1. **File and Directory Management**

ls – list directory contents

ls -a – list all directory contents

ls -ltr – long list directory contents including file info

ls -ltr -a – long list directory contents including all files

cd – change directory

cd / - change to root directory

cd ~ - change to home directory

cd /path

pwd – present working directory complete path

mkdir – create directory

rm filename – remove directory/files

cp filename /path – copy files/directories

mv filename /path – move files/directories

mv file1 file2 – rename files/directories

mv file1 .file1 – to hide a file

mv .file1 file1 – to unhide a file

touch filename – create empty file

find – search files

tree – display directory structure

1. **File content inspection**

cat filename – display file contents

vi filename – edit file contents

head -n filename – show content from start of file

tail -n filename – show content from end of file

tail -f filename – monitor changes in real time

wc filename – count lines, words, characters

awk – pattern scanning and processing

sed – text processing or filtering text

grep string filename – search file content based on string given

1. **Disk and File system management**

df – disk free

du – disk usage

df -h – disk free human readable

du -h – disk usage human readable

du -sk \* - disk usage of current directory

ulimit -a – find file limit for user

1. **Process and system monitoring**

top – interactive process viewer(CPU Utilization)

ps -ef – list of running process

uptime – show system uptime

iostat – CPU and I/O statistics

free -m – show memory usage(details of CPU)

kill -9 PID – terminate a process

kill -3 PID – take a thread dump

kill -1 – kill all processes including current terminal

1. **Package management**

apt install service

yum install service

brew install service

1. **User and group management**

useradd – add new user

passwd – set user password

userdel – delete user

cat /etc/sudoers – to check if user has sudo permissions

vi /etc/sudoers – to edit sudoers

id – show user and group IDs

su username – switch user

sudo su - – switch to root user

sudo – execute with special privileges

1. **Permissions and ownership**

Chmod xxx filename – change file permissions

Chown owner:owner filename – change file ownership

Ls -l – view detailed permissions

1. **Networking**

Ping – checks network connectivity

ifconfig – ipaddress of a system

netstat -na – lists running port numbers

traceroute <url> - no of routers a request is passing through to reach host(website)

ns lookup <IP> - find website name/hostname of a given IP

ns lookup url – checks IP address of a given url

wget/curl url – downloads file from internet

ssh – secure remote connectivity

scp – remote file transfer

1. **System boot and services**

systemctl – control system services

systemctl start service – starts service

systemctl status service – provides status info of service

systemctl enable service – enables service

systemctl stop service – stops service

1. **Logs and troubleshooting**

tail -f /var/log/syslog – monitor logs in realtime

lsof – list open files

lsof -i tcp:xxxx – gives service name of provide port number

1. **Environment and shell configuration**

echo $0 – displays shell info

export – set environment variable

1. **Job scheduling and background tasks**
2. **Compression and archiving**

tar cvf file.tar filename – to bundle or take backups

tar xvf file.tar – to xtract file

gzip file – zip a file

gunzip file – unzip a file

1. **System information**

uname -a – find type of OS

uptime – shows system uptime

whoami – displays current user

1. **Security and firewall management**

ssh-keygen – generate ssh keys

sudo – privilege escalation