



Rocky Enterprise Linux 9.2 Manual Pages on command 'groff.1'

C:\>man groff.1

GROFF(1) General Commands Manual GROFF(1)

NAME

groff - front-end for the groff document formatting system

SYNOPSIS

```
groff [-abcegiijklpstzCEGNRSUVXZ] [-d cs] [-D arg] [-f fam] [-F dir] [-I dir]
      [-K arg] [-L arg] [-m name] [-M dir] [-n num] [-o list] [-P arg] [-r cn]
      [-T dev] [-w name] [-W name] [file ...]
```

groff -h

groff --help

groff -v [option ...]

groff --version [option ...]

DESCRIPTION

This document describes the groff program, the main front-end for the groff document formatting system. The groff program and macro suite is the implementation of a roff(7) system within the free software collection GNU <http://www.gnu.org>. The groff system has all features of the classical roff, but adds many extensions. The groff program allows control of the whole groff system by command-line options. This is a great simplification in comparison to the classical case (which uses pipes only).

OPTIONS

The command line is parsed according to the usual GNU convention. Whitespace is permitted between a command-line option and its argument. Options can be grouped

behind a single ?-? (minus character). A filename of - (minus character) denotes the standard input.

As groff is a wrapper program for troff both programs share a set of options. But the groff program has some additional, native options and gives a new meaning to some troff options. On the other hand, not all troff options can be fed into groff.

Native groff Options

The following options either do not exist for troff or are differently interpreted by groff.

- D arg Set default input encoding used by preconv to arg. Implies -k.
- e Preprocess with eqn.
- g Preprocess with grn.
- G Preprocess with grap. Implies -p.
- h
- help Print a help message.
- I dir This option may be used to specify a directory to search for files (both those on the command line and those named in .psbb and .so requests, and \X'ps: import' , \X'ps: file' and \X'pdf: pdfpic' escapes). The current directory is always searched first. This option may be specified more than once; the directories are searched in the order specified. No directory search is performed for files specified using an absolute path. This option implies the -s option.
- j Preprocess with chem. Implies -p.
- k Preprocess with preconv. This is run before any other preprocessor. Please refer to preconv's manual page for its behaviour if no -K (or -D) option is specified.
- K arg Set input encoding used by preconv to arg. Implies -k.
- l Send the output to a spooler program for printing. The command that should be used for this is specified by the print command in the device description file, see groff_font(5). If this command is not present, the output is piped into the lpr(1) program by default. See options -L and -X.
- L arg Pass arg to the spooler program. Several arguments should be passed with a separate -L option each. Note that groff does not prepend ?-? (a minus

sign) to arg before passing it to the spooler program.

-N Don't allow newlines within eqn delimiters. This is the same as the -N option in eqn.

-p Preprocess with pic.

-P -option

-P -option -P arg

Pass -option or -option arg to the postprocessor. The option must be specified with the necessary preceding minus sign(s) -- or - - because groff does not prepend any dashes before passing it to the postprocessor. For example, to pass a title to the gxditview postprocessor, the shell command

```
groff -X -P -title -P 'groff it' foo
```

is equivalent to

```
groff -X -Z foo | gxditview -title 'groff it' -
```

-R Preprocess with refer. No mechanism is provided for passing arguments to refer because most refer options have equivalent language elements that can be specified within the document. See refer(1) for more details.

-s Preprocess with soelim.

-S Safer mode. Pass the -S option to pic and disable the following troff requests: .open, .opena, .pso, .sy, and .pi. For security reasons, safer mode is enabled by default.

-t Preprocess with tbl.

-T dev Set output device to dev. For this device, troff generates the intermediate output; see groff_out(5). Then groff calls a postprocessor to convert troff's intermediate output to its final format. Real devices in groff are

dvi TeX DVI format (postprocessor is grodvi).

html

xhtml HTML and XHTML output (preprocessors are soelim and pre-grohtml, postprocessor is post-grohtml).

lbp Canon CAPSL printers (LBP-4 and LBP-8 series laser printers; postprocessor is grolbp).

lj4 HP LaserJet4 compatible (or other PCL5 compatible) printers (postprocessor is grolj4).

ps PostScript output (postprocessor is grops).

pdf Portable Document Format (PDF) output (postprocessor is gropdf).

For the following TTY output devices (postprocessor is always grotty), -T selects the output encoding:

ascii 7bit ASCII.

cp1047 Latin-1 character set for EBCDIC hosts.

latin1 ISO 8859-1.

utf8 Unicode character set in UTF-8 encoding. This mode has the most useful fonts for TTY mode, so it is the best mode for TTY output.

