

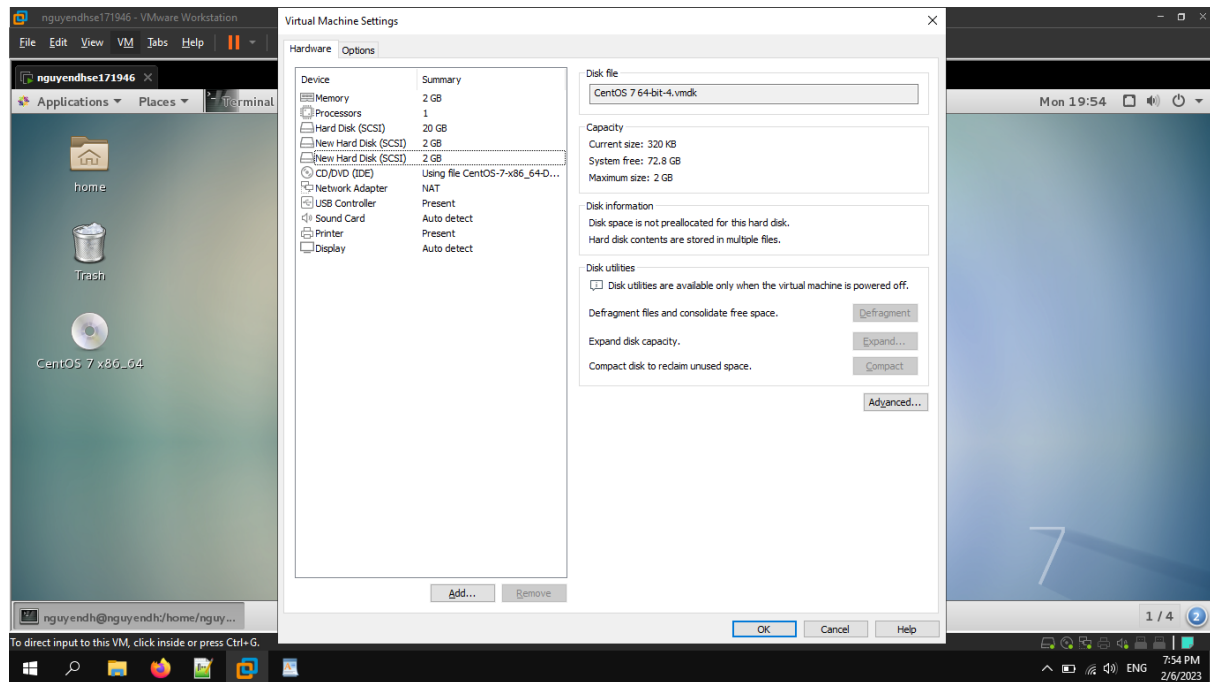
LAB 03

Thầy Mai Hoàng Đình
Trường đại học FPT

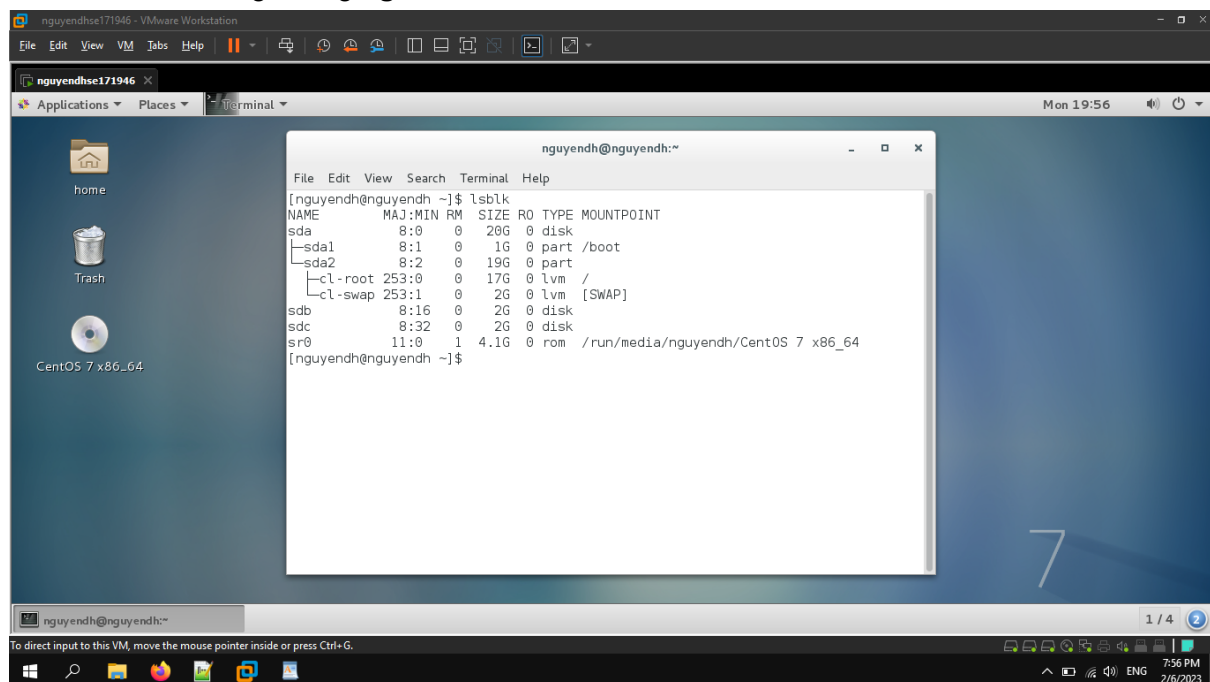
Người thực hiện

Đặng Hoàng Nguyên

