

Basic Commands

By

Harshali Bhuwad

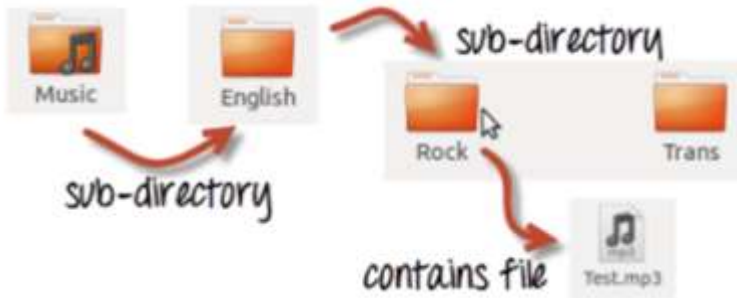
Listing files (ls)

Use the "ls" command to know what files are in the directory you are in. It shows the files /directories in your current directory.

```
guru99@VirtualBox:~$ ls
Desktop    Downloads      Music          Public         Videos
Documents  examples.desktop Pictures        Templates
```

guru99@VirtualBox:~\$

- 'ls -R' to shows all the files not only in directories but also subdirectories



```
guru99@VirtualBox:~$ ls -R
.:
Desktop    Downloads  Music      Public     Videos
Documents  examples.desktop Pictures    Templates

./Desktop:

./Documents:

./Downloads:

./Music:
English

./Music/English:
Rock  Trans

./Music/English/Rock:
Test.mp3

./Music/English/Trans:

./Pictures:

./Public:

./Templates:

./Videos:
guru99@VirtualBox:~$
```

- 'ls -al' gives detailed information of the files.

A terminal window showing the output of the 'ls -al' command. The output is a table of file details. Handwritten annotations in red and green ink point to specific fields with labels: '# of HardLinks' points to the first column, 'owner of file' points to the second and third columns, 'Size in Bytes' points to the fourth column, 'Directory or File Name' points to the last column, 'File type and Access Permissions' points to the first column, 'Usergroup' points to the second and third columns, and 'Date & Time' points to the fifth and sixth columns. The file '.bash_history' is highlighted with a red box.

# of HardLinks	owner of file	Size in Bytes	Directory or File Name
total 220			
drwxr-xr-x 22	n100 n100	4096	2012-08-18 18:09 .
drwxr-xr-x 3	root root	4096	2012-08-18 04:36 ..
-rw----- 1	n100 n100	117	2012-08-18 18:12 .bash_history

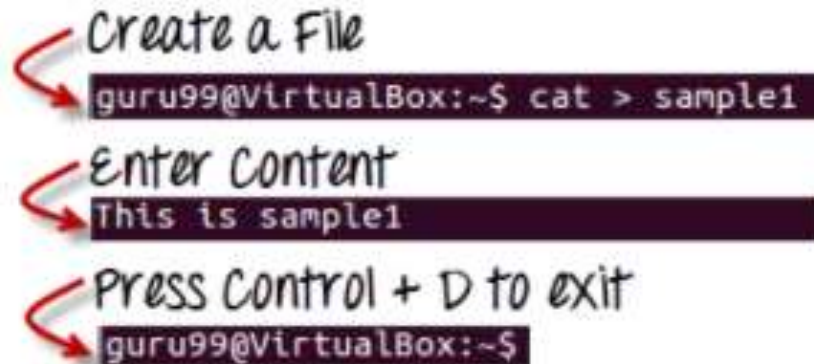
- **Listing Hidden Files: ls -a**

```
guru99@VirtualBox:~$ ls -a
.          .dmrc          .ICEauthority  sample
..         Documents  .local         sample1
.bash_history Downloads      .mission-control sample2
.bash_logout examples.desktop Music          Templates
.bashrc    .gconf        Pictures       .thumbnails
.cache     .gnome2       .profile      Videos
.config    .gstreamer-0.10 Public         .Xauthority
.dbus      .gtk-bookmarks .pulse        .xsession-error
Desktop    .gvfs         .pulse-cookie

guru99@VirtualBox:~$
```

Creating & Viewing Files

- `cat > filename`



A terminal window showing the process of creating a file. Three red arrows point to the commands entered. The first arrow points to the command to create a file, the second to the content being entered, and the third to the exit command.

```
guru99@VirtualBox:~$ cat > sample1
This is sample1
guru99@VirtualBox:~$
```

Handwritten annotations in red:

- Create a File
- Enter Content
- Press Control + D to exit

How to create and view files in Linux/Unix

- **Combine 2 files:**

```
cat file1 file2 > newfilename
```

- **Deleting Files: rm filename**

↪ List current contents of directory

```
guru99@VirtualBox:~$ ls
Desktop    Downloads    Music    [Public  sample1  Templates
Documents  examples.desktop  Pictures  sample  sample2  Videos
```

