

Linux Commands

Basic Commands

- `ls` – List directory contents
- `pwd` – Print working directory
- `cd` – Change directory
- `mkdir` – Create a new directory
- `rmdir` – Remove empty directories
- `rm -r` – Remove directory and contents
- `touch` – Create an empty file
- `cp` – Copy files and directories
- `mv` – Move/rename files
- `rm` – Remove files

File and Directory Operations

- `find /path -name filename` – Find a file by name
- `locate filename` – Find a file using `locate`
- `updatedb` – Update `locate` database
- `tree` – Display directory structure in a tree format
- `du -sh` – Show disk usage of a folder
- `df -h` – Show available disk space
- `stat filename` – Display detailed file information
- `basename /path/to/file` – Get filename from a path
- `dirname /path/to/file` – Get directory from a path
- `file filename` – Determine file type

File Permissions and Ownership

- `chmod 777 filename` – Change file permissions
- `chown user:group filename` – Change file ownership
- `chgrp groupname filename` – Change file group ownership
- `umask` – Show default permissions
- `ls -l` – Show file permissions

Process Management

- `ps aux` – Show running processes
- `top` – Display system resource usage
- `htop` – Interactive process viewer
- `kill PID` – Terminate a process
- `killall process_name` – Kill all processes by name

- `pkill process_name` – Kill processes matching a pattern
- `nice -n 10 command` – Set process priority
- `renice -n 10 -p PID` – Change priority of a running process
- `jobs` – Show background jobs
- `bg` – Resume a background job
- `fg` – Bring background job to foreground

Networking

- `ping google.com` – Check network connectivity
- `ifconfig` – Show network interfaces (deprecated, use `ip` instead)
- `ip a` – Show IP addresses
- `ip r` – Show routing table
- `netstat -tulnp` – Show active connections
- `ss -tulnp` – Show listening ports
- `traceroute google.com` – Trace route to a server
- `nslookup google.com` – DNS lookup
- `dig google.com` – Detailed DNS query
- `wget URL` – Download a file
- `curl -O URL` – Download a file
- `scp file user@host:/path` – Secure copy files remotely
- `rsync -av source destination` – Sync files/directories
- `hostname` – Show or set the hostname

User Management

- `whoami` – Display current user
- `who` – Show logged-in users
- `id` – Display user ID and group ID
- `groups username` – Show user groups
- `adduser username` – Create a new user
- `userdel username` – Delete a user
- `usermod -aG groupname username` – Add user to a group
- `passwd username` – Change user password
- `su username` – Switch to another user
- `sudo command` – Run command as root

Disk and Partition Management

- `fdisk -l` – List partitions
- `mount /dev/sdX /mnt` – Mount a device
- `umount /mnt` – Unmount a device
- `mkfs.ext4 /dev/sdX` – Format a partition
- `fsck /dev/sdX` – Check disk for errors

- `df -Th` – Show disk usage with file system type
- `du -sh /path` – Show size of a directory
- `blkid` – Show UUID of partitions
- `lsblk` – Show block devices
- `parted` – Manage partitions

Archiving and Compression

- `tar -cvf archive.tar files` – Create a tar archive
- `tar -xvf archive.tar` – Extract a tar archive
- `tar -czvf archive.tar.gz files` – Create a compressed tar.gz archive
- `tar -xzvf archive.tar.gz` – Extract a tar.gz archive
- `zip -r archive.zip files` – Create a zip archive
- `unzip archive.zip` – Extract a zip archive
- `gzip file` – Compress a file
- `gunzip file.gz` – Decompress a file

Miscellaneous

- `alias ll='ls -alF'` – Create an alias
- `unalias ll` – Remove an alias
- `history` – Show command history
- `clear` – Clear the terminal
- `echo "Hello World"` – Print a message
- This list covers essential Linux commands for beginners and advanced users.