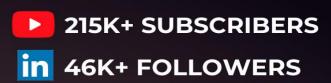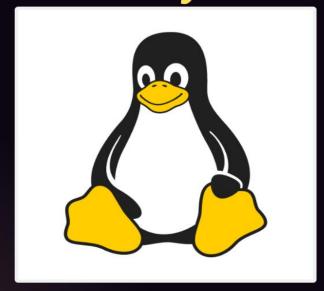DevOps
Shack

Linux
CHEAT SHEET

CREATED BY

DevOps Shack

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LINUX CHEAT SHEET

1. Basic Commands

- **pwd** – Print current working directory

- **ls** – List files and directories

    - **ls -l** – Long format listing
    - **ls -a** – Show hidden files
    - **ls -lh** – Human-readable sizes

- **cd <directory>** – Change directory
    - **cd ..** – Move up one directory
    - **cd -** – Go to previous directory
- **mkdir <dir>** – Create a directory

- **rmdir <dir>** – Remove an empty directory

- **rm -r <dir>** – Remove a directory and its contents

- **touch <file>** – Create an empty file

- **cp <source> <destination>** – Copy files/directories
    - **cp -r <dir1> <dir2>** – Copy a directory recursively
- **mv <old> <new>** – Move/rename files or directories

- **rm <file>** – Delete a file

- **cat <file>** – View file contents

- **less <file>** – View file with navigation

- **head <file>** – Show the first 10 lines of a file

- **tail <file>** – Show the last 10 lines of a file
  - **tail -f <file>** – Live update file output

2. File Permissions & Ownership

- **ls -l** – View file permissions

- **chmod 755 <file>** – Change file permissions
  - **chmod u+x <file>** – Grant execute permission to user
  - **chmod g-w <file>** – Remove write permission from group
  - **chmod o+r <file>** – Add read permission to others
- **chown <user>:<group> <file>** – Change ownership

- **chown -R <user>:<group> <dir>** – Change ownership recursively

3. File Searching

- **find <dir> -name "<pattern>"** – Find files by name

- **find <dir> -type d -name "<pattern>"** – Find directories by name

- **find <dir> -type f -size +100M** – Find files larger than 100MB

- **locate <file>** – Find file using index

- **updatedb** – Update the **locate** database

4. File Compression & Archiving

- **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 archive**

- **tar -xzvf archive.tar.gz** – **Extract a compressed archive**

- **zip archive.zip <files>** – **Create a zip archive**

- **unzip archive.zip** – **Extract a zip archive**

5. Process Management

- **ps aux** – **List running processes**

- **top** – **Show real-time system processes**

- **htop** – **Interactive process viewer (requires installation)**

- **kill <PID>** – **Terminate a process**

- **kill -9 <PID>** – **Force kill a process**

- **pkill <name>** – **Kill process by name**

- **nohup <command> &** – **Run process in background**

- **jobs** – **List background processes**

- **fg %1** – **Bring background job to foreground**

- **bg %1** – **Resume a background job**

6. Disk Usage

- **df -h** – Show disk usage in human-readable format

- **du -sh <dir>** – Show directory size

- **du -h --max-depth=1 <dir>** – Show size of each subdirectory

- **lsblk** – Show block devices

- **mount /dev/sdX /mnt** – Mount a partition

- **umount /dev/sdX** – Unmount a partition

7. User Management

- **whoami** – Show current user

- **who** – Show logged-in users

- **id** – Show user ID (UID) and group ID (GID)

- **adduser <username>** – Add a user

- **passwd <username>** – Change password

- **usermod -aG <group> <user>** – Add user to group

- **deluser <username>** – Delete a user

- **groups <user>** – Show user groups

8. Network Commands

- **ifconfig** – **Show network interfaces (deprecated)**

- **ip a** – **Show IP addresses**

- **ip r** – **Show routing table**

- **ping <host>** – **Check connectivity**

- **traceroute <host>** – **Trace route to a host**

- **netstat -tulnp** – **Show listening ports**

- **ss -tulnp** – **Alternative to netstat**

- **curl -I <url>** – **Fetch HTTP headers**

- **wget <url>** – **Download a file**

9. Package Management

Debian/Ubuntu:

