NAME

man − an interface to the on-line reference manuals

SYNOPSIS

man [**−c**|**−w**|**−tZ**] [**−H** [*browser*]] [**−T** [*device*]] [**−X** [*dpi*]] [**−adhu7V**] [**−i**|**−I**] [**−m** *system* [*,...*]] [**−L** *locale*] [**−p** *string*] [**−C** *file*] [**−M** *path*] [**−P** *pager*] [**−r** *prompt*] [**−S** *list*] [**−e** *extension*] [**−−warnings** [*warnings*]] [[*section*] *page* ...] ...
man −l [**−7**] [**−tZ**] [**−H** [*browser*]] [**−T** [*device*]] [**−X** [*dpi*]] [**−p** *string*] [**−P** *pager*] [**−r** *prompt*] [**−−warnings** [*warnings*]] *file* ...
man −k [*apropos options*] *regexp* ...
man −f [*whatis options*] *page* ...

DESCRIPTION

man is the system's manual pager. Each *page* argument given to **man** is normally the name of a program, utility or function. The *manual page* associated with each of these arguments is then found and displayed. A *section*, if provided, will direct **man** to look only in that *section* of the manual. The default action is to search in all of the available *sections*, following a pre-defined order and to show only the first *page* found, even if *page* exists in several *sections*.

The table below shows the *section* numbers of the manual followed by the types of pages they contain.

1 Executable programs or shell commands
2 System calls (functions provided by the kernel)
3 Library calls (functions within program libraries)
4 Special files (usually found in */dev*)
5 File formats and conventions eg */etc/passwd*
6 Games
7 Miscellaneous (including macro packages and conventions), e.g. **man**(7), **groff**(7)
8 System administration commands (usually only for root)
9 Kernel routines [Non standard]

A manual *page* consists of several sections.

Conventional section names include **NAME**, **SYNOPSIS**, **CONFIGURATION**, **DESCRIPTION**, **OPTIONS**, **EXIT STATUS**, **RETURN VALUE**, **ERRORS**, **ENVIRONMENT**, **FILES**, **VERSIONS**, **CONFORMING TO**, **NOTES**, **BUGS**, **EXAMPLE**, **AUTHORS**, and **SEE ALSO**.

The following conventions apply to the **SYNOPSIS** section and can be used as a guide in other sections.

bold text	type exactly as shown.
italic text	replace with appropriate argument.
[**−abc**]	any or all arguments within [ ] are optional.
−a|**−b**	options delimited by | cannot be used together.
argument **...**	*argument* is repeatable.
[*expression*] **...**	entire *expression* within [ ] is repeatable.

The command or function illustration is a pattern that should match all possible invocations. In some cases it is advisable to illustrate several exclusive invocations as is shown in the **SYNOPSIS** section of this manual page.

EXAMPLES

man *ls*
Display the manual page for the *item* (program) *ls*.

man −a *intro*
Display, in succession, all of the available *intro* manual pages contained within the manual. It is possible to quit between successive displays or skip any of them.

man −t *alias* | *lpr −Pps*
Format the manual page referenced by '*alias*', usually a shell manual page, into the default **troff** or **groff** format and pipe it to the printer named *ps*. The default output for **groff** is usually PostScript. **man −−help** should advise as to which processor is bound to the **−t** option.

man −l −T*dvi ./foo.1x.gz* > *./foo.1x.dvi*
This command will decompress and format the nroff source manual page *./foo.1x.gz* into a **device independent (dvi)** file. The redirection is necessary as the **−T** flag causes output to be directed to **stdout** with no pager. The output could be viewed with a program such as **xdvi** or further processed into PostScript using a program such as **dvips.**

man −k *printf*
Search the short descriptions and manual page names for the keyword *printf* as regular expression. Print out any matches. Equivalent to **apropos −r** *printf* **.**

man −f *smail*
Lookup the manual pages referenced by *smail* and print out the short descriptions of any found. Equivalent to **whatis −r** *smail***.**

OVERVIEW

Many options are available to **man** in order to give as much flexibility as possible to the user. Changes can be made to the search path, section order, output processor, and other behaviours and operations detailed below.

If set, various environment variables are interrogated to determine the operation of **man**. It is possible to set the 'catch all' variable $**MANOPT** to any string in command line format with the exception that any spaces used as part of an option's argument must be escaped (preceded by a backslash). **man** will parse $**MANOPT** prior to parsing its own command line. Those options requiring an argument will be overridden by the same options found on the command line. To reset all of the options set in $**MANOPT**, **−D** can be specified as the initial command line option. This will allow man to 'forget' about the options specified in $**MANOPT** although they must still have been valid.

