🔥 Linux Commands (Complete Topic-wise List for Cloud & DevOps)

1 System Information & Basic

- `uname -a` → Kernel + OS details
- `uname -r` → Kernel version
- `hostname` → Show system hostname
- `hostnamectl` → Change hostname
- `uptime` → System uptime + load average
- `whoami` → Current user
- `who` → Show logged users
- `w` → Detailed user info
- `id` → UID/GID info
- `dmesg` → Kernel log
- `lsb_release -a` → Linux distribution info
- `arch` → System architecture
- `getconf LONG_BIT` → 32/64-bit check

2 File & Directory Management

- `pwd` → Print working directory
- `ls` → List files
- `ls -l` → Long listing
- `ls -a` → Hidden files
- `ls -lh` → Human-readable sizes
- `ls -R` → Recursive list
- `cd /path` → Change directory
- `cd -` → Back to previous dir
- `mkdir dir` → Create dir
- `mkdir -p /a/b/c` → Nested dirs

- `rmdir dir` → Remove empty dir
- `rm -rf dir` → Remove dir with files
- `touch file` → Create empty file
- `cp file1 file2` → Copy file
- `cp -r dir1 dir2` → Copy directory
- `mv file1 file2` → Move/rename
- `basename /path/file` → Get filename only
- `dirname /path/file` → Get directory path
- `stat file` → File metadata
- `file file` → File type
- `tree` → Show directory tree

3 File Viewing & Processing

- `cat file` → View file
- `tac file` → Reverse file
- `less file` → Page viewer
- `more file` → Page viewer
- `head -n 20 file` → First 20 lines
- `tail -n 50 file` → Last 50 lines
- `tail -f log.txt` → Live log monitor
- `strings file` → Extract text from binary
- `nl file` → Numbered lines
- `wc -l file` → Count lines
- `wc -w file` → Word count
- `wc -c file` → Bytes count
- `cut -d':' -f1 /etc/passwd` → Extract columns
- `awk '{print $1}' file` → Process columns
- `awk -F',' '{print $2}' file.csv` → CSV parsing
- `sed 's/error/issue/g' file` → Replace text
- `sort file` → Sort lines

- `sort -u file` → Unique sorted

- `uniq file` → Unique lines

- `uniq -c file` → Frequency count

- `diff file1 file2` → Compare files

- `cmp file1 file2` → Byte compare

- `comm file1 file2` → Compare sorted files

4 User & Group Management

- `who` → Show logged users

- `whoami` → Current user

- `id user` → User ID info

- `users` → Show all logged users

- `adduser user` / `useradd user` → Create user

- `passwd user` → Change password

- `deluser user` / `userdel user` → Delete user

- `usermod -aG group user` → Add user to group

- `groups user` → Show groups

- `groupadd grp` → Create group

- `groupdel grp` → Delete group

- `su - user` → Switch user

- `sudo command` → Run as root

5 Permissions & Ownership

- `ls -l` → Show permissions

- `chmod 755 file` → Owner rwx, group rx, others rx

- `chmod -R 644 dir` → Recursive permission

- `chown user file` → Change owner

- `chown user:group file` → Change owner+group

- `chgrp group file` → Change group

- `umask` → Show default permission mask

6 Process & Job Management

- `ps` → Show processes
- `ps aux` → All processes
- `top` → Realtime monitor
- `htop` → Interactive monitor
- `kill PID` → Kill process
- `kill -9 PID` → Force kill
- `killall process_name` → Kill by name
- `jobs` → Background jobs
- `fg %1` → Bring job foreground
- `bg %1` → Background job
- `nice -n 10 command` → Run with priority
- `renice -n 5 -p PID` → Change priority

7 Disk, Storage & File System

- `df -h` → Disk usage
- `du -sh *` → Size of dirs/files
- `lsblk` → Block devices
- `blkid` → Show UUIDs
- `mount /dev/sdb1 /mnt` → Mount disk
- `umount /mnt` → Unmount
- `fdisk -l` → List partitions
- `parted -l` → Show partitions
- `mkfs.ext4 /dev/sdb1` → Format disk
- `tune2fs -l /dev/sda1` → Filesystem info

8 Networking (Cloud ke liye Most Important)

- `ip addr` → Show IPs
- `ifconfig` (legacy) → Show IPs
- `ip link show` → Show network interfaces

- `ping host` → Check connectivity

- `traceroute host` → Route path

- `curl http://url` → Fetch webpage/API

- `wget url` → Download file

- `scp file user@host:/path` → Secure copy

- `scp -r dir user@host:/path` → Recursive copy

- `rsync -avz src/ user@host:/path` → File sync

- `netstat -tulnp` → Listening ports

- `ss -tuln` → Active connections

- `telnet host port` → Check port access

- `dig domain` → DNS lookup

- `nslookup domain` → DNS resolve

9 Logs & Debugging

- `journalctl -xe` → System logs

- `dmesg` → Kernel logs

- `tail -f /var/log/syslog` → Syslog

- `tail -f /var/log/auth.log` → Auth logs

- `tail -f /var/log/nginx/error.log` → Nginx logs

- `tail -f /var/log/messages` → System messages

- `grep "ERROR" logfile` → Search logs

- `less /var/log/dmesg` → Kernel logs

10 Archiving & Compression

- `tar -cvf archive.tar files/` → Create tar

- `tar -xvf archive.tar` → Extract tar

- `tar -czvf archive.tar.gz files/` → Create gzip

- `tar -xzvf archive.tar.gz` → Extract gzip

- `zip -r archive.zip files/` → Zip

- `unzip archive.zip` → Unzip

- `gzip file` → Compress
- `gunzip file.gz` → Decompress

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1 1 Package Management

Debian/Ubuntu:
- `apt update`
- `apt upgrade`
- `apt install pkg`
- `apt remove pkg`
- `dpkg -i pkg.deb`

RHEL/CentOS:
- `yum install pkg`
- `yum update`
- `yum remove pkg`
- `rpm -ivh pkg.rpm`
- `dnf install pkg`

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1 2 Systemd & Services

- `systemctl status nginx` → Service status
- `systemctl start nginx` → Start service
- `systemctl stop nginx` → Stop service
- `systemctl restart nginx` → Restart
- `systemctl enable nginx` → Auto start
- `systemctl disable nginx` → Disable autostart
- `service nginx status` (legacy)

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1 3 Security

- `ufw status` → Firewall status
- `ufw enable`
- `ufw allow 22` → Allow SSH
- `ufw deny 80` → Block port

- `iptables -L` → Firewall rules

- `iptables -A INPUT -p tcp --dport 22 -j ACCEPT` → Open port

- `ssh-keygen` → Generate SSH keys

- `ssh-copy-id user@host` → Copy key

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1 4 Shell Scripting Commands

- `echo "Hello"` → Print

- `read var` → Input

- `for i in {1..5}; do echo $i; done` → For loop

- `if [ -f file ]; then echo "exists"; fi` → If condition

- `chmod +x script.sh` → Make executable

- `./script.sh` → Run script

- `sh script.sh` → Run in sh

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1 5 DevOps Context (Integration)

- `docker ps` → Running containers

- `docker logs container` → Container logs

- `kubectl get pods` → Pods info

- `kubectl logs podname` → Pod logs

- `helm list` → Helm charts

- `ansible all -m ping` → Check ansible hosts