



Tools



New



Settings



Discard



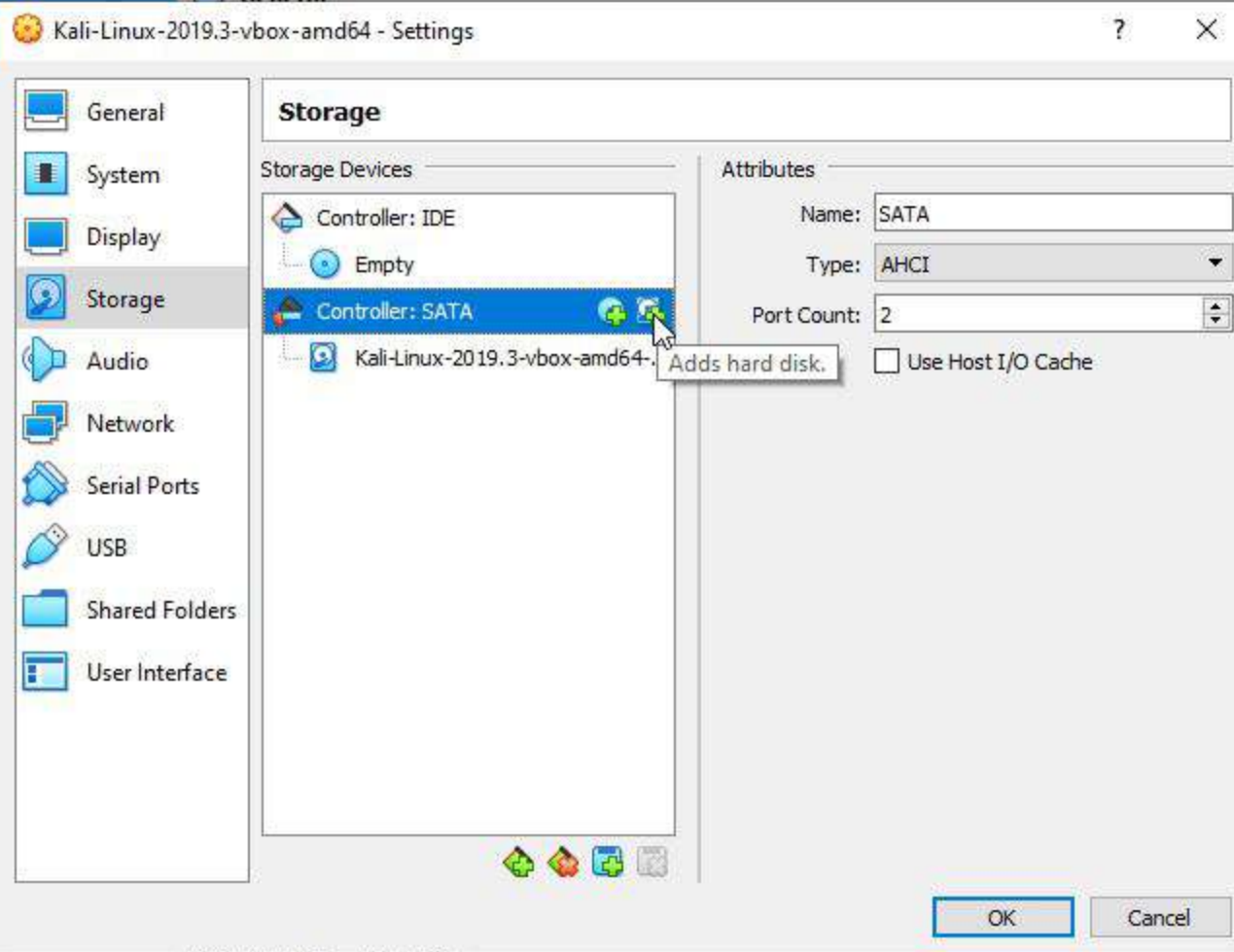
Start



Kali-Linux-2019.3-vbox-amd64

Powered Off

General



Preview

**Kali-Linux-2019.3-  
vbox-amd64**USB Controller: Ohci, EHCI  
Device Filters: 0 (0 active)

Shared folders

None

Description

Kali Rolling (2019.3) x64  
2019-08-30

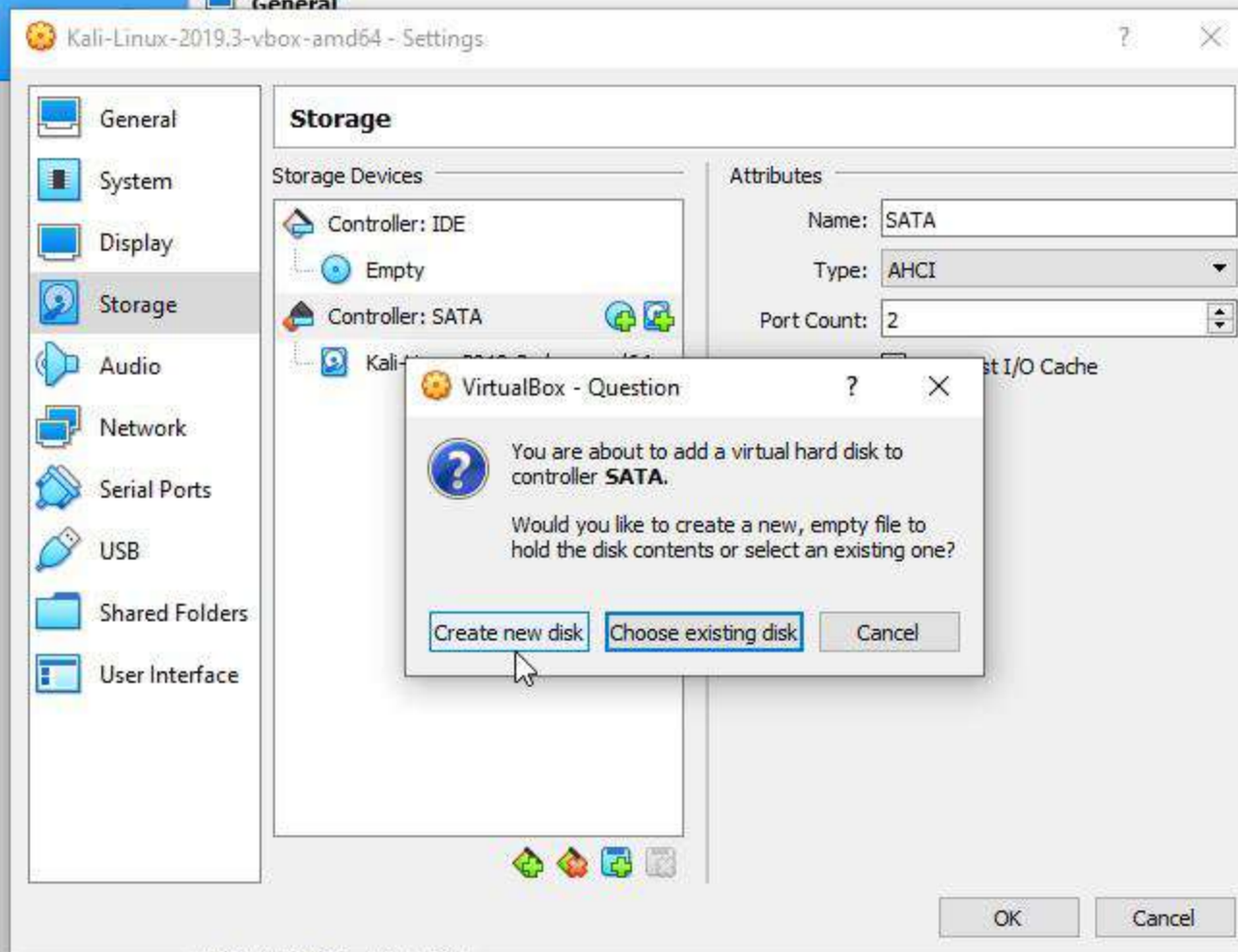
Type here to search

04:42 AM  
12-12-2020



Kali-Linux-2019.3-vbox-amd64  
Powered Off

General



Preview

Kali-Linux-2019.3-  
vbox-amd64



Tools



Kali-Linux-2019.3-vbox-amd64

Powered Off



New



Settings



Discard



Start

General

Kali-Linux-2019.3-vbox-amd64 - Settings



General



System



Display



Storage



Audio



Network



Serial Ports



USB



Shared Folders



User Interface

← Create Virtual Hard Disk

## Hard disk file type

Please choose the type of file that you would like to use for the new virtual hard disk. If you do not need to use it with other virtualization software you can leave this setting unchanged.

☒ VDI (VirtualBox Disk Image)☐ VHD (Virtual Hard Disk)☐ VMDK (Virtual Machine Disk)

