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

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

🡪 At the very least you need two partitions:

1.Root (/) partition

2.Swap partition

**2. Explain About Chmod Command**

🡪 The chmod command is used to change the permissions of files and directories. It stands for "change mode" and allows users to control who can read, write, or execute a file.

Example : chmod ugo+rwx (file name)

**3. How to check Linux memory utilization**

🡪 free -h — Quick overview of memory usage.

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

🡪 The grep command in Linux is used to search for specific patterns within files. It stands for Global Regular Expression Print and allows you to search text using regular expressions or fixed strings.

[Example : grep "hello" file.txt]

-i : Case-insensitive search.

-n : Show line numbers.

-v : Invert the match (show lines that do not match).

-r or -R: Search recursively in directories.

-c : Count the number of matches.

-o : Show only the matching part of the line.

-l : Show file names that contain the pattern.

-w : Match whole words.

-C NUM : Show NUM lines of context around the match.

-B NUM : Show NUM lines before the match.

-A NUM : Show NUM lines after the match.

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

🡪To connect to a remote server using SSH, the basic syntax is:

ssh [username]@[hostname or IP address]

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

**7. Describe the root account**

🡪The root account is the highest-level administrative user on a system, with unrestricted access to all files and settings. It can perform any action, including system configuration, installing software, and managing users. Because of its powerful privileges, it’s a critical target for security threats and is typically used cautiously to prevent misuse. In Unix-like systems, it is often accessed via commands like sudo instead of logging in directly.

**8. What is shell?**

🡪A shell is a command-line interface that allows users to interact with the operating system by typing text-based commands. It acts as an intermediary between the user and the operating system, interpreting and executing commands.

**9. What is Linux?**

🡪Linux is an open-source, Unix-like operating system kernel that serves as the foundation for various operating systems. It was created by Linus Torvalds in 1991 and has since evolved into one of the most popular and widely used operating systems, especially in server environments.

**10. What is Bash?**

🡪Bash (Bourne Again Shell) is a command-line shell and scripting language that is widely used in Linux and other Unix-like operating systems. It serves as the default shell for many Linux distributions and macOS.

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

**🡪** [ sudo fdisk /dev/sdX # Replace /dev/sdX with the actual device name ]

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

🡪 pwd

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

🡪 --help

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

🡪 who

**15. write the Linux command to get information about the operating system.rn in a file.**

🡪 [ uname -a > /path/to/your/file.txt ]

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

**🡪** [ /tmp/original.txt ]: The original file.

[ /tmp/hardlink.txt ]: The new hard link that will point to the same data as the original file.

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

**🡪** -s: Tells ln to create a symbolic link (soft link).

/path/to/original/file: The path to the original file or directory.

/path/to/softlink: The location where you want the symbolic link to be created.

**18. Write the Linux command! to search for specific pattern**

🡪 To search for a specific pattern in a file in Linux

[grep "pattern" <filename>]

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

🡪 grep "hello" example.txt — Will match the line "hello world".

grep "^start" example.txt — Will match "start of the line".

grep "end$" example.txt — Will match "The end".

grep "a\*b" example.txt — Will match "abbbb".

grep "c[ao]t" example.txt — Will match "I like cats" and "cat and dog".

grep "cat\|dog" example.txt — Will match "I like cats", "I like dogs", and "cat and dog".