# Linux
# Basic Commands

# Basic Linux Commands

- 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. 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

# 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 SOURSE

  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] [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