**Module 3**

**Linux server - Configure local storage Assignment**

**1.** These device identifiers are used to represent storage devices and their partitions. Here's what each one typically represents:

**/dev/sda**: This represents the first SCSI (Small Computer System Interface) disk drive detected by the system. "sda" stands for "SCSI disk drive a." It usually refers to a physical disk drive or a virtual disk drive if the system is a virtual machine.

**/dev/sdb**: This represents the second SCSI disk drive detected by the system. Similarly, additional letters (c, d, e, etc.) would represent subsequent disk drives.

**/dev/sda1**: This represents the first partition on the first SCSI disk drive (**/dev/sda**). The number after the drive identifier (**sda**) indicates the partition number. So, **/dev/sda1** is the first partition on the first disk.

**/dev/sda2**: This represents the second partition on the first SCSI disk drive (**/dev/sda**). Similarly, **/dev/sda3**, **/dev/sda4**, and so on, represent subsequent partitions on the same disk.

**/dev/vda**: This represents the first Virtio disk drive detected by the system. Virtio is a virtualization standard, and "vda" stands for "Virtual disk drive a." Similar to **/dev/sda**, it could be a physical or virtual disk drive.

**/dev/vda1**: This represents the first partition on the first Virtio disk drive (**/dev/vda**). Like **/dev/sda1**, the number after the drive identifier (**vda**) indicates the partition number.

2. The df command in Linux is used to display information about disk space usage on filesystems. It provides a summary of available and used disk space for each filesystem, including mounted partitions and storage devices.

3. The blkid command is used to retrieve the Universally Unique Identifier (UUID) of a filesystem in Linux.

4. In Linux, the fdisk command is commonly used to create Master Boot Record (MBR) partitions on a disk. MBR is a traditional partitioning scheme widely used on BIOS-based systems.

5. In Linux, the gdisk command is commonly used to create GUID Partition Table (GPT) partitions on a disk. GPT is a modern partitioning scheme used on both BIOS-based and UEFI-based systems.

6. In Linux, sda, sdb, sdc, etc., are device identifiers representing storage devices such as hard disk drives (HDDs) and solid-state drives (SSDs). Here's what each one typically represents:

**sda, sdb, sdc**: These represent individual storage devices detected by the system. "sda" typically refers to the first detected device, "sdb" to the second, and so on. These devices can be HDDs, SSDs, or other storage devices connected to the system.

**sda1, sda2, sda3**: These represent partitions on the first storage device (sda). The number after the device identifier (sda) indicates the partition number. So, sda1 is the first partition on the first device, sda2 is the second partition, and so on.

**sdb1, sdb2, sdb3**: Similarly, these represent partitions on the second storage device (sdb). The number after the device identifier (sdb) indicates the partition number.

7. A swap partition, also known as swap space, is a dedicated area on a storage device (usually a hard disk drive or SSD) that the operating system uses as virtual memory. When the physical RAM (Random Access Memory) in a system is fully utilized, the operating system can move less frequently accessed or idle memory pages to the swap space to free up physical RAM for more active processes. This process is known as swapping or paging.

8. LVM is a storage management technology that allows administrators to manage disk drives and storage devices more flexibly and dynamically.

9. **PV (Physical Volume)**: Raw storage device or partition initialized for use with LVM.

**VG (Volume Group)**: Collection of one or more PVs combined together to form a single storage pool.

**LV (Logical Volume)**: Virtual partition created from space within a VG, offering greater flexibility and dynamic resizing capabilities compared to traditional partitions.

10. **pvdisplay**: This command displays information about Physical Volumes (PVs), including their size, allocation, and status

**vgdisplay**: This command displays information about Volume Groups (VGs), including their size, allocation, physical volumes associated with the VG, and status.

**lvdisplay**: This command displays information about Logical Volumes (LVs), including their size, allocation, associated Volume Group, and stat

**pvs**: This command provides a summary of information about Physical Volumes (PVs), including their name, -size, free space, and VG name