

## Part one

### Step 1

```
(josiah@josiah)-[~]
$ sudo ls /dev/sd*
[sudo] password for josiah:
/dev/sda /dev/sda1 /dev/sda2 /dev/sda5 /dev/sdb /dev/sdb1

(josiah@josiah)-[~]
$ sudo ls /dev/sd*
[sudo] password for josiah:
/dev/sda /dev/sda1 /dev/sda2 /dev/sda5 /dev/sdb /dev/sdb1
```

### Step 2

```
(josiah@josiah)-[~]
$ sudo fdisk -l
Disk /dev/sda: 25 GiB, 26843545600 bytes, 52428800 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: 0x89709486

   Device   Boot    Start        End    Sectors   Size Id Type
/dev/sda1   *         2048    49641471   49639424   23.7G 83 Linux
/dev/sda2             49643518   52426751    2783234    1.3G  f W95 Ext'd (LBA)
/dev/sda5             49643520   52426751    2783232    1.3G 82 Linux swap / Solaris

Disk /dev/sdb: 1 GiB, 1073741824 bytes, 2097152 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: 0x03dc014a

   Device   Boot  Start        End    Sectors   Size Id Type
/dev/sdb1             2048    2097151    2095104   1023M 83 Linux
```

### Step 3

```
(josiah@josiah)-[~]
$ sudo parted -l
Model: ATA VBOX HARDDISK (scsi)
Disk /dev/sda: 26.8GB
Sector size (logical/physical): 512B/512B
Partition Table: msdos
Disk Flags:

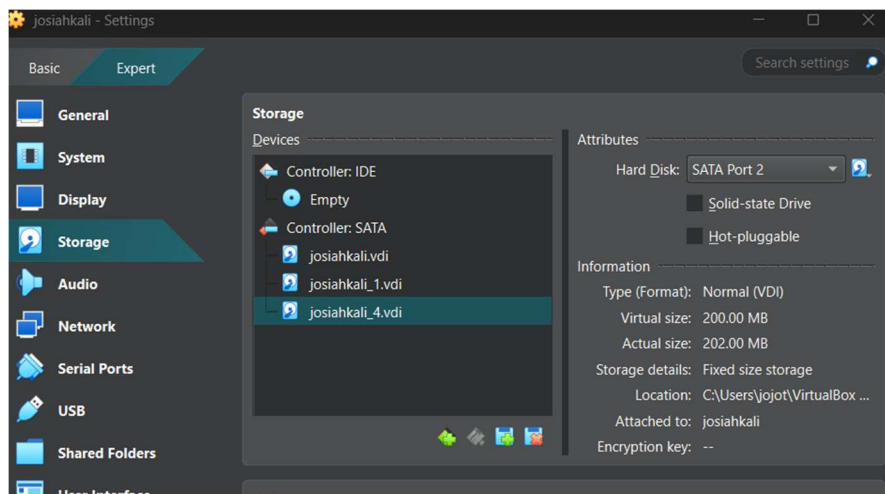
Number  Start   End     Size    Type     File system  Flags
  1      1049kB  25.4GB  25.4GB  primary  ext4          boot
  2      25.4GB  26.8GB  1425MB  extended
  5      25.4GB  26.8GB  1425MB  logical  linux-swap(v1) swap

Model: ATA VBOX HARDDISK (scsi)
Disk /dev/sdb: 1074MB
Sector size (logical/physical): 512B/512B
Partition Table: msdos
Disk Flags:

Number  Start   End     Size    Type     File system  Flags
  1      1049kB  1074MB  1073MB  primary
```

Part two

Step 1-2



Step 3

```
(josiah@josiah)-[~]
$ sudo ls /dev/sd*
[sudo] password for josiah:
/dev/sda /dev/sda1 /dev/sda2 /dev/sda5 /dev/sdb /dev/sdb1 /dev/sdc

(josiah@josiah)-[~]
$ sudo fdisk -l
Disk /dev/sdb: 1 GiB, 1073741824 bytes, 2097152 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: 0x03dc014a

Device      Boot Start      End Sectors  Size Id Type
/dev/sdb1                2048 2097151 2095104 1023M 83 Linux

Disk /dev/sdc: 200 MiB, 209715200 bytes, 409600 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: 25 GiB, 26843545600 bytes, 52428800 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: 0x89709486
```

```
(josiah@josiah)-[~]
$ sudo parted -l
Model: ATA VBOX HARDDISK (scsi)
Disk /dev/sda: 26.8GB
Sector size (logical/physical): 512B/512B
Partition Table: msdos
Disk Flags:

Number  Start   End     Size    Type     File system  Flags
  1      1049kB  25.4GB  25.4GB  primary  ext4          boot
  2      25.4GB  26.8GB  1425MB  extended
  5      25.4GB  26.8GB  1425MB  logical  linux-swap(v1) swap

Model: ATA VBOX HARDDISK (scsi)
Disk /dev/sdb: 1074MB
Sector size (logical/physical): 512B/512B
Partition Table: msdos
Disk Flags:

Number  Start   End     Size    Type     File system  Flags
  1      1049kB  1074MB  1073MB  primary

Error: /dev/sdc: unrecognised disk label
Model: ATA VBOX HARDDISK (scsi)
Disk /dev/sdc: 210MB
Sector size (logical/physical): 512B/512B
Partition Table: unknown
Disk Flags:
```