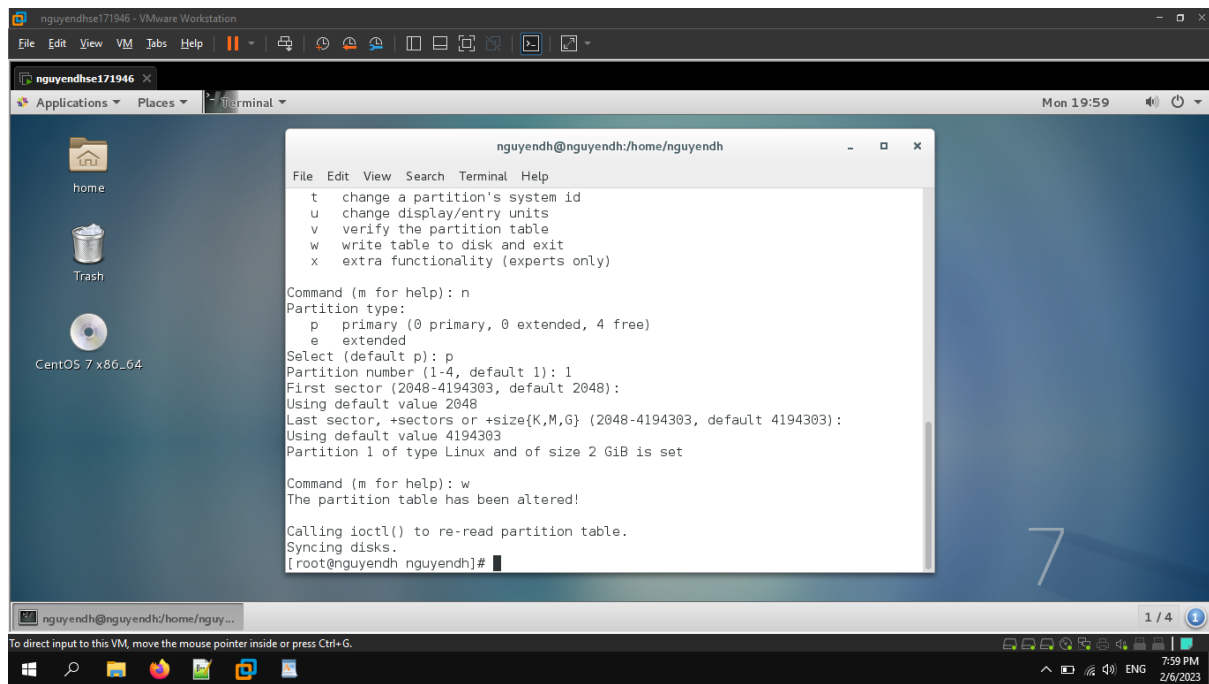
Thêm 2 ổ đĩa mới vào trong Centos 7 bằng **Ctrl D** với dung lượng ổ cứng là 2gb. Và restart bằng **init 6**



