**Assignment No 1**

**Aim: Study of Important Linux Commands**

**Objective:** To study the frequently used linux commands

**Commands:**

**1) man :**

man - an interface to the on-line reference manuals

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.

Example:

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

man cat :- Display the manual page for the item (program) cat.

man touch :- Display the manual page for the item (program) touch.

man grep: Display the manual page for the item (program) grep.

man mkdir :- Display the manual page for the item (program) mkdir.

man cd : Display the manual page for the item (program) cd.

**2) ls :**

ls - list directory contents

SYNOPSIS

ls [OPTION]... [FILE]...

DESCRIPTION

List information about the FILEs (the current directory by default). Sort entries alphabetically if none of -cftuvSUX nor --sort is specified.

Mandatory arguments to long options are mandatory for short options too.

-a, --all

do not ignore entries starting with .

-A, --almost-all

do not list implied . and ..

etc..

Exit status:

0 if OK,

1 if minor problems (e.g., cannot access subdirectory),

2 if serious trouble (e.g., cannot access command-line argument).

Examples:

1) ls :-

**ls** with no option list files and directories in bare format where we won’t be able to view details like file types, size, modified date and time, permission and links etc.

2) ls -l

Here, **ls -l** (**-l** is character not one) shows file or directory, size, modified date and time, file or folder name and owner of file and its permission.

3) ls -a

List all files including hidden file starting with ‘**.**‘. it will lsit hidden files.

4) ls -lh

With combination of **-lh** option, shows sizes in human readable format.

5) ls -F

Using **-F** option with **ls** command, will add the **‘/’** Character at the end each directory.

6) ls -ltr

With combination of **-ltr** will shows latest modification file or directory date as last.

7) ls -i

With **-i** options list file **/** directory with inode number.

8) ls -n

To display **UID** and **GID** of files and directories. use option **-n** with ls command.

**3) cd**

cd - Change the shell working directory.

SYNOPSIS

cd [-L|-P] [dir]

DESCRIPTION

Change the shell working directory.

Change the current directory to DIR. The default DIR is the value of the HOME shell variable.

The variable CDPATH defines the search path for the directory containing DIR. Alternative directory names in CDPATH are separated by a colon (:).A null directory name is the same as the current directory. If DIR begins with a slash (/), then CDPATH is not used.

If the directory is not found, and the shell option `cdable\_vars' is set, the word is assumed to be a variable name. If that variable has a value, its value is used for DIR.

Options:

-L force symbolic links to be followed

-P use the physical directory structure without following symbolic

links

The default is to follow symbolic links, as if `-L' were specified.

Exit Status:

Returns 0 if the directory is changed; non-zero otherwise.

**4) mkdir**

mkdir - make directories

SYNOPSIS

**mkdir** [*OPTION*]... *DIRECTORY*...

DESCRIPTION

Create the DIRECTORY(ies), if they do not already exist. Mandatory arguments to long options are mandatory for short options too.

**-m**, **--mode**=*MODE*

set file mode (as in chmod), not a=rwx - umask

**-p**, **--parents**

no error if existing, make parent directories as needed

**-v**, **--verbose**

print a message for each created directory

**-Z** set SELinux security context of each created directory to the

default type

**--context**[=*CTX*]

like **-Z**, or if CTX is specified then set the SELinux or SMACK

security context to CTX

**--help** display this help and exit

**--version**

output version information and exit

**5) cat**

cat - concatenate files and print on the standard output

SYNOPSIS

**cat** [*OPTION*]... [*FILE*]...

DESCRIPTION

Concatenate FILE(s) to standard output.

With no FILE, or when FILE is -, read standard input.

**-A**, **--show-all**

equivalent to **-vET**

**-b**, **--number-nonblank**

number nonempty output lines, overrides **-n**

**-e** equivalent to **-vE**

**-E**, **--show-ends**

display $ at end of each line

**-n**, **--number**

number all output lines

**-s**, **--squeeze-blank**

suppress repeated empty output lines

**-t** equivalent to **-vT**

**-T**, **--show-tabs**

display TAB characters as ^I

**-u** (ignored)

**-v**, **--show-nonprinting**

use ^ and M- notation, except for LFD and TAB

**--help** display this help and exit

**--version**

output version information and exit

## EXAMPLES

cat f - g

Output f's contents, then standard input, then g's contents.

cat Copy standard input to standard output.

**6) more**

more - file perusal filter for crt viewing

SYNOPSIS

**more** [options] *file*...

**DESCRIPTION**

**more** is a filter for paging through text one screenful at a time. This version is especially primitive. Users should realize that [less(1)](http://man7.org/linux/man-pages/man1/less.1.html) provides [more(1)](http://man7.org/linux/man-pages/man1/more.1.html) emulation plus extensive enhancements.

OPTIONS

Options are also taken from the environment variable **MORE** (make sure to precede them with a dash (**-**)) but command-line options will override those.

**-d** Prompt with "[Press space to continue, 'q' to quit.]", and display "[Press 'h' for instructions.]" instead of ringing the bell when an illegal key is pressed.

**-l** Do not pause after any line containing a **^L** (form feed).

**-f** Count logical lines, rather than screen lines (i.e., long lines are not folded).

**-p** Do not scroll. Instead, clear the whole screen and then display the text. Notice that this option is switched on automatically if the executable is named **page**.

**-c** Do not scroll. Instead, paint each screen from the top, clearing the remainder of each line as it is displayed.

**-s** Squeeze multiple blank lines into one.

**-u** Suppress underlining.

**-***number*

The screen size to use, in *number* of lines.

**+***number*

Start displaying each file at line *number*.

**+/***string*

The *string* to be searched in each file before starting to

display it.

**--help** Display help text and exit.

**-V**, **--version**

Display version information and exit.

## COMMANDS         [top](http://man7.org/linux/man-pages/man1/more.1.html#top_of_page)

Interactive commands for **more** are based on **vi**(1). Some commands may be preceded by a decimal number, called k in the descriptions below. In the following descriptions, **^X** means **control-X**.

**h** or **?** Help; display a summary of these commands. If you forget all other commands, remember this one.

**SPACE** Display next k lines of text. Defaults to current screen size.

**z** Display next k lines of text. Defaults to current screen size. Argument becomes new default.

**RETURN** Display next k lines of text. Defaults to 1 Argument becomes new default.

**d** or **^D** Scroll k lines. Default is current scroll size, initially 11. Argument becomes new default.

**q** or **Q** or **INTERRUPT**

Exit.

**s** Skip forward k lines of text. Defaults to 1.

**f** Skip forward k screenfuls of text. Defaults to 1.

**b** or **^B** Skip backwards k screenfuls of text. Defaults to 1.

Only works with files, not pipes.

**'** Go to the place where the last search started.

**=** Display current line number.

**/pattern** Search for kth occurrence of regular expression. Defaults to 1.

**n** Search for kth occurrence of last regular expression. Defaults to 1.

**!command** or **:!command**

Execute *command* in a subshell.

**v** Start up an editor at current line. The editor is taken from the environment variable **VISUAL** if

defined, or **EDITOR** if **VISUAL** is not defined, or defaults to **vi** if neither **VISUAL** nor **EDITOR** is

defined.

**^L** Redraw screen.

**:n** Go to kth next file. Defaults to 1.

**:p** Go to kth previous file. Defaults to 1.

**:f** Display current file name and line number.

**.** Repeat previous command.

**7) head**

head - output the first part of files

SYNOPSIS

**head** [*OPTION*]... [*FILE*]...

DESCRIPTION

Print the first 10 lines of each FILE to standard output. With more than one FILE, precede each with a header giving the file name.

With no FILE, or when FILE is -, read standard input.

Mandatory arguments to long options are mandatory for short options

too.

**-c**, **--bytes**=*[-]NUM*

print the first NUM bytes of each file; with the leading '-', all but the last NUM bytes of each file

**-n**, **--lines**=*[-]NUM*

print the first NUM lines instead of the first 10; with the leading '-', print all but the last NUM lines of each file

**-q**, **--quiet**, **--silent**

never print headers giving file names

**-v**, **--verbose**

always print headers giving file names

**-z**, **--zero-terminated**

line delimiter is NUL, not newline

**--help** display this help and exit

**--version**

output version information and exit

NUM may have a multiplier suffix: b 512, kB 1000, K 1024, MB 1000\*1000, M 1024\*1024, GB 1000\*1000\*1000, G 1024\*1024\*1024, and so on for T, P, E, Z, Y. Binary prefixes can be used, too: KiB=K, MiB=M, and so on.

