**Logical Volume Management (LVM)**

LVM is used to variably assign the storage i.e. increase or decrease the assigned storage for flexible projects, it is generally used with cloud technologies.

Hard disk types – IDE (old) – Integrated Digital electronic & SATA (current)-

Pre-requisites:

**IDE**

|  |  |
| --- | --- |
| **Windows** | **Linux** |
| Primary Master | |hda |
| Primary Slave | |hdb |
| Secondary Master | |hdc |
| Secondary Slave | |hdd |

**Sata/ScSi**

|  |  |
| --- | --- |
| **Windows** | **Linux** |
| Disk 1 | |sda |
| Disk 2 | |sdb |
| Disk 3 | |sdc |
| Disk 4 | |sdd |

To view the no of disks connected |fdisk -l

In disk info the start and end index indicate no of cylinders which is calculated by dividing the no of MB/8

To create the partition in linux…

* |fdisk /dev/sda
* |l to list out commands for the types of partitions
* |m to list out the commands for making the partition
* |n to create new disk partition
* |e to extend the partition (recommended by partition scheme 4 primary, i.e. 3 primary 1 extended
* |skip the first cylinder and end cylinder be entered in M respectively
* |+200M never forget the unit M or else it will create +200 cylinders

To change the partition type of default Linux partition type…

* |t to toggle/change the type of partition
* |5 type the number of that partition whose file system has to be changed

**Note🡪 |w to write the partitions to the disk. And reboot the system for error free experience.**

To format the partition…

* |mkfs.vfat /dev/sda<number> For windows type of partition
* |mkfs.ext4 /dev/sda<number> for Linux type of partition

To use the volumes firstly you need to mount, create folders in root and then mount the drives in it as

|mount /dev/sda<number> <directory name>

To delete the volume..

* |umount /dev/sda<number>
* |fdisk /dev/sda
* |d to initiate the delete process of the partition
* |type the number of the partition to be deleted as per sda(1-6)
* |w to write the partition
* |reboot

**Logical Volume Management (LVM)**

/dev/sda7

800mb

/dev/sda6

400mb

/dev/sda5

200mb

* These partitions are in LVM partition type (8e)
* Firstly to use them we need to convert them into Physical volume to convert it type

|pvcreate /dev/sda5 /dev/sda6 /dev/sda7

* We need to combine all the logical volume( known as volume group) and then any operation could be applied by

|vgcreate <give it a name,say cu> /dev/sda6 /dev/sda7 /dev/sda5

* Now convert it into logical volume by

|lvcreate -L +400M -n <new name: lv1> <above given name: cu>

(-L is used to specify the length/size)

**Note🡪 To see the disk usage |df -h : to see the usage of the partition**

To extend the logical volume

|lvextend -L +200M /dev/cu/lv1

|resize2fs /dev/cu/lv1

To Reduce the logical volume

* |umount /c1
* |fsck -f /dev/cu/lv1 to check the file system to see that whether file system can be reduced or not.
* We need to reduce 400mb storage from our logical partition
* |resize2fs /dev/cu/lv1 200M
* |lvreduce -L 200M /dev/cu/lv1 and y to agree, the 200M shows the remaining 200after excluding the last extended partition
* Now mount the disk back