**38 Basic Linux Commands to Learn with Examples**

This article I will show you 38 basic Linux commands with examples that are frequently used to get you more familiar with Linux command line. Linux based Operating Systems are very powerful but their true power lies in the command line. There is a lot that you can do with the help of commands but can't otherwise (using GUI). In this article, we will find out about basic Linux commands that are used most frequently. Now, let's start from the beginning.

Syntax

The commands in Linux have the following syntax:

$command options arguments

The command is followed by options (optional of course) and a list of arguments. The options can modify the behavior of a command. The arguments may be files or directories or some other data on which the command acts. Every command might not need arguments. Some commands work with or without them (e.g. ‘ls’ command).The options can be provided in two ways: full word options with -- (e.g. --help), or single letter options with - (e.g. -a -b -c or multiple options, -abc).

Linux Basic Commands

Let’s start with some simple commands.

**1) pwd command**

‘pwd’ command prints the absolute path to current working directory.

$ pwd  
/home/raghu

**2) cal command**

Displays the calendar of the current month.

$ cal  
July 2012  
Su Mo Tu We Th Fr Sa  
1 2 3 4 5 6 7  
8 9 10 11 12 13 14  
15 16 17 18 19 20 21  
22 23 24 25 26 27 28  
29 30 31

‘cal ’ will display calendar for the specified month and year.

$ cal 08 1991  
August 1991  
Su Mo Tu We Th Fr Sa  
1 2 3  
4 5 6 7 8 9 10  
11 12 13 14 15 16 17  
18 19 20 21 22 23 24  
25 26 27 28 29 30 31

**3) echo command**

This command will echo whatever you provide it.

$ echo "linoxide.com"  
linoxide.com

The ‘echo’ command is used to display the values of a variable. One such variable is ‘HOME’. To check the value of a variable precede the variable with a $ sign.

$ echo $HOME  
/home/raghu

**4) date command**

Displays current time and date.

$ date  
Fri Jul 6 01:07:09 IST 2012

If you are interested only in time, you can use 'date +%T' (in hh:mm:ss):

$ date +%T  
01:13:14

#### 5) tty command

Displays current terminal.

$ tty  
/dev/pts/0

#### 6) whoami command

This command reveals the user who is currently logged in.

$ whoami  
raghu

#### 7) id command

This command prints user and groups (UID and GID) of the current user.

$ id  
uid=1000(raghu) gid=1000(raghu) groups=1000(raghu),4(adm),20(dialout),24(cdrom),46(plugdev),112(lpadmin),120(admin),122(sambashare)

By default, information about the current user is displayed. If another username is provided as an argument, information about that user will be printed:

$ id root  
uid=0(root) gid=0(root) groups=0(root)

#### 8) clear command

This command clears the screen.

## Getting help command

For all of its advantages, a big disadvantage of the command line is that there are a lot of commands with too many options and usage. But nobody can remember all the commands. There are some smart ways of using command line in Linux. Several such resources are discussed here:

#### 9) help option

With almost every command, ‘--help’ option shows usage summary for that command.

$ date --help  
Usage: date [OPTION]... [+FORMAT] or: date [-u|--utc|--universal] [MMDDhhmm[[CC]YY][.ss]] Display the current time in the given FORMAT, or set the system date.

#### 10) whatis command

This command gives a one line description about the command. It can be used as a quick reference for any command.

$ whatis date  
date (1) - print or set the system date and time

$ whatis whatis  
whatis (1) - display manual page descriptions

#### 11) Manual Pages

‘--help’ option and ‘whatis’ command do not provide thorough information about the command. For more detailed information, Linux provides man pages and info pages. To see a command's manual page, man command is used.

$ man date

The man pages are properly documented pages. They have following sections:

NAME: The name and one line description of the command.

SYNOPSIS: The command syntax.

DESCRIPTION: Detailed description about what a command does.

OPTIONS: A list and description of all of the command's options.

EXAMPLES: Examples of command usage.

FILES: Any file associated with the command.

AUTHOR: Author of the man page

REPORTING BUGS: Link of website or mail-id where you can report any bug.

SEE ALSO: Any commands related to the command, for further reference.

With -k option, a search through man pages can be performed. This searches for a pattern in the name and short description of a man page.

$ man -k gzip  
gzip (1) - compress or expand files  
lz (1) - gunzips and shows a listing of a gzip'd tar'd archive  
tgz (1) - makes a gzip'd tar archive  
uz (1) - gunzips and extracts a gzip'd tar'd archive  
zforce (1) - force a '.gz' extension on all gzip files

#### 12) Info pages

Info documents are sometimes more elaborate than the man pages. But for some commands, info pages are just the same as man pages. These are like web pages. Internal links are present within the info pages. These links are called nodes. Info pages can be navigated from one page to another through these nodes.

$ info date

## Linux Filesystem commands

#### 13) Changing Directories Command

$ cd [path-to-directory]

Change the current working directory to the directory provided as argument. If no argument is given to ‘cd’, it changes the directory to the user's home directory. The directory path can be an absolute path or relative to current directory. The absolute path always starts with /. The current directory can be checked with ‘pwd’ command (remember?):

$ pwd  
/home/raghu  
$ cd /usr/share/  
$ pwd  
/usr/share  
$ cd doc  
$ pwd  
/usr/share/doc

In the first ‘cd’ command, absolute path (/usr/share) is used, and with second command, relative path (doc) is used.

