



LINUX COMMANDS CHEAT SHEET

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Basic File Operations

`ls -lh file`

Display file permissions, size, owner, etc.

`touch file`

Creates an empty file

`cp file1 file2`

Copy file1 to file2. File2 can be a directory.

`mv file dir`

Move a file to a directory

`mv file1 file2`

Rename file1 to file2

`rm file`

Delete a file.

`ls -lah`

List all the contents in a directory.

`mkdir data`

Creates a directory.

`cp -r dir1 dir2`

Copy dir1 and its contents to dir2.

`rm -rf dir`

Delete a directory and its contents.

`pwd`

Print current working directory.

`stat file`

Display attributes of files and directories.

`wc file`

Count bytes, words, lines in a file or STDIN.

`type cd`

Find out whether cd binary is built-in, alias, or external binary file



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File Viewing

`cat file.txt`

Displays the entire content of the file.

`cat -n file.txt`

Displays the contents of a file with line numbers.

`tac file.txt`

Displays the content of the file in reverse order (from the last line to the first).

`more file.txt`

Allows you to view large text files one screen at a time.

`head -n 5 file.txt`

Displays the first 5 lines of the file.

`tail -n 5 file.txt`

Displays the last 5 lines of the file.

`less file.txt`

Similar to more, but with additional features like scrolling and searching.

`nl file.txt`

Displays the file's contents with line numbers.

`diff file1.txt file2.txt`

Compares two files line by line and shows the differences between them.

`vi filename.txt`

Opens the file filename.txt in vi editor for editing.

`nano filename.txt`

Opens the file filename.txt for editing.



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File Search

`locate file`

Finds the locations of files and directories by name.

`which cd`

Shows the path of the command if it exists.

`whereis ls`

Displays the location of the binary, source, and man pages of the command `ls`.

`find /data -name hello.txt`

Searches for the file `hello.txt` inside the `/data` directory.

Directory Traversal

`cd or cd ~`

Navigates to the home directory.

`cd ..`

Moves up one directory (to the parent directory).

`cd -`

Switches back to the previous working directory.

`cd /`

Moves to the root directory.

`cd /tmp`

Navigates to the `/tmp` directory.

`cd ../../`

used to change directories and move up two levels in the file



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Disk Management

`df -h`

Displays disk usage information in a human-readable format (like GB, MB).

`du -h /home`

Shows the size of files and directories within the /home directory.

`fdisk -l`

Lists all disks and their partitions.

`lsblk`

Displays the block devices and their hierarchy.

`mount /dev/sda1 /mnt`

Mounts the partition /dev/sda1 to the /mnt directory.

`umount /mnt`

Unmounts the partition from /mnt.

`mount -a`

used to mount all filesystems mentioned in the /etc/fstab file.

`free -m`

show the swap file system

`mkswap /dev/sdb1`

Create Swap Space

`swapon /dev/sdb1`

Activate Swap Space

`swapon -a`

activate all swap spaces listed in the /etc/fstab file



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Process Management

`ps` Displays a snapshot of currently running processes.

`ps aux` Shows all running processes for all users.

`top` Displays real-time system processes and their resource usage.

`pgrep firefox` Finds and displays the process ID (PID) for processes named firefox.

`pidof firefox` Displays the PID of the firefox process.

`kill 6732` Terminates the process with PID 6732.

`pkill firefox` Kills all processes named firefox.

`bg` Resumes a stopped process in the background.

`fg` Brings a background process to the foreground.

`jobs` used to display the status of jobs that are running or have been started in the background within the current shell session

`nice vim text &` The nice command is used to start a process with a user defined priority



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Networking

ping google.com

Sends ICMP echo requests to google.com to test network connectivity.

ifconfig

Displays network interface configurations, including IP addresses.

ip addr

Shows IP address information for network interfaces.

netstat

Displays network statistics and active connections.

hostname

displays the current hostname of the system.

hostnamectl

Display information about the system

nmcli

nmcli is a command-line interface for NetworkManager

nmcli connection show

List Available Connections

route -n

Display routing table

ip route

Display routing table

netstat -tulpen

Listening ports



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File Permissions

```
chmod g+w file1
```

adds write permission for the group on the file file1.

```
chmod o+w file1
```

Adds write permission for others on file1

```
chmod u-w file1
```

Removes write permission for the user (owner) on file1.

```
chmod u+w,g+wx,o+r  
file1
```

Adds write permission for the user, write and execute permissions for the group, and read permission for others on file1.

```
chmod a=rw file1
```