The following arguments select gxditview as the ?postprocessor? (it is rather a viewing program):

X75 75dpi resolution, 10pt document base font.

X75-12 75dpi resolution, 12pt document base font.

X100 100dpi resolution, 10pt document base font.

X100-12

100dpi resolution, 12pt document base font.

The default device is ps.

-U Unsafe mode. Reverts to the (old) unsafe behaviour; see option -S.

-v

--version

Output version information of groff and of all programs that are run by it; that is, the given command line is parsed in the usual way, passing -v to all subprograms.

-V Output the pipeline that would be run by groff (as a wrapper program) on the standard output, but do not execute it. If given more than once, the commands are both printed on the standard error and run.

-X Use gxditview instead of using the usual postprocessor to (pre)view a document. The printing spooler behavior as outlined with options -l and -L is carried over to gxditview(1) by determining an argument for the -printCommand option of gxditview(1). This sets the default Print action and the corresponding menu entry to that value. -X only produces good results with -Tps, -TX75, -TX75-12, -TX100, and -TX100-12. The default resolution for

previewing -Tps output is 75dpi; this can be changed by passing the -resolu? tion option to gxditview, for example

```
groff -X -P-resolution -P100 -man foo.1
```

- z Suppress output generated by troff. Only error messages are printed.
- Z Do not automatically postprocess groff intermediate output in the usual man? ner. This will cause the troff output to appear on standard output, replac? ing the usual postprocessor output; see groff_out(5).

Transparent Options

The following options are transparently handed over to the formatter program troff that is called by groff subsequently. These options are described in more detail in troff(1).

- a ASCII approximation of output.
- b Backtrace on error or warning.
- c Disable color output. Please consult the grotty(1) man page for more de? tails.
- C Enable compatibility mode.
- d cs
- d name=s
Define string.
- E Disable troff error messages.
- f fam Set default font family.
- F dir Set path for device DESC files.
- i Process standard input after the specified input files.
- m name
Include macro file name.tmac (or tmac.name); see also groff_tmac(5).
- M dir Path for macro files.
- n num Number the first page num.
- o list
Output only pages in list.
- r cn
- r name=n
Set number register.
- w name

Enable warning name. See troff(1) for names.

-W name

disable warning name. See troff(1) for names.

USING GROFF

The groff system implements the infrastructure of classical roff; see roff(7) for a survey on how a roff system works in general. Due to the front-end programs available within the groff system, using groff is much easier than classical roff. This section gives an overview of the parts that constitute the groff system. It complements roff(7) with groff-specific features. This section can be regarded as a guide to the documentation around the groff system.

Paper Size

The virtual paper size used by troff to format the input is controlled globally with the requests .po, .pl, and .ll. See groff_tmac(5) for the ?papersize? macro package which provides a convenient interface.

The physical paper size, giving the actual dimensions of the paper sheets, is controlled by output devices like grops with the command-line options -p and -l. See groff_font(5) and the man pages of the output devices for more details. groff uses the command-line option -P to pass options to output devices; for example, the following selects A4 paper in landscape orientation for the PS device:

```
groff -Tps -P-pa4 -P-l ...
```

Front-ends

The groff program is a wrapper around the troff(1) program. It allows one to specify the preprocessors by command-line options and automatically runs the postprocessor that is appropriate for the selected device. Doing so, the sometimes tedious piping mechanism of classical roff(7) can be avoided.

The grog(1) program can be used for guessing the correct groff command line to format a file.

The groffer(1) program is an all-around viewer for groff files and man pages.

Preprocessors

The groff preprocessors are reimplementations of the classical preprocessors with moderate extensions. The standard preprocessors distributed with the groff package are

eqn(1) for mathematical formulae,

grn(1) for including gremlin(1) pictures,

pic(1) for drawing diagrams,

chem(1)

for chemical structure diagrams,

refer(1)

for bibliographic references,

soelim(1)

for including macro files from standard locations,

and

tbl(1) for tables.

A new preprocessor not available in classical troff is preconv(1) which converts

various input encodings to something groff can understand. It is always run first

before any other preprocessor.

Besides these, there are some internal preprocessors that are automatically run

with some devices. These aren't visible to the user.