#### 14) Listing File And Directories Command

$ ls [files-or-directories]

List files and/or directories. If no argument is given, the contents of current directory are shown.

$ ls  
example file1.txt file2.txt file3.txt

If a directory is given as an argument, files and directories in that directory are shown.

$ ls /usr  
bin games include lib lib64 local sbin share src

‘ls -l’ displays a long listing of the files.

$ ls -l  
total 4  
drwxr-xr-x 2 raghu raghu 4096 2012-07-06 12:52 example  
-rw-r--r-- 1 raghu raghu 0 2012-07-06 12:52 file1.txt

-rw-r--r-- 1 raghu raghu 0 2012-07-06 12:52 file2.txt  
-rw-r--r-- 1 raghu raghu 0 2012-07-06 12:52 file3.txt

In this long listing, the first character is 'd' or '-'. It distinguishes between file types. The entries with a '-' (dash) are regular files, and ones with 'd' are directories. The next 9 characters are permissions ('rwxr-xr-x' in first listing). The number following the permissions is the link count. Link count follows user and group owner. In the above example, the file owner is 'raghu' and group owner is 'raghu' as well. Next is the size of the file. And then time stamp before the name of file (or directory).  
By default, hidden files or directories are not shown, to see hidden files as well, -a option is used. Hidden files in Linux start with a period sign (.). Any file that starts with a period is hidden. So, to hide a file, you just need to rename it (and put a period before it).

$ ls -la odesk  
total 16  
drwxr-xr-x 4 raghu raghu 4096 2012-07-06 13:46 .  
drwxr-xr-x 11 raghu raghu 4096 2012-07-06 13:15 ..  
drwxr-xr-x 2 raghu raghu 4096 2012-07-06 12:52 example  
-rw-r--r-- 1 raghu raghu 0 2012-07-06 12:52 file1.txt  
-rw-r--r-- 1 raghu raghu 0 2012-07-06 12:52 file2.txt  
-rw-r--r-- 1 raghu raghu 0 2012-07-06 12:52 file3.txt  
drwxr-xr-x 2 raghu raghu 4096 2012-07-06 13:46 .hiddendir  
-rw-r--r-- 1 raghu raghu 0 2012-07-06 13:46 .hiddenfile1.txt  
-rw-r--r-- 1 raghu raghu 0 2012-07-06 13:46 .hiddenfile2.txt

If you want to see the properties of a directory instead of the files contained in it, use -d (with -l) option:

$ ls -ld odesk/  
drwxr-xr-x 4 raghu raghu 4096 2012-07-06 13:46 odesk/

Creating files and directories Command

#### 15) mkdir command

To create a directory, the ‘mkdir’ command is used.

$ mkdir example  
$ ls -l  
total 4  
drwxr-xr-x 2 raghu raghu 4096 2012-07-06 14:09 example

#### 16) touch command

For creating an empty file, use the touch command.

$ touch file1 file2 file3  
$ ls -l  
total 4  
drwxr-xr-x 2 raghu raghu 4096 2012-07-06 14:09 example  
-rw-r--r-- 1 raghu raghu 0 2012-07-06 14:20 file1  
-rw-r--r-- 1 raghu raghu 0 2012-07-06 14:20 file2  
-rw-r--r-- 1 raghu raghu 0 2012-07-06 14:20 file3

If a file already exists, touch will update its time stamp. There are a lot of other methods to create a new file, e.g. using a text editor like vi or gedit, or using redirection. Here is an example of creating a file using redirection:

$ ls -l /usr > usrlisting  
$ ls -l  
total 8  
drwxr-xr-x 2 raghu raghu 4096 2012-07-06 14:09 example  
-rw-r--r-- 1 raghu raghu 0 2012-07-06 14:20 file1  
-rw-r--r-- 1 raghu raghu 0 2012-07-06 14:20 file2  
-rw-r--r-- 1 raghu raghu 0 2012-07-06 14:20 file3  
-rw-r--r-- 1 raghu raghu 491 2012-07-06 14:23 usrlisting

A file named usrlisting is created in this example.

Copy, move and remove commands

#### 17) copy command

$cp source destination

Copy files and directories. If the source is a file, and the destination (file) name does not exit, then source is copied with new name i.e. with the name provided as the destination.

$ cp usrlisting listing\_copy.txt  
$ ls -l  
total 12  
drwxr-xr-x 2 raghu raghu 4096 2012-07-06 14:09 example  
-rw-r--r-- 1 raghu raghu 0 2012-07-06 14:20 file1  
-rw-r--r-- 1 raghu raghu 0 2012-07-06 14:20 file2  
-rw-r--r-- 1 raghu raghu 0 2012-07-06 14:20 file3  
-rw-r--r-- 1 raghu raghu 491 2012-07-06 16:02 listing\_copy.txt  
-rw-r--r-- 1 raghu raghu 491 2012-07-06 14:23 usrlisting

If the destination is a directory, then the file is copied with its original name in that directory.

$ cp listing\_copy.txt example/  
$ ls -l example/  
total 4  
-rw-r--r-- 1 raghu raghu 491 2012-07-06 16:07 listing\_copy.txt

Multiple files can also be copied, but in that case, the last argument will be expected to be a directory where all the files are to be copied. And the rest of the arguments will be treated as file names.

