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LETS UPGRADE

LINUX ADMINISTRATION ESSENTIALS

ASSIGNMENT DAY 5

04 DECEMBER 2020

QUESTION 1

1. Add a 10GB disk to the CentOS.

```
guru@pyimagesearch-gurus: ~
guru@pyimagesearch-gurus:~$ workon gurus
(gurus) guru@pyimagesearch-gurus:~$ lsblk
NAME   MAJ:MIN RM   SIZE RO TYPE MOUNTPOINT
sda      8:0    0    64G  0 disk
├─sda1   8:1    0    62G  0 part /
├─sda2   8:2    0     1K  0 part
└─sda5   8:5    0     2G  0 part [SWAP]
sdb      8:16   0    10G  0 disk
sr0     11:0    1  1024M  0 rom
(gurus) guru@pyimagesearch-gurus:~$
```

New disk “sdb” is created with 10 GB space.

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

```
Last sector, +sectors or +size{K,M,G} (8390656-20971519, default 20971519): ^C(g
urus) guru@pyimagesearch-gurus:~$ lsblk
NAME   MAJ:MIN RM   SIZE RO TYPE MOUNTPOINT
sda      8:0    0    64G  0 disk
├─sda1   8:1    0    62G  0 part /
├─sda2   8:2    0     1K  0 part
└─sda5   8:5    0     2G  0 part [SWAP]
sdb      8:16   0    10G  0 disk
└─sdb1   8:17   0     4G  0 part
sr0     11:0    1  1024M  0 rom
(gurus) guru@pyimagesearch-gurus:~$ sudo fdisk /dev/sdb

Command (m for help): n
Partition type:
   p   primary (1 primary, 0 extended, 3 free)
   e   extended
Select (default p): p
Partition number (1-4, default 2):
Using default value 2
First sector (8390656-20971519, default 8390656): 20971520
Value out of range.
First sector (8390656-20971519, default 8390656):
Using default value 8390656
Last sector, +sectors or +size{K,M,G} (8390656-20971519, default 20971519): +6G
```

```
Information: You may need to update /etc/fstab.

(gurus) guru@pyimagesearch-gurus:~$ sudo fdisk /dev/sdb

Command (m for help): ^C(gurus) guru@pyimagesearch-gurus:~$ lsblk
NAME   MAJ:MIN RM   SIZE RO TYPE MOUNTPOINT
sda      8:0    0    64G  0 disk
├─sda1   8:1    0    62G  0 part /
├─sda2   8:2    0     1K  0 part
└─sda5   8:5    0     2G  0 part [SWAP]
sdb      8:16   0    10G  0 disk
├─sdb1   8:17   0     4G  0 part
└─sdb2   8:18   0     6G  0 part
sr0     11:0    1  1024M  0 rom
(gurus) guru@pyimagesearch-gurus:~$
```

The partitions “sdb1” and “sdb2” of sizes 4GB and 6GB respectively are created.

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

```
(gurus) guru@pyimagesearch-gurus:~$ sudo mkfs.xfs /dev/sdb1
meta-data=/dev/sdb1              isize=256    agcount=4, agsize=262144 blks
         =                       sectsz=512   attr=2, projid32bit=0
data     =                       bsize=4096   blocks=1048576, imaxpct=25
         =                       sunit=0      swidth=0 blks
naming   =version 2              bsize=4096   ascii-ci=0
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
(gurus) guru@pyimagesearch-gurus:~$
(gurus) guru@pyimagesearch-gurus:~$
```

```
(gurus) guru@pyimagesearch-gurus:~$ sudo mkfs.ext4 /dev/sdb2
mke2fs 1.42.9 (4-Feb-2014)
Filesystem label=
OS type: Linux
Block size=4096 (log=2)
Fragment size=4096 (log=2)
Stride=0 blocks, Stripe width=0 blocks
393216 inodes, 1572608 blocks
78630 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
```

```
(gurus) guru@pyimagesearch-gurus:~$ blkid
(gurus) guru@pyimagesearch-gurus:~$ sudo blkid
/dev/sda1: UUID="7b2aa287-5f25-41e7-9d88-fe5c047f4de8" TYPE="ext4"
/dev/sda5: UUID="d890de8d-02ca-49ab-a887-7a8ac112bec6" TYPE="swap"
/dev/sdb1: UUID="d1dc8e54-2221-45b5-845c-aa143a0af374" TYPE="xfs"
/dev/sdb2: UUID="28b16c84-645a-434f-8d88-efe005b4b4e3" TYPE="ext4"
(gurus) guru@pyimagesearch-gurus:~$
```

sdb1 and sdb2 are formatted to xfs and ext4 file system respectively.