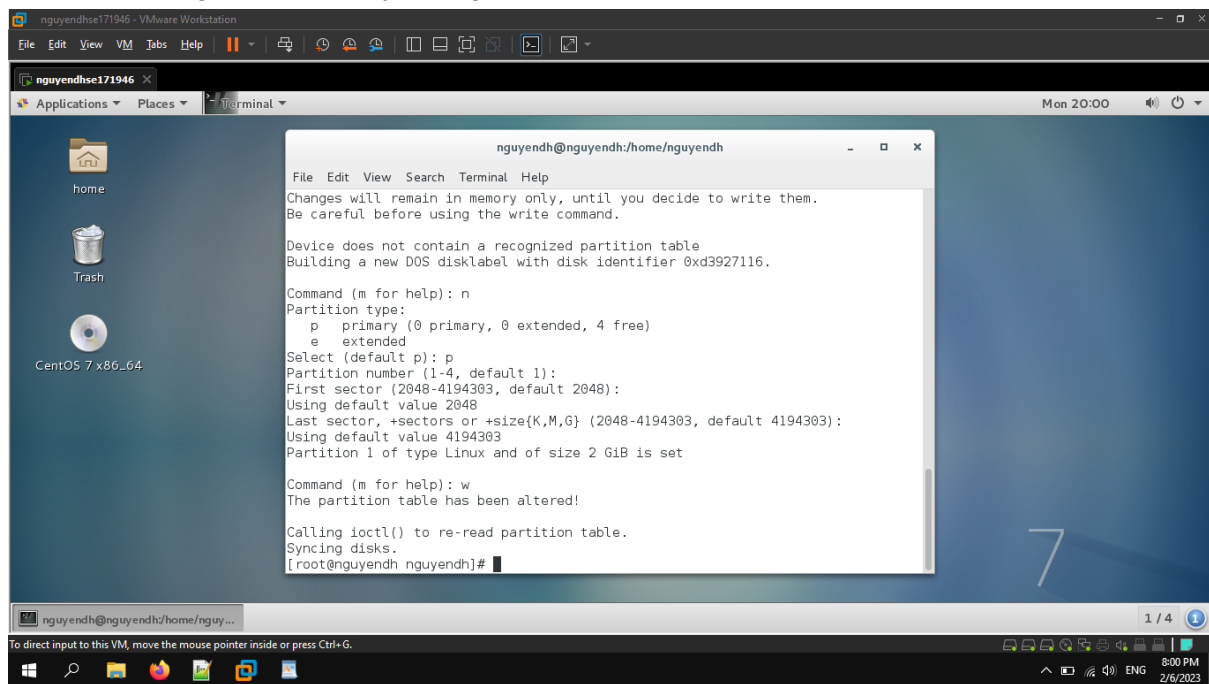
Sử dụng lệnh **lsblk** hoặc vào **root** và chọn **fdisk -l**. Ta đã add thành công ổ đĩa mang tên **sdb** và **sdc** có dung lượng **2gb**



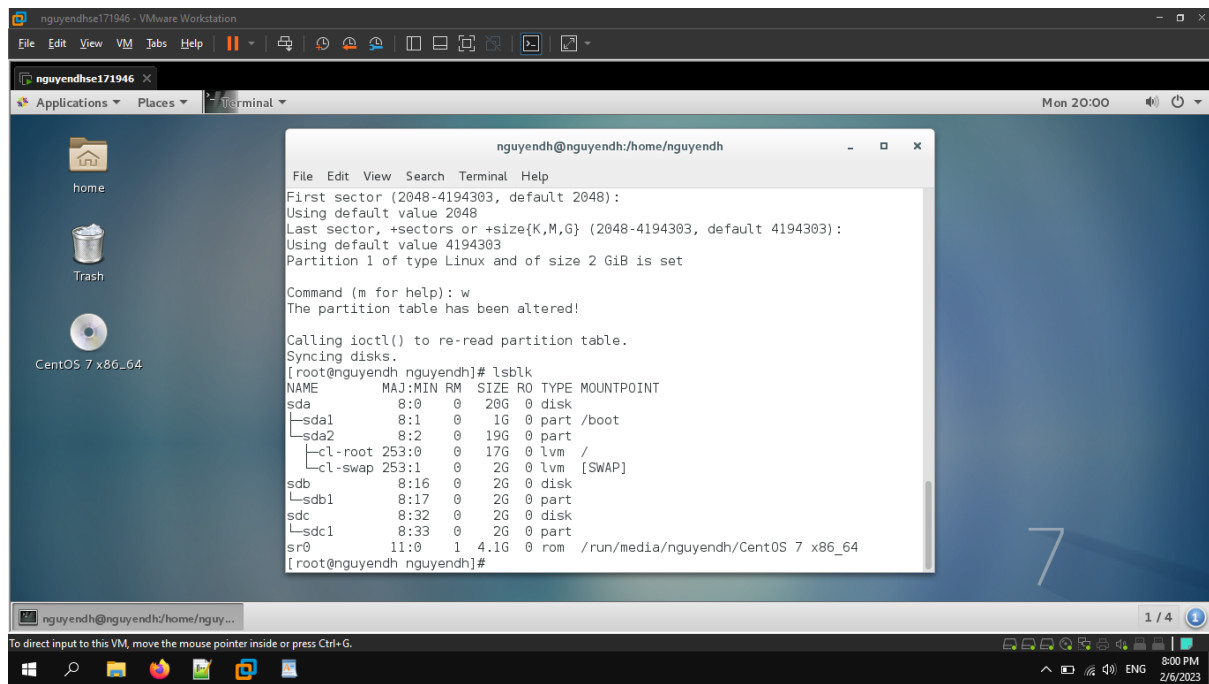
Cấu hình cho ổ **sdb** bằng câu lệnh **fdisk /dev/sdb** full ổ đĩa với ổ primary



