Dates and Times

Date	Displays date
Cal	Displays Calendar

Manual man **-** Manual

Basic File Operations

ls — List files in a directory.
The ls command (pronounced as it is spelled, ell ess) lists attributes of files and directories. You can list files in the current directory:

ls -a — hidden

cp — Copy a file.
The cp command normally copies a file:

```
cp myfile anotherfile
cp myfile myfile2 myfile3 mydir
```

mv — Rename (“move”) a file.
The mv (move) command can rename a file:

```
mv somefile yetanotherfile
mv myfile myfile2 dir1 dir2 destination_directory
```

rm — Delete (“remove”) a file.
The rm (remove) command can delete files:

```
rm deleteme deleteme2
```

or recursively delete directories:

```
 rm -r dir1 dir2
```

List

ln — Create links (alternative names) to a file.
A link is a reference to another file, created by the ln command. Intuitively, links give the same file multiple names,allowing it to live in two (or more) locations at once.

ln -s /home/amit/cyberfrat/conul /bin/consul

Directory Operations

cd -		Change your current directory (i.e., “where you are now” in the filesystem).
pwd	-	Print the name of your current directory.
basename	-	Print the final part of a file path.
mkdir	-	Create (make) a directory.
rmdir	-	Delete (remove) an empty directory.
rm -r	-	Delete a nonempty directory and its contents.

File Viewing

cat	-	View files in their entirety.
less	-	View text files one page at a time.
nl	-	View text files with their lines numbered.
Head	-	View the first lines of a text file.
tail	-	View the last lines of a text file.

File Creation and Editing

nano	A simple text editor included by default in popular Linux distros.
emacs	Text editor from Free Software Foundation.
vim	Text editor, extension of Unix vi.

Creating a File Quickly

You can quickly create an empty file (for later editing) using the touch command:

```
touch newfile
```

File Properties

stat	Display attributes of files and directories.
wc	Count bytes, words, and lines in a file.
du	Measure disk usage of files and directories.
file	Identify (guess) the type of a file.
touch	Change timestamps of files and directories.
chown	Change owner of files and directories.
Chmod	The chmod (change mode) command protects files and directories from unauthorized users on the same system

File Text Manipulation

```
grep "keyword" filename
```

cut

The cut command extracts columns of text from files. A “column” is defined by character offsets (e.g., the nineteenth character of each line):

```
cut -c5 myfile
```

```
cat data.csv
one,two,three,four,five,six,seven
ONE,TWO,THREE,FOUR,FIVE,SIX,SEVEN
1,2,3,4,5,6,7

→ cut -f5 -d, data.csv
five
FIVE
5
```

tr

tr [options] charset1 [charset2]

The tr command performs some simple, useful translations of one set of characters into another. For example, to capitalize everything in a file:

```
→ cat somefile
amit
cyberfrat
ubuntu
debian
redhat


→ cat somefile | tr 'a-z' 'A-Z'
AMIT
CYBERFRAT
UBUNTU
DEBIAN
REDHAT
```

File Compression and Packaging

tar

The tar program packs many files and directories into a single file for easy transport, optionally compressed. (It was originally

for backing up files onto a tape drive; its name is short for “tape archive.”) Tar files are the most common file-packaging format for Linux.

→ tar -czf cyberfrat.tar.gz cyberfrat (to Create)

→ ls -lG myarchive.tar.gz
-rw-r--r-- 1 amit 350 Jun 20 12:49 cyberfrat.tar.gz

→ tar -tf cyberfrat.tar.gz (to l)ist contents
cyberfrat/
cyberfrat/amit
cyberfrat/cyberfrat.txt
cyberfrat/two/
cyberfrat/three/
cyberfrat/nameoffile
cyberfrat/one/
cyberfrat/cyber.csv

...
→ tar -xf cyberfrat.tar.gz (to Extract)

Zip

Zip [options] [files]
zip and unzip compress and uncompress files in Windows Zip format. Compressed files have the extension .zip. Unlike most other Linux compression commands, zip does not delete the original files.

zip cyberfrat.zip cyberfrat ... (Pack.)

zip -r cyberfrat.zip cyberfrat (Pack recursively.)

unzip -l cyberfrat.zip (List contents.)

unzip cyberfrat.zip (Unpack.)

Viewing Processes

A process is a unit of work on a Linux system. Each program you run represents one or more processes, and Linux provides commands for viewing and manipulating them. Every process is identified by a numeric process ID, or PID.

ps - List process.

To view your processes:
→ ps -ux

all of user “amit’s” processes:
→ ps -U amit

all occurrences of a program:
→ ps -C apache2

all processes with command lines truncated to screen width:
→ ps -ef

Uptime - View the system load.

The uptime command tells you how long the system has been running since the last boot:

top - Monitor resource-intensive processes interactively.

The top command lets you monitor the most active processes,updating the display at regular intervals (say, every second).

free - The free command displays memory usage in kilobytes
free -h - human readable

:

Controlling Processes

kill Terminate a process (or send it a signal).