Expert Mode

Next

Cancel



Preview

**Kali-Linux-2019.3-  
vbox-amd64**USB Controller: OHCI, EHCI  
Device Filters: 0 (0 active)

## Shared folders

None

## Description

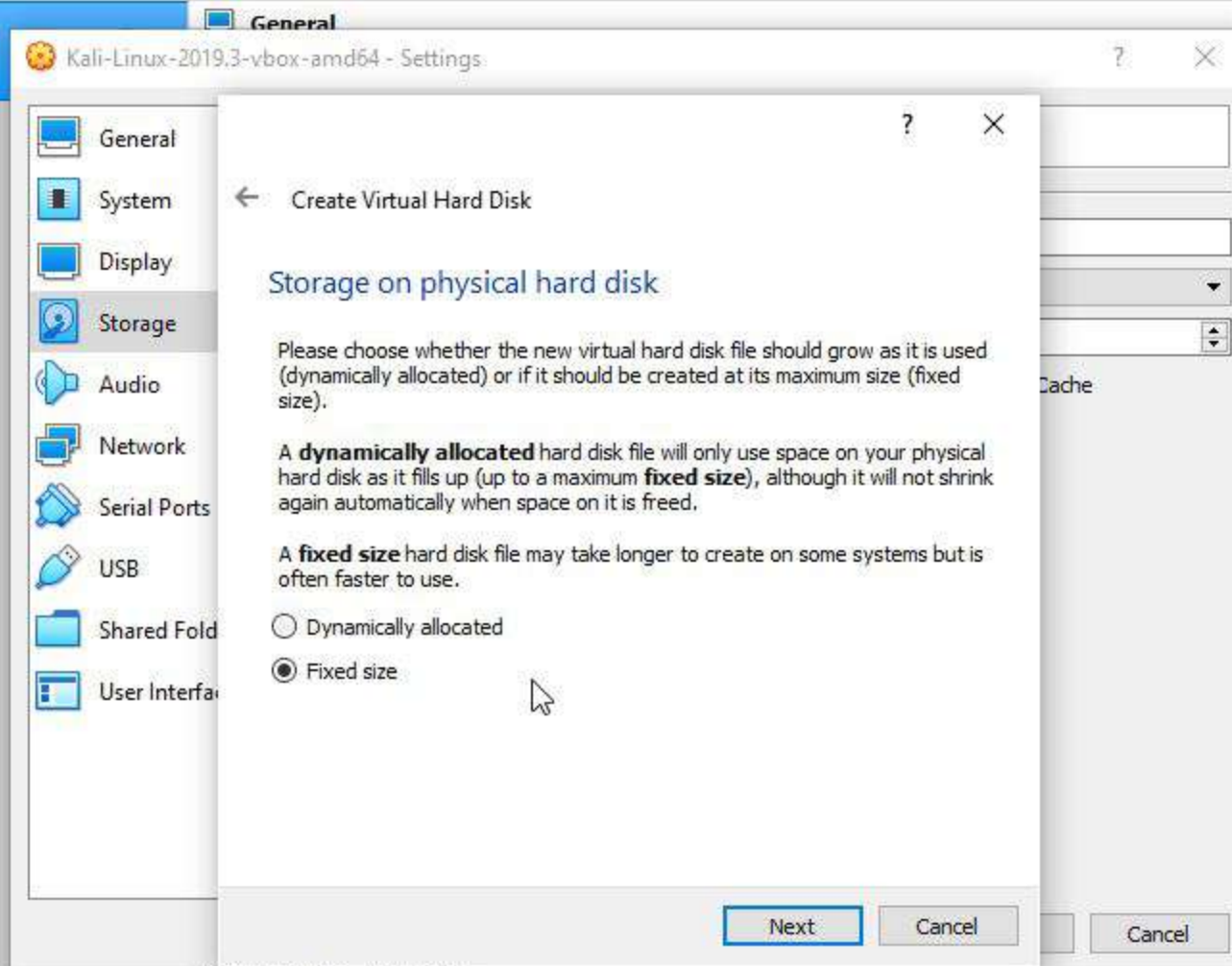
Kali Rolling (2019.3) x64  
2019-08-30

Type here to search

04:43 AM  
12-12-2020



Kali-Linux-2019.3-vbox-amd64  
Powered Off



Preview

Kali-Linux-2019.3-  
vbox-amd64





Tools



Kali-Linux-2019.3-vbox-amd64

Powered Off



New



Settings



Discard



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Kali-Linux-2019.3-vbox-amd64 - Settings



General



System



Display



Storage



Audio



Network



Serial Ports



USB



Shared Folders



User Interface

← Create Virtual Hard Disk

## File location and size

Please type the name of the new virtual hard disk file into the box below or click on the folder icon to select a different folder to create the file in.

sers\MAA DURGA\VirtualBox VMs\Kali-Linux-2019.3-vbox-amd64\disk2.vdi

Select the size of the virtual hard disk in megabytes. This size is the limit on the amount of file data that a virtual machine will be able to store on the hard disk.

4.00 MB 10.00 GB 2.00 TB

Create

Cancel

## Shared folders

None

## Description

Kali Rolling (2019.3) x64  
2019-08-30

Preview

Kali-Linux-2019.3-  
vbox-amd64



Type here to search

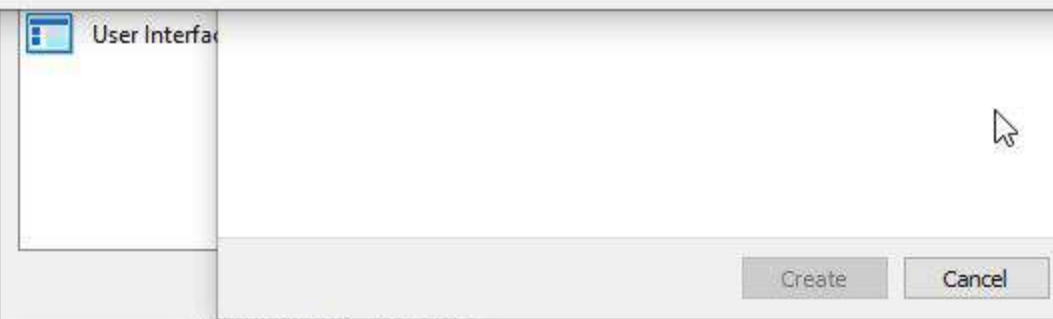
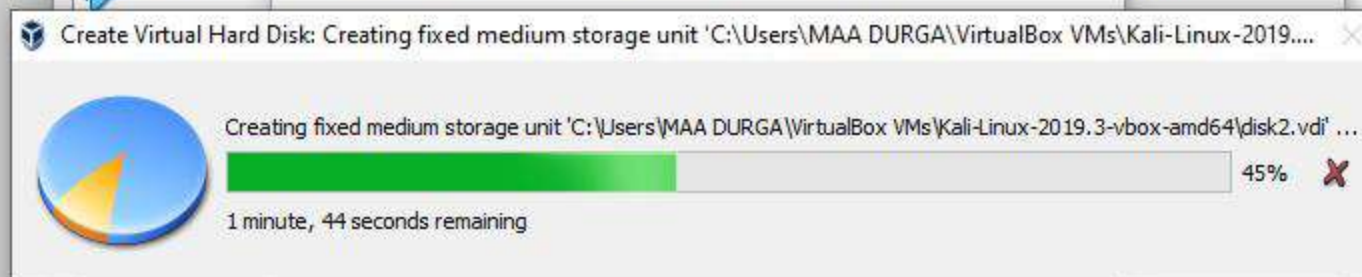