Macro Packages

Macro packages can be included by option -m. The groff system implements and ex?

tends all classical macro packages in a compatible way and adds some packages of

its own. Actually, the following macro packages come with groff:

man The traditional man page format; see groff_man(7). It can be specified on

the command line as -man or -m man.

mandoc The general package for man pages; it automatically recognizes whether the

documents uses the man or the mdoc format and branches to the corresponding

macro package. It can be specified on the command line as -mandoc or

-m mandoc.

mdoc The BSD-style man page format; see groff_mdoc(7). It can be specified on

the command line as -mdoc or -m mdoc.

me The classical me document format; see groff_me(7). It can be specified on

the command line as -me or -m me.

mm The classical mm document format; see groff_mm(7). It can be specified on

the command line as -mm or -m mm.

ms The classical ms document format; see groff_ms(7). It can be specified on

the command line as -ms or -m ms.

www HTML-like macros for inclusion in arbitrary groff documents; see `groff_www(7)`.

Details on the naming of macro files and their placement can be found in `groff_tmac(5)`; this man page also documents some other, minor auxiliary macro packages not mentioned here.

Programming Language

General concepts common to all roff programming languages are described in `roff(7)`.

The groff extensions to the classical troff language are documented in `groff_diff(7)`.

An overview of language features, including all supported escapes and requests, can be found in `groff(7)`.

Formatters

The central roff formatter within the groff system is `troff(1)`. It provides the features of both the classical troff and nroff, as well as the groff extensions.

The command-line option `-C` switches troff into compatibility mode which tries to emulate classical roff as much as possible.

There is a shell script `nroff(1)` that emulates the behavior of classical nroff. It tries to automatically select the proper output encoding, according to the current locale.

The formatter program generates intermediate output; see `groff_out(7)`.

Devices

In roff, the output targets are called devices. A device can be a piece of hardware, e.g., a printer, or a software file format. A device is specified by the option `-T`. The groff devices are as follows.

`ascii` Text output using the `ascii(7)` character set.

`cp1047` Text output using the EBCDIC code page IBM cp1047 (e.g., OS/390 Unix).

`dvi` TeX DVI format.

`html` HTML output.

`latin1` Text output using the ISO Latin-1 (ISO 8859-1) character set; see `iso_8859_1(7)`.

`lbp` Output for Canon CAPSL printers (LBP-4 and LBP-8 series laser printers).

`lj4` HP LaserJet4-compatible (or other PCL5-compatible) printers.

`ps` PostScript output; suitable for printers and previewers like `gv(1)`.

pdf PDF files; suitable for viewing with tools such as `evince(1)` and `okular(1)`.

utf8 Text output using the Unicode (ISO 10646) character set with UTF-8 encoding;
see `unicode(7)`.

xhtml XHTML output.

X75 75dpi X Window System output suitable for the previewers `xditview(1x)` and
`gxditview(1)`. A variant for a 12pt document base font is X75-12.

X100 100dpi X Window System output suitable for the previewers `xditview(1x)` and
`gxditview(1)`. A variant for a 12pt document base font is X100-12.

The postprocessor to be used for a device is specified by the `postpro` command in
the device description file; see `groff_font(5)`. This can be overridden with the `-X`
option.

The default device is `ps`.

Postprocessors

`groff` provides 3 hardware postprocessors:

`grolbp(1)`

for some Canon printers,

`grolj4(1)`

for printers compatible to the HP LaserJet 4 and PCL5,

`grotty(1)`

for text output using various encodings, e.g., on text-oriented terminals or
line printers.

Today, most printing or drawing hardware is handled by the operating system, by de-
vice drivers, or by software interfaces, usually accepting PostScript. Conse-
quently, there isn't an urgent need for more hardware device postprocessors.

The `groff` software devices for conversion into other document file formats are

`grodvi(1)`

for the DVI format,

`grohtml(1)`

for HTML and XHTML formats,

`grops(1)`

for PostScript.

`gropdf(1)`

for PDF.

Combined with the many existing free conversion tools this should be sufficient to convert a troff document into virtually any existing data format.

Utilities

The following utility programs around groff are available.

addftinfo(1)

Add information to troff font description files for use with groff.

afmtodit(1)

Create font description files for PostScript device.

eqn2graph(1)

Convert an eqn image into a cropped image.

gdiffrmk(1)

Mark differences between groff, nroff, or troff files.

grap2graph(1)

Convert a grap diagram into a cropped bitmap image.

groffer(1)

General viewer program for groff files and man pages.

gxditview(1)

The groff X viewer, the GNU version of xditview.

hpftodit(1)

Create font description files for lj4 device.

indxbib(1)

Make inverted index for bibliographic databases.

lkbib(1)

Search bibliographic databases.

lookbib(1)

Interactively search bibliographic databases.

pdfroff(1)

Create PDF documents using groff.

pfbtops(1)

Translate a PostScript font in .pfb format to ASCII.

pic2graph(1)

Convert a pic diagram into a cropped image.

tfmtodit(1)

Create font description files for TeX DVI device.