**8) tail**

tail - output the last part of files

SYNOPSIS

**tail** [*OPTION*]... [*FILE*]...

**DESCRIPTION**

Print the last 10 lines of each FILE to standard output. With more than one FILE, precede each with a header giving the file name.

With no FILE, or when FILE is -, read standard input.

Mandatory arguments to long options are mandatory for short options too.

**-c**, **--bytes**=*[*+]NUM

output the last NUM bytes; or use **-c** +NUM to output starting with byte NUM of each file

**-f**, **--follow[=**{name|descriptor}]

output appended data as the file grows;

an absent option argument means 'descriptor'

**-F** same as **--follow**=*name* **--retry**

**-n**, **--lines**=*[*+]NUM

output the last NUM lines, instead of the last 10; or use **-n** +NUM to output starting with line NUM

**--max-unchanged-stats**=*N*

with **--follow**=*name*, reopen a FILE which has not

changed size after N (default 5) iterations to see if it has been unlinked or renamed (this is the usual case of rotated log files); with inotify, this option is rarely useful

**--pid**=*PID*

with **-f**, terminate after process ID, PID dies

**-q**, **--quiet**, **--silent**

never output headers giving file names

**--retry**

keep trying to open a file if it is inaccessible

**-s**, **--sleep-interval**=*N*

with **-f**, sleep for approximately N seconds (default 1.0) iterations; with inotify and **--pid**=*P*, check process P

at least once every N seconds **-v**, **--verbose** always output headers giving file names

**-z**, **--zero-terminated**

line delimiter is NUL, not newline

**--help** display this help and exit

**--version**

output version information and exit

NUM may have a multiplier suffix: b 512, kB 1000, K 1024, MB 1000\*1000, M 1024\*1024, GB 1000\*1000\*1000, G 1024\*1024\*1024, and so on for T, P, E, Z, Y. Binary prefixes can be used, too: KiB=K, MiB=M, and so on.

With **--follow** (**-f**), tail defaults to following the file descriptor, which means that even if a tail'ed file is renamed, tail will continue to track its end. This default behavior is not desirable when you really want to track the actual name of the file, not the file descriptor (e.g., log rotation). Use **--follow**=*name* in that case. That causes tail to track the named file in a way that accommodates renaming, removal and creation.

**9) touch**

rm - remove files or directories

SYNOPSIS

**rm** [*OPTION*]... [*FILE*]...

DESCRIPTION

This manual page documents the GNU version of **rm**. **rm** removes each specified file. By default, it does not remove directories.

If the *-I* or *--interactive=once* option is given, and there are more than three files or the *-r*, *-R*, or *--recursive* are given, then **rm** prompts the user for whether to proceed with the entire operation. the response is not affirmative, the entire command is aborted.

Otherwise, if a file is unwritable, standard input is a terminal, and the *-f* or *--force* option is not given, or the *-i* or *--interactive=always* option is given, **rm** prompts the user for whether to remove the file. If the response is not affirmative, the file is skipped.

OPTIONS

Remove (unlink) the FILE(s).

**-f**, **--force**

ignore nonexistent files and arguments, never prompt

**-i** prompt before every removal

**-I** prompt once before removing more than three files, or when removing recursively; less intrusive than **-i**, while still giving protection against most mistakes

**--interactive**[=*WHEN*]

prompt according to WHEN: never, once (**-I**), or always (**-i**); WHEN, prompt always

**--one-file-system**

when removing a hierarchy recursively, skip any directory that is on a file system different from that of the corresponding command line argument

**--no-preserve-root**

do not treat '/' specially

**--preserve-root**[=*all*]

do not remove '/' (default); with 'all', reject any command line argument on a separate device from its parent

**-r**, **-R**, **--recursive**

remove directories and their contents recursively

**-d**, **--dir**

remove empty directories

**-v**, **--verbose**

explain what is being done

**--help** display this help and exit

**--version**

output version information and exit

By default, rm does not remove directories. Use the **--recursive** (**-r** or **-R**) option to remove each listed directory, too, along with all of its contents.

To remove a file whose name starts with a '-', for example '-foo', use one of these commands:

rm **-- -foo**

rm ./-foo

Note that if you use rm to remove a file, it might be possible to recover some of its contents, given sufficient expertise and/or time. For greater assurance that the contents are truly unrecoverable, consider using shred.

**10) cp**

cp - copy files and directories

SYNOPSIS

**cp** [*OPTION*]... [*-T*] *SOURCE DEST*

**cp** [*OPTION*]... *SOURCE*... *DIRECTORY*

**cp** [*OPTION*]... *-t DIRECTORY SOURCE*...

DESCRITION

Copy SOURCE to DEST, or multiple SOURCE(s) to DIRECTORY.

Mandatory arguments to long options are mandatory for short options too.

**-a**, **--archive**

same as **-dR --preserve**=*all*

**--attributes-only**

don't copy the file data, just the attributes

**--backup**[=*CONTROL*]

make a backup of each existing destination file

**-b** like **--backup** but does not accept an argument

**--copy-contents**

copy contents of special files when recursive

**-f**, **--force**

if an existing destination file cannot be opened, remove it and try again (this option is ignored when the **-n** option is also used)

**-i**, **--interactive**

prompt before overwrite (overrides a previous **-n** option)

**-H** follow command-line symbolic links in SOURCE

**--parents**

use full source file name under DIRECTORY

**-R**, **-r**, **--recursive**

copy directories recursively

**-t**, **--target-directory**=*DIRECTORY*

copy all SOURCE arguments into DIRECTORY

**-T**, **--no-target-directory**

treat DEST as a normal file

**-u**, **--update**

copy only when the SOURCE file is newer than the destination file or when the destination file is missing

**-v**, **--verbose**

explain what is being done

**--version**

output version information and exit

etc.

By default, sparse SOURCE files are detected by a crude heuristic and the corresponding DEST file is made sparse as well. That is the behavior selected by **--sparse**=*auto*. Specify **--sparse**=*always* to create a sparse DEST file whenever the SOURCE file contains a long enough sequence of zero bytes. Use **--sparse**=*never* to inhibit creation of sparse files.

When **--reflink**[=*always*] is specified, perform a lightweight copy, where the data blocks are copied only when modified. If this is not possible the copy fails, or if **--reflink**=*auto* is specified, fall back to a standard copy. Use **--reflink**=*never* to ensure a standard copy is performed.

The backup suffix is '~', unless set with **--suffix** or SIMPLE\_BACKUP\_SUFFIX. The version control method may be selected via the **--backup** option or through the VERSION\_CONTROL environment variable. Here are the values:

none, off never make backups (even if **--backup** is given)

numbered, t make numbered backups

existing, nil numbered if numbered backups exist, simple otherwise

simple, never always make simple backups

As a special case, cp makes a backup of SOURCE when the force and backup options are given and SOURCE and DEST are the same name for an existing, regular file.

**11) mv**

mv — move files

SYNOPSIS

mv **[**−if**]** *source\_file target\_file*

mv **[**−if**]** *source\_file*... *target\_dir*

DESCRITION

In the first synopsis form, the *mv* utility shall move the file named by the *source\_file* operand to the destination specified by the *target\_file*. This first synopsis form is assumed when the final operand does not name an existing directory and is not a symbolic link referring to an existing directory. In this case, if *source\_file* names a non-directory file and *target\_file* ends with a trailing <slash> character, *mv* shall treat this as an error and no *source\_file*  operands will be processed.

In the second synopsis form, *mv* shall move each file named by a *source\_file* operand to a destination file in the existing directory named by the *target\_dir* operand, or referenced if *target\_dir* is a symbolic link referring to an existing directory. The destination path for each *source\_file* shall be the concatenation of the target directory, a single <slash> character if the target did not end in a <slash>, and the last pathname component of the *source\_file*. This second form is assumed when the final operand names an existing directory.

**OPTIONS**

The *mv* utility shall conform to the Base Definitions volume of POSIX.1‐2008, *Section 12.2*, *Utility Syntax Guidelines*.

The following options shall be supported:

−**f** Do not prompt for confirmation if the destination path exists. Any previous occurrence of the −**i** option is

ignored.

−**i** Prompt for confirmation if the destination path exists. Any previous occurrence of the −**f** option is ignored.

Specifying more than one of the −**f** or −**i** options shall not be considered an error. The last option specified shall determine the behavior of *mv*.

OPERANDS

The following operands shall be supported:

*source\_file*

A pathname of a file or directory to be moved.