- **apt update** – **Update package lists**

- **apt upgrade** – **Upgrade installed packages**

- **apt install <package>** – **Install a package**

- **apt remove <package>** – **Remove a package**

- **dpkg -i <package.deb>** – **Install a .deb package**

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RHEL/CentOS:

- **yum update** – **Update packages**

- **yum install <package>** – **Install a package**

- **yum remove <package>** – **Remove a package**

- **rpm -i <package.rpm>** – **Install an .rpm package**

Arch Linux:

- **pacman -Syu** – **Update system**

- **pacman -S <package>** – **Install package**

- **pacman -R <package>** – **Remove package**

10. Log Management

- **cat /var/log/syslog** – **View system logs**

- **cat /var/log/auth.log** – **View authentication logs**

- **dmesg** – **Show boot messages**

- **journalctl -xe** – **View systemd logs**

- **tail -f /var/log/syslog** – **Monitor logs live**

11. SSH & Remote Access

- **ssh user@host** – Connect to a remote server

- **ssh -i <key> user@host** – Connect using an SSH key

- **scp <file> user@host:/path** – Copy file to a remote server

- **scp user@host:/file .** – Copy file from remote server

- **rsync -av <src> <dest>** – Sync files locally or remotely

12. Text Processing

- **grep "pattern" <file>** – Search for a pattern in a file

- **grep -r "pattern" <dir>** – Search recursively in a directory

- **awk '{print $1}' <file>** – Print the first column

- **sed 's/old/new/g' <file>** – Replace text in a file

- **sort <file>** – Sort lines in a file
  uniq <file> – Remove duplicate lines

- **cut -d':' -f1 /etc/passwd** – Extract first field from file

13. Crontab (Task Scheduling)

- **crontab -e** – Edit crontab

- **crontab -l** – List crontab jobs
- **Example cron job:**
  - **0 * * * * /path/to/script.sh (Runs every hour)**
  - **@reboot /path/to/script.sh (Runs on startup)**

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14. System Monitoring

- **uptime** – Show system uptime

- **free -h** – Show memory usage

- **vmstat** – Show system performance

- **iostat** – Show CPU and disk I/O stats

- **sar -u 5 10** – CPU usage every 5 sec for 10 times

15. Miscellaneous
alias ll='ls -lah' – Create a command alias

- **unalias ll** – Remove alias

- **history** – Show command history

- **!!** – Repeat last command

- **!n** – Run command from history (e.g., **!100**)

- **echo $PATH** – Show system PATH

- **which <command>** – Find command location

- **man <command>** – Show command manual

16. System Performance & Optimization

- **top** – Monitor system performance interactively

- **htop** – Advanced interactive process viewer (needs installation)

- **vmstat 1** – Show system performance every second
- **iostat -x 1** – Show disk I/O statistics

- **sar -r 5 10** – **Monitor memory usage every 5 seconds for 10 times**

- **free -m** – **Show memory usage in MB**

- **uptime** – **Show system uptime and load average**

- **watch -n 1 <command>** – **Run a command every second**

17. Firewall & Security

- **ufw status** – **Check firewall status (Ubuntu)**

- **ufw enable** – **Enable UFW firewall**

- **ufw allow <port>** – **Allow incoming traffic on a port**

- **ufw deny <port>** – **Deny traffic on a port**

- **iptables -L -v** – **List firewall rules (RHEL/CentOS)**

- **iptables -A INPUT -p tcp --dport 22 -j ACCEPT** – **Allow SSH**

- **iptables -A INPUT -p tcp --dport 80 -j ACCEPT** – **Allow HTTP**

- **iptables -D INPUT -p tcp --dport 80 -j ACCEPT** – **Remove rule**

- **fail2ban-client status** – **Check Fail2Ban status (if installed)**
- **passwd -l <user>** – **Lock a user account**

