX");
($fh, $file) = mkstemp("tmpfileXXXXX", $suffix);

$tmpdir = mkdtemp($template);

$unopened_file = mktemp($template);

```

#### POSIX functions:

```

use File::Temp qw/ :POSIX /;

$file = tmpnam();
$fh = tmpfile();

($fh, $file) = tmpnam();

```

#### Compatibility functions:

```

$unopened_file = File::Temp::tempnam($dir, $pfx);

```

#### DESCRIPTION

"File::Temp" can be used to create and open temporary files in a safe way. There is both a function interface and an object-oriented interface. The File::Temp constructor or the tmpfile() function can be used to return the name and the open filehandle of a temporary file. The tmpdir() function can be used to create a temporary directory.

The security aspect of temporary file creation is emphasized such that a filehandle and filename are returned together. This helps guarantee that a race condition can not occur where the temporary file is created by another process between checking for the existence of the file and its opening. Additional security levels are provided to check, for example, that the sticky bit is set on world writable directories. See "safe\_level" for more information.

For compatibility with popular C library functions, Perl implementations of the mkstemp() family of functions are provided. These are, mkstemp(), mkstemp(), mkdtemp() and mktemp().

Additionally, implementations of the standard POSIX tmpnam() and tmpfile() functions are provided if required.

Implementations of `mktemp()`, `tmpnam()`, and `tempnam()` are provided, but should be used with caution since they return only a filename that was valid when function was called, so cannot guarantee that the file will not exist by the time the caller opens the filename.

Filehandles returned by these functions support the seekable methods.

#### OBJECT-ORIENTED INTERFACE

This is the primary interface for interacting with `"File::Temp"`. Using the OO interface a temporary file can be created when the object is constructed and the file can be removed when the object is no longer required.

Note that there is no method to obtain the filehandle from the `"File::Temp"` object. The object itself acts as a filehandle. The object isa `"IO::Handle"` and isa `"IO::Seekable"` so all those methods are available.

Also, the object is configured such that it stringifies to the name of the temporary file and so can be compared to a filename directly. It numifies to the `"refaddr"` the same as other handles and so can be compared to other handles with `"=="`.

```
$fh eq $filename # as a string
$fh != *STDOUT # as a number
```

new Create a temporary file object.

```
my $tmp = File::Temp->new();
```

by default the object is constructed as if `"tempfile"` was called without options, but with the additional behaviour that the temporary file is removed by the object destructor if `UNLINK` is set to true (the default).

Supported arguments are the same as for `"tempfile"`: `UNLINK` (defaulting to true), `DIR`, `EXLOCK` and `SUFFIX`. Additionally, the filename template is specified using the `TEMPLATE` option. The `OPEN` option is not supported (the file is always opened).

```
$tmp = File::Temp->new(TEMPLATE => 'tempXXXXX',
 DIR => 'mydir',
 SUFFIX => '.dat');
```

Arguments are case insensitive.

Can call croak() if an error occurs.

#### newdir

Create a temporary directory using an object oriented interface.

```
$dir = File::Temp->newdir();
```

By default the directory is deleted when the object goes out of scope.

Supports the same options as the "tempdir" function. Note that directories created with this method default to CLEANUP => 1.

```
$dir = File::Temp->newdir($template, %options);
```

A template may be specified either with a leading template or with a TEMPLATE argument.

#### filename

Return the name of the temporary file associated with this object (if the object was created using the "new" constructor).

```
$filename = $tmp->filename;
```

This method is called automatically when the object is used as a string.

#### dirname

Return the name of the temporary directory associated with this object (if the object was created using the "newdir" constructor).

```
$dirname = $tmpdir->dirname;
```

This method is called automatically when the object is used in string context.

#### unlink\_on\_destroy

Control whether the file is unlinked when the object goes out of scope. The file is removed if this value is true and \$KEEP\_ALL is not.

```
$fh->unlink_on_destroy(1);
```

Default is for the file to be removed.

## DESTROY

When the object goes out of scope, the destructor is called. This destructor will attempt to unlink the file (using `unlink1`) if the constructor was called with `UNLINK` set to 1 (the default state if `UNLINK` is not specified).

No error is given if the unlink fails.

If the object has been passed to a child process during a fork, the file will be deleted when the object goes out of scope in the parent.

For a temporary directory object the directory will be removed unless the `CLEANUP` argument was used in the constructor (and set to false) or `"unlink_on_destroy"` was modified after creation. Note that if a temp directory is your current directory, it cannot be removed - a warning will be given in this case. `"chdir()"` out of the directory before letting the object go out of scope.

If the global variable `$KEEP_ALL` is true, the file or directory will not be removed.

## FUNCTIONS

This section describes the recommended interface for generating temporary files and directories.

### tempfile

This is the basic function to generate temporary files. The behaviour of the file can be changed using various options:

```
$fh = tempfile();
($fh, $filename) = tempfile();
```

Create a temporary file in the directory specified for temporary files, as specified by the `tmpdir()` function in `File::Spec`.

```
($fh, $filename) = tempfile($template);
```

Create a temporary file in the current directory using the supplied template. Trailing 'X' characters are replaced with random letters



to generate the filename. At least four 'X' characters must be present at the end of the template.

```
($fh, $filename) = tempfile($template, SUFFIX => $suffix)
```

Same as previously, except that a suffix is added to the template after the 'X' translation. Useful for ensuring that a temporary filename has a particular extension when needed by other applications. But see the WARNING at the end.

```
($fh, $filename) = tempfile($template, DIR => $dir);
```

Translates the template as before except that a directory name is specified.

```
($fh, $filename) = tempfile($template, TMPDIR => 1);
```

Equivalent to specifying a DIR of "File::Spec->tmpdir", writing the file into the same temporary directory as would be used if no template was specified at all.

```
($fh, $filename) = tempfile($template, UNLINK => 1);
```

Return the filename and filehandle as before except that the file is automatically removed when the program exits (dependent on \$KEEP\_ALL). Default is for the file to be removed if a file handle is requested and to be kept if the filename is requested. In a scalar context (where no filename is returned) the file is always deleted either (depending on the operating system) on exit or when it is closed (unless \$KEEP\_ALL is true when the temp file is created).

Use the object-oriented interface if fine-grained control of when a file is removed is required.

If the template is not specified, a template is always automatically generated. This temporary file is placed in tmpdir() (File::Spec) unless a directory is specified explicitly with the DIR option.

```
$fh = tempfile(DIR => $dir);
```

If called in scalar context, only the filehandle is returned and the file will automatically be deleted when closed on operating systems that support this (see the description of tmpfile() elsewhere in

this document). This is the preferred mode of operation, as if you only have a filehandle, you can never create a race condition by fumbling with the filename. On systems that can not unlink an open file or can not mark a file as temporary when it is opened (for example, Windows NT uses the "O\_TEMPORARY" flag) the file is marked for deletion when the program ends (equivalent to setting UNLINK to 1). The "UNLINK" flag is ignored if present.

```
(undef, $filename) = tempfile($template, OPEN => 0);
```

This will return the filename based on the template but will not open this file. Cannot be used in conjunction with UNLINK set to true. Default is to always open the file to protect from possible race conditions. A warning is issued if warnings are turned on. Consider using the tmpnam() and mktemp() functions described elsewhere in this document if opening the file is not required.

If the operating system supports it (for example BSD derived systems), the filehandle will be opened with O\_EXLOCK (open with exclusive file lock). This can sometimes cause problems if the intention is to pass the filename to another system that expects to take an exclusive lock itself (such as DBD::SQLite) whilst ensuring that the tempfile is not reused. In this situation the "EXLOCK" option can be passed to tempfile. By default EXLOCK will be true (this retains compatibility with earlier releases).

```
($fh, $filename) = tempfile($template, EXLOCK => 0);
```

Options can be combined as required.

Will croak() if there is an error.

## tempdir

This is the recommended interface for creation of temporary directories. By default the directory will not be removed on exit (that is, it won't be temporary; this behaviour can not be changed because of issues with backwards compatibility). To enable removal either use the CLEANUP option which will trigger removal on program exit, or consider using the "newdir" method in the object interface which will allow the directory to be cleaned up when the object goes out of scope.

The behaviour of the function depends on the arguments:

```
$tempdir = tempdir();
```

Create a directory in tempdir() (see File::Spec).

```
$tempdir = tempdir($template);
```

Create a directory from the supplied template. This template is similar to that described for tempfile(). 'X' characters at the end of the template are replaced with random letters to construct the directory name. At least four 'X' characters must be in the template.

```
$tempdir = tempdir (DIR => $dir);
```

Specifies the directory to use for the temporary directory. The temporary directory name is derived from an internal template.

```
$tempdir = tempdir ($template, DIR => $dir);
```

Prepend the supplied directory name to the template. The template should not include parent directory specifications itself. Any parent directory specifications are removed from the template before prepending the supplied directory.

```
$tempdir = tempdir ($template, TMPDIR => 1);
```

Using the supplied template, create the temporary directory in a standard location for temporary files. Equivalent to doing

```
$tempdir = tempdir ($template, DIR => File::Spec->tmpdir);
```

but shorter. Parent directory specifications are stripped from the template itself. The "TMPDIR" option is ignored if "DIR" is set explicitly. Additionally, "TMPDIR" is implied if neither a template nor a directory are supplied.

```
$tempdir = tempdir($template, CLEANUP => 1);
```

Create a temporary directory using the supplied template, but attempt to remove it (and all files inside it) when the program exits. Note that an attempt will be made to remove all files from the directory even if they were not created by this module (otherwise why ask to clean it up?). The directory removal is made with the rmtree() function from the File::Path module. Of course, if

the template is not specified, the temporary directory will be created in tmpdir() and will also be removed at program exit.

Will croak() if there is an error.

## MKTEMP FUNCTIONS

The following functions are Perl implementations of the mktemp() family of temp file generation system calls.

### mkstemp

Given a template, returns a filehandle to the temporary file and the name of the file.

```
($fh, $name) = mkstemp($template);
```

In scalar context, just the filehandle is returned.

The template may be any filename with some number of X's appended to it, for example /tmp/temp.XXXX. The trailing X's are replaced with unique alphanumeric combinations.

Will croak() if there is an error.

### mkstemp

Similar to mkstemp(), except that an extra argument can be supplied with a suffix to be appended to the template.

```
($fh, $name) = mkstemp($template, $suffix);
```

For example a template of "testXXXXXX" and suffix of ".dat" would generate a file similar to testhGji\_w.dat.

Returns just the filehandle alone when called in scalar context.

Will croak() if there is an error.

### mkdtemp

Create a directory from a template. The template must end in X's that are replaced by the routine.

```
$tmpdir_name = mkdtemp($template);
```

Returns the name of the temporary directory created.

Directory must be removed by the caller.

Will croak() if there is an error.

#### mktemp

Returns a valid temporary filename but does not guarantee that the file will not be opened by someone else.

```
$unopened_file = mktemp($template);
```

Template is the same as that required by mkstemp().

Will croak() if there is an error.

### POSIX FUNCTIONS

This section describes the re-implementation of the tmpnam() and tmpfile() functions described in POSIX using the mkstemp() from this module.

Unlike the POSIX implementations, the directory used for the temporary file is not specified in a system include file ("P\_tmpdir") but simply depends on the choice of tmpdir() returned by File::Spec. On some implementations this location can be set using the "TMPDIR" environment variable, which may not be secure. If this is a problem, simply use mkstemp() and specify a template.

#### tmpnam

When called in scalar context, returns the full name (including path) of a temporary file (uses mktemp()). The only check is that the file does not already exist, but there is no guarantee that that condition will continue to apply.

```
$file = tmpnam();
```

When called in list context, a filehandle to the open file and a filename are returned. This is achieved by calling mkstemp() after constructing a suitable template.

```
($fh, $file) = tmpnam();
```

If possible, this form should be used to prevent possible race conditions.

See "tmpdir" in File::Spec for information on the choice of

temporary directory for a particular operating system.

Will croak() if there is an error.

#### tmpfile

Returns the filehandle of a temporary file.

```
$fh = tmpfile();
```

The file is removed when the filehandle is closed or when the program exits. No access to the filename is provided.

If the temporary file can not be created undef is returned. Currently this command will probably not work when the temporary directory is on an NFS file system.

Will croak() if there is an error.

#### ADDITIONAL FUNCTIONS

These functions are provided for backwards compatibility with common tempfile generation C library functions.

They are not exported and must be addressed using the full package name.

#### tempnam

Return the name of a temporary file in the specified directory using a prefix. The file is guaranteed not to exist at the time the function was called, but such guarantees are good for one clock tick only. Always use the proper form of "sysopen" with "O\_CREAT | O\_EXCL" if you must open such a filename.

```
$filename = File::Temp::tempnam($dir, $prefix);
```

Equivalent to running mktemp() with \$dir/\$prefixXXXXXXXX (using unix file convention as an example)

Because this function uses mktemp(), it can suffer from race conditions.

Will croak() if there is an error.

#### UTILITY FUNCTIONS

Useful functions for dealing with the filehandle and filename.

## unlink0

Given an open filehandle and the associated filename, make a safe unlink. This is achieved by first checking that the filename and filehandle initially point to the same file and that the number of links to the file is 1 (all fields returned by `stat()` are compared). Then the filename is unlinked and the filehandle checked once again to verify that the number of links on that file is now 0. This is the closest you can come to making sure that the filename unlinked was the same as the file whose descriptor you hold.

```
unlink0($fh, $path)
 or die "Error unlinking file $path safely";
```

Returns false on error but `croaks()` if there is a security anomaly. The filehandle is not closed since on some occasions this is not required.

On some platforms, for example Windows NT, it is not possible to unlink an open file (the file must be closed first). On those platforms, the actual unlinking is deferred until the program ends and good status is returned. A check is still performed to make sure that the filehandle and filename are pointing to the same thing (but not at the time the end block is executed since the deferred removal may not have access to the filehandle).

Additionally, on Windows NT not all the fields returned by `stat()` can be compared. For example, the "dev" and "rdev" fields seem to be different. Also, it seems that the size of the file returned by `stat()` does not always agree, with "`stat(FH)`" being more accurate than "`stat(filename)`", presumably because of caching issues even when using `autoflush` (this is usually overcome by waiting a while after writing to the tempfile before attempting to "unlink0" it).

Finally, on NFS file systems the link count of the file handle does not always go to zero immediately after unlinking. Currently, this command is expected to fail on NFS disks.

This function is disabled if the global variable `$KEEP_ALL` is true and an unlink on open file is supported. If the unlink is to be deferred to the END block, the file is still registered for removal.

This function should not be called if you are using the object oriented interface since it will interfere with the object destructor deleting the file.

## cmpstat

Compare "stat" of filehandle with "stat" of provided filename. This can be used to check that the filename and filehandle initially point to the same file and that the number of links to the file is 1 (all fields returned by stat() are compared).

```
cmpstat($fh, $path)
 or die "Error comparing handle with file";
```

Returns false if the stat information differs or if the link count is greater than 1. Calls croak if there is a security anomaly.

On certain platforms, for example Windows, not all the fields returned by stat() can be compared. For example, the "dev" and "rdev" fields seem to be different in Windows. Also, it seems that the size of the file returned by stat() does not always agree, with "stat(FH)" being more accurate than "stat(filename)", presumably because of caching issues even when using autoflush (this is usually overcome by waiting a while after writing to the tempfile before attempting to "unlink0" it).

Not exported by default.

## unlink1

Similar to "unlink0" except after file comparison using cmpstat, the filehandle is closed prior to attempting to unlink the file. This allows the file to be removed without using an END block, but does mean that the post-unlink comparison of the filehandle state provided by "unlink0" is not available.

```
unlink1($fh, $path)
 or die "Error closing and unlinking file";
```

Usually called from the object destructor when using the OO interface.

Not exported by default.

This function is disabled if the global variable \$KEEP\_ALL is true.

Can call croak() if there is a security anomaly during the stat() comparison.



## cleanup

Calling this function will cause any temp files or temp directories that are registered for removal to be removed. This happens automatically when the process exits but can be triggered manually if the caller is sure that none of the temp files are required. This method can be registered as an Apache callback.

Note that if a temp directory is your current directory, it cannot be removed. "chdir()" out of the directory first before calling "cleanup()". (For the cleanup at program exit when the CLEANUP flag is set, this happens automatically.)

On OSes where temp files are automatically removed when the temp file is closed, calling this function will have no effect other than to remove temporary directories (which may include temporary files).

```
File::Temp::cleanup();
```

Not exported by default.

## PACKAGE VARIABLES

These functions control the global state of the package.

## safe\_level

Controls the lengths to which the module will go to check the safety of the temporary file or directory before proceeding. Options are:

### STANDARD

Do the basic security measures to ensure the directory exists and is writable, that temporary files are opened only if they do not already exist, and that possible race conditions are avoided. Finally the unlink0 function is used to remove files safely.

**MEDIUM** In addition to the STANDARD security, the output directory is checked to make sure that it is owned either by root or the user running the program. If the directory is writable by group or by other, it is then checked to make sure that the sticky bit is set.

Will not work on platforms that do not support the "-k" test for sticky bit.

**HIGH** In addition to the MEDIUM security checks, also check for

the possibility of ‘‘chown() giveaway’’ using the POSIX `sysconf()` function. If this is a possibility, each directory in the path is checked in turn for safeness, recursively walking back to the root directory.

For platforms that do not support the POSIX `“_PC_CHOWN_RESTRICTED”` symbol (for example, Windows NT) it is assumed that ‘‘chown() giveaway’’ is possible and the recursive test is performed.

The level can be changed as follows:

```
File::Temp->safe_level(File::Temp::HIGH);
```

The level constants are not exported by the module.

Currently, you must be running at least perl v5.6.0 in order to run with MEDIUM or HIGH security. This is simply because the safety tests use functions from `Fcntl` that are not available in older versions of perl. The problem is that the version number for `Fcntl` is the same in perl 5.6.0 and in 5.005\_03 even though they are different versions.

On systems that do not support the HIGH or MEDIUM safety levels (for example Win NT or OS/2) any attempt to change the level will be ignored. The decision to ignore rather than raise an exception allows portable programs to be written with high security in mind for the systems that can support this without those programs failing on systems where the extra tests are irrelevant.

If you really need to see whether the change has been accepted simply examine the return value of `"safe_level"`.

```
$newlevel = File::Temp->safe_level(File::Temp::HIGH);
die "Could not change to high security"
 if $newlevel != File::Temp::HIGH;
```

#### TopSystemUID

This is the highest UID on the current system that refers to a root UID. This is used to make sure that the temporary directory is owned by a system UID (`"root"`, `"bin"`, `"sys"` etc) rather than simply by root.

This is required since on many unix systems `"/tmp"` is not owned by

root.

Default is to assume that any UID less than or equal to 10 is a root UID.

```
File::Temp->top_system_uid(10);
my $topid = File::Temp->top_system_uid;
```

This value can be adjusted to reduce security checking if required. The value is only relevant when "safe\_level" is set to MEDIUM or higher.

#### **\$KEEP\_ALL**

Controls whether temporary files and directories should be retained regardless of any instructions in the program to remove them automatically. This is useful for debugging but should not be used in production code.

```
$File::Temp::KEEP_ALL = 1;
```

Default is for files to be removed as requested by the caller.

In some cases, files will only be retained if this variable is true when the file is created. This means that you can not create a temporary file, set this variable and expect the temp file to still be around when the program exits.

#### **\$DEBUG**

Controls whether debugging messages should be enabled.

```
$File::Temp::DEBUG = 1;
```

Default is for debugging mode to be disabled.

#### **WARNING**

For maximum security, endeavour always to avoid ever looking at, touching, or even imputing the existence of the filename. You do not know that that filename is connected to the same file as the handle you have, and attempts to check this can only trigger more race conditions. It's far more secure to use the filehandle alone and dispense with the filename altogether.

If you need to pass the handle to something that expects a filename then on a unix system you can use `"/dev/fd/" . fileno($fh)` for arbitrary

programs. Perl code that uses the 2-argument version of "open" can be passed `"<+&" . fileno($fh)`. Otherwise you will need to pass the filename. You will have to clear the close-on-exec bit on that file descriptor before passing it to another process.

```
use Fcntl qw/F_SETFD F_GETFD/;
fcntl($tmpfh, F_SETFD, 0)
 or die "Can't clear close-on-exec flag on temp fh: $!\n";
```

#### Temporary files and NFS

Some problems are associated with using temporary files that reside on NFS file systems and it is recommended that a local filesystem is used whenever possible. Some of the security tests will most probably fail when the temp file is not local. Additionally, be aware that the performance of I/O operations over NFS will not be as good as for a local disk.

#### Forking

In some cases files created by `File::Temp` are removed from within an `END` block. Since `END` blocks are triggered when a child process exits (unless `"POSIX::_exit()"` is used by the child) `File::Temp` takes care to only remove those temp files created by a particular process ID. This means that a child will not attempt to remove temp files created by the parent process.

If you are forking many processes in parallel that are all creating temporary files, you may need to reset the random number seed using `srand(EXPR)` in each child else all the children will attempt to walk through the same set of random file names and may well cause themselves to give up if they exceed the number of retry attempts.

#### Directory removal

Note that if you have `chdir`'ed into the temporary directory and it is subsequently cleaned up (either in the `END` block or as part of object destruction), then you will get a warning from `File::Path::rmtree()`.

#### Taint mode

If you need to run code under taint mode, updating to the latest `File::Spec` is highly recommended.

#### BINMODE

The file returned by `File::Temp` will have been opened in binary mode if such a mode is available. If that is not correct, use the `"binmode()"` function to change the mode of the filehandle.

Note that you can modify the encoding of a file opened by `File::Temp` also by using `"binmode()"`.

## HISTORY

Originally began life in May 1999 as an XS interface to the system `mkstemp()` function. In March 2000, the OpenBSD `mkstemp()` code was translated to Perl for total control of the code's security checking, to ensure the presence of the function regardless of operating system and to help with portability. The module was shipped as a standard part of perl from v5.6.1.

Thanks to Tom Christiansen for suggesting that this module should be written and providing ideas for code improvements and security enhancements.

## SEE ALSO

"`tmpnam`" in POSIX, "`tmpfile`" in POSIX, `File::Spec`, `File::Path`

See `IO::File` and `File::MkTemp`, `Apache::TempFile` for different implementations of temporary file handling.

See `File::Tempdir` for an alternative object-oriented wrapper for the "`tempdir`" function.

```
vim: ts=2 sts=2 sw=2 et:
```

## SUPPORT

### Bugs / Feature Requests

Please report any bugs or feature requests through the issue tracker at <https://rt.cpan.org/Public/Dist/Display.html?Name=File-Temp>. You will be notified automatically of any progress on your issue.

### Source Code

This is open source software. The code repository is available for public review and contribution under the terms of the license.

<http://github.com/Perl-Toolchain-Gang/File-Temp>

```
git clone git://github.com/Perl-Toolchain-Gang/File-Temp.git
```

## AUTHOR

Tim Jenness <[tjenness@cpan.org](mailto:tjenness@cpan.org)>

## CONTRIBUTORS

- \* Ben Tilly <btilly@gmail.com>
- \* David Golden <dagolden@cpan.org>
- \* Ed Avis <eda@linux01.wcl.local>
- \* James E. Keenan <jkeen@verizon.net>
- \* Kevin Ryde <user42@zip.com.au>
- \* Peter John Acklam <pjacklam@online.no>

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```

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```
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This is free software, and you are welcome to redistribute it
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```

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

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The End

### 3.153 perl-Filter-1.49-3

Source Filters

Version 1.49

2013-04-01 rurban

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modify it under the same terms as Perl itself.

#### DESCRIPTION

-----

This distribution consists of a number of Source Filters.

For more details see the pod documentation embedded in the .pm files.

If you intend using the `Filter::Util::Call` functionality, I would strongly recommend that you check out Damian Conway's excellent `Filter::Simple` module. Damian's module provides a much cleaner interface than `Filter::Util::Call`. Although it doesn't allow the fine control that `Filter::Util::Call` does, it should be adequate for the majority of applications. It's available at

<http://search.cpan.org/dist/Filter-Simple/>

#### PREREQUISITES

-----

Before you can build the Source Filters you need to have the following installed on your system:

\* Perl 5.005 or better. 5.6.0 or better is recommended for Win32.

If your Perl is less than version 5.004\_55, the "order" test harness will be skipped.

#### BUILDING THE MODULES

-----



Assuming you have met all the prerequisites, building the modules should be relatively straightforward.

The modules can now be built using this sequence of commands:

```
perl Makefile.PL
make
make test
```

The filters have been successfully built and tested on the following systems (at least):

```
linux (gcc or clang)
cygwin 1.7
mingw strawberry 5.14
SunOS 4.1.3 (Sun C compiler & gcc 2.7.2.3)
Solaris 2.3 (Sun C Compiler)
irix 5.3
irix 6.x
Windows XP (Visual C++ 6.0)
```

On Windows tr.exe and cpp.exe should be really the gnu/mingw tools in the path for the testsuite to pass successfully.

## INSTALLATION

-----

```
make install
```

## UPDATES

-----

The most recent version of the Filters is always available at

<http://www.cpan.org/modules/by-module/Filter>

### 3.154 perl-Getopt-Long-2.40-3

Module Getopt::Long - extended processing of command line options

=====

Module Getopt::Long implements an extended getopt function called GetOptions(). This function implements the POSIX standard for command line options, with GNU extensions, while still capable of handling the traditional one-letter options.

In general, this means that command line options can have long names instead of single letters, and are introduced with a double dash '--'.

Optionally, Getopt::Long can support the traditional bundling of single-letter command line options.

Getopt::Long is part of the Perl 5 distribution. It is the successor of newgetopt.pl that came with Perl 4. It is fully upward compatible. In fact, the Perl 5 version of newgetopt.pl is just a wrapper around the module.

For complete documentation, see the Getopt::Long POD document or use the command

```
perldoc Getopt::Long
```

#### FEATURES

=====

##### \* Long option names

Major advantage of using long option names is that it is much easier to memorize the option names. Using single-letter names one quickly runs into the problem that there is no logical relationship between the semantics of the selected option and its option letter.

Disadvantage is that it requires more typing. Getopt::Long provides for option name abbreviation, so option names may be abbreviated to uniqueness. Also, modern shells like Cornell's tcsh support option name completion. As a rule of thumb, you can use abbreviations freely while running commands interactively but always use the full names in scripts.

Examples (POSIX):

```
--long --width=80 --height=24
```

Extensions:

`-long` (convenience) `+width=80` (deprecated) `-height 24` (traditional)

By default, long option names are case insensitive.

#### \* Single-letter options and bundling

When single-letter options are requested, `Getopt::Long` allows the option names to be bundled, e.g. `"-abc"` is equivalent to `"-a -b -c"`. In this case, long option names must be introduced with the POSIX `"--"` introducer.

Examples:

`-lgAd` (bundle) `-xw 80` (bundle, `w` takes a value) `-xw80` (same)  
even `-l24w80` (`l = 24` and `w = 80`)

By default, single-letter option names are case sensitive.

#### \* Flexibility:

- options can have alternative names, using an alternative name will behave as if the primary name was used;
- options can be negatable, e.g. `"debug"` will switch it on, while `"nodebug"` will switch it off.
- options can set values, but also add values producing an array of values instead of a single scalar value, or set values in a hash.
- options can have multiple values, e.g., `"--position 25 624"`.

#### \* Options linkage

Using `Getopt::Long` gives the programmer ultimate control over the command line options and how they must be handled:

- by setting a global variable in the calling program;
- by setting a specified variable;
- by entering the option name and the value in an associative array (hash) or object (if it is a blessed hash);
- by calling a user-specified subroutine with the option name and the value as arguments (for hash options: the name, key and value);
- combinations of the above.

## \* Customization:

The module can be customized by specifying settings in the 'use' directive, or by calling a special method, `Getopt::Long::Configure`. For example, the following two cases are functionally equal:

```
use Getopt::Long qw(:config bundling no_ignore_case);
```

and

```
use Getopt::Long;
Getopt::Long::Configure qw(bundling no_ignore_case);
```

Some of the possible customizations. Most of them take a "no\_" prefix to reverse the effect:

- default

Restore default settings.

- auto\_abbrev

Allow option names to be abbreviated to uniqueness.

- getopt\_compat

Allow '+' to start options.

- gnu\_compat

Compatibility with GNU `getopt_long()`.

- permute
- require\_order

Whether non-options are allowed to be mixed with options.

permute means that

```
-foo arg1 -bar arg2 arg3
```

is equivalent to

```
-foo -bar arg1 arg2 arg3
```

(provided `-foo` does not take an argument value).

`require_order` means that options processing terminates when the first non-option is encountered.

```
-foo arg1 -bar arg2 arg3
```

is equivalent to

```
-foo -- arg1 -bar arg2 arg3
```

- `bundling`

Setting this variable to a non-zero value will allow single-character options to be bundled. To distinguish bundles from long option names, long options must be introduced with `--` and single-character options (and bundles) with `-`.

- `ignore_case`

Ignore case when matching options.

- `pass_through`

Do not issue error messages for unknown options, but leave them (pass-through) in `@ARGV`.

- `prefix`

The string that starts options. See also `prefix_pattern`.

- `prefix_pattern`

A Perl pattern that identifies the strings that introduce options. Default is `--|-\|+` unless environment variable `POSIXLY_CORRECT` has been set, in which case it is `--|-`.

- `long_prefix_pattern`

A perl pattern that is used to identify which prefixes should be treated as long style. Any prefixes that don't match this pattern will have short option semantics. Defaults to `--`.

- debug

Enable copious debugging output.

\* Object oriented interface:

Using the object oriented interface, multiple parser objects can be instantiated, each having their own configuration settings:

```
$p1 = new Getopt::Long::Parser (config => ["bundling"]);
$p2 = new Getopt::Long::Parser (config => ["posix"]);
if ($p1->getoptions(...options descriptions...)) ...
```

#### AVAILABILITY

=====

The official version for module `Getopt::Long` comes with the Perl 5 distribution.

Newer versions will be made available on the Comprehensive Perl Archive Network (CPAN), see "[http://www.perl.com/CPAN/authors/Johan\\_Vromans](http://www.perl.com/CPAN/authors/Johan_Vromans)".

Or use the CPAN search engine:

```
http://search.cpan.org/search?mode=module&query=Getopt::Long
http://search.cpan.org/search?module=Getopt::Long
```

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=====

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```

Johan Vromans jvromans@squirrel.nl
Squirrel Consultancy Exloo, the Netherlands
http://www.squirrel.nl http://www.squirrel.nl/people/jvromans
----- "Arms are made for hugging" -----
```

## 3.155 perl-HTTP-Tiny-0.033-3

### NAME

HTTP::Tiny - A small, simple, correct HTTP/1.1 client

### VERSION

version 0.033

### SYNOPSIS

```
use HTTP::Tiny;

my $response = HTTP::Tiny->new->get('http://example.com/');

die "Failed!\n" unless $response->{success};

print "$response->{status} $response->{reason}\n";

while (my ($k, $v) = each %{$response->{headers}}) {
 for (ref $v eq 'ARRAY' ? @$v : $v) {
 print "$k: $_\n";
 }
}

print $response->{content} if length $response->{content};
```

### DESCRIPTION

This is a very simple HTTP/1.1 client, designed for doing simple GET requests without the overhead of a large framework like LWP::UserAgent.

It is more correct and more complete than HTTP::Lite. It supports proxies (currently only non-authenticating ones) and redirection. It also correctly resumes after EINTR.

### METHODS

#### new

```
$http = HTTP::Tiny->new(%attributes);
```

This constructor returns a new HTTP::Tiny object. Valid attributes include:

- \* "agent"

A user-agent string (defaults to 'HTTP-Tiny/\$VERSION'). If "agent" ends in a space character, the default user-agent string is

appended.

\* "cookie\_jar"

An instance of HTTP::CookieJar or equivalent class that supports the "add" and "cookie\_header" methods

\* "default\_headers"

A hashref of default headers to apply to requests

\* "local\_address"

The local IP address to bind to

\* "max\_redirect"

Maximum number of redirects allowed (defaults to 5)

\* "max\_size"

Maximum response size (only when not using a data callback). If defined, responses larger than this will return an exception.

\* "proxy"

URL of a proxy server to use (default is \$ENV{http\_proxy} if set)

\* "no\_proxy"

List of domain suffixes that should not be proxied. Must be a comma-separated string or an array reference. (default is \$ENV{no\_proxy})

\* "timeout"

Request timeout in seconds (default is 60)

\* "verify\_SSL"

A boolean that indicates whether to validate the SSL certificate of an "https" connection (default is false)

\* "SSL\_options"



A hashref of "SSL\_\*" options to pass through to IO::Socket::SSL

Exceptions from "max\_size", "timeout" or other errors will result in a pseudo-HTTP status code of 599 and a reason of "Internal Exception". The content field in the response will contain the text of the exception.

See "SSL SUPPORT" for more on the "verify\_SSL" and "SSL\_options" attributes.

get|head|put|post|delete

```
$response = $http->get($url);
$response = $http->get($url, \%options);
$response = $http->head($url);
```

These methods are shorthand for calling "request()" for the given method. The URL must have unsafe characters escaped and international domain names encoded. See "request()" for valid options and a description of the response.

The "success" field of the response will be true if the status code is 2XX.

post\_form

```
$response = $http->post_form($url, $form_data);
$response = $http->post_form($url, $form_data, \%options);
```

This method executes a "POST" request and sends the key/value pairs from a form data hash or array reference to the given URL with a "content-type" of "application/x-www-form-urlencoded". See documentation for the "www\_form\_urlencode" method for details on the encoding.

The URL must have unsafe characters escaped and international domain names encoded. See "request()" for valid options and a description of the response. Any "content-type" header or content in the options hashref will be ignored.

The "success" field of the response will be true if the status code is 2XX.

mirror

```
$response = $http->mirror($url, $file, \%options)
if ($response->{success}) {
 print "$file is up to date\n";
}
```

```
}
```

Executes a "GET" request for the URL and saves the response body to the file name provided. The URL must have unsafe characters escaped and international domain names encoded. If the file already exists, the request will include an "If-Modified-Since" header with the modification timestamp of the file. You may specify a different "If-Modified-Since" header yourself in the "\$options->{headers}" hash.

The "success" field of the response will be true if the status code is 2XX or if the status code is 304 (unmodified).

If the file was modified and the server response includes a properly formatted "Last-Modified" header, the file modification time will be updated accordingly.

request

```
$response = $http->request($method, $url);
$response = $http->request($method, $url, \%options);
```

Executes an HTTP request of the given method type ('GET', 'HEAD', 'POST', 'PUT', etc.) on the given URL. The URL must have unsafe characters escaped and international domain names encoded. A hashref of options may be appended to modify the request.

Valid options are:

\* "headers"

A hashref containing headers to include with the request. If the value for a header is an array reference, the header will be output multiple times with each value in the array. These headers over-write any default headers.

\* "content"

A scalar to include as the body of the request OR a code reference that will be called iteratively to produce the body of the request

\* "trailer\_callback"

A code reference that will be called if it exists to provide a hashref of trailing headers (only used with chunked transfer-encoding)

\* "data\_callback"

A code reference that will be called for each chunks of the response body received.

If the "content" option is a code reference, it will be called iteratively to provide the content body of the request. It should return the empty string or undef when the iterator is exhausted.

If the "content" option is the empty string, no "content-type" or "content-length" headers will be generated.

If the "data\_callback" option is provided, it will be called iteratively until the entire response body is received. The first argument will be a string containing a chunk of the response body, the second argument will be the in-progress response hash reference, as described below. (This allows customizing the action of the callback based on the "status" or "headers" received prior to the content body.)

The "request" method returns a hashref containing the response. The hashref will have the following keys:

\* "success"

Boolean indicating whether the operation returned a 2XX status code

\* "url"

URL that provided the response. This is the URL of the request unless there were redirections, in which case it is the last URL queried in a redirection chain

\* "status"

The HTTP status code of the response

\* "reason"

The response phrase returned by the server

\* "content"

The body of the response. If the response does not have any content

or if a data callback is provided to consume the response body, this will be the empty string

- \* "headers"

A hashref of header fields. All header field names will be normalized to be lower case. If a header is repeated, the value will be an arrayref; it will otherwise be a scalar string containing the value

On an exception during the execution of the request, the "status" field will contain 599, and the "content" field will contain the text of the exception.

`www_form_urlencode`

```
$params = $http->www_form_urlencode($data);
$response = $http->get("http://example.com/query?$params");
```

This method converts the key/value pairs from a data hash or array reference into a "x-www-form-urlencoded" string. The keys and values from the data reference will be UTF-8 encoded and escaped per RFC 3986. If a value is an array reference, the key will be repeated with each of the values of the array reference. The key/value pairs in the resulting string will be sorted by key and value.

## SSL SUPPORT

Direct "https" connections are supported only if IO::Socket::SSL 1.56 or greater and Net::SSLeay 1.49 or greater are installed. An exception will be thrown if a new enough versions of these modules not installed or if the SSL encryption fails. There is no support for "https" connections via proxy (i.e. RFC 2817).

SSL provides two distinct capabilities:

- \* Encrypted communication channel
- \* Verification of server identity

By default, HTTP::Tiny does not verify server identity.

Server identity verification is controversial and potentially tricky because it depends on a (usually paid) third-party Certificate Authority (CA) trust model to validate a certificate as legitimate. This discriminates against servers with self-signed certificates or

certificates signed by free, community-driven CA's such as CAcert.org  
<<http://cacert.org>>.

By default, HTTP::Tiny does not make any assumptions about your trust model, threat level or risk tolerance. It just aims to give you an encrypted channel when you need one.

Setting the "verify\_SSL" attribute to a true value will make HTTP::Tiny verify that an SSL connection has a valid SSL certificate corresponding to the host name of the connection and that the SSL certificate has been verified by a CA. Assuming you trust the CA, this will protect against a man-in-the-middle attack

<[http://en.wikipedia.org/wiki/Man-in-the-middle\\_attack](http://en.wikipedia.org/wiki/Man-in-the-middle_attack)>. If you are concerned about security, you should enable this option.

Certificate verification requires a file containing trusted CA certificates. If the Mozilla::CA module is installed, HTTP::Tiny will use the CA file included with it as a source of trusted CA's. (This means you trust Mozilla, the author of Mozilla::CA, the CPAN mirror where you got Mozilla::CA, the toolchain used to install it, and your operating system security, right?)

If that module is not available, then HTTP::Tiny will search several system-specific default locations for a CA certificate file:

- \* /etc/ssl/certs/ca-certificates.crt
- \* /etc/pki/tls/certs/ca-bundle.crt
- \* /etc/ssl/ca-bundle.pem

An exception will be raised if "verify\_SSL" is true and no CA certificate file is available.

If you desire complete control over SSL connections, the "SSL\_options" attribute lets you provide a hash reference that will be passed through to "IO::Socket::SSL::start\_SSL()", overriding any options set by HTTP::Tiny. For example, to provide your own trusted CA file:

```
SSL_options => {
 SSL_ca_file => $file_path,
}
```

The "SSL\_options" attribute could also be used for such things as

providing a client certificate for authentication to a server or controlling the choice of cipher used for the SSL connection. See `IO::Socket::SSL` documentation for details.

## LIMITATIONS

`HTTP::Tiny` is *conditionally compliant* with the HTTP/1.1 specification <<http://www.w3.org/Protocols/rfc2616/rfc2616.html>>. It attempts to meet all "MUST" requirements of the specification, but does not implement all "SHOULD" requirements.

Some particular limitations of note include:

- \* `HTTP::Tiny` focuses on correct transport. Users are responsible for ensuring that user-defined headers and content are compliant with the HTTP/1.1 specification.
- \* Users must ensure that URLs are properly escaped for unsafe characters and that international domain names are properly encoded to ASCII. See `URI::Escape`, `URI::_punycode` and `Net::IDN::Encode`.
- \* Redirection is very strict against the specification. Redirection is only automatic for response codes 301, 302 and 307 if the request method is 'GET' or 'HEAD'. Response code 303 is always converted into a 'GET' redirection, as mandated by the specification. There is no automatic support for status 305 ("Use proxy") redirections.
- \* Persistent connections are not supported. The "Connection" header will always be set to "close".
- \* Cookie support requires `HTTP::CookieJar` or an equivalent class.
- \* Only the "http\_proxy" environment variable is supported in the format "http://HOST:PORT/". If a "proxy" argument is passed to "new" (including undef), then the "http\_proxy" environment variable is ignored.
- \* "no\_proxy" environment variable is supported in the format comma-separated list of domain extensions proxy should not be used for. If a "no\_proxy" argument is passed to "new", then the "no\_proxy" environment variable is ignored.
- \* There is no provision for delaying a request body using an "Expect" header. Unexpected "1XX" responses are silently ignored as per the specification.

- \* Only 'chunked' "Transfer-Encoding" is supported.
- \* There is no support for a Request-URI of '\*' for the 'OPTIONS' request.
- \* There is no support for IPv6 of any kind.

#### SEE ALSO

- \* HTTP::Thin - HTTP::Tiny wrapper with HTTP::Request/HTTP::Response compatibility
- \* HTTP::Tiny::Mech - Wrap WWW::Mechanize instance in HTTP::Tiny compatible interface
- \* IO::Socket::SSL - Required for SSL support
- \* LWP::UserAgent - If HTTP::Tiny isn't enough for you, this is the "standard" way to do things
- \* Mozilla::CA - Required if you want to validate SSL certificates
- \* Net::SSLeay - Required for SSL support

#### SUPPORT

##### Bugs / Feature Requests

Please report any bugs or feature requests through the issue tracker at <https://github.com/chansen/p5-http-tiny/issues>. You will be notified automatically of any progress on your issue.

##### Source Code

This is open source software. The code repository is available for public review and contribution under the terms of the license.

