

## LINUX BASIC COMMANDS

1. ls - is a list information about the FILES (the current directory by default)

```
root@kali:~# ls
Desktop Documents Downloads Music Pictures Public Templates Videos
root@kali:~#
```

Some of ls command options:

```
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 ..
--author                 with -l, print the author of each file
-b, --escape             print C-style escapes for nongraphic characters
--block-size=SIZE        scale sizes by SIZE before printing them; e.g.,
                        '--block-size=M' prints sizes in units of
                        1,048,576 bytes; see SIZE format below
-B, --ignore-backups     do not list implied entries ending with ~
-c                       with -lt: sort by, and show, ctime (time of last
                        modification of file status information);
                        with -l: show ctime and sort by name;
                        otherwise: sort by ctime, newest first
-C                       list entries by columns
--color[=WHEN]           colorize the output; WHEN can be 'always' (default
                        if omitted), 'auto', or 'never'; more info below
-d, --directory          list directories themselves, not their contents
-D, --dired              generate output designed for Emacs' dired mode
-f                       do not sort, enable -aU, disable -ls --color
-F, --classify           append indicator (one of */=>@|) to entries
--file-type              likewise, except do not append '*'
--format=WORD            across -x, commas -m, horizontal -x, long -l,
                        single-column -l, verbose -l, vertical -C
--full-time              like -l --time-style=full-iso
-g                       like -l, but do not list owner
--group-directories-first
                        group directories before files;
                        can be augmented with a --sort option, but any
                        use of --sort=none (-U) disables grouping
-G, --no-group           in a long listing, don't print group names
-h, --human-readable     with -l and/or -s, print human readable sizes
                        (e.g., 1K 234M 2G)
--si                    likewise, but use powers of 1000 not 1024
-H, --dereference-command-line
                        follow symbolic links listed on the command line
--dereference-command-line-symlink-to-dir
                        follow each command line symbolic link
                        that points to a directory
--hide=PATTERN           do not list implied entries matching shell PATTERN
                        (overridden by -a or -A)
--hyperlink[=WHEN]       hyperlink file names; WHEN can be 'always'
                        (default if omitted), 'auto', or 'never'
--indicator-style=WORD   append indicator with style WORD to entry names:
                        none (default), slash (-p),
                        file-type (--file-type), classify (-F)
-i, --inode              print the index number of each file
-I, --ignore=PATTERN     do not list implied entries matching shell PATTERN
-k, --kibibytes          default to 1024-byte blocks for disk usage
-l                       use a long listing format
```

```

-L, --dereference      when showing file information for a symbolic
                        link, show information for the file the link
                        references rather than for the link itself
-m                    fill width with a comma separated list of entries
-n, --numeric-uid-gid like -l, but list numeric user and group IDs
-N, --literal          print entry names without quoting
-o                    like -l, but do not list group information
-p, --indicator-style=slash
                        append / indicator to directories
-q, --hide-control-chars print ? instead of nongraphic characters
  --show-control-chars  show nongraphic characters as-is (the default,
                        unless program is 'ls' and output is a terminal)
-Q, --quote-name       enclose entry names in double quotes
  --quoting-style=WORD  use quoting style WORD for entry names:
                        literal, locale, shell, shell-always,
                        shell-escape, shell-escape-always, c, escape
-r, --reverse          reverse order while sorting
-R, --recursive        list subdirectories recursively
-s, --size             print the allocated size of each file, in blocks
-S                    sort by file size, largest first
  --sort=WORD          sort by WORD instead of name: none (-U), size (-S),
                        time (-t), version (-v), extension (-X)
  --time=WORD          with -l, show time as WORD instead of default
                        modification time: atime or access or use (-u);
                        ctime or status (-c); also use specified time
                        as sort key if --sort=time (newest first)

```

```

  --time-style=STYLE   with -l, show times using style STYLE:
                        full-iso, long-iso, iso, locale, or +FORMAT;
                        FORMAT is interpreted like in 'date'; if FORMAT
                        is FORMAT1<newline>FORMAT2, then FORMAT1 applies
                        to non-recent files and FORMAT2 to recent files;
                        if STYLE is prefixed with 'posix-', STYLE
                        takes effect only outside the POSIX locale
-t                    sort by modification time, newest first
-T, --tabsize=COLS    assume tab stops at each COLS instead of 8
-u                    with -lt: sort by, and show, access time;
                        with -l: show access time and sort by name;
                        otherwise: sort by access time, newest first
-U                    do not sort; list entries in directory order
-v                    natural sort of (version) numbers within text
-w, --width=COLS      set output width to COLS. 0 means no limit
-x                    list entries by lines instead of by columns
-X                    sort alphabetically by entry extension
-Z, --context          print any security context of each file
-l                    list one file per line. Avoid '\n' with -q or -b
  --help              display this help and exit
  --version            output version information and exit

