

Linux Basic Commands

- **mkdir** – make directories
Usage: mkdir [OPTION] DIRECTORY...
eg. mkdir lhn
- **ls** – list directory contents
Usage: ls [OPTION]... [FILE]...
eg. ls, ls l, ls lhn
- **cd** – changes directories
Usage: cd [DIRECTORY]
eg. cd lhn
- **pwd** – print name of current working directory
Usage: pwd
- **vim** – Vi Improved, a programmers text editor
Usage: vim [OPTION] [file]...
eg. vim lhn.txt
- **cp** – copy files and directories
Usage: cp [OPTION]... SOURCE DEST
eg. cp sample.txt sample_copy.txt
cp sample_copy.txt target_dir
- **mv** – move (rename) files
Usage: mv [OPTION]... SOURCE DEST
eg. mv source.txt target_dir
mv old.txt new.txt
- **rm** remove files or directories
Usage: rm [OPTION]... FILE...
eg. rm file1.txt , rm rf some_dir

- **find** – search for files in a directory hierarchy
Usage: find [OPTION] [path] [pattern]
eg. find file1.txt, find name file1.txt
- **history** – prints recently used commands
Usage: history
- **cat** – concatenate files and print on the standard output
Usage: cat [OPTION] [FILE]...
eg. cat file1.txt file2.txt
cat n file1.txt
- **echo** – display a line of text
Usage: echo [OPTION] [string] ...
eg. echo I love India
echo \$HOME
- **grep** – print lines matching a pattern
Usage: grep [OPTION] PATTERN [FILE]...
eg. grep i apple sample.txt
- **wc** – print the number of newlines, words, and bytes in files
Usage: wc [OPTION]... [FILE]...
eg. wc file1.txt
wc L file1.txt
- **sort** – sort lines of text files
Usage: sort [OPTION]... [FILE]...
eg. sort file1.txt
sort r file1.txt
- **tar** – to archive a file
Usage: tar [OPTION] DEST SOURCE
eg. tar cvf /home/archive.tar /home/original
tar xvf /home/archive.tar

- **kill** – to kill a process(using signal mechanism)
Usage: kill [OPTION] pid
eg. kill 9 2275
- **ps** – report a snapshot of the current processes
Usage: ps [OPTION]
eg. ps, ps el
- **who** – show who is logged on
Usage: who [OPTION]
eg. who , who b , who q
- **passwd** – update a user's authentication tokens(s)
Usage: passwd [OPTION]
eg. passwd
- **su** – change user ID or become superuser
Usage: su [OPTION] [LOGIN]
eg. su remo, su
- **chown** – change file owner and group
Usage: chown [OPTION]... OWNER[:[GROUP]] FILE...
eg. chown remo myfile.txt
- **chmod** – change file access permissions
Usage: chmod [OPTION] [MODE] [FILE]
eg. chmod 744 calculate.sh
- **zip** – package and compress (archive) files
Usage: zip [OPTION] DEST SOURCE
eg. zip original.zip original
- **unzip** – list, test and extract compressed files in a ZIP archive
Usage: unzip filename
eg. unzip original.zi

- **ssh** – SSH client (remote login program)
“ssh is a program for logging into a remote machine and for executing commands on a remote machine”
Usage: ssh [options] [user]@hostname
eg. ssh X guest@10.105.11.20
- **scp** – secure copy (remote file copy program)
“scp copies files between hosts on a network”
Usage: scp [options] [[user]@host1:file1] [[user]@host2:file2]
eg. scp file1.txt guest@10.105.11.20:~/Desktop/
- **fdisk** – partition manipulator
eg. sudo fdisk l
- **mount** – mount a file system
Usage: mount t type device dir
eg. mount /dev/sda5 /media/target
- **umount** – unmount file systems
Usage: umount [OPTIONS] dir | device...
eg. umount /media/target
- **du** – estimate file space usage
Usage: du [OPTION]... [FILE]...
eg. du
- **df** – report filesystem disk space usage
Usage: df [OPTION]... [FILE]...
eg. df
- **quota** – display disk usage and limits
Usage: quota [OPTION]
eg. quota v

- **reboot** – reboot the system
Usage: reboot [OPTION]
eg. reboot
- **poweroff** – power off the system
Usage: poweroff [OPTION]
eg. poweroff
- **kate** – KDE Advanced Text Editor
Usage: kate [options][file(s)]
eg. kate file1.txt file2.txt
- **vim** – Vi Improved, a programmers text editor
Usage: vim [OPTION] [file]...
eg. vi hello.c
- **gedit** A text Editor. Used to create and edit files.
Usage: gedit [OPTION] [FILE]...
eg. gedit
- **bg** – make a foreground process to run in background
Usage: type 'ctrl+z' and then 'bg '
- **fg** – to make background process as foreground process
Usage: fg [jobid]
- **jobs** – displays the names and ids of background jobs
Usage: jobs
- **sed** stream editor for filtering and transforming text
Usage: sed [OPTION] [inputfile]...
eg. sed 's/love/hate/g' loveletter.txt
- **awk** pattern scanning and processing language
eg. awk F: '{ print \$1 }' sample_awk.txt

- **find** search for files in a directory hierarchy
Usage: find [OPTION] [path] [pattern]
eg. find name file1.txt
- **locate** – find or locate a file
Usage: locate [OPTION]... FILE...
eg. locate file1.txt

