

# Linux Administration

## Assignment - Day 5

**Name:** Himani Dalal

### Question 1

1. Add a 10GB disk to the CentOS.

→

```
(root@kali)-[/home/kali]
# fdisk -l

Disk /dev/sda: 80 GiB, 85899345920 bytes, 167772160 sectors
Disk model: VBOX HARDDISK
Units: sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disklabel type: dos
Disk identifier: 0xe7875fa7

Device Boot      Start         End      Sectors  Size Id Type
/dev/sda1 *        2048     165771263  165769216    79G 83 Linux
/dev/sda2          165773310  167770111    1996802   975M  5 Extended
/dev/sda5          165773312  167770111    1996800   975M 82 Linux swap / Solaris

Disk /dev/sdb: 11 GiB, 11811160064 bytes, 23068672 sectors
Disk model: VBOX HARDDISK
Units: sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
```

## 2. Create 2 Partitions 4GB and 6GB of Space respectively.

→

```
(root@kali)-[/home/kali]
# fdisk /dev/sdb

Welcome to fdisk (util-linux 2.36).
Changes will remain in memory only, until you decide to write them.
Be careful before using the write command.

Device does not contain a recognized partition table.
Created a new DOS disklabel with disk identifier 0xd9860a28.

Command (m for help): p
Disk /dev/sdb: 11 GiB, 11811160064 bytes, 23068672 sectors
Disk model: VBOX HARDDISK
Units: sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disklabel type: dos
Disk identifier: 0xd9860a28

Command (m for help): n
Partition type
   p   primary (0 primary, 0 extended, 4 free)
   e   extended (container for logical partitions)
Select (default p): p
Partition number (1-4, default 1): 1
First sector (2048-23068671, default 2048):
Last sector, +/-sectors or +/-size{K,M,G,T,P} (2048-23068671, default 23068671): +4G

Created a new partition 1 of type 'Linux' and of size 4 GiB.
```

```
Command (m for help): n
Partition type
   p   primary (1 primary, 0 extended, 3 free)
   e   extended (container for logical partitions)
Select (default p): p
Partition number (2-4, default 2): 2
First sector (8390656-23068671, default 8390656):
Last sector, +/-sectors or +/-size{K,M,G,T,P} (8390656-23068671, default 23068671): +6G

Created a new partition 2 of type 'Linux' and of size 6 GiB.

Command (m for help): p
Disk /dev/sdb: 11 GiB, 11811160064 bytes, 23068672 sectors
Disk model: VBOX HARDDISK
Units: sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disklabel type: dos
Disk identifier: 0xd9860a28



| Device    | Boot | Start   | End      | Sectors  | Size | Id | Type  |
|-----------|------|---------|----------|----------|------|----|-------|
| /dev/sdb1 |      | 2048    | 8390655  | 8388608  | 4G   | 83 | Linux |
| /dev/sdb2 |      | 8390656 | 20973567 | 12582912 | 6G   | 83 | Linux |


```

```
Command (m for help): w
The partition table has been altered.
Calling ioctl() to re-read partition table.
Syncing disks.
```

### 3. Format 4 GB with xfs and 6GB with ext4 file system.

→

```
(root@kali)~# mkfs.xfs /dev/sdb1
meta-data=/dev/sdb1            isize=512    agcount=4, agsize=262144 blks
        =                       sectsz=512    attr=2, projid32bit=1
        =                       crc=1        finobt=1, sparse=1, rmapbt=0
        =                       reflink=1
data      =                       bsize=4096   blocks=1048576, imaxpct=25
        =                       sunit=0      swidth=0 blks
naming    =version 2           bsize=4096   ascii-ci=0, ftype=1
log       =internal log       bsize=4096   blocks=2560, version=2
        =                       sectsz=512   sunit=0 blks, lazy-count=1
realtime  =none                extsz=4096   blocks=0, rtextents=0

(root@kali)~# mkfs.ext4 /dev/sdb2
mke2fs 1.45.6 (20-Mar-2020)
Creating filesystem with 1572864 4k blocks and 393216 inodes
Filesystem UUID: cd986415-d940-4808-9654-130097333bd4
Superblock backups stored on blocks:
    32768, 98304, 163840, 229376, 294912, 819200, 884736

Allocating group tables: done
Writing inode tables: done
Creating journal (16384 blocks): done
Writing superblocks and filesystem accounting information: done
```

#### 4. Mount 4GB and 6Gb in /data and /music directory respectively.

→

```
File Actions Edit View Help
# /etc/fstab: static file system information.
#
# Use 'blkid' to print the universally unique identifier for a
# device; this may be used with UUID= as a more robust way to name devices
# that works even if disks are added and removed. See fstab(5).
#
# systemd generates mount units based on this file, see systemd.mount(5).
# Please run 'systemctl daemon-reload' after making changes here.
#
# <file system> <mount point> <type> <options> <dump> <pass>
# / was on /dev/sda1 during installation
UUID=a6825b63-bb13-4904-a565-b3e60153ab45 / ext4 errors=remount-ro 0 1
# swap was on /dev/sda5 during installation
UUID=1796931d-c2cc-4553-a1a6-69d9095637eb none swap sw 0 0
/dev/sr0 /media/cdrom0 udf,iso9660 user,noauto 0 0
/dev/sdb1 /data xfs defaults 0 0
/dev/sdb2 /music ext4 defaults 0 0
```

```
(root@kali) ~ - [ /home/kali ]
# df -h
Filesystem      Size  Used Avail Use% Mounted on
udev            1.5G     0  1.5G   0% /dev
tmpfs           300M  972K  299M   1% /run
/dev/sda1       78G   9.1G   65G  13% /
tmpfs           1.5G     0  1.5G   0% /dev/shm
tmpfs           5.0M     0   5.0M   0% /run/lock
tmpfs           4.0M     0   4.0M   0% /sys/fs/cgroup
/dev/sdb2       5.9G   24M   5.6G   1% /music
/dev/sdb1       4.0G   61M   4.0G   2% /data
tmpfs           300M   52K  300M   1% /run/user/1000
```

5. Create one file of 1GB in each of the mount point created above.

→

```
(root@kali)-[/]
# seq 118400000 > /data/NewData

(root@kali)-[/]
# seq 118400000 > /music/NewMusic

(root@kali)-[/]
# du -h /data
1.0G    /data

(root@kali)-[/]
# du -h /music
16K     /music/lost+found
1.0G    /music
```

6. Verify the disk Consumption and Disk space free in the mounted partitions.

→

```
(root@kali)-[/]
# df -h
```

Filesystem	Size	Used	Avail	Use%	Mounted on
udev	1.5G	0	1.5G	0%	/dev
tmpfs	300M	972K	299M	1%	/run
/dev/sda1	78G	9.1G	65G	13%	/
tmpfs	1.5G	0	1.5G	0%	/dev/shm
tmpfs	5.0M	0	5.0M	0%	/run/lock
tmpfs	4.0M	0	4.0M	0%	/sys/fs/cgroup
/dev/sdb2	5.9G	1.1G	4.6G	19%	/music
/dev/sdb1	4.0G	1.1G	3.0G	27%	/data
tmpfs	300M	56K	300M	1%	/run/user/1000