<https://github.com/chansen/p5-http-tiny>

```
git clone git://github.com/chansen/p5-http-tiny.git
```

#### AUTHORS

- \* Christian Hansen <chansen@cpan.org>
- \* David Golden <dagolden@cpan.org>

#### CONTRIBUTORS

- \* Alan Gardner <gardner@pythian.com>
- \* Alessandro Ghedini <al3xbio@gmail.com>
- \* Brad Gilbert <bgills@cpan.org>
- \* Chris Nehren <apeiron@cpan.org>
- \* Chris Weyl <cweyl@alumni.drew.edu>
- \* Claes Jakobsson <claes@surfar.nu>
- \* Craig Berry <cberry@cpan.org>
- \* David Mitchell <davem@iabyn.com>
- \* Edward Zborowski <ed@rubensteintech.com>
- \* Jess Robinson <castaway@desert-island.me.uk>
- \* Lukas Eklund <leklund@gmail.com>
- \* Martin-Louis Bright <mlbright@gmail.com>
- \* Mike Doherty <doherty@cpan.org>
- \* Serguei Troughelle <stro@cpan.org>
- \* Syohei YOSHIDA <syohex@gmail.com>
- \* Tony Cook <tony@develop-help.com>

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```

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```

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```
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under certain conditions; type 'show c' for details.
```

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<signature of Ty Coon>, 1 April 1989  
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### **3.156 perl-PathTools-3.40-5**

This is the combined distribution for the File::Spec and Cwd modules.  
Please see their respective documentation for details.

## 3.157 perl-Pod-Perldoc-3.20-4

README for Perldoc

Version: 3.19\_01

Perldoc

This is the distribution of Perldoc, the program for reading Pod documentation.

### INSTALLATION

You install this module-suite, as you would install any perl module library, by running these commands:

```
perl Makefile.PL
make
make test
make install
```

If you want to install a private copy of this module-suite in your home directory, then you should try to produce the initial Makefile with something like this command:

```
perl Makefile.PL PREFIX=~/.perl
```

See `perldoc perlmodinstall` for more information on installing modules.

### SUPPORT

Questions, bug reports, useful code bits, and suggestions for this module should just be sent to

<http://rt.cpan.org/NoAuth/Bugs.html?Dist=Pod-Perldoc>

### AVAILABILITY

The latest version of this module is available from the Comprehensive Perl Archive Network (CPAN). Visit <http://www.perl.com/CPAN/> to find a CPAN site near you.

### 3.158 perl-Pod-Simple-3.28-4

=head1 Pod::Simple version 3.28

Pod::Simple is a Perl library for parsing text in the Pod ("plain old documentation") markup language that is typically used for writing documentation for Perl and for Perl modules. The Pod format is explained L<perlpod>; the most common formatter is called C<perldoc>.

Pod formatters can use Pod::Simple to parse Pod documents and render them into plain text, HTML, or any number of other formats.

=head2 Installation

To install this module, type the following:

```
perl Makefile.PL
make
make test
make install
```

=head2 Support

Questions or discussion about POD and Pod::Simple should be sent to the pod-people@perl.org mail list. Send an empty email to pod-people-subscribe@perl.org to subscribe.

This module is managed in an open GitHub repository, L<<https://github.com/theory/pod-simple/>>. Feel free to fork and contribute, or to clone L<[git://github.com/theory/pod-simple.git](https://github.com/theory/pod-simple.git)> and send patches!

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=head1 Author

Pod::Simple was created by Sean M. Burke <sburke@cpan.org>.  
But don't bother him, he's retired.

Pod::Simple is maintained by:

=over

=item \* Allison Randal C<allison@perl.org>

=item \* Hans Dieter Pearcey C<hdp@cpan.org>

=item \* David E. Wheeler C<dwheeler@cpan.org>

=back

=cut

### 3.159 perl-Pod-Usage-1.63-3

Pod::Usage

-----

The Perl5 module "Pod::Usage" which provides the function "pod2usage()" to print usage messages for a Perl script based on its embedded pod documentation. Pod::Usage is a subclass of Pod::PlainText. Please see the POD documentation for this module (embedded in the file "Usage.pm") for more details. The pod2usage() function is probably the most generally useful function in this entire distribution since it is useful to just about any Perl5 script that is invoked from the command-line.

See the POD documentation for more details.

This separate distribution was created to allow refactoring of Pod::Usage to use Pod::Simple instead of Pod::Parser, such that Pod::Parser can be discontinued from the Perl Core in the near future.

#### AUTHORS/CONTRIBUTORS

=====

Marek Rouchal <marekr@cpan.org>

Brad Appleton <bradapp@enteract.com> <http://www.enteract.com/~bradapp/>

rjbs for driving the transition to Pod::Simple

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=====

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#### REQUIREMENTS

=====

- \* Perl version 5.005 or later
- \* Pod::Parser 1.60 or higher from CPAN (already bundled in Perl 5.005)

#### BUILDING & INSTALLING

=====

Please see the perl "ExtUtils::MakeMaker" manpage for how to build and install using the Makefile.PL template. In a nutshell, simply typing:

```
perl Makefile.PL
```

should build a Makefile with the usual targets like "all", "clean", "test", and "install".

#### BUGS

====

Please use the CPAN bug tracking to report bugs:  
<http://rt.cpan.org/NoAuth/Bugs.html?Dist=Pod-Usage>

### 3.160 perl-Scalar-List-Utills-1.27-248

This distribution is a replacement for the builtin distribution.

This package contains a selection of subroutines that people have expressed would be nice to have in the perl core, but the usage would not really be high enough to warrant the use of a keyword, and the size so small such that being individual extensions would be wasteful.

After unpacking the distribution, to install this module type

```
perl Makefile.PL
make
make test
make install
```

#### KNOWN BUGS

There is a bug in perl5.6.0 with UV's that are  $\geq 1 < 31$ . This will show up as tests 8 and 9 of dualvar.t failing

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```

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

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```
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```

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```
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
```

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### 3.162 perl-Storable-2.45-3

Storable 2.14

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---

---

+=====

```
| Storable is distributed as a module, but is also part of the official
| Perl core distribution, as of perl 5.8.
| Maintenance is now done by the perl5-porters. We thank Raphael
| Manfredi for providing us with this very useful module.
```

+=====

The Storable extension brings persistence to your data.

You may recursively store to disk any data structure, no matter how complex and circular it is, provided it contains only SCALAR, ARRAY, HASH (possibly tied) and references (possibly blessed) to those items.

At a later stage, or in another program, you may retrieve data from the stored file and recreate the same hierarchy in memory. If you had blessed references, the retrieved references are blessed into the same package, so you must make sure you have access to the same perl class than the one used to create the relevant objects.

There is also a dclone() routine which performs an optimized mirroring of any data structure, preserving its topology.

Objects (blessed references) may also redefine the way storage and retrieval is performed, and/or what deep cloning should do on those objects.

To compile this extension, run:

```
perl Makefile.PL [PERL_SRC=...where you put perl sources...]
make
make install
```

There is an embedded POD manual page in Storable.pm.

Storable was written by Raphael Manfredi <Raphael\_Manfredi@pobox.com>  
Maintenance is now done by the perl5-porters <perl5-porters@perl.org>

Please e-mail us with problems, bug fixes, comments and complaints,  
although if you have complements you should send them to Raphael.  
Please don't e-mail Raphael with problems, as he no longer works on  
Storable, and your message will be delayed while he forwards it to us.

---

Thanks to (in chronological order):

```
Jarkko Hietaniemi <jhi@iki.fi>
Ulrich Pfeifer <pfeifer@charly.informatik.uni-dortmund.de>
Benjamin A. Holzman <bholzman@earthlink.net>
Andrew Ford <A.Ford@ford-mason.co.uk>
Gisle Aas <gisle@aas.no>
Jeff Gresham <gresham_jeffrey@jpmorgan.com>
Murray Nesbitt <murray@activestate.com>
Albert N. Mischev <Albert.N.Mischev@f80.n5049.z2.fidonet.org>
Marc Lehmann <pcg@opengroup.org>
Justin Banks <justinb@wamnet.com>
Jarkko Hietaniemi <jhi@iki.fi> (AGAIN, as perl 5.7.0 Pumpkin!)
```

for their contributions.

A Japanese translation of this man page is available at the Japanized  
Perl Resources Project <<https://sourceforge.jp/projects/perldocjp/>>.

---

The perl5-porters would like to thank

```
Raphael Manfredi <Raphael_Manfredi@pobox.com>
```

According to the perl5.8 Changes file, the following people have helped  
bring you this Storable release:

```
Abhijit Menon-Sen <ams@wiw.org>
Andreas J. Koenig <andreas.koenig@anima.de>
```

Archer Sully <archer@meer.net>  
Craig A. Berry <craig.berry@psinetcs.com>  
Dan Kogai <dankogai@dan.co.jp>  
Doug MacEachern <doug@covalent.net>  
Gurusamy Sarathy <gsar@ActiveState.com>  
H.Merijn Brand <h.m.brand@xs4all.nl>  
Jarkko Hietaniemi <jhi@iki.fi>  
Mark Bixby  
Michael Stevens <michael@etla.org>  
Mike Guy <mjtg@cam.ac.uk>  
Nicholas Clark <nick@unfortu.net>  
Peter J. Farley III <pjfarley@banet.net>  
Peter Prymmer <pvhp@forte.com>  
Philip Newton <pne@cpan.org>  
Raphael Manfredi <Raphael\_Manfredi@pobox.com>  
Robin Barker <rmb1@cise.npl.co.uk>  
Radu Greab <radu@netsoft.ro>  
Tim Bunce <Tim.Bunce@pobox.com>  
VMSperlrs  
Yitzchak Scott-Thoennes <sthoenna@efn.org>

If I've missed you out, please accept my apologies, and e-mail your patch to perl5-porters@perl.org.

### 3.163 perl-Text-ParseWords-3.29-4

Module: Text::ParseWords

- -----

This is a CORE module. If you installed perl 5.003 or above, an old version of this module is already available to you. This CPAN package is only here to update core distributions prior 5.10.

The version provided is the same that comes with perl 5.10.  
If you run a newer version of perl, the version of Text::ParseWords included there may be newer.

Please run "perldoc Text::ParseWords" to see what this module is for.

Installation

- -----

To update your core, simply perform these usual steps:

```
make
make test
make install
```

Authors of Text::ParseWords

- -----

Maintainer: Alexandr Ciornii.

Previous maintainer: Hal Pomeranz <pomeranz@netcom.com>, 1994-1997 (Original author unknown). Much of the code for &parse\_line() (including the primary regexp) from Joerk Behrends <jbehrends@multimediaproduzenten.de>.

Examples section another documentation provided by John Heidemann <johnh@ISI.EDU>

Bug reports, patches, and nagging provided by lots of folks-- thanks everybody! Special thanks to Michael Schwern <schwern@envirolink.org> for assuring me that a &nested\_quotewords() would be useful, and to Jeff Friedl <jfriedl@yahoo-inc.com> for telling me not to worry about

error-checking (sort of-- you had to be there).

### 3.164 perl-Time-HiRes-1.9725-3

Time::HiRes module: High resolution time, sleep, and alarm.

Implement usleep, ualarm, and gettimeofday for Perl, as well as wrappers to implement time, sleep, and alarm that know about non-integral seconds.

Note: the tests of this module are by definition time sensitive: under heavy loads the tests may fail. Reasonable relaxed criteria are being used for the tests but sometimes you may still see transient failures. Rerun the tests (make test) a couple of times, preferably with less load on the testing machine.

Also, older versions of Perl do not support '-nolinenumbers' on the XSUBPP command, however, 5.004\_03 requires it (on my box, anyway) since the #line generating code in XSUBPP appears to have problems with #ifdef'd .xs code. If xsubpp complains about usage when you do a make, look at the top of the Makefile.PL and comment out the "\$XSOPT=" line. Or upgrade to a newer version of Perl.

POD documentation is embedded.

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Copyright (C) 2011, 2012 Andrew Main (Zefram) <zefram@fysh.org>

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### 3.165 perl-Time-Local-1.2300-2

This archive contains the distribution Time-Local,  
version 1.2300:

efficiently compute time from local and GMT time

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```
<one line to give the program's name and a brief idea of what it does.>
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```

```
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```

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```

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```

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```
Gnomovision version 69, Copyright (C) 19xx name of author
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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.

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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

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The End



## 3.166 perl-constant-1.27-2

### NAME

`constant` - Perl pragma to declare constants

### DESCRIPTION

This pragma allows you to declare constants at compile-time.

When a constant is used in an expression, Perl replaces it with its value at compile time, and may then optimize the expression further. In particular, any code in an "if (CONSTANT)" block will be optimized away if the constant is false.

### INSTALLATION

To install this module, run the following commands:

```
perl Makefile.PL
make
make test
make install
```

Alternatively, to install with `Module::Build`, you can use the following commands:

```
perl Build.PL
./Build
./Build test
./Build install
```

### SUPPORT AND DOCUMENTATION

After installing, you can find documentation for this module with the `perldoc` command.

```
perldoc constant
```

You can also look for information at:

Search CPAN

<http://search.cpan.org/dist/constant>

CPAN Request Tracker:

<http://rt.cpan.org/Dist/Display.html?Name=constant>

AnnoCPAN, annotated CPAN documentation:

<http://annocpan.org/dist/constant>

CPAN Ratings:

<http://cpanratings.perl.org/d/constant>

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### **3.167 perl-parent-0.225**

License: GPL+ or Artistic

### 3.168 perl-podlators-2.5.1-3

podlators version 2.5.1  
(Format POD source into various output formats)

Maintained by Russ Allbery <rra@stanford.edu>

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I welcome all bug reports and patches for this package (and in particular, if you're looking for a project, see TODO). However, please be aware that I tend to be extremely busy and to get a lot of mail. I'll save your mail and get to it as soon as I can, but depending on how busy I am it may take me a couple of months.

#### BLURB

podlators contains Pod::Man and Pod::Text modules which convert POD input to \*roff source output, suitable for man pages, or plain text. It also includes several subclasses of Pod::Text for formatted output to terminals with various capabilities. It is the source package for the Pod::Man and Pod::Text modules included with Perl.

#### DESCRIPTION

This package contains the replacement for pod2text and Pod::Text in versions of Perl 5.005 and earlier. It also contains Pod::Man and pod2man, the replacement for pod2man found in Perl distributions prior to 5.6.0. The modules contained in it use Pod::Simple rather than doing the POD parsing themselves, and are designed to be object-oriented and to subclass. As an example, three useful subclasses of Pod::Text are also included: Pod::Text::Color, which uses ANSI color escape sequences to highlight text, Pod::Text::Termcap, which determines the correct control sequences to embolden and underline text from terminal termcap information, and Pod::Text::Overstrike, which uses the backspacing method of underlining and bold also used by the output of nroff.

Both Pod::Text and Pod::Man provide a variety of options for fine-tuning their output. Pod::Man also tries to massage input text where appropriate to produce better output when run through nroff or troff, such as distinguishing between different types of hyphens and using

slightly smaller case for acronyms.

A general parser utility module for L<> formatting code parsing is also included, `Pod::ParseLink`. This implements only the simple parse described in `perlpodspec`. It is no longer used by the modules here (`Pod::Simple` has a separate implementation of the same concept), but is included in case others find it useful.

## REQUIREMENTS

Both `Pod::Man` and `Pod::Text` are built on `Pod::Simple`, which handles the basic POD parsing and character set conversion. `Pod::Simple` 3.06 or later is required (and `Pod::Simple` 3.07 is recommended). It is available from CPAN and part of Perl core as of 5.10.0. `Encode` is also required (included in Perl core since 5.8.0).

To use `Pod::Text::Color`, `Term::ANSIColor` is required. It is available from CPAN and part of Perl core as of 5.6.0.

PerlIO support is required for `Pod::Text` to set the output encoding to match the input encoding (which it does unless the `utf8` option is used). Without this, the output will use Perl's internal encoding, which may be surprising and may produce Perl warnings.

To run the test suite, `Test::More` is required. It is available from CPAN and part of Perl core as of 5.6.2.

The test suite includes a formatting and spelling check of all of the POD documentation. To check formatting, `Test::Pod` is required. To check spelling, `Pod::Spell` and either `aspell` or `ispell` with the american dictionary are also required. The user's path is searched for `aspell` or `ispell` and `aspell` is preferred. Spelling tests are disabled by default since spelling dictionaries differ too much between systems. To enable those tests, set `RRA_MAINTAINER_TESTS` to a true value.

## INSTALLATION

WARNING: Installation of this package will replace the `pod2text` and `pod2man` scripts that come with Perl, and for Perl 5.6.0 or later the versions of `Pod::Text` and `Pod::Man` installed with Perl. Make sure that you have a version of this package as new as or newer than the modules that come with Perl. For older versions of Perl, `pod2text` and `pod2man` will still be overwritten, but `Pod::Text` will not be, making many of the options in `pod2text` not actually useable unless you overwrite the

version that comes with Perl with it (since Perl looks in its own directories before it looks in site\_perl). Note also that the version in this package attempts to be backwards-compatible but is not bug compatible, and some things like the default wrap margin have changed. The version contained in this package is the default version for Perl 5.5.560 or thereabouts and higher, but may be slightly newer depending on how updates have been synchronized.

Follow the standard installation procedure for Perl modules, which is to type the following commands:

```
perl Makefile.PL
make
make install
```

You'll probably need to do the "make install" as root. This will also install driver scripts named pod2text and pod2man; see their man pages for more information.

#### HOME PAGE AND SOURCE REPOSITORY

The podlators web page at:

```
http://www.eyrie.org/~eagle/software/podlators/
```

will always have the current version of this package, the current documentation, and pointers to any additional resources.

podlators is maintained using Git. You can access the current source by cloning the repository at:

```
git://git.eyrie.org/perl/podlators.git
```

or view the repository on the web at:

```
http://git.eyrie.org/?p=perl/podlators.git
```

You can file bug reports for this package in RT at:

```
https://rt.cpan.org/Public/Dist/Display.html?Name=podlators
```

or send me mail directly at [rra@stanford.edu](mailto:rra@stanford.edu).

### 3.169 perl-threads-1.87-4

threads version 1.87

=====

This module exposes interpreter threads to the Perl level.

#### INSTALLATION

To install this module type the following:

```
perl Makefile.PL
make
make test
make install
```

#### DEPENDENCIES

This module needs perl 5.8.0 or later compiled with 'useithreads'.

#### COPYRIGHT AND LICENCE

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Same licence as Perl.

CPAN version produced by Jerry D. Hedden <jdhedden AT cpan DOT org>

# EOF

### 3.170 perl-threads-shared-1.43-6

threads::shared version 1.43

=====

This module needs Perl 5.8.0 or later compiled with USEITHREADS.  
It lets you share data structures between threads.

#### INSTALLATION

To install this module type the following:

```
perl Makefile.PL
make
make test
make install
```

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# EOF



### 3.171 pinentry-0.8.1-17

PIN Entry

-----

This is a collection of simple PIN or passphrase entry dialogs which utilize the Assuan protocol as described by the aegypten project; see <http://www.gnupg.org/aegypten/> for details.

There are programs for different toolkits available. For all GUIs it is automatically detected which modules can be built, but it can also be requested explicitly.

#### GUI OPTION DEPENDENCIES

Curses --enable-pinentry-curses Curses library, for example ncurses

GTK+ V1.2 --enable-pinentry-gtk Gimp Toolkit Library Version 1.2  
eg. libgtk-1.2 and libglib-1.2

GTK+ V2.0 --enable-pinentry-gtk2 Gimp Toolkit Library, Version 2.0  
eg. libgtk-x11-2.0 and libglib-2.0

Qt --enable-pinentry-qt Qt, eg. libqt or libqt-mt

Qt4 --enable-pinentry-qt4 Qt4

The GTK+ and Qt pinentries can fall back to the curses mode. The option to enable this is --enable-fallback-curses, but this is also detected automatically in the same way --enable-pinentry-curses is. The fallback to curses also works if --disable-pinentry-curses is specified. So to disable linking to curses completely you have to pass --disable-fallback-curses to the configure script as well.

#### Examples:

\* To only build the GTK+ 1.2 pinentry with curses support:

```
./configure --enable-pinentry-gtk --enable-fallback-curses \
--disable-pinentry-curses --disable-pinentry-qt
```

\* To build the Qt pinentry, and the other pinentries if they are supported:

```
./configure --enable-pinentry-qt
```

\* To build everything that is supported (complete auto-detection):

```
./configure
```

Some of the code is taken from Robert Bihlmeyer's Quintuple-Agent. For security reasons, all internationalization has been removed. The client is expected to tell the PIN entry the text strings to be

displayed.

## Curses Pinentry

-----

The curses pinentry supports colors if the terminal does. The colors can be specified by the `--colors=FG,BG,SO` option, which sets the foreground, background and standout colors respectively. The standout color is used for error messages. Colors can be named by any of "black", "red", "green", "yellow", "blue", "magenta", "cyan" and "white". The foreground and standout color can be prefixed by "bright-", "bright", "bold-" and "bold", and any of these prefixes has the same effect of making the color bolder or brighter. Two special color names are defined as well: "default" chooses the default color, and "none" disables use of colors. The name "none" is only meaningful for the standout color and in this case a reversed effect is used for error messages. For the other colors, disabling colors means the same as using the defaults. The default colors are as follows:

Foreground: Terminal default

Background: Terminal default

Standout: Bright red

Note that color support is limited by the capabilities of the display terminal. Some color combinations can be very difficult to read, and please know that colors are perceived differently by different people.

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### 3.172 pkgconfig-0.27.1-4

pkg-config is a script to make putting together all the build flags when compiling/linking a lot easier.

Report bugs at <http://bugzilla.freedesktop.org/>

To use pkg-config, do something like the following in your configure.ac

```
PKG_CHECK_MODULES([GNOME], [gtk > 1.2.8 gnomeui >= 1.2.0])
```

This puts the necessary include flags to compile/link something against libgnomeui and all its dependencies in `$(GNOME_CFLAGS)`, and the `-L/-l` flags for linking in `$(GNOME_LIBS)`.

Users can define the `PKG_CONFIG` environment variable to point at the right one, or if they cross-compile and have a correctly named `pkg-config` (eg. `arm-linux-pkg-config`) in their `PATH` that will be used in preference.

Users can also define the `GNOME_CFLAGS` and `GNOME_LIBS` environment variables if they think they know better, `pkg-config` will not be called if they do that.

The `"gtk > 1.2.8"` part is only necessary if you want to specifically check if `libgtk` is version 1.2.8 or higher. Otherwise, the flags for `gtk` will be included automatically, since `libgnomeui` depends on `gtk`. So you could just say:

```
PKG_CHECK_MODULES([GNOME], [gnomeui])
```

for any version of `gnomeui`.

For more info, there's even a man page, try `'man pkg-config'`

Building

=====

`pkg-config` depends on `glib`. Note that `glib` build-depends on `pkg-config`, but you can just set the corresponding environment variables (`ZLIB_LIBS`, `ZLIB_CFLAGS` are the only needed ones when this is written) to build it.

`pkg-config` also either needs an earlier version of itself to find `glib` or you need to set `GLIB_CFLAGS` and `GLIB_LIBS` to the correct values for where it's installed in your system.

If this requirement is too cumbersome, a bundled copy of a recent glib stable release is included. Pass `--with-internal-glib` to configure to use this copy.

If you're cross-compiling and you need to build the bundled glib, refer to the glib documentation for cross-compiling glib. In short, this will require setting some autoconf cache variables in cases where glib would need to run a program to determine the correct value. See the glib documentation:

<http://developer.gnome.org/glib/stable/glib-cross-compiling.html>

If you need to use the bundled glib on Mac OS X, you'll most likely need to build for a single architecture rather than as a universal binary. This is because glib (as of version 2.32) does not support building for multiple architectures out of the box. The glib2 from MacPorts or Homebrew may be available as a universal binary and usable for pkg-config as described above. Nothing in pkg-config itself precludes being built as a universal binary.

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**3.173 policycoreutils-2.5-29**

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```
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This is free software, and you are welcome to redistribute it
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## 3.174 polkit-0.112-18

### OVERVIEW

=====

polkit is a toolkit for defining and handling authorizations. It is used for allowing unprivileged processes to speak to privileged processes.

### RELEASES

=====

Releases of polkit are available in compressed tarballs from

<http://www.freedesktop.org/software/polkit/releases/>

To verify the authenticity of the compressed tarball, use this command

```
$ gpg --verify polkit-$(VERSION).tar.gz.sign polkit-$(VERSION).tar.gz
gpg: Signature made Sat 10 Mar 2012 03:00:30 PM EST using RSA key ID 3418A891
gpg: Good signature from "David Zeuthen <zeuthen@gmail.com>"
gpg: aka "[jpeg image of size 5237]"
```

### BUGS and DEVELOPMENT

=====

Please report bugs via the freedesktop.org bugzilla at

[https://bugs.freedesktop.org/enter\\_bug.cgi?product=PolicyKit](https://bugs.freedesktop.org/enter_bug.cgi?product=PolicyKit)

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

```
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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.
```

```
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MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU
Library General Public License for more details.
```

```
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Free Software Foundation, Inc., 59 Temple Place - Suite 330,
Boston, MA 02111-1307 USA.
```

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```
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!



### 3.175 polkit-pkla-compat-0.1-4

About

=====

polkit-pkla-compat is a polkit JavaScript rule and associated helpers that mostly provide compatibility with the .pkla file format supported in polkit <= 0.105 for users of later polkit releases.

New releases will be available at <https://fedorahosted.org/polkit-pkla-compat/> .

Installation

=====

See INSTALL for generic installation instructions.

Make sure that the directories that contain the configuration, as printed by (./configure) are only writable by root, and readable by the polkit daemon. Unprivileged users usually don't need to view the configuration. (make install) will do this for you if the polkitd group exists; it is therefore recommended to install polkit before this package (or let your distribution handle the packaging and file permissions.)

Compatibility with polkit-0.105

=====

Compared to polkit-0.105, there are two behavior changes:

- ReturnValue configuration is no longer supported: the JavaScript mechanism can not express such rules.
- "Identity=default" is now available, and evaluated with lower priority than any "unix-group" identity.

Mailing list

=====

[polkit-pkla-compat@lists.fedorahosted.org](mailto:polkit-pkla-compat@lists.fedorahosted.org)

Bugs

=====

Please consider reporting the bug to your distribution's bug tracking system.

Otherwise, report bugs at <https://fedorahosted.org/polkit-pkla-compat/> .

Bug reports with patches are especially welcome.

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```
<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.
```

```
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```

```
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```

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```
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!

### 3.176 popt-1.13-16

This is the popt(3) command line option parsing library. While it is similiar to getopt(3), it contains a number of enhancements, including:

- 1) popt is fully reentrant
- 2) popt can parse arbitrary argv[] style arrays while  
getopt(3) makes this quite difficult
- 3) popt allows users to alias command line arguments
- 4) popt provides convience functions for parsing strings  
into argv[] style arrays

Complete documentation on popt(3) is available in popt.ps (included in this tarball), which is excerpted with permission from the book "Linux Application Development" by Michael K. Johnson and Erik Troan (available from Addison Wesley in May, 1998).

Comments on popt should be addressed to [popt-devel@rpm5.org](mailto:popt-devel@rpm5.org).

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## 3.177 procps-ng-3.3.10-23

### COMPATIBILITY

This code is intended for use with Linux 2.6.xx, 3.x and hopefully all future kernels.

### INSTALLATION

If you are using git version of the project you need extra step.

```
./autogen.sh
```

After that, and everyone using .tar.xz version of procps-ng, can do normal build. Read './configure --help' to select options for your needs.

```
./configure
make
make install
```

If you have DejaGNU installed you can run optional test suite.

```
make check
```

### HOW TO CONTRIBUTE

See Documentation/BUGS file.

### PACKAGING

If you are a downstream maintainer (packager) for a Linux distribution, please avoid causing troubles. This section applies to you.

Avoid maintaining distribution specific patches. Send your patches to upstream, where they are at least reviewed, if not included.

Please forward bug reports. If your bug database is public and busy enough to bother with, please make this known. Follow Debian's lead in making the bug database easy to comment on via email without need for an account.

For normal packages, ensure that you do not add debugging flags to the CFLAGS variable.

#### TRANSLATING MAN PAGES

There is a three-step process for translating man pages. Most of the work happens in the man-po directory.

`make -C man-po translate-templates`

Creates the translation templates (the .pot files) for translators to use as a base. These, along with the tar file, should be sent to the tp-coorindator before release.

`make get-trans`

rsyncs the latest translated (.po) files for both the programs and man pages.

`make -C man-po translate-mans`

This is also called in the dist-hook and is where the translation magic happens. Take the original man page, the relevant .po file and produce a translated man page in that language.

All of the man pages generated are found in  
man-po/(LANG)/man(SECTION)/

#### UPSTREAM & BUG REPORTS

`procps-ng <procps@freelists.org>`



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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!

### 3.178 pth-2.0.7-23

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“Only those who attempt  
the absurd can achieve  
the impossible.”

GNU Pth - The GNU Portable Threads  
Version 2.0.7 (08-Jun-2006)

#### ABSTRACT

Pth is a very portable POSIX/ANSI-C based library for Unix platforms which provides non-preemptive priority-based scheduling for multiple threads of execution (aka ‘multithreading’) inside event-driven applications. All threads run in the same address space of the server application, but each thread has its own individual program-counter, run-time stack, signal mask and errno variable.

The thread scheduling itself is done in a cooperative way, i.e., the threads are managed by a priority- and event-based non-preemptive scheduler. The intention is, that this way one can achieve better portability and run-time performance than with preemptive scheduling. The event facility allows threads to wait until various types of events occur, including pending I/O on filedescriptors, asynchronous signals, elapsed timers, pending I/O on message ports, thread and process termination, and even customized callback functions.

Additionally Pth provides an optional emulation API for POSIX.1c threads (‘Pthreads’) which can be used for backward compatibility to existing multithreaded applications.

Finally, Pth guarantees its fixed set of API functionality on all platforms, i.e., functions like `pth_poll(3)`, `pth_readv(3)` or `pth_writev(3)` are always available, even if the particular underlying platform does not actually support their functionality (through the system calls `poll(2)`, `readv(2)`, `writev(2)`, etc).

Although Pth is very feature-rich, it is a rather small threading library. It consists only of approximately 7,000 line (or 300 KB) of ANSI C code which are auto-configured with approximately 400 lines (or 60 KB) of Autoconf/m4 macros and which are documented by approximately 3,000 lines (or 150 KB) of documentation. Additionally the sources

are documented with approximately 3,600 additional lines of comments. As a result, the whole source tree is just about 1.5 MB in size and fits into a small tarball less than 350 KB in size. This allows Pth to fit very well even into the source tree of other applications without bloating it up very much.

Pth was successfully tested on FreeBSD, NetBSD, OpenBSD, BSDI, GNU/Linux, Solaris, HP-UX, Tru64 (OSF/1), AIX, IRIX, UnixWare, SCO OpenServer, SINIX, ReliantUNIX, ISC, AmigaOS, Rhapsody (MacOS X), FTX, AUX and Win32/Cygwin. And it should automatically adjust itself to remaining Unix platforms, too.

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## HOME AND DOCUMENTATION

The documentation and latest release can be found on

- o OSSP: <http://www.ossf.org/pkg/lib/pth/>
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### 3.178.1 Copying

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“‘Ian Fleming was a UNIX fan!
How do I know? Well, James Bond
had the (license to kill) number 007,
i.e., he could execute anyone!’”
```

GNU Pth - The GNU Portable Threads

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(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.)

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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.

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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.

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- 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.

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### 3.179 pygobject3-3.22.0-1

PyGObject

=====

Original authors: James Henstridge <james@daa.com.au>  
Johan Dahlin <johan@gnome.org>

Current maintainers: Tomeu Vizoso <tomeu.vizoso@collabora.co.uk>  
Martin Pitt <martinpitt@gnome.org>  
Paolo Borelli <pborelli@gnome.org>  
Ignacio Casal Quinteiro <icq@gnome.org>  
Sebastian Pölsterl <sebp@k-d-w.org>  
Simon Feltman <sfeltman@gnome.org>

This archive contains bindings for the GLib, and GObject, to be used in Python. It is a fairly complete set of bindings, it's already rather useful, and is usable to write moderately complex programs. (see the examples directory for some examples of the simpler programs you could write).

If you have any enhancements or bug reports, please file them in bugzilla at:

[http://bugzilla.gnome.org/enter\\_bug.cgi?product=pygobject](http://bugzilla.gnome.org/enter_bug.cgi?product=pygobject)

If you have a patch, file the bug first and then use the "create new attachment" link on the bug's info page. My preferred format for patches is unified diff format (ie. diff -u). Please don't send me diffs which don't have any context, as these make it very difficult to see what the patch does.

New Versions

=====

New versions of this package can be found at:

<http://ftp.gnome.org/pub/GNOME/sources/pygobject/>

Mailing list

=====

pygobject development is discussed on the GNOME python-hackers mailing list. You can subscribe to it through the web interface:

<https://mail.gnome.org/mailman/listinfo/python-hackers-list/>

## Requirements

=====

- \* C compiler (GCC and MSVC supported)
- \* Python 2.7 or higher
- \* Glib/Gio 2.38.0 or higher
- \* gobject-introspection 1.46.0 or higher
- \* libffi (optional)

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=====

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## Compilation

=====

PyGObject uses the standard autotools for the build infrastructure. To build, it should be as simple as running:

```
$./configure --prefix=<prefix where python is installed>
$ make
$ make install
```

By default, configure searches for a few well-known Python interpreter names, such as "python3", "python2", "python2.7", or "python". If your Python interpreter isn't in the path, or is not called "python", you can configure pygobject to build against that with `--with-python=<path>` or setting the PYTHON environment variable:

```
$./configure --with-python=python3
$ PYTHON=python3.2 ./configure
$./configure --with-python=~/.my-patched-python/python
```

If configure can't find GTK+, you may need to set the PKG\_CONFIG\_PATH environment variable to help it find the libraries.

The "make install" target will generate normal and optimised bytecode for all the .py files.

Note. If you're installing to another prefix than the one where python

is installed you'll need to set the PYTHONPATH variable to the \$prefix/lib/pythonX.Y/site-packages directory created by the PyGObject installation.

## Tests

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After having compiled and installed pygobject, you may want to test them. There are a number of example programs available in the examples/ subdirectory.

## Getting Help

=====

If you have questions about programming with PyGObject, you might want to check the documentation on

<https://live.gnome.org/PyGObject/>

If that does not help, send a message to the mailing list (information on subscribing is above), or join #python on irc.gnome.org.

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Version 2.1, February 1999

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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.

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- 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.

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

That's all there is to it!

### 3.180 pygpgme-0.3-9

A Python binding for the gpgme library, used to drive the gpg command line program.

More information about gpgme can be found here:

[http://www.gnupg.org/\(en\)/related\\_software/gpgme/index.html](http://www.gnupg.org/(en)/related_software/gpgme/index.html)

This binding stays fairly close to the C API with the following exceptions:

- \* Memory management is not exposed to the user
- \* Functions like `gpgme_get_foo()/gpgme_set_foo()` are converted to attribute access on `gpgme.Context` objects.
- \* Functions that take `gpgme_data_t` arguments take arbitrary Python file-like objects. The `read()`, `write()`, `seek()` and `tell()` methods may be used on the object.
- \* Non-zero `gpgme_error_t` return values are converted to `gpgme.error` exceptions.
- \* Only the synchronous versions of functions have been wrapped. However, the Python global interpreter lock is dropped, so should play nicely in multi-threaded Python programs.
- \* Function pairs like `gpgme_op_import()/gpgme_op_import_result()` are combined into single method calls.
- \* The Python version of `gpgme_op_keylist()` returns an iterator over the matched keys, rather than requiring the user to use a special iteration function.

This library is licensed under the LGPL, the same license as the gpgme library.

### 3.181 pyliblzma-0.5.3-11

PylibLZMA

-----

PylibLZMA is a python module that implements the liblzma API.

You need the new lzma utils for this available through git at:  
[git://ctrl.tukaani.org/lzma-utils.git](http://ctrl.tukaani.org/lzma-utils.git)

Project homepage: <http://sourceforge.net/projects/lzmautils>

I initially wrote this python module was initially written by as a project assignment in the course "INF5660 - Advanced problem solving with high level languages" at the University of Oslo, May 2008. It was written as a first attempt of both writing a proper python module and also as first proper project written in the C language, so any obscurities or just plain retardness is expected, and any help at correcting such will be greatfully accepted. :)  
- Per Øyvind Karlsen <[peroyvind@mandriva.org](mailto:peroyvind@mandriva.org)>

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Version 3, 29 June 2007

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### 3.182 python-2.7.5-76

This is Python version 2.7.5

=====

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#### What's new in this release?

-----

See the file "Misc/NEWS".

#### If you don't read instructions

-----

Congratulations on getting this far. :-)



To start building right away (on UNIX): type `./configure` in the current directory and when it finishes, type `make`. This creates an executable `./python`; to install in `/usr/local`, first do `su root` and then `make install`.

The section 'Build instructions' below is still recommended reading.

What is Python anyway?

-----

Python is an interpreted, interactive object-oriented programming language suitable (amongst other uses) for distributed application development, scripting, numeric computing and system testing. Python is often compared to Tcl, Perl, Java, JavaScript, Visual Basic or Scheme. To find out more about what Python can do for you, point your browser to <http://www.python.org/>.

How do I learn Python?

-----

The official tutorial is still a good place to start; see <http://docs.python.org/> for online and downloadable versions, as well as a list of other introductions, and reference documentation.

There's a quickly growing set of books on Python. See <http://wiki.python.org/moin/PythonBooks> for a list.

Documentation

-----

All documentation is provided online in a variety of formats. In order of importance for new users: Tutorial, Library Reference, Language Reference, Extending & Embedding, and the Python/C API. The Library Reference is especially of immense value since much of Python's power is described there, including the built-in data types and functions!

All documentation is also available online at the Python web site (<http://docs.python.org/>, see below). It is available online for occasional reference, or can be downloaded in many formats for faster access. The

documentation is downloadable in HTML, PostScript, PDF, LaTeX, and reStructuredText (2.6+) formats; the LaTeX and reStructuredText versions are primarily for documentation authors, translators, and people with special formatting requirements.

#### Web sites

-----

New Python releases and related technologies are published at <http://www.python.org/>. Come visit us!

#### Newsgroups and Mailing Lists

-----

Read `comp.lang.python`, a high-volume discussion newsgroup about Python, or `comp.lang.python.announce`, a low-volume moderated newsgroup for Python-related announcements. These are also accessible as mailing lists: see <http://www.python.org/community/lists/> for an overview of these and many other Python-related mailing lists.

Archives are accessible via the Google Groups Usenet archive; see <http://groups.google.com/>. The mailing lists are also archived, see <http://www.python.org/community/lists/> for details.

#### Bug reports

-----

To report or search for bugs, please use the Python Bug Tracker at <http://bugs.python.org/>.

#### Patches and contributions

-----

To submit a patch or other contribution, please use the Python Patch Manager at <http://bugs.python.org/>. Guidelines for patch submission may be found at <http://www.python.org/dev/patches/>.

If you have a proposal to change Python, you may want to send an email to the `comp.lang.python` or `python-ideas` mailing lists for initial feedback. A Python Enhancement Proposal (PEP) may be submitted if your idea gains ground. All

current PEPs, as well as guidelines for submitting a new PEP, are listed at <http://www.python.org/dev/peps/>.

## Questions

-----

For help, if you can't find it in the manuals or on the web site, it's best to post to the `comp.lang.python` or the Python mailing list (see above). If you specifically don't want to involve the newsgroup or mailing list, send questions to `help@python.org` (a group of volunteers who answer questions as they can). The newsgroup is the most efficient way to ask public questions.

## Build instructions

=====

Before you can build Python, you must first configure it. Fortunately, the configuration and build process has been automated for Unix and Linux installations, so all you usually have to do is type a few commands and sit back. There are some platforms where things are not quite as smooth; see the platform specific notes below. If you want to build for multiple platforms sharing the same source tree, see the section on VPATH below.

Start by running the script `./configure`, which determines your system configuration and creates the Makefile. (It takes a minute or two -- please be patient!) You may want to pass options to the configure script -- see the section below on configuration options and variables. When it's done, you are ready to run make.

To build Python, you normally type `"make"` in the toplevel directory. If you have changed the configuration, the Makefile may have to be rebuilt. In this case, you may have to run make again to correctly build your desired target. The interpreter executable is built in the top level directory.

Once you have built a Python interpreter, see the subsections below on testing and installation. If you run into trouble, see the next section.

Previous versions of Python used a manual configuration process that involved editing the file `Modules/Setup`. While this file still exists

and manual configuration is still supported, it is rarely needed any more: almost all modules are automatically built as appropriate under guidance of the setup.py script, which is run by Make after the interpreter has been built.

## Troubleshooting

-----

See also the platform specific notes in the next section.

If you run into other trouble, see the FAQ (<http://www.python.org/doc/faq/>) for hints on what can go wrong, and how to fix it.

If you rerun the configure script with different options, remove all object files by running "make clean" before rebuilding. Believe it or not, "make clean" sometimes helps to clean up other inexplicable problems as well. Try it before sending in a bug report!

If the configure script fails or doesn't seem to find things that should be there, inspect the config.log file.

If you get a warning for every file about the -Olimit option being no longer supported, you can ignore it. There's no foolproof way to know whether this option is needed; all we can do is test whether it is accepted without error. On some systems, e.g. older SGI compilers, it is essential for performance (specifically when compiling ceval.c, which has more basic blocks than the default limit of 1000). If the warning bothers you, edit the Makefile to remove "-Olimit 1500" from the OPT variable.

If you get failures in test\_long, or sys.maxint gets set to -1, you are probably experiencing compiler bugs, usually related to optimization. This is a common problem with some versions of gcc, and some vendor-supplied compilers, which can sometimes be worked around by turning off optimization. Consider switching to stable versions (gcc 2.95.2, gcc 3.x, or contact your vendor.)

From Python 2.0 onward, all Python C code is ANSI C. Compiling using old K&R-C-only compilers is no longer possible. ANSI C compilers are available for all modern systems, either in the form of updated compilers from the vendor, or one of the free compilers (gcc).

If "make install" fails mysteriously during the "compiling the library" step, make sure that you don't have any of the PYTHONPATH or PYTHONHOME environment variables set, as they may interfere with the newly built executable which is compiling the library.

#### Unsupported systems

-----

A number of systems are not supported in Python 2.7 anymore. Some support code is still present, but will be removed in later versions. If you still need to use current Python versions on these systems, please send a message to [python-dev@python.org](mailto:python-dev@python.org) indicating that you volunteer to support this system. For a more detailed discussion regarding no-longer-supported and resupporting platforms, as well as a list of platforms that became or will be unsupported, see PEP 11.

More specifically, the following systems are not supported any longer:

- SunOS 4
- DYNIX
- dgux
- Minix
- NeXT
- Irix 4 and --with-sgi-dl
- Linux 1
- Systems defining \_\_d6\_pthread\_create (configure.ac)
- Systems defining PY\_PTHREAD\_D4, PY\_PTHREAD\_D6, or PY\_PTHREAD\_D7 in thread\_pthread.h
- Systems using --with-dl-dld
- Systems using --without-universal-newlines
- MacOS 9
- Systems using --with-wctype-functions
- Win9x, WinME

#### Platform specific notes

-----

(Some of these may no longer apply. If you find you can build Python on these platforms without the special directions mentioned here, submit a documentation bug report to SourceForge (see Bug Reports above) so we can remove them!)

Unix platforms: If your vendor still ships (and you still use) Berkeley DB

1.85 you will need to edit Modules/Setup to build the bsddb185 module and add a line to sitecustomize.py which makes it the default. In Modules/Setup a line like