*target\_file*

A new pathname for the file or directory being moved.

*target\_dir*

A pathname of an existing directory into which to move the input files.

STDIN

The standard input shall be used to read an input line in response to each prompt specified in the STDERR section. Otherwise, the standard input shall not be used.

INPUT FILES

The input files specified by each *source\_file* operand can be of any file type

**12) in**

ln - make links between files

SYNOPSIS

**ln** [*OPTION*]... [*-T*] *TARGET LINK\_NAME*

**ln** [*OPTION*]... *TARGET*

**ln** [*OPTION*]... *TARGET*... *DIRECTORY*

**ln** [*OPTION*]... *-t DIRECTORY TARGET*...

DESCRIPTION

In the 1st form, create a link to TARGET with the name LINK\_NAME. In the 2nd form, create a link to TARGET in the current directory. In the 3rd and 4th forms, create links to each TARGET in DIRECTORY. Create hard links by default, symbolic links with **--symbolic**. By default, each destination (name of new link) should not already exist. When creating hard links, each TARGET must exist. Symbolic links can hold arbitrary text; if later resolved, a relative link is interpreted in relation to its parent directory.

Mandatory arguments to long options are mandatory for short options too.

**--backup**[=*CONTROL*]

make a backup of each existing destination file

**-b** like **--backup** but does not accept an argument

**-d**, **-F**, **--directory**

allow the superuser to attempt to hard link directories (note: will probably fail due to system restrictions, even for the superuser)

**-f**, **--force**

remove existing destination files

**-i**, **--interactive**

prompt whether to remove destinations

**-L**, **--logical**

dereference TARGETs that are symbolic links

**-n**, **--no-dereference**

treat LINK\_NAME as a normal file if it is a symbolic link to a directory

**-P**, **--physical**

make hard links directly to symbolic links

**-r**, **--relative**

create symbolic links relative to link location

**-s**, **--symbolic**

make symbolic links instead of hard links

**-S**, **--suffix**=*SUFFIX*

override the usual backup suffix

**-t**, **--target-directory**=*DIRECTORY*

specify the DIRECTORY in which to create the links

**-T**, **--no-target-directory**

treat LINK\_NAME as a normal file always

**-v**, **--verbose**

print name of each linked file

**--help** display this help and exit

**--version**

output version information and exit

13) ps

ps - report a snapshot of the current processes.

SYNOPSIS

**ps** [*options*]

DESCRIPTION

**ps** displays information about a selection of the active processes. you want a repetitive update of the selection and the displayed information, use [top(1)](http://man7.org/linux/man-pages/man1/top.1.html) instead.

This version of **ps** accepts several kinds of options:

1 UNIX options, which may be grouped and must be preceded by a dash.

2 BSD options, which may be grouped and must not be used with a dash.

3 GNU long options, which are preceded by two dashes.

SIMPLE PROCESS SELECTION

**a** Lift the BSD-style "only yourself" restriction, which is imposed upon the set of all processes when some BSD-style (without "-") options are used or when the **ps** personality setting is BSD-like. The set of processes selected in this manner is in addition to the set of processes selected by other means. An alternate description is that this option causes **ps** to list all processes with a terminal (tty), or to list all processes when used together with the **x** option.

**-A** Select all processes. Identical to **-e**.

**-a** Select all processes except both session leaders (see [getsid(2)](http://man7.org/linux/man-pages/man2/getsid.2.html)) and processes not associated with a terminal.

**-d** Select all processes except session leaders.

**--deselect**

Select all processes except those that fulfill the specified conditions (negates the selection). Identical to **-N**.

**-e** Select all processes. Identical to **-A**.

**g** Really all, even session leaders. This flag is obsolete and may be discontinued in a future release. It is normally implied by the **a** flag, and is only useful when operating in the sunos4 personality.

**-N** Select all processes except those that fulfill the specified conditions (negates the selection). Identical to **--deselect**.

**T** Select all processes associated with this terminal. Identical to the **t** option without any argument.

**r** Restrict the selection to only running processes.

**x** Lift the BSD-style "must have a tty" restriction, which is imposed upon the set of all processes when some BSD-style (without "-") options are used or when the **ps** personality setting is BSD-like. The set of processes selected in this manner is in addition to the set of processes selected by other means. An alternate description is that this option causes **ps** to list all processes owned by you (same EUID as **ps**), or to list all processes when used together with the **a** option.

14) kill

kill - terminate a process

SYNOPSIS

**kill** [**-***signal*|**-s** *signal*|**-p**] [**-q** *value*] [**-a**] [**--**] *pid*|*name*...

**kill -l** [*number*] | **-L**

DESCRIPTION

The command **kill** sends the specified *signal* to the specified processes or process groups.

If no signal is specified, the TERM signal is sent. The default action for this signal is to terminate the process. This signal

should be used in preference to the KILL signal (number 9), since a process may install a handler for the TERM signal in order to perform clean-up steps before terminating in an orderly fashion. If a process does not terminate after a TERM signal has been sent, then the KILL signal may be used; be aware that the latter signal cannot be caught, and so does not give the target process the opportunity to perform any clean-up before terminating.

Most modern shells have a builtin kill command, with a usage rather similar to that of the command described here. The **--all**, **--pid**, and **--queue** options, and the possibility to specify processes by command name, are local extensions.

If *signal* is 0, then no actual signal is sent, but error checking is still performed.

ARGUMENTS

The list of processes to be signaled can be a mixture of names and PIDs. Each *pid* can be one of four things:

*n* where *n* is larger than 0. The process with PID *n* is signaled.

**0** All processes in the current process group are signaled.

**-1** All processes with a PID larger than 1 are signaled.

**-***n* where *n* is larger than 1. All processes in process group *n* are signaled. When an argument of the form '-n' is given, and it is meant to denote a process group, either a signal must be specified first, or the argument must be preceded by a '--' option, otherwise it will be taken as the signal to send. *name* All processes invoked using this *name* will be signaled.

OPTIONS

**-s**, **--signal** *signal*

The signal to send. It may be given as a name or a number.

**-l**, **--list** [*number*]

Print a list of signal names, or convert the given signal number to a name. The signals can be found in */usr/include/ linux/signal.h*

**-L**, **--table**

Similar to **-l**, but it will print signal names and their corresponding numbers.

**-a**, **--all**

Do not restrict the command-name-to-PID conversion to processes with the same UID as the present process.

**-p**, **--pid**

Only print the process ID (PID) of the named processes, do not send any signals.

**--verbose**

Print PID(s) that will be signaled with kill along with the signal.

**-q**, **--queue** *value*

Use [sigqueue(3)](http://man7.org/linux/man-pages/man3/sigqueue.3.html) rather than [kill(2)](http://man7.org/linux/man-pages/man2/kill.2.html). The *value* argument is an integer that is sent along with the signal. If the receiving process has installed a handler for this signal using the **SA\_SIGINFO** flag to [sigaction(2)](http://man7.org/linux/man-pages/man2/sigaction.2.html), then it can obtain this data via the *si\_sigval* field of the *siginfo\_t* structure.

**RETURN CODES**[top](http://man7.org/linux/man-pages/man1/kill.1.html#top_of_page)

**kill** has the following return codes:

**0** success

**1** failure

**64** partial success (when more than one process specified)

15) killall

killall - kill processes by name

SYNOPSIS

killall [-Z, --context pattern] [-e, --exact] [-g, --process-group] [-i, --interactive] [-n, --ns PID] [-o, --older-than TIME] [-q, --quiet] [-r, --regexp] [-s, --signal SIGNAL, -SIGNAL] [-u, --user user] [-v, --verbose] [-w, --wait] [-y, --younger-than TIME] [-I, --ignore-case] [-V, --version] [--] name ...

killall -l

killall -V, --version

DESCRIPTION

killall sends a signal to all processes running any of the specified commands. If no signal name is specified, SIGTERM is sent. Signals can be specified either by name (e.g. -HUP or -SIGHUP) or by number (e.g. -1) or by option -s. If the command name is not regular expression (option -r) and contains a slash (/), processes executing that particular file will be selected for killing, independent of their name. killall returns a zero return code if at least one process has been killed for each listed command, or no commands were listed and at least one process matched the -u and -Z search criteria. killall returns non-zero otherwise. A killall process never kills itself (but may kill other killall processes).