```



```

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otherwise: sort by access time, newest first
-U          do not sort; list entries in directory order
-v          natural sort of (version) numbers within text
-w, --width=COLS  set output width to COLS. 0 means no limit
-x          list entries by lines instead of by columns
-X          sort alphabetically by entry extension
-Z, --context    print any security context of each file
-l          list one file per line. Avoid '\n' with -q or -b
--help        display this help and exit
--version     output version information and exit

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).

Using color to distinguish file types is disabled both by default and
with --color=never. With --color=auto, ls emits color codes only when
standard output is connected to a terminal. The LS_COLORS environment
variable can change the settings. Use the dircolors command to set it.

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).

GNU coreutils online help: <http://www.gnu.org/software/coreutils/>
Full documentation at: <http://www.gnu.org/software/coreutils/ls>
or available locally via: info '(coreutils) ls invocation'
root@kali:~#

```

2. cd – change the shell working directory and also change the current directory to DIR.

```

root@kali:~# cd Videos
root@kali:~/Videos# cd ..
root@kali:~#

```

Some of cd command options:

```
Options:
-L      force symbolic links to be followed: resolve symbolic
        links in DIR after processing instances of '..'
-P      use the physical directory structure without following
        symbolic links: resolve symbolic links in DIR before
        processing instances of '..'
-e      if the -P option is supplied, and the current working
        directory cannot be determined successfully, exit with
        a non-zero status
-@      on systems that support it, present a file with extended
        attributes as a directory containing the file attributes
```

The default is to follow symbolic links, as if '-L' were specified.  
'..' is processed by removing the immediately previous pathname component back to a slash or the beginning of DIR.

Exit Status:

Returns 0 if the directory is changed, and if \$PWD is set successfully when -P is used; non-zero otherwise.

```
root@kali:~#
```

3. mv – rename the SOURCE to DEST, or move SOURCE(s) to DIRECTORY

```
root@kali:~# ls
created Documents game Pictures Templates
Desktop Downloads Music Public Videos
root@kali:~# mv created dir
root@kali:~# ls
Desktop Documents game Pictures Templates
dir Downloads Music Public Videos
root@kali:~#
```

Some of mv command options:

```
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
  -f, --force          do not prompt before overwriting
  -i, --interactive    prompt before overwrite
  -n, --no-clobber     do not overwrite an existing file
If you specify more than one of -i, -f, -n, only the final one takes effect.
  --strip-trailing-slashes  remove any trailing slashes from each SOURCE
                           argument
  -S, --suffix=SUFFIX  override the usual backup suffix
  -t, --target-directory=DIRECTORY  move all SOURCE arguments into DIRECTORY
  -T, --no-target-directory  treat DEST as a normal file
  -u, --update          move 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
  -Z, --context        set SELinux security context of destination
                           file to default type
  --help              display this help and exit
  --version            output version information and exit
```

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

GNU coreutils online help: <<http://www.gnu.org/software/coreutils/>>  
Full documentation at: <<http://www.gnu.org/software/coreutils/mv>>  
or available locally via: info '(coreutils) mv invocation'

root@kali:~#

#### 4. cat – concatenate FILE(s) to standard output

```
root@kali:~# cat game
Hello World
root@kali:~#
```



Some of cat command options:

1. cat "file name" – display file
2. cat > "filename" – create file and add data
3. cat >> "filename" – add data to existing file

```
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.

GNU coreutils online help: <http://www.gnu.org/software/coreutils/>
Full documentation at: <http://www.gnu.org/software/coreutils/cat>
or available locally via: info '(coreutils) cat invocation'
root@kali:~#
```

5. rm – remove (unlink) the FILE(s)

```
root@kali:~# touch games
root@kali:~# ls
Desktop Documents Downloads games Music Pictures Public Videos
root@kali:~# rm games
root@kali:~# ls
Desktop Documents Downloads Music Pictures Public Videos
root@kali:~#
```

Some of rm command options:

```
Usage: rm [OPTION]... [FILE]...
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); without 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      do not remove '/' (default)
  -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.

```
GNU coreutils online help: <http://www.gnu.org/software/coreutils/>
Full documentation at: <http://www.gnu.org/software/coreutils/rm>
or available locally via: info '(coreutils) rm invocation'
root@kali:~#
```

## 6. mkdir/rmdir

mkdir – create the DIRECTORY(ies), if they do not already exist.