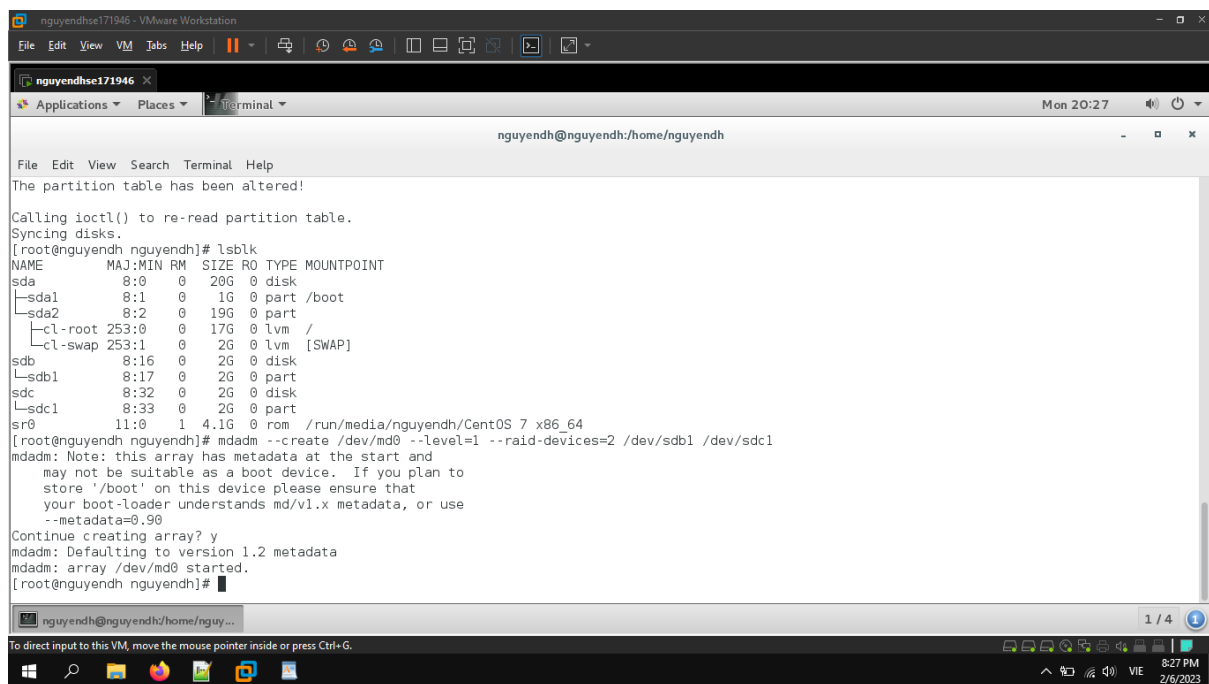
Cấu hình tương tự với ổ sdc y chang ổ sdb