```
bsddb185 bsddbmodule.c
```

should work. (You may need to add -I, -L or -l flags to direct the compiler and linker to your include files and libraries.)

XXX I think this next bit is out of date:

64-bit platforms: The modules audioop, and imageop don't work.

The setup.py script disables them on 64-bit installations. Don't try to enable them in the Modules/Setup file. They contain code that is quite wordsize sensitive. (If you have a fix, let us know!)

Solaris: When using Sun's C compiler with threads, at least on Solaris 2.5.1, you need to add the "-mt" compiler option (the simplest way is probably to specify the compiler with this option as the "CC" environment variable when running the configure script).

When using GCC on Solaris, beware of binutils 2.13 or GCC versions built using it. This mistakenly enables the -zcombreloc option which creates broken shared libraries on Solaris. binutils 2.12 works, and the binutils maintainers are aware of the problem. Binutils 2.13.1 only partially fixed things. It appears that 2.13.2 solves the problem completely. This problem is known to occur with Solaris 2.7 and 2.8, but may also affect earlier and later versions of the OS.

When the dynamic loader complains about errors finding shared libraries, such as

```
ld.so.1: ./python: fatal: libstdc++.so.5: open failed:
No such file or directory
```

you need to first make sure that the library is available on your system. Then, you need to instruct the dynamic loader how to find it. You can choose any of the following strategies:

1. When compiling Python, set LD\_RUN\_PATH to the directories

containing missing libraries.

2. When running Python, set LD\_LIBRARY\_PATH to these directories.
3. Use crle(8) to extend the search path of the loader.
4. Modify the installed GCC specs file, adding -R options into the \*link: section.

The complex object fails to compile on Solaris 10 with gcc 3.4 (at least up to 3.4.3). To work around it, define Py\_HUGE\_VAL as HUGE\_VAL(), e.g.:

```
make CPPFLAGS='-D"Py_HUGE_VAL=HUGE_VAL()" -I. -I$(srcdir)/Include'
./python setup.py CPPFLAGS='-D"Py_HUGE_VAL=HUGE_VAL()"'
```

Linux: A problem with threads and fork() was tracked down to a bug in the pthreads code in glibc version 2.0.5; glibc version 2.0.7 solves the problem. This causes the popen2 test to fail; problem and solution reported by Pablo Bleyer.

Red Hat Linux: Red Hat 9 built Python2.2 in UCS-4 mode and hacked Tcl to support it. To compile Python2.3 with Tkinter, you will need to pass --enable-unicode=ucs4 flag to ./configure.

There's an executable /usr/bin/python which is Python 1.5.2 on most older Red Hat installations; several key Red Hat tools require this version. Python 2.1.x may be installed as /usr/bin/python2. The Makefile installs Python as /usr/local/bin/python, which may or may not take precedence over /usr/bin/python, depending on how you have set up \$PATH.

FreeBSD 3.x and probably platforms with NCurses that use libmytinfo or similar: When using cursesmodule, the linking is not done in the correct order with the defaults. Remove "-ltermcap" from the readline entry in Setup, and use as curses entry: "curses cursesmodule.c -lmytinfo -lncurses -ltermcap" - "mytinfo" (so called on FreeBSD) should be the name of the auxiliary library required on your platform. Normally, it would be linked automatically, but not necessarily in the correct order.

BSDI: BSDI versions before 4.1 have known problems with threads, which can cause strange errors in a number of modules (for instance, the 'test\_signal' test script will hang forever.) Turning off threads (with --with-threads=no) or upgrading to BSDI 4.1 solves this problem.

DEC Unix: Run configure with `--with-dec-threads`, or with `--with-threads=no` if no threads are desired (threads are on by default). When using GCC, it is possible to get an internal compiler error if optimization is used. This was reported for GCC 2.7.2.3 on `selectmodule.c`. Manually compile the affected file without optimization to solve the problem.

DEC Ultrix: compile with GCC to avoid bugs in the native compiler, and pass `SHELL=/bin/sh5` to Make when installing.

AIX: A complete overhaul of the shared library support is now in place. See `Misc/AIX-NOTES` for some notes on how it's done. (The optimizer bug reported at this place in previous releases has been worked around by a minimal code change.) If you get errors about `pthread_*` functions, during compile or during testing, try setting `CC` to a thread-safe (reentrant) compiler, like `"cc_r"`. For full C++ module support, set `CC="xlc_r"` (or `CC="xlc"` without thread support).

AIX 5.3: To build a 64-bit version with IBM's compiler, I used the following:

```
export PATH=/usr/bin:/usr/vacpp/bin
./configure --with-gcc="xlc_r -q64" --with-cxx="xlc_r -q64" \
 --disable-ipv6 AR="ar -X64"
make
```

HP-UX: When using threading, you may have to add `-D_REENTRANT` to the `OPT` variable in the top-level Makefile; reported by Pat Knight, this seems to make a difference (at least for HP-UX 10.20) even though `pyconfig.h` defines it. This seems unnecessary when using HP/UX 11 and later - threading seems to work "out of the box".

HP-UX ia64: When building on the ia64 (Itanium) platform using HP's compiler, some experience has shown that the compiler's optimiser produces a completely broken version of python (see <http://bugs.python.org/814976>). To work around this, edit the Makefile and remove `-O` from the `OPT` line.

To build a 64-bit executable on an Itanium 2 system using HP's compiler, use these environment variables:

```
CC=cc
```



```
CXX=aCC
BASECFLAGS="+DD64"
LDFLAGS="+DD64 -lxnet"
```

and call configure as:

```
./configure --without-gcc
```

then *\*unset\** the environment variables again before running make. (At least one of these flags causes the build to fail if it remains set.) You still have to edit the Makefile and remove -O from the OPT line.

HP PA-RISC 2.0: A recent bug report (<http://bugs.python.org/546117>) suggests that the C compiler in this 64-bit system has bugs in the optimizer that break Python. Compiling without optimization solves the problems.

SCO: The following apply to SCO 3 only; Python builds out of the box on SCO 5 (or so we've heard).

1) Everything works much better if you add -U\_\_STDC\_\_ to the defs. This is because all the SCO header files are broken. Anything that isn't mentioned in the C standard is conditionally excluded when \_\_STDC\_\_ is defined.

2) Due to the U.S. export restrictions, SCO broke the crypt stuff out into a separate library, libcrypt\_i.a so the LIBS needed be set to:

```
LIBS=' -lsocket -lcrypt_i'
```

UnixWare: There are known bugs in the math library of the system, as well as problems in the handling of threads (calling fork in one thread may interrupt system calls in others). Therefore, test\_math and tests involving threads will fail until those problems are fixed.

QNX: Chris Herborth (chrish@qnx.com) writes:  
configure works best if you use GNU bash; a port is available on ftp.qnx.com in /usr/free. I used the following process to build, test and install Python 1.5.x under QNX:

```
1) CONFIG_SHELL=/usr/local/bin/bash CC=cc RANLIB=: \
./configure --verbose --without-gcc --with-libm=""
```

- 2) edit Modules/Setup to activate everything that makes sense for your system... tested here at QNX with the following modules:

```
array, audioop, binascii, cPickle, cStringIO, cmath,
crypt, curses, errno, fcntl, gdbm, grp, imageop,
_locale, math, md5, new, operator, parser, pcre,
posix, pwd, readline, regex, reop,
select, signal, socket, soundex, strop, struct,
syslog, termios, time, timing, zlib, audioop, imageop
```

- 3) make SHELL=/usr/local/bin/bash

or, if you feel the need for speed:

```
make SHELL=/usr/local/bin/bash OPT="-5 -O1+nrt"
```

- 4) make SHELL=/usr/local/bin/bash test

Using GNU readline 2.2 seems to behave strangely, but I think that's a problem with my readline 2.2 port. :-\

- 5) make SHELL=/usr/local/bin/bash install

If you get SIGSEGVs while running Python (I haven't yet, but I've only run small programs and the test cases), you're probably running out of stack; the default 32k could be a little tight. To increase the stack size, edit the Makefile to read: LDFLAGS = -N 48k

BeOS: See Misc/BeOS-NOTES for notes about compiling/installing Python on BeOS R3 or later. Note that only the PowerPC platform is supported for R3; both PowerPC and x86 are supported for R4.

Cray T3E: Mark Hadfield (m.hadfield@niwa.co.nz) writes:

Python can be built satisfactorily on a Cray T3E but based on my experience with the NIWA T3E (2002-05-22, version 2.2.1) there are a few bugs and gotchas. For more information see a thread on comp.lang.python in May 2002 entitled "Building Python on Cray T3E".

- 1) Use Cray's cc and not gcc. The latter was reported not to work by Konrad Hinsén. It may work now, but it may not.

- 2) To set `sys.platform` to something sensible, pass the following environment variable to the configure script:

`MACHDEP=unicosmk`

- 2) Run configure with option `--enable-unicode=ucs4`.
- 3) The Cray T3E does not support dynamic linking, so extension modules have to be built by adding (or uncommenting) lines in `Modules/Setup`. The minimum set of modules is

`posix, new, _sre, unicodedata`

On NIWA's vanilla T3E system the following have also been included successfully:

`_codecs, _locale, _socket, _symtable, _testcapi, _weakref  
array, binascii, cmath, cPickle, crypt, cStringIO, dbm  
errno, fcntl, grp, math, md5, operator, parser, pcre, pwd  
regex, rotor, select, struct, strop, syslog, termios  
time, timing, xreadlines`

- 4) Once the python executable and library have been built, make will execute `setup.py`, which will attempt to build remaining extensions and link them dynamically. Each of these attempts will fail but should not halt the make process. This is normal.
- 5) Running `"make test"` uses a lot of resources and causes problems on our system. You might want to try running tests singly or in small groups.

SGI: SGI's standard `"make"` utility (`/bin/make` or `/usr/bin/make`) does not check whether a command actually changed the file it is supposed to build. This means that whenever you say `"make"` it will redo the link step. The remedy is to use SGI's much smarter `"smake"` utility (`/usr/sbin/smake`), or GNU `make`. If you set the first line of the Makefile to `#!/usr/sbin/smake` `smake` will be invoked by `make` (likewise for GNU `make`).

WARNING: There are bugs in the optimizer of some versions of SGI's compilers that can cause bus errors or other strange behavior, especially on numerical operations. To avoid this,

try building with "make OPT=".

OS/2: If you are running Warp3 or Warp4 and have IBM's VisualAge C/C++ compiler installed, just change into the pc\os2vacpp directory and type NMAKE. Threading and sockets are supported by default in the resulting binaries of PYTHON15.DLL and PYTHON.EXE.

Reliant UNIX: The thread support does not compile on Reliant UNIX, and there is a (minor) problem in the configure script for that platform as well. This should be resolved in time for a future release.

MacOSX: The tests will crash on both 10.1 and 10.2 with SEGV in test\_re and test\_sre due to the small default stack size. If you set the stack size to 2048 before doing a "make test" the failure can be avoided. If you're using the tcsh or csh shells, use "limit stacksize 2048" and for the bash shell (the default as of OSX 10.3), use "ulimit -s 2048".

On naked Darwin you may want to add the configure option "--disable-toolbox-glue" to disable the glue code for the Carbon interface modules. The modules themselves are currently only built if you add the --enable-framework option, see below.

On a clean OSX /usr/local does not exist. Do a "sudo mkdir -m 775 /usr/local" before you do a make install. It is probably not a good idea to do "sudo make install" which installs everything as superuser, as this may later cause problems when installing distutils-based additions.

Some people have reported problems building Python after using "fink" to install additional unix software. Disabling fink (remove all references to /sw from your .profile or .login) should solve this.

You may want to try the configure option "--enable-framework" which installs Python as a framework. The location can be set as argument to the --enable-framework option (default /Library/Frameworks). A framework install is probably needed if you want to use any Aqua-based GUI toolkit (whether Tkinter, wxPython, Carbon, Cocoa or anything else).

You may also want to try the configure option "--enable-universalsdk" which builds Python as a universal binary with support for the

i386 and PPC architectures. This requires Xcode 2.1 or later to build.

See Mac/README for more information on framework and universal builds.

Cygwin: With recent (relative to the time of writing, 2001-12-19) Cygwin installations, there are problems with the interaction of dynamic linking and fork(). This manifests itself in build failures during the execution of setup.py.

There are two workarounds that both enable Python (albeit without threading support) to build and pass all tests on NT/2000 (and most likely XP as well, though reports of testing on XP would be appreciated).

The workarounds:

(a) the band-aid fix is to link the `_socket` module statically rather than dynamically (which is the default).

To do this, run `./configure --with-threads=no` including any other options you need (`--prefix`, etc.). Then in `Modules/Setup` uncomment the lines:

```
#SSL=/usr/local/ssl
#_socket socketmodule.c \
-DUSE_SSL -I$(SSL)/include -I$(SSL)/include/openssl \
-L$(SSL)/lib -lssl -lcrypto
```

and remove `"local/"` from the `SSL` variable. Finally, just run `"make"`!

(b) The "proper" fix is to rebase the Cygwin DLLs to prevent base address conflicts. Details on how to do this can be found in the following mail:

<http://sources.redhat.com/ml/cygwin/2001-12/msg00894.html>

It is hoped that a version of this solution will be incorporated into the Cygwin distribution fairly soon.

Two additional problems:

(1) Threading support should still be disabled due to a known

bug in Cygwin pthreads that causes test\_threadedtempfile to hang.

(2) The \_curses module does not build. This is a known Cygwin ncurses problem that should be resolved the next time that this package is released.

On older versions of Cygwin, test\_poll may hang and test\_strftime may fail.

The situation on 9X/Me is not accurately known at present. Some time ago, there were reports that the following regression tests failed:

```
test_pwd
test_select (hang)
test_socket
```

Due to the test\_select hang on 9X/Me, one should run the regression test using the following:

```
make TESTOPTS='-l -x test_select' test
```

News regarding these platforms with more recent Cygwin versions would be appreciated!

Windows: When executing Python scripts on the command line using file type associations (i.e. starting "script.py" instead of "python script.py"), redirects may not work unless you set a specific registry key. See the Knowledge Base article <<http://support.microsoft.com/kb/321788>>.

#### Configuring the bsddb and dbm modules

-----

Beginning with Python version 2.3, the PyBsddb package <<http://pybsddb.sf.net/>> was adopted into Python as the bsddb package, exposing a set of package-level functions which provide backwards-compatible behavior. Only versions 3.3 through 4.4 of Sleepycat's libraries provide the necessary API, so older versions aren't supported through this interface. The old bsddb module has been retained as bsddb185, though it is not built by default. Users wishing to use it will have to tweak Modules/Setup to build it. The dbm module will still be built against the Sleepycat libraries if

other preferred alternatives (ndbm, gdbm) are not found.

#### Building the sqlite3 module

-----

To build the sqlite3 module, you'll need the sqlite3 or libsqlite3 packages installed, including the header files. Many modern operating systems distribute the headers in a separate package to the library - often it will be the same name as the main package, but with a -dev or -devel suffix.

The version of pysqlite2 that's including in Python needs sqlite3 3.0.8 or later. setup.py attempts to check that it can find a correct version.

#### Configuring threads

-----

As of Python 2.0, threads are enabled by default. If you wish to compile without threads, or if your thread support is broken, pass the --with-threads=no switch to configure. Unfortunately, on some platforms, additional compiler and/or linker options are required for threads to work properly. Below is a table of those options, collected by Bill Janssen. We would love to automate this process more, but the information below is not enough to write a patch for the configure.ac file, so manual intervention is required. If you patch the configure.ac file and are confident that the patch works, please send in the patch. (Don't bother patching the configure script itself -- it is regenerated each time the configure.ac file changes.)

#### Compiler switches for threads

.....

The definition of \_REENTRANT should be configured automatically, if that does not work on your system, or if \_REENTRANT is defined incorrectly, please report that as a bug.

| OS/Compiler/threads<br>(POSIX is draft 10, DCE is draft 4) | Switches for use with threads<br>compile & link |
|------------------------------------------------------------|-------------------------------------------------|
| SunOS 5.{1-5}/{gcc,SunPro cc}/solaris                      | -mt                                             |
| SunOS 5.5/{gcc,SunPro cc}/POSIX                            | (nothing)                                       |
| DEC OSF/1 3.x/cc/DCE<br>(butenhof@zko.dec.com)             | -threads                                        |
| Digital UNIX 4.x/cc/DCE                                    | -threads                                        |

|                           |           |
|---------------------------|-----------|
| (butenhof@zko.dec.com)    |           |
| Digital UNIX 4.x/cc/POSIX | -pthread  |
| (butenhof@zko.dec.com)    |           |
| AIX 4.1.4/cc_r/d7         | (nothing) |
| (buhrt@iquest.net)        |           |
| AIX 4.1.4/cc_r4/DCE       | (nothing) |
| (buhrt@iquest.net)        |           |
| IRIX 6.2/cc/POSIX         | (nothing) |
| (robertl@cwil.nl)         |           |

Linker (ld) libraries and flags for threads

.....

| OS/threads                | Libraries/switches for use with threads |
|---------------------------|-----------------------------------------|
| SunOS 5.{1-5}/solaris     | -lthread                                |
| SunOS 5.5/POSIX           | -lpthread                               |
| DEC OSF/1 3.x/DCE         | -lpthreads -lmach -lc_r -lc             |
| (butenhof@zko.dec.com)    |                                         |
| Digital UNIX 4.x/DCE      | -lpthreads -lpthread -lmach -lexc -lc   |
| (butenhof@zko.dec.com)    |                                         |
| Digital UNIX 4.x/POSIX    | -lpthread -lmach -lexc -lc              |
| (butenhof@zko.dec.com)    |                                         |
| AIX 4.1.4/{draft7,DCE}    | (nothing)                               |
| (buhrt@iquest.net)        |                                         |
| IRIX 6.2/POSIX            | -lpthread                               |
| (jph@emilia.engr.sgi.com) |                                         |

Building a shared libpython

-----

Starting with Python 2.3, the majority of the interpreter can be built into a shared library, which can then be used by the interpreter executable, and by applications embedding Python. To enable this feature, configure with --enable-shared.

If you enable this feature, the same object files will be used to create a static library. In particular, the static library will contain object files using position-independent code (PIC) on platforms where PIC flags are needed for the shared library.



## Configuring additional built-in modules

---

Starting with Python 2.1, the `setup.py` script at the top of the source distribution attempts to detect which modules can be built and automatically compiles them. Autodetection doesn't always work, so you can still customize the configuration by editing the `Modules/Setup` file; but this should be considered a last resort. The rest of this section only applies if you decide to edit the `Modules/Setup` file. You also need this to enable static linking of certain modules (which is needed to enable profiling on some systems).

This file is initially copied from `Setup.dist` by the `configure` script; if it does not exist yet, create it by copying `Modules/Setup.dist` yourself (`configure` will never overwrite it). Never edit `Setup.dist` -- always edit `Setup` or `Setup.local` (see below). Read the comments in the file for information on what kind of edits are allowed. When you have edited `Setup` in the `Modules` directory, the interpreter will automatically be rebuilt the next time you run `make` (in the `toplevel` directory).

Many useful modules can be built on any Unix system, but some optional modules can't be reliably autodetected. Often the quickest way to determine whether a particular module works or not is to see if it will build: enable it in `Setup`, then if you get compilation or link errors, disable it -- you're either missing support or need to adjust the compilation and linking parameters for that module.

On SGI IRIX, there are modules that interface to many SGI specific system libraries, e.g. the GL library and the audio hardware. These modules will not be built by the `setup.py` script.

In addition to the file `Setup`, you can also edit the file `Setup.local`. (the `makesetup` script processes both). You may find it more convenient to edit `Setup.local` and leave `Setup` alone. Then, when installing a new Python version, you can copy your old `Setup.local` file.

## Setting the optimization/debugging options

---

If you want or need to change the optimization/debugging options for the C compiler, assign to the `OPT` variable on the `toplevel` `make`

command; e.g. "make OPT=-g" will build a debugging version of Python on most platforms. The default is OPT=-O; a value for OPT in the environment when the configure script is run overrides this default (likewise for CC; and the initial value for LIBS is used as the base set of libraries to link with).

When compiling with GCC, the default value of OPT will also include the -Wall and -Wstrict-prototypes options.

Additional debugging code to help debug memory management problems can be enabled by using the --with-pydebug option to the configure script.

For flags that change binary compatibility, use the EXTRA\_CFLAGS variable.

## Profiling

-----

If you want C profiling turned on, the easiest way is to run configure with the CC environment variable to the necessary compiler invocation. For example, on Linux, this works for profiling using gprof(1):

```
CC="gcc -pg" ./configure
```

Note that on Linux, gprof apparently does not work for shared libraries. The Makefile/Setup mechanism can be used to compile and link most extension modules statically.

## Coverage checking

-----

For C coverage checking using gcov, run "make coverage". This will build a Python binary with profiling activated, and a ".gcno" and ".gcda" file for every source file compiled with that option. With the built binary, now run the code whose coverage you want to check. Then, you can see coverage statistics for each individual source file by running gcov, e.g.

```
gcov -o Modules zlibmodule
```

This will create a "zlibmodule.c.gcov" file in the current directory

containing coverage info for that source file.

This works only for source files statically compiled into the executable; use the Makefile/Setup mechanism to compile and link extension modules you want to coverage-check statically.

## Testing

-----

To test the interpreter, type "make test" in the top-level directory. This runs the test set twice (once with no compiled files, once with the compiled files left by the previous test run). The test set produces some output. You can generally ignore the messages about skipped tests due to optional features which can't be imported. If a message is printed about a failed test or a traceback or core dump is produced, something is wrong. On some Linux systems (those that are not yet using glibc 6), test\_strftime fails due to a non-standard implementation of strftime() in the C library. Please ignore this, or upgrade to glibc version 6.

By default, tests are prevented from overusing resources like disk space and memory. To enable these tests, run "make testall".

IMPORTANT: If the tests fail and you decide to mail a bug report, *\*don't\** include the output of "make test". It is useless. Run the failing test manually, as follows:

```
./python Lib/test/regtest.py -v test_whatever
```

(substituting the top of the source tree for '.' if you built in a different directory). This runs the test in verbose mode.

## Installing

-----

To install the Python binary, library modules, shared library modules (see below), include files, configuration files, and the manual page, just type

```
make install
```

This will install all platform-independent files in subdirectories of

the directory given with the `--prefix` option to configure or to the 'prefix' Make variable (default `/usr/local`). All binary and other platform-specific files will be installed in subdirectories if the directory given by `--exec-prefix` or the 'exec\_prefix' Make variable (defaults to the `--prefix` directory) is given.

If `DESTDIR` is set, it will be taken as the root directory of the installation, and files will be installed into `$(DESTDIR)$(prefix)`, `$(DESTDIR)$(exec_prefix)`, etc.

All subdirectories created will have Python's version number in their name, e.g. the library modules are installed in `"/usr/local/lib/python<version>/"` by default, where `<version>` is the `<major>.<minor>` release number (e.g. `"2.1"`). The Python binary is installed as `"python<version>"` and a hard link named `"python"` is created. The only file not installed with a version number in its name is the manual page, installed as `"/usr/local/man/man1/python.1"` by default.

If you want to install multiple versions of Python see the section below entitled "Installing multiple versions".

The only thing you may have to install manually is the Python mode for Emacs found in `Misc/python-mode.el`. (But then again, more recent versions of Emacs may already have it.) Follow the instructions that came with Emacs for installation of site-specific files.

On Mac OS X, if you have configured Python with `--enable-framework`, you should use `"make frameworkinstall"` to do the installation. Note that this installs the Python executable in a place that is not normally on your `PATH`, you may want to set up a symlink in `/usr/local/bin`.

## Installing multiple versions

-----

On Unix and Mac systems if you intend to install multiple versions of Python using the same installation prefix (`--prefix` argument to the configure script) you must take care that your primary python executable is not overwritten by the installation of a different version. All files and directories installed using `"make altinstall"` contain the major and minor version and can thus live side-by-side. `"make install"` also creates `${prefix}/bin/python` which refers to `${prefix}/bin/pythonX.Y`. If you intend to install multiple versions using the same prefix you must decide which

version (if any) is your "primary" version. Install that version using "make install". Install all other versions using "make altinstall".

For example, if you want to install Python 2.5, 2.6 and 3.0 with 2.6 being the primary version, you would execute "make install" in your 2.6 build directory and "make altinstall" in the others.

## Configuration options and variables

-----

Some special cases are handled by passing options to the configure script.

**WARNING:** if you rerun the configure script with different options, you must run "make clean" before rebuilding. Exceptions to this rule: after changing --prefix or --exec-prefix, all you need to do is remove Modules/getpath.o.

**--with(out)-gcc:** The configure script uses gcc (the GNU C compiler) if it finds it. If you don't want this, or if this compiler is installed but broken on your platform, pass the option --without-gcc. You can also pass "CC=cc" (or whatever the name of the proper C compiler is) in the environment, but the advantage of using --without-gcc is that this option is remembered by the config.status script for its --recheck option.

**--prefix, --exec-prefix:** If you want to install the binaries and the Python library somewhere else than in /usr/local/{bin,lib}, you can pass the option --prefix=DIRECTORY; the interpreter binary will be installed as DIRECTORY/bin/python and the library files as DIRECTORY/lib/python/\*. If you pass --exec-prefix=DIRECTORY (as well) this overrides the installation prefix for architecture-dependent files (like the interpreter binary). Note that --prefix=DIRECTORY also affects the default module search path (sys.path), when Modules/config.c is compiled. Passing make the option prefix=DIRECTORY (and/or exec\_prefix=DIRECTORY) overrides the prefix set at configuration time; this may be more convenient than re-running the configure script if you change your mind about the install prefix.

**--with-readline:** This option is no longer supported. GNU

readline is automatically enabled by setup.py when present.

- with-threads: On most Unix systems, you can now use multiple threads, and support for this is enabled by default. To disable this, pass --with-threads=no. If the library required for threads lives in a peculiar place, you can use --with-thread=DIRECTORY. IMPORTANT: run "make clean" after changing (either enabling or disabling) this option, or you will get link errors! Note: for DEC Unix use --with-dec-threads instead.
- with-sgi-dl: On SGI IRIX 4, dynamic loading of extension modules is supported by the "dl" library by Jack Jansen, which is ftp'able from ftp://ftp.cwi.nl/pub/dynload/dl-1.6.tar.Z. This is enabled (after you've ftp'ed and compiled the dl library) by passing --with-sgi-dl=DIRECTORY where DIRECTORY is the absolute pathname of the dl library. (Don't bother on IRIX 5, it already has dynamic linking using SunOS style shared libraries.) THIS OPTION IS UNSUPPORTED.
- with-dl-dld: Dynamic loading of modules is rumored to be supported on some other systems: VAX (Ultrix), Sun3 (SunOS 3.4), Sequent Symmetry (Dynix), and Atari ST. This is done using a combination of the GNU dynamic loading package (ftp://ftp.cwi.nl/pub/dynload/dl-dld-1.1.tar.Z) and an emulation of the SGI dl library mentioned above (the emulation can be found at ftp://ftp.cwi.nl/pub/dynload/dld-3.2.3.tar.Z). To enable this, ftp and compile both libraries, then call configure, passing it the option --with-dl-dld=DL\_DIRECTORY,DLD\_DIRECTORY where DL\_DIRECTORY is the absolute pathname of the dl emulation library and DLD\_DIRECTORY is the absolute pathname of the GNU dld library. (Don't bother on SunOS 4 or 5, they already have dynamic linking using shared libraries.) THIS OPTION IS UNSUPPORTED.
- with-libm, --with-libc: It is possible to specify alternative versions for the Math library (default -lm) and the C library (default the empty string) using the options --with-libm=STRING and --with-libc=STRING, respectively. For example, if your system requires that you pass -lc\_s to the C compiler to use the shared C library, you can pass --with-libc=-lc\_s. These libraries are passed after all other libraries, the C library last.

`--with-libs='libs'`: Add 'libs' to the LIBS that the python interpreter is linked against.

`--with-cxx-main=<compiler>`: If you plan to use C++ extension modules, then -- on some platforms -- you need to compile python's main() function with the C++ compiler. With this option, make will use <compiler> to compile main() \*and\* to link the python executable. It is likely that the resulting executable depends on the C++ runtime library of <compiler>. (The default is `--without-cxx-main`.)

There are platforms that do not require you to build Python with a C++ compiler in order to use C++ extension modules. E.g., x86 Linux with ELF shared binaries and GCC 3.x, 4.x is such a platform. We recommend that you configure Python `--without-cxx-main` on those platforms because a mismatch between the C++ compiler version used to build Python and to build a C++ extension module is likely to cause a crash at runtime.

The Python installation also stores the variable CXX that determines, e.g., the C++ compiler distutils calls by default to build C++ extensions. If you set CXX on the configure command line to any string of non-zero length, then configure won't change CXX. If you do not preset CXX but pass `--with-cxx-main=<compiler>`, then configure sets CXX=<compiler>. In all other cases, configure looks for a C++ compiler by some common names (c++, g++, gcc, CC, cxx, cc++, cl) and sets CXX to the first compiler it finds. If it does not find any C++ compiler, then it sets CXX="".

Similarly, if you want to change the command used to link the python executable, then set LINKCC on the configure command line.

`--with-pydebug`: Enable additional debugging code to help track down memory management problems. This allows printing a list of all live objects when the interpreter terminates.

`--with(out)-universal-newlines`: enable reading of text files with foreign newline convention (default: enabled). In other words, any of `\r`, `\n` or `\r\n` is acceptable as end-of-line character. If enabled `import` and `execfile` will automatically accept any newline in files. Python code can open a file with `open(file, 'U')` to

read it in universal newline mode. THIS OPTION IS UNSUPPORTED.

--with-tsc: Profile using the Pentium timestamping counter (TSC).

--with-system-ffi: Build the \_ctypes extension module using an ffi library installed on the system.

--with-dbmliborder=db1:db2:...: Specify the order that backends for the dbm extension are checked. Valid value is a colon separated string with the backend names 'ndbm', 'gdbm' and 'bdb'.

Building for multiple architectures (using the VPATH feature)

-----

If your file system is shared between multiple architectures, it usually is not necessary to make copies of the sources for each architecture you want to support. If the make program supports the VPATH feature, you can create an empty build directory for each architecture, and in each directory run the configure script (on the appropriate machine with the appropriate options). This creates the necessary subdirectories and the Makefiles therein. The Makefiles contain a line VPATH=... which points to a directory containing the actual sources. (On SGI systems, use "smake -J1" instead of "make" if you use VPATH -- don't try gnumake.)

For example, the following is all you need to build a minimal Python in /usr/tmp/python (assuming ~guido/src/python is the toplevel directory and you want to build in /usr/tmp/python):

```
$ mkdir /usr/tmp/python
$ cd /usr/tmp/python
$ ~guido/src/python/configure
[...]
$ make
[...]
$
```

Note that configure copies the original Setup file to the build directory if it finds no Setup file there. This means that you can edit the Setup file for each architecture independently. For this reason, subsequent changes to the original Setup file are not tracked automatically, as they might overwrite local changes. To force a copy of a changed original Setup file, delete the target Setup file. (The makesetup script supports multiple input files, so if you want to be



fancy you can change the rules to create an empty Setup.local if it doesn't exist and run it with arguments `$(srcdir)/Setup Setup.local`; however this assumes that you only need to add modules.)

Also note that you can't use a workspace for VPATH and non VPATH builds. The object files left behind by one version confuses the other.

#### Building on non-UNIX systems

-----

For Windows (2000/NT/ME/98/95), assuming you have MS VC++ 7.1, the project files are in PCbuild, the workspace is pcbuild.dsw. See PCbuild\readme.txt for detailed instructions.

For other non-Unix Windows compilers, in particular MS VC++ 6.0 and for OS/2, enter the directory "PC" and read the file "readme.txt".

For the Mac, a separate source distribution will be made available, for use with the CodeWarrior compiler. If you are interested in Mac development, join the PythonMac Special Interest Group (<http://www.python.org/sigs/pythonmac-sig/>, or send email to [pythonmac-sig-request@python.org](mailto:pythonmac-sig-request@python.org)).

Of course, there are also binary distributions available for these platforms -- see <http://www.python.org/>.

To port Python to a new non-UNIX system, you will have to fake the effect of running the configure script manually (for Mac and PC, this has already been done for you). A good start is to copy the file `pyconfig.h.in` to `pyconfig.h` and edit the latter to reflect the actual configuration of your system. Most symbols must simply be defined as 1 only if the corresponding feature is present and can be left alone otherwise; however the `*_t` type symbols must be defined as some variant of `int` if they need to be defined at all.

For all platforms, it's important that the build arrange to define the preprocessor symbol `NDEBUG` on the compiler command line in a release build of Python (else `assert()` calls remain in the code, hurting release-build performance). The Unix, Windows and Mac builds already do this.

#### Miscellaneous issues

=====

## Emacs mode

-----

There's an excellent Emacs editing mode for Python code; see the file `Misc/python-mode.el`. Originally written by the famous Tim Peters, it is now maintained by the equally famous Barry Warsaw. The latest version, along with various other contributed Python-related Emacs goodies, is online at <http://launchpad.net/python-mode/>.

## Tkinter

-----

The `setup.py` script automatically configures this when it detects a usable Tcl/Tk installation. This requires Tcl/Tk version 8.0 or higher.

For more Tkinter information, see the Tkinter Resource page:  
<http://www.python.org/topics/tkinter/>

There are demos in the `Demo/tkinter` directory.

Note that there's a Python module called "Tkinter" (capital T) which lives in `Lib/lib-tk/Tkinter.py`, and a C module called "\_tkinter" (lower case t and leading underscore) which lives in `Modules/_tkinter.c`. Demos and normal Tk applications import only the Python Tkinter module -- only the latter imports the C \_tkinter module. In order to find the C \_tkinter module, it must be compiled and linked into the Python interpreter -- the `setup.py` script does this. In order to find the Python Tkinter module, `sys.path` must be set correctly -- normal installation takes care of this.

## Distribution structure

-----

Most subdirectories have their own README files. Most files have comments.

|                       |                                             |
|-----------------------|---------------------------------------------|
| <code>Demo/</code>    | Demonstration scripts, modules and programs |
| <code>Doc/</code>     | Documentation sources (reStructuredText)    |
| <code>Grammar/</code> | Input for the parser generator              |

|                 |                                                                 |
|-----------------|-----------------------------------------------------------------|
| Include/        | Public header files                                             |
| LICENSE         | Licensing information                                           |
| Lib/            | Python library modules                                          |
| Mac/            | Macintosh specific resources                                    |
| Makefile.pre.in | Source from which config.status creates the Makefile.pre        |
| Misc/           | Miscellaneous useful files                                      |
| Modules/        | Implementation of most built-in modules                         |
| Objects/        | Implementation of most built-in object types                    |
| PC/             | Files specific to PC ports (DOS, Windows, OS/2)                 |
| PCbuild/        | Build directory for Microsoft Visual C++                        |
| Parser/         | The parser and tokenizer and their input handling               |
| Python/         | The byte-compiler and interpreter                               |
| README          | The file you're reading now                                     |
| RISCOS/         | Files specific to RISC OS port                                  |
| Tools/          | Some useful programs written in Python                          |
| pyconfig.h.in   | Source from which pyconfig.h is created (GNU autoheader output) |
| configure       | Configuration shell script (GNU autoconf output)                |
| configure.ac    | Configuration specification (input for GNU autoconf)            |
| install-sh      | Shell script used to install files                              |
| setup.py        | Python script used to build extension modules                   |

The following files will (may) be created in the toplevel directory by the configuration and build processes:

|                      |                                                           |
|----------------------|-----------------------------------------------------------|
| Makefile             | Build rules                                               |
| Makefile.pre         | Build rules before running Modules/makesetup              |
| buildno              | Keeps track of the build number                           |
| config.cache         | Cache of configuration variables                          |
| pyconfig.h           | Configuration header                                      |
| config.log           | Log from last configure run                               |
| config.status        | Status from last run of the configure script              |
| getbuildinfo.o       | Object file from Modules/getbuildinfo.c                   |
| libpython<version>.a | The library archive                                       |
| python               | The executable interpreter                                |
| reflog.txt           | Output from running the regression suite with the -R flag |
| tags, TAGS           | Tags files for vi and Emacs                               |

That's all, folks!

-----

--Guido van Rossum (home page: <http://www.python.org/~guido/>)

### 3.182.1 License

#### A. HISTORY OF THE SOFTWARE

=====

Python was created in the early 1990s by Guido van Rossum at Stichting Mathematisch Centrum (CWI, see <http://www.cwi.nl>) in the Netherlands as a successor of a language called ABC. Guido remains Python's principal author, although it includes many contributions from others.

In 1995, Guido continued his work on Python at the Corporation for National Research Initiatives (CNRI, see <http://www.cnri.reston.va.us>) in Reston, Virginia where he released several versions of the software.

In May 2000, Guido and the Python core development team moved to BeOpen.com to form the BeOpen PythonLabs team. In October of the same year, the PythonLabs team moved to Digital Creations (now Zope Corporation, see <http://www.zope.com>). In 2001, the Python Software Foundation (PSF, see <http://www.python.org/psf/>) was formed, a non-profit organization created specifically to own Python-related Intellectual Property. Zope Corporation is a sponsoring member of the PSF.

All Python releases are Open Source (see <http://www.opensource.org> for the Open Source Definition). Historically, most, but not all, Python releases have also been GPL-compatible; the table below summarizes the various releases.

| Release        | Derived from | Year      | Owner      | GPL-compatible? (1) |
|----------------|--------------|-----------|------------|---------------------|
| 0.9.0 thru 1.2 |              | 1991-1995 | CWI        | yes                 |
| 1.3 thru 1.5.2 | 1.2          | 1995-1999 | CNRI       | yes                 |
| 1.6            | 1.5.2        | 2000      | CNRI       | no                  |
| 2.0            | 1.6          | 2000      | BeOpen.com | no                  |
| 1.6.1          | 1.6          | 2001      | CNRI       | yes (2)             |
| 2.1            | 2.0+1.6.1    | 2001      | PSF        | no                  |
| 2.0.1          | 2.0+1.6.1    | 2001      | PSF        | yes                 |
| 2.1.1          | 2.1+2.0.1    | 2001      | PSF        | yes                 |
| 2.2            | 2.1.1        | 2001      | PSF        | yes                 |
| 2.1.2          | 2.1.1        | 2002      | PSF        | yes                 |
| 2.1.3          | 2.1.2        | 2002      | PSF        | yes                 |
| 2.2.1          | 2.2          | 2002      | PSF        | yes                 |

|       |       |           |     |     |
|-------|-------|-----------|-----|-----|
| 2.2.2 | 2.2.1 | 2002      | PSF | yes |
| 2.2.3 | 2.2.2 | 2003      | PSF | yes |
| 2.3   | 2.2.2 | 2002-2003 | PSF | yes |
| 2.3.1 | 2.3   | 2002-2003 | PSF | yes |
| 2.3.2 | 2.3.1 | 2002-2003 | PSF | yes |
| 2.3.3 | 2.3.2 | 2002-2003 | PSF | yes |
| 2.3.4 | 2.3.3 | 2004      | PSF | yes |
| 2.3.5 | 2.3.4 | 2005      | PSF | yes |
| 2.4   | 2.3   | 2004      | PSF | yes |
| 2.4.1 | 2.4   | 2005      | PSF | yes |
| 2.4.2 | 2.4.1 | 2005      | PSF | yes |
| 2.4.3 | 2.4.2 | 2006      | PSF | yes |
| 2.4.4 | 2.4.3 | 2006      | PSF | yes |
| 2.5   | 2.4   | 2006      | PSF | yes |
| 2.5.1 | 2.5   | 2007      | PSF | yes |
| 2.5.2 | 2.5.1 | 2008      | PSF | yes |
| 2.5.3 | 2.5.2 | 2008      | PSF | yes |
| 2.6   | 2.5   | 2008      | PSF | yes |
| 2.6.1 | 2.6   | 2008      | PSF | yes |
| 2.6.2 | 2.6.1 | 2009      | PSF | yes |
| 2.6.3 | 2.6.2 | 2009      | PSF | yes |
| 2.6.4 | 2.6.3 | 2009      | PSF | yes |
| 2.6.5 | 2.6.4 | 2010      | PSF | yes |
| 2.7   | 2.6   | 2010      | PSF | yes |

#### Footnotes:

- (1) GPL-compatible doesn't mean that we're distributing Python under the GPL. All Python licenses, unlike the GPL, let you distribute a modified version without making your changes open source. The GPL-compatible licenses make it possible to combine Python with other software that is released under the GPL; the others don't.
- (2) According to Richard Stallman, 1.6.1 is not GPL-compatible, because its license has a choice of law clause. According to CNRI, however, Stallman's lawyer has told CNRI's lawyer that 1.6.1 is "not incompatible" with the GPL.

Thanks to the many outside volunteers who have worked under Guido's direction to make these releases possible.

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### 3.183 python-IPy-0.75-6

IPy - class and tools for handling of IPv4 and IPv6 addresses and networks.

Website: <https://github.com/haypo/python-ipy/>

Presentation of the API

=====

The IP class allows a comfortable parsing and handling for most notations in use for IPv4 and IPv6 addresses and networks. It was greatly inspired by RIPE's Perl module NET::IP's interface but doesn't share the implementation. It doesn't share non-CIDR netmasks, so funky stuff like a netmask of 0xfffff0f can't be done here.