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

```
(gurus) guru@pyimagesearch-gurus:~$ mkdir /data
mkdir: cannot create directory ‘/data’: Permission denied
(gurus) guru@pyimagesearch-gurus:~$ sudo mkdir /data
(gurus) guru@pyimagesearch-gurus:~$ sudo mount /dev/sdb1 /data
(gurus) guru@pyimagesearch-gurus:~$ sudo mkdir /music
(gurus) guru@pyimagesearch-gurus:~$ sudo mount /dev/sdb2 /music
(gurus) guru@pyimagesearch-gurus:~$ lsblk
NAME   MAJ:MIN RM   SIZE RO TYPE MOUNTPOINT
sda      8:0    0    64G  0 disk
├─sda1   8:1    0    62G  0 part /
├─sda2   8:2    0     1K  0 part
└─sda5   8:5    0     2G  0 part [SWAP]
sdb      8:16   0    10G  0 disk
├─sdb1   8:17   0     4G  0 part /data
└─sdb2   8:18   0     6G  0 part /music
sr0     11:0    1  1024M  0 rom
(gurus) guru@pyimagesearch-gurus:~$
```

```
guru@pyimagesearch-gurus: ~
# /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).
#
# <file system> <mount point>   <type>  <options>       <dump>  <pass>
# / was on /dev/sda1 during installation
UUID=7b2aa287-5f25-41e7-9d88-fe5c047f4de8 /               ext4    errors=remount-ro 0       1
# swap was on /dev/sda5 during installation
UUID=d890de8d-02ca-49ab-a887-7a8ac112bec6 none            swap    sw              0       0
# swap was on /dev/sdb1
UUID=d1dc8e54-2221-45b5-845c-aa143a0af374 /data           xfs     defaults        0       0
#swap was on /dev/sdb2
UUID=28b16c84-645a-434f-8d88-efe005b4b4e3 /music          ext4    defaults        0       0
~
~
~
~
~
~
~
~
"/etc/fstab" [readonly] 15L, 825C                                                 1,1           All
```

sdb1 and sdb2 ar mounted in /data and /music directory respectively.

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

```
(gurus) guru@pyimagesearch-gurus:~$ dd if=/dev/sdb1 of=/data/text1.txt bs=1GB count=1
dd: failed to open ‘/dev/sdb1’: Permission denied
(gurus) guru@pyimagesearch-gurus:~$ sudo dd if=/dev/sdb1 of=/data/text1.txt bs=1GB count=1
1+0 records in
1+0 records out
1000000000 bytes (1.0 GB) copied, 3.62191 s, 276 MB/s
```

```
(gurus) guru@pyimagesearch-gurus:~$ sudo dd if=/dev/sdb2 of=/music/text2.txt bs=1GB count=1
1+0 records in
1+0 records out
1000000000 bytes (1.0 GB) copied, 3.33071 s, 300 MB/s
(gurus) guru@pyimagesearch-gurus:~$ df -h
Filesystem      Size  Used Avail Use% Mounted on
udev            991M  8.0K  991M   1% /dev
tmpfs           201M  972K  200M   1% /run
/dev/sda1        61G   12G   46G  21% /
none            4.0K     0  4.0K   0% /sys/fs/cgroup
none            5.0M     0  5.0M   0% /run/lock
none           1001M  224K 1001M   1% /run/shm
none            100M   48K  100M   1% /run/user
/dev/sdb1       4.0G  986M  3.1G  25% /data
/dev/sdb2       5.8G  966M  4.6G  18% /music
(gurus) guru@pyimagesearch-gurus:~$
```

Text files “text1” and “text2”, each of size 1GB is created on /data and /music respectively.

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

```
(gurus) guru@pyimagesearch-gurus:~$ df -h /data
Filesystem      Size  Used Avail Use% Mounted on
/dev/sdb1       4.0G  986M  3.1G  25% /data
(gurus) guru@pyimagesearch-gurus:~$ df -h /music
Filesystem      Size  Used Avail Use% Mounted on
/dev/sdb2       5.8G  966M  4.6G  18% /music
(gurus) guru@pyimagesearch-gurus:~$
```