$ cp file1 file2 example/  
$ ls -l example/  
total 4  
-rw-r--r-- 1 raghu raghu 0 2012-07-06 16:10 file1  
-rw-r--r-- 1 raghu raghu 0 2012-07-06 16:10 file2  
-rw-r--r-- 1 raghu raghu 491 2012-07-06 16:07 listing\_copy.txt

If a directory is to be copied, then it must be copied recursively with the files contained in it. To copy a directory recursively, use -r option with ‘cp’ command:

$ cp -r example /tmp/expertslogin/  
$ ls -l /tmp/expertslogin  
total 4  
drwxr-xr-x 2 raghu raghu 4096 2012-07-06 16:12 example

#### 18) move command

$ mv source destination

Move files or directories. The 'mv' command works like 'cp' command, except that the original file is removed. But, the mv command can be used to rename the files (or directories).

$ mv listing\_copy.txt usrcopy  
$ ls -l  
total 12  
drwxr-xr-x 2 raghu raghu 4096 2012-07-06 16:10 example  
-rw-r--r-- 1 raghu raghu 0 2012-07-06 14:20 file1  
-rw-r--r-- 1 raghu raghu 0 2012-07-06 14:20 file2  
-rw-r--r-- 1 raghu raghu 0 2012-07-06 14:20 file3  
-rw-r--r-- 1 raghu raghu 491 2012-07-06 16:02 usrcopy  
-rw-r--r-- 1 raghu raghu 491 2012-07-06 14:23 usrlisting

Here, 'listing\_copy.txt' is moved with the name 'usrcopy' in the same directory (or you can say that it has been renamed).

#### 19) To remove or Delete

$ rmdir

'rmdir' command removes any empty directories, but cannot delete a directory if a file is present in it. To use ‘rmdir’ command, you must first remove all the files present in the directory you wish to remove (and possibly directories if any).

#### To remove files and directories

$ rm files|directories

A directory must be removed recursively with -r option.

$ rm file2  
$ rm -r example/  
$ ls -l  
total 8  
-rw-r--r-- 1 raghu raghu 0 2012-07-06 14:20 file1  
-rw-r--r-- 1 raghu raghu 0 2012-07-06 14:20 file3  
-rw-r--r-- 1 raghu raghu 491 2012-07-06 16:02 usrcopy  
-rw-r--r-- 1 raghu raghu 491 2012-07-06 14:23 usrlisting

Here, the file named 'file2' is removed first, and then the directory 'example' is removed recursively. This can be seen in the output of ‘ls -l’ command where these two are no longer present.

Other file commands

#### 20) file command

The file command determines the file type of a given file. For example:

$ file /etc/passwd  
/etc/passwd: ASCII text

You can provide one or more than one file as an argument to the file command.

$ file td.c td.out ARP.java Screenshot.png StringTokenizing.class  
idl.rar List.pdf  
td.c: ASCII C program text, with CRLF line terminators  
td.out: ELF 32-bit LSB executable, Intel 80386, version 1 (SYSV), dynamically linked (uses shared libs), for GNU/Linux 2.6.15, not stripped  
ARP.java: ASCII Java program text, with CRLF line terminators  
Screenshot.png: PNG image data, 1366 x 768, 8-bit/color RGB, non-interlaced  
StringTokenizing.class: compiled Java class data, version 50.0 (Java 1.6)  
idl.rar: RAR archive data, v1d, os: Win32  
List.pdf: PDF document, version 1.4

#### 21) stat command

To check the status of a file. This provides more detailed information about a file than ‘ls -l’ output.

$ stat usrcopy  
File: `usrcopy'  
Size: 491 Blocks: 8 IO Block: 4096 regular file  
Device: 808h/2056d Inode: 149452 Links: 1  
Access: (0644/-rw-r--r--) Uid: ( 1000/ raghu) Gid: ( 1000/ raghu)  
Access: 2012-07-06 16:07:06.413522009 +0530  
Modify: 2012-07-06 16:02:30.204152386 +0530  
Change: 2012-07-06 16:17:18.992559654 +0530

#### 22) cat command

The 'cat' command is actually a concatenator but can be used to view the contents of a file.

$ cat /etc/passwd  
root:x:0:0:root:/root:/bin/bash  
daemon:x:1:1:daemon:/usr/sbin:/bin/sh  
bin:x:2:2:bin:/bin:/bin/sh  
sys:x:3:3:sys:/dev:/bin/sh  
sync:x:4:65534:sync:/bin:/bin/sync  
games:x:5:60:games:/usr/games:/bin/sh

**23) pagers**

The cat command lists file as a whole. But if the file is big enough to fit into one screen, then we will be able to see only the last page of the file. The commands 'less' and 'more' display files one page at a time. So they are also called pagers. You can navigate through a file using arrow keys. To quit from a pager, hit 'q'.

#### 24) head command

Displays the first few lines of a file. By default, the ‘head’ command displays the first 10 lines of a file. But with -n option, the number of lines to be viewed can be specified.