The manual pager utilities packaged as **man-db** make extensive use of **index** database caches. These caches contain information such as where each manual page can be found on the filesystem and what its *whatis* (short one line description of the man page) contains, and allow **man** to run faster than if it had to search the filesystem each time to find the appropriate manual page. If requested using the **−u** option, **man** will ensure that the caches remain consistent, which can obviate the need to manually run software to update traditional *whatis* text databases.

If **man** cannot find a **mandb** initiated **index** database for a particular manual page hierarchy, it will still search for the requested manual pages, although file globbing will be necessary to search within that hierarchy. If **whatis** or **apropos** fails to find an **index** it will try to extract information from a traditional *whatis* database instead.

These utilities support compressed source nroff files having, by default, the extensions of **.Z**, **.z** and **.gz**. It is possible to deal with any compression extension, but this information must be known at compile time. Also, by default, any cat pages produced are compressed using **gzip**. Each 'global' manual page hierarchy such as */usr/share/man* or */usr/X11R6/man* may have any directory as its cat page hierarchy. Traditionally the cat pages are stored under the same hierarchy as the man pages, but for reasons such as those specified in the **File Hierarchy Standard (FHS)**, it may be better to store them elsewhere. For details on how to do this, please read **manpath**(5). For details on why to do this, read the standard.

International support is available with this package. Native language manual pages are accessible (if

available on your system) via use of *locale* functions. To activate such support, it is necessary to set either $**LC_MESSAGES**, $**LANG** or another system dependent environment variable to your language locale, usually specified in the **POSIX 1003.1** based format:

<*language*>[**_**<*territory*>[**.**<*character-set*>[**,**<*version*>]]]

If the desired page is available in your *locale*, it will be displayed in lieu of the standard (usually American English) page.

Support for international message catalogues is also featured in this package and can be activated in the same way, again if available. If you find that the manual pages and message catalogues supplied with this package are not available in your native language and you would like to supply them, please contact the maintainer who will be coordinating such activity.

For information regarding other features and extensions available with this manual pager, please read the documents supplied with the package.

DEFAULTS

man will search for the desired manual pages within the *index* database caches. If the **−u** option is given, a cache consistency check is performed to ensure the databases accurately reflect the filesystem. If this option is always given, it is not generally necessary to run **mandb** after the caches are initially created, unless a cache becomes corrupt. However, the cache consistency check can be slow on systems with many manual pages installed, so it is not performed by default, and system administrators may wish to run **mandb** every week or so to keep the database caches fresh. To forestall problems caused by outdated caches, **man** will fall back to file globbing if a cache lookup fails, just as it would if no cache was present.

Once a manual page has been located, a check is performed to find out if a relative preformatted 'cat' file already exists and is newer than the nroff file. If it does and is, this preformatted file is (usually) decompressed and then displayed, via use of a pager. The pager can be specified in a number of ways, or else will fall back to a default is used (see option **−P** for details). If no cat is found or is older than the nroff file, the nroff is filtered through various programs and is shown immediately.

If a cat file can be produced (a relative cat directory exists and has appropriate permissions), **man** will compress and store the cat file in the background.

The filters are deciphered by a number of means. Firstly, the command line option **−p** or the environment variable $**MANROFFSEQ** is interrogated. If **−p** was not used and the environment variable was not set, the initial line of the nroff file is parsed for a preprocessor string. To contain a valid preprocessor string, the first line must resemble

'\" <**string**>

where **string** can be any combination of letters described by option **−p** below.

If none of the above methods provide any filter information, a default set is used.

A formatting pipeline is formed from the filters and the primary formatter (**nroff** or [**tg**]**roff** with **−t**) and executed. Alternatively, if an executable program *mandb_nfmt* (or *mandb_tfmt* with **−t**) exists in the man tree root, it is executed instead. It gets passed the manual source file, the preprocessor string, and optionally the device specified with **−T** or **−E** as arguments.

OPTIONS

Non argument options that are duplicated either on the command line, in $**MANOPT**, or both, are not harmful. For options that require an argument, each duplication will override the previous argument value.

General options

−C *file*, **−−config−file=** *file*
Use this user configuration file rather than the default of *˜/.manpath*.

−d, −−debug
Print debugging information.