```
>>> from IPy import IP
>>> ip = IP('127.0.0.0/30')
>>> for x in ip:
... print(x)
...
127.0.0.0
127.0.0.1
127.0.0.2
127.0.0.3
>>> ip2 = IP('0x7f000000/30')
>>> ip == ip2
1
>>> ip.reverseNames()
['0.0.0.127.in-addr.arpa.', '1.0.0.127.in-addr.arpa.',
'2.0.0.127.in-addr.arpa.', '3.0.0.127.in-addr.arpa.']
>>> ip.reverseName()
'0-3.0.0.127.in-addr.arpa.'
>>> ip.itype()
'PRIVATE'
```

Supports most IP address formats

=====

It can detect about a dozen different ways of expressing IP addresses and networks, parse them and distinguish between IPv4 and IPv6 addresses:

```
>>> IP('10.0.0.0/8').version()
4
```

```
>>> IP('::1').version()
6
```

#### IPv4 addresses

-----

```
>>> print(IP(0x7f000001))
127.0.0.1
>>> print(IP('0x7f000001'))
127.0.0.1
>>> print(IP('127.0.0.1'))
127.0.0.1
>>> print(IP('10'))
10.0.0.0
```

#### IPv6 addresses

-----

```
>>> print(IP('1080:0:0:0:8:800:200C:417A'))
1080::8:800:200c:417a
>>> print(IP('1080::8:800:200C:417A'))
1080::8:800:200c:417a
>>> print(IP('::1'))
::1
>>> print(IP('::13.1.68.3'))
::d01:4403
```

#### Network mask and prefixes

-----

```
>>> print(IP('127.0.0.0/8'))
127.0.0.0/8
>>> print(IP('127.0.0.0/255.0.0.0'))
127.0.0.0/8
>>> print(IP('127.0.0.0-127.255.255.255'))
127.0.0.0/8
```

#### Derive network address

=====

IPy can transform an IP address into a network address by applying the given netmask:

```
>>> print(IP('127.0.0.1/255.0.0.0', make_net=True))
```

127.0.0.0/8

This can also be done for existing IP instances:

```
>>> print(IP('127.0.0.1').make_net('255.0.0.0'))
127.0.0.0/8
```

Convert address to string

=====

Nearly all class methods which return a string have an optional parameter 'wantprefixlen' which controls if the prefixlen or netmask is printed. Per default the prefixlen is always shown if the network contains more than one address::

|                           |                       |                       |
|---------------------------|-----------------------|-----------------------|
| wantprefixlen == 0 / None | don't return anything | 1.2.3.0               |
| wantprefixlen == 1        | /prefix               | 1.2.3.0/24            |
| wantprefixlen == 2        | /netmask              | 1.2.3.0/255.255.255.0 |
| wantprefixlen == 3        | -lastip               | 1.2.3.0-1.2.3.255     |

You can also change the defaults on an per-object basis by fiddling with the class members:

- \* NoPrefixForSingleIp
- \* WantPrefixLen

Examples of string conversions:

```
>>> IP('10.0.0.0/32').strNormal()
'10.0.0.0'
>>> IP('10.0.0.0/24').strNormal()
'10.0.0.0/24'
>>> IP('10.0.0.0/24').strNormal(0)
'10.0.0.0'
>>> IP('10.0.0.0/24').strNormal(1)
'10.0.0.0/24'
>>> IP('10.0.0.0/24').strNormal(2)
'10.0.0.0/255.255.255.0'
>>> IP('10.0.0.0/24').strNormal(3)
'10.0.0.0-10.0.0.255'
>>> ip = IP('10.0.0.0')
>>> print(ip)
10.0.0.0
>>> ip.NoPrefixForSingleIp = None
```

```
>>> print(ip)
10.0.0.0/32
>>> ip.WantPrefixLen = 3
>>> print(ip)
10.0.0.0-10.0.0.0
```

## Compatibility and links

=====

IPy 0.73 works on Python version 2.5-2.7.

This Python module is under BSD license: see COPYING file.

Further Information might be available at:  
<https://github.com/haypo/python-ipy>

## TODO

=====

- \* better comparison (\_\_cmp\_\_ and friends)
- \* tests for \_\_cmp\_\_
- \* always write hex values lowercase
- \* interpret 2001:1234:5678:1234/64 as 2001:1234:5678:1234::/64
- \* move size in bits into class variables to get rid of some "if self.\_ipversion ..."
- \* support for base85 encoding
- \* support for output of IPv6 encoded IPv4 Addresses
- \* update address type tables
- \* first-last notation should be allowed for IPv6
- \* add IPv6 docstring examples
- \* check better for negative parameters
- \* add addition / aggregation
- \* move reverse name stuff out of the classes and refactor it
- \* support for aggregation of more than two nets at once
- \* support for aggregation with "holes"
- \* support for finding common prefix
- \* '>>' and '<<' for prefix manipulation
- \* add our own exceptions instead ValueError all the time
- \* rename checkPrefix to checkPrefixOk
- \* add more documentation and doctests
- \* refactor



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### 3.184 python-chardet-2.2.1

Chardet: The Universal Character Encoding Detector

-----

Detects

- ASCII, UTF-8, UTF-16 (2 variants), UTF-32 (4 variants)
- Big5, GB2312, EUC-TW, HZ-GB-2312, ISO-2022-CN (Traditional and Simplified Chinese)
- EUC-JP, SHIFT\_JIS, ISO-2022-JP (Japanese)
- EUC-KR, ISO-2022-KR (Korean)
- KOI8-R, MacCyrillic, IBM855, IBM866, ISO-8859-5, windows-1251 (Cyrillic)
- ISO-8859-2, windows-1250 (Hungarian)
- ISO-8859-5, windows-1251 (Bulgarian)
- windows-1252 (English)
- ISO-8859-7, windows-1253 (Greek)
- ISO-8859-8, windows-1255 (Visual and Logical Hebrew)
- TIS-620 (Thai)

Requires Python 2.6 or later

Command-line Tool

-----

chardet comes with a command-line script which reports on the encodings of one or more files::

```
% chardetect somefile someotherfile
somefile: windows-1252 with confidence 0.5
someotherfile: ascii with confidence 1.0
```

About

-----

This is a continuation of Mark Pilgrim's excellent chardet. Previously, two versions needed to be maintained: one that supported python 2.x and one that supported python 3.x. We've recently merged with 'Ian Corduscano <<https://github.com/sigmavirus24>>'s 'charade <<https://github.com/sigmavirus24/charade>>' fork, so now we have one coherent version that works for Python 2.6+.

:maintainer: Dan Blanchard

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(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.)

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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

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

That's all there is to it!

### 3.185 python-configobj-4.7.2

```
=====
Validation Schema with validate.py
=====
```

```

Using the Validator class

```

```
:Authors: 'Michael Foord'_, 'Nicola Larosa'_, 'Mark Andrews'_
:Version: Validate 1.0.1
:Date: 2010/01/09
:Homepage: 'Validate Homepage'_
:Repository: 'Google code homepage <http://code.google.com/p/configobj/>'_
:PyPI Entry: 'Validate on Python Packaging Index
<http://pypi.python.org/pypi/validate>'_
:License: 'BSD License'_
:Support: 'Mailing List'_

.. _Mailing List: http://lists.sourceforge.net/lists/listinfo/configobj-develop
.. _Michael Foord: fuzzyman@voidspace.org.uk
.. _Nicola Larosa: nico@teknico.net
.. _This Document:
.. _Validate Homepage: http://www.voidspace.org.uk/python/validate.html
.. _BSD License: http://www.voidspace.org.uk/python/license.shtml

.. contents:: Validate Manual
.. sectnum::
```

```
Introduction
=====
```

Validation is used to check that supplied values conform to a specification.

The value can be supplied as a string, e.g. from a config file. In this case the check will also *convert* the value to the required type. This allows you to add validation as a transparent layer to access data stored as strings. The validation checks that the data is correct *and* converts it to the expected type.

Checks are also strings, and are easy to write. One generic system can be used

to validate information from different sources via a single consistent mechanism.

Checks look like function calls, and map to function calls. They can include parameters and keyword arguments. These arguments are passed to the relevant function by the `Validator` instance, along with the value being checked.

The syntax for checks also allows for specifying a default value. This default value can be `None`, no matter what the type of the check. This can be used to indicate that a value was missing, and so holds no useful value.

Functions either return a new value, or raise an exception. See `Validator Exceptions` for the low down on the exception classes that `validate.py` defines.

Some standard functions are provided, for basic data types; these come built into every validator. Additional checks are easy to write: they can be provided when the `Validator` is instantiated, or added afterwards.

Validate was primarily written to support `ConfigObj`, but is designed to be applicable to many other situations.

For support and bug reports please use the `ConfigObj` `Mailing List`.

.. `_ConfigObj`: <http://www.voidspace.org.uk/python/configobj.html>

Downloading  
=====

The current version is `1.0.1`, dated 9th January 2010.

You can get obtain `validate` in the following ways :

Files  
-----

- \* `validate.py` from Voidspace

- \* `configobj.zip` from Voidspace - See the homepage of `ConfigObj` for the latest version and download links.

This contains `validate.py` and `this document`. (As well as `ConfigObj` and

the ConfigObj documentation).

\* The latest development version can be obtained from the 'Subversion Repository'.

#### Documentation

-----

\*configobj.zip\* contains 'this document'.

\* You can view 'this document' online as the 'Validate Homepage'.

.. \_configobj.py:  
<http://www.voidspace.org.uk/cgi-bin/voidspace/download/configobj.py>  
.. \_configobj.zip:  
<http://www.voidspace.org.uk/cgi-bin/voidspace/download/configobj-4.7.0.zip>  
.. \_validate.py:  
<http://www.voidspace.org.uk/cgi-bin/voidspace/download/validate.py>  
.. \_Subversion Repository: <http://code.google.com/p/configobj/>  
.. \_Sourceforge: <http://sourceforge.net/projects/configobj>  
.. \_validate: <http://www.voidspace.org.uk/python/validate.html>

#### The standard functions

=====

The standard functions come built-in to every 'Validator' instance. They work with the following basic data types :

- \* integer
- \* float
- \* boolean
- \* string
- \* ip\_addr

plus lists of these datatypes.

Adding additional checks is done through coding simple functions.

The full set of standard checks are :

: 'integer': matches integer values (including negative). Takes optional 'min' and 'max' arguments::

```

integer()
integer(3, 9) # any value from 3 to 9
integer(min=0) # any positive value
integer(max=9)

:'float': matches float values
 Has the same parameters as the integer check.

:'boolean': matches boolean values: ''True'' or ''False''.
 Acceptable string values for True are::

 true, on, yes, 1

 Acceptable string values for False are::

 false, off, no, 0

 Any other value raises an error.

:'string': matches any string. Takes optional keyword args 'min' and 'max' to
 specify min and max length of string.

:'ip_addr': matches an Internet Protocol address, v.4, represented by a
 dotted-quad string, i.e. '1.2.3.4'.

:'list': matches any list. Takes optional keyword args 'min', and 'max' to
 specify min and max sizes of the list. The list checks always
 return a list.

:'force_list': matches any list, but if a single value is passed in will
 coerce it into a list containing that value. Useful for
 configobj if the user forgot the trailing comma to turn
 a single value into a list.

:'tuple': matches any list. This check returns a tuple rather than a list.

:'int_list': Matches a list of integers. Takes the same arguments as list.

:'float_list': Matches a list of floats. Takes the same arguments as list.

:'bool_list': Matches a list of boolean values. Takes the same arguments as
 list.

```

:`'string_list'`: Matches a list of strings. Takes the same arguments as `list`.

:`'ip_addr_list'`: Matches a list of IP addresses. Takes the same arguments as `list`.

:`'mixed_list'`: Matches a list with different types in specific positions.  
List size must match the number of arguments.

Each position can be one of::

`int, str, boolean, float, ip_addr`

So to specify a list with two strings followed by two integers,  
you write the check as::

`mixed_list(str, str, int, int)`

:`'pass'`: matches everything: it never fails and the value is unchanged. It is  
also the default if no check is specified.

:`'option'`: matches any from a list of options.  
You specify this test with::

`option('option 1', 'option 2', 'option 3')`

The following code will work without you having to specifically add the  
functions yourself.

.. code-block:: python

```
from validate import Validator
#
vtor = Validator()
newval1 = vtor.check('integer', value1)
newval2 = vtor.check('boolean', value2)
etc ...
```

.. note::

Of course, if these checks fail they raise exceptions. So you should wrap  
them in `'try...except'` blocks. Better still, use `ConfigObj` for a higher  
level interface.

## Using Validator

=====

Using ‘‘Validator’’ is very easy. It has one public attribute and one public method.

Shown below are the different steps in using ‘‘Validator’’.

The only additional thing you need to know, is about ‘Writing check functions’\_.

### Instantiate

-----

.. code-block:: python

```
from validate import Validator
vtor = Validator()
```

or even :

.. code-block:: python

```
from validate import Validator
#
fdict = {
 'check_name1': function1,
 'check_name2': function2,
 'check_name3': function3,
}
#
vtor = Validator(fdict)
```

The second method adds a set of your functions as soon as your validator is created. They are stored in the ‘‘vtor.functions’’ dictionary. The ‘key’ you give them in this dictionary is the name you use in your checks (not the original function name).

Dictionary keys/functions you pass in can override the built-in ones if you want.

### Adding functions

-----

The code shown above, for adding functions on instantiation, has exactly the same effect as the following code :

.. code-block:: python

```
from validate import Validator
#
vtor = Validator()
vtor.functions['check_name1'] = function1
vtor.functions['check_name2'] = function2
vtor.functions['check_name3'] = function3
```

‘‘vtor.functions’’ is just a dictionary that maps names to functions, so we could also have called ‘‘vtor.functions.update(fdict)’’.

Writing the check

-----

As we’ve heard, the checks map to the names in the ‘‘functions’’ dictionary. You’ve got a full list of ‘The standard functions’\_ and the arguments they take.

If you’re using ‘‘Validator’’ from ConfigObj, then your checks will look like::

```
keyword = int_list(max=6)
```

but the check part will be identical .

The check method

-----

If you’re not using ‘‘Validator’’ from ConfigObj, then you’ll need to call the ‘‘check’’ method yourself.

If the check fails then it will raise an exception, so you’ll want to trap that. Here’s the basic example :

.. code-block:: python

```
from validate import Validator, ValidateError
```



```
#
vtor = Validator()
check = "integer(0, 9)"
value = 3
try:
 newvalue = vtor.check(check, value)
except ValidateError:
 print 'Check Failed.'
else:
 print 'Check passed.'
```

.. caution::

Although the value can be a string, if it represents a list it should already have been turned into a list of strings.

#### Default Values ~~~~~

Some values may not be available, and you may want to be able to specify a default as part of the check.

You do this by passing the keyword `‘‘missing=True’’` to the `‘‘check’’` method, as well as a `‘‘default=value’’` in the check. (Constructing these checks is done automatically by `ConfigObj`: you only need to know about the `‘‘default=value’’` part) :

.. code-block:: python

```
check1 = 'integer(default=50)'
check2 = 'option("val 1", "val 2", "val 3", default="val 1")'

assert vtor.check(check1, '', missing=True) == 50
assert vtor.check(check2, '', missing=True) == "val 1"
```

If you pass in `‘‘missing=True’’` to the check method, then the actual value is ignored. If no default is specified in the check, a `‘‘ValidateMissingValue’’` exception is raised. If a default is specified then that is passed to the check instead.

If the check has `‘‘default=None’’` (case sensitive) then `‘‘vtor.check’’` will

\*always\* return `''None''` (the object). This makes it easy to tell your program that this check contains no useful value when missing, i.e. the value is optional, and may be omitted without harm.

.. note::

As of version 0.3.0, if you specify `''default=None''` (note the quote marks around `''None''`) then it will be interpreted as the string `''None''`.

## List Values

~~~~~

It's possible that you would like your default value to be a list. It's even possible that you will write your own check functions - and would like to pass them keyword arguments as lists from within the check.

To avoid confusing syntax with commas and quotes you use a list constructor to specify that keyword arguments are lists. This includes the `''default''` value. This makes checks look something like::

```
checkname(default=list('val1', 'val2', 'val3'))
```

## get\_default\_value

-----

`''Validator''` instances have a `''get_default_value''` method. It takes a `''check''` string (the same string you would pass to the `''check''` method) and returns the default value, converted to the right type. If the check doesn't define a default value then this method raises a `''KeyError''`.

If the `''check''` has been seen before then it will have been parsed and cached already, so this method is not expensive to call (however the conversion is done each time).

## Validator Exceptions

=====

.. note::

If you only use Validator through ConfigObj, it traps these Exceptions for you. You will still need to know about them for writing your own check functions.

‘‘vtor.check’’ indicates that the check has failed by raising an exception. The appropriate error should be raised in the check function.

The base error class is ‘‘ValidateError’’. All errors (except for ‘‘VdtParamError’’) raised are sub-classes of this.

If an unrecognised check is specified then ‘‘VdtUnknownCheckError’’ is raised.

There are also ‘‘VdtTypeError’’ and ‘‘VdtValueError’’.

If incorrect parameters are passed to a check function then it will (or should) raise ‘‘VdtParamError’’. As this indicates *\*programmer\** error, rather than an error in the value, it is a subclass of ‘‘SyntaxError’’ instead of ‘‘ValidateError’’.

.. note::

This means it *\*won't\** be caught by ConfigObj - but propagated instead.

If the value supplied is the wrong type, then the check should raise ‘‘VdtTypeError’’. e.g. the check requires the value to be an integer (or representation of an integer) and something else was supplied.

If the value supplied is the right type, but an unacceptable value, then the check should raise ‘‘VdtValueError’’. e.g. the check requires the value to be an integer (or representation of an integer) less than ten and a higher value was supplied.

Both ‘‘VdtTypeError’’ and ‘‘VdtValueError’’ are initialised with the incorrect value. In other words you raise them like this :

.. code-block:: python

```
raise VdtTypeError(value)
```

```
#
raise VdtValueError(value)
```

‘‘VdtValueError’’ has the following subclasses, which should be raised if they are more appropriate.

```
* ‘‘VdtValueTooSmallError’’
* ‘‘VdtValueTooBigError’’
* ‘‘VdtValueTooShortError’’
* ‘‘VdtValueTooLongError’’
```

Writing check functions  
=====

Writing check functions is easy.

The check function will receive the value as its first argument, followed by any other parameters and keyword arguments.

If the check fails, it should raise a ‘‘VdtTypeError’’ or a ‘‘VdtValueError’’ (or an appropriate subclass).

All parameters and keyword arguments are *\*always\** passed as strings. (Parsed from the check string).

The value might be a string (or list of strings) and need converting to the right type - alternatively it might already be a list of integers. Our function needs to be able to handle either.

If the check passes then it should return the value (possibly converted to the right type).

And that’s it !

Example  
-----

Here is an example function that requires a list of integers. Each integer must be between 0 and 99.

It takes a single argument specifying the length of the list. (Which allows us

to use the same check in more than one place). If the length can't be converted to an integer then we need to raise `'VdtParamError'`.

Next we check that the value is a list. Anything else should raise a `'VdtTypeError'`. The list should also have 'length' entries. If the list has more or less entries then we will need to raise a `'VdtValueTooShortError'` or a `'VdtValueTooLongError'`.

Then we need to check every entry in the list. Each entry should be an integer between 0 and 99, or a string representation of an integer between 0 and 99. Any other type is a `'VdtTypeError'`, any other value is a `'VdtValueError'` (either too big, or too small).

.. code-block:: python

```
def special_list(value, length):
 """
 Check that the supplied value is a list of integers,
 with 'length' entries, and each entry between 0 and 99.
 """
 # length is supplied as a string
 # we need to convert it to an integer
 try:
 length = int(length)
 except ValueError:
 raise VdtParamError('length', length)
 #
 # Check the supplied value is a list
 if not isinstance(value, list):
 raise VdtTypeError(value)
 #
 # check the length of the list is correct
 if len(value) > length:
 raise VdtValueTooLongError(value)
 elif len(value) < length:
 raise VdtValueTooShortError(value)
 #
 # Next, check every member in the list
 # converting strings as necessary
 out = []
 for entry in value:
 if not isinstance(entry, (str, unicode, int)):
 # a value in the list
 # is neither an integer nor a string
```

```

 raise VdtTypeError(value)
 elif isinstance(entry, (str, unicode)):
 if not entry.isdigit():
 raise VdtTypeError(value)
 else:
 entry = int(entry)
 if entry < 0:
 raise VdtValueTooSmallError(value)
 elif entry > 99:
 raise VdtValueTooBigError(value)
 out.append(entry)
#
if we got this far, all is well
return the new list
return out

```

If you are only using `validate` from `ConfigObj` then the error type (`*TooBig*`, `*TooSmall*`, etc) is lost - so you may only want to raise `‘‘VdtValueError‘‘`.

.. caution::

If your function raises an exception that isn't a subclass of `‘‘ValidateError‘‘`, then `ConfigObj` won't trap it. This means validation will fail.

This is why our function starts by checking the type of the value. If we are passed the wrong type (e.g. an integer rather than a list) we get a `‘‘VdtTypeError‘‘` rather than bombing out when we try to iterate over the value.

If you are using `validate` in another circumstance you may want to create your own subclasses of `‘‘ValidateError‘‘` which convey more specific information.

#### Known Issues

=====

The following parses and then blows up. The resulting error message is confusing:

```
‘‘checkname(default=list(1, 2, 3, 4))‘‘
```

This is because it parses as: `‘‘checkname(default="list(1", 2, 3, 4))‘‘`. That isn't actually unreasonable, but the error message won't help you

work out what has happened.

## TODO

=====

- \* A regex check function ?
- \* A timestamp check function ? (Using the ‘‘parse’’ function from ‘‘DateUtil’’ perhaps).

## ISSUES

=====

.. note::

Please file any bug reports to ‘Michael Foord’\_ or the ConfigObj  
‘Mailing List’\_.

If we could pull tuples out of arguments, it would be easier  
to specify arguments for ‘mixed\_lists’.

## CHANGELOG

=====

2009/10/25 - Version 1.0.1

-----

- \* BUGFIX: Fixed compatibility with Python 2.3.

2009/04/13 - Version 1.0.0

-----

- \* BUGFIX: can now handle multiline strings.
- \* Addition of ‘force\_list’ validation option.

As the API is stable and there are no known bugs or outstanding feature requests  
I am marking this 1.0.

2008/02/24 - Version 0.3.2

-----

BUGFIX: Handling of None as default value fixed.

2008/02/05 - Version 0.3.1

-----

BUGFIX: Unicode checks no longer broken.

2008/02/05 - Version 0.3.0

-----

Improved performance with a parse cache.

New ‘‘get\_default\_value’’ method. Given a check it returns the default value (converted to the correct type) or raises a ‘‘KeyError’’ if the check doesn’t specify a default.

Added ‘tuple’ check and corresponding ‘is\_tuple’ function (which always returns a tuple).

BUGFIX: A quoted ‘None’ as a default value is no longer treated as None, but as the string ‘None’.

BUGFIX: We weren’t unquoting keyword arguments of length two, so an empty string didn’t work as a default.

BUGFIX: Strings no longer pass the ‘is\_list’ check. Additionally, the list checks always return lists.

A couple of documentation bug fixes.

Removed CHANGELOG from module.

2007/02/04           Version 0.2.3

-----

Release of 0.2.3

2006/12/17           Version 0.2.3-alpha1

-----



By Nicola Larosa

Fixed validate doc to talk of `boolean` instead of `bool`; changed the `is_bool` function to `is_boolean` (Sourceforge bug #1531525).

2006/04/29      Version 0.2.2  
-----

Addressed bug where a string would pass the `is_list` test. (Thanks to Konrad Wojas.)

2005/12/16      Version 0.2.1  
-----

Fixed bug so we can handle keyword argument values with commas.

We now use a list constructor for passing list values to keyword arguments (including `default`):

```
default=list("val", "val", "val")
```

Added the `_test` test.

Moved a function call outside a try...except block.

2005/08/18      Version 0.2.0  
-----

Updated by 'Michael Foord' and 'Nicola Larosa'

Does type conversion as well.

2005/02/01      Version 0.1.0  
-----

Initial version developed by 'Michael Foord' and Mark Andrews.

### 3.186 python-decorator-3.4.0-3

Decorator module

=====

```
:Author: Michele Simionato
:E-mail: michele.simionato@gmail.com
:Requires: Python 2.4+
:Download page: http://pypi.python.org/pypi/decorator
:Installation: 'easy_install decorator'
:License: BSD license
```

Installation

-----

If you are lazy, just perform

```
$ easy_install decorator
```

which will install just the module on your system. Notice that Python 3 requires the easy\_install version of the distribute\_ project.

If you prefer to install the full distribution from source, including the documentation, download the tarball\_, unpack it and run

```
$ python setup.py install
```

in the main directory, possibly as superuser.

```
.. _tarball: http://pypi.python.org/pypi/decorator
.. _distribute: http://packages.python.org/distribute/
```

Testing

-----

For Python 2.5, 2.6, 2.7 run

```
$ python documentation.py
```

for Python 3.X run

```
$ python documentation3.py
```

You will see a few innocuous errors with Python 2.5, because some inner details such as the introduction of the ArgSpec namedtuple and Thread.\_\_repr\_\_ changed. You may safely ignore them.

You cannot run the tests in Python 2.4, since there is a test using the with statement, but the decorator module is expected to work anyway (it has been used in production with Python 2.4 for years). My plan is to keep supporting all Python versions >= 2.4 in the core module, but I will keep the documentation and the tests updated only for the latest Python versions in both the 2.X and 3.X branches.

Finally, notice that you may run into trouble if in your system there is an older version of the decorator module; in such a case remove the old version.

## Documentation

-----

There are various versions of the documentation:

- 'HTML version (Python 2)'
- 'PDF version (Python 2)'
- 'HTML version (Python 3)'
- 'PDF version (Python 3)'

.. \_HTML version (Python 2):

<http://micheles.googlecode.com/hg/decorator/documentation.html>

.. \_PDF version (Python 2):

<http://micheles.googlecode.com/hg/decorator/documentation.pdf>

.. \_HTML version (Python 3):

<http://micheles.googlecode.com/hg/decorator/documentation3.html>

.. \_PDF version (Python 3):

<http://micheles.googlecode.com/hg/decorator/documentation3.pdf>

## Repository

-----

The project is hosted on GoogleCode as a Mercurial repository. You can look at the source here:

<http://code.google.com/p/micheles/source/browse/#hg%2Fdecorator>

### 3.187 python-iniparse-0.4-9

#### Introduction to iniparse

iniparse is a INI parser for Python which is:

- \* Compatible with ConfigParser: Backward compatible implementations of ConfigParser, RawConfigParser, and SafeConfigParser are included that are API-compatible with the Python standard library.
- \* Preserves structure of INI files: Order of sections & options, indentation, comments, and blank lines are preserved as far as possible when data is updated.
- \* More convenient: Values can be accessed using dotted notation (cfg.user.name), or using container syntax (cfg['user']['name']).

It is very useful for config files that are updated both by users and by programs, since it is very disorienting for a user to have her config file completely rearranged whenever a program changes it. iniparse also allows making the order of entries in a config file significant, which is desirable in applications like image galleries.

Website: <http://code.google.com/p/iniparse/>

Mailing List: [iniparse-discuss@googlegroups.com](mailto:iniparse-discuss@googlegroups.com)

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Copyright (c) 2007 Tim Lauridsen <tla@rasmil.dk>

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iniparse/compat.py and tests/test\_compat.py contain code derived from lib/python-2.3/ConfigParser.py and lib/python-2.3/test/test\_cfgparse.py respectively. Other code may contain small snippets from those two files as well. The Python license (LICENSE-PSF) applies to that code.

---

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### 3.188 python-kitchen-1.1.1-5

```
=====
Kitchen.core Module
=====
```

```
:Author: Toshio Kuratomi
:Date: 2 Jan 2012
:Version: 1.1.x
```

The Kitchen module provides a python API for all sorts of little useful snippets of code that everybody ends up writing for their projects but never seem big enough to build an independent release. Use kitchen and stop cutting and pasting that code over and over.

```
.. contents::
```

```

License

```

Since version 0.2a1, this python module has been distributed under the terms of the GNU Lesser General Public License Version 2 or later.

```
.. note:: Some parts of this module are licensed under terms less restrictive
 than the LGPL. If you separate these files from the work as a whole you
 are allowed to use them under the less restrictive licenses. The following
 is a list of the files that are known:
```

```
:subprocess.py: licensed under the Python 2 license by the PSF
 http://www.python.org/download/releases/2.4/license/
:test_subprocess.py: Python Software Foundation License Version 2
 http://www.python.org/download/releases/2.7/license/
:kitchen/pycompat25/defaultdict.py: Python Software Foundation License
Version 2
 http://www.python.org/download/releases/2.6.2/license
```

```

Requirements

```

kitchen.core requires

```
:python: 2.3.1 or later
```

## Soft Requirements

=====

If found, these libraries will be used to make the implementation of something better in some way. If they are not present, the API that they enable will still exist but may function in a different manner.

:chardet\_: Used in `kitchen.text.xml.guess_encoding__to_xml()` to help guess encoding of byte strings being converted. If not present, unknown encodings will be converted as if they were latin1.

.. \_chardet:: <http://chardet.feedparser.org/>

## Other Recommended Libraries

These libraries implement commonly used functionality that everyone seems to invent. Rather than reinvent their wheel, I simply list the things that they do well for now. Perhaps if people can't find them normally, I'll add them as requirements in `setup.py` or link them into `kitchen`'s namespace. For now, I just mention them here:

:bunch\_: Bunch is a dictionary that you can use attribute lookup as well as bracket notation to access. Setting it apart from most homebrewed implementations is the `bunchify()` function which will descend nested structures of lists and dicts, transforming the dicts to Bunch's.

.. \_bunch:: <http://pypi.python.org/pypi/bunch/>

## Building, and testing

### Testing

=====

You can run the unittests with this command::  
    nosetests --with-coverage --cover-package kitchen

### 3.188.1 Copying

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

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### **3.189 python-linux-procfs-0.4.9-4**

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```
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```

```
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```
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```

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```
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```

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

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### 3.190 python-pycurl-7.19.0-19

License

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<signature of Ty Coon>, 1 April 1990  
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That's all there is to it!

### 3.191 python-pyudev-0.15-9

```

pyudev
#####
```

<http://pyudev.readthedocs.org>

pyudev is a LGPL\_ licensed, pure Python\_ binding for libudev\_, the device and hardware management and information library for Linux. It supports almost all libudev\_ functionality, you can enumerate devices, query device properties and attributes or monitor devices, including asynchronous monitoring with threads, or within the event loops of Qt, Glib or wxPython.

The binding supports CPython\_ 2 (2.6 or newer) and 3 (3.1 or newer), and PyPy\_ 1.5 or newer. It is tested against udev 151 or newer, earlier versions of udev as found on dated Linux systems may work, but are not officially supported.

The website\_ provides detailed information and complete API documentation.

Support, issues and source code  
=====

A mailing list is available at [pyudev@librelist.com](mailto:pyudev@librelist.com) for questions and discussions about pyudev usage and development. To subscribe to this list, just send a mail to [pyudev@librelist.com](mailto:pyudev@librelist.com) and reply to the confirmation mail.

Bugs and issues can be reported to the issue 'issue tracker'\_ on GitHub\_. The source code is located in a git\_ repository on GitHub\_, too::

```
git clone --recursive git://github.com/lunaryorn/pyudev.git
```

Feel free to fork the repository. Pull requests and patches are welcome!

```
.. _LGPL: http://www.gnu.org/licenses/old-licenses/lgpl-2.1.html
.. _Python: http://www.python.org/
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.. _website: http://pyudev.readthedocs.org
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.. \_git: <http://www.git-scm.com/>

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### 3.192 python-schedutils-0.4-6



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```
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```

```
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```
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This is free software, and you are welcome to redistribute it
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```

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```
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```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
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### 3.193 python-urlgrabber-3.10-9

urlgrabber -- A high-level cross-protocol url-grabber

#### INSTALLATION INSTRUCTIONS

If you want to install urlgrabber on your system, simply open the package and run:

```
python setup.py install
```

Take a look at the install options by doing

```
python setup.py install --help
```

With no arguments, distutils will add all modules to a 'urlgrabber' package under your python site-packages directory.

You can build rpms by running

```
python setup.py bdist_rpm
```

The rpms (both source and "binary") will be specific to the current distribution/version and may not be portable to others. This is because they will be built for the currently installed python.

keepalive.py and byterange.py are generic urllib2 extension modules and can be used to add keepalive and range support to any urllib2 application.

As of version 2.9.x, urlgrabber is no longer tested with python versions less than 2.2. It will probably work with 2.0, but will almost certainly NOT work under prior python versions.

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Version 2.1, February 1999

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### 3.194 pyxattr-0.5.1-5

pyxattr  
=====

This is the pyxattr module, a Python extension module which gives access to the extended attributes for filesystem objects available in some operating systems.

Downloads: go to <https://github.com/iustin/pyxattr/downloads>. Latest version is 0.5.1. The source repository is either at <http://git.k1024.org/pyxattr.git> or at <https://github.com/iustin/pyxattr>.

Requirements  
-----

pyxattr has been written and tested on Linux, kernel v2.4 or later, with XFS filesystems; ext2/ext3 should work also. If any other platform implements the same behavior, pyxattr could be used.

You need to have the attr library (including development headers; most distributions should have this, under various names) and setuptools installed in order to build and install the module.

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-----

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Note that previous versions had different licenses: version 0.3 was licensed under LGPL version 3 (which, I realized later, is not compatible with GPLv2, hence the change to LGPL 2.1), and even older versions were licensed under GPL v2 or later.

```
.. Local Variables:
.. mode: rst
.. fill-column: 72
.. End:
```

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That's all there is to it!

## 3.195 qrencode-3.4.1-3

libqrencode 3.4.1 - QR Code encoding library

### GENERAL INFORMATION

=====

Libqrencode is a library for encoding data in a QR Code symbol, a 2D symbology that can be scanned by handy terminals such as a mobile phone with CCD. The capacity of QR Code is up to 7000 digits or 4000 characters and has high robustness.

Libqrencode accepts a string or a list of data chunks then encodes in a QR Code symbol as a bitmap array. While other QR Code applications generate an image file, using libqrencode allows applications to render QR Code symbols from raw bitmap data directly. This library also contains a command-line utility outputs a QR Code symbol as a PNG image.

### SPECIFICATION

=====

Libqrencode supports QR Code model 2, described in JIS (Japanese Industrial Standards) X0510:2004 or ISO/IEC 18004. Most of features in the specification are implemented such as:

- Numeric, alphabet, Japanese kanji (Shift-JIS) or any 8 bit code can be embedded
- Optimized encoding of a string
- Structured-append of symbols
- Micro QR Code (experimental)

Currently the following features are not supported:

- ECI and FNC1 mode
- QR Code model 1 (deprecated)

### INSTALL

=====

#### Requirements

-----

Some test programs or utility tools uses SDL or PNG, but the library itself has no dependencies. You can skip compiling those tools if you want not to install programs using SDL or PNG.

Compile & install

-----

Just try

```
./configure
make
make install
```

This compiles and installs the library and header file to the appropriate directories. By default, /usr/local/lib and /usr/local/include. You can change the destination directory by passing some options to the configure script. Run `./configure --help` to see the list of options.

It also installs a binary "qrencode" to /usr/local/bin. If you want not to install it, give `--without-tools` option to the configure script.

When you downloaded a development tree from github, it is required to run "autogen.sh" at first to generate configure script.

#### USAGE

=====

Basic usages of this library are written in the header file (qrencode.h). You can generate a manual of the library by using Doxygen.

#### WARNINGS

=====

The library is distributed WITHOUT ANY WARRANTY.

Micro QR Code support is EXPERIMENTAL.

Be careful to use the command line tool (qrencode) if it is used by a web application (e.g. CGI script). For example, giving `-s` option with a large number to qrencode may cause DoS. The parameters should be checked by the application.

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=====

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## CONTACT

=====

Visit the homepage at:

<http://fukuchi.org/works/qrencode/>

for new releases. The git repository is available at:

<https://github.com/fukuchi/libqrencode>

Please mail any bug reports, suggestions, comments, and questions to:

Kentaro Fukuchi <[kentaro@fukuchi.org](mailto:kentaro@fukuchi.org)>

or submit issues to:

<https://github.com/fukuchi/libqrencode/issues>

Questions of license compliance are also welcome.

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=====

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Reed-Solomon encoder is written by Phil Karn, KA9Q.

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|                   |                                            |
|-------------------|--------------------------------------------|
| NANKI Haruo       | - improved lower-case characteres encoding |
| Philippe Delcroix | - improved mask evaluation                 |
| Yusuke Mihara     | - structured-append support                |
| David Dahl        | - DPI and SVG support patch                |
| Adam Shepherd     | - bug fix patch of the mask evaluation     |

Josef Eisl (zapster) - EPS support patch  
Colin (moshen) - ANSI support patch  
Ralf Ertzinger - ASCII support patch  
Yutaka Niibe (gniibe) - various bug fix patches  
Dan Storm (Repox) - SVG support patch  
Lennart Poettering (mezcalero)  
- Improved text art patch  
Yann Droneaud - Improved input validation patch  
Shigeyuki Hirai, Paul Janssens, wangsai, Gavan Fantom, Matthew Baker, Rob Ryan,  
Fred Steinhäuser, Terry Burton  
- bug report / suggestion

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Ty Coon, President of Vice

That's all there is to it!

## 3.196 readline-6.2-10

### Introduction

=====

This is the Gnu Readline library, version 6.2.

The Readline library provides a set of functions for use by applications that allow users to edit command lines as they are typed in. Both Emacs and vi editing modes are available. The Readline library includes additional functions to maintain a list of previously-entered command lines, to recall and perhaps reedit those lines, and perform csh-like history expansion on previous commands.

The history facilities are also placed into a separate library, the History library, as part of the build process. The History library may be used without Readline in applications which desire its capabilities.

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To build the library, try typing './configure', then 'make'. The configuration process is automated, so no further intervention should be necessary. Readline builds with 'gcc' by default if it is available. If you want to use 'cc' instead, type

```
CC=cc ./configure
```

if you are using a Bourne-style shell. If you are not, the following may work:

```
env CC=cc ./configure
```

Read the file INSTALL in this directory for more information about how to customize and control the build process.

The file rlconf.h contains C preprocessor defines that enable and disable certain Readline features.

The special make target 'everything' will build the static and shared libraries (if the target platform supports them) and the examples.

## Examples

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There are several example programs that use Readline features in the examples directory. The 'rl' program is of particular interest. It is a command-line interface to Readline, suitable for use in shell scripts in place of 'read'.

## Shared Libraries

=====

There is skeletal support for building shared versions of the Readline and History libraries. The configure script creates a Makefile in the 'shlib' subdirectory, and typing 'make shared' will cause shared versions of the Readline and History libraries to be built on supported platforms.

If 'configure' is given the '--enable-shared' option, it will attempt to build the shared libraries by default on supported platforms.

Configure calls the script support/shobj-conf to test whether or not shared library creation is supported and to generate the values of variables that are substituted into shlib/Makefile. If you try to build shared libraries on an unsupported platform, 'make' will display a message asking you to update support/shobj-conf for your platform.

If you need to update support/shobj-conf, you will need to create a 'stanza' for your operating system and compiler. The script uses the value of host\_os and \${CC} as determined by configure. For instance, FreeBSD 4.2 with any version of gcc is identified as 'freebsd4.2-gcc\*'.

In the stanza for your operating system-compiler pair, you will need to define several variables. They are:

**SHOBJ\_CC** The C compiler used to compile source files into shareable object files. This is normally set to the value of \${CC} by configure, and should not need to be changed.

**SHOBJ\_CFLAGS** Flags to pass to the C compiler (\$SHOBJ\_CC) to create position-independent code. If you are using gcc, this should probably be set to '-fpic'.

**SHOBJ\_LD** The link editor to be used to create the shared library from the object files created by **\$SHOBJ\_CC**. If you are using gcc, a value of 'gcc' will probably work.

**SHOBJ\_LDFLAGS** Flags to pass to **SHOBJ\_LD** to enable shared object creation. If you are using gcc, '-shared' may be all that is necessary. These should be the flags needed for generic shared object creation.

**SHLIB\_XLDFLAGS** Additional flags to pass to **SHOBJ\_LD** for shared library creation. Many systems use the -R option to the link editor to embed a path within the library for run-time library searches. A reasonable value for such systems would be '-R\$(libdir)'.

**SHLIB\_LIBS** Any additional libraries that shared libraries should be linked against when they are created.

**SHLIB\_LIBPREF** The prefix to use when generating the filename of the shared library. The default is 'lib'; Cygwin uses 'cyg'.

**SHLIB\_LIBSUFF** The suffix to add to 'libreadline' and 'libhistory' when generating the filename of the shared library. Many systems use 'so'; HP-UX uses 'sl'.

**SHLIB\_LIBVERSION** The string to append to the filename to indicate the version of the shared library. It should begin with **\$(SHLIB\_LIBSUFF)**, and possibly include version information that allows the run-time loader to load the version of the shared library appropriate for a particular program. Systems using shared libraries similar to SunOS 4.x use major and minor library version numbers; for those systems a value of '**\$(SHLIB\_LIBSUFF).\$(SHLIB\_MAJOR)\$(SHLIB\_MINOR)**' is appropriate. Systems based on System V Release 4 don't use minor version numbers; use '**\$(SHLIB\_LIBSUFF).\$(SHLIB\_MAJOR)**' on those systems. Other Unix versions use different schemes.

**SHLIB\_DLLVERSION** The version number for shared libraries that determines API compatibility between readline versions and the underlying system. Used only on Cygwin. Defaults to **\$SHLIB\_MAJOR**, but can be overridden at configuration time by defining **DLLVERSION** in the environment.

SHLIB\_DOT The character used to separate the name of the shared library from the suffix and version information. The default is '.'; systems like Cygwin which don't separate version information from the library name should set this to the empty string.

SHLIB\_STATUS Set this to 'supported' when you have defined the other necessary variables. Make uses this to determine whether or not shared library creation should be attempted.

You should look at the existing stanzas in support/shobj-conf for ideas.

Once you have updated support/shobj-conf, re-run configure and type 'make shared'. The shared libraries will be created in the shlib subdirectory.

If shared libraries are created, 'make install' will install them. You may install only the shared libraries by running 'make install-shared' from the top-level build directory. Running 'make install' in the shlib subdirectory will also work. If you don't want to install any created shared libraries, run 'make install-static'.

#### Documentation =====

The documentation for the Readline and History libraries appears in the 'doc' subdirectory. There are three texinfo files and a Unix-style manual page describing the facilities available in the Readline library. The texinfo files include both user and programmer's manuals. HTML versions of the manuals appear in the 'doc' subdirectory as well.

#### Reporting Bugs =====

Bug reports for Readline should be sent to:

bug-readline@gnu.org

When reporting a bug, please include the following information:

- \* the version number and release status of Readline (e.g., 4.2-release)
- \* the machine and OS that it is running on
- \* a list of the compilation flags or the contents of 'config.h', if appropriate

- \* a description of the bug
- \* a recipe for recreating the bug reliably
- \* a fix for the bug if you have one!

If you would like to contact the Readline maintainer directly, send mail to `bash-maintainers@gnu.org`.

Since Readline is developed along with bash, the `bug-bash@gnu.org` mailing list (mirrored to the Usenet newsgroup `gnu.bash.bug`) often contains Readline bug reports and fixes.

Chet Ramey  
`chet.ramey@case.edu`

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<http://rpm.org/wiki/Communicate> lists all rpm releated mailing lists.

RPM was originally written by:

Erik Troan <[ewt@redhat.com](mailto:ewt@redhat.com)>

Marc Ewing <[marc@redhat.com](mailto:marc@redhat.com)>

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```
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```
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under certain conditions; type 'show c' for details.
```

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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.