OPTIONS

-e, --exact

Require an exact match for very long names. If a command name is longer than 15 characters, the full name may be unavailable (i.e. it is swapped out). In this case, killall will kill everything that matches within the first 15 characters. With -e, such entries are skipped. killall prints a message for each skipped entry if -v is specified in addition to -e,

-I, --ignore-case

Do case insensitive process name match.

-g, --process-group

Kill the process group to which the process belongs. The kill signal is only sent once per group, even if multiple processes belonging to the same process group were found.

-i, --interactive

Interactively ask for confirmation before killing.

-l, --list

List all known signal names.

-n, --ns

Match against the PID namespace of the given PID. The default is to match against all namespaces.

-o, --older-than

Match only processes that are older (started before) the time specified. The time is specified as a float then a unit. The units are s,m,h,d,w,M,y for seconds, minutes, hours, days, weeks, Months and years respectively.

-q, --quiet

Do not complain if no processes were killed.

-r, --regexp

Interpret process name pattern as a POSIX extended regular expression, per regex(3).

-s, --signal, -SIGNAL

Send this signal instead of SIGTERM.

-u, --user

Kill only processes the specified user owns. Command names are optional.

-v, --verbose

Report if the signal was successfully sent.

-V, --version

Display version information.

-w, --wait

Wait for all killed processes to die. killall checks once per second if any of the killed processes still exist and only returns if none are left. Note that killall may wait forever if the signal was ignored, had no effect, or if the process stays in zombie state.

-y, --younger-than

Match only processes that are younger (started after) the time specified. The time is specified as a float then a unit. The units are s,m,h,d,w,M,y for seconds, minutes, hours, days, weeks, Months and years respectively.

-Z, --context

(SELinux Only) Specify security context: kill only processes having security context that match with given extended regular expression pattern. Must precede other argu‐ments on the command line. Command names are optional.

15) pkill

NAME

pgrep, pkill - look up or signal processes based on name and other attributes

SYNOPSIS

pgrep [options] pattern

pkill [options] pattern

DESCRIPTION

pgrep looks through the currently running processes and lists the process IDs which match the selection criteria to stdout. All the criteria have to match. For example,

$ pgrep -u root sshd will only list the processes called sshd AND owned by root. On the other hand,

$ pgrep -u root,daemon will list the processes owned by root OR daemon. pkill will send the specified signal (by default SIGTERM) to each process instead of listing them on stdout.

OPTIONS

-signal

--signal signal

Defines the signal to send to each matched process. Either the numeric or the symbolic signal name can be used. (pkill only.)

-c, --count

Suppress normal output; instead print a count of matching processes. When count does not match anything, e.g. returns zero, the command will return non-zero value.

-d, --delimiter delimiter

Sets the string used to delimit each process ID in the output (by default a new‐ line). (pgrep only.)

-f, --full

The pattern is normally only matched against the process name. When -f is set, the full command line is used.

-g, --pgroup pgrp,...

Only match processes in the process group IDs listed. Process group 0 is translated into pgrep's or pkill's own process group.

-G, --group gid,...

Only match processes whose real group ID is listed. Either the numerical or symbolical value may be used.

-i, --ignore-case

Match processes case-insensitively.

-l, --list-name

List the process name as well as the process ID. (pgrep only.)

-a, --list-full

List the full command line as well as the process ID. (pgrep only.)

-n, --newest

Select only the newest (most recently started) of the matching processes.

-o, --oldest

Select only the oldest (least recently started) of the matching processes.

-P, --parent ppid,...

Only match processes whose parent process ID is listed.

-s, --session sid,...

Only match processes whose process session ID is listed. Session ID 0 is translated into pgrep's or pkill's own session ID.

-t, --terminal term,...

Only match processes whose controlling terminal is listed. The terminal name should be specified without the "/dev/" prefix.

-u, --euid euid,...

Only match processes whose effective user ID is listed. Either the numerical or symbolical value may be used.

-U, --uid uid,...

Only match processes whose real user ID is listed. Either the numerical or symbolical value may be used.

-v, --inverse

Negates the matching. This option is usually used in pgrep's context. In pkill's context the short option is disabled to avoid accidental usage of the option.

-V, --version

Display version information and exit.

-h, --help

Display help and exit.

etc.

OPERANDS

pattern

Specifies an Extended Regular Expression for matching against the process names or command lines.

16) bg

bg — run jobs in the background

SYNOPSIS

bg **[***job\_id*...**]**

**DESCRIPTION**[top](http://man7.org/linux/man-pages/man1/bg.1p.html#top_of_page)

If job control is enabled (see the description of *set* −**m**), the *bg* utility shall resume suspended jobs from the current environment (see *Section 2.12*, *Shell Execution Environment*) by running them as background jobs. If the job specified by *job\_id* is already a running background job, the *bg* utility shall have no effect and shall exit successfully.

Using *bg* to place a job into the background shall cause its process ID to become ``known in the current shell execution environment'', as if it had been started as an asynchronous list; see *Section 2.9.3.1*,

*Examples*.

**OPERANDS**

The following operand shall be supported:

*job\_id* Specify the job to be resumed as a background job. If no *job\_id* operand is given, the most recently suspended job shall be used. The format of *job\_id* is described in the Base Definitions volume of POSIX.1‐2008, *Section 3.204*, *Job Control Job ID*.

STDOUT

The output of *bg* shall consist of a line in the format:

**"[%d] %s\n", <***job-number*>, <*command*>

where the fields are as follows:

<*job-number*>

A number that can be used to identify the job to the *wait*, *fg*, and *kill* utilities. Using these utilities, the job can be identified by prefixing the job number with **'%'**.

<*command*> The associated command that was given to the shell.

STDERP

The standard error shall be used only for diagnostic messages.

EXIT STATUS

The following exit values shall be returned:

0 Successful completion.

>0 An error occurred.

17) fg

fg — run jobs in the foreground

SYNOPSIS

fg **[***job\_id***]**

DESCRIPTION

If job control is enabled (see the description of *set* −**m**), the *fg* utility shall move a background job from the current environment (see *Section 2.12*, *Shell Execution Environment*) into the foreground.

Using *fg* to place a job into the foreground shall remove its process ID from the list of those ``known in the current shell execution environment''; see *Section 2.9.3.1*, *Examples*.

OPERANDS         [top](http://man7.org/linux/man-pages/man1/fg.1p.html#top_of_page)

The following operand shall be supported:

*job\_id* Specify the job to be run as a foreground job. If no *job\_id* operand is given, the *job\_id* for the job that was most recently suspended, placed in the background, or run as a background job shall be used. The format of *job\_id* is described in the Base Definitions volume of POSIX.1‐2008, *Section 3.204*, *Job Control Job ID*.

## STDOUT         [top](http://man7.org/linux/man-pages/man1/fg.1p.html#top_of_page)

The *fg* utility shall write the command line of the job to standard

output in the following format:

**"%s\n", <***command*>

## STDERR         [top](http://man7.org/linux/man-pages/man1/fg.1p.html#top_of_page)

The standard error shall be used only for diagnostic messages.

EXIT STATUS         [top](http://man7.org/linux/man-pages/man1/fg.1p.html#top_of_page)

The following exit values shall be returned:

0 Successful completion.

>0 An error occurred.

18) chmod

chmod, fchmod, fchmodat - change permissions of a file

SYNOPSIS

**#include <sys/stat.h>**

**int chmod(const char \****pathname***, mode\_t** *mode***);**

**int fchmod(int** *fd***, mode\_t** *mode***);**

**#include <fcntl.h>** /\* Definition of AT\_\* constants \*/

**#include <sys/stat.h>**

**int fchmodat(int** *dirfd***, const char \****pathname***, mode\_t** *mode***, int** *flags***);**

Feature Test Macro Requirements for glibc (see [feature\_test\_macros(7)](http://man7.org/linux/man-pages/man7/feature_test_macros.7.html)):

**fchmod**():

Since glibc 2.24:

\_POSIX\_C\_SOURCE >= 199309L

Glibc 2.19 to 2.23

\_POSIX\_C\_SOURCE

Glibc 2.16 to 2.19:

\_BSD\_SOURCE || \_POSIX\_C\_SOURCE

Glibc 2.12 to 2.16:

\_BSD\_SOURCE || \_XOPEN\_SOURCE >= 500 ||

\_POSIX\_C\_SOURCE >= 200809L

Glibc 2.11 and earlier:

\_BSD\_SOURCE || \_XOPEN\_SOURCE >= 500

**fchmodat**():

Since glibc 2.10:

\_POSIX\_C\_SOURCE >= 200809L

Before glibc 2.10:

\_ATFILE\_SOURCE

DESCRIPTION

The **chmod**() and **fchmod**() system calls change a files mode bits. (The file mode consists of the file permission bits plus the set-user-ID, set-group-ID, and sticky bits.) These system calls differ only in how the file is specified:

\* **chmod**() changes the mode of the file specified whose pathname is given in *pathname*, which is dereferenced if it is a symbolic link.

