

Linux Commands Guide

File & Directory Management

Navigation

- `ls` — List files and directories
- `cd` — Change current directory
- `pwd` — Display current directory path

Creation & Deletion

- `mkdir` — Create a new directory
- `rmdir` — Remove an empty directory
- `rm` — Delete files and directories
- `touch` — Create an empty file or update timestamp

Manipulation

- `cp` — Copy files and directories
- `mv` — Move or rename files and directories
- `cat` — Show file content
- `less` — View file content page by page
- `head` — Show first lines of a file
- `tail` — Show last lines of a file

Permissions & Ownership

- `chmod` — Change permissions of files/directories
- `chown` — Change ownership of files/directories

Searching & Filtering

- `find` — Search for files and directories
- `locate` — Find files by name using a database
- `grep` — Search inside files using patterns

Process Management

- `ps` — Display running processes
- `top` — Interactive process monitoring
- `kill` — Terminate process by PID

- `killall` — Kill processes by name
- `nice` — Run commands with priority adjustments
- `renice` — Change priority of running processes

Disk & File System

- `df` — Show disk space usage
- `du` — Display size of files and directories
- `mount` — Mount file systems or devices
- `umount` — Unmount file systems
- `blkid` — Show block device attributes

Networking

- `ping` — Check if a host is reachable
- `traceroute` — Show path packets take to a host
- `netstat` — Show network connections and stats
- `ss` — Display socket statistics
- `dig` — Query DNS information
- `nslookup` — Get DNS records
- `ifconfig` — Show network interfaces (legacy)
- `ip` — Manage network interfaces and routes
- `ssh` — Securely connect to remote systems
- `scp` — Secure copy files between systems
- `rsync` — Sync files between directories or hosts
- `ftp` — Transfer files using FTP protocol
- `mtr` — Diagnose network issues

Firewall & Security

- `iptables` — Manage firewall rules
- `firewalld` — Manage firewall dynamically

User & Group Management

- `passwd` — Change user passwords
- `adduser` — Create a new user account
- `userdel` — Delete a user account
- `groupadd` — Create a new group
- `groupdel` — Delete a group

- `usermod` — Modify user accounts

Scheduling Tasks

- `crontab` — Schedule recurring tasks
- `at` — Schedule one-time tasks

Archiving & Compression

- `tar` — Archive or extract files
- `zip` — Compress files
- `unzip` — Extract compressed files

Web & Data Transfer

- `wget` — Download files from the web
- `curl` — Transfer data from URLs

System Info & Monitoring

- `uname` — Show system information
- `uptime` — Show system runtime
- `who` — Show logged-in users
- `w` — Show users and their processes
- `hostname` — Show or set system hostname
- `hostnamectl` — Show or change host details
- `date` — Display or set system date/time
- `timedatectl` — Manage system time settings
- `free` — Show memory usage
- `vmstat` — Report system performance stats
- `iostat` — Report CPU and I/O stats
- `lsof` — List open files and their processes
- `strace` — Trace system calls made by a process
- `ltrace` — Trace library calls of a program
- `perf` — Performance analysis tool
- `time` — Measure how long a command takes to run
- `watch` — Execute a command repeatedly

Logs & Services

- `journalctl` — View system logs (systemd)

- `journalctl -xe` — Show error logs in real-time
- `systemctl` — Control systemd services
- `service` — Start/stop services (legacy systems)
- `dmesg` — Display kernel messages

▢ Text & Data Processing

- `awk` — Text processing and pattern scanning
- `sed` — Stream editor for transforming text
- `cut` — Extract fields from files
- `sort` — Sort lines of text
- `uniq` — Remove duplicate lines
- `tee` — Redirect output to multiple locations
- `xargs` — Build and execute commands from input
- `bc` — Command-line calculator

🔗 Environment & Shell Utilities

- `echo` — Print text or variables
- `man` — Show manual for commands
- `alias` — Create shortcuts for long commands
- `export` — Set environment variables
- `env` — Show or modify environment variables
- `which` — Show full path of a command
- `whereis` — Locate binary, source, and man files
- `type` — Show how a command is interpreted
- `history` — Show command history
- `clear` — Clear terminal screen

🔌 System Control

- `shutdown` — Power off or reboot system
 - `reboot` — Restart system
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