Exercise 1 – The Inodes

Tasks to Perform on AlmaLinux and Ubuntu:

*Use your **user's account not root** and use **sudo** if necessary.*

1. For each of your partitions, how many **inodes** have been created? How many are used and how many are available?

```
[lmohammed@server12 ~]$ df -i
Filesystem      Inodes  IUsed   IFree IUse% Mounted on
devtmpfs        456605    483  456122    1% /dev
tmpfs           464137      1  464136    1% /dev/shm
tmpfs           819200   1045  818155    1% /run
/dev/sda7      20974080 172258 20801822    1% /
/dev/sda2        524288    366  523922    1% /boot
/dev/sda3       4194304   2571 4191733    1% /var
/dev/sda5       3670016   3283 3666733    1% /home
tmpfs             92827    121   92706    1% /run/user/1000
/dev/sr0              0      0       0     - /run/media/lmohammed/AlmaLinux-9-5
-x86_64-dvd
```

Partition	Created	Used	Available
/	20974080	172258	20801822
/boot	524288	366	523922
/var	4194304	3283	4191733
/home	3670016	3283	3666733
/run/user/1000	92827	121	92706

```
lmohammed@client12:~$ df -i
Filesystem      Inodes  IUsed   IFree IUse% Mounted on
tmpfs           495174    930  494244    1% /run
/dev/sda6      1411680 218616 1193064   16% /
tmpfs           495174      1  495173    1% /dev/shm
tmpfs           495174      4  495170    1% /run/lock
/dev/sda4        62592    607   61985    1% /boot
/dev/sda2            0      0       0     - /boot/efi
/dev/sda5       305216   1481  303735    1% /home
tmpfs            99034    134   98900    1% /run/user/1000
lmohammed@client12:~$
```

Partition	Created	Used	Available
/	1411680	218616 (16%)	1193064
/boot	62592	607	61985

/home	305216	1481	303735
/run	495174	930	494244
/run/user/1000	99034	134	98900

Exercise 2 – Creating Physical Links

Tasks to Perform on AlmaLinux:

*Use your **user's account not root** and use **sudo** if necessary.*

2. Create an empty file: **test.txt** and list its **inode number**.

```
[lmohammed@server12 ~]$ ls -i
12583041 Desktop         137 Music      4194434 Templates
12583042 Documents   4194435 Pictures      2912 test.txt
     136 Downloads   8519810 Public     8519812 Videos
```

2912 is the inode number

3. Create two physical links called **phy1.txt** and **phy2.txt** for the **test.txt** file.

```
[lmohammed@server12 ~]$ ln test.txt phy1.txt
[lmohammed@server12 ~]$ ln test.txt phy2.txt
[lmohammed@server12 ~]$ ls -l
total 0
drwxr-xr-x. 2 lmohammed lmohammed  6 Mar 24 14:52 Desktop
drwxr-xr-x. 2 lmohammed lmohammed 22 Mar 26 17:50 Documents
drwxr-xr-x. 2 lmohammed lmohammed 41 Mar 25 13:02 Downloads
drwxr-xr-x. 2 lmohammed lmohammed  6 Mar 24 14:52 Music
-rw-r--r--. 3 lmohammed lmohammed  0 Mar 26 17:51 phy1.txt
-rw-r--r--. 3 lmohammed lmohammed  0 Mar 26 17:51 phy2.txt
drwxr-xr-x. 2 lmohammed lmohammed  6 Mar 24 14:52 Pictures
drwxr-xr-x. 2 lmohammed lmohammed  6 Mar 24 14:52 Public
drwxr-xr-x. 2 lmohammed lmohammed  6 Mar 24 14:52 Templates
-rw-r--r--. 3 lmohammed lmohammed  0 Mar 26 17:51 test.txt
drwxr-xr-x. 2 lmohammed lmohammed  6 Mar 24 14:52 Videos
```

4. List the inode numbers of the 3 files: **phy1.txt**, **phy2.txt** and **test.txt**.

```
[lmohammed@server12 ~]$ ls -i
12583041 Desktop         136 Downloads      2912 phy1.txt   4194435 Pictures   4194434 Templates   8519812 Videos
12583042 Documents       137 Music          2912 phy2.txt   8519810 Public        2912 test.txt
[lmohammed@server12 ~]$
```