`xditview(1x)`

roff viewer historically distributed with the X Window System.

`xtotroff(1)`

Convert X font metrics into GNU troff font metrics.

ENVIRONMENT

Normally, the path separator in the following environment variables is the colon; this may vary depending on the operating system. For example, DOS and Windows use a semicolon instead.

GROFF_BIN_PATH

This search path, followed by `PATH`, is used for commands that are executed by `groff`. If it is not set then the directory where the `groff` binaries were installed is prepended to `PATH`.

GROFF_COMMAND_PREFIX

When there is a need to run different `roff` implementations at the same time `groff` provides the facility to prepend a prefix to most of its programs that could provoke name clashing at run time (default is to have none). Historically, this prefix was the character `g`, but it can be anything. For example, `gtroff` stood for `groff's troff`, `gtbl` for the `groff` version of `tbl`. By setting `GROFF_COMMAND_PREFIX` to different values, the different `roff` installations can be addressed. More exactly, if it is set to prefix `xxx` then `groff` as a wrapper program internally calls `xxxtroff` instead of `troff`. This also applies to the preprocessors `eqn`, `grn`, `pic`, `refer`, `tbl`, `soelim`, and to the utilities `indxbib` and `lookbib`. This feature does not apply to any programs different from the ones above (most notably `groff` itself) since they are unique to the `groff` package.

GROFF_ENCODING

The value of this environment value is passed to the `preconv` preprocessor to select the encoding of input files. Setting this option implies `groff's` command-line option `-k` (this is, `groff` actually always calls `preconv`). If set without a value, `groff` calls `preconv` without arguments. An explicit `-K` command-line option overrides the value of `GROFF_ENCODING`. See `preconv(1)` for details.

GROFF_FONT_PATH

A list of directories in which to search for the devname directory in addition to the default ones. See troff(1) and groff_font(5) for more details.

GROFF_TMAC_PATH

A list of directories in which to search for macro files in addition to the default directories. See troff(1) and groff_tmac(5) for more details.

GROFF_TMPDIR

The directory in which temporary files are created. If this is not set but the environment variable TMPDIR instead, temporary files are created in the directory TMPDIR. On MS-DOS and Windows platforms, the environment variables TMP and TEMP (in that order) are searched also, after GROFF_TMPDIR and TMPDIR. Otherwise, temporary files are created in /tmp. The refer(1), groffer(1), grohtml(1), and grops(1) commands use temporary files.

GROFF_TYPESETTER

Presets the default device. If this is not set the ps device is used as default. This device name is overwritten by the option -T.

EXAMPLES

The following example illustrates the power of the groff program as a wrapper around troff.

To process a roff file using the preprocessors tbl and pic and the me macro set, classical troff had to be called by

```
pic foo.me | tbl | troff -me -Tlatin1 | grotty
```

Using groff, this pipe can be shortened to the equivalent command

```
groff -p -t -me -T latin1 foo.me
```

An even easier way to call this is to use grog(1) to guess the preprocessor and macro options and execute the generated command (by using backquotes to specify shell command substitution)

```
`grog -Tlatin1 foo.me`
```

The simplest way is to view the contents in an automated way by calling

```
groffer foo.me
```

BUGS

On EBCDIC hosts (e.g., OS/390 Unix), output devices ascii and latin1 aren't available. Similarly, output for EBCDIC code page cp1047 is not available on ASCII

based operating systems.

INSTALLATION DIRECTORIES

groff installs files in varying locations depending on its compile-time configuration. On this installation, the following locations are used.

/etc/X11/app-defaults

Application defaults directory for gxditview(1).

/usr/bin

Directory containing groff's executable commands.

/usr/share/groff/1.22.4/eign

List of common words for indxbib(1).

/usr/share/groff/1.22.4

Directory for data files.

/usr/dict/papers/Ind

Default index for lkbib(1) and refer(1).

/usr/share/doc/groff-base

Documentation directory.

/usr/share/doc/groff-base/examples

Example directory.

/usr/share/groff/1.22.4/font

Font directory.

/usr/share/doc/groff-base/html

HTML documentation directory.

/usr/lib/font

Legacy font directory.

/usr/share/groff/site-font

Local font directory.

/usr/share/groff/site-tmac

Local macro package (tmac file) directory.