- **passwd -u <user>** – **Unlock a user account**

18. Kernel & System Information

- **uname -r** – **Show kernel version**

- **uname -a** – **Show full kernel details**

- **cat /etc/os-release** – Show OS details

- **hostnamectl** – Show system hostname and details

- **lsmod** – List loaded kernel modules

- **modinfo <module>** – Show details of a kernel module

- **dmesg | tail** – View recent kernel messages

- **sysctl -a** – Show all system configurations

19. Mounting & Unmounting File Systems

- **mount** – Show mounted file systems

- **mount /dev/sdX /mnt** – Mount a device
- **umount /mnt** – Unmount a device

- **df -h** – Show available disk space

- **du -sh /directory** – Show directory size

- **fsck /dev/sdX** – Check and repair a filesystem

- **mkfs.ext4 /dev/sdX** – Format a partition as ext4

20. System Shutdown & Restart

- **shutdown -h now** – Shutdown immediately

- **shutdown -h +10** – Shutdown in 10 minutes

- **shutdown -r now** – Restart system immediately

- **reboot** – Reboot the system

- **poweroff** – **Power off the system**

- **halt** – **Halt the system**

21. Disk Partitioning

- **fdisk -l** – **List all partitions**

- **fdisk /dev/sdX** – **Manage partitions on a disk**

- **parted /dev/sdX** – **Create and resize partitions**

- **mkfs.ext4 /dev/sdX1** – **Format partition as ext4**

- **mount /dev/sdX1 /mnt** – **Mount a partition**

22. Environment Variables

- **echo $PATH** – **Show system PATH**

- **export VAR=value** – **Set an environment variable**

- **printenv VAR** – **Show variable value**

- **unset VAR** – **Remove a variable**

- **env** – **List all environment variables**

23. Disk & Storage Management

- **lsblk** – **List storage devices**

- **blkid** – **Show UUIDs of partitions**

- **mount -o loop file.iso /mnt** – **Mount an ISO file**

- **lsof /path/to/file** – **Show processes using a file**

- **tune2fs -m 5 /dev/sdX1** – **Set reserved space on ext4**

24. Service Management (Systemd & SysVinit)

Systemd (Ubuntu, CentOS 7+, RHEL 7+)

- **systemctl start <service>** – **Start a service**

- **systemctl stop <service>** – **Stop a service**

- **systemctl restart <service>** – **Restart a service**

- **systemctl status <service>** – **Show service status**

- **systemctl enable <service>** – **Enable service at boot**

- **systemctl disable <service>** – **Disable service at boot**

SysVinit (Older Systems)

- **service <service> start** – **Start a service**

- **service <service> stop** – **Stop a service**

- **chkconfig <service> on** – **Enable service at boot**

- **chkconfig <service> off** – **Disable service at boot**

25. File & Directory Permissions (Advanced)

- **chmod 777 <file>** – **Full permissions (rwxrwxrwx)**

- **chmod 644 <file>** – Read/write for owner, read-only for others

- **chmod 700 <dir>** – Full access for owner, no access for others

- **chmod +x <file>** – Add execute permission

- **chmod -w <file>** – Remove write permission

- **chown user:group <file>** – Change ownership

- **chown -R user:group <dir>** – Change ownership recursively

26. Advanced File Operations

- **ls -lt** – List files by modification time

- **ls -S** – List files by size
- **find / -type f -name "file.txt"** – Search for a file

- **find . -type d -empty** – Find empty directories

- **find . -mtime -1** – Find files modified in the last 24 hours

- **ln -s /path/to/original /path/to/link** – Create a symbolic link

27. Backup & Restore

- **tar -cvf backup.tar /path/to/dir** – Create a tar backup

- **tar -xvf backup.tar** – Extract a tar archive

- **rsync -av /source/ /destination/** – Sync files

- **dd if=/dev/sdX of=backup.img** – Create a disk image

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28. Performance Tuning

- **nice -n 10 <command>** – **Run a command with lower priority**

- **renice -n 10 -p <PID>** – **Change priority of a running process**

- **ulimit -n 65535** – **Increase file descriptor limit**

- **sysctl vm.swappiness=10** – **Reduce swap usage**

29. Debugging & Troubleshooting

- **dmesg | tail -20** – **Show recent system messages**

- **journalctl -xe** – **View recent logs**

- **strace -p <PID>** – **Trace system calls of a process**

- **lsof -i :80** – **Show processes using port 80**

- **tcpdump -i eth0** – **Capture network packets**

30. Kernel Module Management

- **lsmod** – **List loaded modules**

- **modprobe <module>** – **Load a module**

- **rmmod <module>** – **Remove a module**

- **modinfo <module>** – **Show module details**