↪ Remove the file sample1

```
guru99@VirtualBox:~$ rm sample1
```

↪ List directory, to check file has been deleted

```
guru99@VirtualBox:~$ ls
Desktop    Downloads    Music    Public  sample2  Videos
Documents  examples.desktop  Pictures  sample  Templates
guru99@VirtualBox:~$
```


- **Moving files:**

`mv filename new_file_location`

- **Re-naming files:**

`mv filename newfilename`

- **Creating Directories:**
mkdir directoryname

```
home@VirtualBox:~$ mkdir mydirectory
home@VirtualBox:~$ ls
Desktop    Downloads  Music      Pictures   Templates
Documents  examples.desktop  mydirectory  Public     Videos
home@VirtualBox:~$
```

- **Removing Directories**

`rmdir directoryname`

```
home@VirtualBox:~$ rmdir mydirectory
home@VirtualBox:~$ ls
Desktop  dir2  Documents  examples.desktop  Pictures  Templates
dir1     dir3  Downloads  Music              Public    Videos
home@VirtualBox:~$
```

- **Renaming Directory**

`mv directoryname newdirectoryname`

```
home@VirtualBox:~$ mv mydirectory newdirectory
home@VirtualBox:~$ ls
Desktop      Downloads      Music          Pictures      Templates
Documents    examples.desktop  newdirectory   Public        Videos
home@VirtualBox:~$
```

- The 'Man' command

```
guru99@VirtualBox:~$ man man
```

```
guru99@VirtualBox: ~
MAN(1)                                Manual pager utils                                MAN(1)

NAME
    man - an interface to the on-line reference manuals

SYNOPSIS
    man [-C file] [-d] [-D] [--warnings[=warnings]] [-R encoding] [-L
    locale] [-m system[,...]] [-M path] [-S list] [-e extension] [-i|-I]
    [--regex|--wildcard] [--names-only] [-a] [-u] [--no-subpages] [-P
    pager] [-r prompt] [-7] [-E encoding] [--no-hyphenation] [--no-justifi-
    cation] [-p string] [-t] [-T[device]] [-H[browser]] [-X[dpi]] [-Z]
    [[section] page ...] ...
    man -k [apropos options] regexp ...
    man -K [-w|-W] [-S list] [-i|-I] [--regex] [section] term ...
    man -f [whatis options] page ...
    man -l [-C file] [-d] [-D] [--warnings[=warnings]] [-R encoding] [-L
    locale] [-P pager] [-r prompt] [-7] [-E encoding] [-p string] [-t]
    [-T[device]] [-H[browser]] [-X[dpi]] [-Z] file ...
    man -w|-W [-C file] [-d] [-D] page ...
    man -c [-C file] [-d] [-D] page ...
    man [-hV]

DESCRIPTION
    Manual page man(1) line 1 (press h for help or q to quit)
```

- **The History Command**

```
guru99@VirtualBox:~$ history
 1  cat > sample
 2  cat sample
 3  cat sample ^a
 4  cat sample a
 5  cat sample | grep a
 6  cat sample | grep ^a
 7  useradd home
 8  useradd mycomputer
 9  sudo useradd mycomputer
10  sudo adduser MyLinux
11  sudo adduser mylinux
12  vi scriptsample.sh
```

- **The clear command**

```
141 man
142 3a
143 man intro
144 man ls
145 man cat
146 man man
147 history
148 146
149 history 146
150 history
151 clear
152 history
guru99@VirtualBox:~$ clear
```

The window gets cleared

```
guru99@VirtualBox:~$
```

- **Installing Software**

`sudo apt-get update`

```
guru99@VirtualBox:~$ sudo apt-get update
Ign http://extras.ubuntu.com precise InRelease
Ign http://security.ubuntu.com precise-security InRelease
Ign http://in.archive.ubuntu.com precise InRelease
Ign http://in.archive.ubuntu.com precise-updates InRelease
Get:1 http://security.ubuntu.com precise-security Release.gpg [198 B]
Get:2 http://extras.ubuntu.com precise Release.gpg [72 B]
Ign http://in.archive.ubuntu.com precise-backports InRelease
Hit http://extras.ubuntu.com precise Release
Hit http://in.archive.ubuntu.com precise Release.gpg
Hit http://extras.ubuntu.com precise/main Sources
Get:3 http://in.archive.ubuntu.com precise-updates Release.gpg [198 B]
Get:4 http://security.ubuntu.com precise-security Release [49.6 kB]
```

updates all installed packages

```
Hit http://in.archive.ubuntu.com precise-updates/univers
Hit http://in.archive.ubuntu.com precise-backports/main
Hit http://in.archive.ubuntu.com precise-backports/multi
Hit http://in.archive.ubuntu.com precise-backports/restr
Hit http://in.archive.ubuntu.com precise-backports/unive
Fetched 1,293 kB in 27s (47.4 kB/s)
Reading package lists... Done
guru99@VirtualBox:~$
```


- **cp**

This command copies a file, preserving the original and creating an identical copy.

```
cp -i oldfile newfile
```

- **date**

The date command displays the current day, date, time, and year.