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

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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>
```

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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:

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

That's all there is to it!

### **3.198 rsyslog-8.24.0-34**

see README.md -- this file here is just required for autotools

### **3.199 rsyslog-8.24.0-34**

see README.md -- this file here is just required for autotools

### 3.199.1 Copying

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Version 3, 29 June 2007

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- 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.
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This is the GNU implementation of sed, the Unix stream editor.

See the NEWS file for a brief summary and the ChangeLog for more detailed descriptions of changes.

See the file INSTALL for generic compilation and installation instructions.

See the file BUGS for instructions about reporting bugs.

The file README.boot gives instructions for making a "bootstrap" version of sed on systems which lack any pre-existing and working version of sed.

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## 3.201 selinux-policy-3.13.1-229

1) Reference Policy make targets:

General Make targets:

`install-src` Install the policy sources into `/etc/selinux/NAME/src/policy`, where `NAME` is defined in the Makefile. If not defined, the `TYPE`, as defined in the Makefile, is used. The default `NAME` is `refpolicy`. A pre-existing source policy will be moved to `/etc/selinux/NAME/src/policy.bak`.

`conf` Regenerate `policy.xml`, and update/create `modules.conf` and `booleans.conf`. This should be done after adding or removing modules, or after running the bare target. If the configuration files exist, their settings will be preserved. This must be ran on policy sources that are checked out from the CVS repository before they can be used.

`clean` Delete all temporary files, compiled policies, and `file_contexts`. Configuration files are left intact.

`bare` Do the clean make target and also delete configuration files, web page documentation, and `policy.xml`.

`html` Regenerate `policy.xml` and create web page documentation in the `doc/html` directory.

Make targets specific to modular (loadable modules) policies:

`base` Compile and package the base module. This is the default target for modular policies.

`modules` Compile and package all Reference Policy modules configured to be built as loadable modules.

`MODULENAME.pp` Compile and package the `MODULENAME` Reference Policy module.

`all` Compile and package the base module and all Reference Policy modules configured to be built as loadable modules.

install Compile, package, and install the base module and Reference Policy modules configured to be built as loadable modules.

load Compile, package, and install the base module and Reference Policy modules configured to be built as loadable modules, then insert them into the module store.

validate Validate if the configured modules can successfully link and expand.

install-headers Install the policy headers into /usr/share/selinux/NAME. The headers are sufficient for building a policy module locally, without requiring the complete Reference Policy sources. The build.conf settings for this policy configuration should be set before using this target.

Make targets specific to monolithic policies:

policy Compile a policy locally for development and testing. This is the default target for monolithic policies.

install Compile and install the policy and file contexts.

load Compile and install the policy and file contexts, then load the policy.

enableaudit Remove all dontaudit rules from policy.conf.

relabel Relabel the filesystem.

checklabels Check the labels on the filesystem, and report when a file would be relabeled, but do not change its label.

restorelabels Relabel the filesystem and report each file that is relabeled.

## 2) Reference Policy Build Options (build.conf)

TYPE String. Available options are standard, mls, and mcs.

For a type enforcement only system, set standard. This optionally enables multi-level security (MLS) or multi-category security (MCS) features. This option controls enable\_mls, and enable\_mcs policy blocks.

NAME String (optional). Sets the name of the policy; the NAME is used when installing files to e.g., /etc/selinux/NAME and /usr/share/selinux/NAME. If not set, the policy type (TYPE) is used.

DISTRO String (optional). Enable distribution-specific policy. Available options are redhat, rhel4, gentoo, debian, and suse. This option controls distro\_redhat, distro\_rhel4, distro\_gentoo, distro\_debian, and distro\_suse policy blocks.

MONOLITHIC Boolean. If set, a monolithic policy is built, otherwise a modular policy is built.

DIRECT\_INITRC Boolean. If set, sysadm will be allowed to directly run init scripts, instead of requiring the run\_init tool. This is a build option instead of a tunable since role transitions do not work in conditional policy. This option controls direct\_sysadm\_daemon policy blocks.

OUTPUT\_POLICY Integer. Set the version of the policy created when building a monolithic policy. This option has no effect on modular policy.

UNK\_PERMS String. Set the kernel behavior for handling of permissions defined in the kernel but missing from the policy. The permissions can either be allowed, denied, or the policy loading can be rejected.

UBAC Boolean. If set, the SELinux user will be used additionally for approximate role separation.

MLS\_SENS Integer. Set the number of sensitivities in the MLS policy. Ignored on standard and MCS policies.

MLS\_CATS Integer. Set the number of categories in the MLS policy. Ignored on standard and MCS policies.



MCS\_CATS Integer. Set the number of categories in the MCS policy. Ignored on standard and MLS policies.

QUIET Boolean. If set, the build system will only display status messages and error messages. This option has no effect on policy.

### 3) Reference Policy Files and Directories

All directories relative to the root of the Reference Policy sources directory.

Makefile General rules for building the policy.

Rules.modular Makefile rules specific to building loadable module policies.

Rules.monolithic Makefile rules specific to building monolithic policies.

build.conf Options which influence the building of the policy, such as the policy type and distribution.

config/appconfig-\* Application configuration files for all configurations of the Reference Policy (targeted/strict with or without MLS or MCS). These are used by SELinux-aware programs.

config/local.users The file read by load policy for adding SELinux users to the policy on the fly.

doc/html/\* This contains the contents of the in-policy XML documentation, presented in web page form.

doc/policy.dtd The doc/policy.xml file is validated against this DTD.

doc/policy.xml This file is generated/updated by the conf and html make targets. It contains the complete XML documentation included in the policy.

doc/templates/\* Templates used for documentation web pages.

policy/booleans.conf This file is generated/updated by the conf make target. It contains the booleans in the policy, and their default values. If tunables are implemented as booleans, tunables will also be included. This file will be installed as the /etc/selinux/NAME/booleans

file.

`policy/constraints` This file defines additional constraints on permissions in the form of boolean expressions that must be satisfied in order for specified permissions to be granted. These constraints are used to further refine the type enforcement rules and the role allow rules. Typically, these constraints are used to restrict changes in user identity or role to certain domains.

`policy/global_booleans` This file defines all booleans that have a global scope, their default value, and documentation.

`policy/global_tunables` This file defines all tunables that have a global scope, their default value, and documentation.

`policy/flask/initial_sids` This file has declarations for each initial SID.

`policy/flask/security_classes` This file has declarations for each security class.

`policy/flask/access_vectors` This file defines the access vectors. Common prefixes for access vectors may be defined at the beginning of the file. After the common prefixes are defined, an access vector may be defined for each security class.

`policy/mcs` The multi-category security (MCS) configuration.

`policy/mls` The multi-level security (MLS) configuration.

`policy/modules/*` Each directory represents a layer in Reference Policy all of the modules are contained in one of these layers.

`policy/modules.conf` This file contains a listing of available modules, and how they will be used when building Reference Policy. To prevent a module from being used, set the module to "off". For monolithic policies, modules set to "base" and "module" will be included in the policy. For modular policies, modules set to "base" will be included in the base module; those set to "module" will be compiled as individual loadable modules.

`policy/support/*` Support macros.

policy/users This file defines the users included in the policy.

support/\* Tools used in the build process.

#### 4) Building policy modules using Reference Policy headers:

The system must first have the Reference Policy headers installed, typically by the distribution. Otherwise, the headers can be installed using the `install-headers` target from the full Reference Policy sources.

To set up a directory to build a local module, one must simply place a `.te` file in a directory. A sample Makefile to use in the directory is the `Makefile.example` in the `doc` directory. This may be installed in `/usr/share/doc`, under the directory for the distribution's policy. Alternatively, the primary Makefile in the headers directory (typically `/usr/share/selinux/NAME/Makefile`) can be called directly, using `make's -f` option.

Larger projects can set up a structure of layers, just as in Reference Policy, by creating `policy/modules/LAYERNAME` directories. Each layer also must have a `metadata.xml` file which is an XML file with a `summary` tag and optional `desc` (long description) tag. This should describe the purpose of the layer.

Metadata.xml example:

```
<summary>ABC modules for the XYZ components.</summary>
```

Make targets for modules built from headers:

`MODULENAME.pp` Compile and package the `MODULENAME` local module.

`all` Compile and package the modules in the current directory.

`load` Compile and package the modules in the current directory, then insert them into the module store.

`refresh` Attempts to reinsert all modules that are currently in the module store from the local and system module packages.

`xml` Build a `policy.xml` from the XML included with the

base policy headers and any XML in the modules in the current directory.

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## 3.202 setools-3.3.8-4

SETools - Policy analysis tools for SELinux (C) 2001-2014  
Tresys Technology  
setools@tresys.com, <http://oss.tresys.com/projects/setools>

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### 1. Overview

-----

This file describes SETools, developed by Tresys Technology. SETools is a collection of graphical tools, command-line tools, and libraries designed to facilitate SELinux policy analysis. Although SETools is primarily targeted for Red Hat-based systems, it should also work for Gentoo and Debian distributions. See the file KNOWN-BUGS for testing information.

SETools includes the following graphical tools, command-line tools, and libraries:

apol	policy analysis tool
libapol	policy analysis library
libpoldiff	semantic policy difference library
libqpol	library that abstracts policy internals

libseaudit	parse and filter SELinux audit messages in log files
libsefs	open and search SELinux file contexts
seaudit	audit log analysis tools: seaudit and seaudit-report
sechecker	SELinux policy checking tool
secmds	command line tools: seinfo, sesearch, findcon, replcon, and indexcon
sediff	semantic policy difference tools: sediff and sediffx

Each of these components is in a subdirectory under the top-level source directory, along with supporting pieces in the following directories:

man	manual pages for SETools commands
packages	miscellaneous support for external packages

In addition the top-level source directory contains various pieces of documentation. Please consult the file KNOWN-BUGS in this directory prior to filing any bug reports.

## 2. Installation

-----

SETools uses the GNU build system to configure, compile, and install. As such it contains a configure script that will verify its dependencies. SETools requires the following development packages for compilation:

- flex
- bison
- pkg-config 0.23 or greater
- libselinux 2.0.87 or greater
- libsepol 2.0.38 or greater
- libsepol-static 2.0.38 or greater
- libxml2
- sqlite 3.6.20 or greater

These packages are needed to build SETools's graphical tools:

- swig 1.3.28 or greater
- bwidget 1.8 or later
- tcl-devel 8.4.9 or greater
- tk-devel 8.4.9 or greater
- glib2-devel
- gtk2-devel 2.8 or greater
- libglade2-devel

To build additional SETools SWIG wrappers, these packages are required:

- Java JDK 1.2 or greater
- python-devel 2.3 or greater

Apol requires BWidget 1.7 or greater to run. The BWidget toolkit is part of the tcllib package and is often not present in Linux distributions; the toolkit may be freely downloaded at <http://tcllib.sourceforge.net>. The supplied configure script attempts to detect the version of BWidget installed. If it is not found then SETools will use the prepackaged one found within the 'packages' subdirectory. In some situations the toolkit will not be automatically found; if you are sure that BWidget is present then specify `--disable-bwidget-check` to the configure script.

## 2.1. compiling from official distribution

-----

The official, stable source distribution is available from <http://oss.tresys.com/projects/setools/>. Untar and uncompress the distribution, and perform the following.

```
$ cd setools-3.3.7
$./configure
$ make
$ make install
```

This will put the binaries in `/usr/local/bin`, data files in `/usr/local/share/setool-3.3`, and libraries in `/usr/local/lib`. Assuming that `/usr/local/bin` is in your `$PATH` and `/usr/local/lib` in `$LD_LIBRARY_PATH` everything should now work.

## 2.2. compiling from git clone

-----

If you prefer the bleeding edge of SETools development, you could instead obtain the development version of SETools from the git repository (see Section 4).

```
$ cd setools
$ autoreconf -i -s
```

```
$./configure
$ make
$ make install
```

You will need a recent version of autoconf to create the configure script. SETools was written using autoconf-2.60, although autoconf-2.59 also seems to work correctly albeit with a build warning.

As SETools uses the GNU build system, other make targets are available. 'make install-strip' will strip unneeded symbols from installed binaries. 'make uninstall' removes files written by an earlier install.

### 2.3. configure flags

-----

You can customize your SETools build using the flags given to 'configure'. Notable options include:

**--enable-debug**

All code will be compiled using static libraries and the gcc flags '-g3 -gdwarf-2 -O0'. This flag is useful for tracking down issues.

**--disable-gui**

Build only the command-line tools: seinfo, sesearch, findcon, indexcon, replcon, sechecker, and sediff.

**--disable-bwidget-check**

Assume that BWidget 1.8 is installed on the system. The configure script normally tries to launch a Tcl script that loads BWidget, which requires a running X session. You will need this flag if compiling in a non-X environment.

**--disable-selinux-check**

Disable the build-time check for SELinux. In rare circumstances the build computer will not have SELinux running, resulting in 'configure' producing a warning and disable parts of SETools. By specifying this flag, 'configure' will not disable parts of SETools.

**--enable-swig-java**



Build SWIG interfaces for Java. This permits third-party developers who prefer Java to use the SETools libraries for their own projects.

`--enable-swig-python`

Build SWIG interfaces for Python. This permits third-party developers who prefer Python to use the SETools libraries for their own projects.

`--enable-swig-tcl`

Build SWIG interfaces for Tcl. This is needed for the apol tool. By default this flag is enabled.

`--enable-sepol-src=PATH`

Look for libsepol source files in PATH. Use this flag when compiling against a development version of SELinux (see Section 2.4). Note that if `--enable-sepol-src` and `--with-sepol-devel` are both specified then this flag takes precedence.

`--with-tcl=PATH`

Look for Tcl development files in PATH. Debian users will need to specify this flag, as Tcl 8.4 is typically located at `/usr/lib/tcl8.4`.

`--with-tk=PATH`

Look for Tk development files in PATH. Debian users will need to specify this flag, as Tk 8.4 is typically located at `/usr/lib/tk8.4`.

`--with-sepol-devel=PATH`

Look for libsepol header files in PATH/include and library in PATH/lib64 and PATH/lib. Note that if `--enable-sepol-src` and `--with-sepol-devel` are both specified then `--enable-sepol-src` takes precedence.

`--with-selinux-devel=PATH`

Look for libselinux header files in PATH/include and library in PATH/lib64 and PATH/lib.

`--with-default-policy=PATH`

Explicitly use PATH as the default SELinux policy source file, instead of inferring its location based upon the return value of `selinux_policy_root()`.

`--with-test-policies=PATH`

Use the policies in PATH as input to the SETools tests; these tests are invoked upon 'make check'.

Of course, 'configure' accepts other usual flags such as `--prefix`.

## 2.4. Using a development version of SELinux

-----

As SELinux is a rapidly evolving project, you may wish to use a version of libsepol.so that is newer than the one installed to /usr/lib. To support different versions of libsepol, SETools can be configured to compile against a specific version of libsepol using the `--enable-sepol-src` flag. For example, suppose you have a SELinux SVN checkout and compilation like the following:

```
$ cd /home/gburdell
$ svn co https://svn.sourceforge.net/svnroot/selinux/trunk selinux
$ cd selinux/libsepol
$ make
```

You can compile SETools against this particular copy of libsepol:

```
$ cd /home/gburdell/setools
$./configure --enable-sepol-src=/home/gburdell/selinux/libsepol
```

Note that `--enable-sepol-src` will override the flag `--with-sepol-devel`.

## 2.5. Logwatch support

-----

Integrating SETools with Logwatch can provide an effective IDS solution by automating customized audit reports and having them emailed to a specific recipient(s) for further analysis. You can integrate SETools into Logwatch using the `seaudit-report` plugin by specifying the 'make install-logwatch' target. This target installs the configuration necessary for having `seaudit-report` run as a Logwatch service. The configuration files are part of the SETools source distribution, located in the `seaudit` subdirectory, and include:

seaudit-report-group.conf:  
logfile group configuration file

seaudit-report-service.conf:  
service filter config file

seaudit-report-service:  
service filter script

Make sure the Logwatch program is installed before proceeding with using this install target.

## 2.6. doxygen support

-----

All externally exported library functions include doxygen-style tags in the documentation. To produce your own HTML outputs when writing third-party tools, use the doxygen configuration file located in packages/Doxyfile; it directs generated output to /tmp/setools. From the top-level source directory do:

```
$ doxygen packages/Doxyfile
```

## 3. Features

-----

SETools encompasses a number of tools, both graphical and command line, and libraries. Many of the programs have help files accessible during runtime.

### 3.1. graphical tools

-----

The main emphasis of SETools is the graphical analysis tools.

apol:  
A Tcl/Tk graphical analysis tool. Use it to open a SELinux policy, examine the policy's components and rules, and perform various types of analyses.

seaudit:

A GTK+ graphical audit log analysis tool for SELinux. This tool allows users to sort and filter the system's audit log, query the policy based on audit messages, and export audit log messages to a file. The tool can also create reports in HTML or plaintext format using an entire audit log or an seaudit view. Note that this program is installed in  $\$(PREFIX)/sbin$  because its main function is to analyze `/var/log/audit/audit.log`.

**sediffx:**

A GTK+ graphical tool to semantically compare two policies. Use `sediffx` to open two SELinux policies, find differences between them, and then show those results.

### 3.2. command-line tools

-----

Some tools in the SETools suite may be run in a non-windowing environment. The first six tools listed below are located in the `secmds` subdirectory; the rest are in their own directories.

**seinfo:**

A tool to quickly get a list of components from a SELinux policy.

**sesearch:**

A tool to search rules (allow, type\_transition, etc.) and constraints within a SELinux policy.

**findcon:**

A tool to search files with a matching SELinux file context. The tool can search a filesystem directly, a `file_contexts` file, or a database as created by `indexcon`.

**replcon:**

A tool to search the filesystem, replacing a matched file's context with a different one.

**indexcon:**

A tool to create a database that indexes the security contexts of a SELinux filesystem.

**sechecker:**

A tool for performing modular checks on an SELinux policy.

Sechecker supports configuration profiles to specify multiple modules and generates a report of potential issues within a policy.

**seaudit-report:**

A tool for generating reports on SELinux audit messages in plaintext or HTML format. Reports generated by this tool can be configured to include standard report sections such as policy load messages, enforcement toggles messages, policy boolean messages, etc. A key feature of the tool is that reports can be further customized through the use of saved seaudit view files. The tool can effectively be used as a plugin to other audit log analysis tools, such as the Logwatch daemon.

**sediff:**

A tool to load two SELinux policies, find differences between them, and then show those results. The tool provides a command-line interface to libpoldiff.

### 3.3. analysis libraries

-----

The SETools support libraries (libapol, libpoldiff, libqpol, libseaudit, and libsefs) are available for use in third-party applications. Although they are not officially supported (and thus subject to change between SETools releases), we will do our best to maintain compatibility beginning with SETools version 3.0.

**libqpol:**

Abstract the internals of an SELinux policy behind a consistent interface, such that changes to the policy representation (as governed by libsepol) do not affect analysis tools.

**libapol:**

Work with libqpol to perform higher-order analyses of a policy. A typical sequence for an analysis tool is:

- open a policy via apol\_policy\_open()
- execute some query via apol/policy-query.h
- obtain detailed results via qpol/policy\_query.h
- close the policy via apol\_policy\_destroy()

libseaudit:

Parse and store SELinux audit messages. Its chief users are seaudit and seaudit-report.

libpoldiff:

Accept two SELinux policies and finds differences between them. Its main users are sediff and sediffx.

libsefs:

Create a representation of file contexts, by reading contexts directly from a filesystem, from a file\_contexts file, or from a specially formatted database. Queries can then be created and executed against those file contexts

These libraries have SWIG wrappers that are built if --enable-swig-java, --enable-swig-python, and/or --enable-swig-tcl are given during configuration time. The generated Java wrappers will be in placed \$PREFIX/lib; symlinks to jar files will be in \$PREFIX/share/java. Python wrappers will be installed to Python's site-packages directory. Tcl wrappers are built as Tcl packages (e.g., 'package require apol') and placed in \$PREFIX/lib/setools.

#### 4. Obtaining SETools

-----

Official releases of SETools may be freely downloaded from Tresys's Open Source Software website, <http://oss.tresys.com/projects/setools>.

Tresys builds RPM packages of SETools. They may also be obtained from the website listed above.

SETools source code is maintained within a git repository.  
From the command line do:

```
$ git clone https://github.com/TresysTechnology/setools3.git
```

You may also browse the git repository at  
<https://github.com/TresysTechnology/setools3>

Other binary releases SETools are available for your favorite Linux packaging system from third-party sources. Gentoo users have an ebuild script for SETools. Debian maintains the dpkg "setools" in section admin, priority optional.

## 5. Reporting bugs

---

If you found a bug, have a suggestion, or otherwise would like to comment upon SETools, please email [setools-bugs@tresys.com](mailto:setools-bugs@tresys.com). We will respond to you as soon as possible.

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```
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This is free software, and you are welcome to redistribute it
under certain conditions; type 'show c' for details.
```

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```
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```

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

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### **3.203 setup-2.8.71-10**

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## 3.204 sg3-utils-1.37-17

README for sg3\_utils

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### Introduction

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This package contains low level utilities for devices that use the SCSI command set. Originally the SCSI command set was associated exclusively with the SCSI Parallel Interface (SPI) transport. SPI has now almost been completely replaced by the Serial Attached SCSI (SAS) transport which also accepts the SCSI command set. Additionally many other storage related transports use the SCSI command set (amongst others); examples are ATAPI devices (CD/DVDs and tapes), USB mass storage devices (including those using the newer UAS[P]), Fibre Channel disks, IEEE 1394 storage devices (SBP protocol), iSCSI, FCoE and SLP devices.

This package originally targeted the Linux SCSI subsystem. Since most operating systems contain a SCSI command pass-through mechanism, many utilities within this package have been ported. This README mainly concentrates on Linux: see the README.freebsd file for the FreeBSD port, README.solaris for the Solaris port, the README.tru64 file for the Tru64 (OSF) port and README.win32 for the Windows ports (of which there are two variants).

Most utilities within the sg3\_utils package work at the SCSI command level. For example the sg\_inq utility issues a SCSI INQUIRY command and decodes the response. The COVERAGE file has a table containing a row for each SCSI command issued by this package; to the right of each row is the utility (sometimes more than one) that issue that SCSI command. The COVERAGE file has a second table for ATA commands usage.

Some utilities interface at a slightly higher level, for example: sg\_dd, sgm\_dd and sgp\_dd. These are closely related to the Unix dd command and typically issue a sequence of SCSI READ and WRITE commands to copy data. These utilities are relatively tightly bound to Linux and are not ported to other Operating Systems. A new utility called ddpt (in a package of the same name) is more generic while still allowing a copy to be done in terms of SCSI READ and WRITE commands. ddpt has been ported to other OSes.

### Description

=====

A web site supporting the sg3\_utils package can be found at [http://sg.danny.cz/sg/sg3\\_utils.html](http://sg.danny.cz/sg/sg3_utils.html) . That page has a table of released versions for download. The most recent release or beta of sg3\_utils may

be found on this page: <http://sg.danny.cz/sg> in the News section.

The predecessor to this package was called `sg_utils`. It is described in [http://sg.danny.cz/sg/uu\\_index.html](http://sg.danny.cz/sg/uu_index.html) and old versions can be downloaded from the Downloads section of <http://sg.danny.cz/sg> .

In the Linux 2.4 kernel series these utilities need to use the SCSI generic (`sg`) driver to access SCSI devices. The name of this package (i.e. `sg3_utils`) refers to version 3 of the SCSI generic (`sg`) driver which was introduced at the beginning of the 2.4 Linux kernel series. Significantly this added a new SCSI command interface structure (i.e. `struct sg_io_hdr`) that is more flexible than the older "`sg_header`" structure found in the `sg` driver in the 2.2 and earlier Linux kernel series. The `sg_io_hdr` structure is also more flexible than the awkward (and limiting) interface to the `SCSI_IOCTL_SEND_COMMAND` ioctl supported by the Linux SCSI mid level. The version 3 `sg` driver also added the `SG_IO` ioctl that is synchronous (i.e. it issues the requested SCSI command and waits for the response (or a timeout) before the ioctl returns to the user space program that invoked it). The `SG_IO` ioctl is now supported in other parts of the Linux kernel in the 2.6 series.

In `sg3_utils` version 1.27 support has been added for the Linux `bsg` driver which use the `sg` version 4 interface. There seems no point in renaming this package `sg4_utils`. The existing utilities just silently support either. Currently the source build must be able to see the `/usr/include/linux/bsg.h` file. Then at run time the `/proc/devices` pseudo file needs to have an entry for the `bsg` driver (appeared around lk 2.6.28). With this in place each utility at run time checks the device it has been given and if it is a char device whose major number matches the `bsg` entry in `/proc/devices` then the `sg v4` interface is used. Otherwise the `sg v3` interface is used.

Utilities that wish to use the asynchronous SCSI command interface (i.e. via a `write()` `read()` sequence) or issue special "commands" (e.g. bus and device resets) still need to use the Linux `sg` driver. Note that various drivers (e.g. `cdrom/sr`) have different `open()` flag and permissions policies that the user may need to take into account.

If users have problems or questions about them please contact the author. Documentation for the Linux `sg` device driver can be found at: [http://sg.danny.cz/sg/p/sg\\_v3\\_ho.html](http://sg.danny.cz/sg/p/sg_v3_ho.html) . This is written in DocBook and the original xml can be found in the same directory with the ".xml" extension. Postscript and pdf renderings are also in that directory. Older documentation for the `sg` version 3 driver can be found at: [http://sg.danny.cz/sg/p/scsi\\_generic\\_v3.txt](http://sg.danny.cz/sg/p/scsi_generic_v3.txt) .

All utilities are either "GPL"-ed or have a FreeBSD license. The author's intention is that users may incorporate all or part of the code in their work as they please. Attribution is encouraged. Please check the code as other contributors (apart from the author) may also have copyright notices. For a list of contributors see the CREDITS file.

To save the repetition of common code (e.g. SCSI error processing) and reduce the size of the executable files, a shared library called libsgutils<num>.so (its Linux name) is created during the build process. That library is built from the contents of the include and lib subdirectories. The header files in the include subdirectory can be seen as the API of libsgutils and are commented with that in mind. The SCSI pass-through code for the supported operating systems is found in the lib subdirectory with names like sg\_pt\_linux.c and sg\_pt\_win32.c .

Various distributions (of Linux mainly) distribute sg3\_utils as 3 installable packages. One is a package containing the shared library discussed above (e.g. libsgutils2-2\_1.33-0.1\_i386.deb). A second package contains the utilities (e.g. sg3-utils\_1.33-0.1\_i386.deb) and depends on the first package). Finally there is an optional package that contains header files and a static library (e.g. libsgutils2-dev\_1.33-0.1\_i386.deb). This final package is only needed to build other packages (e.g. sdparm) that wish to use the sg3\_utils shared library.

All the utilities in the src subdirectory have "man" pages that are placed in the doc subdirectory. There is also a sg3\_utils (8) man page that summarizes common facilities including exit statuses. Additional information (including each utility's version number) can be found towards the top of each ".c" file corresponding to the utility name.

The sg driver in Linux can be seen as having 3 distinct versions:

v1	lk < 2.2.6	sg_header based relatively unchanged since 1992
v2	lk >= 2.2.6	enhanced sg_header interface structure [1999/4/16]
v3	lk >= 2.4	additional sg_io_hdr interface structure [2001/1/4]
v3	lk >= 2.6	same interface as found in lk 2.4 [2.6.0: 2003/12/18]

and the bsg driver supports the sg v4 interface and was added around lk 2.6.28 . This package is targeted at "v3" and "v4". Another package called "sg\_utils" is targeted at "v2" and to a lesser extent "v1". The "sg\_utils" package has a subset of the utilities found in this package.

In Linux some sg driver ioctls (notably SG\_IO) are defined for many block

devices in lk 2.6 series. In practice this means all SCSI block devices, ATAPI block devices (mainly CD, DVD and BD optical devices) but not ATA disks, depending on which kernel configuration options, can be accessed by the utilities in this package. SATA disks that use the libata kernel library (or some other SCSI to ATA Translation (SAT) Layer (SATL)) accept SCSI commands and thus are supported. Support for the SG\_IO as been added to the scsi tape driver (st) in lk 2.6.6 .

In the src directory the bulk of the utilities are written in relatively clean POSIX compliant C code with Linux specific system calls and structures removed and placed in Linux specific files in the lib directory. A small number of utilities in the src directory do contain Linux specific logic and are not ported to other OSes (e.g. sg\_dd). One utility, sg\_scan, has two separate implementations, one for Linux (sg\_scan.c.linux) and one for Windows (sg\_scan.c.win32). The src-lib directory split approach allows FreeBSD, Solaris, Tru64 and Windows specific code to be isolated to a few files in the lib directory whose interfaces match those of the Linux specific code.

Darwin is not supported because the Apple folks do not want to give their users a pass-through SCSI interface. The author has read about creative hackers using a VM containing a real OS to circumvent the Apple restriction.

C standard is C99

=====

The C code in this package is written for portability rather than speed. It assumes a level of C99 compliance and favours POSIX system and library calls over OS specific calls.

The C code is written in a C++ friendly way and is checked from time to time that it compiles clean with C++. To accomodate C++ certain C99 constructs such as designated initializers cannot be used.

Building

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This package is designed to be built with the usual:

"./configure ; make ; make install"

sequence. In some situations that may need to be prefixed by a call to the "./autogen.sh" script which invokes autoconf and automake. That in turn may require packages containing those utilities to be installed. The libtool utility is also required. Naturally a C compiler is required and due to the vagaries of libtool a C++ compiler also.

The "./configure" takes many command line options with the defaults

being usually sufficient to start with. One quirk is that the location of the installation is under the /usr/local directory. So the sg\_inq utility will be installed at /usr/local/bin/sg\_inq . This is controlled by the "--prefix=<directory>" option which defaults to "--prefix=/usr/local". As an example to install the executables in /usr/bin and disable the creation of the shared library (libsgutils<num>.so) this invocation could be used: "./configure --prefix=/usr --disable-shared". To reduce the size of an executable as well try this: "./configure --prefix=/usr --disable-shared --disable-scsistrings".

In Linux there are package build files for "rpm" based and for "deb" based systems. The 'sg3\_utils.spec' file in the main directory can be used like this: 'rpmbuild -ba sg3\_utils.spec' in a rpmbuild tree SPECS directory. To cross build or make a more widely distributable package then the --target option may be useful: 'rpmbuild --target=i386 -ba sg3\_utils.spec' or 'rpmbuild --target=x86\_64 -ba sg3\_utils.spec' .

The 'build\_debian.sh' script should build several "deb" packages and place them in the parent directory. In debian based systems doing a 'apt-get install build-essential' is one way to get most of build environment needed if it has not already been loaded. There are now some problems with this script and the superseded Debian 4.0 ("etch"). See debian/README.debian4 for a workaround. Amongst other things debian builds are sensitive to the value in the debian/compat file. If it contains "7" then it works on lenny and gives warning on squeeze (but fails on the earlier etch).

Warning  
=====

Many devices use SCSI command sets over transport protocols not normally associated with SCSI (as defined at <http://www.t10.org> ). Some of these devices react poorly (e.g. lock up) when sent SCSI commands that they don't support. Even sending a supported SCSI command with a field set to an unexpected value can cause problems. [The author is talking about billions of USB devices with horrible SCSI implementations.]

For example, all "SCSI" devices must support the INQUIRY command which the SCSI-2 standard says should request a 36 byte response. However later SCSI standards (e.g. SPC-2) have increased that length but some SCSI devices lock up when they receive a request for anything other than a 36 byte response.

Any well implemented "SCSI" device should react sensibly when a utility in sg3\_utils sends a SCSI command that it doesn't support. Unfortunately this cannot be guaranteed.

Prior to lk 2.6.29 USB mass storage limited sense data to 18 bytes which caused problems for certain types of descriptor based sense data. An example of this is the SCSI ATA PASS-THROUGH command with the CK\_COND bit set.

## Utilities

=====

Here is list in alphabetical order of utilities found in the 'src' subdirectory of the sg3\_utils package:

```
sginfo, sg_compare_and_write, sg_copy_results, sgm_dd, sgp_dd, sg_dd,
sg_decode_sense, sg_emc_trespass, sg_format, sg_get_config,
sg_get_lba_status, sg_ident, sg_inq, sg_logs, sg_luns, sg_map, sg_map26,
sg_modes, sg_opcodes, sg_persist, sg_prevent, sg_raw, sg_rbuf, sg_rdac,
sg_read, sg_readcap, sg_read_block_limits, sg_read_buffer, sg_read_long,
sg_reassign, sg_referrals, sg_request, sg_reset, sg_rmsn, sg_rtpg,
sg_safte, sg_sanitize, sg_sat_identify, sg_sat_phy_event,
sg_sat_set_features, sg_scan, sg_senddiag, sg_ses, sg_start, sg_stpg,
sg_sync, sg_test_rwbuff, sg_turs, sg_unmap, sg_verify, sg_vpd,
sg_write_buffer, sg_write_long, sg_write_same, sg_wr_mode, sg_xcopy
```

Each of the above utilities depends on header files found in the 'include' subdirectory and library code found in the 'lib' subdirectory. Associated man pages are found in the 'doc' subdirectory. Additional programs found in the 'archive', 'examples' and 'utils' subdirectories in not build by the top level build infrastructure. Linux binary distributions of the sg3\_utils package (e.g. "rpm" and debian packages) typically contain the shared library, the utilities found in the 'src' subdirectory, their associated man pages and some documentation files (e.g. README, INSTALL, CREDITS, COPYING and COVERAGE). See the INSTALL file for generic instructions about building with autotools (e.g. ./configure ).

Man pages can be read (without building and installing the package) by going to the 'doc' subdirectory and executing something like this:

```
$ man ./sg_dd.8
```

To see which SCSI commands (and ATA commands) are used by these utilities refer to the COVERAGE file.

Here is a list in alphabetical order of utilities found in the 'examples' subdirectory:

```
- bsg_queue_tst, sg_excl, scsi_inquiry, sg_iovec_tst, sg_queue_tst,
 sg_sat_chk_power, sg_sat_identify, sg_sat_phy_event,
```

sg\_\_sat\_set\_features, sg\_sat\_smart\_rd\_data, sg\_simple1, sg\_simple2,  
sg\_simple3, sg\_simple4, sg\_simple5, sg\_simple16, sg\_tst\_excl and  
sg\_tst\_excl2

Also in that subdirectory is a script to test sg\_persist, an example data file for sg\_persist (called "transport\_ids.txt") and an example data file for sg\_reassign (called "reassign\_addr.txt"). There are several scripts for 'sg\_senddiag -pf -raw=-' that will put some SAS disk phys into a "compliant jitter tolerance pattern" (CJTPAT).

The 'utils' subdirectory contains source and a Makefile to build "hxascbmp" which accepts binary data from stdin (or a file on the command line) and outputs an ASCII-HEX and ASCII representation of it. It is similar to the Unix od command. There is also code to sg\_chk\_asc.c which checks a given text file (typically a copy of <http://www.t10.org/lists/asc-num.txt> ) and checks it against the asc/ascq text strings held in sg\_lib\_data.c .

The 'doc' subdirectory contains a README file containing the urls of various related documents.

The 'scripts' subdirectory contains some Bourne (bash) shell scripts that rely on utilities in the main directory. One script uses the sdparm utility. These scripts are described in the scripts/README file and have usage messages.

Notes for utilities without man pages

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These utils are found in the 'examples' subdirectory.

The "scsi\_inquiry" program shows the use of the SCSI\_IOCTL\_SEND\_COMMAND ioctl to send a SCSI INQUIRY command. That ioctl() is supported by the SCSI sub system mid level and so is common to all sd, sr, st and sg devices. That ioctl is deprecated in the lk 2.6 series. This program has been placed in the "examples" subdirectory.

"sg\_simple1" and "sg\_simple2" are example programs demonstrating calls to the SCSI INQUIRY and TEST UNIT READY commands. They only differ in their error processing: sg\_simple1 uses sg\_lib.[hc] for error processing while sg\_simple2 does its own more primitive checks.

"sg\_simple3" tests out user space scatter gather added to the version 3 sg driver.

"sg\_simple4" shows the INQUIRY command using mmap-ed IO to obtain its response buffer.

"sg\_simple5" also sends and INQUIRY and TEST UNIT READY commands. It uses the generic pass through mechanism based on sg\_pt.h . It will currently build in Linux and FreeBSD (with "make -f Makefile.freebsd"). It has extensive error checking code.

"sg\_simple16" attempts to send a 16 byte SCSI command, READ\_16, to the scsi device. This is only supported for lk >= 2.4.15 and for adapter drivers that indicate that they have 16 byte CDB capability (otherwise DID\_ABORT will appear in the host\_status).

"sg\_sat\_chk\_power" attempts to push an ATA CHECK POWER MODE command through the SAT-defined ATA PASS\_THROUGH (16) SCSI command. That ATA command needs to read the "FIS" registers after the command is completed which involves using the ATA Status Return (sense data) descriptor (as defined in SAT).

"sg\_sat\_smart\_rd\_data" attempts to push an ATA SMART/READ DATA command through the SAT-defined ATA PASS\_THROUGH (16) SCSI command. If successful, the 256 word (512 byte) response is output.

"sg\_tst\_excl" and "sg\_tst\_excl2" use multiple threads to bombard the given device with O\_EXCL open flags, so only one should succeed at a time. While holding O\_EXCL control a thread attempts a double increment on an integer in the given LBA. If the integer starts even (after the first read) then it should remain even if the O\_EXCL flag is doing its job. The "sg\_tst\_excl" variant uses the Linux SG\_IO v3 interface while the "sg\_tst\_excl2" uses the more generic sg\_pt infrastructure.