−D, −−default
This option is normally issued as the very first option and resets **man's** behaviour to its default. Its use is to reset those options that may have been set in $**MANOPT**. Any options that follow **−D** will have their usual effect.

−−warnings[=*warnings*]
Enable warnings from *groff*. This may be used to perform sanity checks on the source text of manual pages. *warnings* is a comma-separated list of warning names; if it is not supplied, the default is "mac".

Main modes of operation

−f, −−whatis
Equivalent to **whatis**. Display a short description from the manual page, if available. See **whatis**(1) for details.

−k, −−apropos
Equivalent to **apropos**. Search the short manual page descriptions for keywords and display any matches. See **apropos**(1) for details.

−l, −−local−file
Activate 'local' mode. Format and display local manual files instead of searching through the system's manual collection. Each manual page argument will be interpreted as an nroff source file in the correct format. No cat file is produced. If '−' is listed as one of the arguments, input will be taken from stdin. When this option is not used, and man fails to find the page required, before displaying the error message, it attempts to act as if this option was supplied, using the name as a filename and looking for an exact match.

−w, −−where, −−location
Don't actually display the manual pages, but do print the location(s) of the source nroff files that would be formatted.

−W, −−where−cat, −−location−cat
Don't actually display the manual pages, but do print the location(s) of the cat files that would be displayed. If −w and −W are both specified, print both separated by a space.

−c, −−catman
This option is not for general use and should only be used by the **catman** program.

−R *encoding*, **−−recode**=*encoding*
Instead of formatting the manual page in the usual way, output its source converted to the specified *encoding*. If you already know the encoding of the source file, you can also use **manconv**(1) directly. However, this option allows you to convert several manual pages to a single encoding without having to explicitly state the encoding of each, provided that they were already installed in a structure similar to a manual page hierarchy.

Finding manual pages

−L *locale*, **−−locale=***locale*
man will normally determine your current locale by a call to the C function **setlocale**(3) which interrogates various environment variables, possibly including $**LC_MESSAGES** and $**LANG**. To temporarily override the determined value, use this option to supply a *locale* string directly to **man**. Note that it will not take effect until the search for pages actually begins. Output such as the help message will always be displayed in the initially determined locale.

−m *system*[,...], **−−systems=***system*[,...]
If this system has access to other operating system's manual pages, they can be accessed using this

option. To search for a manual page from NewOS's manual page collection, use the option **−m NewOS**.

The *system* specified can be a combination of comma delimited operating system names. To include a search of the native operating system's manual pages, include the system name **man** in the argument string. This option will override the $**SYSTEM** environment variable.

−M *path*, **−−manpath=***path*
Specify an alternate manpath to use. By default, **man** uses **manpath** derived code to determine the path to search. This option overrides the $**MANPATH** environment variable and causes option **−m** to be ignored.

A path specified as a manpath must be the root of a manual page hierarchy structured into sections as described in the man-db manual (under "The manual page system"). To view manual pages outside such hierarchies, see the **−l** option.

−S *list*, **−s** *list*, **−−sections=***list*
List is a colon- or comma-separated list of 'order specific' manual sections to search. This option overrides the $**MANSECT** environment variable. (The **−s** spelling is for compatibility with System V.)

−e *sub-extension*, **−−extension=***sub-extension*
Some systems incorporate large packages of manual pages, such as those that accompany the **Tcl** package, into the main manual page hierarchy. To get around the problem of having two manual pages with the same name such as **exit**(3), the **Tcl** pages were usually all assigned to section **l**. As this is unfortunate, it is now possible to put the pages in the correct section, and to assign a specific 'extension' to them, in this case, **exit**(3tcl). Under normal operation, **man** will display **exit**(3) in preference to **exit**(3tcl). To negotiate this situation and to avoid having to know which section the page you require resides in, it is now possible to give **man** a *sub-extension* string indicating which package the page must belong to. Using the above example, supplying the option **−e tcl** to **man** will restrict the search to pages having an extension of ***tcl**.

−i, −−ignore−case
Ignore case when searching for manual pages. This is the default.

−I, −−match−case
Search for manual pages case-sensitively.

−a, −−all
By default, **man** will exit after displaying the most suitable manual page it finds. Using this option forces **man** to display all the manual pages with names that match the search criteria.

−u, −−update
This option causes **man** to perform an 'inode level' consistency check on its database caches to ensure that they are an accurate representation of the filesystem. It will only have a useful effect if **man** is installed with the setuid bit set.

