



ICT - 3208 (Operating System Laboratory)

Experiment - 1

(ii) How do you update the system packages in Linux?

To update the package list and upgrade installed packages:

```
sudo apt update    # Updates the package list  
sudo apt upgrade   # Upgrades installed packages to latest versions
```

If you want a full distribution upgrade (recommended sometimes):

```
sudo apt full-upgrade
```

(iii) How do you install a package in Linux?

Use `apt install` followed by the package name:

```
sudo apt install <package_name>
```

Example:

```
sudo apt install nmap
```

(iv) How do you remove a package in Linux?

To remove a package without deleting configuration files:

```
sudo apt remove <package_name>
```

To remove a package **with its configuration files**:

```
sudo apt purge <package_name>
```

(v) How do you display the manual page for a command in Linux?

Use the `man` command:

```
man <command_name>
```

Example:

```
man ls
```

(vi) How do you display the list of installed packages in Linux?

For Kali Linux (Debian-based):

```
dpkg --get-selections
```

or:

```
apt list --installed
```

Experiment - 2

(ii) How do you create a new directory in Linux using the `mkdir` command?

To create a new directory:

```
mkdir <directory_name>
```

Example:

```
mkdir myfolder
```

(iii) How do you navigate to the parent directory using the `cd` command?

To move to the parent directory:

```
cd ..
```

(iv) How do you change the permissions of a file or directory using the `chmod` command?

Basic syntax:

```
chmod <permissions> <file_or_directory>
```

Examples:

- Give **read, write, execute** permissions to the owner:

```
chmod 700 myfile.txt
```

- Give **read and execute** permissions to everyone:

```
chmod 755 myfolder
```

(v) How do you shutdown the system in Linux?

To **shutdown** immediately:

```
sudo shutdown now
```

To shutdown after a delay (e.g., 10 minutes):

```
sudo shutdown +10
```

Alternative:

```
poweroff
```

(vi) How do you restart the system in Linux?

To restart immediately:

```
sudo reboot
```

Or using shutdown:

```
sudo shutdown -r now
```

Experiment - 3

(ii) How do you create a new user in Linux?

Use the `adduser` command (interactive) or `useradd`:

```
sudo adduser <username>
```

Example:

```
sudo adduser testuser
```

This will prompt for password and user details.

(iii) How do you delete a user in Linux?

To delete a user (without removing home directory):

```
sudo deluser <username>
```

To delete a user and their home directory:

```
sudo deluser --remove-home <username>
```

(iv) How do you change the password of a user in Linux?

Use the `passwd` command:

```
sudo passwd <username>
```

Example:

```
sudo passwd testuser
```

(v) How do you add a user to a group in Linux?

Use `usermod` with `-aG`:

```
sudo usermod -aG <groupname> <username>
```

Example:

```
sudo usermod -aG sudo testuser
```

(Adds `testuser` to `sudo` group)

(vi) How do you remove a user from a group in Linux?

Use `deluser`:

```
sudo deluser <username> <groupname>
```

Example:

```
sudo deluser testuser sudo
```

(vii) How do you display the members of a group in Linux?

Two common ways:

```
getent group <groupname>
```

Example:

```
getent group sudo
```

or:

```
groups <username>
```

How to create a new group in Linux?

Use the `addgroup` or `groupadd` command:

```
sudo addgroup <groupname>
```

Example:

```
sudo addgroup developers
```

How to list all groups in Linux?

There are two ways:

Method 1: View `/etc/group` file

```
cat /etc/group
```

Method 2: Use `getent`

```
getent group
```

Method 3: Show groups for the current user

```
groups
```

Experiment - 4

(ii) How do you give read, write, and execute permissions to a file or directory in Linux?

Use the `chmod` command with numeric or symbolic mode.

Numeric mode (read=4, write=2, execute=1):

```
chmod 777 <file_or_directory>
```

(777 = full permissions for owner, group, and others)

Example:

```
chmod 777 myfile.txt
```

Symbolic mode:

```
chmod u+rwx,g+rwx,o+rwx <file_or_directory>
```

(iii) How do you remove read, write, and execute permissions from a file or directory in Linux?

Remove all permissions using:

```
chmod 000 <file_or_directory>
```

or specifically remove execute:

```
chmod a-x <file_or_directory>
```

(a = all users, -x = remove execute)

(iv) How do you delete a file using the `rm` command in Linux?

```
rm <file_name>
```

Example:

```
rm myfile.txt
```

To force delete without prompt:

```
rm -f myfile.txt
```

To delete a directory recursively:

```
rm -r myfolder
```

(v) How do you change the permissions of a file or a directory in Linux?