"bsg\_queue\_tst" sends an INQUIRY command via the Linux SG\_IO v4 interface which is used by the bsg driver. So it will take device names like "/dev/bsg/6:0:0:0". It tests if sending repeated INQUIRYs with the BSG\_FLAG\_Q\_AT\_HEAD or BSG\_FLAG\_Q\_AT\_TAIL flag makes any difference.

#### Command line processing

=====

These utilities can be divided into 3 groups when their handling of command line arguments is considered:

- ad hoc, typically in a short form only, sometimes longer (e.g. "sg\_logs -pcb /dev/sdc")
- inspired by the dd Unix command (e.g. sg\_dd, sgm\_dd, sgp\_dd, sg\_read)



- recent utilities use "getopt\_long" (see "man getopt\_long") type command lines. These have short form (starting with "-") and corresponding longer form (starting with "--") options.

The older utilities that use ad hoc options, in alphabetical order:

- sg\_emc\_trespass, sginfo(1/2), sg\_inq, sg\_logs, sg\_map, sg\_modes, sg\_opcodes, sg\_rbuf, sg\_rdac, sg\_readcap, sg\_reset, sg\_scan (Linux), sg\_senddiag, sg\_start, sg\_test\_rwbuf, sg\_turs

In sg3\_utils version 1.23 the following utilities from this group were converted to have a dual getopt\_long/ad\_hoc interface, defaulting to the getopt\_long interface:

- sg\_inq, sg\_logs, sg\_modes, sg\_opcodes, sg\_rbuf, sg\_readcap, sg\_senddiag, sg\_start, sg\_turs

These can be switched back to the older (backward compatible) ad hoc interface by defining the SG3\_UTILS\_OLD\_OPTS environment variable or using '-O' as the first command line option.

The more recent utilities that use "getopt\_long" only are:

- sg\_compare\_and\_write, sg\_decode\_sense, sg\_format, sg\_get\_config, sg\_get\_lba\_status, sg\_ident, sg\_luns, sg\_map26, sg\_persist, sg\_prevent, sg\_raw, sg\_read\_block\_limits, sg\_read\_buffer, sg\_read\_long, sg\_reassign, sg\_referrals, sg\_requests, sg\_rmsn, sg\_rtpg, sg\_safte, sg\_sanitize, sg\_sat\_identify, sg\_sat\_phy\_event, sg\_sat\_set\_features, sg\_scan(w), sg\_ses, sg\_stpg, sg\_sync, sg\_test\_rwbuf, sg\_unmap, sg\_verify, sg\_vpd, sg\_write\_buffer, sg\_write\_long, sg\_write\_same, sg\_wr\_mode

Dangerous code

=====

This C code snippet:

```
unsigned char uc = 0x80;
uint64_t ull;
ull = (uc << 24);
```

Somewhat surprisingly sets ull to:

```
ull: 0xffffffff80000000
```

This result is due to the 'unary conversion' of uc to a (32 bit signed) 'int' before the shift. The resultant type from the shift is also an int and it has its top bit set so there is sign extension when it is assigned into a 64 bit unsigned integer. Making sure there is no conversion to 'int' solves the problem. In this case if uc is declared as unsigned int the result will be as expected (i.e. 0x80000000).

Other SCSI and storage tools

=====

See <http://sg.danny.cz/sg/tools.html>

Douglas Gilbert  
14th October 2013

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Upstream Authors: Douglas Gilbert <dgilbert at interlog dot com>,  
Bruce Allen <ballen at gravity dot phys dot uwm dot edu>,  
Peter Allworth <linsol at zeta dot org dot au>,  
James Bottomley <jejb at parisc-linux dot org>,  
Lars Marowsky-Bree <lmb at suse dot de>,  
Kurt Garloff <garloff at suse dot de>,  
Grant Grundler <grundler at parisc-linux dot org>,  
Christophe Varoqui <christophe dot varoqui at free dot fr>,  
Michael Weller <eowmob at exp-math dot uni-essen dot de>,  
Eric Youngdale <eric at andante dot org>

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10th April 2012

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### 3.205 shadow-utils-4.1.5.1-25

Shadow SITES

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Homepage

<http://pkg-shadow.alioth.debian.org/>

FTP site

<ftp://pkg-shadow.alioth.debian.org/pub/pkg-shadow>

SVN repository

anonymous read only access: <svn://svn.debian.org/pkg-shadow/upstream>

SVN web interface

<http://svn.debian.org/wsvn/pkg-shadow/upstream>

or

<http://svn.debian.org/viewsvn/pkg-shadow/upstream>

Mailing lists

for general discuss: [pkg-shadow-devel@lists.alioth.debian.org](mailto:pkg-shadow-devel@lists.alioth.debian.org)

commit list: [pkg-shadow-commits@lists.alioth.debian.org](mailto:pkg-shadow-commits@lists.alioth.debian.org)

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<http://lists.alioth.debian.org/mailman/listinfo/pkg-shadow-commits>

Mailing lists archives:

<http://lists.alioth.debian.org/pipermail/pkg-shadow-devel/>

<http://lists.alioth.debian.org/pipermail/pkg-shadow-commits/>

S/Key support:

Shadow can be built with S/Key support using the S/Key package from:

<http://cvsweb.netbsd.org/bsdweb.cgi/src/lib/libskey/>

or

<http://gentoo.osuosl.org/distfiles/skey-1.1.5.tar.bz2>

Authors and contributors

=====

Thanks to at least the following people for sending patches, bug reports and various comments. This list may be incomplete, I received a lot of mail...

Adam Rudnicki <adam@v-lo.krakow.pl>  
Alan Curry <pacman@tardis.mars.net>  
Alexander O. Yuriev <alex@bach.cis.temple.edu>  
Algis Rudys <arudys@rice.edu>  
Andreas Jaeger <aj@arthur.rhein-neckar.de>  
Aniello Del Sorbo <anidel@edu-gw.dia.unisa.it>  
Anton Gluck <gluc@midway.uchicago.edu>  
Arkadiusz Miskiewicz <misiek@pld.org.pl>  
Ben Collins <bcollins@debian.org>  
Brian R. Gaeke <brg@dgate.org>  
Calle Karlsson <ckn@kash.se>  
Chip Rosenthal <chip@unicom.com>  
Chris Evans <lady0110@sable.ox.ac.uk>  
Cristian Gafton <gafton@sorosis.ro>  
Dan Walsh <dwalsh@redhat.com>  
Darcy Boese <possum@chardonnay.niagara.com>  
Dave Hagewood <admin@arrowweb.com>  
David A. Holland <dholland@hcs.harvard.edu>  
David Frey <David.Frey@lugs.ch>  
Ed Carp <ecarp@netcom.com>  
Floody <flood@evcom.net>  
Frank Denis <j@4u.net>  
George Kraft IV <gk4@us.ibm.com>  
Greg Mortensen <loki@world.std.com>  
Guido van Rooij  
Guy Maor <maor@debian.org>  
Hrvoje Dogan <hdogan@bjesomar.srce.hr>  
Jakub Hrozek <jhrozek@redhat.com>  
Janos Farkas <chexum@bankinf.banki.hu>  
Jay Soffian <jay@lw.net>  
Jesse Thilo <Jesse.Thilo@pobox.com>  
Joey Hess <joe@kite.ml.org>  
John Adelsberger <jja@umr.edu>  
Jonathan Hankins <jhankins@mailserv.homewood.k12.al.us>  
Jon Lewis <jlewis@lewis.org>  
Joshua Cowan <jcowan@hermit.reslife.okstate.edu>  
Judd Bourgeois <shagboy@bluesky.net>  
Juergen Heinzl <unicorn@noris.net>  
Juha Virtanen <jiiivee@iki.fi>  
Julian Pidancet <julian.pidancet@gmail.com>  
Julianne Frances Haugh <jockgrrrl@ix.netcom.com>  
Leonard N. Zubkoff <lnz@dandelion.com>

Luca Berra <bluca@www.polimi.it>  
Lukáš Kuklínek <lkukline@redhat.com>  
Lutz Schwalowsky <schwalow@mineralogie.uni-hamburg.de>  
Marc Ewing <marc@redhat.com>  
Martin Bene <mb@sime.com>  
Martin Mares <mj@gts.cz>  
Michael Meskes <meskes@topsystem.de>  
Michael Talbot-Wilson <mike@calypso.bns.com.au>  
Mike Frysinger <vapier@gentoo.org>  
Mike Pakovic <mpakovic@users.southeast.net>  
Nicolas François <nicolas.francois@centraliens.net>  
Nikos Mavroyanopoulos <nmav@i-net.paiko.gr>  
Pavel Machek <pavel@bug.ucw.cz>  
Peter Vrabec <pvrabec@redhat.com>  
Phillip Street  
Rafał Maszkowski <rzma@icm.edu.pl>  
Rani Chouha <ranibey@smartec.com>  
Sami Kerola <kerolasa@rocketmail.com>  
Scott Garman <scott.a.garman@intel.com>  
Sebastian Rick Rijkers <srriekers@gmail.com>  
Seraphim Mellos <mellos@ceid.upatras.gr>  
Shane Watts <shane@nexus.melkew.edu.au>  
Steve M. Robbins <steve@nyongwa.montreal.qc.ca>  
Thorsten Kukuk <kukuk@suse.de>  
Tim Hockin <thockin@eagle.ais.net>  
Timo Karjalainen <timok@iki.fi>  
Ulysses Alonso Camaro <ulysses@pusa.eleinf.uv.es>  
Werner Fink <werner@suse.de>

#### Maintainers

=====

Tomasz Kłoczko <kloczek@pld.org.pl> (2000-2007)  
Nicolas François <nicolas.francois@centraliens.net> (2007-now)

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### 3.206 shared-mime-info-1.8-4

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- The freedesktop.org shared MIME database spec.
- The merged GNOME and KDE databases, in the new format.
- The update-mime-database command, used to install new MIME data.

To install:

Do the usual:

```
$./configure
$ make
$ make install
```

If you want to install to your home directory, you should instead do:

```
$./configure --prefix=$HOME/.local
$ make
$ make install
```

You'll need to make sure that `$HOME/.local/bin` is in your `PATH`, of course.

See <http://www.freedesktop.org/wiki/Standards/shared-mime-info-spec> for more information.

Please report bugs to the bugzilla, under the shared-mime-info product.

<http://www.freedesktop.org/wiki/GettingInvolved>

Useful reference links:

IANA:

<http://www.iana.org/assignments/media-types/>

KDE's old mime-types:

<http://websvn.kde.org/branches/KDE/3.5/kdelibs/mimetypes/>

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```
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```
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```

```
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### **3.207 slang-2.2.4-11**

New features and upgrade information for version 2 are described in the appendices of `doc/text/slang.txt` and `doc/text/cslang.txt`. If you upgrading from version 1, then you should read these appendices.

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```

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```

```
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Ty Coon, President of Vice
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## 3.208 sqlite3.7.17-8

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6200 Maple Cove Lane  
Charlotte, NC 28269  
USA

A template copyright release is available in PDF or HTML. You can use this release to make future changes.

## 3.209 sudo-1.8.23-3

### The sudo philosophy

=====

Sudo is a program designed to allow a sysadmin to give limited root privileges to users and log root activity. The basic philosophy is to give as few privileges as possible but still allow people to get their work done.

### Where to find sudo

=====

Before you try and build sudo, \*please\* make sure you have the current version. The latest sudo may always be gotten via anonymous ftp from [ftp.sudo.ws](ftp://ftp.sudo.ws) in the directory `/pub/sudo/` or from the sudo web site, <https://www.sudo.ws/>

The distribution is `sudo-M.m.tar.gz` where 'M' is the major version number and 'm' is the minor version number. BETA versions of sudo may also be available. If you join the 'sudo-workers' mailing list you will get the BETA announcements (see the 'Mailing lists' section below).

### What's new

=====

See the NEWS file for a list of major changes in this release. For a complete list of changes, see the ChangeLog file. For a summary of major changes to the current stable release, see the web page, <https://www.sudo.ws/stable.html>.

If you are upgrading from an earlier version of Sudo, please see the UPGRADE file in the doc directory.

For a history of sudo please see the HISTORY file in the doc directory. You can find a list of contributors to sudo in the doc/CONTRIBUTORS file.

### Building the release

=====

Please read the installation guide in the 'INSTALL' file before trying to build sudo. Pay special attention to the "OS dependent notes" section.

### Copyright

=====

Sudo is distributed under an ISC-style license. Please refer to the 'LICENSE' file included with the release for details.

### Mailing lists

=====

sudo-announce This list receives announcements whenever a new version of sudo is released.

<https://www.sudo.ws/mailman/listinfo/sudo-announce>

sudo-users This list is for questions and general discussion about sudo.

<https://www.sudo.ws/mailman/listinfo/sudo-users>

sudo-workers This list is for people working on and porting sudo.

<https://www.sudo.ws/mailman/listinfo/sudo-workers>

sudo-commits This list receives a message for each commit made to the sudo source repository.

<https://www.sudo.ws/mailman/listinfo/sudo-commits>

To subscribe to a list, visit its url (as listed above) and enter your email address to subscribe. Digest versions are available but these are fairly low traffic lists so the digest versions are not a significant win.

Mailing list archives are also available. See the mailing list web sites for the appropriate links.

Web page

=====

There is a sudo web page at <https://www.sudo.ws/> that contains an overview of sudo, documentation, downloads, a bug tracker, information about beta versions and other useful info.

Bug reports

=====

If you have found what you believe to be a bug, you can file a bug report in the sudo bug database, on the web at <https://bugzilla.sudo.ws/>.

Please read over the 'TROUBLESHOOTING' file in the doc directory \*before\* submitting a bug report. When reporting bugs, please be sure to include the version of sudo you are using as well as the platform you are running it on.

## 3.210 sysfsutils-2.1.0-16

Sysfs Utilities Package - Includes Libsysfs(v. 2.1.0)

=====

### Contents

-----

1. Introduction
2. How to Install
  - 2.1 Caveats/Known issues
3. Licenses
4. Reporting Bugs

### 1. Introduction

-----

This package's purpose is to provide a set of utilities for interfacing with sysfs, a virtual filesystem in Linux kernel versions 2.5+ that provides a tree of system devices. While a filesystem is a very useful interface, we've decided to provide a stable programming interface that will hopefully make it easier for applications to query system devices and their attributes.

This package currently includes:

- libsysfs: a library for accessing system devices.
- systool: an application to view system device information by bus, class, and topology.
- A number of example usage routines in the "test" directory.
- A comprehensive testsuite, also shipped as part of the "test" directory. This testsuite can be used to test all the APIs exported by Libsysfs. Please refer the libsysfs.txt file in the "docs" directory for details as to how to use the testsuite.

### 2. How to Install

-----

Run the "configure" script to generate Makefiles. Use "make" to build the library and utilities.

For a successful install, run "make install" as super-user. "make uninstall"



will clean up all installed files.

### 3. Licenses

-----

The commands and tests are licensed under the GNU Public License (GPL) Version2, June 1991. The full text of the GPL is located in this package's "cmd" directory:

sysfsutils/cmd/GPL

The library is licensed under the GNU Lesser Public License (LGPL) Version 2.1, February 1999. The full text of the LGPL is located in this package's "lib" directory:

sysfsutils/lib/LGPL

### 4. Reporting Bugs

-----

Please direct all bugs to either the linux-diag mailing list - linux-diag-devel@lists.sourceforge.net - or to the authors:

Ananth Mavinakayanahalli <ananth@in.ibm.com>  
Daniel Stekloff <dsteklof@us.ibm.com>  
Mohan Kumar <mohan@in.ibm.com>

### **3.210.1 Copying**

The commands and utilities under the "test" directory are licensed under the GNU General Public License (GPL) Version 2, June 1991. The full text of the GPL is located at:

sysfsutils/cmd/GPL

The sysfs library is licensed under the GNU Lesser Public License (LGPL) Version 2.1, February 1999. The full text of the LGPL is located at:

sysfsutils/lib/LGPL

## 3.211 systemd-219-62

systemd System and Service Manager

### DETAILS:

<http://0pointer.de/blog/projects/systemd.html>

### WEB SITE:

<http://www.freedesktop.org/wiki/Software/systemd>

### GIT:

<git://anongit.freedesktop.org/systemd/systemd>

<ssh://git.freedesktop.org/git/systemd/systemd>

### GITWEB:

<http://cgit.freedesktop.org/systemd/systemd>

### MAILING LIST:

<http://lists.freedesktop.org/mailman/listinfo/systemd-devel>

<http://lists.freedesktop.org/mailman/listinfo/systemd-commits>

### IRC:

#systemd on [irc.freenode.org](http://irc.freenode.org)

### BUG REPORTS:

[https://bugs.freedesktop.org/enter\\_bug.cgi?product=systemd](https://bugs.freedesktop.org/enter_bug.cgi?product=systemd)

### AUTHOR:

Lennart Poettering

Kay Sievers

...and many others

### LICENSE:

LGPLv2.1+ for all code

- except `src/shared/MurmurHash2.c` which is Public Domain

- except `src/shared/siphash24.c` which is CC0 Public Domain

- except `src/journal/lookup3.c` which is Public Domain

- except `src/udev/*` which is (currently still) GPLv2, GPLv2+

### REQUIREMENTS:

Linux kernel  $\geq 3.7$

Linux kernel  $\geq 3.8$  for Smack support

Kernel Config Options:

CONFIG\_DEVTMPFS  
CONFIG\_CGROUPS (it is OK to disable all controllers)  
CONFIG\_INOTIFY\_USER  
CONFIG\_SIGNALFD  
CONFIG\_TIMERFD  
CONFIG\_EPOLL  
CONFIG\_NET  
CONFIG\_SYSFS  
CONFIG\_PROC\_FS  
CONFIG\_FHANDLE (libudev, mount and bind mount handling)

udev will fail to work with the legacy sysfs layout:

CONFIG\_SYSFS\_DEPRECATED=n

Legacy hotplug slows down the system and confuses udev:

CONFIG\_UEVENT\_HELPER\_PATH=""

Userspace firmware loading is not supported and should be disabled in the kernel:

CONFIG\_FW\_LOADER\_USER\_HELPER=n

Some udev rules and virtualization detection relies on it:

CONFIG\_DMIID

Support for some SCSI devices serial number retrieval, to create additional symlinks in /dev/disk/ and /dev/tape:

CONFIG\_BLK\_DEV\_BSG

Required for PrivateNetwork and PrivateDevices in service units:

CONFIG\_NET\_NS

CONFIG\_DEVPTS\_MULTIPLE\_INSTANCES

Note that systemd-located.service and other systemd units use PrivateNetwork and PrivateDevices so this is effectively required.

Optional but strongly recommended:

CONFIG\_IPV6

CONFIG\_AUTOFS4\_FS

CONFIG\_TMPFS\_POSIX\_ACL

CONFIG\_TMPFS\_XATTR

CONFIG\_SECCOMP

Required for CPUShares in resource control unit settings

CONFIG\_CGROUP\_SCHED

CONFIG\_FAIR\_GROUP\_SCHED

Required for CPUQuota in resource control unit settings  
CONFIG\_CFS\_BANDWIDTH

For systemd-bootchart, several proc debug interfaces are required:

CONFIG\_SCHEDSTATS  
CONFIG\_SCHED\_DEBUG

For UEFI systems:

CONFIG\_EFIVAR\_FS  
CONFIG\_EFI\_PARTITION

Note that kernel auditing is broken when used with systemd's container code. When using systemd in conjunction with containers, please make sure to either turn off auditing at runtime using the kernel command line option "audit=0", or turn it off at kernel compile time using:

CONFIG\_AUDIT=n

If systemd is compiled with libseccomp support on architectures which do not use socketcall() and where seccomp is supported (this effectively means x86-64 and ARM, but excludes 32-bit x86!), then nspawn will now install a work-around seccomp filter that makes containers boot even with audit being enabled. This works correctly only on kernels 3.14 and newer though. TL;DR: turn audit off, still.

glibc >= 2.14  
libcap  
libmount >= 2.20 (from util-linux)  
libseccomp >= 1.0.0 (optional)  
libblkid >= 2.24 (from util-linux) (optional)  
libkmod >= 15 (optional)  
PAM >= 1.1.2 (optional)  
libcryptsetup (optional)  
libaudit (optional)  
libacl (optional)  
libselinux (optional)  
liblzma (optional)  
liblz4 >= 119 (optional)  
libgcrypt (optional)  
libqrencode (optional)  
libmicrohttpd (optional)  
libpython (optional)  
libidn (optional)

gobject-introspection > 1.40.0 (optional)  
elfutils >= 158 (optional)  
make, gcc, and similar tools

During runtime, you need the following additional dependencies:

util-linux >= v2.25 required  
dbus >= 1.4.0 (strictly speaking optional, but recommended)  
dracut (optional)  
PolicyKit (optional)

When building from git, you need the following additional dependencies:

docbook-xsl  
xsltproc  
automake  
autoconf  
libtool  
intltool  
gperf  
gtkdocize (optional)  
python (optional)  
python-lxml (optional, but required to build the indices)  
sphinx (optional)

When systemd-hostnamed is used, it is strongly recommended to install nss-myhostname to ensure that, in a world of dynamically changing hostnames, the hostname stays resolvable under all circumstances. In fact, systemd-hostnamed will warn if nss-myhostname is not installed.

To build HTML documentation for python-systemd using sphinx, please first install systemd (using 'make install'), and then invoke sphinx-build with 'make sphinx-<target>', with <target> being 'html' or 'latexpdf'. If using DESTDIR for installation, pass the same DESTDIR to 'make sphinx-html' invocation.

#### USERS AND GROUPS:

Default udev rules use the following standard system group names, which need to be resolvable by getgrnam() at any time, even in the very early boot stages, where no other databases and network are available:

audio, cdrom, dialout, disk, input, kmem, lp, tape, tty, video

During runtime, the journal daemon requires the "systemd-journal" system group to exist. New journal files will be readable by this group (but not writable), which may be used to grant specific users read access. In addition, system groups "wheel" and "adm" will be given read-only access to journal files using systemd-tmpfiles.service.

The journal gateway daemon requires the "systemd-journal-gateway" system user and group to exist. During execution this network facing service will drop privileges and assume this uid/gid for security reasons.

Similarly, the NTP daemon requires the "systemd-timesync" system user and group to exist.

Similarly, the network management daemon requires the "systemd-network" system user and group to exist.

Similarly, the name resolution daemon requires the "systemd-resolve" system user and group to exist.

Similarly, the kdbus dbus1 proxy daemon requires the "systemd-bus-proxy" system user and group to exist.

#### NSS:

systemd ships with three NSS modules:

nss-myhostname resolves the local hostname to locally configured IP addresses, as well as "localhost" to 127.0.0.1/::1.

nss-resolve enables DNS resolution via the systemd-resolved DNS/LLMNR caching stub resolver "systemd-resolved".

nss-mymachines enables resolution of all local containers registered with machined to their respective IP addresses.

To make use of these NSS modules, please add them to the "hosts: " line in /etc/nsswitch.conf. The "resolve" module should replace the glibc "dns" module in this file.

The three modules should be used in the following order:

hosts: files mymachines resolve myhostname

#### WARNINGS:

systemd will warn you during boot if /etc/mtab is not a symlink to /proc/mounts. Please ensure that /etc/mtab is a proper symlink.

systemd will warn you during boot if /usr is on a different file system than /. While in systemd itself very little will break if /usr is on a separate partition, many of its dependencies very likely will break sooner or later in one form or another. For example, udev rules tend to refer to binaries in /usr, binaries that link to libraries in /usr or binaries that refer to data files in /usr. Since these breakages are not always directly visible, systemd will warn about this, since this kind of file system setup is not really supported anymore by the basic set of Linux OS components.

systemd requires that the /run mount point exists. systemd also requires that /var/run is a a symlink to /run.

For more information on this issue consult  
<http://freedesktop.org/wiki/Software/systemd/separate-usr-is-broken>

To run systemd under valgrind, compile with VALGRIND defined (e.g. ./configure CPPFLAGS='... -DVALGRIND=1'). Otherwise, false positives will be triggered by code which violates some rules but is actually safe.

#### ENGINEERING AND CONSULTING SERVICES:

ENDOCODE <<https://endocode.com/>> offers professional engineering and consulting services for systemd. Please contact Chris Kühl <[chris@endocode.com](mailto:chris@endocode.com)> for more information.



### 3.212 sysvinit-2.88-14.dsf

contrib Unofficial stuff  
doc Documentation, mostly obsolete  
man Manual pages, not obsolete  
obsolete Really obsolete stuff ;)  
src Source code

The project home is on <http://savannah.nongnu.org/projects/sysvinit> .

Send patches to [sysvinit-devel@nongnu.org](mailto:sysvinit-devel@nongnu.org) .

### 3.212.1 Copying

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Version 2, June 1991

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```

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```

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```
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  
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```
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'Gnomovision' (which makes passes at compilers) written by James Hacker.
```

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

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### 3.213 tar-1.26-35

README for GNU tar

See the end of file for copying conditions.

#### \* Introduction

Please glance through *\*all\** sections of this 'README' file before starting configuration. Also make sure you read files 'ABOUT-NLS' and 'INSTALL' if you are not familiar with them already.

If you got the 'tar' distribution in 'shar' format, time stamps ought to be properly restored; do not ignore such complaints at 'unshar' time.

GNU 'tar' saves many files together into a single tape or disk archive, and can restore individual files from the archive. It includes multivolume support, the ability to archive sparse files, automatic archive compression/decompression, remote archives and special features that allow 'tar' to be used for incremental and full backups. This distribution also includes 'rmt', the remote tape server. The 'mt' tape drive control program is in the GNU 'cpio' distribution.

GNU 'tar' is derived from John Gilmore's public domain 'tar'.

See file 'ABOUT-NLS' for how to customize this program to your language.

See file 'COPYING' for copying conditions.

See file 'INSTALL' for compilation and installation instructions.

See file 'PORTS' for various ports of GNU tar to non-Unix systems.

See file 'NEWS' for a list of major changes in the current release.

See file 'THANKS' for a list of contributors.

Besides those configure options documented in files 'INSTALL' and 'ABOUT-NLS', an extra option may be accepted after './configure':

#### \* Install

##### \*\* Selecting the default archive format.

The default archive format is GNU, this can be overridden by presetting DEFAULT\_ARCHIVE\_FORMAT while configuring. The allowed values are GNU, V7, OLDGNU, USTAR and POSIX.

##### \*\* Selecting the default archive device

The default archive device is now 'stdin' on read and 'stdout' on write. The installer can still override this by presetting 'DEFAULT\_ARCHIVE' in the environment before configuring (the behavior of '-[0-7]' or '-[0-7]lmh' options in 'tar' are then derived automatically). Similarly, 'DEFAULT\_BLOCKING' can be preset to something else than 20.

**\*\* Selecting full pathname of the "rmt" binary.**

Previous versions of tar always looked for "rmt" binary in the directory "/etc/rmt". However, the "rmt" program included in the distribution was installed under "\$prefix/libexec/rmt". To fix this discrepancy, tar now looks for "\$prefix/libexec/rmt". If you do not want this behavior, specify full path name of "rmt" binary using DEFAULT\_RMT\_DIR variable, e.g.:

```
./configure DEFAULT_RMT_DIR=/etc
```

If you already have a copy of "rmt" installed and wish to use it instead of the version supplied with the distribution, use --with-rmt option:

```
./configure --with-rmt=/etc/rmt
```

This will also disable building the included version of rmt.

**\*\* Installing backup scripts.**

This version of tar is shipped with the shell scripts for producing incremental backups (dumps) and restoring filesystems from them. The name of the backup script is "backup". The name of the restore script is "restore". They are installed in "\$prefix/sbin" directory.

Use option --enable-backup-scripts to compile and install these scripts.

**\*\* '--disable-largefile' omits support for large files, even if the operating system supports large files. Typically, large files are those larger than 2 GB on a 32-bit host.**

**\* Installation hints**

Here are a few hints which might help installing 'tar' on some systems.

**\*\* gzip and bzip2.**

GNU tar uses the gzip and bzip2 programs to read and write compressed archives. If you don't have these programs already, you need to install them. Their sources can be found at:

```
ftp://ftp.gnu.org/gnu/gzip/
http://sourceware.cygnum.com/bzip2/
```

If you see the following symptoms:

```
$ tar -xzf file.tar.gz
gzip: stdin: decompression OK, trailing garbage ignored
tar: Child returned status 2
```

then you have encountered a gzip incompatibility that should be fixed in gzip test version 1.3, which as of this writing is available at [<ftp://alpha.gnu.org/gnu/gzip/>](ftp://alpha.gnu.org/gnu/gzip/). You can work around the incompatibility by using a shell command like 'gzip -d <file.tar.gz | tar -xzf -'.

**\*\* Solaris issues.**

GNU tar exercises many features that can cause problems with older GCC versions. In particular, GCC 2.8.1 (sparc, -O1 or -O2) is known to miscompile GNU tar. No compiler-related problems have been reported when using GCC 2.95.2 or later.

Recent versions of Solaris tar sport a new -E option to generate extended headers in an undocumented format. GNU tar does not understand these headers.

**\*\* Static linking.**

Some platform will, by default, prepare a smaller 'tar' executable which depends on shared libraries. Since GNU 'tar' may be used for system-level backups and disaster recovery, installers might prefer to force static linking, making a bigger 'tar' executable maybe, but able to work standalone, in situations where shared libraries are not available. The way to achieve static linking varies between systems. Set LDFLAGS to a value from the table below, before configuration (see 'INSTALL').

Platform Compiler LDFLAGS

(any) Gnu C -static  
AIX (vendor) -bnso -bI:/lib/syscalls.exp  
HPUX (vendor) -Wl,-a,archive  
IRIX (vendor) -non\_shared  
OSF (vendor) -non\_shared  
SCO 3.2v5 (vendor) -dn  
Solaris (vendor) -Bstatic  
SunOS (vendor) -Bstatic

**\*\* Failed tests 'ignfail.sh' or 'incremen.sh'.**

In an NFS environment, lack of synchronization between machine clocks might create difficulties to any tool comparing dates and file time stamps, like 'tar' in incremental dumps. This has been a recurrent problem with GNU Make for the last few years. We would like a general solution.

**\*\* BSD compatibility matters.**

Set LIBS to '-lbsd' before configuration (see 'INSTALL') if the linker complains about 'bsd\_ioctl' (Slackware). Also set CPPFLAGS to '-I/usr/include/bsd' if <sgtty.h> is not found (Slackware).

**\*\* OPENStep 4.2 swap files**

Tar cannot read the file /private/vm/swapfile.front (even as root). This file is not a real file, but some kind of uncompressed view of the real compressed swap file; there is no reason to back it up, so the simplest workaround is to avoid tarring this file.

**\* Special topics**

Here are a few special matters about GNU 'tar', not related to build matters. See previous section for such.

**\*\* File attributes.**

About \*security\*, it is probable that future releases of 'tar' will have some behavior changed. There are many pending suggestions to choose from. Today, extracting an archive not being 'root', 'tar' will restore suid/sgid bits on files but owned by the extracting user. 'root' automatically gets a lot of special privileges, '-p' might later become required to get them.

GNU 'tar' does not properly restore symlink attributes. Various systems implement flavors of symbolic links showing different behavior and

properties. We did not successfully sorted all these out yet. Currently, the 'lchown' call will be used if available, but that's all.

\*\* POSIX compliance.

GNU 'tar' is able to create archive in the following formats:

- \*\*\* The format of UNIX version 7
- \*\*\* POSIX.1-1988 format, also known as "ustar format"
- \*\*\* POSIX.1-2001 format, also known as "pax format"
- \*\*\* Old GNU format (described below)

In addition to those, GNU 'tar' is also able to read archives produced by 'star' archiver.

A so called 'Old GNU' format is based on an early draft of the POSIX 1003.1 'ustar' standard which is different from the final standard. It defines its extensions (such as incremental backups and handling of the long file names) in a way incompatible with any existing tar archive format, therefore the use of old GNU format is strongly discouraged.

Please read the file NEWS for more information about POSIX compliance and new 'tar' features.

\* What's next?

GNU tar will be merged into GNU paxutils: a project containing several utilities related to creating and handling archives in various formats. The project will include tar, cpio and pax utilities.

\* Bug reporting.

Send bug reports to <bug-tar@gnu.org>. A bug report should contain an adequate description of the problem, your input, what you expected, what you got, and why this is wrong. Diffs are welcome, but they only describe a solution, from which the problem might be uneasy to infer. If needed, submit actual data files with your report. Small data files are preferred. Big files may sometimes be necessary, but do not send them to the report address; rather take special arrangement with the maintainer.

Your feedback will help us to make a better and more portable package. Consider documentation errors as bugs, and report them as such. If you

develop anything pertaining to 'tar' or have suggestions, let us know and share your findings by writing to <bug-tar@gnu.org>.

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Local Variables:  
mode: outline  
paragraph-separate: "[  
]\*\$"  
version-control: never  
End:

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

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

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```
<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.
```

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## 3.214 tcp-wrappers-7.6-77

@(#) README 1.30 97/03/21 19:27:21

This is the 7.6 version of the TCP/IP daemon wrapper package.

Thank you for using this program. If you like it, send me a postcard. My postal address is at the bottom of this file.

Read the BLURB file for a brief summary of what is new. The CHANGES file gives a complete account of differences with respect to previous releases.

Announcements of new releases of this software are posted to Usenet (comp.security.unix, comp.unix.admin), to the cert-tools mailing list, and to a dedicated mailing list. You can subscribe to the dedicated mailing list by sending an email message to majordomo@wzv.win.tue.nl with in the body (not subject): subscribe tcp-wrappers-announce.

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## 1 - Introduction

-----

With this package you can monitor and filter incoming requests for the SYSTAT, FINGER, FTP, TELNET, RLOGIN, RSH, EXEC, TFTP, TALK, and other network services.

It supports both 4.3BSD-style sockets and System V.4-style TLI. Praise yourself lucky if you don't know what that means.

The package provides tiny daemon wrapper programs that can be installed without any changes to existing software or to existing configuration files. The wrappers report the name of the client host and of the requested service; the wrappers do not exchange information with the client or server applications, and impose no overhead on the actual conversation between the client and server applications.

Optional features are: access control to restrict what systems can connect to what network daemons; client user name lookups with the RFC 931 etc. protocol; additional protection against hosts that pretend to have someone else's host name; additional protection against hosts that pretend to have someone else's host address.

The programs are very portable. Build procedures are provided for many common (and not so common) environments, and guidelines are provided in case your environment is not among them.

Requirements are that network daemons are spawned by a super server such as the inetd; a 4.3BSD-style socket programming interface and/or System V.4-style TLI programming interface; and the availability of a syslog(3) library and of a syslogd(8) daemon. The wrappers should run without modification on any system that satisfies these requirements. Workarounds have been implemented for several common bugs in systems software.

What to do if this is your first encounter with the wrapper programs:  
1) read the tutorial sections for an introduction to the relevant concepts and terminology; 2) glance over the security feature sections

in this document; 3) follow the installation instructions (easy or advanced). I recommend that you first use the default security feature settings. Run the wrappers for a few days to become familiar with their logs, before doing anything drastic such as cutting off access or installing booby traps.

## 2 - Disclaimer

-----

The wrapper programs rely on source address information obtained from network packets. This information is provided by the client host. It is not 100 percent reliable, although the wrappers do their best to expose forgeries.

In the absence of cryptographic protection of message contents, and of cryptographic authentication of message originators, all data from the network should be treated with sound scepticism.

THIS RESTRICTION IS BY NO MEANS SPECIFIC TO THE TCP/IP PROTOCOLS.

## 3 - Tutorials

-----

The tutorial sections give a gentle introduction to the operation of the wrapper programs, and introduce some of the terminology that is used in the remainder of the document: client, server, the inetd and syslogd daemons, and their configuration files.

### 3.1 - How it works

-----

Almost every application of the TCP/IP protocols is based on a client-server model. For example, when a user invokes the telnet command to connect to one of your systems, a telnet server process is executed on the target host. The telnet server process connects the user to a login process. A few examples of client and server programs are shown in the table below:

client	server	application
-----		
telnet	telnetd	remote login
ftp	ftpd	file transfer
finger	fingerd	show users

The usual approach is to run one single daemon process that waits for all kinds of incoming network connections. Whenever a connection is established, this daemon (usually called `inetd`) runs the appropriate server program and goes back to sleep, waiting for other connections.

The wrapper programs rely on a simple, but powerful mechanism. Instead of directly running the desired server program, the `inetd` is tricked into running a small wrapper program. The wrapper logs the client host name or address and performs some additional checks. When all is well, the wrapper executes the desired server program and goes away.

The wrapper programs have no interaction with the client user (or with the client process). Nor do the wrappers interact with the server application. This has two major advantages: 1) the wrappers are application-independent, so that the same program can protect many kinds of network services; 2) no interaction also means that the wrappers are invisible from outside (at least for authorized users).

Another important property is that the wrapper programs are active only when the initial contact between client and server is established. Once a wrapper has done its work there is no overhead on the client-server conversation.

The simple mechanism has one major drawback: the wrappers go away after the initial contact between client and server processes, so the wrappers are of little use with network daemons that service more than one client. The wrappers would only see the first client attempt to contact such a server. The NFS mount daemon is a typical example of a daemon that services requests from multiple clients. See the section on related software for ways to deal with such server programs.

There are two ways to use the wrapper programs:

- 1) The easy way: move network daemons to some other directory and fill the resulting holes with copies of the wrapper programs. This approach involves no changes to system configuration files, so there is very little risk of breaking things.
- 2) The advanced way: leave the network daemons alone and modify the `inetd` configuration file. For example, an entry such as:

```
tftp dgram udp wait root /usr/etc/tcpd in.tftpd -s /tftpboot
```

When a tftp request arrives, `inetd` will run the wrapper program

(tcpcd) with a process name 'in.tftpd'. This is the name that the wrapper will use when logging the request and when scanning the optional access control tables. 'in.tftpd' is also the name of the server program that the wrapper will attempt to run when all is well. Any arguments ('-s /tftpboot' in this particular example) are transparently passed on to the server program.

For an account of the history of the wrapper programs, with real-life examples, see the section below on related documents.

### 3.2 - Where the logging information goes

-----

The wrapper programs send their logging information to the syslog daemon (syslogd). The disposition of the wrapper logs is determined by the syslog configuration file (usually /etc/syslog.conf). Messages are written to files, to the console, or are forwarded to a @loghost. Some syslogd versions can even forward messages down a |pipeline.

Older syslog implementations (still found on Ultrix systems) only support priority levels ranging from 9 (debug-level messages) to 0 (alerts). All logging information of the specified priority level or more urgent is written to the same destination. In the syslog.conf file, priority levels are specified in numerical form. For example,

```
8/usr/spool/mqueue/syslog
```

causes all messages with priority 8 (informational messages), and anything that is more urgent, to be appended to the file /usr/spool/mqueue/syslog.

Newer syslog implementations support message classes in addition to priority levels. Examples of message classes are: mail, daemon, auth and news. In the syslog.conf file, priority levels are specified with symbolic names: debug, info, notice, ..., emerg. For example,

```
mail.debug /var/log/syslog
```

causes all messages of class mail with priority debug (or more urgent) to be appended to the /var/log/syslog file.

By default, the wrapper logs go to the same place as the transaction logs of the sendmail daemon. The disposition can be changed by editing the Makefile and/or the syslog.conf file. Send a 'kill -HUP' to the

syslogd after changing its configuration file. Remember that syslogd, just like sendmail, insists on one or more TABs between the left-hand side and the right-hand side expressions in its configuration file.

Solaris 2.x note: the syslog daemon depends on the m4 macro processor. The m4 program is installed as part of the software developer packages.

Trouble shooting note: when the syslogging does not work as expected, run the program by hand ('syslogd -d') and see what really happens.

## 4 - Features

-----

### 4.1 - Access control

-----

When compiled with -DHOSTS\_ACCESS, the wrapper programs support a simple form of access control. Access can be controlled per host, per service, or combinations thereof. The software provides hooks for the execution of shell commands when an access control rule fires; this feature may be used to install "booby traps". For details, see the hosts\_access.5 manual page, which is in 'nroff -man' format. A later section describes how you can test your access control rules.

Access control can also be used to connect clients to the "right" service. What is right may depend on the requested service, the origin of the request, and what host address the client connects to. Examples:

- (1) A gopher or www database speaks native language when contacted from within the country, otherwise it speaks English.
- (2) A service provider offers different ftp, gopher or www services with different internet hostnames from one host (section 4.6).

Access control is enabled by default. It can be turned off by editing the Makefile, or by providing no access control tables. The install instructions below describe the Makefile editing process.

The hosts\_options.5 manual page ('nroff -man' format) documents an extended version of the access control language. The extensions are disabled by default. See the section below on language extensions.

Later System V implementations provide the Transport Level Interface (TLI), a network programming interface that performs functions similar

to the Berkeley socket programming interface. Like Berkeley sockets, TLI was designed to cover multiple protocols, not just Internet.

When the wrapper discovers that the TLI interface sits on top of a TCP/IP or UDP/IP conversation it uses this knowledge to provide the same functions as with traditional socket-based applications. When some other protocol is used underneath TLI, the host address will be some universal magic cookie that may not even be usable for access control purposes.

#### 4.2 - Host name spoofing

-----

With some network applications, such as RSH or RLOGIN, the client host name plays an important role in the authentication process. Host name information can be reliable when lookups are done from a `_local_` hosts table, provided that the client IP address can be trusted.

With `_distributed_` name services, authentication schemes that rely on host names become more problematic. The security of your system now may depend on some far-away DNS (domain name server) outside your own control.

The wrapper programs verify the client host name that is returned by the `address->name` DNS server, by asking for a second opinion. To this end, the programs look at the name and addresses that are returned by the `name->address` DNS server, which may be an entirely different host.