\* **fchmod**() changes the mode of the file referred to by the open file descriptor *fd*.

The new file mode is specified in *mode*, which is a bit mask created by ORing together zero or more of the following:

**S\_ISUID** (04000) set-user-ID (set process effective user ID on [execve(2)](http://man7.org/linux/man-pages/man2/execve.2.html))

**S\_ISGID** (02000) set-group-ID (set process effective group ID on [execve(2)](http://man7.org/linux/man-pages/man2/execve.2.html); mandatory locking, as described in [fcntl(2)](http://man7.org/linux/man-pages/man2/fcntl.2.html); take a new file's group from parent directory, as described in [chown(2)](http://man7.org/linux/man-pages/man2/chown.2.html) and [mkdir(2)](http://man7.org/linux/man-pages/man2/mkdir.2.html))

**S\_ISVTX** (01000) sticky bit (restricted deletion flag, as described in [unlink(2)](http://man7.org/linux/man-pages/man2/unlink.2.html))

**S\_IRUSR** (00400) read by owner

**S\_IWUSR** (00200) write by owner

**S\_IXUSR** (00100) execute/search by owner ("search" applies for directories, and means that entries within the directory can be accessed)

**S\_IRGRP** (00040) read by group

**S\_IWGRP** (00020) write by group

**S\_IXGRP** (00010) execute/search by group

**S\_IROTH** (00004) read by others

**S\_IWOTH** (00002) write by others

**S\_IXOTH** (00001) execute/search by others

RETURN VALUE

On success, zero is returned. On error, -1 is returned, and [*errno*](http://man7.org/linux/man-pages/man3/errno.3.html) is set appropriately.

ERROR

Depending on the filesystem, errors other than those listed below can be returned.

The more general errors for **chmod**() are listed below:

**EACCES** Search permission is denied on a component of the path prefix. See also [path\_resolution(7)](http://man7.org/linux/man-pages/man7/path_resolution.7.html).)

**EFAULT** *pathname* points outside your accessible address space. **EIO** An I/O error occurred.

**ELOOP** Too many symbolic links were encountered in resolving *pathname*.

**ENAMETOOLONG** *pathname* is too long.

**ENOENT** The file does not exist.

**ENOMEM** Insufficient kernel memory was available.

**ENOTDIR** A component of the path prefix is not a directory.

**EPERM** The effective UID does not match the owner of the file, and the process is not privileged (Linux: it does not have the

**CAP\_FOWNER** capability).

**EPERM** The file is marked immutable or append-only. (See [ioctl\_iflags(2)](http://man7.org/linux/man-pages/man2/ioctl_iflags.2.html).)

**EROFS** The named file resides on a read-only filesystem.

The general errors for **fchmod**() are listed below:

**EBADF** The file descriptor *fd* is not valid.

**EIO** See above.

**EPERM** See above.

**EROFS** See above.

The same errors that occur for **chmod**() can also occur for **fchmodat**(). The following additional errors can occur for **fchmodat**():

**EBADF** *dirfd* is not a valid file descriptor.

**EINVAL** Invalid flag specified in *flags*.

**ENOTDIR** *pathname* is relative and *dirfd* is a file descriptor referring to a file other than a directory.

**ENOTSUP**

*flags* specified **AT\_SYMLINK\_NOFOLLOW**, which is not supported.

19) grep

grep — search a file for a pattern

SYNOPSIS

grep **[**−E|−F**] [**−c|−l|−q**] [**−insvx**]** −e *pattern\_list*

**[**−e *pattern\_list***]**... **[**−f *pattern\_file***]**... **[***file*...**]**

grep **[**−E|−F**] [**−c|−l|−q**] [**−insvx**] [**−e *pattern\_list***]...**

−f *pattern\_file* **[**−f *pattern\_file***]**... **[***file*...**]**

grep **[**−E|−F**] [**−c|−l|−q**] [**−insvx**]** *pattern\_list* **[***file*...**]**

DESCRIPTION

The *grep* utility shall search the input files, selecting lines matching one or more patterns; the types of patterns are controlled by the options specified. The patterns are specified by the −**e** option, −**f** option, or the *pattern\_list* operand. The *pattern\_list*'s value shall consist of one or more patterns separated by <newline> characters; the *pattern\_file*'s contents shall consist of one or more patterns terminated by a <newline> character. By default, an input line shall be selected if any pattern, treated as an entire basic regular expression (BRE) as described in the Base Definitions volume of POSIX.1‐2008, *Section 9.3*, *Basic Regular Expressions*, matches any part of the line excluding the terminating <newline>; a null BRE shall match every line. By default, each selected input line shall be written to the standard output.

Regular expression matching shall be based on text lines. Since a <newline> separates or terminates patterns (see the −**e** and −**f** options below), regular expressions cannot contain a <newline>. Similarly, since patterns are matched against individual lines (excluding the terminating <newline> characters) of the input, there is no way for a pattern to match a <newline> found in the input.

OPTION

The *grep* utility shall conform to the Base Definitions volume of POSIX.1‐2008, *Section 12.2*, *Utility Syntax Guidelines*.

The following options shall be supported:

−**E** Match using extended regular expressions. Treat each pattern specified as an ERE, as described in the Base Definitions volume of POSIX.1‐2008, *Section 9.4*, *Extended Regular Expressions*. If any entire ERE pattern matches some part of an input line excluding the terminating <newline>, the line shall be matched. A null ERE shall match every line.

−**F** Match using fixed strings. Treat each pattern specified as a string instead of a regular expression. If an input line contains any of the patterns as a contiguous sequence of bytes, the line shall be matched. A null string shall match every line.

−**c** Write only a count of selected lines to standard output.

−**e** *pattern\_list*

Specify one or more patterns to be used during the search for input. The application shall ensure that patterns in *pattern\_list* are separated by a <newline>. A null pattern can be specified by two adjacent <newline> characters in *pattern\_list*. Unless the −**E** or −**F** option is also specified, each pattern shall be treated as a BRE, as described in the Base Definitions volume of POSIX.1‐2008, *Section 9.3*, *Basic Regular Expressions*. Multiple −**e** and −**f** options shall be accepted by the *grep* utility. All of the specified patterns shall be used when matching lines, but the order of evaluation is unspecified.

−**f** *pattern\_file*

Read one or more patterns from the file named by the pathname *pattern\_file*. Patterns in *pattern\_file* shall be terminated by a <newline>. A null pattern can be specified by an empty line in *pattern\_file*. Unless the −**E** or −**F**  option is also specified, each pattern shall be treated as a BRE, as described in the Base Definitions volume of POSIX.1‐2008, *Section 9.3*, *Basic Regular Expressions*.

−**i** Perform pattern matching in searches without regard to case; see the Base Definitions volume of POSIX.1‐2008, *Section 9.2*, *Regular Expression General Requirements*.

−**l** (The letter ell.) Write only the names of files containing selected lines to standard output. Pathnames shall be written once per file searched. If the standard input is searched, a pathname of **"(standard**input)" shall be written, in the POSIX locale. In other locales, **"standard**input" may be replaced by something more appropriate in those locales.

−**n** Precede each output line by its relative line number in the file, each file starting at line 1. The line number counter shall be reset for each file processed.

−**q** Quiet. Nothing shall be written to the standard output, of matching lines. Exit with zero status if an

input line is selected.

−**s** Suppress the error messages ordinarily written for nonexistent or unreadable files. Other error messages shall not be suppressed.

−**v** Select lines not matching any of the specified patterns. If the −**v** option is not specified, selected lines shall be those that match any of the specified patterns.

−**x** Consider only input lines that use all characters in the line excluding the terminating <newline> to match an entire fixed string or regular expression to be matching lines.

OPERANDS

The following operands shall be supported:

*pattern\_list*

Specify one or more patterns to be used during the search for input. This operand shall be treated as if it

were specified as −**e** *pattern\_list*. *file* A pathname of a file to be searched for the patterns. If no *file* operands are specified, the standard input shall be used.

STDIN

The standard input shall be used if no *file* operands are specified, shall be used if a *file* operand is **'−'** and the implementation treats the **'−'** as meaning standard input. Otherwise, the standard input shall not be used. See the INPUT FILES section.