Như hình dưới ta thấy được đã thành công, thông qua lệnh **lsblk**



Tạo raid level 1 với cái tên md0 trên hai ổ sdb1 và sdc1



Xem thông tin của hai raid chúng ta vừa tạo

The screenshot shows a terminal window within a VMware Workstation environment. The terminal displays the output of the 'lsblk' command, showing disk partitions sda1, sda2, cl-root, cl-swap, sdb1, sdc, and sdc1. It then shows the execution of 'mdadm --create' to set up a RAID array 'md0' using sdb1 and sdc1. The terminal output includes details about the RAID array's metadata, the number of devices, and the status of the array. The user is prompted to continue creating the array, and the terminal shows the array is successfully created and started.

```
File Edit View Search Terminal Help
sda      8:0    0   20G  0 disk
├─sda1   8:1    0    1G  0 part /boot
├─sda2   8:2    0   19G  0 part
├─cl-root 253:0  0    17G  0 lvm  /
├─cl-swap 253:1  0    2G  0 lvm  [SWAP]
sdb      8:16   0    2G  0 disk
├─sdb1   8:17   0    2G  0 part
sdc      8:32   0    2G  0 disk
├─sdc1   8:33   0    2G  0 part
sr0     11:0   1  4.1G  0 rom  /run/media/nguyendh/CentOS 7 x86_64
[root@nguyendh nguyendh]# mdadm --create /dev/md0 --level=1 --raid-devices=2 /dev/sdb1 /dev/sdc1
mdadm: Note: this array has metadata at the start and
may not be suitable as a boot device.  If you plan to
store '/boot' on this device please ensure that
your boot-loader understands md/v1.x metadata, or use
--metadata=0.90
Continue creating array? y
mdadm: Defaulting to version 1.2 metadata
mdadm: array /dev/md0 started.
[root@nguyendh nguyendh]# cat /proc/mdstat
Personalities : [raid1]
md0 : active raid1 sdc1[1] sdb1[0]
      2095104 blocks super 1.2 [2/2] [UU]

unused devices: <none>
[root@nguyendh nguyendh]#
```

Cấu hình cho raid vừa tạo theo kiểu ext3

The screenshot shows a terminal window within a VMware Workstation environment. The terminal displays the output of the 'mkfs.ext3' command, which formats the RAID array 'md0' as an ext3 filesystem. The terminal output includes details about the filesystem's configuration, such as the number of blocks, inodes, and the journal. The user is prompted to allocate group tables, and the terminal shows the process is completed.

```
File Edit View Search Terminal Help
      2095104 blocks super 1.2 [2/2] [UU]

unused devices: <none>
[root@nguyendh nguyendh]# mkfs.ext3 /dev/md0
mke2fs 1.42.9 (28-Dec-2013)
Filesystem label=
OS type: Linux
Block size=4096 (log=2)
Fragment size=4096 (log=2)
Stride=0 blocks, Stripe width=0 blocks
131072 inodes, 523776 blocks
26188 blocks (5.00%) reserved for the super user
First data block=0
Maximum filesystem blocks=536870912
16 block groups
32768 blocks per group, 32768 fragments per group
8192 inodes per group
Superblock backups stored on blocks:
    32768, 98304, 163840, 229376, 294912

Allocating group tables: done
Writing inode tables: done
Creating journal (8192 blocks): done
Writing superblocks and filesystem accounting information: done

[root@nguyendh nguyendh]#
```

