

1)

```
Terminal - root@kalilinux: ~
File Edit View Terminal Tabs Help
r0 11:0 1 1024M 0 rom
root@kalilinux:~# fdisk -l /dev/sda
Disk /dev/sda: 37.3 GiB, 40019582464 bytes, 78163247 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
Disklabel type: dos
Disk identifier: 0xcdbdfcbdf

Device Boot Start End Sectors Size Id Type
/dev/sda1 2048 57188351 57186304 27.3G 7 HPFS/NTFS/exFAT
root@kalilinux:~# parted /dev/sda print free
Model: ATA WDC WD400BB-00JH (scsi)
Disk /dev/sda: 40.0GB
Sector size (logical/physical): 512B/512B
Partition Table: msdos
Disk Flags:

Number Start End Size Type File system Flags
1 32.3kB 1049kB 1016kB Free Space
1 1049kB 29.3GB 29.3GB primary ntfs
29.3GB 40.0GB 10.7GB Free Space
root@kalilinux:~#
```

Adding 10 gb disk(it's exactly 10gb.out of 40 ,37.7 is usable in that I took 10gb, remaining is 27.7gb).

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

```
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Changes will remain in memory only, until you decide to write them.
Be careful before using the write command.

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):
First sector (57188352-78163246, default 57188352):
Last sector, +sectors or +size{K,M,G,T,P} (57188352-78163246, default 78163246):
+4G

Created a new partition 2 of type 'Linux' and of size 4 GiB.

Command (m for help): p
Disk /dev/sda: 37.3 GiB, 40019582464 bytes, 78163247 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
Disklabel type: dos
Disk identifier: 0xcdbdfcbdf

Device      Boot      Start          End      Sectors      Size Id Type
/dev/sda1                2048 57188351 57186304 27.3G  7 HPFS/NTFS/exFAT
/dev/sda2           57188352 65576959  8388608    4G 83 Linux

Command (m for help):
```



```
Terminal - root@kalilinux: ~
File Edit View Terminal Tabs Help
root@kalilinux:~# fdisk /dev/sda

Welcome to fdisk (util-linux 2.32.1).
Changes will remain in memory only, until you decide to write them.
Be careful before using the write command.

Command (m for help): n
Partition type
  p   primary (2 primary, 0 extended, 2 free)
  e   extended (container for logical partitions)
Select (default p): p
Partition number (3,4, default 3):
First sector (65576960-78163246, default 65576960):
Last sector, +sectors or +size{K,M,G,T,P} (65576960-78163246, default 78163246):
+6G

Created a new partition 3 of type 'Linux' and of size 6 GiB.

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

root@kalilinux:~#
```

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

```
Terminal - root@kalilinux: ~
File Edit View Terminal Tabs Help
Command (m for help): w
The partition table has been altered.
Calling ioctl() to re-read partition table.
Syncing disks.

root@kalilinux:~# mkfs.xfs /dev/sda2
meta-data=/dev/sda2            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@kalilinux:~# mkfs.ext4 /dev/sda3
mke2fs 1.44.4 (18-Aug-2018)
Creating filesystem with 1572864 4k blocks and 393216 inodes
Filesystem UUID: bd774d0e-cd03-496c-a6fe-f82457705dcb
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

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```

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


```
Terminal - root@kalilinux: ~
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root@kalilinux:~# mkdir /data
root@kalilinux:~# mount /dev/sda2 /data
root@kalilinux:~# mkdir /music
root@kalilinux:~# mount /dev/sda3 /music
root@kalilinux:~# lsblk
NAME        MAJ:MIN RM   SIZE RO TYPE MOUNTPOINT
sda          8:0    0  37.3G  0 disk
├─sda1       8:1    0  27.3G  0 part
├─sda2       8:2    0    4G    0 part /data
└─sda3       8:3    0    6G    0 part /music
sdb          8:16   0 298.1G  0 disk
├─sdb1       8:17   0   500M  0 part
├─sdb2       8:18   0 102.3G  0 part /media/root/B020744120741118
├─sdb3       8:19   0  97.7G  0 part /media/root/5CEA6E8AEA6E606E
├─sdb4       8:20   0    1K    0 part
├─sdb5       8:21   0  95.7G  0 part /
└─sdb6       8:22   0    2G    0 part [SWAP]
sr0         11:0    1 1024M  0 rom
root@kalilinux:~#
```