5. Use the **echo** command to add the text "**Lab 3**" to the **phy1.txt** file. Check that the text has been added correctly.

```
[lmohammed@server12 ~]$ echo "Lab 3" > phy1.txt
[lmohammed@server12 ~]$ cat phy1.txt
Lab 3
[lmohammed@server12 ~]$
```

6. List the contents of the other two files: **test.txt** and **phy2.txt**. Is the new text appear?

```
[lmohammed@server12 ~]$ cat test.txt
Lab 3
[lmohammed@server12 ~]$ cat phy2.txt
Lab 3
[lmohammed@server12 ~]$
```

7. Delete the **test.txt** file.

```
[lmohammed@server12 ~]$ rm test.txt
[lmohammed@server12 ~]$
```

8. Does The other two files**: phy1.txt** and **phy2.txt** still exist?

```
[lmohammed@server12 ~]$ ls -l
total 8
drwxr-xr-x. 2 lmohammed lmohammed  6 Mar 24 14:52 Desktop
drwxr-xr-x. 2 lmohammed lmohammed 22 Mar 26 17:50 Documents
drwxr-xr-x. 2 lmohammed lmohammed 41 Mar 25 13:02 Downloads
drwxr-xr-x. 2 lmohammed lmohammed  6 Mar 24 14:52 Music
-rw-r--r--. 2 lmohammed lmohammed  6 Mar 26 18:12 phy1.txt
-rw-r--r--. 2 lmohammed lmohammed  6 Mar 26 18:12 phy2.txt
drwxr-xr-x. 2 lmohammed lmohammed  6 Mar 24 14:52 Pictures
drwxr-xr-x. 2 lmohammed lmohammed  6 Mar 24 14:52 Public
drwxr-xr-x. 2 lmohammed lmohammed  6 Mar 24 14:52 Templates
drwxr-xr-x. 2 lmohammed lmohammed  6 Mar 24 14:52 Videos
[lmohammed@server12 ~]$
```

9. Display the **number of links** for the **phy1.txt** and **phy2.txt** files.

```
[lmohammed@server12 ~]$ ls -l
total 8
drwxr-xr-x. 2 lmohammed lmohammed  6 Mar 24 14:52 Desktop
drwxr-xr-x. 2 lmohammed lmohammed 22 Mar 26 17:50 Documents
drwxr-xr-x. 2 lmohammed lmohammed 41 Mar 25 13:02 Downloads
drwxr-xr-x. 2 lmohammed lmohammed  6 Mar 24 14:52 Music
-rw-r--r--. 2 lmohammed lmohammed  6 Mar 26 18:12 phy1.txt
-rw-r--r--. 2 lmohammed lmohammed  6 Mar 26 18:12 phy2.txt
drwxr-xr-x. 2 lmohammed lmohammed  6 Mar 24 14:52 Pictures
drwxr-xr-x. 2 lmohammed lmohammed  6 Mar 24 14:52 Public
drwxr-xr-x. 2 lmohammed lmohammed  6 Mar 24 14:52 Templates
drwxr-xr-x. 2 lmohammed lmohammed  6 Mar 24 14:52 Videos
[lmohammed@server12 ~]$
```

10. Delete both **phy1.txt** and **phy2.txt** files.

```
[lmohammed@server12 ~]$ rm phy1.txt
[lmohammed@server12 ~]$ rm phy2.txt
[lmohammed@server12 ~]$ ls -l
total 0
drwxr-xr-x. 2 lmohammed lmohammed  6 Mar 24 14:52 Desktop
drwxr-xr-x. 2 lmohammed lmohammed 22 Mar 26 17:50 Documents
drwxr-xr-x. 2 lmohammed lmohammed 41 Mar 25 13:02 Downloads
drwxr-xr-x. 2 lmohammed lmohammed  6 Mar 24 14:52 Music
drwxr-xr-x. 2 lmohammed lmohammed  6 Mar 24 14:52 Pictures
drwxr-xr-x. 2 lmohammed lmohammed  6 Mar 24 14:52 Public
drwxr-xr-x. 2 lmohammed lmohammed  6 Mar 24 14:52 Templates
drwxr-xr-x. 2 lmohammed lmohammed  6 Mar 24 14:52 Videos
[lmohammed@server12 ~]$
```

Exercise 3 – Creating symbolic links

Tasks to Perform on AlmaLinux:

*Use your **user's account not root** and use **sudo** if necessary.*

1. Create the empty file **sym1.txt**.

```
[lmohammed@server12 ~]$ touch sym1.txt
```

```
[lmohammed@server12 ~]$ ls -l
total 0
drwxr-xr-x. 2 lmohammed lmohammed  6 Mar 24 14:52 Desktop
drwxr-xr-x. 2 lmohammed lmohammed  6 Mar 26 18:24 Documents
drwxr-xr-x. 2 lmohammed lmohammed 41 Mar 25 13:02 Downloads
drwxr-xr-x. 2 lmohammed lmohammed  6 Mar 24 14:52 Music
drwxr-xr-x. 2 lmohammed lmohammed  6 Mar 24 14:52 Pictures
drwxr-xr-x. 2 lmohammed lmohammed  6 Mar 24 14:52 Public
-rw-r--r--. 1 lmohammed lmohammed  0 Mar 26 18:24 sym1.txt
drwxr-xr-x. 2 lmohammed lmohammed  6 Mar 24 14:52 Templates
drwxr-xr-x. 2 lmohammed lmohammed  6 Mar 24 14:52 Videos
[lmohammed@server12 ~]$
```

2. Create a symbolic link called **sym2.txt** and link it to the **sym1.txt** file.

```
[lmohammed@server12 ~]$ ln -s sym1.txt sym2.txt
[lmohammed@server12 ~]$
```

3. Use the **ls -l** command to check the newly created symbolic link.

```
[lmohammed@server12 ~]$ ls -l
total 0
drwxr-xr-x. 2 lmohammed lmohammed  6 Mar 24 14:52 Desktop
drwxr-xr-x. 2 lmohammed lmohammed  6 Mar 26 18:24 Documents
drwxr-xr-x. 2 lmohammed lmohammed 41 Mar 25 13:02 Downloads
drwxr-xr-x. 2 lmohammed lmohammed  6 Mar 24 14:52 Music
drwxr-xr-x. 2 lmohammed lmohammed  6 Mar 24 14:52 Pictures
drwxr-xr-x. 2 lmohammed lmohammed  6 Mar 24 14:52 Public
-rw-r--r--. 1 lmohammed lmohammed  0 Mar 26 18:24 sym1.txt
lrwxrwxrwx. 1 lmohammed lmohammed  8 Mar 26 19:56 sym2.txt -> sym1.txt
drwxr-xr-x. 2 lmohammed lmohammed  6 Mar 24 14:52 Templates
drwxr-xr-x. 2 lmohammed lmohammed  6 Mar 24 14:52 Videos
[lmohammed@server12 ~]$
```

4. Use the **echo** command to add the text: "**Symbolic Link**" to the sym2.txt **file**. Check that the text has been added.

```
[lmohammed@server12 ~]$ echo "Symbolic Link" > sym2.txt
[lmohammed@server12 ~]$ cat sym2.txt
Symbolic Link
[lmohammed@server12 ~]$
```

5. List the contents of the **sym1.txt** file. Is the new text appear?

```
[lmohammed@server12 ~]$ cat sym1.txt
Symbolic Link
[lmohammed@server12 ~]$
```

Yes.

6. Delete the **sym2.txt** symbolic link and open the **sym1.txt** file, is the new text still present?

```
[lmohammed@server12 ~]$ rm sym2.txt
[lmohammed@server12 ~]$ cat sym1.txt
Symbolic Link
[lmohammed@server12 ~]$
```

Yes it is.

7. Recreate again a symbolic link called **sym2.txt** and link it to the **sym1.txt** file.

```
[lmohammed@server12 ~]$ ln -s sym1.txt sym2.txt
[lmohammed@server12 ~]$
```

8. Use the **ls -l** command to verify the newly created symbolic link.

```
[lmohammed@server12 ~]$ ls -l
total 4
drwxr-xr-x. 2 lmohammed lmohammed  6 Mar 24 14:52 Desktop
drwxr-xr-x. 2 lmohammed lmohammed  6 Mar 26 18:24 Documents
drwxr-xr-x. 2 lmohammed lmohammed 41 Mar 25 13:02 Downloads
drwxr-xr-x. 2 lmohammed lmohammed  6 Mar 24 14:52 Music
drwxr-xr-x. 2 lmohammed lmohammed  6 Mar 24 14:52 Pictures
drwxr-xr-x. 2 lmohammed lmohammed  6 Mar 24 14:52 Public
-rw-r--r--. 1 lmohammed lmohammed 14 Mar 26 19:58 sym1.txt
lrwxrwxrwx. 1 lmohammed lmohammed  8 Mar 26 20:00 sym2.txt -> sym1.txt
drwxr-xr-x. 2 lmohammed lmohammed  6 Mar 24 14:52 Templates
drwxr-xr-x. 2 lmohammed lmohammed  6 Mar 24 14:52 Videos
[lmohammed@server12 ~]$
```