/usr/share/groff/1.22.4/tmac

Macro package (tmac file) directory.

/usr/share/groff/1.22.4/oldfont

Font directory for compatibility with old versions of groff; see grops(1).

/usr/share/doc/groff-base/pdf

PDF documentation directory.

/usr/lib/groff/site-tmac

System macro package (tmac file) directory.

groff Macro Directory

This contains all information related to macro packages. Note that more than a single directory is searched for those files as documented in `groff_tmac(5)`. For the groff installation corresponding to this document, it is located at `/usr/share/groff/1.22.4/tmac`. The following files contained in the groff macro directory have a special meaning:

`troffrc`

Initialization file for troff. This is interpreted by troff before reading the macro sets and any input.

`troffrc-end`

Final startup file for troff. It is parsed after all macro sets have been read.

`name.tmac`

`tmac.name`

Macro file for macro package name.

groff Font Directory

This contains all information related to output devices. Note that more than a single directory is searched for those files; see `troff(1)`. For the groff installation corresponding to this document, it is located at `/usr/share/groff/1.22.4/font`. The following files contained in the groff font directory have a special meaning:

`devname/DESC`

Device description file for device name, see `groff_font(5)`.

`devname/F`

Font file for font F of device name.

AVAILABILITY

Information on how to get groff and related information is available at the groff page of the GNU website <http://www.gnu.org/software/groff?>.

Three groff mailing lists are available:

bug tracker activity (read-only) bug-groff@gnu.org?;

general discussion [?groff@gnu.org?](mailto:groff@gnu.org); and

commit activity (read-only) [?groff-commit@gnu.org?](mailto:groff-commit@gnu.org), which reports changes to groff's source code repository by its developers.

Details on repository access and much more can be found in the file README at the top directory of the groff source package.

A free implementation of the `grap` preprocessor, written by Ted Faber [?faber@lunabase.org?](mailto:faber@lunabase.org), can be found at the `grap` website [?http://www.lunabase.org/~faber/Vault/software/grap/?](http://www.lunabase.org/~faber/Vault/software/grap/). This is the only `grap` supported by groff.

AUTHORS

groff was written by James Clark [?jjc@jclark.com?](mailto:jjc@jclark.com). This document was rewritten, enhanced, and put under the FDL license in 2002 by Bernd Warken [?groff-bernd.warken-72@web.de?](mailto:groff-bernd.warken-72@web.de).

SEE ALSO

Groff: The GNU Implementation of troff, by Trent A. Fisher and Werner Lemberg, is the primary groff manual. You can browse it interactively with `?info groff?`.

Due to its complex structure, the groff system has many man pages. They can be read with `man(1)` or `groffer(1)`.

But there are special sections of man pages. `groff` has man pages in sections 1, 5, and 7. When there are several man pages with the same name in the same man section, the one with the lowest section is should as first. The other man pages can be shown anyway by adding the section number as argument before the man page name.

Reading the man page about the groff language is done by one of

`man 7 groff`

`groffer 7 groff`

Introduction, history and further readings:

`roff(7)`.

Viewer for groff files:

`groffer(1)`, `gxditview(1)`, `xditview(1x)`.

Wrapper programs for formatters:

`groff(1)`, `grog(1)`.

Roff preprocessors:

`eqn(1)`, `grn(1)`, `pic(1)`, `chem(1)`, `preconv(1)`, `refer(1)`, `soelim(1)`, `tbl(1)`,

`grap(1)`.

Roff language with the groff extensions:

groff(7), groff_char(7), groff_diff(7), groff_font(5).

Roff formatter programs:

nroff(1), troff(1), ditroff(7).

The intermediate output language:

groff_out(7).

Postprocessors for the output devices:

grodvi(1), grohtml(1), grolbp(1), grolj4(1), lj4_font(5), grops(1),
gropdf(1), grotty(1).

Groff macro packages and macro-specific utilities:

groff_tmac(5), groff_man(7), groff_mdoc(7), groff_me(7), groff_mm(7),
groff_mmse(7) (only in Swedish locales), groff_mom(7), groff_ms(7),
groff_www(7), groff_trace(7), mmroff(7).

The following utilities are available:

addftinfo(1), afmtodit(1), eqn2graph(1), gdiffmk(1), grap2graph(1),
groffer(1), gxditview(1), hpftodit(1), indxbib(1), lkbib(1), lookbib(1),
pdfroff(1), pfbtops(1), pic2graph(1), tfmtodit(1), xtetroff(1).