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Basic File Operations

Is -Ih file

touch file

cp file1 file2

mv file dir

mv file1 file2

rm file

Is -lah

mkdir data

cp -r dir1 dir2

rm -rf dir

pwd

stat file

wc file

type cd

Display file permissions, size, owner, etc.

Creates an empty file

Copy file1 to file2. File2 can be a directory.

Move a file to a directory

Rename file1 to file2

Delete a file.

List all the contents in a directory.

Creates a directory.

Copy dir1 and its contents to dir2.

Delete a directory and its contents.

Print current working directory.

Display attributes of files and directories.

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

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





File Viewing

cat file.txt

cat -n file.txt

tac file.txt

more file.txt

head -n 5 file.txt

tail -n 5 file.txt

less file.txt

nl file.txt

diff file1.txt file2.txt

vi filename.txt

nano filename.txt

Displays the entire content of the file.

Displays the contents of a file with line numbers.

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

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

Displays the first 5 lines of the file.

Displays the last 5 lines of the file.

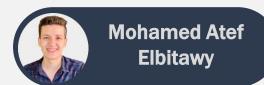
Similar to more, but with additional features like scrolling and searching.

Displays the file's contents with line numbers.

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

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

Opens the file filename.txt for editing.





File Search

locate file

which cd

whereis Is

find /data -name hello.txt

Finds the locations of files and directories by name.

Shows the path of the command if it exists.

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

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

Directory Traversal

cd or cd ~

cd ...

cd -

cd /

cd /tmp

cd ../..

Navigates to the home directory.

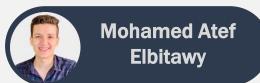
Moves up one directory (to the parent directory).

Switches back to the previous working directory.

Moves to the root directory.

Navigates to the /tmp directory.

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





Disk Management

df -h

du -h /home

fdisk -l

Isblk

mount /dev/sda1 /mnt

umount /mnt

mount -a

free -m

mkswap /dev/sdb1

swapon /dev/sdb1

swapon -a

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

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

Lists all disks and their partitions.

Displays the block devices and their hierarchy.

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

Unmounts the partition from /mnt.

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

show the swap file system

Create Swap Space

Activate Swap Space

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





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

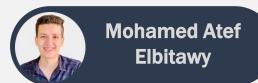
Brings a background process to the foreground.

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





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





File Permissions

chmod g+w file1

chmod o+w file1

chmod u-w file1

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

chmod a=rw file1

chmod +rw file1

chown Ali file1

chown -R Ali dir1

chown user:group file.txt

chown :sales file1

umask 022

adds write permission for the group on the file file1.

Adds write permission for others on file1

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

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

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

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

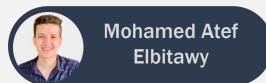
Changes the owner of file1 to Ali.

Recursively changes the owner of dir1 and its contents to Ali

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

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

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





Process Management

tar -cf backup.tar /home

tar -xf backup.tar

tar -zcvf data.tar.gz /home

tar -zxvf data.tar.gz

gzip data

gunzip data.gz

bzip2 file.text

bunzip2 file.text.bz2

xz file.text

unxz file.text.xz

gzip -c file.text > file.gz

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

Extracts files from the backup.tar archive.

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

Extracts the data.tar.gz archive.

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

Decompresses the data.gz file back to data.

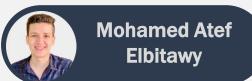
Recursively compresses the /home directory into a data.zip archive.

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

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

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

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





Installing and updating software packages with RPM

rpm -qa

rpm -q NAME

rpm -qi NAME

rpm -ql NAME

rpm -qc NAME

rpm -qd NAME

rpm -q --changelog NAME

rpm -q --scripts NAME

List all RPM packages currently installed.

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

Display detailed information about a package.

List all files included in a package.

List configuration files included in a package.

List documentation files included in a package.

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

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





Installing and updating software packages with YUM

yum list [NAME-PATTERN]

yum group list

yum search KEYWORD

yum info PACKAGENAME

yum install PACKAGENAME

yum group install GROUPNAME

yum remove PACKAGENAME

yum history

List installed and available packages by name

List installed and available groups

Search for a package by keyword

Show details of a package

Install a package

Install a package group

Remove a package

Display transaction history





Access Control Lists (ACL)

getfacl file

getfacl.

setfacl -m u:abeer:rw file.txt

setfacl -m o::rw file.txt

setfacl -m g:sales:rw dir1

setfacl -R -m g:sales:rw dir1

setfacl -x u:abeer file.txt

setfacl -b file.txt

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

Displays the ACL entries for the current directory.

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

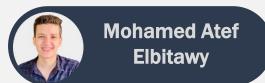
Grants read and write (rw) permissions to all other users (others) for file.txt.

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

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

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

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





User Management

id

whoami

useradd mohamed

passwd mohamed

usermod -L mohamed

usermod -U mohamed

usermod -G sales mohamed

usermod -aG admin mohamed

userdel mohamed

userdel -r test

su - mohamed

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

Displays the username of the currently logged-in user.

Creates a new user named mohamed.

Sets or changes the password for the user mohamed.

Locks the user mohamed account, disabling login.

Unlocks the user mohamed account, enabling login.

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

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

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

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

Switches the current session to the user mohamed