Class 22

RAID = redundant array of independent/inexpensive disk

It is a technology which use to save and secure the data , we use 2 or more hard disk .

Types of RAID (RAID Level)

- **RAID 0** – striping
- **RAID 1** – mirroring
- **RAID 5** – striping with parity
- **RAID 6** – striping with double parity
- **RAID 10** – combining mirroring and striping

RAID 0 = it use to save the data fastly but if 1 HD fail , loss the data . we can attach same size or different size HD

10G +20G = 30G

RAID 1 =we have use same size HD , if 1 HD is fail then data will safe

RAID 5 = we use atleast 3 HD of same size , if 1 HD is fail , everything will safe

5+5+5 = 10G

RAID 6 = 4HD of same size ,if 2 HD is fail still data will safe

5+5+5+5 = 15G

RAID 10 = RAID 1 +RAID 0

4 HD =

2 HD fail , data will safe

RAID 0

2 HD = 5 GB +8GB

Make the partition , set ID fd

Primary = 83

Extended = 5

Logical =83

Swap = 82

RAID = fd

Mdadm -C /dev/md0 -l 0 -n 2 /dev/sda1 /dev/sdb1

Mdadm = multi disk and device management = make the RAID

-C =create

/dev/md0 = /dev/sda =1 sata HD , /dev/md0 = (md = meta data ,0 = 1 RAID)

-l = raid level

-n = no of hard disk

Cat /proc/mdstat

Mkfs.ext4 /dev/md0

Mdadm –detail /dev/md0

Mount /dev/md0 /mnt

RAID 1

Attach 2 same size Hard disk , change ID fd

Mdadm -C /dev/md0 -l 1 -n 2 /dev/sda1 /dev/sdb1

Mkfs.ext3 /dev/md0

Mdadm --detail /dev/md0

Mount /dev/md0 /mnt

Fail the HD

Mdadm /dev/md0 -f /dev/sda1

Remove the HD

Mdadm /dev/md0 -r /dev/sda1

Attach a new HD , id fd

Mkfs.ext4 /dev/sdc1

Mdadm /debv/md0 --add /dev/sdc1

OS =HD = / , /boot swap

Deactivate the RAID

Umount

Mdadm --stop /dev/md0

Again start

Mdadm --assemble /dev/md0 /dev/sda1 /dev/sdb1

RAID 0 ,1

5,6,10 = home work

LVM = logical volume manager = it is use to extend and reduce the storage according to work , without loss the data .

Package name = lvm2

Rpm -q lvm2

3 HD

/dev/sda , /dev/sdb , /dev/sdc

Make the partition and set ID = 8e

Make physical volume

Pvcreate /dev/sda1 /dev/sdb1 /dev/sdc1

See the PV

Pvs or pvdisplay

Make the volume group

Vgcreate test /dev/sda1 /dev/sdb1 /dev/sdc1

See the VG

Vgs or vgdisplay

Make the logical volume

Lvcreate -L 12G -n abc test

See the lv

Lvs or lvdisplay

Mkfs.ext4 /dev/test/abc

Mount /dev/test/abc /mnt

RAID , LVM part 1