04:44 AM  
12-12-2020



Kali-Linux-2019.3-vbox-amd64  
Powered Off

## General



USB Controller: USB, EHCI  
Device Filters: 0 (0 active)

## Shared folders

None

## Description

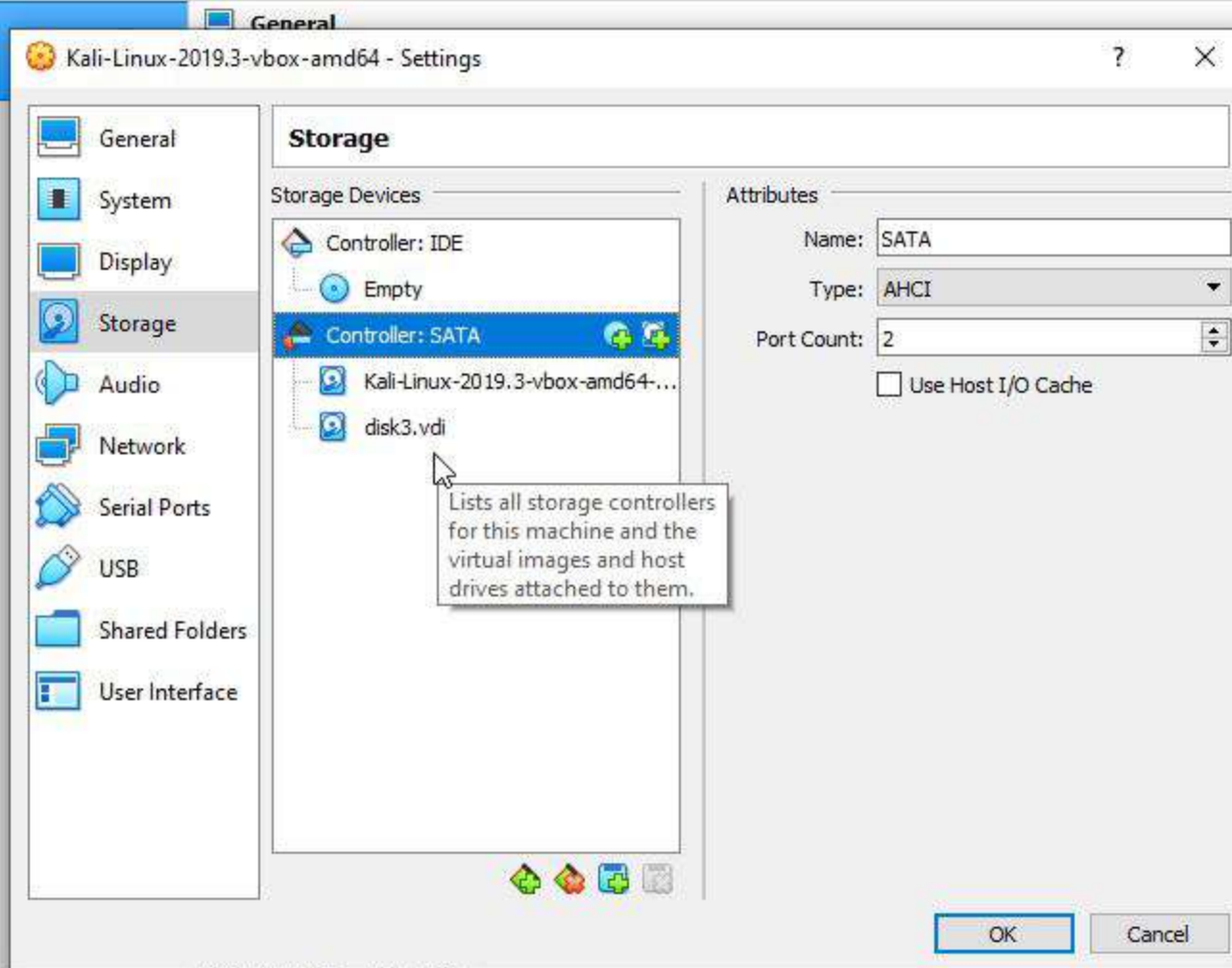
Kali Rolling (2019.3) x64  
2019-08-30

## Preview

Kali-Linux-2019.3-  
vbox-amd64



Kali-Linux-2019.3-vbox-amd64  
Powered Off



Preview

Kali-Linux-2019.3-  
vbox-amd64

USB Controller: OHCI, EHCI  
Device Filters: 0 (0 active)

Shared folders

None

Description

Kali Rolling (2019.3) x64  
2019-08-30



Type here to search



04:55 AM  
12-12-2020



File Edit View Search Terminal Tabs Help

root@kali: ~

root@kali: ~

root@kali:~# # Question 1 - Add a 10 GB disk to the machine.

root@kali:~#

root@kali:~# # We have added one 10GB vdi(Virtual Disk Image) from the Virtual Box console

root@kali:~# # And the steps are provided above in detailed manner.

