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CYSE 270: Linux System for Cybersecurity

Lab 7 – Manage Local Storage

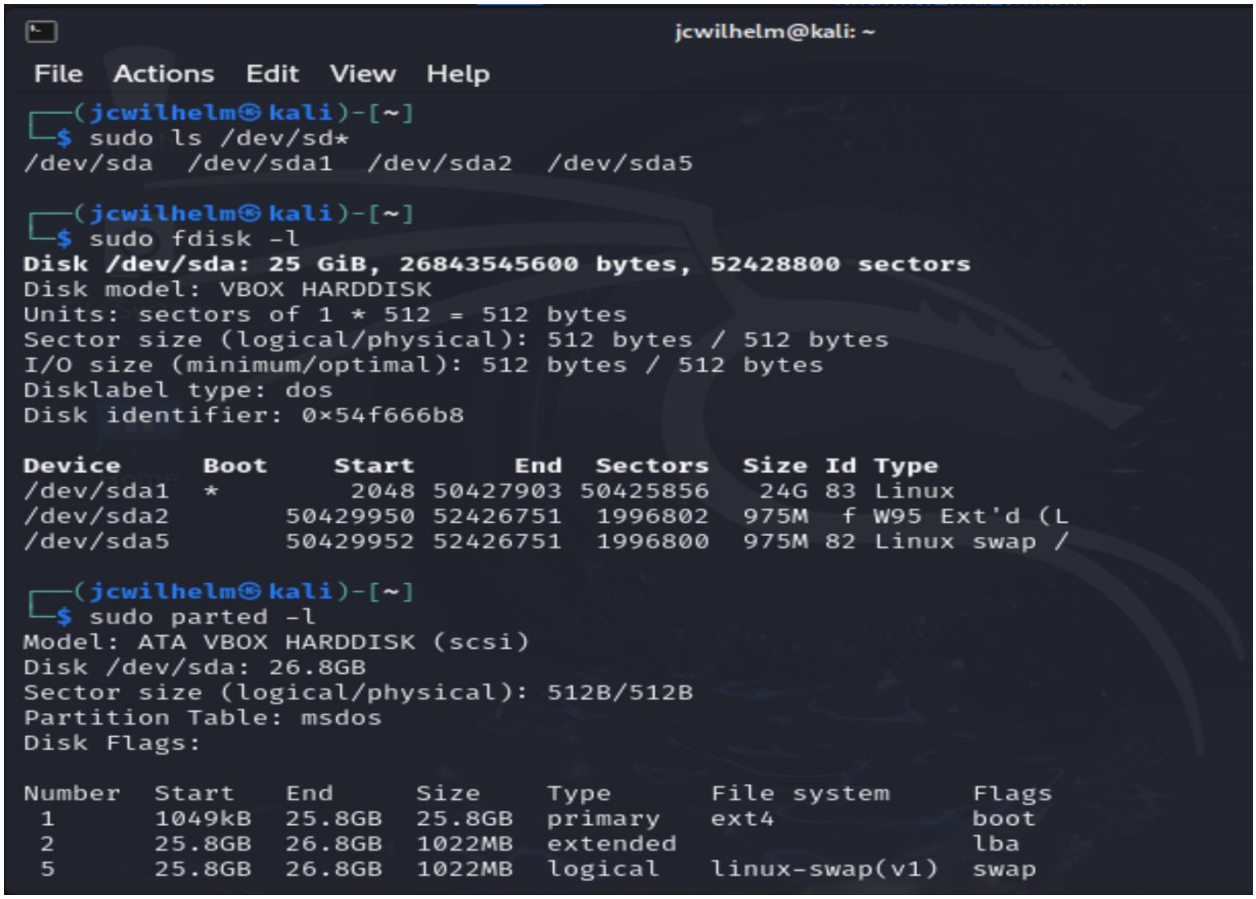
CYSE 270: Linux System for Cybersecurity Part I– Check your file system (30 points).

Submit the screenshot for All the three steps.

Step 1. Execute the **ls /dev/sd*** command to see the current hard disk devices. [use sudo]

Step 2. Execute the **fdisk -l** command to list the current hard disk partitions. [use sudo]