9. Delete the original **sym1.txt** file.

```
[lmohammed@server12 ~]$ rm sym1.txt
[lmohammed@server12 ~]$
```

10. Check if the **sym2.txt** exists, and try to list the contents of the file. Can you? Why?

```
[lmohammed@server12 ~]$ ls -l
total 0
drwxr-xr-x. 2 lmohammed lmohammed  6 Mar 24 14:52 Desktop
drwxr-xr-x. 2 lmohammed lmohammed  6 Mar 26 18:24 Documents
drwxr-xr-x. 2 lmohammed lmohammed 41 Mar 25 13:02 Downloads
drwxr-xr-x. 2 lmohammed lmohammed  6 Mar 24 14:52 Music
drwxr-xr-x. 2 lmohammed lmohammed  6 Mar 24 14:52 Pictures
drwxr-xr-x. 2 lmohammed lmohammed  6 Mar 24 14:52 Public
lrwxrwxrwx. 1 lmohammed lmohammed  8 Mar 26 20:00 sym2.txt -> sym1.txt
drwxr-xr-x. 2 lmohammed lmohammed  6 Mar 24 14:52 Templates
drwxr-xr-x. 2 lmohammed lmohammed  6 Mar 24 14:52 Videos
[lmohammed@server12 ~]$ cat sym2.txt
cat: sym2.txt: No such file or directory
[lmohammed@server12 ~]$
```

No, because we deleted the destination file, so sym2.txt (the symbolic link) becomes useless.

11. Delete symbolic link **sym2.txt**.

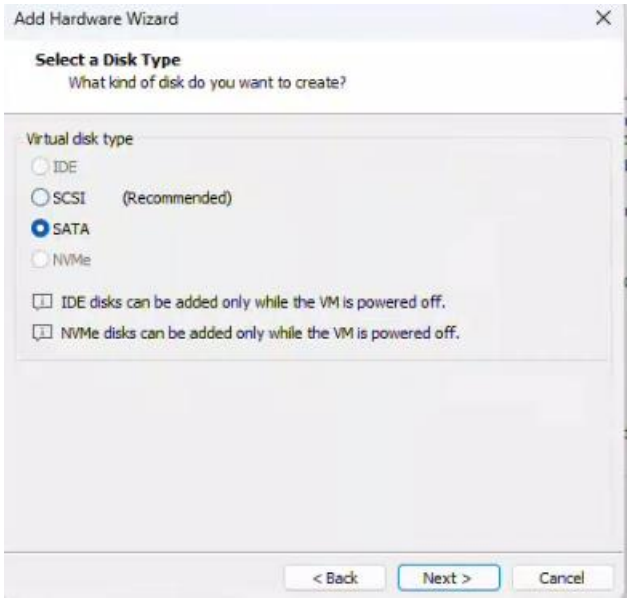
```
[lmohammed@server12 ~]$ rm sym2.txt
[lmohammed@server12 ~]$ ls -l
total 0
drwxr-xr-x. 2 lmohammed lmohammed  6 Mar 24 14:52 Desktop
drwxr-xr-x. 2 lmohammed lmohammed  6 Mar 26 18:24 Documents
drwxr-xr-x. 2 lmohammed lmohammed 41 Mar 25 13:02 Downloads
drwxr-xr-x. 2 lmohammed lmohammed  6 Mar 24 14:52 Music
drwxr-xr-x. 2 lmohammed lmohammed  6 Mar 24 14:52 Pictures
drwxr-xr-x. 2 lmohammed lmohammed  6 Mar 24 14:52 Public
drwxr-xr-x. 2 lmohammed lmohammed  6 Mar 24 14:52 Templates
drwxr-xr-x. 2 lmohammed lmohammed  6 Mar 24 14:52 Videos
[lmohammed@server12 ~]$
```

Exercise 4 – Adding and Mounting Disks

Tasks to Perform on Ubuntu:

*Use your **user's account not root** and use **sudo** if necessary.*

1. Add a **5 GB SATA** disk to your **Ubuntu** virtual machine.



2. Check that the disk is added correctly.

```
lmohammed@client12:~$ lsblk
NAME   MAJ:MIN RM  SIZE RO TYPE MOUNTPOINTS
sda      8:0    0   30G  0 disk
├─sda1   8:1    0    1M  0 part
├─sda2   8:2    0  977M  0 part /boot/efi
├─sda3   8:3    0  1.9G  0 part [SWAP]
├─sda4   8:4    0  977M  0 part /boot
├─sda5   8:5    0  4.7G  0 part /home
└─sda6   8:6    0 21.5G  0 part /
sdb      8:16   0    5G  0 disk
lmohammed@client12:~$
```

3. On the new disk, create two partitions of **2 GB** each.

```
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 (2048-10485759, default 2048):
Last sector, +/-sectors or +/-size{K,M,G,T,P} (2048-10485759, default 10485759): 2G
Value out of range.
Last sector, +/-sectors or +/-size{K,M,G,T,P} (2048-10485759, default 10485759): +2G

Created a new partition 1 of type 'Linux' and of size 2 GiB.
```

```
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 (4196352-10485759, default 4196352):
Last sector, +/-sectors or +/-size{K,M,G,T,P} (4196352-10485759, default 10485759): +2G

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

```
Command (m for help): p
Disk /dev/sdb: 5 GiB, 5368709120 bytes, 10485760 sectors
Disk model: VMware Virtual S
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: 0x36305a82

Device     Boot   Start     End Sectors Size Id Type
/dev/sdb1          2048 4196351 4194304   2G 83 Linux
/dev/sdb2       4196352 8390655 4194304   2G 83 Linux

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

lmohammed@client12:~$
```

4. Check that both partitions are created correctly.

```
lmohammed@client12:~$ lsblk
NAME   MAJ:MIN RM  SIZE RO TYPE MOUNTPOINTS
sda      8:0    0   30G  0 disk
├─sda1   8:1    0    1M  0 part
├─sda2   8:2    0  977M  0 part /boot/efi
├─sda3   8:3    0  1.9G  0 part [SWAP]
├─sda4   8:4    0  977M  0 part /boot
├─sda5   8:5    0  4.7G  0 part /home
└─sda6   8:6    0 21.5G  0 part /
sdb      8:16   0    5G  0 disk
├─sdb1   8:17   0    2G  0 part
└─sdb2   8:18   0    2G  0 part
lmohammed@client12:~$
```

5. Format the 1st partition with the **xfs** file system.

```
lmohammed@client12:~$ sudo mkfs.xfs /dev/sdb1
meta-data=/dev/sdb1              isize=512    agcount=4, agsize=131072 blks
         =                       sectsz=512   attr=2, projid32bit=1
         =                       crc=1        finobt=1, sparse=1, rmapbt=0
         =                       reflink=1    bigtime=0 inobtcount=0
data     =                       bsize=4096   blocks=524288, 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
lmohammed@client12:~$
```

6. Format the 2nd partition with the **ext4** file system.

```
lmohammed@client12:~$ sudo mkfs.ext4 /dev/sdb2
mke2fs 1.46.5 (30-Dec-2021)
Creating filesystem with 524288 4k blocks and 131072 inodes
Filesystem UUID: 0f45132a-90e7-4dbd-a11f-9a117940f880
Superblock backups stored on blocks:
        32768, 98304, 163840, 229376, 294912

Allocating group tables: done
Writing inode tables: done
Creating journal (16384 blocks): done
Writing superblocks and filesystem accounting information: done
```

7. Verify that both partitions are properly formatted with the correct file system.