If any name or address discrepancies are found, or if the second DNS opinion is not available, the wrappers assume that one of the two name servers is lying, and assume that the client host pretends to have someone else's host name.

When compiled with `-DPARANOID`, the wrappers will always attempt to look up and double check the client host name, and will always refuse service in case of a host name/address discrepancy. This is a reasonable policy for most systems.

When compiled without `-DPARANOID`, the wrappers by default still perform hostname lookup. You can match hosts with a name/address discrepancy with the `PARANOID` wildcard and decide whether or not to grant service.

Automatic hostname verification is enabled by default. Automatic hostname lookups and verification can be turned off by editing the

Makefile. The configuration and installation section below describes the Makefile editing process.

#### 4.3 - Host address spoofing

-----

While host name spoofing can be found out by asking a second opinion, it is much harder to find out that a host claims to have someone else's network address. And since host names are deduced from network addresses, address spoofing is at least as effective as name spoofing.

The wrapper programs can give additional protection against hosts that claim to have an address that lies outside their own network. For example, some far-away host that claims to be a trusted host within your own network. Such things are possible even while the impersonated system is up and running.

This additional protection is not an invention of my own; it has been present for at least five years in the BSD rsh and rlogin daemons. Unfortunately, that feature was added *after* 4.3 BSD came out, so that very few, if any, UNIX vendors have adopted it. Our site, and many other ones, has been running these enhanced daemons for several years, and without any ill effects.

When the wrapper programs are compiled with `-DKILL_IP_OPTIONS`, the programs refuse to service TCP connections with IP source routing options. `-DKILL_IP_OPTIONS` is not needed on modern UNIX systems that can stop source-routed traffic in the kernel. Examples are 4.4BSD derivatives, Solaris 2.x, and Linux. See your system manuals for details.

If you are going to use this feature on SunOS 4.1.x you should apply patch 100804-03+ or 101790-something depending on your SunOS version. Otherwise you may experience "BAD TRAP" and "Data fault" panics when the `getsockopt()` system call is executed after a TCP RESET has been received. This is a kernel bug, it is not the fault of the wrappers.

The feature is disabled by default. It can be turned on by editing the Makefile. The configuration and installation section below describes the Makefile editing process.

UDP services do not benefit from this additional protection. With UDP, all you can be certain of is the network packet's destination address.

#### 4.4 - Client username lookups

-----

The protocol proposed in RFC 931 provides a means to obtain the client user name from the client host. The requirement is that the client host runs an RFC 931-compliant daemon. The information provided by such a daemon is not intended to be used for authentication purposes, but it can provide additional information about the owner of a TCP connection.

The RFC 931 protocol has diverged into different directions (IDENT, TAP, RFC 1413). To add to the confusion, they all use the same network port. The daemon wrappers implement a common subset of the protocols.

There are some limitations: the number of hosts that run an RFC 931 (or compatible) daemon is limited (but growing); client user name lookups do not work for datagram (UDP) services. More seriously, client user name lookups can cause noticeable delays with connections from non-UNIX PCs. Recent PC software seem to have fixed this (for example NCSA telnet). The wrappers use a 10-second timeout for RFC931 lookups, to accommodate slow networks and slow hosts.

By default, the wrappers will do username lookup only when the access control rules require them to do so (via user@host client patterns, see the hosts\_access.5 manual page) or when the username is needed for %<letter> expansions.

You can configure the wrappers to always perform client username lookups, by editing the Makefile. The client username lookup timeout period (10 seconds default) can be changed by editing the Makefile. The installation sections below describe the Makefile editing process.

On System V with TLI-based network services, client username lookups will be possible only when the underlying network protocol is TCP/IP.

#### 4.5 - Language extensions

-----

The wrappers sport only a limited number of features. This is for a good reason: programs that run at high privilege levels must be easy to verify. And the smaller a program, the easier to verify. There is, however, a provision to add features.

The options.c module provides a framework for language extensions. Quite a few extensions have already been implemented; they are



documented in the `hosts_options.5` document, which is in 'nroff -man' format. Examples: changing the severity level at which a request for service is logged; "allow" and "deny" keywords; running a customized server instead of the standard one; many others.

The language extensions are not enabled by default because they introduce an incompatible change to the access control language syntax. Instructions to enable the extensions are given in the `Makefile`.

#### 4.6 - Multiple ftp/gopher/www archives on one host

-----

Imagine one host with multiple internet addresses. These addresses do not need to have the same internet hostname. Thus, it is possible to offer services with different internet hostnames from just one host.

Service providers can use this to offer organizations a presence on the "net" with their own internet hostname, even when those organizations aren't connected to the Internet at all. To the end user it makes no difference, because applications use internet hostnames.

There are several ways to assign multiple addresses to one machine. The nice way is to take an existing network interface and to assign additional internet addresses with the 'ifconfig' command. Examples:

```
Solaris 2: ifconfig le0:1 <address> netmask <mask> up
4.4 BSD: ifconfig en0 alias <address> netmask <mask>
```

On other systems one has to increase the number of network interfaces: either with hardware interfaces, or with pseudo interfaces like SLIP or PPP. The interfaces do not need to be attached to anything. They just need to be up and to be assigned a suitable internet address and mask.

With the wrapper software, 'daemon@host' access control patterns can be used to distinguish requests by the network address that they are aimed at. Judicious use of the 'twist' option (see the `hosts_options.5` file, 'nroff -man' format) can guide the requests to the right server. These can be servers that live in separate chroot areas, or servers modified to take additional context from the command line, or a combination.

Another way is to modify gopher or www listeners so that they bind to only one specific network address. Multiple gopher or www servers can then be run side by side, each taking requests sent to its respective

network address.

#### 4.7 - Banner messages

-----

Some sites are required to present an informational message to users before they attempt to login. Banner messages can also be useful when denying service: instead of simply dropping the connection a polite explanation is given first. Finally, banners can be used to give your system a more personal touch.

The wrapper software provides easy-to-use tools to generate pre-login banners for ftp, telnet, rlogin etc. from a single prototype banner textfile. Details on banners and on-the-fly %<letter> expansions are given in the hosts\_options.5 manual page ('nroff -man' format). An example is given in the file Banners.Makefile.

In order to support banner messages the wrappers have to be built with language extensions enabled. See the section on language extensions.

#### 4.8 - Sequence number guessing

-----

Recently, systems came under attack from intruders that exploited a well-known weakness in TCP/IP sequence number generators. This weakness allows intruders to impersonate trusted hosts. Break-ins have been reported via the rsh service. In fact, any network service can be exploited that trusts the client host name or address.

A long-term solution is to stop using network services that trust the client host name or address, and to use data encryption instead.

A short-term solution, as outlined in in CERT advisory CA-95:01, is to configure network routers so that they discard datagrams from "outside" with an "inside" source address. This approach is most fruitful when you do not trust any hosts outside your local network.

The IDENT (RFC931 etc.) client username lookup protocol can help to detect host impersonation attacks. Before accepting a client request, the wrappers can query the client's IDENT server and find out that the client never sent that request.

When the client host provides IDENT service, a negative IDENT lookup result (the client matches 'UNKNOWN@host') is strong evidence of a host

impersonation attack.

A positive IDENT lookup result (the client matches 'KNOWN@host') is less trustworthy. It is possible for an attacker to spoof both the client request and the IDENT lookup connection, although doing so should be much harder than spoofing just a client request. Another possibility is that the client's IDENT server is lying.

Client username lookups are described in more detail in a previous section. Pointers to IDENT daemon software are described in the section on related software.

## 5 - Other works

-----

### 5.1 - Related documents

-----

The war story behind the tcp wrapper tools is described in:

W.Z. Venema, "TCP WRAPPER, network monitoring, access control and booby traps", UNIX Security Symposium III Proceedings (Baltimore), September 1992.

ftp.win.tue.nl:/pub/security/tcp\_wrapper.ps.Z (postscript)  
ftp.win.tue.nl:/pub/security/tcp\_wrapper.txt.Z (flat text)

The same cracker is also described in:

W.R. Cheswick, "An Evening with Berferd, In Which a Cracker is Lured, Endured, and Studied", Proceedings of the Winter USENIX Conference (San Francisco), January 1992.

research.att.com:/dist/internet\_security/berferd.ps

An updated version of the latter paper appeared in:

W.R. Cheswick, S.M. Bellovin, "Firewalls and Internet Security", Addison-Wesley, 1994.

Discussions on internet firewalls are archived on ftp.greatcircle.com. Subscribe to the mailing list by sending a message to

majordomo@greatcircle.com

With in the body (not subject): subscribe firewalls.

## 5.2 - Related software

-----

Network daemons etc. with enhanced logging capabilities can generate massive amounts of information: our 150+ workstations generate several hundred kbytes each day. egrep-based filters can help to suppress some of the noise. A more powerful tool is the Swatch monitoring system by Stephen E. Hansen and E. Todd Atkins. Swatch can process log files in real time and can associate arbitrary actions with patterns; its applications are by no means restricted to security. Swatch is available [ftp.stanford.edu](ftp://ftp.stanford.edu/directory/general/security-tools/swatch), directory `/general/security-tools/swatch`.

Socks, described in the UNIX Security III proceedings, can be used to control network traffic from hosts on an internal network, through a firewall host, to the outer world. Socks consists of a daemon that is run on the firewall host, and of a library with routines that redirect application socket calls through the firewall daemon. Socks is available from [s1.gov](http://s1.gov) in `/pub/firewalls/socks.tar.Z`.

For a modified Socks version by Ying-Da Lee ([ylee@syl.dl.nec.com](mailto:ylee@syl.dl.nec.com)) try [ftp.nec.com](ftp://ftp.nec.com), directory `/pub/security/socks.cstc`.

Tcpr is a set of perl scripts by Paul Ziemba that enable you to run ftp and telnet commands across a firewall. Unlike socks it can be used with unmodified client software. Available from [ftp.alantec.com](ftp://ftp.alantec.com), `/pub/tcpr`.

The TIS firewall toolkit provides a multitude of tools to build your own internet firewall system. [ftp.tis.com](ftp://ftp.tis.com), directory `/pub/firewalls`.

Versions of rshd and rlogind, modified to report the client user name in addition to the client host name, are available for anonymous ftp ([ftp.win.tue.nl:/pub/security/logdaemon-XX.tar.Z](ftp://ftp.win.tue.nl/pub/security/logdaemon-XX.tar.Z)). These programs are drop-in replacements for SunOS 4.x, Ultrix 4.x, SunOS 5.x and HP-UX 9.x. This archive also contains ftpd/rexecd/login versions that support S/Key or SecureNet one-time passwords in addition to traditional UNIX reusable passwords.

The securelib shared library by William LeFebvre can be used to control access to network daemons that are not run under control of the inetd or that serve more than one client, such as the NFS mount daemon that runs until the machine goes down. Available from [eecs.nwu.edu](http://eecs.nwu.edu), file

/pub/securelib.tar.

xinetd (posted to comp.sources.unix) is an inetd replacement that provides, among others, logging, username lookup and access control. However, it does not support the System V TLI services, and involves much more source code than the daemon wrapper programs. Available from ftp.uu.net, directory /usenet/comp.sources.unix.

netlog from Texas A&M relies on the SunOS 4.x /dev/nit interface to passively watch all TCP and UDP network traffic on a network. The current version is on net.tamu.edu in /pub/security/TAMU.

Where shared libraries or router-based packet filtering are not an option, an alternative portmap daemon can help to prevent hackers from mounting your NFS file systems using the proxy RPC facility. ftp.win.tue.nl:/pub/security/portmap-X.shar.Z was tested with SunOS 4.1.X Ultrix 3.0 and Ultrix 4.x, HP-UX 8.x and some version of AIX. The protection is less effective than that of the securelib library because portmap is mostly a dictionary service.

An rpcbind replacement (the Solaris 2.x moral equivalent of portmap) can be found on ftp.win.tue.nl in /pub/security. It prevents hackers from mounting your NFS file systems by using the proxy RPC facility.

Source for a portable RFC 931 (TAP, IDENT, RFC 1413) daemon by Peter Eriksson is available from ftp.lysator.liu.se:/pub/ident/servers.

Some TCP/IP implementations come without syslog library. Some come with the library but have no syslog daemon. A replacement can be found in ftp.win.tue.nl:/pub/security/surrogate-syslog.tar.Z. The fakesyslog library that comes with the nntp sources reportedly works well, too.

## 6 - Limitations

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### 6.1 - Known wrapper limitations

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Many UDP (and rpc/udp) daemons linger around for a while after they have serviced a request, just in case another request comes in. In the inetd configuration file these daemons are registered with the 'wait' option. Only the request that started such a daemon will be seen by the wrappers. Such daemons are better protected with the securelib shared library (see: Related software).

The wrappers do not work with RPC services over TCP. These services are registered as `rpc/tcp` in the `inetd` configuration file. The only non-trivial service that is affected by this limitation is `rex`, which is used by the `on(1)` command. This is no great loss. On most systems, `rex` is less secure than a wildcard in `/etc/hosts.equiv`.

Some RPC requests (for example: `rwall`, `rup`, `rusers`) appear to come from the server host. What happens is that the client broadcasts its request to all portmap daemons on its network; each portmap daemon forwards the request to a daemon on its own system. As far as the `rwall` etc. daemons know, the request comes from the local host.

Portmap and RPC (e.g. NIS and NFS) (in)security is a topic in itself. See the section in this document on related software.

## 6.2 - Known system software bugs

Workarounds have been implemented for several bugs in system software. They are described in the `Makefile`. Unfortunately, some system software bugs cannot be worked around. The result is loss of functionality.

IRIX has so many bugs that it has its own `README.IRIX` file.

Older ConvexOS versions come with a broken `recvfrom(2)` implementation. This makes it impossible for the daemon wrappers to look up the client host address (and hence, the name) in case of UDP requests. A patch is available for ConvexOS 10.1; later releases should be OK.

With early Solaris (SunOS 5) versions, the `syslog` daemon will leave behind zombie processes when writing to logged-in users. Workaround: increase the `syslogd` threshold for logging to users, or reduce the wrapper's logging severity.

On some systems, the optional RFC 931 etc. client username lookups may trigger a kernel bug. When a client host connects to your system, and the RFC 931 connection from your system to that client is rejected by a router, your kernel may drop all connections with that client. This is not a bug in the wrapper programs: complain to your vendor, and don't enable client user name lookups until the bug has been fixed.

Reportedly, SunOS 4.1.1, Next 2.0a, ISC 3.0 with TCP 1.3, and AIX 3.2.2 and later are OK.

Sony News/OS 4.51, HP-UX 8-something and Ultrix 4.3 still have the bug. Reportedly, a fix for Ultrix is available (CX0-8919).

The following procedure can be used (from outside the tue.nl domain) to find out if your kernel has the bug. From the system under test, do:

```
% ftp 131.155.70.19
```

This command attempts to make an ftp connection to our anonymous ftp server (ftp.win.tue.nl). When the connection has been established, run the following command from the same system under test, while keeping the ftp connection open:

```
% telnet 131.155.70.19 111
```

Do not forget the '111' at the end of the command. This telnet command attempts to connect to our portmap process. The telnet command should fail with: "host not reachable", or with a timeout error. If your ftp connection gets messed up, you have the bug. If the telnet command does not fail, please let me know a.s.a.p.!

For those who care, the bug is that the BSD kernel code was not careful enough with incoming ICMP UNREACHABLE control messages (it ignored the local and remote port numbers, and therefore zapped \*all\* connections with the remote system). The bug is still present in the BSD NET/1 source release (1989) but apparently has been fixed in BSD NET/2 (1991).

## 7 - Configuration and installation

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### 7.1 - Easy configuration and installation

-----

The "easy" recipe requires no changes to existing software or configuration files. Basically, you move the daemons that you want to protect to a different directory and plug the resulting holes with copies of the wrapper programs.

If you don't run Ultrix, you won't need the miscd wrapper program. The miscd daemon implements among others the SYSTAT service, which produces the same output as the WHO command.

Type 'make' and follow the instructions. The Makefile comes with

ready-to-use templates for many common UNIX implementations (sun, ultrix, hp-ux, aix, irix,...).

IRIX has so many bugs that it has its own README.IRIX file.

When the 'make' succeeds the result is five executables (six in case of Ultrix).

You can use the 'tcpdchk' program to identify the most common problems in your wrapper and inetd configuration files.

With the 'tcpdmatch' program you can examine how the wrapper would react to specific requests for service.

The 'safe\_finger' command should be used when you implement booby traps: it gives better protection against nasty stuff that remote hosts may do in response to your finger probes.

The 'try-from' program tests the host and username lookup code. Run it from a remote shell command ('rsh host /some/where/try-from') and it should be able to figure out from what system it is being called.

The tcpd program can be used to monitor the telnet, finger, ftp, exec, rsh, rlogin, tftp, talk, comsat and other tcp or udp services that have a one-to-one mapping onto executable files.

The tcpd program can also be used for services that are marked as rpc/udp in the inetd configuration file, but not for rpc/tcp services such as rexd. You probably do not want to run rexd anyway. On most systems it is even less secure than a wildcard in /etc/hosts.equiv.

With System V.4-style systems, the tcpd program can also handle TLI services. When TCP/IP or UDP/IP is used underneath TLI, tcpd provides the same functions as with socket-based applications. When some other protocol is used underneath TLI, functionality will be limited (no client username lookups, weird network address formats).

Decide which services you want to monitor. Move the corresponding vendor-provided daemon programs to the location specified by the REAL\_DAEMON\_DIR constant in the Makefile, and fill the holes with copies of the tcpd program. That is, one copy of (or link to) the tcpd program for each service that you want to monitor. For example, to monitor the use of your finger service:



```
mkdir REAL_DAEMON_DIR
mv /usr/etc/in.fingerd REAL_DAEMON_DIR
cp tcpd /usr/etc/in.fingerd
```

The example applies to SunOS 4. With other UNIX implementations the network daemons live in /usr/libexec, /usr/sbin or in /etc, or have no "in." prefix to their names, but you get the idea.

File protections: the wrapper, all files used by the wrapper, and all directories in the path leading to those files, should be accessible but not writable for unprivileged users (mode 755 or mode 555). Do not install the wrapper set-uid.

Ultrix only: If you want to monitor the SYSTAT service, move the vendor-provided miscd daemon to the location specified by the REAL\_DAEMON\_DIR macro in the Makefile, and install the miscd wrapper at the original miscd location.

In the absence of any access-control tables, the daemon wrappers will just maintain a record of network connections made to your system.

## 7.2 - Advanced configuration and installation

-----

The advanced recipe leaves your daemon executables alone, but involves simple modifications to the inetd configuration file.

Type 'make' and follow the instructions. The Makefile comes with ready-to-use templates for many common UNIX implementations (sun, ultrix, hp-ux, aix, irix, ...).

IRIX users should read the warnings in the README.IRIX file first.

When the 'make' succeeds the result is five executables (six in case of Ultrix).

You can use the 'tcpdchk' program to identify the most common problems in your wrapper and inetd configuration files.

With the 'tcpdmatch' program you can examine how the wrapper would react to specific requests for service.

The 'try-from' program tests the host and username lookup code. Run it from a remote shell command ('rsh host /some/where/try-from') and it



AIX note: you may have to execute the 'inetimp' command after changing the inetd configuration file.

The example applies to SunOS 4. With other UNIX implementations the network daemons live in /usr/libexec, /usr/sbin, or /etc, the network daemons have no "in." prefix to their names, or the username field in the inetd configuration file may be missing.

When the finger service works as expected you can perform similar changes for other network services. Do not forget the 'kill -HUP'.

The miscd daemon that comes with Ultrix implements several network services. It decides what to do by looking at its process name. One of the services is systat, which is a kind of limited finger service. If you want to monitor the systat service, install the miscd wrapper in a suitable place and update the inetd configuration file:

```
systat stream tcp nowait /suitable/place/miscd systatd
```

Ultrix 4.3 allows you to specify a user id under which the daemon will be executed. This feature is not documented in the manual pages. Thus, the example would become:

```
systat stream tcp nowait nobody /suitable/place/miscd systatd
```

Older Ultrix systems still run all their network daemons as root.

In the absence of any access-control tables, the daemon wrappers will just maintain a record of network connections made to your system.

### 7.3 - Daemons with arbitrary path names

-----

The above tcpd examples work fine with network daemons that live in a common directory, but sometimes that is not practical. Having soft links all over your file system is not a clean solution, either.

Instead you can specify, in the inetd configuration file, an absolute path name for the daemon process name. For example,

```
ntalk dgram udp wait root /usr/etc/tcpd /usr/local/lib/ntalkd
```

When the daemon process name is an absolute path name, tcpd ignores the

value of the REAL\_DAEMON\_DIR constant, and uses the last path component of the daemon process name for logging and for access control.

#### 7.4 - Building and testing the access control rules

-----

In order to support access control the wrappers must be compiled with the -DHOSTS\_ACCESS option. The access control policy is given in the form of two tables (default: /etc/hosts.allow and /etc/hosts.deny). Access control is disabled when there are no access control tables, or when the tables are empty.

If you haven't used the wrappers before I recommend that you first run them a couple of days without any access control restrictions. The logfile records should give you an idea of the process names and of the host names that you will have to build into your access control rules.

The syntax of the access control rules is documented in the file hosts\_access.5, which is in 'nroff -man' format. This is a lengthy document, and no-one expects you to read it right away from beginning to end. Instead, after reading the introductory section, skip to the examples at the end so that you get a general idea of the language. Then you can appreciate the detailed reference sections near the beginning of the document.

The examples in the hosts\_access.5 document ('nroff -man' format) show two specific types of access control policy: 1) mostly closed (only permitting access from a limited number of systems) and 2) mostly open (permitting access from everyone except a limited number of trouble makers). You will have to choose what model suits your situation best. Implementing a mixed policy should not be overly difficult either.

Optional extensions to the access control language are described in the hosts\_options.5 document ('nroff -man' format).

The 'tcpdchk' program examines all rules in your access control files and reports any problems it can find. 'tcpdchk -v' writes to standard output a pretty-printed list of all rules. 'tcpdchk -d' examines the hosts.access and hosts.allow files in the current directory. This program is described in the tcpdchk.8 document ('nroff -man' format).

The 'tcpdmatch' command can be used to try out your local access control files. The command syntax is:

```
tcpdmatch process_name hostname (e.g.: tcpdmatch in.tftpd localhost)
```

```
tcpdmatch process_name address (e.g.: tcpdmatch in.tftpd 127.0.0.1)
```

This way you can simulate what decisions will be made, and what actions will be taken, when hosts connect to your own system. The program is described in the `tcpdmatch.8` document ('`nroff -man`' format).

Note 1: '`tcpdmatch -d`' will look for `hosts.{allow,deny}` tables in the current working directory. This is useful for testing new rules without bothering your users.

Note 2: you cannot use the '`tcpdmatch`' command to simulate what happens when the local system connects to other hosts.

In order to find out what process name to use, just use the service and watch the process name that shows up in the logfile. Alternatively, you can look up the name from the `inetd` configuration file. Coming back to the `tftp` example in the tutorial section above:

```
tftp dgram udp wait root /usr/etc/tcpd in.tftpd -s /tftpboot
```

This entry causes the `inetd` to run the wrapper program (`tcpd`) with a process name '`in.tftpd`'. This is the name that the wrapper will use when scanning the access control tables. Therefore, '`in.tftpd`' is the process name that should be given to the '`tcpdmatch`' command. On your system the actual `inetd.conf` entry may differ (`tftpd` instead of `in.tftpd`, and no '`root`' field), but you get the idea.

When you specify a host name, the '`tcpdmatch`' program will use both the host name and address. This way you can simulate the most common case where the wrappers know both the host address and the host name. The '`tcpdmatch`' program will iterate over all addresses that it can find for the given host name.

When you specify a host address instead of a host name, the '`tcpdmatch`' program will pretend that the host name is unknown, so that you can simulate what happens when the wrapper is unable to look up the client host name.

## 7.5 - Other applications

-----

The access control routines can easily be integrated with other

programs. The hosts\_access.3 manual page ('nroff -man' format) describes the external interface of the libwrap.a library.

The tcpd program can even be used to control access to the mail service. This can be useful when you suspect that someone is trying out some obscure sendmail bug, or when a remote site is misconfigured and keeps hammering your mail daemon.

In that case, sendmail should not be run as a stand-alone network listener, but it should be registered in the inetd configuration file. For example:

```
smtp stream tcp nowait root /usr/etc/tcpd /usr/lib/sendmail -bs
```

You will still need to run one sendmail background process to handle queued-up outgoing mail. A command like:

```
/usr/lib/sendmail -q15m
```

(no '-bd' flag) should take care of that. You cannot really prevent people from posting forged mail this way, because there are many unprotected smtp daemons on the network.

## 8 - Acknowledgements

-----

Many people contributed to the evolution of the programs, by asking inspiring questions, by suggesting features or bugfixes, or by submitting source code. Nevertheless, all mistakes and bugs in the wrappers are my own.

Thanks to Brendan Kehoe (cs.widener.edu), Heimir Sverrisson (hafro.is) and Dan Bernstein (kramden.acf.nyu.edu) for feedback on an early release of this product. The host name/address check was suggested by John Kimball (src.honeywell.com). Apollo's UNIX environment has some peculiar quirks: Willem-Jan Withagen (eb.ele.tue.nl), Pieter Schoenmakers (es.ele.tue.nl) and Charles S. Fuller (wccs.psc.edu) provided assistance. Hal R. Brand (advax.llnl.gov) told me how to get the client IP address in case of datagram-oriented services, and suggested the optional shell command feature. Shabbir Safdar (mentor.cc.purdue.edu) provided a first version of a much-needed manual page. Granville Boman Goza, IV (sei.cmu.edu) suggested to use the client IP address even when the host name is available. Casper H.S. Dik (fwi.uva.nl) provided additional insight into DNS spoofing

techniques. The bogus daemon feature was inspired by code from Andrew Macpherson (BNR Europe Ltd). Steve Bellovin (research.att.com) confirmed some of my suspicions about the darker sides of TCP/IP insecurity. Risks of automated fingers were pointed out by Borja Marcos (we.lc.ehu.es). Brad Plecs (jhuspo.ca.jhu.edu) was kind enough to try my early TLI code and to work out how DG/UX differs from Solaris.

John P. Rouillard (cs.umb.edu) deserves special mention for his persistent, but constructive, nagging about wrong or missing things, and for trying out and discussing embryonic code or ideas.

Last but not least, Howard Chu (hanauma.jpl.nasa.gov), Darren Reed (coombs.anu.edu.au), Icarus Sparry (gdr.bath.ac.uk), Scott Schwartz (cs.psu.edu), John A. Kunze (violet.berkeley.edu), Daniel Len Schales (engr.latech.edu), Chris Turbeville (cse.uta.edu), Paul Kranenburg (cs.few.eur.nl), Marc Boucher (cam.org), Dave Mitchell (dcs.shef.ac.uk), Andrew Maffei, Adrian van Bloois, Rop Gonggrijp, John C. Wingenbach, Everett F. Batey and many, many others provided fixes, code fragments, or ideas for improvements.

Wietse Venema (wietse@wzv.win.tue.nl)  
Department of Mathematics and Computing Science  
Eindhoven University of Technology  
P.O. Box 513  
5600 MB Eindhoven  
The Netherlands

Currently visiting IBM T.J. Watson Research, Hawthorne NY, USA.

### 3.215 texinfo-5.1-5

\$Id: README 5191 2013-02-23 00:11:18Z karl \$

This is the README file for the GNU Texinfo distribution. Texinfo is the preferred documentation format for GNU software.

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Home page: <http://www.gnu.org/software/texinfo/>

This page includes links to other Texinfo-related programs.

Primary distribution point: <http://ftp.gnu.org/gnu/texinfo/>

automatic mirror redirection: <http://ftpmirror.gnu.org/texinfo/>

mirror list: <http://www.gnu.org/prep/ftp.html>

Texinfo is a documentation system that uses a single source to produce many forms of output:

- a PDF or DVI document (via the TeX typesetting system) with the normal features of a book, including sectioning, cross references, indices, etc.
- an Info file with analogous features to make documentation browsing easy.
- a plain text (ASCII) file.
- an HTML output file suitable for use with a web browser.
- a Docbook file.
- a XML file transliterating the source with a Texinfo DTD.

See `./INSTALL*` for installation instructions.

To get started with Texinfo, best is to read the Texinfo manual; it is online at <http://www.gnu.org/software/texinfo/manual/texinfo>. If you don't have Internet access, you can read the manual locally:

- first, build the distribution.
- then, for HTML, run: `make -C doc html`  
and you can start reading at `doc/texinfo.html/index.html`.
- for PDF, if you have a working TeX, run: `make -C doc pdf`
- for Info, you can read about the Info reader itself with:  
`./info/ginfo doc/info`  
and then read the Texinfo manual:  
`./info/ginfo doc/texinfo`



Texinfo mailing lists and archives:

- <http://lists.gnu.org/mailman/listinfo/bug-texinfo>  
for bug reports, enhancement suggestions, technical discussion.
- <http://lists.gnu.org/mailman/listinfo/help-texinfo>  
for authoring questions and general discussion.

There are no corresponding newsgroups.

Bug reports:

Please include enough information for the maintainers to reproduce the problem. Generally speaking, that means:

- the contents of all input files necessary to reproduce the bug (crucial!).
- a statement of the problem and any samples of the erroneous output.
- the version number of Texinfo and the program(s) involved (use `--version`).
- hardware and operating system information (`uname -a`).
- unusual options you gave to configure, if any (see `config.status`).
- anything else that you think could be helpful.

Patches are most welcome; if possible, please make them with `diff -c` and include `ChangeLog` entries.

See `README-hacking` for information on the Texinfo development environment -- any interested parties are welcome. If you're a programmer and wish to contribute, this should get you started. If you're not a programmer, you can still make significant contributions by writing test cases, checking the documentation against the implementation, etc.

This distribution includes the following files, among others:

<code>README</code>	This file.
<code>README-hacking</code>	Texinfo developer information.
<code>INSTALL</code>	Texinfo-specific installation notes.
<code>NEWS</code>	Summary of new features by release.

Texinfo documentation files (in `./doc`):

<code>texinfo.txi</code>	Describes the Texinfo language and many of the associated tools. It tells how to use Texinfo to write documentation, how to use Texinfo mode in GNU Emacs, TeX, <code>texi2any</code> / <code>makeinfo</code> , and much else.
<code>info.txi</code>	Describes how to read manuals in Info. This document also comes as part of GNU Emacs.

info-stdn.texi	How to use the standalone GNU Info reader that is included in this distribution (./info).
 Printing-related files:	
doc/texinfo.tex	This implements Texinfo in TeX, to typeset a Texinfo file into a DVI or PDF file.
util/texindex.c	This file contains the source for the 'texindex' program that generates sorted indices used by TeX when typesetting a file for printing.
util/texi2dvi	This is a shell script for producing an indexed DVI file using TeX and texindex.
util/texi2pdf	Generate PDF (wrapper for texi2dvi).
 Source directories:	
djgpp/	Support for compiling under DJGPP.
gnulib/	Support files from Gnulib.
info/	Standalone Info reader.
install-info/	Maintain the Info dir file.
tp/	Texinfo Parser in Perl, includes texi2any/makeinfo.
 Translation support:	
po/	Strings of the programs.
po_document/	Strings in generated Texinfo documents.
 Installation support:	
Makefile.am	Read by Automake to create a Makefile.in.
Makefile.in	Read by configure to make a Makefile, created by Automake.
configure.ac	Read by Autoconf to create 'configure'.
configure	Configuration script for local conditions, created by Autoconf.
build-aux/	Common files.
 Finally, the contrib/ directory contains additional files from users provided for your reading and/or hacking pleasure. They aren't part of Texinfo proper or maintained by the Texinfo developers.	

### 3.215.1 Copying

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## TERMS AND CONDITIONS

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## 3.216 tuned-2.10.0-6

Tuned: Daemon for monitoring and adaptive tuning of system devices.

(This is tuned 2.0 with a new code base. If you are looking for the older version, please check out branch '1.0' in our Git repository.)

How to use it

-----

In Fedora, Red Hat Enterprise Linux, and their derivatives install tuned package (optionally tuned-utils, tuned-utils-systemtap, and tuned-profiles-compat):

```
yum install tuned
```

After the installation, start the tuned service:

```
systemctl start tuned
```

You might also want to run tuned whenever your machine starts:

```
systemctl enable tuned
```

If the daemon is running you can easily control it using 'tuned-adm' command line utility. This tool communicates with the daemon over DBus. Any user can list the available profiles and see which one is active. But the profiles can be switched only by root user or by any user with physical console allocated on the machine (X11, physical tty, but no SSH).

To see the current active profile, run:

```
$ tuned-adm active
```

To list all available profiles, run:

```
$ tuned-adm list
```

To switch to a different profile, run:

```
tuned-adm profile <profile-name>
```

Your profile choice is also written into /etc/tuned/active\_profile and this choice is used when the daemon is restarted (e.g. with the machine reboot).

To disable all tunings, run:  
# tuned-adm off

# tuned-adm recommend

Recommend profile suitable for your system. Currently only static detection is implemented - it decides according to data in /etc/system-release-cpe and virt-what output. The rules for autodetection are defined in the file /usr/lib/tuned/recommend.d/50-tuned.conf. They can be overridden by the user by putting a file to /etc/tuned/recommend.d or a file named recommend.conf into /etc/tuned (see tuned-adm(8) for more details). The default rules recommend profiles targeted to the best performance or the balanced profile if unsure.

Available tunings  
-----

We are currently working on many new tuning features. Some are described in the manual pages, some are yet undocumented.

Authors  
-----

The best way to contact the authors of the project is to use our mailing list: power-management@lists.fedoraproject.org

In case you want to contact individual author, you will find the e-mail address in every commit message in our Git repository:  
<https://github.com/redhat-performance/tuned.git>

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```

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```
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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
```

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### 3.217 tzdata-2018i-1

README for the tz distribution

"What time is it?" -- Richard Deacon as The King  
"Any time you want it to be." -- Frank Baxter as The Scientist  
(from the Bell System film "About Time")

The Time Zone Database (called tz, tzdb or zoneinfo) contains code and data that represent the history of local time for many representative locations around the globe. It is updated periodically to reflect changes made by political bodies to time zone boundaries, UTC offsets, and daylight-saving rules.

See <<https://www.iana.org/time-zones/repository/tz-link.html>> or the file tz-link.html for how to acquire the code and data. Once acquired, read the comments in the file 'Makefile' and make any changes needed to make things right for your system, especially if you are using some platform other than GNU/Linux. Then run the following commands, substituting your desired installation directory for "\$HOME/tzdir":

```
make TOPDIR=$HOME/tzdir install
$HOME/tzdir/usr/bin/zdump -v America/Los_Angeles
```

This database of historical local time information has several goals:

- \* Provide a compendium of data about the history of civil time that is useful even if not 100% accurate.
- \* Give an idea of the variety of local time rules that have existed in the past and thus may be expected in the future.
- \* Test the generality of the local time rule description system.

The information in the time zone data files is by no means authoritative; fixes and enhancements are welcome. Please see the file CONTRIBUTING for details.

Thanks to these Time Zone Caballeros who've made major contributions to the time conversion package: Keith Bostic; Bob Devine; Paul Eggert; Robert Elz; Guy Harris; Mark Horton; John Mackin; and Bradley White. Thanks also to Michael Bloom, Art Neilson, Stephen Prince, John Sovereign, and Frank Wales for testing work, and to Gwillim Law for checking local mean time data. Thanks in particular to Arthur David Olson, the project's founder and first

maintainer, to whom the time zone community owes the greatest debt of all.  
None of them are responsible for remaining errors.

-----

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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.



### 3.218 ustr-1.0.4-16

Compile with:

```
make
make all-shared
```

Compile and Run test suite with:

```
make check
```

Install all important files with:

```
make install
```

Cleanup:

```
make clean
```

Full cleanup, incl. .in -> real conversion etc:

```
make distclean
```

See README-DEVELOPERS for what to do after that, or look at the website at:

<http://www.and.org/ustr/>

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## 3.219 util-linux-2.23.2-59

util-linux

util-linux is a random collection of Linux utilities

Note that in years 2006-2010 this project used the name "util-linux-ng".

### MAILING LIST:

E-MAIL: [util-linux@vger.kernel.org](mailto:util-linux@vger.kernel.org)

URL: <http://vger.kernel.org/vger-lists.html#util-linux>

### DOWNLOAD:

<ftp://ftp.kernel.org/pub/linux/utils/util-linux/>

### SOURCE CODE:

Web interface:

<http://git.kernel.org/?p=utils/util-linux/util-linux.git>

<https://github.com/karelzak/util-linux>

Checkout:

```
git clone git://git.kernel.org/pub/scm/utils/util-linux/util-linux.git
util-linux
```

### NLS (PO TRANSLATIONS):

PO files are maintained by:

<http://translationproject.org/domain/util-linux.html>

### VERSION SCHEMA:

Standard releases:

<major>.<minor>[.<maint>[.<bugfix>]]

major = fatal and deep changes

minor = typical release with new features

maint = maintenance releases; bug fixes only  
bugfix = unplanned releases for critical/security bugs

Development releases:

<major>.<minor>-rc<N>

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```

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Ty Coon, President of Vice
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## 3.220 vim-7.4.160-5

README.txt for version 7.4 of Vim: Vi IMproved.

### WHAT IS VIM

Vim is an almost compatible version of the UNIX editor Vi. Many new features have been added: multi-level undo, syntax highlighting, command line history, on-line help, spell checking, filename completion, block operations, etc. There is also a Graphical User Interface (GUI) available. See "runtime/doc/vi\_diff.txt" for differences with Vi.

This editor is very useful for editing programs and other plain text files. All commands are given with normal keyboard characters, so those who can type with ten fingers can work very fast. Additionally, function keys can be defined by the user, and the mouse can be used.

Vim runs under Amiga DOS, MS-DOS, MS-Windows (95, 98, Me, NT, 2000, XP, Vista, 7), Atari MiNT, Macintosh, BeOS, VMS, RISC OS, OS/2 and almost all flavours of UNIX. Porting to other systems should not be very difficult.

### DISTRIBUTION

There are separate distributions for Unix, PC, Amiga and some other systems. This README.txt file comes with the runtime archive. It includes the documentation, syntax files and other files that are used at runtime. To run Vim you must get either one of the binary archives or a source archive. Which one you need depends on the system you want to run it on and whether you want or must compile it yourself. Check "<http://www.vim.org/download.php>" for an overview of currently available distributions.

### DOCUMENTATION

The vim tutor is a one hour training course for beginners. Mostly it can be started as "vimtutor". See ":help tutor" for more information.

The best is to use ":help" in Vim. If you don't have an executable yet, read "runtime/doc/help.txt". It contains pointers to the other documentation files. The User Manual reads like a book and is recommended to learn to use Vim. See ":help user-manual".

## COPYING

Vim is Charityware. You can use and copy it as much as you like, but you are encouraged to make a donation to help orphans in Uganda. Please read the file "runtime/doc/uganda.txt" for details (do ":help uganda" inside Vim).

Summary of the license: There are no restrictions on using or distributing an unmodified copy of Vim. Parts of Vim may also be distributed, but the license text must always be included. For modified versions a few restrictions apply. The license is GPL compatible, you may compile Vim with GPL libraries and distribute it.

## SPONSORING

Fixing bugs and adding new features takes a lot of time and effort. To show your appreciation for the work and motivate Bram and others to continue working on Vim please send a donation.

Since Bram is back to a paid job the money will now be used to help children in Uganda. See runtime/doc/uganda.txt. But at the same time donations increase Bram's motivation to keep working on Vim!

For the most recent information about sponsoring look on the Vim web site:

<http://www.vim.org/sponsor/>

## COMPILING

If you obtained a binary distribution you don't need to compile Vim. If you obtained a source distribution, all the stuff for compiling Vim is in the "src" directory. See src/INSTALL for instructions.

## INSTALLATION

See one of these files for system-specific instructions:

README\_ami.txt Amiga

README\_unix.txt Unix

README\_dos.txt MS-DOS and MS-Windows

README\_os2.txt OS/2

README\_mac.txt Macintosh

README\_vms.txt VMS

There are more README\_\*.txt files, depending on the distribution you used.

## INFORMATION

The latest news about Vim can be found on the Vim home page:

<http://www.vim.org/>

If you have problems, have a look at the Vim FAQ:

<http://vimdoc.sf.net/vimfaq.html>

If you still have problems or any other questions, use one of the mailing lists to discuss them with Vim users and developers:

<http://www.vim.org/maillist.php>

If nothing else works, report bugs directly:

Bram Moolenaar <[Bram@vim.org](mailto:Bram@vim.org)>

## MAIN AUTHOR

Send any other comments, patches, flowers and suggestions to:

Bram Moolenaar E-mail: [Bram@vim.org](mailto:Bram@vim.org)

Finsterruetihof 1

8134 Adliswil

Switzerland

### 3.221 virt-what-1.18-4

virt-what

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---

This is a collection of scripts which you can use to work out what sort of virtualization you are running inside. Please read the manual page virt-what(1) to find out how to use it. This file is for developers and people compiling from source.

Compiling and installing

---

Build from a tarball:

```
./configure
make
```

Build from git (<http://git.annexia.org/?p=virt-what.git;a=summary>):

```
autoreconf -i
autoconf
./configure
make
```

Run the automated regression tests:

```
make check
```

If you want to run it from the local directory (without needing to install), then you have to set the PATH:

```
PATH=.:$PATH virt-what
```

or since virt-what normally needs to be run as root:

```
su -c 'PATH=.:$PATH virt-what'
```

To install (usually as root):

```
make install
```

also:



```
make prefix=/usr install
make DESTDIR=/tmp/somewhere install
```

#### Contributing a virtualization test

---

virt-what is especially dependent on outside contributors because it's hard to even get access to some of the hypervisors out there, and even for the common hypervisors there are many different versions and many different ways for to break. For these reasons we are especially happy if you contribute to or even just test virt-what :-)

virt-what is a simple shell script. Add a new hypervisor test to 'virt-what.in' ('virt-what' in this directory is a generated file).

If you can't contribute a patch, please just send us the following data (all as root from inside the guest):

- (1) /proc/cpuinfo
- (2) dmidecode
- (3) If possible, send the output of /usr/libexec/virt-what-cpuid-helper
- (4) Any other /proc and /sys files that may be related to the hypervisor.
- (5) Name of the virtualization system, version, host or guest, and as much other information as possible.

Please send patches, test results or any other data to:

<https://www.redhat.com/mailman/listinfo/virt-tools-list>

See also: <http://virt-tools.org/contact/>

#### Contributing a regression test

---

In the tests/ subdirectory you'll find some existing tests.

These tests are taken from real machines, and we have a policy of \*only\* adding real data here so that our regression tests are

impeccable.

The virt-what script has a hidden '--test-root' option which allows a different root directory to be specified for these regression tests. The tests/ subdirectory contains some alternate root filesystems (sparsely populated with a few files taken from the real systems) for testing.

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```
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```
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This is free software, and you are welcome to redistribute it
under certain conditions; type 'show c' for details.
```

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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
```

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### 3.222 wget-1.14-18

-- text --

GNU Wget

=====

Current Web home: <http://www.gnu.org/software/wget/>

GNU Wget is a free utility for non-interactive download of files from the Web. It supports HTTP, HTTPS, and FTP protocols, as well as retrieval through HTTP proxies.

It can follow links in HTML pages and create local versions of remote web sites, fully recreating the directory structure of the original site. This is sometimes referred to as "recursive downloading."

While doing that, Wget respects the Robot Exclusion Standard (/robots.txt). Wget can be instructed to convert the links in downloaded HTML files to the local files for offline viewing.

Recursive downloading also works with FTP, where Wget can retrieve a hierarchy of directories and files.

With both HTTP and FTP, Wget can check whether a remote file has changed on the server since the previous run, and only download the newer files.

Wget has been designed for robustness over slow or unstable network connections; if a download fails due to a network problem, it will keep retrying until the whole file has been retrieved. If the server supports regetting, it will instruct the server to continue the download from where it left off.

If you are behind a firewall that requires the use of a socks style gateway, you can get the socks library and compile wget with support for socks.

Most of the features are configurable, either through command-line options, or via initialization file .wgetrc. Wget allows you to install a global startup file (/usr/local/etc/wgetrc by default) for site settings.

Wget works under almost all Unix variants in use today and, unlike many of its historical predecessors, is written entirely in C, thus requiring no additional software, such as Perl. The external software it does work with, such as OpenSSL, is optional. As Wget uses the GNU

Autoconf, it is easily built on and ported to new Unix-like systems. The installation procedure is described in the INSTALL file.

As with other GNU software, the latest version of Wget can be found at the master GNU archive site <ftp.gnu.org>, and its mirrors. Wget resides at [<ftp://ftp.gnu.org/pub/gnu/wget/>](ftp://ftp.gnu.org/pub/gnu/wget/).

Please report bugs in Wget to [<bug-wget@gnu.org>](mailto:bug-wget@gnu.org).

See the file 'MAILING-LIST' for information about Wget mailing lists. Wget's home page is at [<http://www.gnu.org/software/wget/>](http://www.gnu.org/software/wget/).

If you would like to contribute code for Wget, please read <http://wget.addictivecode.org/PatchGuidelines>.

Wget was originally written and maintained by Hrvoje Niksic. Please see the file AUTHORS for a list of major contributors, and the ChangeLogs for a detailed listing of all contributions.

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### 3.223 which-2.20-7

#### Install

=====

You will need an ANSI C compiler (like gcc) to compile this package.

Just type 'make', followed by 'make install'.

#### History

=====

The main difference with version 1.0 by Paul Vixie is that this version will not return directory names as being executables and that by default it will expand a leading "./" and "~/ " to its full path on output.

The -all option has been added in example of a version of which on Ultrix. They use '-a' as option.

The --read-alias idea has been copied from a version of which by Maarten Litmaath called 'which-v6', he was using '-i' as option which stands for 'interactive'.

#### Manual page

=====

#### NAME

which - shows the full path of (shell) commands.

#### SYNOPSIS

which [options] [--] programname [...]

#### DESCRIPTION

Which takes one or more arguments. For each of its arguments it prints to stdout the full path of the executables that would have been executed when this argument had been entered at the shell prompt. It does this by searching for an executable or script in the directories listed in the environment variable PATH using the same algorithm as bash(1).

This man page is generated from the file which.texinfo.

#### OPTIONS

`--all, -a`  
 Print all matching executables in PATH, not just the first.

`--read-alias, -i`  
 Read aliases from stdin, reporting matching ones on stdout. This is useful in combination with using an alias for which itself. For example  
`alias which='alias | which -i'`.

`--skip-alias`  
 Ignore option '`--read-alias`', if any. This is useful to explicitly search for normal binaries, while using the '`--read-alias`' option in an alias or function for which.

`--read-functions`  
 Read shell function definitions from stdin, reporting matching ones on stdout. This is useful in combination with using a shell function for which itself. For example:  
`which() { declare -f | which --read-functions $@ }`  
`export -f which`

`--skip-functions`  
 Ignore option '`--read-functions`', if any. This is useful to explicitly search for normal binaries, while using the '`--read-functions`' option in an alias or function for which.

`--skip-dot`  
 Skip directories in PATH that start with a dot.

`--skip-tilde`  
 Skip directories in PATH that start with a tilde and executables which reside in the HOME directory.

`--show-dot`  
 If a directory in PATH starts with a dot and a matching executable was found for that path, then print `./programname` rather than the full path.

`--show-tilde`  
 Output a tilde when a directory matches the HOME directory. This option is ignored when which is invoked as root.

`--version, -v, -V`  
 Print version information on standard output then exit successfully.

`--help`

Print usage information on standard output then exit successfully.

#### RETURN VALUE

Which returns the number of failed arguments, or -1 when no 'program-name' was given.

#### EXAMPLE

The recommended way to use this utility is by adding an alias (C shell) or shell function (Bourne shell) for which like the following:

[ba]sh:

```
which ()
{
 (alias; declare -f) | /usr/bin/which --tty-only --read-alias
--read-functions --show-tilde --show-dot $@
}
export -f which
```

[t]csh:

```
alias which 'alias | /usr/bin/which --tty-only --read-alias
--show-dot --show-tilde'
```

This will print the readable ~/ and ./ when starting which from your prompt, while still printing the full path when used from a script:

```
> which q2
~/bin/q2
> echo 'which q2'
/home/carlo/bin/q2
```

#### BUGS

The HOME directory is determined by looking for the HOME environment variable, which aborts when this variable doesn't exist. Which will consider two equivalent directories to be different when one of them contains a path with a symbolic link.

#### AUTHOR

Carlo Wood <carlo@gnu.org>



SEE ALSO  
    bash(1)

WHICH(1)

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### 3.224 wpa-supPLICant-2.6-12

wpa\_supPLICant and hostapd

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This package may include either wpa\_supPLICant, hostapd, or both. See  
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Source code files were moved around in v0.6.x releases and compared to  
earlier releases, the programs are now built by first going to a  
subdirectory (wpa\_supPLICant or hostapd) and creating build  
configuration (.config) and running 'make' there (for Linux/BSD/cygwin  
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wpa\_supplicant and hostapd

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### **3.225 xfsprogs-4.5.0-18**

XFS User Tools README

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See the file doc/INSTALL for build, installation and post-install configuration steps.

Refer to the xfs(5) manual page for general XFS information and references to other XFS manual pages.

For more information and details on how to contribute to the XFS project see the web pages at:  
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```
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.
```

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```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
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```

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

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### 3.226 xmlsec1-1.2.20-7

XMLSec Library

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XMLSec library provides C based implementation for major XML Security standards:

- \* XML Signature Syntax and Processing  
<http://www.w3.org/TR/xmlsig-core>
- \* XML Encryption Syntax and Processing  
<http://www.w3.org/TR/xmlenc-core/>

XMLSec is based on well known LibXML (<http://xmlsoft.org>), LibXSLT (<http://xmlsoft.org/XSLT>) and OpenSSL (<http://www.openssl.org>) libraries.

This code is released under the MIT Licence see the Copyright file.

Aleksey Sanin <[aleksey@aleksey.com](mailto:aleksey@aleksey.com)>

### 3.226.1 Copying

xmlsec, xmlsec-openssl, xmlsec-gnutls, xmlsec-gcrypt libraries

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xmlsec-nss library

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xmlsec-mscrypto library

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#### References

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\* AOL

<http://www.aleksey.com/pipermail/xmlsec/2003/005488.html>

<http://www.aleksey.com/pipermail/xmlsec/attachments/20030729/0e25648e/attachment.htm>

\* Cordys R&D BV

<http://www.aleksey.com/pipermail/xmlsec/2003/005581.html>

\* Cryptocom LTD

<http://www.aleksey.com/pipermail/xmlsec/2006/007410.html>

## 3.227 xz-5.2.2-1

XZ Utils

=====

- 0. Overview
- 1. Documentation
  - 1.1. Overall documentation
  - 1.2. Documentation for command line tools
  - 1.3. Documentation for liblzma
- 2. Version numbering
- 3. Reporting bugs
- 4. Other implementations of the .xz format
- 5. Contact information

### 0. Overview

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XZ Utils provide a general-purpose data compression library and command line tools. The native file format is the .xz format, but also the legacy .lzma format is supported. The .xz format supports multiple compression algorithms, which are called "filters" in context of XZ Utils. The primary filter is currently LZMA2. With typical files, XZ Utils create about 30 % smaller files than gzip.

To ease adapting support for the .xz format into existing applications and scripts, the API of liblzma is somewhat similar to the API of the popular zlib library. For the same reason, the command line tool xz has similar command line syntax than that of gzip.

When aiming for the highest compression ratio, LZMA2 encoder uses a lot of CPU time and may use, depending on the settings, even hundreds of megabytes of RAM. However, in fast modes, LZMA2 encoder competes with bzip2 in compression speed, RAM usage, and compression ratio.

LZMA2 is reasonably fast to decompress. It is a little slower than gzip, but a lot faster than bzip2. Being fast to decompress means that the .xz format is especially nice when the same file will be decompressed very many times (usually on different computers), which is the case e.g. when distributing software packages. In such situations, it's not too bad if the compression takes some time,

since that needs to be done only once to benefit many people.

With some file types, combining (or "chaining") LZMA2 with an additional filter can improve compression ratio. A filter chain may contain up to four filters, although usually only one two is used. For example, putting a BCJ (Branch/Call/Jump) filter before LZMA2 in the filter chain can improve compression ratio of executable files.

Since the .xz format allows adding new filter IDs, it is possible that some day there will be a filter that is, for example, much faster to compress than LZMA2 (but probably with worse compression ratio). Similarly, it is possible that some day there is a filter that will compress better than LZMA2.

XZ Utils doesn't support multithreaded compression or decompression yet. It has been planned though and taken into account when designing the .xz file format.

## 1. Documentation

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### 1.1. Overall documentation

README	This file
INSTALL.generic	Generic install instructions for those not familiar with packages using GNU Autotools
INSTALL	Installation instructions specific to XZ Utils
PACKAGERS	Information to packagers of XZ Utils
COPYING	XZ Utils copyright and license information
COPYING.GPLv2	GNU General Public License version 2
COPYING.GPLv3	GNU General Public License version 3
COPYING.LGPLv2.1	GNU Lesser General Public License version 2.1
AUTHORS	The main authors of XZ Utils
THANKS	Incomplete list of people who have helped making this software
NEWS	User-visible changes between XZ Utils releases
ChangeLog	Detailed list of changes (commit log)
TODO	Known bugs and some sort of to-do list

Note that only some of the above files are included in binary

packages.

## 1.2. Documentation for command line tools

The command line tools are documented as man pages. In source code releases (and possibly also in some binary packages), the man pages are also provided in plain text (ASCII only) and PDF formats in the directory "doc/man" to make the man pages more accessible to those whose operating system doesn't provide an easy way to view man pages.

## 1.3. Documentation for liblzma

The liblzma API headers include short docs about each function and data type as Doxygen tags. These docs should be quite OK as a quick reference.

I have planned to write a bunch of very well documented example programs, which (due to comments) should work as a tutorial to various features of liblzma. No such example programs have been written yet.

For now, if you have never used liblzma, libbzip2, or zlib, I recommend learning \*basics\* of zlib API. Once you know that, it should be easier to learn liblzma.

<http://zlib.net/manual.html>  
[http://zlib.net/zlib\\_how.html](http://zlib.net/zlib_how.html)

## 2. Version numbering

-----

The version number format of XZ Utils is X.Y.ZS:

- X is the major version. When this is incremented, the library API and ABI break.
- Y is the minor version. It is incremented when new features are added without breaking existing API or ABI. Even Y indicates stable release and odd Y indicates unstable (alpha or beta version).



- Z is the revision. This has different meaning for stable and unstable releases:
  - \* Stable: Z is incremented when bugs get fixed without adding any new features.
  - \* Unstable: Z is just a counter. API or ABI of features added in earlier unstable releases having the same X.Y may break.
- S indicates stability of the release. It is missing from the stable releases where Y is an even number. When Y is odd, S is either "alpha" or "beta" to make it very clear that such versions are not stable releases. The same X.Y.Z combination is not used for more than one stability level i.e. after X.Y.Zalpha, the next version can be X.Y.(Z+1)beta but not X.Y.Zbeta.

### 3. Reporting bugs

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Naturally it is easiest for me if you already know what causes the unexpected behavior. Even better if you have a patch to propose. However, quite often the reason for unexpected behavior is unknown, so here are a few things to do before sending a bug report:

1. Try to create a small example how to reproduce the issue.
2. Compile XZ Utils with debugging code using configure switches `--enable-debug` and, if possible, `--disable-shared`. If you are using GCC, use `CFLAGS='-O0 -ggdb3'`. Don't strip the resulting binaries.
3. Turn on core dumps. The exact command depends on your shell; for example in GNU bash it is done with `"ulimit -c unlimited"`, and in tcsh with `"limit coredumpsize unlimited"`.
4. Try to reproduce the suspected bug. If you get "assertion failed" message, be sure to include the complete message in your bug report. If the application leaves a core dump, get a backtrace using gdb:
 

```
$ gdb /path/to/app-binary # Load the app to the debugger.
(gdb) core core # Open the core dump.
(gdb) bt # Print the backtrace. Copy & paste to bug report.
(gdb) quit # Quit gdb.
```

Report your bug via email or IRC (see Contact information below).

Don't send core dump files or any executables. If you have a small example file(s) (total size less than 256 KiB), please include it/them as an attachment. If you have bigger test files, put them online somewhere and include an URL to the file(s) in the bug report.

Always include the exact version number of XZ Utils in the bug report. If you are using a snapshot from the git repository, use "git describe" to get the exact snapshot version. If you are using XZ Utils shipped in an operating system distribution, mention the distribution name, distribution version, and exact xz package version; if you cannot repeat the bug with the code compiled from unpatched source code, you probably need to report a bug to your distribution's bug tracking system.

#### 4. Other implementations of the .xz format

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7-Zip and the p7zip port of 7-Zip support the .xz format starting from the version 9.00alpha.

<http://7-zip.org/>  
<http://p7zip.sourceforge.net/>

XZ Embedded is a limited implementation written for use in the Linux kernel, but it is also suitable for other embedded use.

<http://tukaani.org/xz/embedded.html>

#### 5. Contact information

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If you have questions, bug reports, patches etc. related to XZ Utils, contact Lasse Collin <lasse.collin@tukaani.org> (in Finnish or English). tukaani.org uses greylisting to reduce spam, thus when you send your first email, it may get delayed by a few hours. In addition to that, I'm sometimes slow at replying. If you haven't got a reply within two weeks, assume that your email has got lost and resend it or use IRC.

You can find me also from #tukaani on Freenode; my nick is Larhzu. The channel tends to be pretty quiet, so just ask your question and someone may wake up.

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```
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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  
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```
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
```

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## 3.228 yum-3.4.3-161

-----  
Yum - an automatic updater and installer for rpm-based systems  
-----

Included programs:  
/usr/bin/yum Main program

Basic usage description follows:

Yum is run with one of the following options:

- update [package list]

If run without any packages, Yum will automatically upgrade every currently installed package. If one or more packages are specified, Yum will only update the packages listed.

- install <package list>

Yum will install the latest version of the specified package (don't specify version information).

- remove <package list>

Yum will remove the specified packages from the system.

- yum list [package list]

List available packages

See the man page for more information (man yum)

Also see the webpage and wiki for more information:

web page: <http://yum.baseurl.org/>

wiki: <http://yum.baseurl.org/wiki>

3.2.X Branch - yum-3\_2\_X

Starting commit is roughly: a3c91d7f6a15f31a42d020127b2da2877dfc137d

E.g. git diff a3c91d7f6a15f31a42d020127b2da2877dfc137d

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```

```
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Ty Coon, President of Vice
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### 3.229 yum-metadata-parser-1.1.4-10

YUM metadata parser written in C.

\* Why?

The biggest complaint people have with YUM is often the performance of parsing the metadata. This implementation should be ~10 times faster, parsing the primary.xml file under 1 second usually, filelists.xml under 3 seconds and other.xml under 4 seconds. It uses a lot less memory as well, some testings I have done show it uses ~4mb instead of 40mb standard YUM uses.

\* How?

Should be really easy:

```
python setup.py build
```

```
sudo python setup.py install --prefix=/usr
```

(Assuming you python prefix is /usr).

The next time you use yum, it regenerates the sqlitecache because the database schema is slightly different.

## 3.230 yum-utils-1.1.31-50

-- Introduction --

Yum-utils is a collection of utilities, plugins and examples related to the yum package manager. See <http://wiki.linux.duke.edu/YumUtils> for more details.

If you encounter any problems using these utilities feel free to send an e-mail to the yum mailing list:

<http://lists.baseurl.org/mailman/listinfo/yum>

If you have created an utility related to yum and you'd like to look into getting it included into this set please e-mail the yum-devel mailing list:

<http://lists.baseurl.org/mailman/listinfo/yum-devel>

-- Description of the utilities --

package-cleanup:

Check for unneeded packages and dependency problems in the system.

repoclosure:

Check for dependency problems in repositories.

repomanage:

Look up oldest or newest packages in a directory. Can be used for cleaning up repositories for example.

repoquery:

Query packages and groups in repositories similarly to rpmquery.

repo-rss:

Generate RSS feed from repositories.

yum-builddep:

Install build dependencies of source RPMS.

yumdownloader:

Download packages (and optionally their dependencies) to arbitrary directories without installing them.

reposync:

poor-man's rsync for yum repositories. Uses the yum download mechanisms to synchronize a remote repository to a local directory

repotrack:

allows you to track only certain packages and their dependencies from a remote repository. Useful if you only want a few things out of another repository.

-- Authors --

Various people have made a contribution to this collection:

- Gijs Hollestelle

Author of yumdownloader and package-cleanup

- Seth Vidal

Maintainer of yum, author of repoclosure, repomanage and repo-rss

- Panu Matilainen

Author of repoquery, yum-builddep

- Sean Dilda

Author of the update on boot init scripts

- Tim Lauridsen

Maintainer of yum-utils - fixer of a lot of misc utils.

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### 3.231 zlib-1.2.7-18

#### ZLIB DATA COMPRESSION LIBRARY

zlib 1.2.7 is a general purpose data compression library. All the code is thread safe. The data format used by the zlib library is described by RFCs (Request for Comments) 1950 to 1952 in the files <http://tools.ietf.org/html/rfc1950> (zlib format), rfc1951 (deflate format) and rfc1952 (gzip format).

All functions of the compression library are documented in the file `zlib.h` (volunteer to write man pages welcome, contact [zlib@gzip.org](mailto:zlib@gzip.org)). A usage example of the library is given in the file `test/example.c` which also tests that the library is working correctly. Another example is given in the file `test/minigzip.c`. The compression library itself is composed of all source files in the root directory.

To compile all files and run the test program, follow the instructions given at the top of `Makefile.in`. In short `./configure; make test`, and if that goes well, `"make install"` should work for most flavors of Unix. For Windows, use one of the special makefiles in `win32/` or `contrib/vstudio/`. For VMS, use `make_vms.com`.

Questions about zlib should be sent to [<zlib@gzip.org>](mailto:zlib@gzip.org), or to Gilles Vollant [<info@winimage.com>](mailto:info@winimage.com) for the Windows DLL version. The zlib home page is <http://zlib.net/>. Before reporting a problem, please check this site to verify that you have the latest version of zlib; otherwise get the latest version and check whether the problem still exists or not.

PLEASE read the zlib FAQ [http://zlib.net/zlib\\_faq.html](http://zlib.net/zlib_faq.html) before asking for help.

Mark Nelson [<markn@ieee.org>](mailto:markn@ieee.org) wrote an article about zlib for the Jan. 1997 issue of Dr. Dobbs's Journal; a copy of the article is available at <http://marknelson.us/1997/01/01/zlib-engine/>.

The changes made in version 1.2.7 are documented in the file `ChangeLog`.

Unsupported third party contributions are provided in directory `contrib/`.

zlib is available in Java using the `java.util.zip` package, documented at <http://java.sun.com/developer/technicalArticles/Programming/compression/>.

A Perl interface to zlib written by Paul Marquess [<pmqs@cpan.org>](mailto:pmqs@cpan.org) is available at CPAN (Comprehensive Perl Archive Network) sites, including

<http://search.cpan.org/~pmqs/IO-Compress-Zlib/> .

A Python interface to zlib written by A.M. Kuchling <amk@amk.ca> is available in Python 1.5 and later versions, see <http://docs.python.org/library/zlib.html> .

zlib is built into tcl: <http://wiki.tcl.tk/4610> .

An experimental package to read and write files in .zip format, written on top of zlib by Gilles Vollant <info@winimage.com>, is available in the contrib/minizip directory of zlib.

Notes for some targets:

- For Windows DLL versions, please see win32/DLL\_FAQ.txt
- For 64-bit Irix, deflate.c must be compiled without any optimization. With -O, one libpng test fails. The test works in 32 bit mode (with the -n32 compiler flag). The compiler bug has been reported to SGI.
- zlib doesn't work with gcc 2.6.3 on a DEC 3000/300LX under OSF/1 2.1 it works when compiled with cc.
- On Digital Unix 4.0D (formely OSF/1) on AlphaServer, the cc option -std1 is necessary to get gzprintf working correctly. This is done by configure.
- zlib doesn't work on HP-UX 9.05 with some versions of /bin/cc. It works with other compilers. Use "make test" to check your compiler.
- gzdopen is not supported on RISCOS or BEOS.
- For PalmOs, see <http://palmzlib.sourceforge.net/>

Acknowledgments:

The deflate format used by zlib was defined by Phil Katz. The deflate and zlib specifications were written by L. Peter Deutsch. Thanks to all the people who reported problems and suggested various improvements in zlib; they are too numerous to cite here.

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Jean-loup Gailly  
jloup@gzip.org

Mark Adler  
madler@alumni.caltech.edu

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```
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```
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```

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```
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```

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

Firmware provided by Pierrick Hascoet <pierrick.hascoet@abiliss.com> to Devin Heitmueller <dheitmueller@kernellabs.com> on January 15, 2010.

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## 4.9 agere

```
agere_sta_fw.bin -- 9.48 Hermes I
agere_ap_fw.bin -- 9.48 Hermes I
```

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The Linux driver architecture was based on two modules, the MSF (Module specific functions) and the HCF (Hardware Control Functions). Included in the HCF is run-time firmware (binary format) which is downloaded into the RAM of the Hermes 1/2/2.5 WMAC.

This hex coded firmware is not based on any open source software and hence it is not subject to any Open Source License. The firmware was developed by Agere and runs on the DISC processor embedded within the Hermes 1/2/2.5 Wireless MAC devices.

Hope this helps.

Sincerely,

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Intellectual Property Licensing Manager  
Agere

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## 4.11 broadcom-bcm43xx

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<https://tls.mbed.org/download>

Fast discrete Fourier and cosine transforms and inverses

author: Monty <xiphmont@mit.edu>

modifications by: Monty

last modification date: Jul 1 1996

```
/* These Fourier routines were originally based on the Fourier
routines of the same names from the NETLIB bihar and fftpack
fortran libraries developed by Paul N. Swarztrauber at the National
Center for Atmospheric Research in Boulder, CO USA. They have been
reimplemented in C and optimized in a few ways for OggSquish. */
```

```
/* As the original fortran libraries are public domain, the C Fourier
routines in this file are hereby released to the public domain as
well. The C routines here produce output exactly equivalent to the
original fortran routines. Of particular interest are the facts
that (like the original fortran), these routines can work on
arbitrary length vectors that need not be powers of two in
length. */
```



## 4.14 caviium

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## 4.15 chelsio-firmware

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Chelsio Communication Terminator 4/5 ethernet controller firmware

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## 4.16 cw1200

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## 4.17 cypress

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## 4.18 e100

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## **4.19 ene-firmware**

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## 4.20 fw-sst-0f28

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## 4.21 go7007

The README file from the original package from Micronas appears below. Only the part about the firmware redistribution in section 0 is relevant, all other sections are completely obsolete.

---

### WIS G07007SB Public Linux Driver

---

\*\*\* Please see the file RELEASE-NOTES for important last-minute updates \*\*\*

#### 0. OVERVIEW AND LICENSING/DISCLAIMER

This driver kit contains Linux drivers for the WIS G07007SB multi-format video encoder. Only kernel version 2.6.x is supported. The video stream is available through the Video4Linux2 API and the audio stream is available through the ALSA API (or the OSS emulation layer of the ALSA system).

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#### 1. SYSTEM REQUIREMENTS

This driver requires Linux kernel 2.6. Kernel 2.4 is not supported. Using kernel 2.6.10 or later is recommended, as earlier kernels are known to have unstable USB 2.0 support.

A fully built kernel source tree must be available. Typically this will be linked from `"/lib/modules/<KERNEL VERSION>/build"` for convenience. If this link does not exist, an extra parameter will need to be passed to the `'make'` command.

All vendor-built kernels should already be configured properly. However, for custom-built kernels, the following options need to be enabled in the kernel as built-in or modules:

<code>CONFIG_HOTPLUG</code>	- Support for hot-pluggable devices
<code>CONFIG_MODULES</code>	- Enable loadable module support
<code>CONFIG_KMOD</code>	- Automatic kernel module loading
<code>CONFIG_FW_LOADER</code>	- Hotplug firmware loading support
<code>CONFIG_I2C</code>	- I2C support
<code>CONFIG_VIDEO_DEV</code>	- Video For Linux
<code>CONFIG_SOUND</code>	- Sound card support
<code>CONFIG_SND</code>	- Advanced Linux Sound Architecture
<code>CONFIG_USB</code>	- Support for Host-side USB
<code>CONFIG_USB_DEVICEFS</code>	- USB device filesystem
<code>CONFIG_USB_EHCI_HCD</code>	- EHCI HCD (USB 2.0) support

Additionally, to use the example application, the following options need to be enabled in the ALSA section:

<code>CONFIG_SND_MIXER_OSS</code>	- OSS Mixer API
<code>CONFIG_SND_PCM_OSS</code>	- OSS PCM (digital audio) API

The hotplug scripts, along with the `fxload` utility, must also be installed. These scripts can be obtained from <http://linux-hotplug.sourceforge.net/>. Hotplugging is used for loading firmware into the Cypress EZ-USB chip using `fxload` and for loading firmware into the driver using the firmware agent.

## 2. COMPILING AND INSTALLING THE DRIVER

Most users should be able to compile the driver by simply running:

```
$ make
```

in the top-level directory of the driver kit. First the kernel modules will be built, followed by the example applications.

If the build system is unable to locate the kernel source tree for the currently-running kernel, or if the module should be built for a kernel other than the currently-running kernel, an additional parameter will need to be passed to make to specify the appropriate kernel source directory:

```
$ make KERNELSRC=/usr/src/linux-2.6.10-custom3
```

Once the compile completes, the driver and firmware files should be installed by running:

```
$ make install
```

The kernel modules will be placed in `"/lib/modules/<KERNEL VERSION>/extra"` and the firmware files will be placed in the appropriate hotplug firmware directory, usually `/lib/firmware`. In addition, USB maps and scripts will be placed in `/etc/hotplug/usb` to enable `fxload` to initialize the EZ-USB control chip when the device is connected.

### 3. PAL/SECAM TUNER CONFIGURATION (TV402U-EU only)

The PAL model of the Plextor ConvertX TV402U may require additional configuration to correctly select the appropriate TV frequency band and audio subchannel.

Users with a device other than the Plextor ConvertX TV402U-EU should skip this section.

The wide variety of PAL TV systems used in Europe requires that additional information about the local TV standards be passed to the driver in order to properly tune TV channels. The two necessary parameters are (a) the PAL TV band, and (b) the audio subchannel format in use.

In many cases, the appropriate TV band selection is passed to the driver from applications. However, in some cases, the application only specifies that the driver should use PAL but not the specific information about the appropriate TV band. To work around this issue, the correct TV band may be specified in the `"force_band"` parameter to the `wis-sony-tuner` module:

TV band	force_band
-----	-----
PAL B/G	B
PAL I	I
PAL D/K	D
SECAM L	L

If the "force\_band" parameter is specified, the driver will ignore any TV band specified by applications and will always use the band provided in the module parameter.

The other parameter that can be specified is the audio subchannel format. There are several stereo audio carrier systems in use, including NICAM and three varieties of A2. To receive audio broadcast on one of these stereo carriers, the "force\_mpx\_mode" parameter must be specified to the wis-sony-tuner module.

TV band	Audio subcarrier	force_mpx_mode
-----	-----	-----
PAL B/G	Mono (default)	1
PAL B/G	A2	2
PAL B/G	NICAM	3
PAL I	Mono (default)	4
PAL I	NICAM	5
PAL D/K	Mono (default)	6
PAL D/K	A2 (1)	7
PAL D/K	A2 (2)	8
PAL D/K	A2 (3)	9
PAL D/K	NICAM	10
SECAM L	Mono (default)	11
SECAM L	NICAM	12

If the "force\_mpx\_mode" parameter is not specified, the correct mono-only mode will be chosen based on the TV band. However, the tuner will not receive stereo audio or bilingual broadcasts correctly.

To pass the "force\_band" or "force\_mpx\_mode" parameters to the wis-sony-tuner module, the following line must be added to the modprobe configuration file, which varies from one Linux distribution to another.

```
options wis-sony-tuner force_band=B force_mpx_mode=2
```

The above example would force the tuner to the PAL B/G TV band and receive stereo audio broadcasts on the A2 carrier.

To verify that the configuration has been placed in the correct location, execute:

```
$ modprobe -c | grep wis-sony-tuner
```

If the configuration line appears, then modprobe will pass the parameters correctly the next time the wis-sony-tuner module is loaded into the kernel.

#### 4. TESTING THE DRIVER

Because few Linux applications are able to correctly capture from Video4Linux2 devices with only compressed formats supported, the new driver should be tested with the "gorecord" application in the apps/ directory.

First connect a video source to the device, such as a DVD player or VCR. This will be captured to a file for testing the driver. If an input source is unavailable, a test file can still be captured, but the video will be black and the audio will be silent.

This application will auto-detect the V4L2 and ALSA/OSS device names of the hardware and will record video and audio to an AVI file for a specified number of seconds. For example:

```
$ apps/gorecord -duration 60 capture.avi
```

If this application does not successfully record an AVI file, the error messages produced by gorecord and recorded in the system log (usually in /var/log/messages) should provide information to help resolve the problem.

Supplying no parameters to gorecord will cause it to probe the available devices and exit. Use the -help flag for usage information.

#### 5. USING THE DRIVER

The V4L2 device implemented by the driver provides a standard compressed format API, within the following criteria:

- \* Applications that only support the original Video4Linux1 API will not



be able to communicate with this driver at all.

- \* No raw video modes are supported, so applications like xawtv that expect only uncompressed video will not function.
- \* Supported compression formats are: Motion-JPEG, MPEG1, MPEG2 and MPEG4.
- \* MPEG video formats are delivered as Video Elementary Streams only. Program Stream (PS), Transport Stream (TS) and Packetized Elementary Stream (PES) formats are not supported.
- \* Video parameters such as format and input port may not be changed while the encoder is active.
- \* The audio capture device only functions when the video encoder is actively capturing video. Attempts to read from the audio device when the encoder is inactive will result in an I/O error.
- \* The native format of the audio device is 48Khz 2-channel 16-bit little-endian PCM, delivered through the ALSA system. No audio compression is implemented in the hardware. ALSA may convert to other uncompressed formats on the fly.

The include/ directory contains a C header file describing non-standard features of the GO7007SB encoder, which are described below:

#### GO7007IOC\_S\_COMP\_PARAMS, GO7007IOC\_G\_COMP\_PARAMS

These ioctls are used to negotiate general compression parameters.

To query the current parameters, call the GO7007IOC\_G\_COMP\_PARAMS ioctl with a pointer to a struct go7007\_comp\_params. If the driver is not set to MPEG format, the EINVAL error code will be returned.

To change the current parameters, initialize all fields of a struct go7007\_comp\_params and call the GO7007\_IOC\_S\_COMP\_PARAMS ioctl with a pointer to this structure. The driver will return the current parameters with any necessary changes to conform to the limitations of the hardware or current compression mode. Any or all fields can be set to zero to request a reasonable default value. If the driver is not set to MPEG format, the EINVAL error code will be returned. When I/O is in progress, the EBUSY error code will be returned.

Fields in struct `go7007_comp_params`:

<code>__u32</code> <code>gop_size</code>	The maximum number of frames in each Group Of Pictures; i.e. the maximum number of frames minus one between each key frame.
<code>__u32</code> <code>max_b_frames</code>	The maximum number of sequential bidirectionally-predicted frames. (B-frames are not yet supported.)
<code>enum go7007_aspect_ratio</code> <code>aspect_ratio</code>	The aspect ratio to be encoded in the meta-data of the compressed format.  Choices are: <code>GO7007_ASPECT_RATIO_1_1</code> <code>GO7007_ASPECT_RATIO_4_3_NTSC</code> <code>GO7007_ASPECT_RATIO_4_3_PAL</code> <code>GO7007_ASPECT_RATIO_16_9_NTSC</code> <code>GO7007_ASPECT_RATIO_16_9_PAL</code>
<code>__u32</code> <code>flags</code>	Bit-wise OR of control flags (below)

Flags in struct `go7007_comp_params`:

<code>GO7007_COMP_CLOSED_GOP</code>	Only produce self-contained GOPs, used to produce streams appropriate for random seeking.
<code>GO7007_COMP_OMIT_SEQ_HEADER</code>	Omit the stream sequence header.

`GO7007IOC_S_MPEG_PARAMS`, `GO7007IOC_G_MPEG_PARAMS`

These `ioctl`s are used to negotiate MPEG-specific stream parameters when the `pixelformat` has been set to `V4L2_PIX_FMT_MPEG`.

To query the current parameters, call the `GO7007IOC_G_MPEG_PARAMS` `ioctl` with a pointer to a struct `go7007_mpeg_params`. If the driver is not set to MPEG format, the `EINVAL` error code will be returned.

To change the current parameters, initialize all fields of a struct `go7007_mpeg_params` and call the `GO7007_IOC_S_MPEG_PARAMS` `ioctl` with a

pointer to this structure. The driver will return the current parameters with any necessary changes to conform to the limitations of the hardware or selected MPEG mode. Any or all fields can be set to zero to request a reasonable default value. If the driver is not set to MPEG format, the EINVAL error code will be returned. When I/O is in progress, the EBUSY error code will be returned.

Fields in struct go7007\_mpeg\_params:

```
enum go7007_mpeg_video_standard
```

```
 mpeg_video_standard The MPEG video standard in which to
 compress the video.
```

Choices are:

```
 GO7007_MPEG_VIDEO_MPEG1
 GO7007_MPEG_VIDEO_MPEG2
 GO7007_MPEG_VIDEO_MPEG4
```

```
__u32
 flags
```

Bit-wise OR of control flags (below)

```
__u32
 pali
```

The profile and level indication to be stored in the sequence header. This is only used as an indicator to the decoder, and does not affect the MPEG features used in the video stream. Not valid for MPEG1.

Choices for MPEG2 are:

```
 GO7007_MPEG2_PROFILE_MAIN_MAIN
```

Choices for MPEG4 are:

```
 GO7007_MPEG4_PROFILE_S_L0
 GO7007_MPEG4_PROFILE_S_L1
 GO7007_MPEG4_PROFILE_S_L2
 GO7007_MPEG4_PROFILE_S_L3
 GO7007_MPEG4_PROFILE_ARTS_L1
 GO7007_MPEG4_PROFILE_ARTS_L2
 GO7007_MPEG4_PROFILE_ARTS_L3
 GO7007_MPEG4_PROFILE_ARTS_L4
 GO7007_MPEG4_PROFILE_AS_L0
 GO7007_MPEG4_PROFILE_AS_L1
 GO7007_MPEG4_PROFILE_AS_L2
 GO7007_MPEG4_PROFILE_AS_L3
```

GO7007\_MPEG4\_PROFILE\_AS\_L4  
GO7007\_MPEG4\_PROFILE\_AS\_L5

Flags in struct `go7007_mpeg_params`:

GO7007\_MPEG\_FORCE\_DVD\_MODE    Force all compression parameters and  
                                 bitrate control settings to comply  
                                 with DVD MPEG2 stream requirements.  
                                 This overrides most compression and  
                                 bitrate settings!

GO7007\_MPEG\_OMIT\_GOP\_HEADER   Omit the GOP header.

GO7007\_MPEG\_REPEAT\_SEQHEADER   Repeat the MPEG sequence header at  
                                 the start of each GOP.

GO7007IOC\_S\_BITRATE, GO7007IOC\_G\_BITRATE

These `ioctl`s are used to set and query the target bitrate value for the compressed video stream. The bitrate may be selected by storing the target bits per second in an `int` and calling `GO7007IOC_S_BITRATE` with a pointer to the `int`. The bitrate may be queried by calling `GO7007IOC_G_BITRATE` with a pointer to an `int` where the current bitrate will be stored.

Note that this is the primary means of controlling the video quality for all compression modes, including `V4L2_PIX_FMT_MJPEG`. The `VIDIOC_S_JPEGCOMP` `ioctl` is not supported.

---

### Installing the WIS PCI Voyager Driver

---

The WIS PCI Voyager driver requires several patches to the Linux 2.6.11.x kernel source tree before compiling the driver. These patches update the in-kernel SAA7134 driver to the newest development version and patch bugs in the TDA8290/TDA8275 tuner driver.

The following patches must be downloaded from Gerd Knorr's website and applied in the order listed:

<http://dl.bytesex.org/patches/2.6.11-2/i2c-tuner>

<http://dl.bytesex.org/patches/2.6.11-2/i2c-tuner2>  
<http://dl.bytesex.org/patches/2.6.11-2/v4l2-api-mpeg>  
<http://dl.bytesex.org/patches/2.6.11-2/saa7134-update>

The following patches are included with this SDK and can be applied in any order:

patches/2.6.11/saa7134-voyager.diff  
patches/2.6.11/tda8275-newaddr.diff  
patches/2.6.11/tda8290-ntsc.diff

Check to make sure the CONFIG\_VIDEO\_SAA7134 option is enabled in the kernel configuration, and build and install the kernel.

After rebooting into the new kernel, the G07007 driver can be compiled and installed:

```
$ make SAA7134_BUILD=y
$ make install
$ modprobe saa7134-go7007
```

There will be two V4L video devices associated with the PCI Voyager. The first device (most likely /dev/video0) provides access to the raw video capture mode of the SAA7133 device and is used to configure the source video parameters and tune the TV tuner. This device can be used with xawtv or other V4L(2) video software as a standard uncompressed device.

The second device (most likely /dev/video1) provides access to the compression functions of the G07007. It can be tested using the gorecord application in the apps/ directory of this SDK:

```
$ apps/gorecord -vdevice /dev/video1 -noaudio test.avi
```

Currently the frame resolution is fixed at 720x480 (NTSC) or 720x576 (PAL), and the video standard must be specified to both the raw and the compressed video devices (xawtv and gorecord, for example).

---

RELEASE NOTES FOR WIS G07007SB LINUX DRIVER

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Last updated: 5 November 2005

- Release 0.9.7 includes new support for using udev to run fxload. The install script should automatically detect whether the old hotplug scripts or the new udev rules should be used. To force the use of hotplug, run "make install USE\_UDEV=n". To force the use of udev, run "make install USE\_UDEV=y".
- Motion detection is supported but undocumented. Try the 'modet' app for a demonstration of how to use the facility.
- Using USB2.0 devices such as the TV402U with USB1.1 HCDs or hubs can cause buffer overruns and frame drops, even at low framerates, due to inconsistency in the bitrate control mechanism.
- On devices with an SAA7115, including the Plextor ConvertX, video height values of 96, 128, 160, 192, 256, 320, and 384 do not work in NTSC mode. All valid heights up to 512 work correctly in PAL mode.
- The WIS Star Trek and PCI Voyager boards have no support yet for audio or the TV tuner.

## 4.22 i2400m

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## 4.56 dib0700

Firmware provided by Patrick Boettcher <pboettcher@dibcom.fr> to Devin Heitmueller <dheitmueller@kernellabs.com> on October 8, 2009.

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## 4.62 sdma-firmware

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