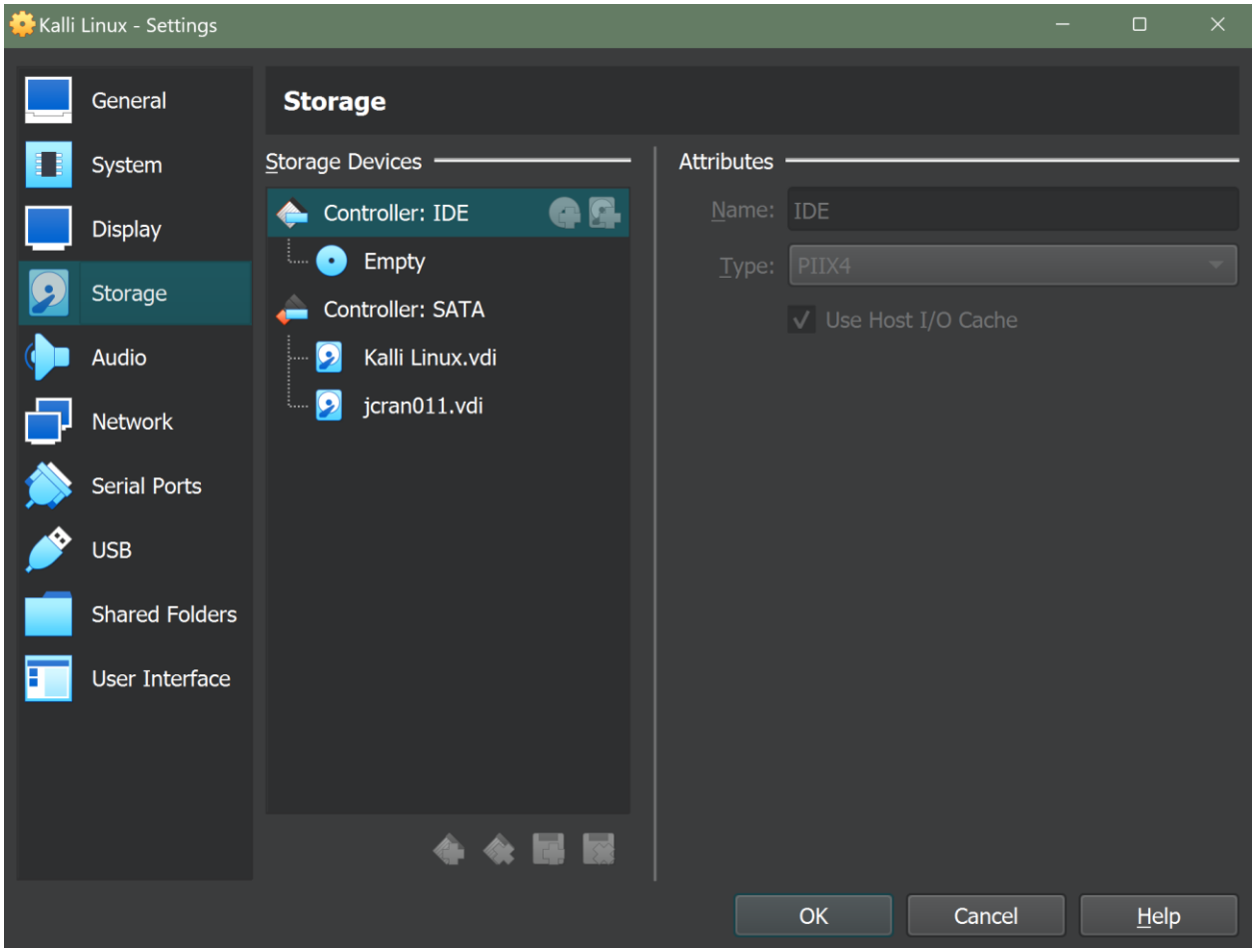
Step 3. Execute the **parted -l** command to list the current hard disk partition table. [use sudo]



Part II– Create a new virtual disk (30 points)

