**Module :3- Linux server - Configure local storage Assignment**

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

**ANS: Different filesystem types are designed to manage how data is stored organized and retrieved on a storage device like a hard dirve or SSD each filesystem features, EXT4 employs delayed allocations and extents, leading to improved performance and reduced framenations and supports online defragmation, EXT4 fourth extended filesystem used by linux based systems, NTFS new technology file system, used by windows operating system.**

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

**ANS: manage disk partitons and filesystem is a common task administration here's like tools fdisk, mkfs, and mont create format manage disk, (sudo fdisk /dev/sda , p the partition table , n then new partition ,w write the change, and format the partition, sudo mkfs.ext4 /dev/sda1, create a mount point, mkdir /mntp, mount /dev/sdb2 /mntp, vim /etc/fstab, device name, mount point, types of FS, mount options, dumping, check sequence FSCK) manage partition filesystem data storage system.**

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

**ANS: Identify the disk command ( lsblk , fdisk /dev/sdb , new partition create n , partition type P= primary, E= extended, select p, partition number 1-4 : 1 , first sector ( 2048 - 20971519 default 2048 [press enter], + size {K,M,G,T,P} (default 20971519): +2048M, W press, that verify partition fdisk -l , parted -l , lsblk.)**

**27. Why LVM is required?**

**ANS: LVM used for the folowing, creating single logical volumes of multiple physical volumes or entire hard disk, when you need flexibilty, and storage are dynamic change over time, large storage systems,snapshots, for backup and recovery, aggregation of multiple disks volume goruping.**

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

**ANS: there are serveral ways to check memory usage on a linux system, ( free -h command memory usage, choose display applcations from the menu, "/proc/meminfo" command check memory usage, top ,htop real time memory usage, vmstat, dtailed memory , smem advanced level memory).**

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

**ANS: twice the amount of RAM if the total RAM amount is below 2GB, of RAM, - 8GB OF Swap, RAM Workload, and whether or not the system will use hibernation, small RAM ( < 2 GB ) Swap size memory RAM ( 4-8 ) swap size 2-4 GB generally very larg RAM ( 32 GB or more ) but 4 GB stability.**

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

**ANS: the maximum file size on the ext4 filesystem is determined by the block size used when the filesystem is created, default block size, most ext4 filesystem use a default block size of 4 KB, which supports a maximum file size of 16 - 256 TB, ext4 file system support, 1 exabyte, and 16 terabytes TB.**

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

**ANS: 8 exbibytes minus one byte, and maximum file size XFS 64 bit is 8 exabytes EB, on 32-bit systems, the maximum file size is 16 TB.**