Controlling formatted output

−P *pager*, **−−pager=***pager*
Specify which output pager to use. By default, **man** uses **pager -s**. This option overrides the $**MANPAGER** environment variable, which in turn overrides the $**PAGER** environment variable. It is not used in conjunction with **−f** or **−k**.

−r *prompt*, **−−prompt=***prompt*
If a recent version of **less** is used as the pager, **man** will attempt to set its prompt and some sensible options. The default prompt looks like

Manual page *name***(***sec***) line** *x*

where *name* denotes the manual page name, *sec* denotes the section it was found under and *x* the

current line number. This is achieved by using the $**LESS** environment variable.

Supplying **−r** with a string will override this default. The string may contain the text **$MAN_PN** which will be expanded to the name of the current manual page and its section name surrounded by '(' and ')'. The string used to produce the default could be expressed as

\ Manual\ page\ \$MAN_PN\ ?ltline\ %lt?L/%L.:
byte\ %bB?s/%s..?\ (END):?pB %pB\\%..

It is broken into two lines here for the sake of readability only. For its meaning see the **less**(1) manual page. The prompt string is first evaluated by the shell. All double quotes, back-quotes and backslashes in the prompt must be escaped by a preceding backslash. The prompt string may end in an escaped $ which may be followed by further options for less. By default **man** sets the **−ix8** options.

If you want to override **man**'s prompt string processing completely, use the $**MANLESS** environment variable described below.

−7, −−ascii
When viewing a pure *ascii*(7) manual page on a 7 bit terminal or terminal emulator, some characters may not display correctly when using the *latin1*(7) device description with **GNU nroff**. This option allows pure *ascii* manual pages to be displayed in *ascii* with the *latin1* device. It will not translate any *latin1* text. The following table shows the translations performed: some parts of it may only be displayed properly when using **GNU nroff**'s *latin1*(7) device.

Description	Octal	latin1	ascii
continuation hyphen	255	-	-
bullet (middle dot)	267	•	o
acute accent	264	´	'
multiplication sign	327	×	x

If the *latin1* column displays correctly, your terminal may be set up for *latin1* characters and this option is not necessary. If the *latin1* and *ascii* columns are identical, you are reading this page using this option or **man** did not format this page using the *latin1* device description. If the *latin1* column is missing or corrupt, you may need to view manual pages with this option.

This option is ignored when using options **−t**, **−H**, **−T**, or **−Z** and may be useless for **nroff** other than **GNU's**.

−E *encoding*, **−−encoding**=*encoding*
Generate output for a character encoding other than the default. For backward compatibility, *encoding* may be an **nroff** device such as **ascii**, **latin1**, or **utf8** as well as a true character encoding such as **UTF−8**.

−p *string*, **−−preprocessor=***string*
Specify the sequence of preprocessors to run before **nroff** or **troff**/**groff**. Not all installations will have a full set of preprocessors. Some of the preprocessors and the letters used to designate them are: **eqn** (**e**), **grap** (**g**), **pic** (**p**), **tbl** (**t**), **vgrind** (**v**), **refer** (**r**). This option overrides the $**MANROFFSEQ** environment variable. **zsoelim** is always run as the very first preprocessor.

−t, −−troff
Use *groff -mandoc* to format the manual page to stdout. This option is not required in conjunction with **−H**, **−T**, or **−Z**.

−T[*device*], **−−troff−device**[=*device*]
This option is used to change **groff** (or possibly **troff's**) output to be suitable for a device other than the default. It implies **−t**. Examples (provided with Groff-1.17) include **dvi**, **latin1**, **ps**, **utf8**,

X75 and **X100**.

−H[*browser*], **−−html**[=*browser*]
This option will cause **groff** to produce HTML output, and will display that output in a web browser. The choice of browser is determined by the optional *browser* argument if one is provided, by the $**BROWSER** environment variable, or by a compile-time default if that is unset (usually **lynx**). This option implies **−t**, and will only work with **GNU troff**.

−X[*dpi*], **−−gxditview**[=*dpi*]
This option displays the output of **groff** in a graphical window using the **gxditview** program. The *dpi* (dots per inch) may be 75, 75-12, 100, or 100-12, defaulting to 75; the -12 variants use a 12-point base font. This option implies **−T** with the X75, X75-12, X100, or X100-12 device respectively.

−Z, −−ditroff
groff will run **troff** and then use an appropriate post-processor to produce output suitable for the chosen device. If *groff -mandoc* is **groff**, this option is passed to **groff** and will suppress the use of a post-processor. It implies **−t**.