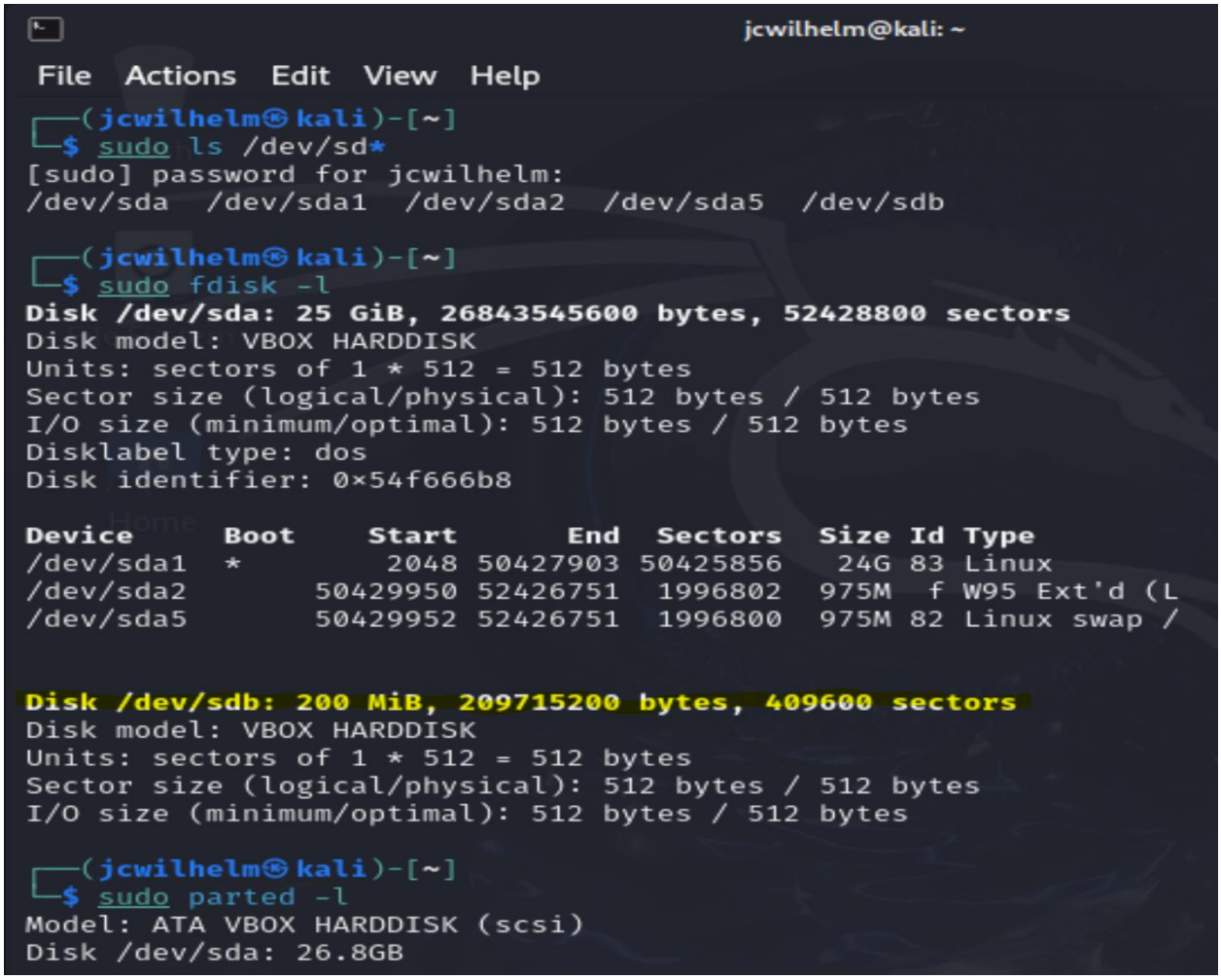
Submit the screenshot for All the three steps.

Step 1. In the VM setting, attach a new virtual hard disk with the size of 200 MB to our current Linux VM. Name it as “your_midas.vdi” [**HINT:** Please refer to the slides and discussion during the class for week 7]



Step 2. Load this virtual hard disk to your virtual machine.

Step 3. **Repeat** the steps in Part I and **highlight the differences** after adding the new virtual hard disk.



Part III– Creating Partitions and Filesystems (60 points)

Submit the screenshot for All the three eight steps.

Step 1. Use the **fdisk** command to create a new primary partition on the new virtual hard disk attached in Part II.

Step 2. Use the correct command to **create an ext4 filesystem** on the new partition.

```
┌──(jcwilhelm㉿kali)-[~]
└─$ sudo fdisk /dev/sdb

Welcome to fdisk (util-linux 2.40).
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 0x8c57a184.

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): sudo mkfs.ext4 /dev/sdb1
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.
```

Step 3. **Repeat** the steps in Part I and highlight the differences.

```
File  Actions  Edit  View  Help
┌──(jcwilhelm㉿kali)-[~]
└─$ 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: 0x54f666b8

Device     Boot    Start      End  Sectors  Size Id Type
/dev/sda1  *        2048 50427903 50425856   24G 83 Linux
/dev/sda2       50429950 52426751  1996802  975M  f W95 Ext'd (LBA)
/dev/sda5       50429952 52426751  1996800  975M 82 Linux swap / Solaris

Disk /dev/sdb: 200 MiB, 209715200 bytes, 409600 sectors
Disk model: VBOX HARDDISK
Geometry: 255 heads, 63 sectors/track, 25 cylinders
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: sun

Device      Start    End Sectors   Size Id Type         Flags
/dev/sdb1       0 305234  305235   149M 83 Linux native
/dev/sdb2  305235 401624   96390  47.1M 82 Linux swap      u
/dev/sdb3       0 401624  401625 196.1M  5 Whole disk
```

Step 4. Make a new directory named **/cyse**. And **mount** the new partition under this directory.

Step 5. Use the **df** command to check the mounting point of the new partition.

Step 6. Create a new file named for **YourMIDAS.txt** (replace YourMIDAS with your MIDAS ID) in the directory /cyse and put your name in that file.

Step 7. **Unmount** /cyse directory.

Step 8. Check the contents in /cyse directory. What do you find?