$ head /etc/passwd  
root:x:0:0:root:/root:/bin/bash  
daemon:x:1:1:daemon:/usr/sbin:/bin/sh  
bin:x:2:2:bin:/bin:/bin/sh  
sys:x:3:3:sys:/dev:/bin/sh  
sync:x:4:65534:sync:/bin:/bin/sync  
games:x:5:60:games:/usr/games:/bin/sh  
man:x:6:12:man:/var/cache/man:/bin/sh  
lp:x:7:7:lp:/var/spool/lpd:/bin/sh  
mail:x:8:8:mail:/var/mail:/bin/sh  
news:x:9:9:news:/var/spool/news:/bin/sh

#### 25) tail command

Similar to ‘head’; the ‘tail’ command shows the last 10 lines by default, and -n option is available as well.

$ tail -n 4 /etc/passwd  
raghu:x:1000:1000:Raghu Sharma,,,:/home/raghu:/bin/bash  
sshd:x:113:65534::/var/run/sshd:/usr/sbin/nologin  
dictd:x:114:123:Dictd Server,,,:/var/lib/dictd:/bin/false  
mysql:x:115:124:MySQL Server,,,:/nonexistent:/bin/false

#### 26) wc command

Word count

This command counts lines, words and letters of the input given to it.

$ wc /etc/passwd  
35 57 1698 /etc/passwd

The /etc/passwd file has 35 lines, 57 words, and 1698 letters present in it.

#### 27) grep command

The ‘grep’ command searches for a pattern in a file (or standard input). It supports regular expressions. It returns a line if it matches the pattern in that line. So, if we wish to find the lines containing the word ‘nologin’, we use ‘grep’ as follows:

$ grep nologin /etc/passwd  
sshd:x:113:65534::/var/run/sshd:/usr/sbin/nologin

#### 28) ln command

The ln command is used in linux to create links. Links are a kind of shortcuts to other files. The general form of command is:

$ ln TARGET LINK\_NAME

There are two types of links, soft links and hard links. By default, hard links are created. If you want to create soft link, use -s option. In this example, both types of links are created for the file usrlisting.

$ ln usrlisting hard\_link

$ ln -s usrlisting soft\_link

$ ls -l  
total 12  
-rw-r--r-- 1 raghu raghu 0 2012-07-06 14:20 file1  
-rw-r--r-- 1 raghu raghu 0 2012-07-06 14:20 file3  
-rw-r--r-- 2 raghu raghu 491 2012-07-06 14:23 hard\_link  
lrwxrwxrwx 1 raghu raghu 10 2012-07-09 14:00 soft\_link -> usrlisting  
-rw-r--r-- 1 raghu raghu 491 2012-07-06 16:02 usrcopy  
-rw-r--r-- 2 raghu raghu 491 2012-07-06 14:23 usrlisting

Text Editors

#### 29) Pico & Nano

‘Pico’ is a text editor in Linux. ‘Nano’ editor is inspired from ‘pico’. They work almost the same. If the argument given as filename exists, then that file will be opened for editing in pico/nano. Otherwise, a new file with that name will be created. Let’s create a new file named hello.txt:

$ pico hello.txt  
GNU nano 2.2.6 File: hello.txt Modified

This file is edited with pico editor.

^G Get Help ^O WriteOut ^R Read File ^Y Prev Page ^K Cut Text ^C Cur Pos  
^X Exit ^J Justify ^W Where Is ^V Next Page ^U UnCut Text^T To Spell

Having made all the changes to the file, press ‘ctrl+o’ to write the changes to the file and ‘ctrl+x’ to exit from the editor. There are a lot of functions available with this editor. The help menu can be accessed with ‘ctrl+g’ keystrokes.

#### 30) VI editor

The VI stands for Visual editor; another text editor in Linux. This is a standard editor in many Linux/Unix environments. This is the default editor that comes with many Linux distributions. It might be possible that it is the only text editor available with your distro.

You can open a file with vi for editing using the following:

$ vi hello.txt

The vi editor has 3 modes in which it performs its functions. The default is COMMAND mode, in which tasks like copy, paste, undo etc can be performed. You can change a mode from command mode only (and come back to it). The second mode is the INSERT mode, in which whatever key you type is treated as a character and will be loaded into the file buffer. To enter this mode, press ‘i’ when in command mode.  
The final mode is EX mode or last line mode. The changes made in the buffer can be saved or discarded in this mode.

Hello world.  
This file is edited using vi editor.  
~  
~  
~

~  
~  
"hello.txt" 2 lines, 50 characters

Some additional useful commands

#### 31) alias command

The ‘alias’ is another name for a command. If no argument is given, it shows current aliases. Aliases can be used for short names of commands. For example, you might use the clear command frequently. You can create an alias for it:

$ alias c="clear"

Next time you enter 'c ' on command line, your screen will get clear. Current aliases can be checked with 'alias' command:

$ alias  
alias alert='notify-send --urgency=low -i "$([ $? = 0 ] && echo terminal || echo error)" "$(history|tail -n1|sed -e '\''s/^\s\*[0-9]\+\s\*//;s/[;&|]\s\*alert$//'\'')"'  
alias c='clear'  
alias egrep='egrep --color=auto'  
alias fgrep='fgrep --color=auto'  
alias grep='grep --color=auto'  
alias l='ls -CF'  
alias la='ls -A'  
alias ll='ls -alF'  
alias ls='ls --color=auto'

#### 32) w command

w command is used to check which users are logged in to the system, and what command they are executing at that particular time:

$ w  
10:06:56 up 57 min, 3 users, load average: 0.04, 0.06, 0.09  
USER TTY FROM LOGIN@ IDLE JCPU PCPU WHAT  
root tty1 10:06 28.00s 1.02s 0.67s pager -s  
raghu tty7 :0 09:19 57:33 1:22 0.20s gnome-session --session=classic-gnome  
raghu pts/0 :0.0 09:34 0.00s 0.78s 0.00s w

It also shows the uptime, number of users logged in and load average of the system (in the first line of output above).