Use `chmod` with numeric or symbolic mode:

```
chmod <permissions> <file_or_directory>
```

Example:

```
chmod 644 myfile.txt
```

(Owner: read/write, Group: read, Others: read)

(vi) How do you display the permissions of a file or a directory in Linux?

Use the `ls -l` command:

```
ls -l <file_or_directory>
```

Example:

```
ls -l myfile.txt
```

Output example:

```
-rw-r--r-- 1 user user 1234 Aug 22 file.txt
```

Meaning:

- `r` = read
 - `w` = write
 - `x` = execute
 - First = file, `d` = directory
-

Experiment - 5

(ii) How do you display the contents of a file using the `cat` command in Linux?

Use:

```
cat <file_name>
```

Example:

```
cat myfile.txt
```

(iii) How do you copy a file from one location to another using the `cp` command in Linux?

Syntax:

```
cp <source> <destination>
```

Example:

```
cp /home/user/file.txt /home/user/Documents/
```

To copy a directory recursively:

```
cp -r <source_directory> <destination_directory>
```

(iv) How do you create a new file in Linux?

Several ways:

Using `touch`:

```
touch <file_name>
```

Example:

```
touch newfile.txt
```

Using `cat`:

```
cat > newfile.txt
```

(type content, then press `CTRL+D` to save and exit)

(v) How do you display the contents of a file on the screen in Linux?

Options:

- `cat` command:

```
cat file.txt
```

- `less` or `more` for long files:

```
less file.txt
```

(vi) How do you display the IP address of the machine in Linux?

In Kali Linux, common methods:

Using `ip` command (modern way):

```
ip addr show
```

or shorter:

```
ip a
```

Filter only IP addresses:

```
hostname -l
```

Using `ifconfig` (if installed):

```
ifconfig
```

Experiment - 6

(ii) How do you list all the files in the current directory in Linux?

Use the `ls` command:

```
ls
```

To include hidden files:

```
ls -a
```

To show details (permissions, size, date):

```
ls -l
```

(iii) How do you create a new directory in Linux?

Use the `mkdir` command:

```
mkdir <directory_name>
```

Example:

```
mkdir myfolder
```

(iv) How do you change file permissions in Linux?

Use `chmod` :

```
chmod <permissions> <file>
```

Example:

```
chmod 755 myfile.txt
```

(Owner: read/write/execute, Group & Others: read/execute)

(v) How do you remove a package in Linux?

Use `apt remove` :

```
sudo apt remove <package_name>
```

To remove the package **and its configuration files**:

```
sudo apt purge <package_name>
```

(vi) How do you update the system in Linux?

Update the package list:

```
sudo apt update
```

(vii) How do you upgrade the system in Linux?

Upgrade all installed packages:

```
sudo apt upgrade
```

For a full upgrade (including dependencies and kernel):

```
sudo apt full-upgrade
```

Experiment - 7

(ii) How do you display the current date and time in Linux?

Use the `date` command:

```
date
```

Example output:

```
Fri Aug 22 21:35:01 IST 2025
```

(iii) How do you display the current working directory in Linux?

Use the `pwd` command:

```
pwd
```

Example:

```
/home/user
```

(iv) How do you create a new user account in Linux?

Use `adduser`:

```
sudo adduser <username>
```

Example:

```
sudo adduser testuser
```

(v) How do you change the password for a user account in Linux?

Use the `passwd` command:

```
sudo passwd <username>
```

Example:

```
sudo passwd testuser
```

(vi) How do you display the current user name in Linux?

Two common ways:

```
whoami
```

or:

```
echo $USER
```

Experiment - 8

(ii) How do you move a file to a different directory in Linux?

Use the `mv` command:

```
mv <source_file> <destination_directory>
```

Example:

```
mv file.txt /home/user/Documents/
```

(This moves `file.txt` to the Documents folder)

(iii) How do you copy a file to a different directory in Linux?

Use the `cp` command:

```
cp <source_file> <destination_directory>
```

Example:

```
cp file.txt /home/user/Documents/
```

To copy directories recursively:

```
cp -r myfolder /home/user/Documents/
```

(iv) How do you delete a file in Linux?

Use the `rm` command:

```
rm <file_name>
```

Example:

```
rm file.txt
```

Force deletion without prompt:

```
rm -f file.txt
```

(v) How do you delete a directory in Linux?

Use `rm -r` for a directory and its contents:

```
rm -r <directory_name>
```

Or, if you want to force deletion:

```
rm -rf <directory_name>
```

(vi) How do you rename a file in Linux?

Use the `mv` command to rename:

```
mv <old_filename> <new_filename>
```

Example:

```
mv oldname.txt newname.txt
```