root@kali:~#

root@kali:~# #Now we can check how many disks are attached in system using lsblk -command.

root@kali:~# lsblk

NAME	MAJ:MIN	RM	SIZE	RO	TYPE	MOUNTPOINT
sda	8:0	0	80G	0	disk	
_sda1	8:1	0	78G	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	

root@kali:~#

root@kali:~# # As we can see that a disk of size 10GB has been added having NAME as "sdb".

root@kali:~# #Hence, we can conform that,

root@kali:~# # a disk of size 10GB has been added successfully.

root@kali:~#

root@kali:~#



File Edit View Search Terminal Tabs Help

root@kali: ~

root@kali: ~

```
root@kali:~#  
root@kali:~# # Question 2 - Create two partitions of 4GB and 6GB respectively.
```

```
root@kali:~#  
root@kali:~# # We can do the above partition using fdisk command.
```

```
root@kali:~# fdisk -l  
Disk /dev/sdb: 10 GiB, 10737418240 bytes, 20971520 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
```

```
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: 0x1f520778
```

Device	Boot	Start	End	Sectors	Size	Id	Type
/dev/sda1	*	2048	163577855	163575808	78G	83	Linux
/dev/sda2		163579902	167770111	4190210	2G	5	Extended
/dev/sda5		163579904	167770111	4190208	2G	82	Linux swap / Solaris

```
root@kali:~#  
root@kali:~#  
root@kali:~#  
root@kali:~#  
root@kali:~#
```

File Edit View Search Terminal Tabs Help

root@kali: ~

root@kali: ~

I/O size (minimum/optimal): 512 bytes / 512 bytes

Disklabel type: dos

Disk identifier: 0x1f520778

Device	Boot	Start	End	Sectors	Size	Id	Type
/dev/sda1	*	2048	163577855	163575808	78G	83	Linux
/dev/sda2		163579902	167770111	4190210	2G	5	Extended
/dev/sda5		163579904	167770111	4190208	2G	82	Linux swap / Solaris

root@kali:~#

root@kali:~#

root@kali:~#

root@kali:~#

root@kali:~# # We can see very well that there is a disk of 10GB mounted having id "/dev/sdb".

root@kali:~# # Now we can start partitioning,

root@kali:~#

root@kali:~# fdisk /dev/sdb

Welcome to fdisk (util-linux 2.34).

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 0x2e176fa1.

Command (m for help): n

Partition type

p primary (0 primary, 0 extended, 4 free)

e extended (container for logical partitions)

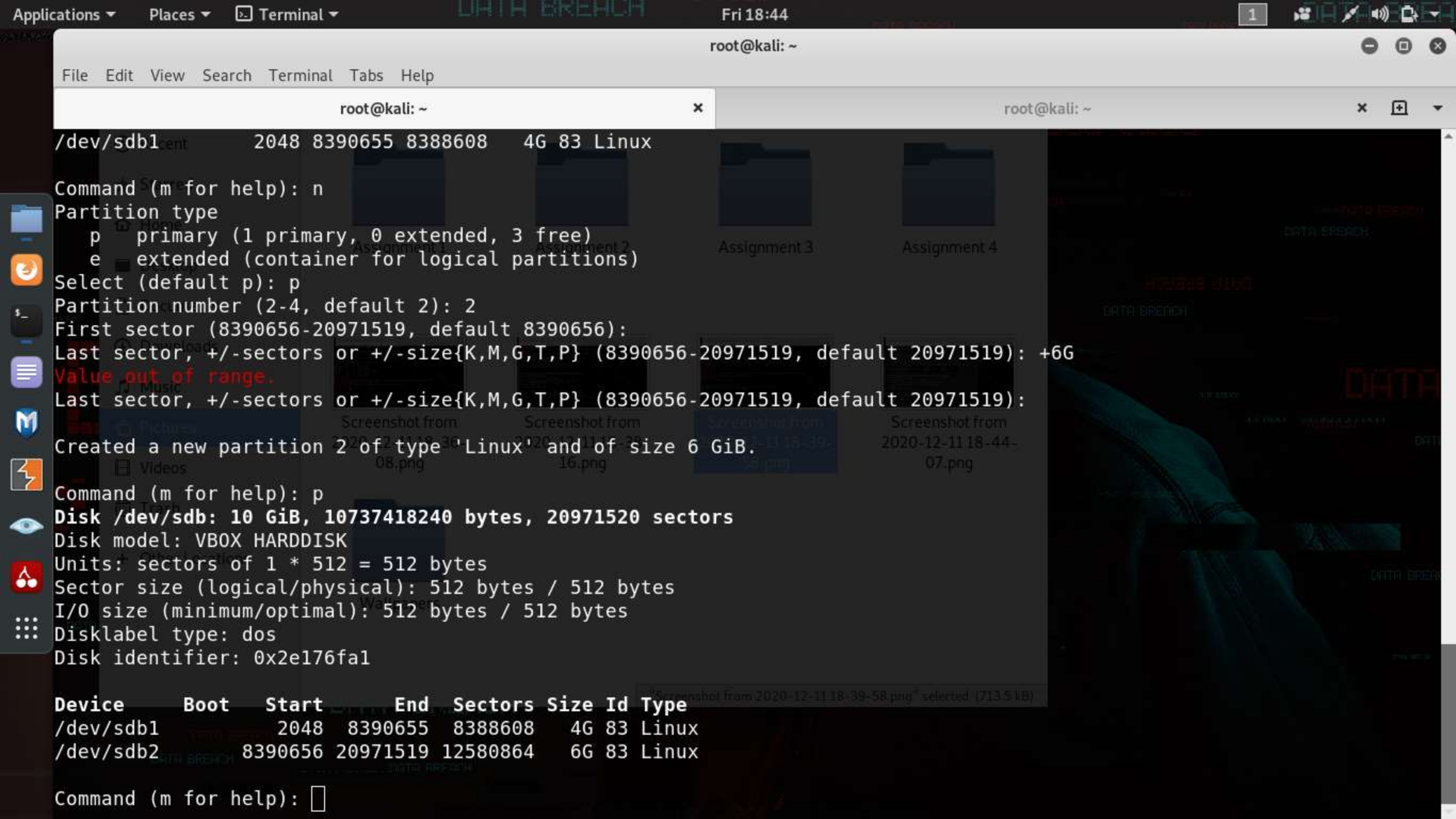
Select (default p):



```
^C
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 (2048-20971519, default 2048):
Last sector, +/-sectors or +/-size{K,M,G,T,P} (2048-20971519, default 20971519): +4G
Created a new partition 1 of type 'Linux' and of size 4 GiB.
Command (m for help): p
Disk /dev/sdb: 10 GiB, 10737418240 bytes, 20971520 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: 0x2e176fa1

Device      Boot Start      End Sectors Size Id Type
/dev/sdb1                2048 8390655 8388608  4G 83 Linux

Command (m for help): n
Partition type
  p primary (1 primary, 0 extended, 3 free)
  e extended (container for logical partitions)
Select (default p):
```



```
/dev/sdb1 2048 8390655 8388608 4G 83 Linux
```

```
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 (8390656-20971519, default 8390656):
```

```
Last sector, +/-sectors or +/-size{K,M,G,T,P} (8390656-20971519, default 20971519): +6G
```

```
Value out of range.
```

```
Last sector, +/-sectors or +/-size{K,M,G,T,P} (8390656-20971519, default 20971519):
```