Sets read and write permissions for all users (owner, group, and others) on file1.

```
chmod +rw file1
```

Adds read and write permissions for all users (owner, group, and others) on file1.

```
chown Ali file1
```

Changes the owner of file1 to Ali.

```
chown -R Ali dir1
```

Recursively changes the owner of dir1 and its contents to Ali

```
chown user:group  
file.txt
```

Changes the ownership of file.txt to user and group group.

```
chown :sales file1
```

Changes the group ownership of file1 to sales without altering the file's owner.

```
umask 022
```

Sets the defaults perms for newly created files to 644 and for directories to 755



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Process Management

```
tar -cf backup.tar /home
```

Creates a backup.tar archive from the /home directory.

```
tar -xf backup.tar
```

Extracts files from the backup.tar archive.

```
tar -zcvf data.tar.gz /home
```

Compresses the /home directory into a data.tar.gz archive.

```
tar -zxvf data.tar.gz
```

Extracts the data.tar.gz archive.

```
gzip data
```

Compresses the file data using Gzip, creating data.gz.

```
gunzip data.gz
```

Decompresses the data.gz file back to data.

```
bzip2 file.text
```

Recursively compresses the /home directory into a data.zip archive.

```
bunzip2 file.text.bz2
```

Decompresses the file.text.bz2 file, returning it to file.text.

```
xz file.text
```

Compresses the file.text file using the XZ compression format, creating file.text.xz.

```
unxz file.text.xz
```

Decompresses the file.text.xz file, returning it to file.text.

```
gzip -c file.text > file.gz
```

Compresses file.text using Gzip and writes the compressed output to file.gz.



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Installing and updating software packages with RPM

```
rpm -qa
```

List all RPM packages currently installed.

```
rpm -q NAME
```

Display the version of the package named "NAME" installed on the system.

```
rpm -qi NAME
```

Display detailed information about a package.

```
rpm -ql NAME
```

List all files included in a package.

```
rpm -qc NAME
```

List configuration files included in a package.

```
rpm -qd NAME
```

List documentation files included in a package.

```
rpm -q --changelog NAME
```

Show a short summary of the reason for a new package release.

```
rpm -q --scripts NAME
```

Display the shell scripts run during package installation, upgrade, or removal.



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Installing and updating software packages with YUM

`yum list [NAME-PATTERN]`

List installed and available packages by name

`yum group list`

List installed and available groups

`yum search KEYWORD`

Search for a package by keyword

`yum info PACKAGENAME`

Show details of a package

`yum install PACKAGENAME`

Install a package

`yum group install GROUPNAME`

Install a package group

`yum remove PACKAGENAME`

Remove a package

`yum history`

Display transaction history



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Access Control Lists (ACL)

```
getfacl file
```

Displays the ACL entries for the file, showing which users and groups have specific permissions.

```
getfacl .
```

Displays the ACL entries for the current directory.

```
setfacl -m u:abeer:rw file.txt
```

Grants read and write (rw) permissions to the user moahmed for file.txt.

```
setfacl -m o::rw file.txt
```

Grants read and write (rw) permissions to all other users (others) for file.txt.

```
setfacl -m g:sales:rw dir1
```

Grants read and write (rw) permissions to the sales group for dir1.

```
setfacl -R -m g:sales:rw dir1
```

Recursively grants read and write (rw) permissions to the sales group for dir1 and all its subdirectories and files.

```
setfacl -x u:abeer file.txt
```

Removes the ACL entry for the user moahmed from file.txt.

```
setfacl -b file.txt
```

Removes all ACL entries and restores default permissions for file.txt.



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User Management

`id`

Displays the user ID (UID), group ID (GID), and group memberships of the current user.

`whoami`

Displays the username of the currently logged-in user.

`useradd mohamed`

Creates a new user named mohamed.

`passwd mohamed`

Sets or changes the password for the user mohamed.

`usermod -L mohamed`

Locks the user mohamed account, disabling login.

`usermod -U mohamed`

Unlocks the user mohamed account, enabling login.

`usermod -G sales mohamed`

Assigns the user mohamed to the sales group (replaces any existing groups).

`usermod -aG admin mohamed`

Adds the user mohamed to the admin group without affecting other group memberships.

`userdel mohamed`

Deletes the user mohamed (home directory and files are retained).

`userdel -r test`

Deletes the user test and removes their home directory and files.

`su - mohamed`

Switches the current session to the user mohamed