#### 33) last command

Displays information about the users who logged in and out of the system. The output of the last command can be very large, so the following output has been filtered (through head) to display the top 10 lines only:

$ last | head  
root tty1 Mon Jul 9 10:06 still logged in  
root tty1 Mon Jul 9 10:06 - 10:06 (00:00)  
raghu pts/1 :0.0 Mon Jul 9 10:05 - 10:06 (00:00)  
raghu pts/0 :0.0 Mon Jul 9 09:34 still logged in  
raghu tty7 :0 Mon Jul 9 09:19 still logged in  
reboot system boot 2.6.38-13-generi Mon Jul 9 09:09 - 10:12 (01:02)  
raghu tty7 :0 Sun Jul 8 23:36 - 00:30 (00:54)  
reboot system boot 2.6.38-13-generi Sun Jul 8 23:36 - 00:30 (00:54)  
raghu tty7 :0 Sun Jul 8 21:07 - down (01:06)  
reboot system boot 2.6.38-13-generi Sun Jul 8 21:07 - 22:14 (01:07)

A similar command is 'lastb' that shows the last unsuccessful login attempts. But this command must be run as root otherwise you would get an error saying permission denied.

$ lastb  
raghu tty2 Mon Jul 9 10:16 - 10:16 (00:00)  
UNKNOWN tty2 Mon Jul 9 10:15 - 10:15 (00:00)  
ubuntu tty8 :1 Mon Jul 2 10:23 - 10:23 (00:00)

btmp begins Mon Jul 2 10:23:54 2012

#### 34) du command

The du command determines disk usage of a file. If the argument given to it is a directory, then it will list disk usage of all the files and directories recursively under that directory:

$ du /etc/passwd  
4 /etc/passwd

$ du hello/  
52 hello/HelloApp  
4 hello/orb.db/logs  
20 hello/orb.db  
108 hello/

#### 35) df command

The df reports file system usage. For example:

$ df  
Filesystem 1K-blocks Used Available Use% Mounted on  
/dev/sda7 10079084 7372872 2194212 78% /  
none 1522384 768 1521616 1% /dev  
none 1529012 252 1528760 1% /dev/shm  
none 1529012 108 1528904 1% /var/run  
none 1529012 4 1529008 1% /var/lock  
/dev/sda8 5039616 3758824 1024792 79% /home  
/dev/sda2 209715196 196519248 13195948 94% /media/Data

#### 36) fdisk command

The fdisk is a tool for getting partition information, and for adding and removing partitions.The fdisk tool requires super user privileges. To list all the partitions of all the hard drives available:

$ fdisk -l

Disk /dev/sda: 320.1 GB, 320072933376 bytes  
255 heads, 63 sectors/track, 38913 cylinders  
Units = cylinders of 16065 \* 512 = 8225280 bytes  
Sector size (logical/physical): 512 bytes / 512 bytes  
I/O size (minimum/optimal): 512 bytes / 512 bytes  
Disk identifier: 0x396f396f

Device Boot Start End Blocks Id System  
/dev/sda1 1 2611 20971520 7 HPFS/NTFS  
/dev/sda2 2611 28720 209715200 7 HPFS/NTFS  
/dev/sda3 \* 28720 38914 81882113 5 Extended  
/dev/sda5 28720 33942 41943040 7 HPFS/NTFS  
/dev/sda6 33942 34464 4194304 7 HPFS/NTFS  
/dev/sda7 34464 35739 10240000 83 Linux  
/dev/sda8 35739 36376 5120000 83 Linux  
/dev/sda9 36376 36886 4096000 82 Linux swap / Solaris  
/dev/sda10 36887 38276 11164672 83 Linux  
/dev/sda11 38277 38914 5117952 83 Linux

The fdisk is an interactive tool to edit the partition table. It takes a device (hard disk) as an argument, whose partition table needs to be edited.

$ fdisk /dev/sda

WARNING: DOS-compatible mode is deprecated. It's strongly recommended to  
switch off the mode (command 'c') and change display units to  
sectors (command 'u').

Command (m for help): m  
Command action  
a toggle a bootable flag  
b edit bsd disklabel  
c toggle the dos compatibility flag  
d delete a partition  
l list known partition types  
m print this menu  
n add a new partition  
o create a new empty DOS partition table  
p print the partition table  
q quit without saving changes  
s create a new empty Sun disklabel  
t change a partition's system id  
u change display/entry units  
v verify the partition table  
w write table to disk and exit  
x extra functionality (experts only)

Pressing ‘m’ at the fdisk prompt prints out the help shown above that lists all the commands available for fdisk. A new partition can be created with 'n' and an existing partition can be deleted with the 'd' command. When you are done editing the partitions, press 'w' to write the changes to the disk, and finally, hit 'q' to quit from fdisk (q does not save changes).