- **df**

This command reports file system disk usage.

- **du**

This command reports disk usage (that is, the amount of space taken up by a group of files).

- **find**

The find command lists all of the files within a directory and its subdirectories that match a set of conditions.

```
find . -name myfile.txt -print
```

- **pwd**

This command reports the current directory path.

- **echo** : echo command in linux is used to display line of text/string that are passed as an argument .

echo "enter text"

- **Vi:** This command starts the vi text editor. To edit a file named myfile in the current directory, enter:

`vi <filename_NEW> or <filename_EXISTING>`

creating a new file

```
guru99@VirtualBox:~$ vi samplefile
```

vi editor opens in the command mode

```
Command Mode
"samplefile" [New File] 0,0-1 All
```

press 'i' to enter the insert mode

```
Insert Mode
-- INSERT -- 0,1 All
```

Add content

```
Hello World!
1,12 All
```

Press esc to enter Command mode. Press :wq to save and quit

```
Hello World!
:wq
```

check the content of file

```
guru99@VirtualBox:~$ cat samplefile
Hello World!
guru99@VirtualBox:~$
```

VI Editing commands

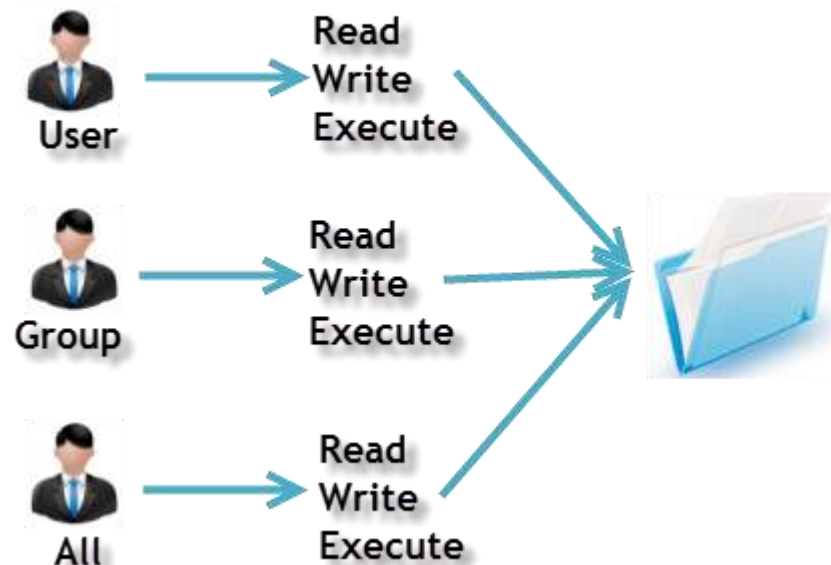
- i - Insert at cursor (goes into insert mode)
- a - Write after cursor (goes into insert mode)
- A - Write at the end of line (goes into insert mode)
- ESC - Terminate insert mode
- u - Undo last change
- U - Undo all changes to the entire line
- o - Open a new line (goes into insert mode)
- dd - Delete line
- 3dd - Delete 3 lines.
- D - Delete contents of line after the cursor
- C - Delete contents of a line after the cursor and insert new text. Press ESC key to end insertion.
- dw - Delete word
- 4dw - Delete 4 words
- cw - Change word
- x - Delete character at the cursor
- r - Replace character
- R - Overwrite characters from cursor onward
- s - Substitute one character under cursor continue to insert
- S - Substitute entire line and begin to insert at the beginning of the line
- ~ - Change case of individual character

- **chmod**

This command changes the permission information associated with a file.