INPUT FILES

The input files shall be text files.

STDOUT

If the −**l** option is in effect, the following shall be written for each file containing at least one selected input line:

**"%s\n", <***file*>

Otherwise, if more than one *file* argument appears, and −**q** is not specified, the *grep* utility shall prefix each output line by:

**"%s:", <***file*>

The remainder of each output line shall depend on the other options specified:

\* If the −**c** option is in effect, the remainder of each output line shall contain:

**"%d\n", <***count*>

\* Otherwise, if −**c** is not in effect and the −**n** option is in effect, the following shall be written to standard output:

**"%d:", <***line number*>

\* Finally, the following shall be written to standard output:

**"%s", <***selected-line contents*>

STDERP

The standard error shall be used only for diagnostic messages.

**EXIT STATUS**

The following exit values shall be returned:

0 One or more lines were selected.

1 No lines were selected.

>1 An error occurred.

**EXAMPLES**

1. To find all uses of the word **"Posix"** (in any case) in file **text.mm** and write with line numbers:

**grep −i −n posix text.mm**

2. To find all empty lines in the standard input:

**grep ^$** or: **grep −v .**

3. Both of the following commands print all lines containing strings **"abc"** or **"def"** or both:

**grep −E 'abc|def'**

grep −F 'abc

def'

4. Both of the following commands print all lines matching exactly **"abc"** or **"def"**:

**grep −E '^abc$|^def$'**

grep −F −x 'abc

def'

RATIONAL

This *grep* has been enhanced in an upwards-compatible way to provide the exact functionality of the historical *egrep* and *fgrep* commands as well. It was the clear intention of the standard developers to consolidate the three *grep*s into a single command.

The old *egrep* and *fgrep* commands are likely to be supported for many years to come as implementation extensions, allowing historical applications to operate unmodified.

Historical implementations usually silently ignored all but one of multiply-specified −**e** and −**f** options, but were not consistent as to which specification was actually used.

The −**b** option was omitted from the OPTIONS section because block numbers are implementation-defined.

The System V restriction on using − to mean standard input was omitted.

A definition of action taken when given a null BRE or ERE is specified. This is an error condition in some historical implementations.

The −**l** option previously indicated that its use was undefined when no files were explicitly named. This behavior was historical and placed an unnecessary restriction on future implementations. It has been removed.

The historical BSD *grep* −**s** option practice is easily duplicated by redirecting standard output to **/dev/null**. The −**s** option required here is from System V.

The −**x** option, historically available only with *fgrep*, is available here for all of the non-obsolescent versions.

20) locate

locate - list files in databases that match a pattern

SYNOPSIS

**locate** [-d path | --database=path] [-e | -E | --[non-]existing] [-i | --ignore-case] [-0 | --null] [-c | --count] [-w | --wholename] [-b | --basename] [-l N | --limit=N] [-S | --statistics] [-r | --regex ] [--regextype R] [--max-database-age D] [-P | -H | --nofollow] [-L | --follow] [--version] [-A | --all] [-p | --print] [--help] pattern...

DESCRIPTION

This manual page documents the GNU version of **locate**. For each given pattern, **locate** searches one or more databases of file names and displays the file names that contain the pattern. Patterns can contain shell-style metacharacters: `\*', `?', and `[]'. The metacharacters do not treat `/' or `.' specially. Therefore, a pattern `foo\*bar' can match a file name that contains `foo3/bar', and a pattern `\*duck\*' can match a file name that contains `lake/.ducky'. Patterns that contain metacharacters should be quoted to protect them from expansion by the shell.

If a pattern is a plain string — it contains no metacharacters —displays all file names in the database that contain that string anywhere. If a pattern does contain metacharacters, **locate** only displays file names that match the pattern exactly. As a result, patterns that contain metacharacters should usually begin with a `\*', and will most often end with one as well. The exceptions are patterns that are intended to explicitly match the beginning or end of a file name.

The file name databases contain lists of files that were on the system when the databases were last updated. The system administrator can choose the file name of the default database, the frequency with which the databases are updated, and the directories for which they contain entries; see [updatedb(1)](http://man7.org/linux/man-pages/man1/updatedb.1.html).

If **locate**'s output is going to a terminal, unusual characters in the output are escaped in the same way as for the -print action of the **find** command. If the output is not going to a terminal, file names are printed exactly as-is.

OPTIONS

*-0, --null*

Use ASCII NUL as a separator, instead of newline.

*-A, --all*

Print only names which match all non-option arguments, not those matching one or more non-option arguments.

*-b, --basename*

Results are considered to match if the pattern specified matches the final component of the name of a file as listed in the database. This final component is usually referred to as the `base name'.

*-c, --count*

Instead of printing the matched filenames, just print the total number of matches we found, unless --*print* (-p) is also present.

*-d path, --database=path*

Instead of searching the default file name database, search the file name databases in *path*, which is a colon-separated list of database file names. You can also use the environment variable **LOCATE\_PATH** to set the list of database files to search. The option overrides the environment variable if both are used. Empty elements in the path are taken to be synonyms for the file name of the default database. A database can be supplied on stdin, using `-' as an element of *path*. If more than one element of *path* is `-', later instances are ignored (and a warning message is printed).

The file name database format changed starting with GNU **find** and **locate** version 4.0 to allow machines with different byte orderings to share the databases. This version of **locate** can automatically recognize and read databases produced for older versions of GNU **locate** or Unix versions of **locate** or **find**. for the old locate database format will be discontinued in a future release.

*-e, --existing*

Only print out such names that currently exist (instead of such names that existed when the database was created). Note that this may slow down the program a lot, if there are many matches in the database. If you are using this option within a program, please note that it is possible for the file to be deleted after **locate** has checked

that it exists, but before you use it.

*-E, --non-existing*

Only print out such names that currently do not exist (instead of such names that existed when the database was created). Note that this may slow down the program a lot, if there are many matches in the database.

*--help* Print a summary of the options to **locate** and exit.

*-i, --ignore-case*

Ignore case distinctions in both the pattern and the file names.

*-l N, --limit=N*

Limit the number of matches to N. If a limit is set via this option, the number of results printed for the -c option will never be larger than this number.

*-L, --follow*

If testing for the existence of files (with the -e or -E options), consider broken symbolic links to be non-existing. This is the default.

*--max-database-age D*

Normally, **locate** will issue a warning message when it searches a database which is more than 8 days old. This option changes that value to something other than 8. The effect of specifying a negative value is undefined.

*-m, --mmap*

Accepted but does nothing, for compatibility with BSD **locate**.

*-P, -H, --nofollow*

If testing for the existence of files (with the -e or -E options), treat broken symbolic links as if they were existing files. The -H form of this option is provided purely for similarity with **find**; the use of -P is recommended over -H.

*-p, --print*

Print search results when they normally would not, because of the presence of --statistics (-S) or --count (-c).

*-r, --regex*

The pattern specified on the command line is understood to be a regular expression, as opposed to a glob pattern. The Regular expressions work in the same was as in **emacs** except for the fact that "." will match a newline. GNU **find** uses the same regular expressions. Filenames whose full paths match the specified regular expression are printed (or, in the case of the -c option, counted). If you wish to anchor your regular expression at the ends of the full path name, then as is usual with regular expressions, you should use the characters ^ and $ to signify this.

*--regextype R*

Use regular expression dialect R. Supported dialects include `findutils-default', `posix-awk', `posix-basic', `posix- egrep', `posix-extended', `posix-minimal-basic', `awk', `ed', `egrep', `emacs', `gnu-awk', `grep' and `sed'. See the Texinfo documentation for a detailed explanation of these dialects.

*-s, --stdio*

Accepted but does nothing, for compatibility with BSD **locate**.

*-S, --statistics*

Print various statistics about each locate database and then exit without performing a search, unless non-option arguments are given. For compatibility with BSD, -S is accepted as a synonym for --statistics. However, the output of **locate -S** is different for the GNU and BSD implementations of **locate**.

*--version*

Print the version number of **locate** and exit.

*-w, --wholename*

Match against the whole name of the file as listed in the database. This is the default.

21) pgrep

pgrep, pkill - look up or signal processes based on name and other attributes

SYNOPSIS

pgrep [options] pattern

pkill [options] pattern

DESCRIPTION

pgrep looks through the currently running processes and lists the process IDs which match the selection criteria to stdout. All the criteria have to match. For example,

$ pgrep -u root sshd will only list the processes called sshd AND owned by root. On the other hand,

$ pgrep -u root,daemon will list the processes owned by root OR daemon. pkill will send the specified signal (by default SIGTERM) to each process instead of listing them on stdout.

