



Linux

Basic Commands

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Basic Linux Commands

A morning with IT
Prabhāt
Linux Workshop

- File Handling
- Text Processing
- System Administration
- Process Management
- Archival
- Network
- File Systems
- Advanced Commands



Sources to learn commands??

- Primary – man(manual) pages.
 - `man <command>` - shows all information about the command
 - `<command> --help` - shows the available options for that command
- Secondary – Books and Internet



File Handling commands

- **mkdir** – make directories

Usage: mkdir [OPTION] DIRECTORY...

eg. mkdir prabhat

- **ls** – list directory contents

Usage: ls [OPTION]... [FILE]...

eg. ls, ls -l, ls prabhat

- **cd** – changes directories

Usage: cd [DIRECTORY]

eg. cd prabhat



File Handling(contd...)

- **pwd** - print name of current working directory

Usage: pwd

- **vim** – Vi Improved, a programmers text editor

Usage: vim [OPTION] [file]...

eg. vim file1.txt



File Handling(contd...)

- **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



File Handling(contd...)

- **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`



Pattern

A Pattern is an expression that describes a set of strings which is used to give a concise description of a set, without having to list all elements.

eg. `ab*cd` matches anything that starts with `ab` and ends with `cd` etc.

`ls *.txt` – prints all text files



Text Processing

- **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`



Text Processing(contd...)

- **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`



Text Processing(contd...)

- **sort** – sort lines of text files

Usage: sort [OPTION]... [FILE]...

eg. sort file1.txt

sort -r 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. **drwxrw-r--** means owner has all three permissions, group has read and write, others have only read permission

- read permission – 4, write – 2, execute -1

eg. **rw-rw-r--** = 764

673 = **rw-rwx-wx**



System Administration

- **chmod** – change file access permissions

Usage: `chmod [OPTION] [MODE] [FILE]`

eg. `chmod 744 calculate.sh`

- **chown** – change file owner and group

Usage: `chown [OPTION]... OWNER[:[GROUP]] FILE...`

eg. `chown remo myfile.txt`



System Administration (contd...)

- **su** – change user ID or become super-user
Usage: su [OPTION] [LOGIN]
eg. su remo, su
- **passwd** – update a user's authentication tokens(s)
Usage: passwd [OPTION]
eg. passwd
- **who** – show who is logged on
Usage: who [OPTION]
eg. who , who -b , who -q



Process Management

- **ps** – report a snapshot of the current processes

Usage: ps [OPTION]

eg. ps, ps -el

- **kill** – to kill a process(using signal mechanism)

Usage: kill [OPTION] pid

eg. kill -9 2275



Archival

- **tar** – to archive a file

Usage: tar [OPTION] DEST SOURCE

eg. tar -cvf /home/archive.tar /home/original

tar -xvf /home/archive.tar

- **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.zip



Network

- **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/`



File Systems

- **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`



File Systems(contd...)

- **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`



Advanced Commands

- **reboot** – reboot the system
Usage: `reboot [OPTION]`
eg. `reboot`
- **poweroff** – power off the system
Usage: `poweroff [OPTION]`
eg. `poweroff`



Suggested Material

- *The UNIX Programming Environment*
by Kernighan and Pike (PrenticeHall)
- *Your UNIX: The Ultimate Guide*
by Sumitabha Das



Thank You



Editor commands

- **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`



Process Management(contd...)

- **bg** – make a foreground process to run in background
Usage: type 'ctrl+z' and then 'bg <job id>'
- **fg** – to make background process as foreground process
Usage: fg [jobid]
- **jobs** – displays the names and ids of background jobs
Usage: jobs



Advanced Commands (contd...)

- **sed** - stream editor for filtering and transforming text

Usage: sed [OPTION] [input-file]...

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