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

```
Command (m for help): p
```

```
Disk /dev/sdb: 10 GiB, 10737418240 bytes, 20971520 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: 0x2e176fa1
```

Device	Boot	Start	End	Sectors	Size	Id	Type
/dev/sdb1		2048	8390655	8388608	4G	83	Linux
/dev/sdb2		8390656	20971519	12580864	6G	83	Linux

```
Command (m for help):
```



File Edit View Search Terminal Tabs Help

root@kali: ~

root@kali: ~

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

Command (m for help): p

Disk /dev/sdb: 10 GiB, 10737418240 bytes, 20971520 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: 0x2e176fa1

Device	Boot	Start	End	Sectors	Size	Type
/dev/sdb1		2048	8390655	8388608	4G	Linux
/dev/sdb2		8390656	20971519	12580864	6G	Linux

Command (m for help): w

The partition table has been altered.

Calling ioctl() to re-read partition table.

Syncing disks.

root@kali:~# # As we can see from above we created two primary partitions using -fdisk command.

root@kali:~# #Both partitions having ID "/dev/sdb1" of 4G and "/dev/sdb2" of 6G.

root@kali:~# # We saved the parttioning using w command.

root@kali:~#

root@kali:~#

root@kali:~#

root@kali:~#

root@kali:~#

File Edit View Search Terminal Tabs Help

root@kali: ~

root@kali: ~

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

root@kali:~#

root@kali:~#

root@kali:~# # Question 3 - Format 4GB with xfs and 6GB with ext4.

root@kali:~#

root@kali:~# # We can do that with the help of mkfs command.

root@kali:~# # and by providing the ID of disk partition we want to format.

root@kali:~# # xfs file system is not getting installed in kali linux.

root@kali:~# # hence we will format both with ext4 file system.

root@kali:~#

root@kali:~# # Formatting 4GB partition.

root@kali:~# mkfs.ext4 -j /dev/sdb1

mke2fs 1.45.3 (14-Jul-2019)

Creating filesystem with 1048576 4k blocks and 262144 inodes

Filesystem UUID: 0acf2ac2-08e0-46dc-9107-45fe49b6298a

Superblock backups stored on blocks:

32768, 98304, 163840, 229376, 294912, 819200, 884736

Allocating group tables: done

Writing inode tables: done

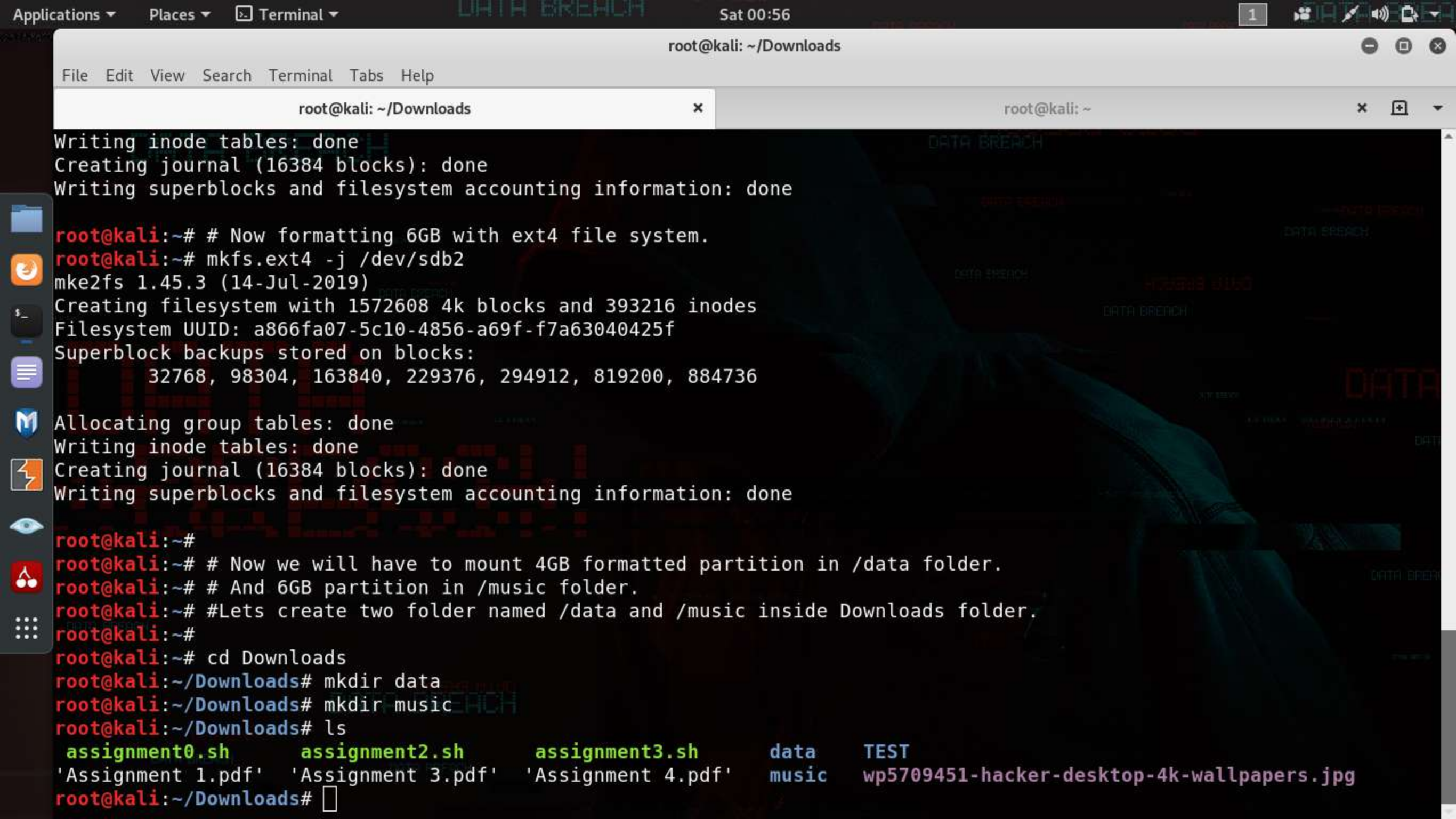
Creating journal (16384 blocks): done

Writing superblocks and filesystem accounting information: done

root@kali:~# # Now formatting 6GB with ext4 file system.

root@kali:~#







root@kali: ~/Downloads

File Edit View Search Terminal Tabs Help

root@kali: ~/Downloads

root@kali: ~

root@kali:~/Downloads# mkdir music

root@kali:~/Downloads# ls

```
assignment0.sh  assignment2.sh  assignment3.sh  data  TEST
'Assignment 1.pdf' 'Assignment 3.pdf' 'Assignment 4.pdf' music  wp5709451-hacker-desktop-4k-wallpapers.jpg
```

root@kali:~/Downloads#

root@kali:~/Downloads# # Now we will mount the 4GB in /data folder.

root@kali:~/Downloads#

root@kali:~/Downloads# mount /dev/sdb1 /data

mount: /data: mount point does not exist.

root@kali:~/Downloads# mount /dev/sdb1 /Downloads/data

mount: /Downloads/data: mount point does not exist.

root@kali:~/Downloads# mount /dev/sdb1 /root/Downloads/data

root@kali:~/Downloads#

root@kali:~/Downloads# # as WE CAN SEE mounting of 4GB partition is done now on /data folder

root@kali:~/Downloads# # Similarly we can mount 6GB partition in /music folder.

root@kali:~/Downloads#

root@kali:~/Downloads# mount /dev/sdb2 /root/Downloads/music

root@kali:~/Downloads#

root@kali:~/Downloads# # We have mounted both the sdb1 and sdb2 in /data and /music folder.

root@kali:~/Downloads# # To see whether it is mounted or not, we can use df -h command.

