

Useful Linux Commands

1. File and Directory Management

Command	Use / Description
ls	Lists all files and directories in the current location.
ls -l	Lists files in long format (permissions, size, owner).
ls -a	Shows hidden files (starting with .).
pwd	Displays the current working directory.
cd [directory]	Changes to the specified directory.
cd ..	Moves one directory up (parent folder).
mkdir [dir_name]	Creates a new directory.
rmdir [dir_name]	Removes an empty directory.
rm [file_name]	Deletes a file.
rm -r [dir_name]	Deletes a directory and all files inside it.
cp [source] [destination]	Copies files or directories.
mv [source] [destination]	Moves or renames files and directories.
touch [file_name]	Creates a new empty file.
cat [file_name]	Displays the content of a file.
head [file_name]	Shows the first 10 lines of a file.
tail [file_name]	Shows the last 10 lines of a file.
nano [file_name]	Opens a file in the Nano text editor.

Command	Use / Description
vim [file_name]	Opens a file in the Vim text editor.

2. System Information

Command	Use / Description
uname -a	Shows system information (kernel version, OS type).
hostname	Displays the system's hostname.
whoami	Shows the current logged-in username.
date	Displays or sets the system date and time.
uptime	Shows how long the system has been running.
df -h	Displays available disk space in human-readable format.
du -h	Shows the size of files and directories.
top	Displays running processes and system usage in real-time.
htop	Improved version of top with interactive view.
free -h	Shows memory (RAM) usage.
lscpu	Displays CPU architecture information.

3. User Management

Command	Use / Description
adduser [username]	Creates a new user.

Command	Use / Description
passwd [username]	Changes or sets the password for a user.
deluser [username]	Deletes a user.
who	Shows who is currently logged in.
id [username]	Shows the user ID and group information.
su [username]	Switches to another user account.
sudo [command]	Executes a command as the root (admin) user.

4. File Permissions

Command	Use / Description
chmod [permissions] [file]	Changes file or directory permissions.
chown [user]:[group] [file]	Changes the owner and group of a file.
ls -l	Displays permission details of files.

Example:

chmod 755 file.sh → gives read, write, execute permission to the owner, and read+execute to others.

5. Network Commands

Command	Use / Description
ifconfig	Displays network interface configuration. <i>(use ip a on new systems)</i>

Command	Use / Description
ip a	Shows all network interface details.
ping [host]	Tests network connection to a host.
netstat -tuln	Shows active listening ports.
ss -tuln	Newer replacement for netstat.
traceroute [host]	Shows the path packets take to reach a destination.
nslookup [domain]	Finds IP address of a domain.
dig [domain]	Performs detailed DNS lookups.
curl [url]	Transfers data from or to a server (downloads webpages or APIs).
wget [url]	Downloads files from the internet.
nmap [target]	Scans open ports on a target (used in cybersecurity).
ssh [user@ip]	Connects securely to a remote machine.
scp [file] [user@host]:[path]	Copies files securely between systems.

6. Package Management

Command	Use / Description
apt update	Updates the package list.
apt upgrade	Installs the latest updates for all packages.
apt install [package_name]	Installs a package.

Command	Use / Description
apt remove [package_name]	Removes a package.
apt autoremove	Removes unused dependencies.
dpkg -l	Lists all installed packages.

7. Process Management

Command	Use / Description
ps	Displays running processes.
ps aux	Shows all running processes with details.
kill [PID]	Terminates a process using its process ID.
killall [process_name]	Kills all processes with the given name.
bg	Sends a job to the background.
fg	Brings a background job to the foreground.

8. Compression and Archiving

Command	Use / Description
tar -cvf file.tar folder/	Creates a tar archive.
tar -xvf file.tar	Extracts a tar archive.
gzip [file]	Compresses a file.
gunzip [file.gz]	Decompresses a gzipped file.

Command	Use / Description
zip [file.zip] [file_name]	Creates a zip file.
unzip [file.zip]	Extracts zip files.

9. Searching and Filtering

Command	Use / Description
grep [text] [file]	Searches for text in a file.
find [path] -name [file_name]	Finds files by name.
locate [file_name]	Quickly finds files (uses database).
history	Shows command history.
clear	Clears the terminal screen.

10. System Control

Command	Use / Description
shutdown now	Shuts down the system immediately.
reboot	Restarts the system.
logout	Logs out of the current session.
systemctl status [service]	Checks the status of a service.
systemctl start [service]	Starts a service.
systemctl stop [service]	Stops a service.