```
root@kali:~# ls
Desktop  Documents  Downloads  Music  Pictures  Public  Videos
root@kali:~# mkdir movie
root@kali:~# ls
Desktop  Documents  Downloads  movie  Music  Pictures  Public  Videos
```

rmdir - remove the DIRECTORY(ies), if they empty.

```
root@kali:~# ls
Desktop Documents Downloads movie Music Pictures Public Videos
root@kali:~# rmdir movie
root@kali:~# ls
Desktop Documents Downloads Music Pictures Public Videos
root@kali:~#
```

Some of mkdir/rmdir command options:

- mkdir :

```
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root@kali:~# mkdir --help
Usage: mkdir [OPTION]... DIRECTORY...
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

GNU coreutils online help: <http://www.gnu.org/software/coreutils/>
Full documentation at: <http://www.gnu.org/software/coreutils/mkdir>
or available locally via: info '(coreutils) mkdir invocation'
root@kali:~#
```

- rmdir :

```
Kali Live
root@kali:~# rmdir --help
Usage: rmdir [OPTION]... DIRECTORY...
Remove the DIRECTORY(ies), if they are empty.

--ignore-fail-on-non-empty
                    ignore each failure that is solely because a directory
                    is non-empty
-p, --parents       remove DIRECTORY and its ancestors; e.g., 'rmdir -p a/b/c' is
                    similar to 'rmdir a/b/c a/b a'
-v, --verbose       output a diagnostic for every directory processed
--help              display this help and exit
--version           output version information and exit

GNU coreutils online help: <http://www.gnu.org/software/coreutils/>
Full documentation at: <http://www.gnu.org/software/coreutils/rmdir>
or available locally via: info '(coreutils) rmdir invocation'
root@kali:~#
```



7. touch – update the access and modification times of each FILE to the current time.

```
root@kali:~# touch mytxt
root@kali:~# ls
Desktop  Documents  game      Music  Pictures  Templates
dir      Downloads  game.txt  mytxt  Public    Videos
root@kali:~#
```

Some of touch command options:

```
Mandatory arguments to long options are mandatory for short options too.
-a                change only the access time
-c, --no-create   do not create any files
-d, --date=STRING parse STRING and use it instead of current time
-f               (ignored)
-h, --no-dereference affect each symbolic link instead of any referenced
                  file (useful only on systems that can change the
                  timestamps of a symlink)
-m               change only the modification time
-r, --reference=FILE use this file's times instead of current time
-t STAMP          use [[CC]YY]MMDDhhmm[.ss] instead of current time
                  --time=WORD      change the specified time:
                                  WORD is access, atime, or use: equivalent to -a
                                  WORD is modify or mtime: equivalent to -m
--help           display this help and exit
--version        output version information and exit
```

Note that the -d and -t options accept different time-date formats.

GNU coreutils online help: <<http://www.gnu.org/software/coreutils/>>  
Full documentation at: <<http://www.gnu.org/software/coreutils/touch>>  
or available locally via: info '(coreutils) touch invocation'  
root@kali:~#

8. pwd – print the name of the current working directory.

```
root@kali:~# ls
Desktop  Documents  game      Music  Pictures  Templates
dir      Downloads  game.txt  mytxt  Public    Videos
root@kali:~# cd Documents
root@kali:~/Documents# pwd
/root/Documents
root@kali:~/Documents#
```

Some of pwd command options:

```
Options:
-L      print the value of $PWD if it names the current working
        directory
-P      print the physical directory, without any symbolic links

By default, 'pwd' behaves as if '-L' were specified.

Exit Status:
Returns 0 unless an invalid option is given or the current directory
cannot be read.
root@kali:~#
```

9. top - (table of processes) is a task manager program for Unix like other operating systems. It produces an ordered list of running processes selected by user-specified criteria.

```
root@kali:~# top

top - 23:00:56 up 1:09, 1 user, load average: 0.94, 0.53, 0.32
Tasks: 217 total, 1 running, 216 sleeping, 0 stopped, 0 zombie
%Cpu(s): 4.7 us, 8.0 sy, 0.0 ni, 86.6 id, 0.0 wa, 0.0 hi, 0.7 si, 0.0 st
KiB Mem : 999464 total, 95184 free, 773288 used, 130992 buff/cache
KiB Swap: 1046524 total, 855804 free, 190720 used. 88108 avail Mem