root@kali:~/Downloads#

root@kali:~/Downloads# df -ah

Filesystem	Size	Used	Avail	Use%	Mounted on
sysfs	0	0	0	-	/sys
proc	0	0	0	-	/proc
udev	927M	0	927M	0%	/dev
devpts	0	0	0	-	/dev/pts
tmpfs	192M	6.2M	186M	4%	/run
/dev/sda1	77G	9.4G	63G	13%	/



tmpfs	960M	0	960M	0%	/sys/fs/cgroup
cgroup2	0	0	0	-	/sys/fs/cgroup/unified
cgroup	0	0	0	-	/sys/fs/cgroup/systemd
pstore	0	0	0	-	/sys/fs/pstore
bpf	0	0	0	-	/sys/fs/bpf
cgroup	0	0	0	-	/sys/fs/cgroup/cpu,cpuacct
cgroup	0	0	0	-	/sys/fs/cgroup/memory
cgroup	0	0	0	-	/sys/fs/cgroup/net_cls,net_prio
cgroup	0	0	0	-	/sys/fs/cgroup/blkio
cgroup	0	0	0	-	/sys/fs/cgroup/perf_event
cgroup	0	0	0	-	/sys/fs/cgroup/rdma
cgroup	0	0	0	-	/sys/fs/cgroup/freezer
cgroup	0	0	0	-	/sys/fs/cgroup/devices
cgroup	0	0	0	-	/sys/fs/cgroup/pids
cgroup	0	0	0	-	/sys/fs/cgroup/cpuset
mqueue	0	0	0	-	/dev/mqueue
hugetlbfs	0	0	0	-	/dev/hugepages
debugfs	0	0	0	-	/sys/kernel/debug
systemd-1	-	-	-	-	/proc/sys/fs/binfmt_misc
binfmt_misc	0	0	0	-	/proc/sys/fs/binfmt_misc
tmpfs	192M	12K	192M	1%	/run/user/132
fusectl	0	0	0	-	/sys/fs/fuse/connections
gvfsd-fuse	0.0K	0.0K	0.0K	-	/run/user/132/gvfs
tmpfs	192M	36K	192M	1%	/run/user/0
gvfsd-fuse	0	0	0	-	/run/user/0/gvfs
/dev/sdb1	3.9G	16M	3.7G	1%	/root/Downloads/data
/dev/sdb2	5.9G	24M	5.6G	1%	/root/Downloads/music

root@kali:~/Downloads#

root@kali:~/Downloads# As we can see /dev/sdb1 and /dev/sdb2 are mounted in respective folders.



```
root@kali:~/Downloads#  
root@kali:~/Downloads# As we can see /dev/sdb1 and /dev/sdb2 are mounted in respective folders.  
bash: As: command not found  
root@kali:~/Downloads#  
root@kali:~/Downloads#  
root@kali:~/Downloads#  
root@kali:~/Downloads#  
root@kali:~/Downloads# # Now we have to create one file of 1GB in each of the mounted folders.  
root@kali:~/Downloads# # We can do that by the help of dd commands.  
root@kali:~/Downloads# # We will create one file in /data folder and one in /music folder of /Downloads  
root@kali:~/Downloads#  
root@kali:~/Downloads# cd data  
root@kali:~/Downloads/data# # Use dd command here.  
root@kali:~/Downloads/data# dd if=/dev/zero of=Demo.img bs=1 count=0 seek=1G  
0+0 records in  
0+0 records out  
0 bytes copied, 0.000511816 s, 0.0 kB/s  
root@kali:~/Downloads/data# ls  
Demo.img  lost+found  
root@kali:~/Downloads/data# # Similarly one inside the /music folder.  
root@kali:~/Downloads/data# cd ..  
root@kali:~/Downloads# cd music  
root@kali:~/Downloads/music# dd if=/dev/zero of=Demo1.img bs=1 count=0 seek=1G  
0+0 records in  
0+0 records out  
0 bytes copied, 0.000178241 s, 0.0 kB/s  
root@kali:~/Downloads/music# ls  
Demo1.img  lost+found  
root@kali:~/Downloads/music#
```



root@kali: ~/Downloads/music

File Edit View Search Terminal Tabs Help

root@kali: ~/Downloads/music

root@kali: ~/Music

root@kali:~/Downloads/music# # Now we will verify disk consumption and disk free for particular mounts.

root@kali:~/Downloads/music# # First for /data mount

root@kali:~/Downloads/music#

root@kali:~/Downloads/music# cd ..

root@kali:~/Downloads# cd data

root@kali:~/Downloads/data# ls

Demo.img lost+found

root@kali:~/Downloads/data# ls -ls Demo.img

0 -rw-r--r-- 1 root root 1073741824 Dec 12 01:43 Demo.img

root@kali:~/Downloads/data# ls -lh Demo.img

-rw-r--r-- 1 root root 1.0G Dec 12 01:43 Demo.img

root@kali:~/Downloads/data#

root@kali:~/Downloads/data# #Now verification of disk consumption.

root@kali:~/Downloads/data#

root@kali:~/Downloads/data# df -h /dev/sdb1

Filesystem	Size	Used	Avail	Use%	Mounted on
/dev/sdb1	3.9G	16M	3.7G	1%	/root/Downloads/data

root@kali:~/Downloads/data#

root@kali:~/Downloads/data# #Similarly for /music folder mount.

root@kali:~/Downloads/data# cd ..

root@kali:~/Downloads# cd music

root@kali:~/Downloads/music# ls

Demo1.img lost+found

root@kali:~/Downloads/music# ls -lh Demo1.img

-rw-r--r-- 1 root root 1.0G Dec 12 01:44 Demo1.img

root@kali:~/Downloads/music#

root@kali:~/Downloads/music# df -h /dev/sdb2

Filesystem	Size	Used	Avail	Use%	Mounted on
/dev/sdb2	5.9G	24M	5.6G	1%	/root/Downloads/music

root@kali:~/Downloads/music#

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high-school students

remove duplicate value from list of tuples based on values from another list

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