```
lmohammed@client12:~$ lsblk -f
NAME   FSTYPE FSVER LABEL UUID                                 FSAVAIL FSUSE% MOUNTPOINTS
sda
├─sda1
├─sda2 vfat   FAT32       42CC-EED2                               969M     1% /boot/efi
├─sda3 swap   1           78af6fa4-253c-469d-b290-f88ace849529                [SWAP]
├─sda4 ext4   1.0         2763ef2e-fd89-4a44-9576-7438d06c85c6  677.7M    21% /boot
├─sda5 ext4   1.0         d91ada68-f2ba-418a-a109-f03c1b239e61    4.1G     4% /home
└─sda6 ext4   1.0         d725d8fb-a8c7-4e36-b48e-f9e28904e0aa   12.4G    36% /
sdb
├─sdb1 xfs                53c2235f-29ce-43d7-9ec8-792e91827252
└─sdb2 ext4   1.0         0f45132a-90e7-4dbd-a11f-9a117940f880
lmohammed@client12:~$
```

8. Create directory**/home/*<your_user>*/partition1.**

```
lmohammed@client12:~$ mkdir /home/lmohammed/partition1
```

9. Manually mount the **first new partition** of the new disk in**/home/*<your_user>*/partition1.**

```
lmohammed@client12:~$ mount /dev/sdb1 /home/lmohammed/partition1
mount: /home/lmohammed/partition1: must be superuser to use mount.
lmohammed@client12:~$ sudo mount /dev/sdb1 /home/lmohammed/partition1
lmohammed@client12:~$
```

10. Check that the partition is mounted correctly.

```
lmohammed@client12:~$ lsblk
NAME   MAJ:MIN RM  SIZE RO TYPE MOUNTPOINTS
sda      8:0    0   30G  0 disk
├─sda1   8:1    0    1M  0 part
├─sda2   8:2    0  977M  0 part /boot/efi