  PID USER      PR  NI    VIRT    RES    SHR S  %CPU  %MEM     TIME+ COMMAND
  906 root        20   0   371176   22152   10556 S   6.1   2.2   5:23.66 Xorg
 1010 root        20   0  3318868  235892  39760 S   3.6  23.6   2:24.44 gnome-shell
 1733 root        20   0    46876    3728    3072 R   1.3   0.4   0:00.27 top
   22 root        20   0         0         0         0 S   0.6   0.0   0:33.82 kworker/0:1
 1721 root        20   0   590680   38268   26200 S   0.6   3.8   0:02.08 gnome-term+
    1 root        20   0   219268    5516    4332 S   0.3   0.6   0:14.42 systemd
 1193 root        20   0   738620   33956   20628 S   0.3   3.4   0:05.50 nautilus-d+
    2 root        20   0         0         0         0 S   0.0   0.0   0:00.05 kthreadd
    4 root         0 -20         0         0         0 S   0.0   0.0   0:00.00 kworker/0:+
    6 root         0 -20         0         0         0 S   0.0   0.0   0:00.00 mm_percpu_+
    7 root        20   0         0         0         0 S   0.0   0.0   0:04.16 ksoftirqd/0
    8 root        20   0         0         0         0 S   0.0   0.0   0:05.42 rcu_sched
    9 root        20   0         0         0         0 S   0.0   0.0   0:00.00 rcu_bh
   10 root        rt    0         0         0         0 S   0.0   0.0   0:00.00 migration/0
   11 root        rt    0         0         0         0 S   0.0   0.0   0:00.48 watchdog/0
```

10. ps - (process status) displays the currently-running processes.

- PID = Process ID number
- TTY = Terminal associated with the process
- CMD = Name of the process, including arguments.

```
root@kali:~# ps
  PID TTY          TIME CMD
 1269 pts/0    00:00:00 bash
 1369 pts/0    00:00:00 ps
root@kali:~#
```

11. Kill – send the processes identified by PID or JOBSPEC the signal named by SIGSPEC or SIGNUM. If neither SIGSPEC nor SIGNUM is present, then SIGTERM is assumed.

```
root@kali:~# kill -l
 1) SIGHUP       2) SIGINT       3) SIGQUIT      4) SIGILL       5) SIGTRAP
 6) SIGABRT      7) SIGBUS      8) SIGFPE       9) SIGKILL      10) SIGUSR1
11) SIGSEGV     12) SIGUSR2    13) SIGPIPE     14) SIGALRM     15) SIGTERM
16) SIGSTKFLT   17) SIGCHLD    18) SIGCONT     19) SIGSTOP     20) SIGTSTP
21) SIGTTIN     22) SIGTTOU    23) SIGURG      24) SIGXCPU     25) SIGXFSZ
26) SIGVTALRM   27) SIGPROF    28) SIGWINCH    29) SIGIO        30) SIGPWR
31) SIGSYS      34) SIGRTMIN   35) SIGRTMIN+1  36) SIGRTMIN+2  37) SIGRTMIN+3
38) SIGRTMIN+4  39) SIGRTMIN+5 40) SIGRTMIN+6  41) SIGRTMIN+7  42) SIGRTMIN+8
43) SIGRTMIN+9  44) SIGRTMIN+10 45) SIGRTMIN+11 46) SIGRTMIN+12 47) SIGRTMIN+13
48) SIGRTMIN+14 49) SIGRTMIN+15 50) SIGRTMAX-14 51) SIGRTMAX-13 52) SIGRTMAX-12
53) SIGRTMAX-11 54) SIGRTMAX-10 55) SIGRTMAX-9  56) SIGRTMAX-8  57) SIGRTMAX-7
58) SIGRTMAX-6  59) SIGRTMAX-5 60) SIGRTMAX-4  61) SIGRTMAX-3  62) SIGRTMAX-2
63) SIGRTMAX-1  64) SIGRTMAX
root@kali:~#
```



Some of kill command options:

```
Options:
-s sig      SIG is a signal name
-n sig      SIG is a signal number
-l          list the signal names; if arguments follow '-l' they are
            assumed to be signal numbers for which names should be listed
-L          synonym for -l

Kill is a shell builtin for two reasons: it allows job IDs to be used
instead of process IDs, and allows processes to be killed if the limit
on processes that you can create is reached.

Exit Status:
Returns success unless an invalid option is given or an error occurs.
root@kali:~#
```

12. wc – (word count) is a command for print newline, word and byte counts for each FILE, and a total line if more than one FILE is specified.