### Part 3

#### Step 1

```

(josiah@josiah)-[~]
$ sudo fdisk /dev/sdc

Welcome to fdisk (util-linux 2.40.2).
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.
Created a new DOS (MBR) disklabel with disk identifier 0x9fecaf20.

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 (2048-409599, default 2048):
Last sector, +/-sectors or +/-size[K,M,G,T,P] (2048-409599, default 409599):

Created a new partition 1 of type 'Linux' and of size 199 MiB.

Command (m for help): save
Created a new partition 1 of type 'Linux native' and of size 149 MiB.
Created a new partition 2 of type 'Linux swap' and of size 47.1 MiB.
Created a new partition 3 of type 'Whole disk' and of size 196.1 MiB.
Created a new Sun disklabel.

Command (m for help): quit

```

## Step 2

```

(josiah@josiah)-[~]
$ sudo mkfs.ext4 /dev/sdc
mke2fs 1.47.1 (20-May-2024)
Creating filesystem with 204800 1k blocks and 51200 inodes
Filesystem UUID: aafb0716-c41b-4a38-a8b1-7542fe54ea20
Superblock backups stored on blocks:
    8193, 24577, 40961, 57345, 73729

Allocating group tables: done
Writing inode tables: done
Creating journal (4096 blocks): done
Writing superblocks and filesystem accounting information: done

```

## Step 3

```

(josiah@josiah)-[~]
$ sudo parted -l
Model: ATA VBOX HARDDISK (scsi)
Disk /dev/sda: 26.8GB
Sector size (logical/physical): 512B/512B
Partition Table: msdos
Disk Flags:

Number  Start   End     Size    Type     File system  Flags
  1      1049kB  25.4GB  25.4GB  primary  ext4         boot
  2      25.4GB  26.8GB  1425MB  extended lba
  5      25.4GB  26.8GB  1425MB  logical  linux-swap(v1) swap

Model: ATA VBOX HARDDISK (scsi)
Disk /dev/sdb: 1074MB
Sector size (logical/physical): 512B/512B
Partition Table: msdos
Disk Flags:

Number  Start   End     Size    Type     File system  Flags
  1      1049kB  1074MB  1073MB  primary

Model: ATA VBOX HARDDISK (scsi)
Disk /dev/sdc: 210MB
Sector size (logical/physical): 512B/512B
Partition Table: loop
Disk Flags:

Number  Start   End     Size    File system  Flags
  1      0.00B   210MB   210MB   ext4

```

#### Step 4

```
(josiah@josiah)-[~]  
$ sudo mkdir /cyse
```

```
(josiah@josiah)-[~]  
$ sudo mount /dev/sdc /cyse
```

#### Step 5

```
(josiah@josiah)-[~]  
$ sudo df  
Filesystem      1K-blocks      Used Available Use% Mounted on  
udev            1259836         0    1259836   0% /dev  
tmpfs           264640         1004    263636   1% /run  
/dev/sda1       24253528 15663752    7332408  69% /  
tmpfs           1323184         4    1323180   1% /dev/shm  
tmpfs           5120          0       5120   0% /run/lock  
tmpfs           1024          0       1024   0% /run/credentials/systemd-udev-load-credentials.service  
tmpfs           1024          0       1024   0% /run/credentials/systemd-tmpfiles-setup-dev-early.service  
tmpfs           1024          0       1024   0% /run/credentials/systemd-sysctl.service  
tmpfs           1024          0       1024   0% /run/credentials/systemd-tmpfiles-setup-dev.service  
tmpfs           1323188       1048    1322140   1% /tmp  
tmpfs           1024          0       1024   0% /run/credentials/systemd-tmpfiles-setup.service  
tmpfs           1024          0       1024   0% /run/credentials/getty@tty1.service  
tmpfs           264636        112    264524   1% /run/user/1000  
tmpfs           1024          0       1024   0% /run/credentials/systemd-journald.service  
/dev/sdc        186299         64    171899   1% /cyse
```

#### Step 6

```
(josiah@josiah)-[~]  
$ cd /cyse  
  
(josiah@josiah)-[/cyse]  
$ vi jthom216.txt
```

```
~  
"jthom216.txt"  
"jthom216.txt" E212: Can't open file for writing  
Press ENTER or type command to continue
```

#### Step 7

```
(josiah@josiah)-[~]  
$ sudo umount /cyse  
  
(josiah@josiah)-[~]
```

#### Step 8. You can't create a file when the directory is mounted.

```
(josiah@josiah)-[~]  
$ ls -l /cyse  
total 0
```