#### 37) netstat command

The ‘netstat’ is a command used to check the network statistics of the system. It will list the current network connections, routing table information, interface statistics, masquerade connections and a lot more information.

$ netstat | head  
Active Internet connections (w/o servers)  
Proto Recv-Q Send-Q Local Address Foreign Address State  
Active UNIX domain sockets (w/o servers)  
Proto RefCnt Flags Type State I-Node Path  
unix 13 [ ] DGRAM 8498 /dev/log  
unix 2 [ ] DGRAM 6824 @/org/kernel/udev/udevd  
unix 3 [ ] STREAM CONNECTED 56738 /var/run/dbus/system\_bus\_socket  
unix 3 [ ] STREAM CONNECTED 56113  
unix 3 [ ] STREAM CONNECTED 29138  
unix 3 [ ] STREAM CONNECTED 29137

#### 38) history command

This command shows the commands you have entered on your terminal so far.

#### 39) passwd command

To change your password with 'passwd' command.

#### 40) shutdown -h now

Finally, you can shut down your system using this command.

**A Brief Outline of 106 Linux Commands with Examples**

Similar to the Command Prompt in Windows, Linux has the Terminal in order to help you configure and interact with your system. For someone to work in the Terminal they need to familiarize themselves with Linux commands. Once familiarized it is fairly easy to work from the Terminal and that is why most of the Linux workers prefer the Linux terminal over the GUI.

This article will help you to get familiarized with all the most common Linux commands and their usages. These commands are divided into 15 sections based on their functionalities.

System Related Commands

These commands are used to view and manage Linux system-related information.

**1.** [**uname**](https://linoxide.com/linux-command/uname-command/) : Displays linux system information. With -a switch you can view all the information, with -r switch you can view kernel release information and with -o you can view OS information

**2. cat /etc/redhat\_release** : Shows which version of redhat installed

**3.** [**uptime**](https://linoxide.com/linux-command/linux-uptime-command/) : Shows how long the system has been running

**4.** [**hostname**](https://linoxide.com/linux-command/display-set-hostname-linux/) : Shows system host name. With -i switch you can view the ip address of the machine and with -d you can view the domain name

**5.** [**last**](https://linoxide.com/linux-command/linux-last-command/) **reboot** : Shows system reboot history

**6.** [**date**](https://linoxide.com/linux-command/date-command-linux/) : Shows the current date and time. You can specify the format you want to view the date as well. As an example, by using 'date +%D' you can view the date in 'MM/DD/YY' format

**7.** [**cal**](https://linoxide.com/linux-command/cal-ncal-commands-display-calender-linux/) : Shows the calendar of the current month. With -y switch you can view the calendar of the whole current year

**8. w** : [Displays who is logged](https://linoxide.com/linux-command/linux-w-command/) on and what they are doing

**9.** [**whoami**](https://linoxide.com/linux-command/linux-whoami-command/) : Shows current user id

**10.** [**finger**](https://linoxide.com/linux-command/finger-command-user-details/) **user** : Displays information about user

**11. reboot** : Reboots the system

**12.** [**shutdown**](https://linoxide.com/linux-command/examples-linux-shutdown-commands/) : Shuts down the system

Hardware Related Commands

These commands are used to view and manage hardware-related aspects of the Linux machine.

**13.** [**dmesg**](https://linoxide.com/linux-command/linux-dmesg-command/) : Displays all the messages from Kernel ring buffer. With -k switch you can view kernel messages and with -u you can view userspace messages

**14. cat /proc/cpuinfo** : Displays information about processes and CPUs of the system

**15. cat /proc/meminfo** : Displays details on hardware memory

**16. cat /proc/interrupts** : Lists the number of interrupts per CPU per I/O device

**17. lshw** : Displays information on hardware configuration of the system. But this command must be run as super user or it will only report partial information

**18. lsblk** : Displays block device related information of the machine. With -a you can view all block devices

**19. free -m** : [Shows used and free memory](https://linoxide.com/linux-command/linux-free-command/) (-m for MB)

**20. lspci -tv** : [Shows information on PCI](https://linoxide.com/how-tos/linux-list-pci-devices/) buses devices

**21. lsusb -tv** : [Shows information on USB](https://linoxide.com/linux-command/linux-lsusb-command-print-usb/) devices

**22.** [**dmidecode**](https://linoxide.com/linux-command/how-to-display-system-hardware-information-in-bios/) : Shows hardware info from the BIOS (vendor details)

**23. hdparm -i /dev/sda** : Shows info about disk sda

**hdparm -tT /dev/sda** : Performs a read speed test on disk sda

**24. badblocks -s /dev/sda** : Tests for [unreadable blocks](https://linoxide.com/linux-how-to/how-to-fix-repair-bad-blocks-in-linux/) on disk sda

Statistic Related Commands

These set of commands are used to view various kinds of stats of the Linux system

**25. mpstat 1** : Displays [processors related statistics](https://linoxide.com/linux-command/linux-mpstat-command/)

**26. vmstat 2**  : Displays [virtual memory statistics](https://linoxide.com/linux-command/linux-vmstat-command-tool-report-virtual-memory-statistics/)

**27. iostat 2** : Displays [I/O statistics](https://linoxide.com/linux-command/linux-iostat-command/)

**28. tail -n 500 /var/log/messages** : [Displays the last](https://linoxide.com/linux-command/linux-tail-command/) 500 kernel/syslog messages

