# Module: 1 - Linux server - Understand and use essential tools

1. What is the minimum number of partitions you need to install Linux?

Ans -Minimum technically need at least one partition, the root partition. This partition holds the core operating system files.

2. Explain About Chmod Command.

Ans - chmod stands for "change mode". It's used to modify the permissions of files and directories.

3. How to check Linux memory utilization.

Ans –

- vmstat: This command reports information about virtual memory usage, processes, memory and cpu activity.
- top: This command displays a real-time view of your system's memory and CPU usage per process.

4. · Use grep to search for specific patterns in files.

Ans –

- **-i:** Ignore case.
- **-n**: Show line numbers.
- **-w**: Match whole words.
- Example: grep -i "error" /var/log/syslog

5. · Get Connecting on a linux server by ssh .

Ans –

- SSH (Secure Shell): A secure protocol for remote login and other network services.
- Syntax: ssh username@hostname_or_ip_address
- Example: ssh user1@192.168.1.100
- Password Authentication: You'll be prompted for the user's password.

6. · Create 5 files in the /tmp directory, and then use tar and gzip to bundle and compress the files.

Ans

- **Create 5 files in /tmp:**

1.cd /tmp
2.touch file1.txt file2.txt file3.txt file4.txt file5.txt

- **Use tar and gzip:**

1.tar -czvf myfiles.tar.gz file1.txt file2.txt file3.txt file4.txt file5.txt

- tar: Archiving utility.
- -c: Create an archive.
- -z: Compress with gzip.
- -v: Verbose output.
- -f: Specify the archive filename.
- gzip: Compression utility.

7. ·Describe the root account.

Ans –

- **Superuser:** The root account is the most powerful user account in Linux.
- **Unlimited Access:** It has complete control over the system, including all files, directories, and processes.
- **Security Risk:** Because of its power, the root account should be used sparingly and carefully.

8. What is shell?

Ans - A shell is a special user program that provides an interface for users to interact with the operating system services.

9. What is Linux?

Ans – Linux is like mac and windows operating system but in command line**.** Linux is a free and open-source operating system that is based on the Linux Kernel. It was developed by Linus Torvalds in 1991[1]. The Linux Kernel acts as the core of the operating system, managing hardware resources and ensuring smooth and efficient operation.

10. What is Bash?

Ans - Bash, short for Bourne-Again SHell, is a command-line interpreter or Unix shell that was developed as a free software alternative to the Bourne shell. It was created by Brian Fox for the GNU Project and first released in 1989. Bash is widely used as the default login shell for linux.

11. You have a new empty hard drive that you will use for Linux. What is the first step you use.

Ans –

1. Connect the Drive: Ensure the new hard drive is physically connected to your system.
2. Access the System's Disk Utility Tool:
    - On a running Linux system, you can use a tool like gparted or fdisk to partition the drive.
    - If you're using a live Linux USB or installation disk, you can access these tools during the installation process or boot into a live environment.
3. Identify the New Drive:
    - Use a command like lsblk or fdisk -l to list all available drives and identify your new hard drive. The new drive will typically show as something like /dev/sdb or /dev/sdc (make sure it's the right one!).
4. Partition the Drive:
    - Using gparted (GUI) or fdisk/parted (CLI), create the partitions that you need. At a minimum, you'll need a root partition (/) and possibly a swap partition.
        - For example, you might create:
            - A root partition (/) for the operating system.
            - A swap partition (optional) to improve performance for certain workloads.
        - Format each partition to a suitable filesystem, typically ext4 for the root partition and swap for the swap partition.

12. Write the Linux command to show the current working directory.

Ans - pwd

13. write the Linux command to get help with various options.

Ans-

1. man command_name

2.Command name --help

14. Write the linux comman! to display what all users are currently doing.

Ans - w

15. write the Linux command to get information about the operating system.

Ans - cat /etc/os-release

16. Write the Linux command to create a hard link of a file.

Ans - ln original file hard linkname

17. Write the Linux command to create a soft link of a file as well as Directory.

Ans –

- For a file:

ln -s original file symbolic linkname

- For a directory:

ln -s original directory symbolic linkname

18. Write the Linux command! to search for specific pattern in a file

Ans -1. To search for a specific pattern in a file:

grep 'pattern' filename

2.For example, to search for the word "error" in logfile.txt:

grep 'error' logfile.txt

19. Write the Linux command to show the use of basic regular expressions using grep command.

Ans - 1. To search for a specific pattern in a file:

grep 'pattern' filename

2.To search for the word "error" in logfile.txt:

grep 'error' logfile.txt

3. To match lines containing "ab",

grep 'abc*' filename