```
root@kali:~# cat game
Hello World
root@kali:~# wc game
 1  2 12 game
root@kali:~#
```

Some of wc command options:

```
The options below may be used to select which counts are printed, always in
the following order: newline, word, character, byte, maximum line length.
-c, --bytes      print the byte counts
-m, --chars      print the character counts
-l, --lines      print the newline counts
--files0-from=F  read input from the files specified by
                  NUL-terminated names in file F;
                  If F is - then read names from standard input
-L, --max-line-length  print the maximum display width
-w, --words      print the word counts
--help          display this help and exit
--version       output version information and exit

GNU coreutils online help: <http://www.gnu.org/software/coreutils/>
Full documentation at: <http://www.gnu.org/software/coreutils/wc>
or available locally via: info '(coreutils) wc invocation'
root@kali:~#
```

### 13. grep – search for PATTERN in each FILE.

```
root@kali:~# ls
Desktop  Documents  game      Music  Pictures  Templates
dir      Downloads  game.txt  mytxt  Public    Videos
root@kali:~# grep game Documents
grep: Documents: Is a directory
root@kali:~# grep Documents game
root@kali:~#
```

Some of grep command options:

```
Pattern selection and interpretation:
-E, --extended-regexp  PATTERN is an extended regular expression
-F, --fixed-strings    PATTERN is a set of newline-separated strings
-G, --basic-regexp     PATTERN is a basic regular expression (default)
-P, --perl-regexp      PATTERN is a Perl regular expression
-e, --regexp=PATTERN   use PATTERN for matching
-f, --file=FILE        obtain PATTERN from FILE
-i, --ignore-case       ignore case distinctions
-w, --word-regexp       force PATTERN to match only whole words
-x, --line-regexp       force PATTERN to match only whole lines
-z, --null-data         a data line ends in 0 byte, not newline
```

```
Miscellaneous:
-s, --no-messages      suppress error messages
-v, --invert-match      select non-matching lines
-V, --version           display version information and exit
--help                 display this help text and exit
```

```
Output control:
-m, --max-count=NUM    stop after NUM selected lines
-b, --byte-offset       print the byte offset with output lines
-n, --line-number       print line number with output lines
                        --line-buffered flush output on every line
-H, --with-filename     print file name with output lines
-h, --no-filename       suppress the file name prefix on output
                        --label=LABEL use LABEL as the standard input file name prefix
-o, --only-matching     show only the part of a line matching PATTERN
-q, --quiet, --silent   suppress all normal output
                        --binary-files=TYPE assume that binary files are TYPE;
                        TYPE is 'binary', 'text', or 'without-match'
-a, --text              equivalent to --binary-files=text
-I                      equivalent to --binary-files=without-match
-d, --directories=ACTION how to handle directories;
                        ACTION is 'read', 'recurse', or 'skip'
-D, --devices=ACTION    how to handle devices, FIFOs and sockets;
                        ACTION is 'read' or 'skip'
-r, --recursive         like --directories=recurse
-R, --dereference-recursive likewise, but follow all symlinks
                        --include=FILE_PATTERN search only files that match FILE_PATTERN
                        --exclude=FILE_PATTERN skip files and directories matching FILE_PATTERN
                        --exclude-from=FILE skip files matching any file pattern from FILE
                        --exclude-dir=PATTERN directories that match PATTERN will be skipped.
-L, --files-without-match print only names of FILES with no selected lines
-l, --files-with-matches print only names of FILES with selected lines
```



```

--exclude-from=FILE  skip files matching any file pattern from FILE
--exclude-dir=PATTERN  directories that match PATTERN will be skipped.
-L, --files-without-match  print only names of FILES with no selected lines
-l, --files-with-matches  print only names of FILES with selected lines
-c, --count            print only a count of selected lines per FILE
-T, --initial-tab      make tabs line up (if needed)
-Z, --null             print 0 byte after FILE name

Context control:
-B, --before-context=NUM  print NUM lines of leading context
-A, --after-context=NUM   print NUM lines of trailing context
-C, --context=NUM         print NUM lines of output context
-NUM                      same as --context=NUM
    --color[=WHEN],
    --colour[=WHEN]      use markers to highlight the matching strings;
                           WHEN is 'always', 'never', or 'auto'
-U, --binary             do not strip CR characters at EOL (MSDOS/Windows)

When FILE is '-', read standard input.  With no FILE, read '.' if
recursive, '-' otherwise.  With fewer than two FILES, assume -h.
Exit status is 0 if any line is selected, 1 otherwise;
if any error occurs and -q is not given, the exit status is 2.

Report bugs to: bug-grep@gnu.org
GNU grep home page: <http://www.gnu.org/software/grep/>
General help using GNU software: <http://www.gnu.org/gethelp/>
root@kali:~#

```

#### 14. more/less

more - is a command to view (but not modify) the contents of a text file.

```

root@kali:~# ls
Desktop  Documents  game      Music  Pictures  Templates
dir      Downloads  game.txt  mytxt  Public    Videos
root@kali:~# more game
Hello World
root@kali:~# more Music
*** Music: directory ***
root@kali:~#

```



less - to view (but not change) the contents of a text file one screen at a time.