The kill command sends a signal to a process. This can terminate a process (the default action), interrupt it, suspend it,

crash it, and so on. You must own the process, or be the super-
user, to affect it.

sudo kill 9464 9465 9466

ps -uax | grep apache2

pidof apache2

iimeout -
The timeout command sets a time limit for running another timeout Kill a command that runs for too long.program, in seconds.

sleep 60

timeout 3 sleep 60

As a more practical example, play music from your MP3 collection for an hour, then stop:
→ timeout 3600 mplayer *.mp3

Scheduling Jobs

sleep Wait a set number of seconds, doing nothing.
The sleep command simply waits a set amount of time.

sleep 5m - Do nothing for 5 minutes

sleep is useful for delaying a command for a set amount of time:
→ sleep 10 && echo 'Ten seconds have passed.

watch - Run a program at set intervals.

The watch program executes a given command at regular intervals; the default is every two seconds.

watch -n 60 date - watch date command every 60 secs

crontab

The crontab command, like the at command, schedules jobs for specific times. However, crontab is for recurring jobs, such as “Run this command at midnight on the second Tuesday of each month.”

crontab -e - Edit your crontab file in your default editor ($VISUAL).

crontab -l - Print your crontab file on standard output.
Here are some example time specifications:

* * * * * date >> /home/amit/cyberfrat/amit

45 * * * * 45 minutes after each hour (1:45, 2:45, etc.)

45 9 * * * date >> /home/amit/cyberfrat/amit
Every day at 9:45 am

45 9 8 * * date >> /home/amit/cyberfrat/amit The eighth day of every month at 9:45 am

45 9 8 12 * date >> /home/amit/cyberfrat/amit Every December 8 at 9:45 am

45 9 8 dec * date >> /home/amit/cyberfrat/amit Every December 8 at 9:45 am

45 9 * * 6 date >> /home/amit/cyberfrat/amit	Every Saturday at 9:45 am
45 9 * * date >> sat /home/amit/cyberfrat/amit	Every Saturday at 9:45 am
45 9 * date >> 12 6 /home/amit/cyberfrat/amit	Every Saturday in December, at 9:45 am
45 9 8 12 6 date >> /home/amit/cyberfrat/amit	Every Saturday in December, plus December 8,at 9:45 am

Users and Their Environment

logname - Print your login name.

logname

The logname command prints your login name (it might seem trivial, but it's useful in shell scripts):

whoami - Print your current, effective username.

The whoami command prints the name of the current, effective user.

id - Print the user ID and group membership of a user.
Every user has a unique, numeric user ID, and a default group with a unique, numeric group ID. The id command prints these values along with their associated user and group names:

finger - Print information about users.
The finger command prints logged-in user information in a short form:

Printenv - The printenv command prints all environment variables known to your shell and their values:

User Account Management

Adduser - create an account

The useradd command lets the superuser create a user account:

sudo useradd balaji

Deluser - Delete a user
It does not delete the files in the user's home directory unless you supply the -r option. Think carefully before deleting a user; consider deactivating the account instead (with usermod-L).

deluser balaji

usermod - The usermod command modifies the given user's account in various ways, such as changing a home directory:

sudo usermod -d /home/balajik balaji

Useful options

-d dir	Change the user's home directory to dir.
-l username	Change the user's login name to username.
-s shell	Change the user's login shell to shell.
-g group	Change the user's initial (default) group to Group, which can either be a numeric group ID or a group name, and which must already exist.
-L	Disable a user
-U	Unlock the user

passwd - The passwd command changes a login password,

chfn -

The chfn (change finger) command updates a few pieces of personal information maintained by the system: real name, home telephone, office telephone, and office location, as displayed by the finger command.

Group Management

groups - Print the group membership of a user.

sudo groupadd cyber - Create a group.
The groupadd command creates a group.

sudo groupdel cyber - deletes a group The groupdel command deletes an existing group

Host Information

uname Print basic system information.

The uname command prints fundamental information about your computer:

This includes the kernel name (Linux),
Hostname (server.example.com),
kernel release (4.2.0-17-generic),
Kernel version (#21-Ubuntu SMP Fri Oct 23 19:56:16 UTC 2015),
hardware name (x86_64),
operating system name (GNU/Linux).

hostname - The hostname command prints the name of your computer.

ip Set and display network interface information.
The ip command displays and sets various aspects of your computer's network interface.

ip addr show wlp1s0
ip addr show

ifconfig Older command to set and display network interface information.

The ifconfig command is an ancestor of ip. It is still found on many Linux systems but is less powerful

ifconfig wlp1s0

Host Location

host Look up hostnames, IP addresses, and DNS info.
host www.ubuntu.org

ping — Check if a remote host is reachable.

The ping command tells you if a remote host is reachable. It sends small packets (ICMP packets to be precise) to a remote host and waits for responses:

ping google.com

traceroute — View the network path to a remote host.

The traceroute command prints the network path from your local host to a remote host, and the time it takes for packets to traverse the path:

Lynx - text browser
Lynx www.google.com

wget - The wget command hits a URL and downloads the data to a file or standard output. It's great for capturing individual web pages, downloading files,

Echo " hello world"

Installing Softwares

sudo apt update
sudo apt install htop -y - Installs htop

sudo apt remove htop -y - removes htop