├─sda3   8:3    0  1.9G  0 part [SWAP]
├─sda4   8:4    0  977M  0 part /boot
├─sda5   8:5    0  4.7G  0 part /home
└─sda6   8:6    0 21.5G  0 part /
sdb      8:16   0    5G  0 disk
├─sdb1   8:17   0    2G  0 part /home/lmohammed/partition1
└─sdb2   8:18   0    2G  0 part
lmohammed@client12:~$
```

11. Create the folder **/Test.**

```
lmohammed@client12:~$ sudo mkdir /Test
```

12. Edit the**/etc/fstab** file to mount the **second new partition** of the new disk in the**/Test** directory and make it permanent.

```
# /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/sda6 during installation
UUID=d725d8fb-a8c7-4e36-b48e-f9e28904e0aa /               ext4    errors=remount-ro 0       1
# /boot was on /dev/sda4 during installation
UUID=2763ef2e-fd89-4a44-9576-7438d06c85c6 /boot           ext4    defaults        0       2
# /boot/efi was on /dev/sda2 during installation
UUID=42CC-EED2  /boot/efi       vfat    umask=0077      0       1
# /home was on /dev/sda5 during installation
UUID=d91ada68-f2ba-418a-a109-f03c1b239e61 /home           ext4    defaults        0       2
# swap was on /dev/sda3 during installation
UUID=78af6fa4-253c-469d-b290-f88ace849529 none            swap    sw              0       0
#/dev/sdb2
UUID=0f45132a-90e7-4dbd-a11f-9a117940f880 /Test           ext4    defaults        0       0
```

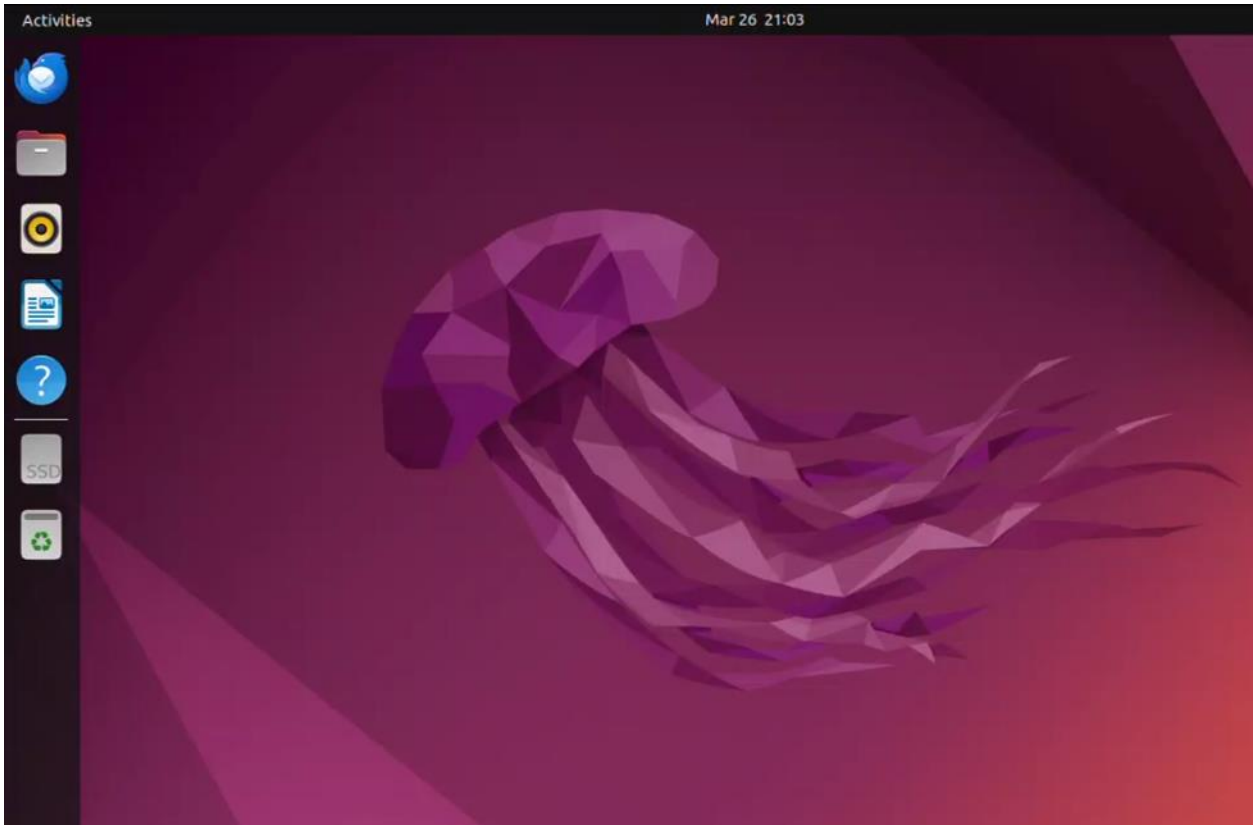
13. Test permanent mounting with the command: **mount -a.**

