PARTITIONS

* Every disk can only contain 3 primary partitions and one extended partition.
* Extended partition is one type of partition, where we can create logical partitions under this. We can create many logical partitions under extended partition if we want.
* One disk can contain only 3 Primary and 1 extended partitions.
* **/etc/fstab** = It is the file where we mount partitions permanently.
* **/etc/mtab** = it is a file which stores info about all mounted file sys.
* **blkid /dev/sda1** = to know the block uuid of a partition.
* **lsblk** = it will show how many disks are attached to system.

**CREATE PARTITIONS**

* **fdisk –l** = To see existing partitions.
* **fdisk /dev/sda** = It will get you to disk management utility.
* **n =** To create new partition.
* **p** = To see print partition table.
* **m** = help...It will show the options.
* **d** = To delete a partition.
* **w** = To write changes to disk.
* Click ‘n’ to create a partition.
* Give number to partition.
* Give size to partition (M, G).
* Type **‘w’** to save the changes and exit.
* After creating (or) deleting partitions, the changes will effect only after restarting the system.
* In order to do that, we have an option without restarting the system; we can just restart the partition table. **Partprobe /dev/sda. (or) partx –a /dev/sda. (or) kpartx /dev/sda.**
* Now check partition table to see new partition that we created.
* Now, We created a new partition, but you can’t access it, unless you format it with a file system and mount it.
* **mkfs.ext4 partition** = To format it with ext4 file system.
* Create an empty dir, and mount that formatted partition to this dir.

**mount partition /dir**……**mount** = to see all temporary mounted partitions**.**

* To mount permanently. Go to **/etc/fstab**,

**partition mount-point file-system defaults 0 0.**

**0 –** it is used by dump program. It tells dump info whether the partition to be backed up (or) not. Is we set 0 it is ignored.

**0 –** It is used by fsck program. It checks the file system while booting. If we set 0 it ignores checking**.**

* Save the file and quit.
* **mount –a** = To see all permanently mounted partitions.
* **umount /dir =** To unmount a partition. If it is permanently mounted, remove the entries in fstab file and unmount it.

SWAP

* It is a virtual memory which stores in system hard disk. It is used when RAM is full. If the system need more memory, but ram is full. All inactive pages in memory will go to swap temporarily and will get back to RAM, when it is free.
* Swap should not be considered as replacement of RAM.
* The basic rule of swap is twice the RAM size.
* To create a swap, first create normal partition with **hex code 82**, format it with swap file system and mount it permanently.
* **mkswap partition** =to format partition with swap file system.
* **Swapon partition** = to activate swap.
* **Swapoff partition =** to deactivate swap.
* Make an entry in **/etc/fstab** file to mount.
* If your swap space is full and you want to add some more swap. You can create another swap partition if you have disk space.
* If you don’t have free space in disk to create another partition, you can create a swap file with dd command. It will act as a swap Partition.

**dd if=/dev/zero of=/swap-file-name bs=1024 count=100024.**

* **If =** input file…**of =** output file**.** It will create swap file.
* Format the file with mkswap……..**mkswap /file-name.**
* After formatting, you can use this file as swap.
* **Swapon /file =** To start swap.
* **Swapoff /file =** To stop swap.
* Use **free –m** to see swap usage**.**

LVM [LOGICAL VOLUME MANAGEMENT]

* Extend the lv = **lvextend -L +200M /dev/vgname/lvname**.
* To update it = **resize2fs /dev/vgname/lvname**.
* Before Updating lv, organize the data **e2fsck -f /dev/vg/lv**.
* To reduce the lv size
* Umount the dir.
* Organize the data in file system = **e2fsck -f /dev/vgname/lvname**.
* Update the file system about size reduce = **resize2fs /dev/vgname/lvname size** (after reduce).
* Now….Reduce the size to 300 MB **= lvreduce -L -300M /dev/vgname/lvname**.
* Again mount the lv.
* To move the data from one lv to another :
* Unmount the lv = umount lvname.
* Umount pv.
* Add a new pv to vg.
* Migrate the data from old pv to new = **pvmove old new**.
* Mount the lv.
* Remove the old pv = **pvremove /dev/sda1** (before this you have to remove the pv from vg)