```
root@kali:~# ls
Desktop  Documents  game      Music  Pictures  Templates
dir      Downloads  game.txt  mytxt  Public    Videos
root@kali:~# less -N mytxt
```

```
1 hii.My name is mary.
2 mary has a cat.
mytxt (END)
```

Some of more / less command options:

- more

```
Options:
-d      display help instead of ringing bell
-f      count logical rather than screen lines
-l      suppress pause after form feed
-c      do not scroll, display text and clean line ends
-p      do not scroll, clean screen and display text
-s      squeeze multiple blank lines into one
-u      suppress underlining
-<number> the number of lines per screenful
+<number> display file beginning from line number
+<string> display file beginning from search string match
-V      display version information and exit
```

For more details see more(1).

```
root@kali:~#
```

- less

```

SUMMARY OF LESS COMMANDS

Commands marked with * may be preceded by a number, N.
Notes in parentheses indicate the behavior if N is given.
A key preceded by a caret indicates the Ctrl key; thus ^K is ctrl-K.

h H          Display this help.
q :q Q :Q ZZ  Exit.
-----

MOVING

e ^E j ^N CR * Forward one line (or N lines).
y ^Y k ^K ^P * Backward one line (or N lines).
f ^F ^V SPACE * Forward one window (or N lines).
b ^B ESC-v    * Backward one window (or N lines).
z            * Forward one window (and set window to N).
w            * Backward one window (and set window to N).
ESC-SPACE    * Forward one window, but don't stop at end-of-file.
d ^D         * Forward one half-window (and set half-window to N).
u ^U         * Backward one half-window (and set half-window to N).
ESC-) RightArrow * Left one half screen width (or N positions).
ESC-( LeftArrow  * Right one half screen width (or N positions).
F             Forward forever; like "tail -f".
ESC-F        Like F but stop when search pattern is found.
HELP -- Press RETURN for more, or q when done

```

```

SEARCHING

/pattern      * Search forward for (N-th) matching line.
?pattern      * Search backward for (N-th) matching line.
n             * Repeat previous search (for N-th occurrence).
N             * Repeat previous search in reverse direction.
ESC-n         * Repeat previous search, spanning files.
ESC-N         * Repeat previous search, reverse dir. & spanning files.
ESC-u         Undo (toggle) search highlighting.
&pattern      * Display only matching lines
-----

A search pattern may be preceded by one or more of:
^N or !      Search for NON-matching lines.
^E or *      Search multiple files (pass thru END OF FILE).
^F or @      Start search at FIRST file (for /) or last file (for ?).
^K           Highlight matches, but don't move (KEEP position).
^R           Don't use REGULAR EXPRESSIONS.
-----

JUMPING

HELP -- Press RETURN for more, or q when done

```

15. file - The command is to determine type of file for example single file, multiple file, viewing mime type and compressed file.

```
root@kali:~# file mytxt
mytxt: ASCII text
root@kali:~#
```

Some of file command options:

```
--help          display this help and exit
-v, --version   output version information and exit
-m, --magic-file LIST use LIST as a colon-separated list of magic
                  number files
-z, --uncompress try to look inside compressed files
-Z, --uncompress-noreport only print the contents of compressed files
-b, --brief      do not prepend filenames to output lines
-c, --checking-printout print the parsed form of the magic file, use in
                  conjunction with -m to debug a new magic file
                  before installing it
-e, --exclude TEST exclude TEST from the list of test to be
                  performed for file. Valid tests are:
                  apptype, ascii, cdf, compress, elf, encoding,
                  soft, tar, text, tokens
-f, --files-from FILE read the filenames to be examined from FILE
-F, --separator STRING use string as separator instead of ':'
-i, --mime       output MIME type strings (--mime-type and
                  --mime-encoding)
    --apple      output the Apple CREATOR/TYPE
    --extension  output a slash-separated list of extensions
    --mime-type  output the MIME type
    --mime-encoding output the MIME encoding
-k, --keep-going don't stop at the first match
-l, --list       list magic strength
```



