

# LINUX ADMINISTRATION

## ASSIGNMENT 2nd

### Question 1

1. Add a 10GB disk to the CentOS.
2. Create 2 Partitions 4GB and 6GB of Space respectively.
3. Format 4GB with xfs and 6GB with ext4 file system.
4. Mount 4GB and 6GB in /data and /music directory respectively.
5. Create one file of 1GB in each of the mount point created above.
6. Verify the disk Consumption and disk space free in the mounted partitions.

**1. Add a 10GB disk to the CentOS.**

**Ans.** Verify That Disk Is Added Using **fdisk -l**

```
Applications Places Terminal
root@localhost:~

File Edit View Search Terminal Help

[root@localhost ~]# fdisk -l

Disk /dev/sda: 32.2 GB, 32212254720 bytes, 62914560 sectors
Units = sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disk label type: dos
Disk identifier: 0x0008367b

   Device Boot      Start         End      Blocks   Id  System
/dev/sda1   *        2048     1026047       512000   83   Linux
/dev/sda2             1026048     41986047    20480000   83   Linux
/dev/sda3             41986048     50178047     4096000   82   Linux swap / Solaris

Disk /dev/sdb: 21.5 GB, 21474836480 bytes, 41943040 sectors
Units = sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disk label type: dos
Disk identifier: 0x2e86ee15

   Device Boot      Start         End      Blocks   Id  System
/dev/sdb1             2048     20973567    10485760   83   Linux

Disk /dev/sdc: 11.8 GB, 11811160064 bytes, 23068672 sectors
Units = sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes

[root@localhost ~]#
```

**#I Have Taken 11Gb To Avoid Any Kind Of Storage Issue.**

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

**Ans. Creating 2 Partition**

```
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
```

```
[root@localhost ~]# clr
bash: clr: command not found...
[root@localhost ~]# clear
[root@localhost ~]# fdisk /dev/sdc
Welcome to fdisk (util-linux 2.23.2).
```

```
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
Building a new DOS disklabel with disk identifier 0x23ea359c.
```

```
Command (m for help): n
Partition type:
   p   primary (0 primary, 0 extended, 4 free)
   e   extended
```

```
Select (default p): p
Partition number (1-4, default 1): 1
First sector (2048-23068671, default 2048):
Using default value 2048
Last sector, +sectors or +size{K,M,G} (2048-23068671, default 23068671): +4G
Partition 1 of type Linux and of size 4 GiB is set
```

```
Command (m for help): n
Partition type:
   p   primary (1 primary, 0 extended, 3 free)
   e   extended
Select (default p): p
Partition number (2-4, default 2): 2
First sector (8390656-23068671, default 8390656):
Using default value 8390656
Last sector, +sectors or +size{K,M,G} (8390656-23068671, default 23068671): +6G
Partition 2 of type Linux and of size 6 GiB is set
```

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

**Ans.**

## Formatting And Creating File System Using mkfs Command

```
Applications  Places  Terminal  Sat 19:21  root@localhost:~

File Edit View Search Terminal Help

/dev/sdc1      2048    8390655    4194304    83 Linux
/dev/sdc2      8390656  20973567    6291456    83 Linux
[root@localhost ~]# mkfs.xfs /dev/sdc1
meta-data=/dev/sdc1    isize=512    agcount=4, agsize=262144 blks
        =             sectsz=512    attr=2, projid32bit=1
        =             crc=1        finobt=0, sparse=0
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@localhost ~]# mkfs.ext4 /dev/sdc2
mke2fs 1.42.9 (28-Dec-2013)
Filesystem label=
OS type: Linux
Block size=4096 (log=2)
Fragment size=4096 (log=2)
Stride=0 blocks, Stripe width=0 blocks
393216 inodes, 1572864 blocks
78643 blocks (5.00%) reserved for the super user
First data block=0
Maximum filesystem blocks=1610612736
48 block groups
32768 blocks per group, 32768 fragments per group
8192 inodes per group
Superblock backups stored on blocks:
    32768, 98304, 163840, 229376, 294912, 819200, 884736

Allocating group tables: done
Writing inode tables: done
Creating journal (32768 blocks): done
Writing superblocks and filesystem accounting information: done

[root@localhost ~]#
```

