

# Linux Command Cheat Sheet

A concise, professional Linux command reference for developers, sysadmins, and learners.

*Updated regularly – feel free to fork and star!*

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## Basic Commands

Command	Description
<code>man &lt;tool&gt;</code>	Opens manual pages. → <code>man uname</code>
<code>&lt;tool&gt; -h</code>	Shows help page. → <code>uname -h</code>
<code>apropos &lt;keyword&gt;</code>	Searches man page descriptions.
<code>cat</code>	Displays or concatenates files.
<code>whoami</code>	Shows current logged-in username.
<code>id</code>	Displays user identity and group info.
<code>hostname</code>	Shows system hostname.
<code>uname -a</code>	Prints detailed OS and kernel info.
<code>pwd</code>	Prints current working directory.
<code>ls -la</code>	Lists files with details (hidden too).
<code>cd &lt;dir&gt;</code>	Change directory. → <code>cd /home/usman</code>
<code>clear</code>	Clears the terminal screen.

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## Networking

Command	Description
<code>ifconfig</code>	Displays network configuration.
<code>ip addr show</code>	Modern replacement for <code>ifconfig</code> .
<code>netstat -tuln</code>	Shows active network connections.
<code>ss -tuln</code>	Faster alternative to <code>netstat</code> .
<code>ping google.com</code>	Tests network connectivity.
<code>traceroute google.com</code>	Displays route packets take.
<code>nslookup openai.com</code>	DNS lookup utility.
<code>dig openai.com</code>	Advanced DNS query tool.
<code>scp file user@server:/path</code>	Securely copy file over SSH.
<code>rsync -av src/ dest/</code>	Sync files/directories efficiently.
<code>ssh user@ip</code>	Connect to a remote system.
<code>ufw allow 22</code>	Allow SSH through firewall.
<code>iptables -L</code>	Lists firewall rules.

## User & Group Management

Command	Description
<code>sudo</code>	Run command as superuser.
<code>su root</code>	Switch user (to root).
<code>useradd usman</code>	Add a new user.
<code>userdel usman</code>	Delete user account.
<code>usermod -aG sudo usman</code>	Add user to sudo group.
<code>passwd usman</code>	Change user password.
<code>addgroup devs</code>	Create a new group.
<code>delgroup devs</code>	Delete a group.
<code>groups usman</code>	List user's groups.
<code>gpasswd -d usman devs</code>	Remove user from a group.

## Permissions & Ownership

Command	Description
<code>chmod 755 file</code>	Change permissions.
<code>chown usman:usman file</code>	Change ownership.
<code>umask 022</code>	Set default permission mask.

## Permission Mapping:

Binary	Octal	Permission
111	7	<b>rwX</b>
101	5	<b>r-X</b>
100	4	<b>r--</b>

Example → **rwXr-Xr-- = 754**

## File Management

Command	Description
<code>touch file.txt</code>	Create an empty file.
<code>mkdir folder</code>	Create a new directory.
<code>tree /home</code>	Recursive directory listing.
<code>mv old new</code>	Move or rename files.
<code>cp file /tmp/</code>	Copy files or directories.
<code>find / -name "*.conf"</code>	Search for files.
<code>updatedb &amp;&amp; locate nginx.conf</code>	Locate files quickly.
<code>tar -czvf backup.tar.gz folder/</code>	Create a tar archive.
<code>zip -r files.zip folder/</code>	Zip files.
<code>unzip files.zip</code>	Extract zip files.
<code>nano script.py</code>	Edit file in terminal.

## System Maintenance

Command	Description
<code>systemctl restart nginx</code>	Restart a system service.
<code>journalctl -u nginx</code>	View service logs.
<code>reboot</code>	Restart system.
<code>shutdown -h now</code>	Power off immediately.
<code>alias ll='ls -la'</code>	Create command shortcut.
<code>unalias ll</code>	Remove alias.
<code>history</code>	Show command history.

## System Monitoring

Command	Description
<code>top</code>	View running processes (real-time).
<code>htop</code>	Interactive process viewer.
<code>free -h</code>	Show memory usage.
<code>df -h</code>	Show disk usage.
<code>du -sh /var/log</code>	Show directory size.
<code>uptime</code>	Show uptime & load average.
<code>lsblk</code>	List block devices.
<code>lsof -i</code>	List open network files.
<code>lspci</code>	List PCI devices.
<code>dmesg</code>	Kernel and hardware messages.

## Package Management

Command	Description
<code>apt install curl</code>	Install packages (Debian).
<code>dpkg -i package.deb</code>	Install local package.
<code>snap install vlc</code>	Install snap app.
<code>aptitude update</code>	Update packages via aptitude.
<code>pip install requests</code>	Python package manager.
<code>gem install rails</code>	Ruby package manager.
<code>apt-cache search nginx</code>	Search for packages.
<code>apt list --installed</code>	List installed packages.

## Text & File Processing

Command	Description
<code>head file.txt</code>	Show first 10 lines.
<code>tail -f log.txt</code>	Follow log output.
<code>sort names.txt</code>	Sort file contents.
<code>grep "error" logfile.log</code>	Search for patterns.
<code>cut -d':' -f1 /etc/passwd</code>	Extract columns.
<code>tr 'a-z' 'A-Z' &lt; file.txt</code>	Translate characters.
<code>awk '{print \$1}' file.txt</code>	Process text by field.
<code>sed 's/old/new/g' file.txt</code>	Replace text patterns.
<code>wc -l file.txt</code>	Count lines/words/chars.
<code>uniq</code>	Remove duplicate lines.
<code>diff file1 file2</code>	Compare files.

Command	Description
<code>cmp a.txt b.txt</code>	Compare byte-by-byte.
<code>xargs rm</code>	Run commands from input.
<code>tee file.log</code>	Write to file & stdout.
<code>column -t file.txt</code>	Format text into columns.

## Process Management

Command	Description
<code>ps aux</code>	Show active processes.
<code>kill 1234</code>	Kill process by PID.
<code>bg %1</code>	Resume background process.
<code>fg %1</code>	Bring job to foreground.
<code>jobs</code>	List background jobs.

## Kill Signals

Signal	Name	Description
1	SIGHUP	Terminal closed
2	SIGINT	Ctrl + C
3	SIGQUIT	Quit process
9	SIGKILL	Force kill
15	SIGTERM	Graceful termination
19	SIGSTOP	Stop process
20	SIGTSTP	Ctrl + Z suspend

## Disk & Partition

Command	Description
<code>fdisk -l</code>	List all partitions.
<code>mount /dev/sdb1 /mnt</code>	Mount device.
<code>umount /mnt</code>	Unmount device.

## Security & Access

Command	Description
<code>chsh -s /bin/bash</code>	Change user shell.
<code>visudo</code>	Edit sudoers safely.
<code>last</code>	Show login history.

## Bonus: Quick Web Server

Run a local HTTP server instantly: “`bash python3 -m http.server 8080`”