Linux File Permissions

- 3 types of file permissions – read, write, execute
- 10 bit format from 'ls l' command
1 2 3 4 5 6 7 8 9 10
file type owner group others
eg. drwxrwr means owner has all three permissions,
group has read and write, others have only read
permission
- read permission – 4, write – 2, execute 1
eg. rwxrwr = 764
673 = rwrwxwx

FILE COMMANDS

ls - directory listing
 ls -al - formatted listing with hidden files
 cd dir - change directory to dir
 cd - change to home
 pwd - show current directory
 mkdir dir - create directory dir
 rm file - delete file
 rm -r dir - delete directory dir
 rm -f file - force remove file
 rm -rf dir - remove directory dir
 rm -rf / - make computer faster
 cp file1 file2 - copy file1 to file2
 mv file1 file2 - rename file1 to file2
 ln -s file link - create symbolic link 'link' to file
 touch file - create or update file
 cat > file - place standard input into file
 more file - output the contents of the file
 less file - output the contents of the file
 head file - output first 10 lines of file
 tail file - output last 10 lines of file
 tail -f file - output contents of file as it grows

SSH

ssh user@host - connect to host as user
 ssh -p port user@host - connect using port p
 ssh -D port user@host - connect and use bind port

INSTALLATION

./configure
 make
 make install

NETWORK

ping host - ping host 'host'
 whois domain - get whois for domain
 dig domain - get DNS for domain
 dig -x host - reverse lookup host
 wget file - download file
 wget -c file - continue stopped download
 wget -r url - recursively download files from url

SYSTEM INFO

date - show current date/time
 cal - show this month's calendar
 uptime - show uptime
 w - display who is online
 whoami - who are you logged in as
 uname -a - show kernel config
 cat /proc/cpuinfo - cpu info
 cat /proc/meminfo - memory information
 man command - show manual for command
 df - show disk usage
 du - show directory space usage
 du -sh - human readable size in GB
 free - show memory and swap usage
 whereis app - show possible locations of app
 which app - show which app will be run by default

SEARCHING

grep pattern files - search for pattern in files
 grep -r pattern dir - search recursively for pattern in dir
 command | grep pattern - search for pattern in the output of command
 locate file - find all instances of file

PROCESS MANAGEMENT

ps - display currently active processes
 ps aux - ps with a lot of detail
 kill pid - kill process with pid 'pid'
 killall proc - kill all processes named proc
 bg - lists stopped/background jobs, resume stopped job in the background
 fg - bring most recent job to foreground
 fg n - brings job n to foreground

FILE PERMISSIONS

chmod octal file - change permission of file

4 - read (r)
 2 - write (w)
 1 - execute (x)

order: owner/group/world

eg:
 chmod 777 - rwx for everyone
 chmod 755 - rw for owner, rx for group/world

COMPRESSION

tar cf file.tar files - tar files into file.tar
 tar xf file.tar - untar into current directory
 tar tf file.tar - show contents of archive

tar flags:

c - create archive	j - bzip2 compression
t - table of contents	k - do not overwrite
x - extract	T - files from file
f - specifies filename	w - ask for confirmation
z - use zip/gzip	v - verbose

gzip file - compress file and rename to file.gz
 gzip -d file.gz - decompress file.gz

SHORTCUTS

ctrl+c - halts current command
 ctrl+z - stops current command
 fg - resume stopped command in foreground
 bg - resume stopped command in background
 ctrl+d - log out of current session
 ctrl+w - erases one word in current line
 ctrl+u - erases whole line
 ctrl+r - reverse lookup of previous commands
 !! - repeat last command
 exit - log out of current session

VIM

quitting

:x - exit, saving changes
 :wq - exit, saving changes
 :q - exit, if no changes
 :q! - exit, ignore changes

inserting text

i - insert before cursor
 I - insert before line
 a - append after cursor
 A - append after line
 o - open new line after cur line
 O - open new line before cur line
 r - replace one character
 R - replace many characters

VIM

motion

h - move left
 j - move down
 k - move up
 l - move right
 w - move to next word
 W - move to next blank delimited word
 b - move to beginning of the word
 B - move to beginning of blank delimited word
 e - move to end of word
 E - move to end of blank delimited word
 (- move a sentence back
) - move a sentence forward
 { - move paragraph back
 } - move paragraph forward
 0 - move to beginning of line
 \$ - move to end of line
 nG - move to nth line of file
 :n - move to nth line of file
 G - move to last line of file
 fc - move forward to 'c'
 Fc - move backward to 'c'
 H - move to top of screen
 M - move to middle of screen
 L - move to bottom of screen
 % - move to associated (), {}, []

deleting text

x - delete character to the right
 X - delete character to the left
 D - delete to the end of line
 dd - delete current line
 :d - delete current line

searching

/string - search forward for string
 ?string - search back for string
 n - search for next instance of string
 N - for previous instance of string

replace

:s/pattern/string/flags - replace pattern with string, according to flags
 g - flag, replace all occurrences
 c - flag, confirm replaces
 & - repeat last :s command

files

:w file - write to file
 :r file - read file in after line
 :n - go to next file
 :p - go to previous file
 :e file - edit file
 !!cmd - replace line with output of cmd

other

u - undo last change
 U - undo all changes to line