Getting help

−h, −−help
Print a help message and exit.

−V, −−version
Display version information.

EXIT STATUS

0 Successful program execution.

1 Usage, syntax or configuration file error.

2 Operational error.

3 A child process returned a non-zero exit status.

16 At least one of the pages/files/keywords didn't exist or wasn't matched.

ENVIRONMENT

MANPATH
If $**MANPATH** is set, its value is used as the path to search for manual pages.

MANROFFOPT
The contents of $**MANROFFOPT** are added to the command line every time **man** invokes the formatter (**nroff**, **troff**, or **groff**).

MANROFFSEQ
If $**MANROFFSEQ** is set, its value is used to determine the set of preprocessors to pass each manual page through. The default preprocessor list is system dependent.

MANSECT
If $**MANSECT** is set, its value is a colon-delimited list of sections and it is used to determine which manual sections to search and in what order.

MANPAGER, **PAGER**
If $**MANPAGER** or $**PAGER** is set ($**MANPAGER** is used in preference), its value is used as the name of the program used to display the manual page. By default, **pager -s** is used.

MANLESS
If $**MANLESS** is set, **man** will not perform any of its usual processing to set up a prompt string for the **less** pager. Instead, the value of $**MANLESS** will be copied verbatim into $**LESS**. For example, if you want to set the prompt string unconditionally to "my prompt string", set $**MANLESS** to '**−Psmy prompt string**'.

BROWSER
If $**BROWSER** is set, its value is a colon-delimited list of commands, each of which in turn is used to try to start a web browser for **man −−html**. In each command, *%s* is replaced by a filename containing the HTML output from **groff**, *%%* is replaced by a single percent sign (%), and *%c* is replaced by a colon (:).

SYSTEM
If $**SYSTEM** is set, it will have the same effect as if it had been specified as the argument to the **−m** option.

MANOPT
If $**MANOPT** is set, it will be parsed prior to **man's** command line and is expected to be in a similar format. As all of the other **man** specific environment variables can be expressed as command line options, and are thus candidates for being included in $**MANOPT** it is expected that they will become obsolete. N.B. All spaces that should be interpreted as part of an option's argument must be escaped.

MANWIDTH
If $**MANWIDTH** is set, its value is used as the line length for which manual pages should be formatted. If it is not set, manual pages will be formatted with a line length appropriate to the current terminal (using an **ioctl**(2) if available, the value of $**COLUMNS**, or falling back to 80 characters if neither is available). Cat pages will only be saved when the default formatting can be used, that is when the terminal line length is between 66 and 80 characters.

MAN_KEEP_FORMATTING
Normally, when output is not being directed to a terminal (such as to a file or a pipe), formatting characters are discarded to make it easier to read the result without special tools. However, if $**MAN_KEEP_FORMATTING** is set to any non-empty value, these formatting characters are retained. This may be useful for wrappers around **man** that can interpret formatting characters.

LANG, **LC_MESSAGES**
Depending on system and implementation, either or both of $**LANG** and $**LC_MESSAGES** will be interrogated for the current message locale. **man** will display its messages in that locale (if available). See **setlocale**(3) for precise details.

FILES

/etc/manpath.config
man-db configuration file.

/usr/share/man
A global manual page hierarchy.

/usr/share/man/index.(bt|db|dir|pag)
A traditional global *index* database cache.

/var/cache/man/index.(bt|db|dir|pag)
An FHS compliant global *index* database cache.

SEE ALSO

mandb(8), **manpath**(1), **manpath**(5), **apropos**(1), **whatis**(1), **catman**(8), **less**(1), **nroff**(1), **troff**(1), **groff**(1), **zsoelim**(1), **setlocale**(3), **man**(7), **ascii**(7), **latin1**(7), the man-db package manual, **FSSTND**.

HISTORY

1990, 1991 − Originally written by John W. Eaton (jwe@che.utexas.edu).

Dec 23 1992: Rik Faith (faith@cs.unc.edu) applied bug fixes supplied by Willem Kasdorp (wkasdo@nikhefk.nikef.nl).

30th April 1994 − 23rd February 2000: Wilf. (G.Wilford@ee.surrey.ac.uk) has been developing and maintaining this package with the help of a few dedicated people.

30th October 1996 − 30th March 2001: Fabrizio Polacco <fpolacco@debian.org> maintained and enhanced this package for the Debian project, with the help of all the community.

31st March 2001 − present day: Colin Watson <cjwatson@debian.org> is now developing and maintaining man-db.