OPTIONS

-signal

--signal signal

Defines the signal to send to each matched process. Either the numeric or the symbolic signal name can be used. (pkill only.)

-c, --count

Suppress normal output; instead print a count of matching processes. When count does not match anything, e.g. returns zero, the command will return non-zero value.

-d, --delimiter delimiter

Sets the string used to delimit each process ID in the output (by default a new line). (pgrep only.)

-f, --full

The pattern is normally only matched against the process name. When -f is set, the full command line is used.

-g, --pgroup pgrp,...

Only match processes in the process group IDs listed. Process group 0 is translated into pgrep's or pkill's own process group.

-G, --group gid,...

Only match processes whose real group ID is listed. Either the numerical or symbolical value may be used.

-i, --ignore-case

Match processes case-insensitively.

-l, --list-name

List the process name as well as the process ID. (pgrep only.)

-a, --list-full

List the full command line as well as the process ID. (pgrep only.)

-n, --newest

Select only the newest (most recently started) of the matching processes.

-o, --oldest

Select only the oldest (least recently started) of the matching processes.

-P, --parent ppid,...

Only match processes whose parent process ID is listed.

-s, --session sid,...

Only match processes whose process session ID is listed. Session ID 0 is translated into pgrep's or pkill's own session ID.

-t, --terminal term,...

Only match processes whose controlling terminal is listed. The terminal name should be specified without the "/dev/" prefix.

-u, --euid euid,...

Only match processes whose effective user ID is listed. Either the numerical or symbolical value may be used.

-U, --uid uid,...

Only match processes whose real user ID is listed. Either the numerical or symbolical value may be used.

-v, --inverse

Negates the matching. This option is usually used in pgrep's context. In pkill's context the short option is disabled to avoid accidental usage of the option.

-w, --lightweight

Shows all thread ids instead of pids in pgrep's context. In pkill's context this option is disabled.

-x, --exact

Only match processes whose names (or command line if -f is specified) exactly match the pattern.

-F, --pidfile file

Read PID's from file. This option is perhaps more useful for pkill than pgrep.

22) date

date - print or set the system date and time

SYNOPSIS

date [OPTION]... [+FORMAT]

date [-u|--utc|--universal] [MMDDhhmm[[CC]YY][.ss]]

DESCRIPTION

Display the current time in the given FORMAT, or set the system date.

Mandatory arguments to long options are mandatory for short options too.

-d, --date=STRING

display time described by STRING, not 'now'

--debug

annotate the parsed date, and warn about questionable usage to stderr

-f, --file=DATEFILE

like --date; once for each line of DATEFILE

-I[FMT], --iso-8601[=FMT]

output date/time in ISO 8601 format. FMT='date' for date only (the default), , 'minutes', 'seconds', or 'ns' for date and time to the indicated precision.

Example: 2006-08-14T02:34:56-06:00

-R, --rfc-email

output date and time in RFC 5322 format. Example: Mon, 14 Aug 2006 02:34:56 -0600

-s, --set=STRING

set time described by STRING

-u, --utc, --universal

print or set Coordinated Universal Time (UTC)

--help display this help and exit

--version

output version information and exit

FORMAT controls the output. Interpreted sequences are:

%% a literal %

%a locale's abbreviated weekday name (e.g., Sun)

%A locale's full weekday name (e.g., Sunday)

%b locale's abbreviated month name (e.g., Jan)

%B locale's full month name (e.g., January)

%c locale's date and time (e.g., Thu Mar 3 23:05:25 2005)

%C century; like %Y, except omit last two digits (e.g., 20)

%d day of month (e.g., 01)

%D date; same as %m/%d/%y

%e day of month, space padded; same as %\_d

%F full date; same as %Y-%m-%d

%g last two digits of year of ISO week number (see %G)

%G year of ISO week number (see %V); normally useful only with %V

%h same as %b

%H hour (00..23)

%I hour (01..12)

%j day of year (001..366)

%k hour, space padded ( 0..23); same as %\_H

%l hour, space padded ( 1..12); same as %\_I

%m month (01..12)

%M minute (00..59)

%n a newline

%N nanoseconds (000000000..999999999)

%p locale's equivalent of either AM or PM; blank if not known

%P like %p, but lower case

%q quarter of year (1..4)

%r locale's 12-hour clock time (e.g., 11:11:04 PM)

%R 24-hour hour and minute; same as %H:%M

%s seconds since 1970-01-01 00:00:00 UTC

%S second (00..60)

%t a tab

%T time; same as %H:%M:%S

%u day of week (1..7); 1 is Monday

%U week number of year, with Sunday as first day of week (00..53)

%V ISO week number, with Monday as first day of week (01..53)

%w day of week (0..6); 0 is Sunday

%W week number of year, with Monday as first day of week (00..53)

%x locale's date representation (e.g., 12/31/99)

%X locale's time representation (e.g., 23:13:48)

%y last two digits of year (00..99)

%Y year

%z +hhmm numeric time zone (e.g., -0400)

%:z +hh:mm numeric time zone (e.g., -04:00)

%::z +hh:mm:ss numeric time zone (e.g., -04:00:00)

%:::z numeric time zone with : to necessary precision (e.g., -04, +05:30)

%Z alphabetic time zone abbreviation (e.g., EDT)

By default, date pads numeric fields with zeroes. The following optional flags may follow '%':

- (hyphen) do not pad the field

\_ (underscore) pad with spaces

0 (zero) pad with zeros

^ use upper case if possible

# use opposite case if possible

After any flags comes an optional field width, as a decimal number; then an optional modifier, which is either E to use the locale's alternate representations if available, or O to use the locale's alternate numeric symbols if available.

EXAMPLES

Convert seconds since the epoch (1970-01-01 UTC) to a date

$ date --date='@2147483647'

Show the time on the west coast of the US (use tzselect(1) to find TZ)

$ TZ='America/Los\_Angeles' date

Show the local time for 9AM next Friday on the west coast of the US

$ date --date='TZ="America/Los\_Angeles" 09:00 next Fri'

23) whereis

whereis - locate the binary, source, and manual page files for a command

SYNOPSIS

**whereis** [options] [**-BMS** *directory*... **-f**] *name*...

DESCRIPTION

**whereis** locates the binary, source and manual files for the specified command names. The supplied names are first stripped of leading pathname components and any (single) trailing extension of the form**.***ext* (for example: **.c**) Prefixes of **s.** resulting from use of source code control are also dealt with. **whereis** then attempts to locate the desired program in the standard Linux places, and in the places specified by **$PATH** and **$MANPATH**.

The search restrictions (options **-b**, **-m** and **-s**) are cumulative and apply to the subsequent *name* patterns on the command line. Any new search restriction resets the search mask. For example,

**whereis -bm ls tr -m gcc** searches for "ls" and "tr" binaries and man pages, and for "gcc" man pages only.

The options **-B**, **-M** and **-S** reset search paths for the subsequent *name* patterns. For example,

**whereis -m ls -M /usr/share/man/man1 -f cal** searches for "ls" man pages in all default paths, but for "cal" in the /usr/share/man/man1 directory only.

OPTIONS

**-b** Search for binaries.

**-m** Search for manuals.

**-s** Search for sources.

**-u** Only show the command names that have unusual entries. A command is said to be unusual if it does not have just one entry of each explicitly requested type. Thus '**whereis -m -u \***' asks for those files in the current directory which have no documentation file, or more than one.

**-B** *list*

Limit the places where **whereis** searches for binaries, by a whitespace-separated list of directories.

**-M** *list*

Limit the places where **whereis** searches for manuals and documentation in Info format, by a whitespace-separated list of directories.

**-S** *list*

Limit the places where **whereis** searches for sources, by a whitespace-separated list of directories.

**-f** Terminates the directory list and signals the start of filenames. It *must* be used when any of the **-B**, **-M**, or **-S** options is used.

**-l** Output the list of effective lookup paths that **whereis** is using. When none of **-B**, **-M**, or **-S** is specified, the option will output the hard-coded paths that the command was able to find on the system.

**-h**, **--help**

Display help text and exit.

**-V**, **--version**

Display version information and exit.