**29. tcpdump -i eth1** : [Captures all packets](https://linoxide.com/linux-how-to/14-tcpdump-commands-capture-network-traffic-linux/) flow on interface eth1. With -w switch you can specify a file where you can direct the output to

**tcpdump -i eth0 'port 80'** : Monitors all traffic on port 80 on interface eth0

**30. lsof** : [Lists all open files](https://linoxide.com/how-tos/lsof-command-list-process-id-information/) belonging to all active processes

**lsof -u testuser** : Lists files opened by a specific user

**31. free -m** : Shows RAM memory details

**32. watch df -h** : [Watches changeable](https://linoxide.com/linux-command/linux-watch-command/) disk usage continuously

User-Related Commands

These commands are used to manage Linux users

**33. id** : [Shows the active user and group information](https://linoxide.com/linux-command/linux-id-command/). With -G switch you can view the IDs of groups

**34. last** : Shows a list of last logins on the system. Using -a switch you can add the hostname to the last column of the output

**35. who** : [Shows who is logged](https://linoxide.com/linux-command/linux-who-command/) on the system

**36. groupadd admin** : [Adds the group](https://linoxide.com/linux-command/groupadd-command/) "admin"

**37. useradd -c "Sam Tomshi" -g admin -m sam** : Creates user "sam" and adds to group "admin"

**38. userdel sam** : Deletes user sam

**39. adduser sam** : [Adds user](https://linoxide.com/linux-command/linux-user-add-command/) "sam"

**40. usermod** : Modifies user information

**41. passwd user1** : Changes the password of user1

File Related Commands

These commands are used to handle files and directories

**42. ls -al** : Displays all [information about files/directories](https://linoxide.com/linux-command/linux-ls-command/). This includes displaying all hidden files as well

**43. pwd** : Shows [current directory path](https://linoxide.com/linux-command/linux-pwd-command/)

**44. mkdir directory-name**  : [Creates a directory](https://linoxide.com/linux-command/linux-mkdir-command/)

**45. rm file-name** : [Deletes file](https://linoxide.com/linux-command/linux-rm-command/)

**rm -r directory-name** : Deletes directory recursively

**rm -f file-name** : Forcefully removes file

**rm -rf directory-name** : Forcefully removes directory recursively

**46. cp file1 file2** : [Copies linux files](https://linoxide.com/linux-command/linux-cp-command/), here file1 to file2

**cp -r dir1 dir2** : Copies dir1 to dir2, creates dir2 if it doesn't exist

**47. mv file1 file2** : [Moves files](https://linoxide.com/linux-command/mv-command-linux/) from one place to another/renames file1 to file2

**48. ln -s /path/to/file-name link-name** : [Creates a symbolic link](https://linoxide.com/linux-how-to/create-soft-link-linux/) to file-name

**49. touch file** : [Creates empty file](https://linoxide.com/linux-command/linux-touch-command/)

**50. cat file** : [Prints the file content](https://linoxide.com/linux-command/13-cat-command-examples/) in terminal

**51. more file** : Display the [contents of file](https://linoxide.com/linux-command/linux-more-command/)

**52. head file** : [Display the first](https://linoxide.com/linux-command/linux-head-command/) 10 lines of file

**53. tail file** : Outputs the last 10 lines of file

**tail -f file** : Outputs the contents of file as it grows starting with the last 10 lines

**54. gpg -c file**  : [Encrypts file](https://linoxide.com/security/gpg-command-encrypt-decrypt-file/)

**gpg file.gpg**  : Decrypts file

**55. cksum file**  : View the checksum of the file

**56. diff file1 file2**  : View the differences between contents of file1 and file2

**57. ln -s link file**  : Create a soft link named link to the file

**58. sort** : Sorts files in alphabetical order

**59. uniq** : Compares adjacent lines in a file and removes/reports any duplicate lines

**60. wc** : Counts number of words/lines

**61. dir** : Lists the content of the directory

**62. tee** : Command for [chaining and redirection](https://linoxide.com/linux-how-to/linux-tee-command-examples/)

**63. tr** : Command for [translating characters](https://linoxide.com/how-tos/linux-tr-command/)

Process Related Commands

These commands are used to handle Linux processes

**64. ps** : Displays your currently active processes

**ps aux | grep 'telnet'** : Displays all process ids related to telnet process

**65. pmap** : [Display Memory map](https://linoxide.com/linux-command/pmap-command/) of process

**66. top**  : Display all running [processes and cpu/memory usage](https://linoxide.com/linux-command/linux-top-command-examples-screenshots/)

**67. kill pid**  : [Kills process](https://linoxide.com/linux-how-to/linux-kill-command-examples/) with mentioned pid

**68. killall proc**  : [Kills all processes](https://linoxide.com/linux-command/linux-killall-my-options/) named proc

**69. pkill processname** : Sends kill signal to a process with its name

**70. bg**  : Resumes suspended jobs [without bringing them to foreground](https://linoxide.com/linux-command/fg-bg/)

**71. fg**  : Brings the most recent job to foreground

**fg n**  : Brings job n to the foreground

File Permission Related Commands

These commands are used to change permissions of the files

**72. chmod octal file-name** : [Changes the permissions](https://linoxide.com/linux-command/chmod-command/) of file to octal