`chmod permissions filename`

Owners assigned Permission On Every File and Directory



Number	Permission Type	Symbol
0	No Permission	—
1	Execute	—x
2	Write	-w-
3	Execute + Write	-wx
4	Read	r—
5	Read + Execute	r-x
6	Read + Write	rw-
7	Read + Write + Execute	rwX

Checking Current File Permissions

```
ubuntu@ubuntu:~$ ls -l sample
-rw-rw-r-- 1 ubuntu ubuntu 15 Sep  6 08:00 sample
```

chmod 764 and checking permissions again

```
ubuntu@ubuntu:~$ chmod 764 sample
ubuntu@ubuntu:~$ ls -l sample
-rwxrw-r-- 1 ubuntu ubuntu 15 Sep  6 08:00 sample
```

- # chown

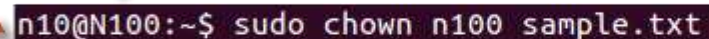
- The chown command allows you to change the user and/or group ownership
- of a given file, directory, or symbolic link.
- chown user filename

check the current file ownership using ls -l



```
-rw-rw-r-- 1 root n10 18 2012-09-16 18:17 sample.txt
```

change the file owner to n100. You will need sudo



```
n10@N100:~$ sudo chown n100 sample.txt
```

ownership changed to n100

```
-rw-rw-r-- 1 n100 n10 18 2012-09-16 18:17 sample.txt
```

changing user and group to root 'chown user:group file'

```
n10@N100:~$ sudo chown root:root sample.txt
```

user and group ownership changed to root

```
-rw-rw-r-- 1 root root 18 2012-09-16 18:17 sample.txt
```

- Chgrp

- To change group ownership.
- `chgrp group_name filename`

Check the current file ownership using `ls -dl`

```
guru99@VirtualBox:~$ ls -dl test1  
-rwxrwxrwx 1 root cdrom 0 Oct  6 11:27 test1
```

Change the file owner to root. You will need `sudo`

```
guru99@VirtualBox:~$ sudo chgrp root test1
```

Group ownership changed to root

```
guru99@VirtualBox:~$ ls -dl test1  
-rwxrwxrwx 1 root root 0 Oct  6 11:27 test1
```

- Ps

- Linux provides us a utility called ps for viewing information related with the processes on a system which stands as abbreviation for “Process Status”.

```
home@VirtualBox:~$ ps ux
```

USER	PID	%CPU	%MEM	VSZ	RSS	TTY	STAT	START	TIME	COMMAND
home	1114	0.0	0.8	46548	8512	?	Ssl	Sep03	0:00	gnome-sess
home	1151	0.0	0.0	3856	140	?	Ss	Sep03	0:00	/usr/bin/s
home	1154	0.0	0.0	3748	484	?	S	Sep03	0:00	/usr/bin/d
home	1155	0.1	0.2	6656	3036	?	Ss	Sep03	0:18	//bin/dbus
home	1157	0.0	0.2	9148	2368	?	S	Sep03	0:00	/usr/lib/g
home	1162	0.0	0.2	31588	2296	?	Ssl	Sep03	0:00	/usr/lib/g
home	1174	0.0	1.4	132472	14884	?	Sl	Sep03	0:03	/usr/lib/g

- Top

- TopThis utility tells the user about all the running processes on the Linux machine.

```
home@VirtualBox:~$ top
top - 23:57:43 up 2:54, 1 user, load average: 0.00, 0.01, 0.05
Tasks: 189 total, 2 running, 187 sleeping, 0 stopped, 0 zombie
Cpu(s): 0.7%us, 3.0%sy, 0.0%ni, 96.3%id, 0.0%wa, 0.0%hi, 0.0%si, 0.0%st
Mem: 1026080k total, 924508k used, 101572k free, 37000k buffers
Swap: 1046524k total, 21472k used, 1025052k free, 367996k cached
```

PID	USER	PR	NI	VIRT	RES	SHR	S	%CPU	%MEM	TIME+	COMMAND
1525	home	20	0	1775m	100m	28m	S	1.7	10.0	5:05.34	Photoshop.exe
961	root	20	0	75972	51m	7952	R	1.0	5.1	2:23.42	Xorg
1507	home	20	0	7644	4652	696	S	1.0	0.5	2:42.66	wineserver
1564	home	20	0	75144	29m	9840	S	0.3	3.0	0:25.96	ubuntuone-syncd
2999	home	20	0	127m	13m	10m	S	0.3	1.4	0:01.36	gnome-terminal
3077	home	20	0	2820	1188	864	R	0.3	0.1	0:00.76	top
1	root	20	0	3200	1704	1260	S	0.0	0.2	0:00.98	init
2	root	20	0	0	0	0	S	0.0	0.0	0:00.00	kthreadd
3	root	20	0	0	0	0	S	0.0	0.0	0:00.95	ksoftirqd/0

• Kill

- This command terminates a running processes on a Linux machine.
- In order to use this utility you need to know the PID (process id) of the process you want to kill.

kill PID

- To find the PID of a process simply type
pidof Process name