Linux Learning

Making Partition and Mounting to Directory

1. CREATING PARTION USING FDISK
   1. Run fdisk -l command to see all the partition
   2. This will show /dev/sd(partition\_number)

Like /dev/sda , /dev/sdb / /dev/sdbc ( three disk a , b , c attached to VM)

Harddisk are represented with SDA , SDB & SDC lable

Partition in Harddisk are represented with SDA1, SDA2 labels

* 1. fdisk /dev/sdc and press enter, we are create a partition in harddisk no. 3
  2. type n for new partition 🡪 type p for primary 🡪 type 2 for partition no. 🡪 Enter for first sector default value 🡪 Enter partition size (+2G) 🡪 type w to save

1. CREATING FILE SYSTEM ON NEWLY CREATED PARTITION
   1. mkfs.ext4 /dev/sdc1
2. MOUNT PARTITION TO DIRECTORY
   1. Create a directory using mkdir directory name
   2. Now mount partition to directory using below command

mount /dev/sdc1 /partition1

* 1. Type df -h to display mounted directories
  2. To make the mounting parmenent, open file fstab file located in etc directory

vim /etc/fstab and enter following record

/dev/sdc1 /partition1 ext4 default

Save file and exit

* 1. Run command mount -a

CREATING SWAP PARTITION

1. Run the free -m command to see memory information
2. Now create a partition like above instruction but change the type to Linux swap using l option
3. Save and exit
4. Now format / or create file system using below command

mkswap /dev/sdc3

1. Now edit /etc/fstab and enter the partition information to make it permanent
2. Now run the below command to enable swap partition

swapon -v /dev/sdc3

1. swapon -s to show all the swap partition in system
2. to remove the swap partition using below command

swapoff /dev/sdc3

CREATING SWAP USING FILE

1. enter below command to create swap using file

dd if=/dev/zero of=/swap1G bs=1024 count=1048576

above command will create a file with name swap1G at / level of 1GB size

1. enable swap on above file using below command

mkswap /swap1G

swapon -v /swap1G

1. edit the /etc/fstab file to make it permanent

LOGICAL DISK MANAGEMENT

Using LVM we can join two partition from two different hard disk in to one logical

volume

Step No. 1 create partition on first hard disk

1. run the command parted -l

above command will give information about harddisk and partitions

1. parted /dev/sdd 🡪 mklabel msdos 🡪 q

above command will give label to hard disk no. 3

1. to create partion in hard disk issue parted /dev/sdd 🡪 p

mkpart primary start finish press enter

1. set partition\_number lvm on

Step No. 2 create partition on second hard disk

Same step as above

Step No. 3 create physical volume partition

1. pvcreate /dev/first\_partition /dev/second\_partition and press enter
2. pvdisplay command will physical volume partition

Step No. 4 create volume group and add these partition in it

1. vgcreate vol\_group\_name /dev/partition\_1 /dev/partition\_2
2. vgdispaly

Step No. 5 create logical volume inside logical Volume Group

1. lvcreate -L 8GB -n logical\_vol\_name vol\_group\_name
2. lvdisplay

Step No. 6 format the logical volume create at step 5

1. mke2fs -t ext4 -j /dev/volume\_group/logical\_volume
2. get path from fdisk command

Step No. 7

1. mount the logical volume to directory
2. mount /dev/volume\_group/logical\_volume /directory\_name
3. add information /etc/fstab
4. mount -a

Step No. 8 Extending the Logical Volume Group by adding new partition

1. create new partition by step no. 1
2. convert newly created partition in physical partition by below command

pvcreate /dev/partition\_name

1. vgextend logical\_volume\_group\_name /dev/new\_partition\_name
2. now we can increase the logical volume by following command

lvresize -L new\_size /dev/logical\_volume\_group/logical\_volume\_name

1. resize2fs /dev/logical\_volume\_group/logical\_volume\_name new\_size
2. df -h

Step No. 8 to rename the logical volume

1. lvrename name\_of\_volume\_group name\_of\_logical\_volume new\_name\_of\_logical\_volume
2. unmount the logical\_volume then change in /etc/fstab and mount again

Step No. 9 to rename volume\_group\_name

1. vgrename name\_of\_volume\_group. New\_name\_of\_volume\_group
2. unmount the directory firstv
3. update /etc/fstab as well accordingly

CREATING SOFTWARE RAID

WE ARE CREATING RAID 0, FOR THIS WE NEED TWO HARD DISKS

Step No. 1 Enter below command to create RAID zero

1. mdadm --create /dev/md0 –level=0 --raid-devices=2 /dev/harddisk1

/dev/harddisk2 and press enter

1. mke2fs -t ext4 -j /dev/md0

above command will format the newly created RAID 0

1. now we can mount the RAID 0 to Directory
2. add to /etc/fstab to make it parament

WE ARE CREATING RAID 1, FOR THIS WE NEED TWO HARD DISKS

Enter below command to create RAID ONE (Mirror)

1. mdadm --create /dev/md1 –level=1 --raid-devices=2 /dev/harddisk1

/dev/harddisk2 and press enter

1. mke2fs -t ext4 -j /dev/md1

above command will format the newly created RAID 1

1. now we can mount the RAID 0 to Directory
2. add to /etc/fstab to make it parament

WE ARE CREATING RAID 1, FOR THIS WE NEED THREE OR MORE HARD DISKS

Enter below command to create RAID FIVE

1. mdadm --create /dev/md5 –level=5 --raid-devices=3 /dev/harddisk1

/dev/harddisk2 /dev/harddisk3 and press enter

1. mke2fs -t ext4 -j /dev/md5

above command will format the newly created RAID 5

1. now we can mount the RAID 0 to Directory
2. add to /etc/fstab to make it parament
3. mdadm –detail /dev/md5

above command will give detail of RAID 5

1. mdadm --detail –scan

above command will show all array configured on system

1. mdadm --detail –scan >> /etc/mdadm.conf

above command will save RAID configuration and will not lost if system reboot

DEGRADING A Harddisk in array, removing the hard disk and add another hard disk

1. mdadm /dev/md1 -f /dev/partition\_number
2. mdadm --detail
3. mdadm /dev/md1 -r /dev/partition\_number
4. mdadm --manage /dev/md1 --add /dev/new\_partition\_number
5. mdadm --grow /dev/md1 --raid-device=3 --add /dev/new\_partition

above command will add additional partition to array