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

**Ans.**

## Creating Mount Point Using **fstab** File

```
Applications Places Terminal

root@localhost:~

File Edit View Search Terminal Help

#
# /etc/fstab
# Created by anaconda on Thu Apr 23 04:18:30 2020
#
# Accessible filesystems, by reference, are maintained under '/dev/disk'
# See man pages fstab(5), findfs(8), mount(8) and/or blkid(8) for more info
#
UUID=17ad28c5-7578-4822-b5a5-0d4bf2d0fee4 / xfs defaults 0 0
UUID=2aab8e9e-39ca-4f97-8c2e-26564426b1e6 /boot xfs defaults 0 0
UUID=e2132d0a-8cd9-4892-a88e-46005b497bc8 swap swap defaults 0 0
/dev/sdb1 /var/ftp/pub ext4 defaults 0 0
/dev/sdc1 /data xfs defaults 0 0
/dev/sdc2 /music ext4 defaults 0 0
~
```

## Verifying Mount Point Is Created

```
Applications Places Terminal

root@localhost:~

File Edit View Search Terminal Help

8.0K ./local/share/keyrings
32K ./local/share/Trash/info
316K ./local/share/Trash/files
348K ./local/share/Trash
696K ./local/share
696K ./local
0 ./Desktop
0 ./Downloads
0 ./Templates
0 ./Public
0 ./Documents
0 ./Music
416K ./Pictures
0 ./Videos
4.0K ./ssh
5.2M
[root@localhost ~]# du -h /dev/sdc
0 /dev/sdc
[root@localhost ~]# df -h /dev/sdc
Filesystem      Size  Used Avail Use% Mounted on
devtmpfs        975M   0  975M   0% /dev
[root@localhost ~]# df -h
Filesystem      Size  Used Avail Use% Mounted on
/dev/sda2       20G   4.1G   16G   21% /
devtmpfs        975M   0  975M   0% /dev
tmpfs           991M   0  991M   0% /dev/shm
tmpfs           991M  11M  980M   2% /run
tmpfs           991M   0  991M   0% /sys/fs/cgroup
/dev/sdb1       9.8G   4.3G   5.0G   46% /var/ftp/pub
/dev/sda1       497M  155M  343M   32% /boot
tmpfs           199M   24K  199M   1% /run/user/0
/dev/sr0        4.2G   4.2G   0 100% /run/media/root/RHEL-7.6 Server.x86_64
/dev/sdc1       4.0G   33M   4.0G   1% /data
/dev/sdc2       5.8G   24M   5.5G   1% /music
[root@localhost ~]#
```

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

Ans. Creating 1Gb File Using **seq > 1000000** Command



A terminal window with a title bar containing 'Applications', 'Places', and 'Terminal'. The terminal shows the following commands and output:

```
root@localhost:/  
File Edit View Search Terminal Help  
[root@localhost music]# cd /  
[root@localhost /]# du -h /data  
848M    /data  
[root@localhost /]# du -h /music  
16K     /music/lost+found  
848M    /music  
[root@localhost /]#
```

**#Here The File Created Is Having 848 Mb Which Is Closest To 1Gb**

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

**Ans. Verify Disk Usage Using `df -h` Command**



```
[root@localhost ~]# df -h
```

Filesystem	Size	Used	Avail	Use%	Mounted on
/dev/sda2	20G	4.1G	16G	21%	/
devtmpfs	975M	0	975M	0%	/dev
tmpfs	991M	0	991M	0%	/dev/shm
tmpfs	991M	11M	980M	2%	/run
tmpfs	991M	0	991M	0%	/sys/fs/cgroup
/dev/sdb1	9.8G	4.3G	5.0G	46%	/var/ftp/pub
/dev/sda1	497M	155M	343M	32%	/boot
tmpfs	199M	28K	199M	1%	/run/user/0
/dev/sr0	4.2G	4.2G	0	100%	/run/media/root/RHEL-7.6 Server.x86_64
/dev/sdc1	4.0G	880M	3.2G	22%	/data
/dev/sdc2	5.8G	872M	4.7G	16%	/music

```
[root@localhost ~]#
```