```
lmohammed@client12:/etc$ sudo mount -a
lmohammed@client12:/etc$ lsblk
```

14. Check that the partition is mounted correctly.

```
lmohammed@client12:/etc$ lsblk
NAME   MAJ:MIN RM  SIZE RO TYPE MOUNTPOINTS
sda      8:0    0   30G  0 disk
├─sda1   8:1    0    1M  0 part
├─sda2   8:2    0  977M  0 part /boot/efi
├─sda3   8:3    0  1.9G  0 part [SWAP]
├─sda4   8:4    0  977M  0 part /boot
├─sda5   8:5    0  4.7G  0 part /home
└─sda6   8:6    0 21.5G  0 part /
sdb      8:16   0    5G  0 disk
├─sdb1   8:17   0    2G  0 part /home/lmohammed/partition1
└─sdb2   8:18   0    2G  0 part /Test
lmohammed@client12:/etc$
```

15. Restart the mac



16. hine.

    ?

17. Check that the mount**/Test** is still properly mounted on the new disk, and that the mount point **/home/*<your_user>*/partition1** is no longer mounted.

```
lmohammed@client12:~$ lsblk
NAME   MAJ:MIN RM  SIZE RO TYPE MOUNTPOINTS
sda      8:0    0   30G  0 disk
├─sda1   8:1    0    1M  0 part
├─sda2   8:2    0  977M  0 part /boot/efi
├─sda3   8:3    0  1.9G  0 part [SWAP]
├─sda4   8:4    0  977M  0 part /boot
├─sda5   8:5    0  4.7G  0 part /home
└─sda6   8:6    0 21.5G  0 part /
sdb      8:16   0    5G  0 disk
├─sdb1   8:17   0    2G  0 part
└─sdb2   8:18   0    2G  0 part /Test
lmohammed@client12:~$
```

18. Unmount **/Test.**

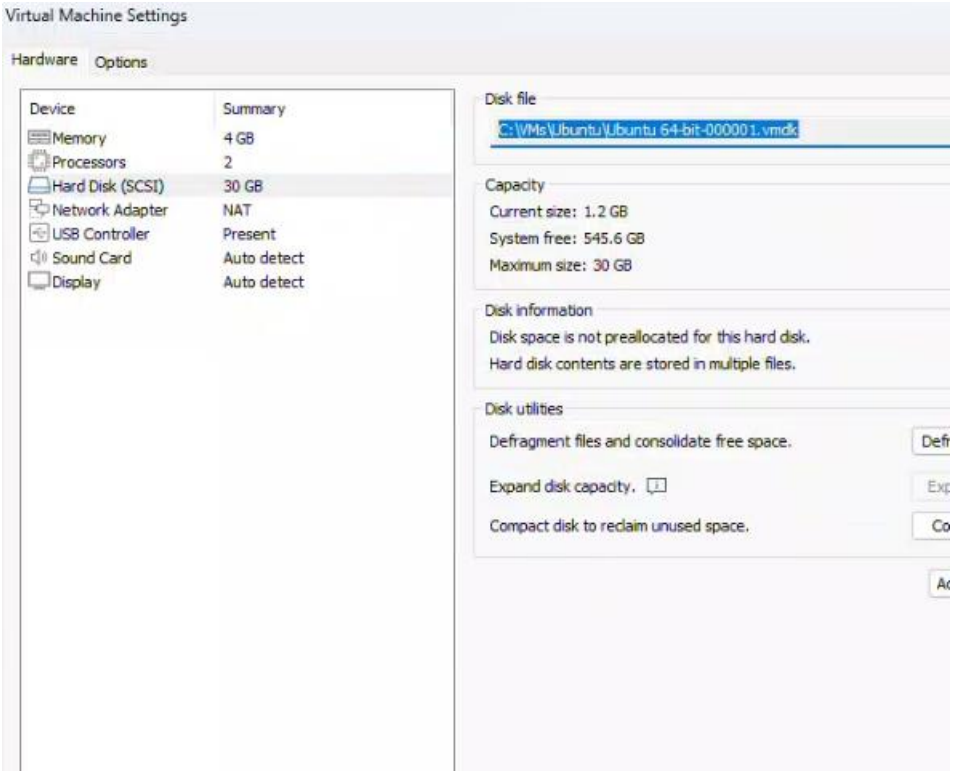
```
lmohammed@client12:~$ sudo umount /Test
lmohammed@client12:~$
```

```
lmohammed@client12:~$ lsblk
NAME   MAJ:MIN RM  SIZE RO TYPE MOUNTPOINTS
sda      8:0    0   30G  0 disk
├─sda1   8:1    0    1M  0 part
├─sda2   8:2    0  977M  0 part /boot/efi
├─sda3   8:3    0  1.9G  0 part [SWAP]
├─sda4   8:4    0  977M  0 part /boot
├─sda5   8:5    0  4.7G  0 part /home
└─sda6   8:6    0 21.5G  0 part /
sdb      8:16   0    5G  0 disk
├─sdb1   8:17   0    2G  0 part
└─sdb2   8:18   0    2G  0 part
lmohammed@client12:~$
```

19. Edit the**/etc/fstab file** and delete the mount point **/Test**.

```
 GNU nano 6.2                                    fstab *
# /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/sda6 during installation
UUID=d725d8fb-a8c7-4e36-b48e-f9e28904e0aa /               ext4    errors=remount-ro 0       1
# /boot was on /dev/sda4 during installation
UUID=2763ef2e-fd89-4a44-9576-7438d06c85c6 /boot           ext4    defaults        0       2
# /boot/efi was on /dev/sda2 during installation
UUID=42CC-EED2  /boot/efi       vfat    umask=0077      0       1
# /home was on /dev/sda5 during installation
UUID=d91ada68-f2ba-418a-a109-f03c1b239e61 /home           ext4    defaults        0       2
# swap was on /dev/sda3 during installation
UUID=78af6fa4-253c-469d-b290-f88ace849529 none            swap    sw              0       0
```

20. Stop the virtual machine and remove the new disk from the Ubuntu VM.


Virtual Machine Settings
Hardware
Options
Device
Summary
Memory
4 GB
Processors
2
Hard Disk (SCSI)
30 GB
Network Adapter
NAT
USB Controller
Present
Sound Card
Auto detect
Display
Auto detect
Disk file
C:\VMs\Ubuntu\Ubuntu 64-bit-000001.vmdk
Capacity
Current size: 1.2 GB
System free: 545.6 GB
Maximum size: 30 GB
Disk information
Disk space is not preallocated for this hard disk.
Hard disk contents are stored in multiple files.
Disk utilities
Defragment files and consolidate free space.
Expand disk capacity.
Compact disk to reclaim unused space.