```

VMware
--apple          output the Apple CREATOR/TYPE
--extension      output a slash-separated list of extensions
--mime-type      output the MIME type
--mime-encoding  output the MIME encoding
-k, --keep-going don't stop at the first match
-l, --list        list magic strength
-L, --dereference follow symlinks (default if POSIXLY_CORRECT is set)
-h, --no-dereference don't follow symlinks (default if POSIXLY_CORRECT is not s
et) (default)
-n, --no-buffer   do not buffer output
-N, --no-pad      do not pad output
-0, --print0      terminate filenames with ASCII NUL
-p, --preserve-date preserve access times on files
-P, --parameter  set file engine parameter limits
                 indir      15 recursion limit for indirection
                 name        30 use limit for name/use magic
                 elf_notes   256 max ELF notes processed
                 elf_phnum    128 max ELF prog sections processed
                 elf_shnum    32768 max ELF sections processed
-r, --raw         don't translate unprintable chars to \ooo
-s, --special-files treat special (block/char devices) files as
                   ordinary ones
-C, --compile     compile file specified by -m
-d, --debug       print debugging messages

```

16. `ln -s` is a command to create hard links by default or a symbolic link (symlink) to an existing file.

```

root@kali:~# ls
Desktop  Documents  game      Music  Pictures  Templates
dir      Downloads  game.txt  mytxt  Public    Videos
root@kali:~# ln -s /root/Pictures /root/Videos
root@kali:~# ls -l
total 48
drwxr-xr-x 2 root root 4096 Mar 18 12:34 Desktop
drwxr-xr-x 2 root root 4096 Mar 18 18:51 dir
drwxr-xr-x 2 root root 4096 Mar 18 12:34 Documents
drwxr-xr-x 2 root root 4096 Mar 18 12:34 Downloads
-rw-r--r-- 1 root root  12 Mar 19 23:31 game
-rw-r--r-- 1 root root   1 Mar 20 02:11 game.txt
drwxr-xr-x 2 root root 4096 Mar 18 12:34 Music
-rw-r--r-- 1 root root  37 Mar 20 08:41 mytxt
drwxr-xr-x 2 root root 4096 Mar 18 12:34 Pictures
drwxr-xr-x 2 root root 4096 Mar 18 12:34 Public
drwxr-xr-x 2 root root 4096 Mar 18 12:34 Templates
drwxr-xr-x 2 root root 4096 Mar 20 09:21 Videos
root@kali:~#

```

Some of ln command options:

```
Usage: ln [OPTION]... [-T] TARGET LINK_NAME    (1st form)
or: ln [OPTION]... TARGET                      (2nd form)
or: ln [OPTION]... TARGET... DIRECTORY        (3rd form)
or: ln [OPTION]... -t DIRECTORY TARGET...      (4th form)

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
```

```
VMware
  -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
```

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

Using -s ignores -L and -P. Otherwise, the last option specified controls  
behavior when a TARGET is a symbolic link, defaulting to -P.

GNU coreutils online help: <<http://www.gnu.org/software/coreutils/>>  
Full documentation at: <<http://www.gnu.org/software/coreutils/ln>>  
or available locally via: info '(coreutils) ln invocation'

root@kali:~#



17. uptime – to display the time since the last boot.

```
root@kali:~# uptime
09:28:41 up 1:36, 1 user, load average: 0.32, 0.16, 0.10
root@kali:~#
```

Some of uptime command options:

```
Usage:
uptime [options]

Options:
-p, --pretty    show uptime in pretty format
-h, --help      display this help and exit
-s, --since     system up since
-V, --version   output version information and exit

For more details see uptime(1).
root@kali:~#
```

18. uname – print certain system information.

```
root@kali:~# uname
Linux
root@kali:~#
```

Some of uptime command options:

```
-a, --all          print all information, in the following order,
                   except omit -p and -i if unknown:
-s, --kernel-name  print the kernel name
-n, --nodename     print the network node hostname
-r, --kernel-release print the kernel release
-v, --kernel-version print the kernel version
-m, --machine      print the machine hardware name
-p, --processor    print the processor type (non-portable)
-i, --hardware-platform print the hardware platform (non-portable)
-o, --operating-system print the operating system
--help            display this help and exit
--version         output version information and exit
```



## 19. chmod/chown

chmod – change the mode of each FILE to MODE.

```
root@kali:~/Pictures# chmod 324 mytxt
root@kali:~/Pictures# ls -l
total 4
--wx-w-r-- 1 44 root 37 Mar 20 08:41 mytxt
root@kali:~/Pictures#
```

Chown – change the owner and/or change the group of each FILE to OWNER and/or GROUP.