EXAMPLE

To find all files in */usr/bin* which are not documented in */usr/man/man1* or have no source in */usr/src*:

**cd /usr/bin**

**whereis -u -ms -M /usr/man/man1 -S /usr/src -f \***

24) df

df - report file system disk space usage

SYNOPSIS

**df** [*OPTION*]... [*FILE*]...

DESCRIPTION

This manual page documents the GNU version of **df**. **df** displays the amount of disk space available on the file system containing each file name argument. If no file name is given, the space available on all currently mounted file systems is shown. Disk space is shown in 1K blocks by default, unless the environment variable POSIXLY\_CORRECT is set, in which case 512-byte blocks are used.

If an argument is the absolute file name of a disk device node containing a mounted file system, **df** shows the space available on that file system rather than on the file system containing the device node. This version of **df** cannot show the space available on unmounted file systems, because on most kinds of systems doing so requires very nonportable intimate knowledge of file system structures.

OPTIONS

Show information about the file system on which each FILE resides, or all file systems by default.

Mandatory arguments to long options are mandatory for short options too.

**-a**, **--all**

include pseudo, duplicate, inaccessible file systems

**-B**, **--block-size**=*SIZE*

scale sizes by SIZE before printing them; e.g., '-BM' prints sizes in units of 1,048,576 bytes; see SIZE format below

**-h**, **--human-readable**

print sizes in powers of 1024 (e.g., 1023M)

**-H**, **--si**

print sizes in powers of 1000 (e.g., 1.1G)

**-i**, **--inodes**

list inode information instead of block usage

**-k** like **--block-size**=*1K*

**-l**, **--local**

limit listing to local file systems

**--no-sync**

do not invoke sync before getting usage info (default)

**--output**[=*FIELD\_LIST*]

use the output format defined by FIELD\_LIST, or print all fields if FIELD\_LIST is omitted.

**-P**, **--portability**

use the POSIX output format

**--sync** invoke sync before getting usage info

**--total**

elide all entries insignificant to available space, and produce a grand total

**-t**, **--type**=*TYPE*

limit listing to file systems of type TYPE

**-T**, **--print-type**

print file system type

**-x**, **--exclude-type**=*TYPE*

limit listing to file systems not of type TYPE

**-v** (ignored)

**--help** display this help and exit

**--version**

output version information and exit

Display values are in units of the first available SIZE from **--block-size**, and the DF\_BLOCK\_SIZE, BLOCK\_SIZE and BLOCKSIZE environment variables. Otherwise, units default to 1024 bytes (or 512 if POSIXLY\_CORRECT is set).

The SIZE argument is an integer and optional unit (example: 10K is 10\*1024). Units are K,M,G,T,P,E,Z,Y (powers of 1024) or KB,MB,... powers of 1000). Binary prefixes can be used, too: KiB=K, MiB=M, and so on.

FIELD\_LIST is a comma-separated list of columns to be included. Valid field names are: 'source', 'fstype', 'itotal', 'iused', 'iavail', 'ipcent', 'size', 'used', 'avail', 'pcent', 'file' and 'target' (see info page).

25) free

free - Display amount of free and used memory in the system

SYNOPSIS

**free** [*options*]

DESCRIPTION

**free** displays the total amount of free and used physical and swap memory in the system, as well as the buffers and caches used by the kernel. The information is gathered by parsing /proc/meminfo. The displayed columns are:

**total** Total installed memory (MemTotal and SwapTotal in /proc/meminfo)

**used** Used memory (calculated as **total** - **free** - **buffers** - **cache**)

**free** Unused memory (MemFree and SwapFree in /proc/meminfo)

**shared** Memory used (mostly) by tmpfs (Shmem in /proc/meminfo)

**buffers**

Memory used by kernel buffers (Buffers in /proc/meminfo)

**cache** Memory used by the page cache and slabs (Cached and

SReclaimable in /proc/meminfo)

**buff/cache**

Sum of **buffers** and **cache**

**available**

Estimation of how much memory is available for starting new applications, without swapping. Unlike the data provided by the **cache** or **free** fields, this field takes into account page cache and also that not all reclaimable memory slabs will be reclaimed due to items being in use (MemAvailable in /proc/meminfo, available on kernels 3.14, emulated on kernels 2.6.27+, otherwise the same as **free**)

## OPTIONS         [top](http://man7.org/linux/man-pages/man1/free.1.html#top_of_page)

**-b**, **--bytes**

Display the amount of memory in bytes.

**-k**, **--kibi**

Display the amount of memory in kibibytes. This is the

default.

**-m**, **--mebi**

Display the amount of memory in mebibytes.

**-g**, **--gibi**

Display the amount of memory in gibibytes.

**-h**, **--human**

Show all output fields automatically scaled to shortest three digit unit and display the units of print out.

If unit is missing, and you have exbibyte of RAM or swap, the number is in tebibytes and columns might not be aligned with header.

**-w**, **--wide**

Switch to the wide mode. The wide mode produces lines longer than 80 characters. In this mode **buffers** and **cache** are reported in two separate columns.

**-c**, **--count** *count*

Display the result *count* times. Requires the **-s** option.

**-l**, **--lohi**

Show detailed low and high memory statistics.

**-s**, **--seconds** *delay*

Continuously display the result *delay* seconds apart. You may actually specify any floating point number for *delay* using either . or , for decimal point. [usleep(3)](http://man7.org/linux/man-pages/man3/usleep.3.html) is used for microsecond resolution delay times.

**--si** Use kilo, mega, giga etc (power of 1000) instead of kibi,

mebi, gibi (power of 1024).

**-t**, **--total**

Display a line showing the column totals.

**--help** Print help.

**-V**, **--version**

Display version information.

26) man

cal - display a calendar

SYNOPSIS

**cal** [options] [[[*day*] *month*] *year*]

**cal** [options] [*timestamp*|*monthname*]

DESCRIPTION

**cal** displays a simple calendar. If no arguments are specified, the current month is displayed.

The *month* may be specified as a number (1-12), as a month name or as an abbreviated month name according to the current locales.

Two different calendar systems are used, Gregorian and Julian. These are nearly identical systems with Gregorian making a small adjustment to the frequency of leap years; this facilitates improved synchronization with solar events like the equinoxes. The Gregorian calendar reform was introduced in 1582, but its adoption continued up to 1923. By default **cal** uses the adoption date of 3 Sept 1752. From that date forward the Gregorian calendar is displayed; previous dates use the Julian calendar system. 11 days were removed at the time of adoption to bring the calendar in sync with solar events. So Sept 1752 has a mix of Julian and Gregorian dates by which the 2nd is followed by the 14th (the 3rd through the 13th are absent).

Optionally, either the proleptic Gregorian calendar or the Julian calendar may be used exclusively. See **--reform** below.

OPTIONS

**-1**, **--one**

Display single month output. (This is the default.)

**-3**, **--three**

Display three months spanning the date.

**-n , --months** *number*

Display *number* of months, starting from the month containing the date.

**-S, --span**

Display months spanning the date.

**-s**, **--sunday**

Display Sunday as the first day of the week.

**-m**, **--monday**

Display Monday as the first day of the week.

**--iso** Display the proleptic Gregorian calendar exclusively. See **--reform** below.

**-j**, **--julian**

Use day-of-year numbering for all calendars. These are also called ordinal days. Ordinal days range from 1 to 366. This option does not switch from the Gregorian to the Julian calendar system, that is controlled by the **--reform** option.

**--reform** *val*

This option sets the adoption date of the Gregorian calendar reform. Calendar dates previous to reform use the Julian calendar system. Calendar dates after reform use the Gregorian calendar system.

See **DESCRIPTION** above.

**-y**, **--year**

Display a calendar for the whole year.

**-Y, --twelve**

Display a calendar for the next twelve months.

**-w**, **--week**[=*number*]

Display week numbers in the calendar (US or ISO-8601).

**--color**[=*when*]

Colorize the output. The optional argument *when* can be **auto**, **never** or **always**. If the *when* argument is omitted, it defaults to **auto**. The colors can be disabled; for the current built-in default see the **--help** output. See also the **COLORS** section.

**-V**, **--version**

Display version information and exit.

**-h**, **--help**

Display help text and exit.

27) which

which - locate a command

SYNOPSIS

which [-a] filename ...

DESCRIPTION

which returns the pathnames of the files (or links) which would be executed in the current environment, had its arguments been given as commands in a strictly POSIX-conformant shell. does this by searching the PATH for executable files matching the names of the arguments. It does not canonicalize path names.

OPTIONS

-a print all matching pathnames of each argument

EXIT STATUS

0 if all specified commands are found and executable

1 if one or more specified commands is nonexistent or not executable

2 if an invalid option is specified