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

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

**Ans.** The minimum number of partitions required to install Linux is one — the root (/) partition.

* 1. **Explain About Chmod Command**

**Ans.** The Chmod command is used in Linux/Unix to change file or directory permissions. It allows setting read (r), write (w), and execute (x) rights for the owner, group, and others using either symbolic or numeric modes.

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

**Ans.** Use **free -h** to check memory usage in a simple and readable format.

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

**Ans.** Use **grep [pattern] [filename]** to find specific text in files. For example, grep "error" file.txt searches for "error" in the file.

* 1. **Get Connecting on a Linux server by ssh**

**Ans.** Use ssh **user@server\_ip** to connect to a Linux server securely.

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

**Ans.** Create 5 files through **touch** command and then we have to use tar with gzip to bundle and compress the file through this command: **tar -czvf /tmp/files.tar.gz /tmp/file1 /tmp/file2 /tmp/file3 /tmp/file4 /tmp/file5**

* 1. **Describe the root account**

**Ans.** The root account is the superuser in Linux/Unix systems with unrestricted control over the entire system. It has the highest privileges, allowing it to manage files, users, system settings, and perform any administrative task, making it both powerful and potentially dangerous if misused.

* 1. **What is shell?**

**Ans.** In Linux, a shell is a command-line interpreter that provides a user interface for accessing the services of the operating system. It allows users to run commands, manage files, and execute programs. Common Linux shells include:

* Bash (Bourne Again Shell) – the most widely used.
* sh (Bourne Shell) – a basic shell.
* zsh, ksh, and csh – alternative shells with additional features.
  1. **What is Linux?**

**Ans.** Linux is an open-source, Unix-like operating system based on the Linux kernel. It is widely used for servers, desktops, mobile devices, and embedded systems due to its stability, security, and flexibility.

* 1. **What is Bash?**

**Ans.** Bash (Bourne Again Shell) is the default command-line shell in most Linux distributions. It allows users to run commands, write scripts, and automate tasks.

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

**Ans.**

1. Connect the hard drive to the system.
2. Identify the drive using lsblk or fdisk -l.
3. Partition the drive using fdisk or parted.
4. Format the partitions with a filesystem (e.g., mkfs.ext4).
5. Mount the partitions to directories (e.g., mount /dev/sdX1 /mnt).
6. Update /etc/fstab if needed for automatic mounting.
   1. **Write the Linux command to show the current working directory.**

**Ans.** The Linux command to display the current working directory is **pwd(** Print Working Directory**)**

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

**Ans.** To get help with various options in Linux, use the man command followed by the command **name** (e.g., man ls) or use **--help** with the command (e.g., ls --help).

* 1. **Write the Linux command to display what all users are currently doing.**

**Ans.** The Linux command to display what all users are currently doing is **w** this command shows logged-in users and their current activities. Alternatively, you can use **who.**

* 1. **write the Linux command to get information about the operating system.**

**Ans.** The Linux command to get information about the operating system is **uname -a**. This shows detailed system information including kernel version.

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

**Ans.** The Linux command to create a hard link of a file is **ln source\_file hard\_link\_name.**

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

**Ans.** To create a soft (symbolic) link of a file or directory in Linux, use the command ln **-s target\_path link\_name**. This works for both files and directories by specifying the target and the link name.

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

**Ans.** The Linux command to search for a specific pattern in a file is **grep "pattern" filename.**

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

**Ans.** The Linux command to use basic regular expressions with grep is **grep "regex\_pattern" filename.**