# LINUX COMMANDS CHEAT SHEET

## System

| | | |
|---|---|---|
| uname | => | Displays Linux system information |
| uname -r | => | Displays kernel release information |
| uptime | => | Displays how long the system has been running including load average |
| hostname | => | Shows the system hostname |
| hostname -i | => | Displays the IP address of the system |
| last reboot | => | Shows system reboot history |
| date | => | Displays current system date and time |
| timedatectl | => | Query and change the System clock |
| cal | => | Displays the current calendar month and day |
| w | => | Displays currently logged in users in the system |
| whoami | => | Displays who you are logged in as |
| finger username | => | Displays information about the user |

## Hardware

| | | |
|---|---|---|
| dmesg | => | Displays bootup messages |
| cat /proc/cpuinfo | => | Displays more information about CPU e.g model, model name, cores, vendor id |
| cat /proc/meminfo | => | Displays more information about hardware memory e.g. Total and Free memory |
| lshw | => | Displays information about system's hardware configuration |
| lsblk | => | Displays block devices related information |
| free -m | => | Displays free and used memory in the system (-m flag indicates memory in MB) |
| lspci -tv | => | Displays PCI devices in a tree-like diagram |
| lsusb -tv | => | Displays USB devices in a tree-like diagram |
| dmidecode | => | Displays hardware information from the BIOS |
| hdparm -i /dev/xda | => | Displays information about disk data |
| hdparm -tT /dev/xda | => | Conducts a read speed test on device xda |
| badblocks -s /dev/xda | => | Tests for unreadable blocks on disk |

## Users

| | | |
|---|---|---|
| id | => | Displays the details of the active user e.g. uid, gid, and groups |
| last | => | Shows the last logins in the system |
| who | => | Shows who is logged in to the system |
| groupadd "admin" | => | Adds the group 'admin' |
| adduser "Sam" | => | Adds user Sam |
| userdel "Sam" | => | Deletes user Sam |
| usermod | => | Used for changing / modifying user information |

## File Commands

| | | |
|---|---|---|
| ls -al | => | Lists files - both regular & hidden files and their permissions as well. |
| pwd | => | Displays the current directory file path |
| mkdir 'directory_name' | => | Creates a new directory |
| rm file_name | => | Removes a file |
| rm -f filename | => | Forcefully removes a file |
| rm -r directory_name | => | Removes a directory recursively |
| rm -rf directory_name | => | Removes a directory forcefully and recursively |
| cp file1 file2 | => | Copies the contents of file1 to file2 |
| cp -r dir1 dir2 | => | Recursively Copies dir1 to dir2. dir2 is created if it does not exist |
| mv file1 file2 | => | Renames file1 to file2 |
| ln -s /path/to/file_name link_name | => | Creates a symbolic link to file_name |
| touch file_name | => | Creates a new file |
| cat > file_name | => | Places standard input into a file |
| more file_name | => | Outputs the contents of a file |
| head file_name | => | Displays the first 10 lines of a file |
| tail file_name | => | Displays the last 10 lines of a file |
| gpg -c file_name | => | Encrypts a file |
| gpg file_name.gpg | => | Decrypts a file |
| wc | => | Prints the number of bytes, words and lines in a file |
| xargs | => | Executes commands from standard input |

## Process Related

| | | |
|---|---|---|
| ps | => | Display currently active processes |
| ps aux | grep 'telnet' | => | Searches for the id of the process 'telnet' |
| pmap | => | Displays memory map of processes |
| top | => | Displays all running processes |
| kill pid | => | Terminates process with a given pid |
| killall proc | => | Kills / Terminates all processes named proc |
| pkill process-name | => | Sends a signal to a process with its name |
| bg | => | Resumes suspended jobs in the background |
| fg | => | Brings suspended jobs to the foreground |
| fg n | => | Brings job n to the foreground |
| lsof | => | Lists files that are open by processes |
| renice 19 PID | => | Makes a process run with very low priority |
| pgrep firefox | => | Find Firefox process ID |
| pstree | => | Visualizing processes in tree model |

## File Permission

| | | |
|---|---|---|
| chmod octal filename | => | Change file permissions of the file to octal |
| Example | | |
| chmod 777 /data/test.c | => | Set rwx permissions to owner, group and everyone (everyone else who has access to the server) |
| chmod 755 /data/test.c | => | Set rwx to the owner and r_x to group and everyone |
| chmod 766 /data/test.c | => | Sets rwx for owner, rw for group and everyone |
| chown owner user-file | => | Change ownership of the file |
| chown owner-user: owner-group file_name | => | Change owner and group owner of the file |
| chown owner-user:owner-group-directory | => | Change owner and group owner of the directory |

## Network

| | | |
|---|---|---|
| ip addr show | => | Displays IP addresses and all the network interfaces |
| ip address add 192.168.0.1/24 dev eth0 | => | Assigns IP address 192.168.0.1 to interface eth0 |
| ifconfig | => | Displays IP addresses of all network interfaces |
| ping host | => | ping command sends an ICMP echo request to establish a connection to server / PC |
| whois domain | => | Retrieves more information about a domain name |
| dig domain | => | Retrieves DNS information about the domain |
| dig -x host | => | Performs reverse lookup on a domain |
| host google.com | => | Performs an IP lookup for the domain name |
| hostname -i | => | Displays local IP address |
| wget file_name | => | Downloads a file from an online source |
| netstat -pnltu | => | Displays all active listening ports |

## Compression / Archives

| | | |
|---|---|---|
| tar -cf home.tar home | => | Creates archive file called 'home.tar' from file 'home' |
| tar -xf files.tar | => | Extract archive file 'files.tar' |
| tar -zcvf home.tar.gz source-folder | => | Creates gzipped tar archive file from source folder |
| gzip file | => | Compression a file with .gz extension |

## Install Packages

| | | |
|---|---|---|
| rpm -i pkg_name.rpm | => | Install an rpm package |
| rpm -e pkg_name | => | Removes an rpm package |
| dnf install pkg_name | => | Install package using dnf utility |

## Install Source (Compilation)

| | |
|---|---|
| ./configure | |
| make | |
| make install | |

## Search

| | | |
|---|---|---|
| grep 'pattern' files | => | Search for a given pattern in files |
| grep -r pattern dir | => | Search recursively for a pattern in a given directory |
| locate file | => | Find all instances of the file |
| find /home/ -name "index" | => | Find file names that begin with 'index' in /home folder |
| find /home -size +10000k | => | Find files greater than 10000k in the home folder |

## Login

| | | |
|---|---|---|
| ssh user@host | => | Securely connect to host as user |
| ssh -p port_number user@host | => | Securely connect to host using a specified port |
| ssh host | => | Securely connect to the system via SSH default port 22 |
| telnet host | => | Connect to host via telnet default port 23 |

## File Transfer

| | | |
|---|---|---|
| scp file1.txt server2/tmp | => | Securely copy file1.txt to server2 in /tmp directory |
| rsync -a /home/apps / backup/ | => | Synchronize contents in /home/apps directory with /backup directory |

## Disk Usage

| | | |
|---|---|---|
| df -h | => | Displays free space on mounted systems |
| df -i | => | Displays free inodes on filesystems |
| fdisk -l | => | Shows disk partitions, sizes, and types |
| du -sh | => | Displays disk usage in the current directory in a human-readable format |
| findmnt | => | Displays target mount point for all filesystems |
| mount device-path mount-point | => | Mount a device |

## Directory Traverse

| | | |
|---|---|---|
| cd .. | => | Move up one level in the directory tree structure |
| cd | => | Change directory to $HOME directory |
| cd /test | => | Change directory to /test directory |