Module :2- Linux server - Operate running systems

20. View running processes with ps.

Ans : To view running processes on a Linux system, you can use the ps command. Below are a few common uses of ps:

Show your own processes:

Bash : ps aux

21. Terminate processes with kill.

Ans : kill <PID>

kill -9 <PID>

22. Use top or htop to monitor system resources and processes.  
Ans : top: Displays real-time system processes, memory usage, and CPU utilization.

htop: An enhanced version of top with a more user-friendly interface (requires installation).

sudo apt install htop # Install htop

htop

23. · Configure one of your lab COMPUTERS to boot to the CLI using systemd, and reboot to confirm that you were successful.

Ans : To change the default target to boot into a multi-user CLI (without a graphical interface):

1. Use systemctl to set the default target:  
   sudo systemctl set-default multi-user.target
2. Reboot the system:

sudo reboot

Module :3- Linux server - Configure local storage Assignment

24. Learn about different filesystem types (e.g., ext4, NTFS).

Ans : ext4: The most common filesystem used in Linux, offering good performance and support for large file sizes.

NTFS: A filesystem used primarily by Windows, but can be read/written in Linux using appropriate drivers.

25. Manage disk partitions and filesystems using tools like fdisk, mkfs, and mount.

Ans : fdisk: A command-line tool for partitioning a disk.

sudo fdisk /dev/sda

mkfs: Creates a filesystem on a partition.

sudo mkfs.ext4 /dev/sda1 # Creates an ext4 filesystem on /dev/sda1

mount: Mounts a filesystem to a directory.

sudo mount /dev/sda1 /mnt # Mounts /dev/sda1 to /mnt

26. create a 2048MB partition and verify if the partition has been created.

Ans : Open fdisk on the disk:

sudo fdisk /dev/sda

Check the partition:

sudo fdisk -l

27. Why LVM is required?

Ans :> Dynamic resizing of disk partitions.

* Better management of storage across physical volumes.
* Flexible volume management (e.g., creating snapshots).

28. How can you find out how much memory Linux is using?

Ans : command : free -h

29. What is a typical size for a swap partition under a Linux system?

Ans :> For systems with up to 4GB of RAM: swap should be the same size as RAM.

* For systems with more than 4GB of RAM: swap is typically 4GB, but it could be smaller or larger depending on usage.

30. What is the maximum file size on the ext4 file system?

Ans : The maximum file size on an ext4 file system is 16 TiB (terabytes). However, this depends on the block size used when formatting the file system, with the default block size being 4 KiB (kilobytes).

31. What is the maximum file size on the xfs file system

Ans : The maximum file size on an XFS file system is 8 exabytes (EB), but in practice, it depends on the hardware and system configuration. Typically, the maximum file size is in the range of several terabytes, depending on the system's capabilities.

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

Ans : > useradd: This command is used to add a new user to the system. Example: useradd username

* userdel: This command is used to delete a user from the system. Example: userdel username
* groupadd: This command is used to create a new group. Example: groupadd groupname
* passwd: This command is used to set or change the password for a user. Example: passwd username

33. Explain different file system types in Linux?

Ans : > ext4 (Fourth Extended File System): A widely used file system that provides journaling, high performance, and reliability.

* XFS: A high-performance file system designed for scalability and high availability, especially suitable for large systems and file storage.
* Btrfs (B-tree file system): A modern copy-on-write file system offering features like snapshots, subvolumes, and checksumming for data integrity.
* NTFS: A file system primarily used by Windows systems but can be used in Linux with support from the ntfs-3g driver.
* FAT32: A legacy file system with broad compatibility, often used for flash drives and external drives

34. Explain File Permission groups in Linux?

Ans : Owner (User):

* This is the user who owns the file or directory. By default, the user who creates the file or directory is the owner.

Group:

* Every file or directory is associated with a group, and a group is a collection of users. A file or directory can have permissions that apply to members of the group.
* For example, if the owner of the file is part of a certain group, the group members can have read, write, and execute permissions on the file or directory.

35. How do you switch from one desktop environment to another, such as switching from KDE to Gnome?

Ans : In Linux, there are three main file permission groups:

* Owner (User): The user who owns the file or directory.
* Group: Users who are part of the file's group, typically assigned during file creation.
* Others: All other users who do not fall into the owner or group categories. These groups are granted permissions for reading, writing, and executing files.

36.What are the kinds of permissions under Linux

Ans : > Read (r): Permission to view the contents of a file or list the contents of a directory.

* Write (w): Permission to modify the contents of a file or add/remove files in a directory.
* Execute (x): Permission to execute a file as a program or script. For directories, this allows entering or accessing the directory.

37. What are the different modes when using vi editor?

Ans : > Normal mode: This is the default mode when you open vi. You can navigate the text, delete, copy, and paste text, and perform other operations without modifying the text directly.

* Command mode: In this mode, you can execute commands like saving, quitting, searching, and replacing. You access command mode by pressing : while in normal mode.
* Visual mode: This mode allows you to select text. You can enter it by pressing v in normal mode, and use commands like y to yank (copy) or d to delete the selected text.