**chmod 777 /data/test.c**  : Sets rwx permission for owner , group and others

**chmod 755 /data/test.c** : Sets rwx permission for owner and rx for group and others

**73. chown owner-user file**  : [Changes owner](https://linoxide.com/linux-command/chown-command/) of the file

**chown owner-user:owner-group file-name** : Changes owner and group owner of the file

**chown owner-user:owner-group directory**  : Changes owner and group owner of the directory

**74. chgrp group1 file**  : Changes the group ownership of the file to group1

Network Related Commands

These commands are used to view and edit network configurations related aspects of the system

**75. ifconfig -a** : [Displays all network interface](https://linoxide.com/how-tos/linux-ifconfig/) and set ip address

**76. ifconfig eth0**  : Displays eth0 ethernet port ip address and details

**77. ip addr show**  : [Display all network interfaces](https://linoxide.com/linux-command/use-ip-command-linux/) and ip addresses

**78. ip address add 192.168.0.1 dev eth0**  : Sets ip address of eth0 device

**79. ethtool eth0**  : Linux tool to show ethernet status

**80. mii-tool eth0**  : Linux tool to show eth0 status

**81. ping host**  : [Sends echo requests](https://linoxide.com/linux-how-to/ping-ipv6-address-windows-linux-cli/) to the host to test ipv4 connection

**82. whois domain**  : Gets who is information for domain

**83. dig domain**  : Gets [DNS nameserver information](https://linoxide.com/how-tos/useful-options-dig/) for domain

**dig -x host**  : Reverse lookup host

**84. host google.com**  : [Lookup DNS](https://linoxide.com/linux-command/learn-host-command/) ip address for the name

**85. hostname -i**  : Lookup local ip address

**86. wget file**  : Downloads file

**87. netstat -tupl**  : Lists all [active listening ports](https://linoxide.com/linux-how-to/linux-netstat-commands-basic-advanced-examples/)

**88. nslookup**  : Resolves domain names to IP addresses

Compression / Archive Related Commands

These commands are used to compress and decompress files

**89. tar cf home.tar home**  : [Creates a tar](https://linoxide.com/linux-how-to/16-tar-commands-compress-extract-files-linux/) named home.tar containing home/

**tar xf file.tar**  : Extracts the files from file.tar

**tar czf file.tar.gz files**  : Creates a tar with gzip compression

**90. gzip file**  : Compresses file and renames it to file.gz

**91. bzip2 -z file**  : Compresses file and renames it to file.bz2

**bzip2 -d file.bz2**  : Decompress the file

Package Installation Related Commands

These commands are used to manage Linux packages

**92. rpm -i pkgname.rpm** : Installs rpm based package

**rpm -e pkgname** : Removes package

**93. make** : [Install from source](https://linoxide.com/how-tos/linux-make-command-examples/) file

Search Related Commands

These commands are used to search for files and patterns

**94. grep pattern files**  : Searches for pattern in files

**grep -r pattern dir** : Searches recursively for pattern in dir

**95. locate file**  : Finds all instances of file

**96. find /home/tom -name 'index\*'**  : Finds file names that start with "index" inside /home/tom directory

**find /home -size +10000k**  : Finds files larger than 10000k in /home

## Login Related Commands

These commands are used to log into another host

**97. ssh user@host**  : [Securely connect](https://linoxide.com/linux-command/learn-ssh-connection-options/) to a host as user

**ssh -p port $ user@host**  : Connects to host using specific port

**98. telnet host**  : Connects to the system using telnet port

## File Transfer Related Commands

These commands are used to copy files from one system to another system

**99. scp file.txt server2:/tmp**  : [Secure copy](https://linoxide.com/how-tos/scp-command-file-directory-transfer-linux/) file.txt to remote host /tmp folder

**scp nixsavy@server2:/www/\*.html /www/tmp**  : Copies \*.html files from remote host to current host /www/tmp folder

**scp -r nixsavy@server2:/www /www/tmp**  : Copies all files and folders recursively from remote server to the current system /www/tmp folder

**100. rsync -a /home/apps /backup/**  : [Synchronizes source to destination](https://linoxide.com/how-tos/rsync-copy/)

**rsync -avz /home/apps $ linoxide@192.168.10.1**:/backup : Synchronize files/directories between the local and remote system with compression enabled

## Disk Usage Related Commands

These commands are used to view disk statistics

**101. df -h**  : [Shows free space](https://linoxide.com/linux-command/linux-df-command/) on mounted filesystems

**df -i** : Shows free inodes on mounted filesystems

**102. fdisk -l**  : [Shows disks partitions](https://linoxide.com/linux-command/fdisk-commands-manage-partitions-in-linux/) sizes and types

**103. du -ah**  : [Displays disk usage](https://linoxide.com/linux-command/linux-du-command/) in human readable form

**du -sh**  : Displays total disk usage on the current directory

**104. findmnt**  : [Displays target mount point](https://linoxide.com/linux-command/powerful-findmnt-command/) for all filesystems

**105. mount device-path mount-point**  : Mounts a device to the device-path

## Directory Traverse Related Commands

These commands are used to change the directory

**106. cd ..**  : Goes up one level of the directory tree

**cd**  : Goes to $HOME directory

**cd /test**  : Changes to /test directory