**Module:4 Linux server - Manage user and Groups and working with file systems**

**32. Manage Users and Groups with commands like useradd, userdel, groupadd, and passwd**

* **useradd**: Adds a new user to the system.
* sudo useradd username
  + Use -m to create the user’s home directory.
* sudo useradd -m username
* **passwd**: Sets or changes a user’s password.
* sudo passwd username
* **userdel**: Deletes a user from the system.
* sudo userdel username
  + Add -r to remove the user's home directory as well.
* sudo userdel -r username
* **groupadd**: Adds a new group.
* sudo groupadd groupname
* To add a user to a group:
* sudo usermod -aG groupname username
* To check groups of a user:
* groups username

**33. Explain Different File System Types in Linux**

* **ext4**: Default, stable, journaling, supports large files.
* **xfs**: High-performance journaling filesystem, good for large files.
* **btrfs**: Advanced, supports snapshots and pooling.
* **vfat/FAT32**: Compatible with Windows, limited file size (4GB max).
* **NTFS**: Windows filesystem, Linux can read/write via drivers.
* **swap**: Special filesystem for swap space (virtual memory).
* **tmpfs**: Temporary file system in RAM.

**35. Explain File Permission Groups in Linux**

Linux file permissions are divided into three groups:

* **Owner (User)**: The user who owns the file.
* **Group**: Users who are in the file’s group.
* **Others**: All other users.

Each group has permissions to:

* Read (r): View contents.
* Write (w): Modify contents.
* Execute (x): Run as a program/script or access a directory.

Permissions are shown as:

-rwxr-xr--

| | | |

| | | Others

| | Group

| Owner

**35 (contd.). How do you switch from one desktop environment to another, such as KDE to GNOME?**

* Log out of your current session.
* At the login screen, look for a **session selector** or gear icon.
* Choose the desktop environment (e.g., GNOME, KDE).
* Log in again to switch environments.
* Alternatively, set the default desktop environment via command line by updating your display manager config or using tools like update-alternatives.

**36. What Are the Kinds of Permissions Under Linux?**

* **Read (r)**: Permission to view file contents or list directory contents.
* **Write (w)**: Permission to modify file contents or add/remove files in a directory.
* **Execute (x)**: Permission to run a file as a program or enter a directory.

**37. What Are the Different Modes When Using vi Editor?**

* **Normal Mode (Command Mode)**: Default mode for navigation and commands.
* **Insert Mode**: For typing and editing text (i to enter).
* **Visual Mode**: For selecting blocks of text.
* **Command-Line Mode**: For saving, quitting, or executing commands (: enters this mode).