```
Terminal - root@kalilinux: ~
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root@kalilinux:~# df -h
Filesystem      Size  Used Avail Use% Mounted on
udev            990M     0  990M   0% /dev
tmpfs           201M   816K  201M   1% /run
/dev/sdb5        94G   3.2G   86G   4% /
tmpfs           1005M     0  1005M   0% /dev/shm
tmpfs           5.0M     0   5.0M   0% /run/lock
tmpfs           1005M     0  1005M   0% /sys/fs/cgroup
/dev/sdb3        98G   20G   79G  20% /media/root/5CEA6E8AEA6E606E
/dev/sdb2       103G   42G   61G  41% /media/root/B020744120741118
/dev/sda2        4.0G    61M   4.0G   2% /data
/dev/sda3        5.9G    24M   5.6G   1% /music
/dev/sda1        28G   7.9G   20G  29% /media/root/New Volume
root@kalilinux:~#
```

```
Terminal - rohith@kalilinux: ~
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# /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/sdb5 during installation
UUID=60c687e4-2a07-4b0c-843e-cel70e741b8e / ext4 errors=remount-ro 0 1
# swap was on /dev/sdb6 during installation
UUID=3e05eeaf-d73e-4fa2-a99c-435d561b79dc none swap sw 0 0
/dev/sr0 /media/cdrom0 udf,iso9660 user,noauto 0 0
/dev/sda2 /data xfs default 0 0
/dev/sda3 /music ext4 default 0 0

:wq!
```


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

```
Terminal - root@kalilinux: ~
File Edit View Terminal Tabs Help
dd: unrecognized operand '/dev/sda2'
Try 'dd --help' for more information.
root@kalilinux:~# dd /data
dd: unrecognized operand '/data'
Try 'dd --help' for more information.
root@kalilinux:~# dd if=/dev/sda2 of=/data/test.txt bs=1GB count=1
1+0 records in
1+0 records out
1000000000 bytes (1.0 GB, 954 MiB) copied, 47.0459 s, 21.3 MB/s
root@kalilinux:~# lsblk
NAME        MAJ:MIN RM   SIZE RO TYPE MOUNTPOINT
sda          8:0    0  37.3G  0 disk
├─sda1       8:1    0  27.3G  0 part /media/root/New Volume
└─sda2       8:2    0    4G   0 part /data
sda3         8:3    0    6G   0 part /music
sdb          8:16   0 298.1G  0 disk
├─sdb1       8:17   0   500M  0 part
├─sdb2       8:18   0 102.3G  0 part
├─sdb3       8:19   0   97.7G  0 part
├─sdb4       8:20   0    1K   0 part
├─sdb5       8:21   0   95.7G  0 part /
└─sdb6       8:22   0    2G   0 part [SWAP]
sr0         11:0    1 1024M  0 rom
root@kalilinux:~#
```

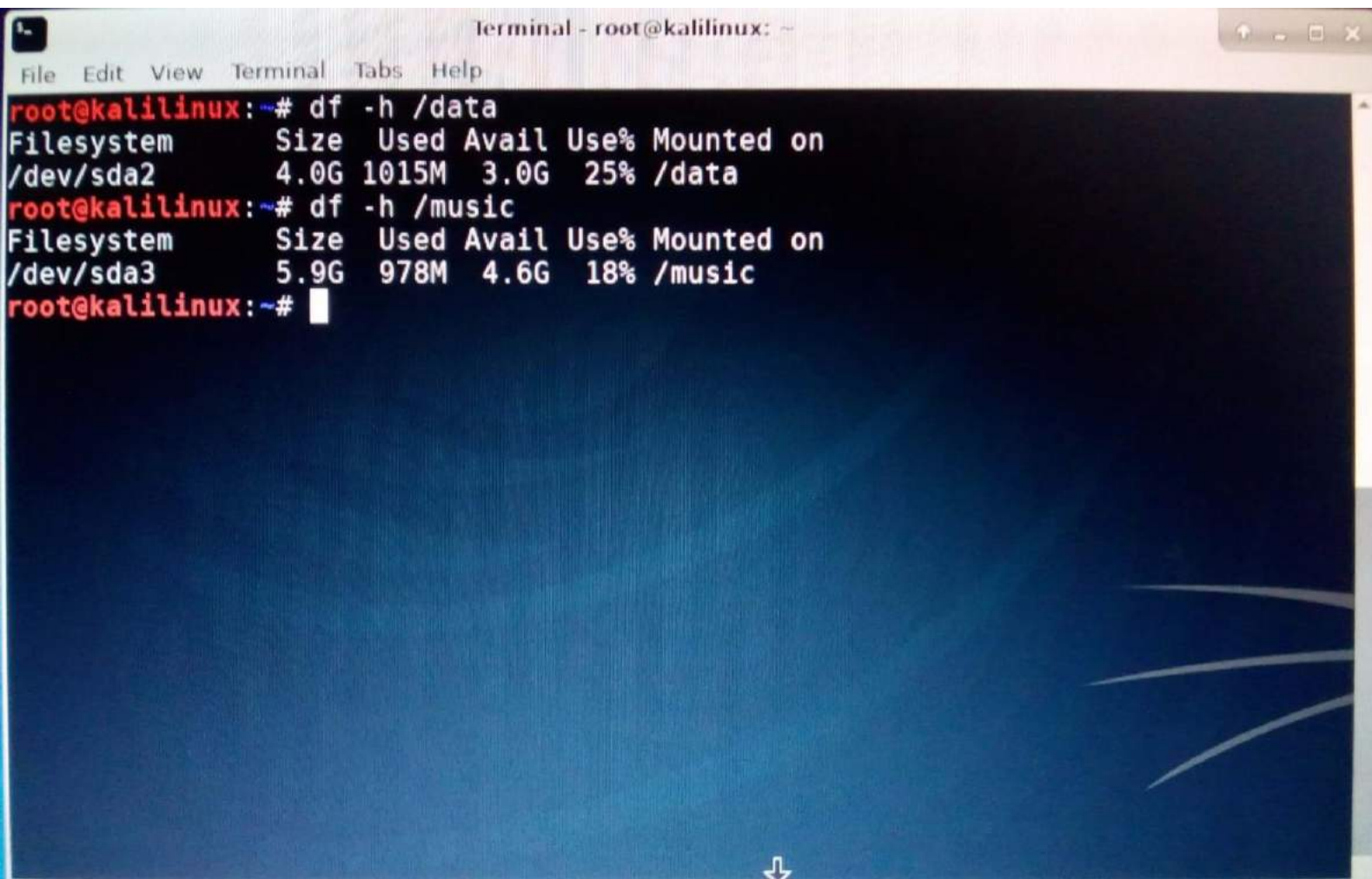
```
Terminal - root@kalilinux: ~
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sdb      8:16    0 298.1G    0 disk
├─sdb1    8:17    0   500M    0 part
├─sdb2    8:18    0 102.3G    0 part
├─sdb3    8:19    0   97.7G    0 part
├─sdb4    8:20    0     1K    0 part
├─sdb5    8:21    0   95.7G    0 part /
└─sdb6    8:22    0     2G    0 part [SWAP]
sr0      11:0    1  1024M    0 rom

