Linux Commands Reference

File and Directory Management

- `ls`: List files and directories
- `cd`: Change directory
- `pwd`: Print current working directory
- `mkdir`: Create a directory
- `rmdir`: Remove an empty directory
- `rm`: Remove files or directories
- `cp`: Copy files and directories
- `mv`: Move or rename files
- `touch`: Create an empty file
- `find`: Search for files and directories
- `locate`: Quickly find a file by name

File Viewing and Editing

- `cat`: View file contents
- `less`: View file contents one screen at a time
- `more`: Similar to `less`, but less powerful
- `nano`: Edit files in a simple terminal-based editor
- `vi/vim`: Advanced text editor
- `head`: Display the beginning of a file
- `tail`: Display the end of a file

File Permissions and Ownership

- `chmod`: Change file permissions
- `chown`: Change file ownership
- `umask`: Set default file permissions

Disk and File System Management

- `df`: Check disk space usage
- `du`: Check directory size
- `mount`: Mount a filesystem
- `umount`: Unmount a filesystem
- `lsblk`: List information about block devices

Process Management

- `ps`: Display running processes
- `top`: Show live system processes
- `htop`: Interactive process viewer
- `kill`: Terminate a process by PID
- `killall`: Terminate processes by name

- `bg`: Resume a job in the background
- `fg`: Resume a job in the foreground
- `jobs`: List background jobs

Networking

- `ping`: Test network connectivity
- `curl`: Transfer data from or to a server
- `wget`: Download files from the web
- `ifconfig`: Display or configure network interfaces
- `ip`: Show/manipulate IP configuration
- `netstat`: Display network connections
- `ssh`: Securely connect to a remote machine
- `scp`: Securely copy files to/from a remote machine

User Management

- `whoami`: Show current user
- `who`: Show logged-in users
- `id`: Display user ID and group ID
- `passwd`: Change user password
- `su`: Switch to another user
- `adduser`/`useradd`: Add a new user
- `deluser`/`userdel`: Remove a user

Package Management

Debian-based systems (e.g., Ubuntu)

- `apt`: Install, update, or remove packages
- `dpkg`: Low-level package management

Red Hat-based systems (e.g., CentOS)

- `yum`: Package manager (older systems)
- `dnf`: Modern package manager

Arch-based systems

- `pacman`: Package manager

System Monitoring and Performance

- `uptime`: Show system uptime
- `free`: Check memory usage
- `vmstat`: Show system performance statistics
- `iostat`: Show CPU and I/O statistics

Compression and Archiving

- `tar`: Archive files
- `gzip`: Compress files
- `gunzip`: Decompress files
- `zip`: Create compressed zip archives
- `unzip`: Extract zip archives

Development and Scripting

- `gcc`: Compile C programs
- `make`: Build programs using `Makefile`
- `bash`: Start a Bash shell
- `python`: Run Python scripts
- `perl`: Run Perl scripts
- `awk`: Pattern scanning and text processing
- `sed`: Stream editor for text manipulation

System Information

- `uname`: Display system information
- `hostname`: Show or set the system hostname
- `uptime`: Display how long the system has been running
- `dmesg`: Print system boot and kernel messages
- `lsb_release`: Display Linux distribution details

Searching

- `grep`: Search for patterns in files
- `awk`: Search and process text
- `find`: Search for files based on conditions

Shell and Environment

- `echo`: Print a message or variable value
- `export`: Set environment variables
- `env`: Display environment variables
- `alias`: Create command shortcuts

Others

- `history`: Show command history
- `date`: Show or set the system date
- `cal`: Display a calendar
- `clear`: Clear the terminal screen
- `reboot`: Restart the system
- `shutdown`: Turn off or restart the system