```
root@kali:~/Pictures# chown 422 mytxt
root@kali:~/Pictures# ls -l
total 4
--wx-w-r-- 1 422 root 37 Mar 20 08:41 mytxt
root@kali:~/Pictures#
```

Some of chmod/chown command options:

- chmod :

```
-c, --changes          like verbose but report only when a change is made
-f, --silent, --quiet  suppress most error messages
-v, --verbose          output a diagnostic for every file processed
--no-preserve-root     do not treat '/' specially (the default)
--preserve-root        fail to operate recursively on '/'
--reference=RFILE      use RFILE's mode instead of MODE values
-R, --recursive        change files and directories recursively
--help                display this help and exit
--version              output version information and exit
```

Each MODE is of the form '[ugo]\*([-+])([rwxXst]\*|[ugo]))+([-+])[0-7]+'.  
GNU coreutils online help: <<http://www.gnu.org/software/coreutils/>>  
Full documentation at: <<http://www.gnu.org/software/coreutils/chmod>>  
or available locally via: info '(coreutils) chmod invocation'

```
root@kali:~#
```

- chown :

```
-c, --changes      like verbose but report only when a change is made
-f, --silent, --quiet  suppress most error messages
-v, --verbose      output a diagnostic for every file processed
                   --dereference    affect the referent of each symbolic link (this is
                                   the default), rather than the symbolic link itself
-h, --no-dereference  affect symbolic links instead of any referenced file
                                   (useful only on systems that can change the
                                   ownership of a symlink)
                   --from=OWNER:GROUP  change the owner and/or group of each file only if
                                   its current owner and/or group match those specified
                                   here. Either may be omitted, in which case a match
                                   is not required for the omitted attribute
                   --no-preserve-root  do not treat '/' specially (the default)
                   --preserve-root    fail to operate recursively on '/'
                   --reference=RFILE  use RFILE's owner and group rather than
                                   specifying OWNER:GROUP values
-R, --recursive    operate on files and directories recursively
```

The following options modify how a hierarchy is traversed when the -R option is also specified. If more than one is specified, only the final one takes effect.

```
-H      if a command line argument is a symbolic link
        to a directory, traverse it
-L      traverse every symbolic link to a directory
        encountered
-P      do not traverse any symbolic links (default)

--help   display this help and exit
--version output version information and exit
```

Owner is unchanged if missing. Group is unchanged if missing, but changed to login group if implied by a ':' following a symbolic OWNER. OWNER and GROUP may be numeric as well as symbolic.

Examples:

```
chown root /u      Change the owner of /u to "root".
chown root:staff /u Likewise, but also change its group to "staff".
chown -hR root /u  Change the owner of /u and subfiles to "root".
```

GNU coreutils online help: <<http://www.gnu.org/software/coreutils/>>  
Full documentation at: <<http://www.gnu.org/software/coreutils/chown>>  
or available locally via: info '(coreutils) chown invocation'

```
root@kali:~#
```

20. ping - to test the reachability of a host on an Internet Protocol (IP) network.

```
root@kali:~# ping istudent.uitm.edu.my
PING istudent.uitm.edu.my (10.0.22.4) 56(84) bytes of data.
^C
--- istudent.uitm.edu.my ping statistics ---
13 packets transmitted, 0 received, 100% packet loss, time 12281ms

root@kali:~# ping google.com
PING google.com (172.217.31.46) 56(84) bytes of data.
^C
--- google.com ping statistics ---
6 packets transmitted, 0 received, 100% packet loss, time 5118ms
```

21. netstat - (network statistics) is a command-line that displays network connections for the Transmission Control Protocol, routing tables, and a number of network interface and network protocol statistics.

```
root@kali:~# netstat
Active Internet connections (w/o servers)
Proto Recv-Q Send-Q Local Address           Foreign Address         State
tcp        0      0 kali:58066             58.27.86.24:http      TIME_WAIT

Active UNIX domain sockets (w/o servers)
Proto RefCnt Flags       Type       State         I-Node  Path
unix  2      [ ]        DGRAM                    21006    /run/user/0/systemd/n
otify
unix  2      [ ]        DGRAM                    11284    /run/systemd/journal/
syslog
unix  8      [ ]        DGRAM                    11295    /run/systemd/journal/
socket
unix  2      [ ]        DGRAM                    16248    /run/user/131/systemd
/notify
unix  3      [ ]        DGRAM                    11183    /run/systemd/notify
unix  14     [ ]        DGRAM                    11206    /run/systemd/journal/
dev-log
unix  3      [ ]        STREAM   CONNECTED    27531    @/tmp/.X11-unix/X1
unix  3      [ ]        STREAM   CONNECTED    21607
unix  3      [ ]        STREAM   CONNECTED    18933    /run/user/131/bus
unix  3      [ ]        STREAM   CONNECTED    18825    @/tmp/.X11-unix/X0
unix  3      [ ]        STREAM   CONNECTED    20776    /run/systemd/journal/
stdout
unix  3      [ ]        STREAM   CONNECTED    20772
unix  3      [ ]        STREAM   CONNECTED    22384    /run/systemd/journal/
```