root@kalilinux:~# df -h
Filesystem      Size  Used Avail Use% Mounted on
udev            990M     0  990M   0% /dev
tmpfs           201M   804K   201M   1% /run
/dev/sdb5        94G   3.2G   86G    4% /
tmpfs          1005M     0 1005M   0% /dev/shm
tmpfs           5.0M     0   5.0M   0% /run/lock
tmpfs          1005M     0 1005M   0% /sys/fs/cgroup
/dev/sda2        4.0G  1015M   3.0G   25% /data
/dev/sda3        5.9G    24M   5.6G    1% /music
/dev/sda1        28G   7.9G   20G   29% /media/root/New Volume

root@kalilinux:~# dd if=/dev/sda3 of=/music/test1.txt bs=1GB count=1
1+0 records in
1+0 records out
1000000000 bytes (1.0 GB, 954 MiB) copied, 48.9996 s, 20.4 MB/s
root@kalilinux:~#
```

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

A terminal window titled "Terminal - root@kalilinux: ~" with a menu bar (File, Edit, View, Terminal, Tabs, Help) and standard window controls. The terminal shows two disk usage commands and their outputs. The first command is "df -h /data", which outputs a table with columns: Filesystem, Size, Used, Avail, Use%, and Mounted on. The second command is "df -h /music", which outputs a similar table. The prompt "root@kalilinux:~#" is shown at the end of the output for the second command.

```
root@kalilinux:~# df -h /data
Filesystem      Size  Used Avail Use% Mounted on
/dev/sda2        4.0G 1015M   3.0G  25% /data
root@kalilinux:~# df -h /music
Filesystem      Size  Used Avail Use% Mounted on
/dev/sda3        5.9G  978M   4.6G  18% /music
root@kalilinux:~#
```