Mount vào trong ổ với định dạng ext3



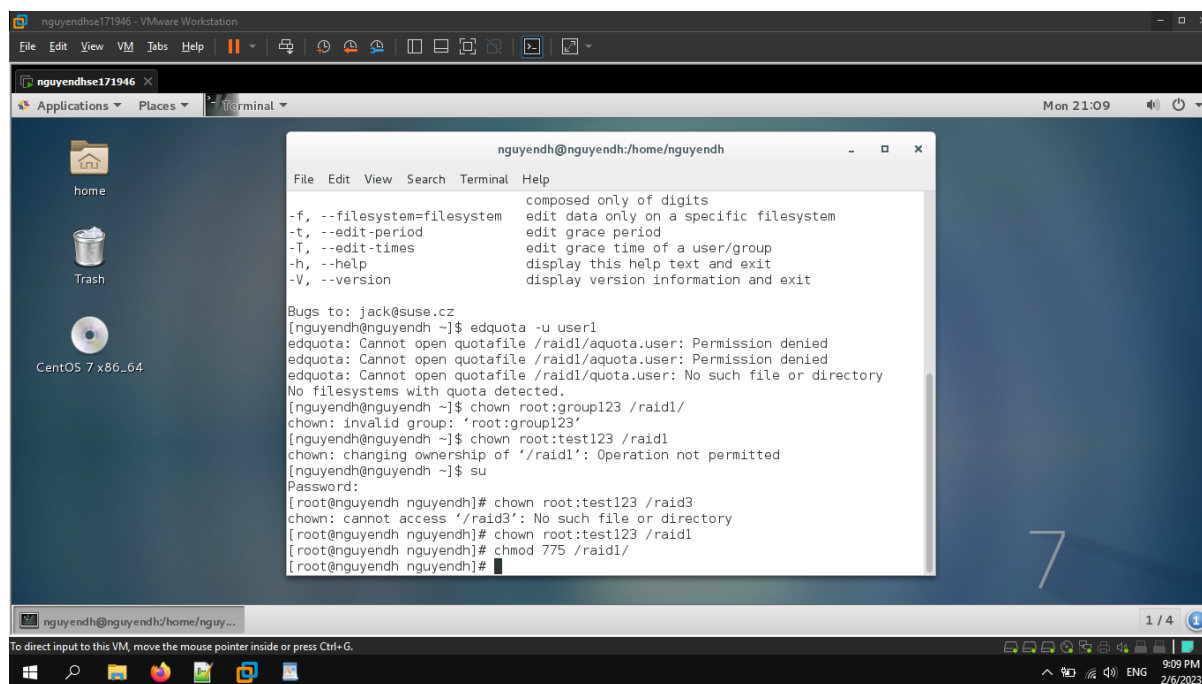


```
nguyendhse171946 - VMware Workstation
File Edit View VM Tabs Help
nguyendhse171946
Applications Places Terminal
nguyendh@nguyendh:/home/nguyendh
File Edit View Search Terminal Help
[root@nguyendh nguyendh]# groupadd test123
[root@nguyendh nguyendh]# useradd -g test123 user1
[root@nguyendh nguyendh]# useradd -g test123 user2
[root@nguyendh nguyendh]# vi /etc/fstab
[root@nguyendh nguyendh]# vi /etc/fstab
[root@nguyendh nguyendh]# mount -o remount /raid1
[root@nguyendh nguyendh]#
```

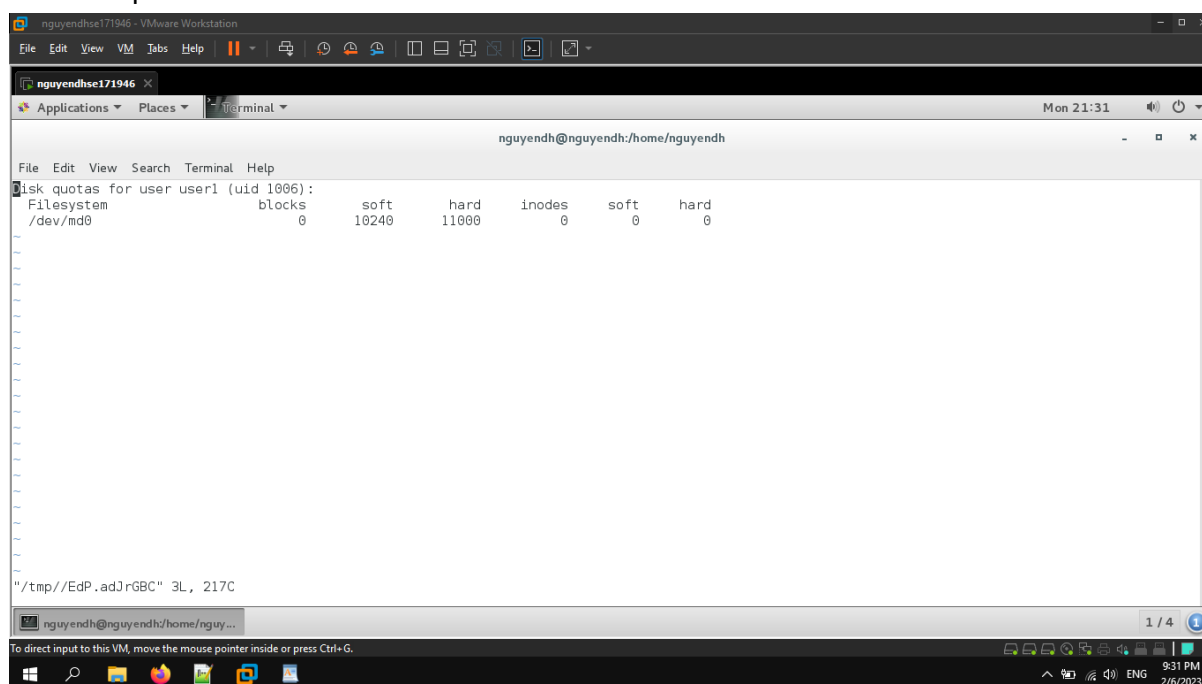
Sử dụng quotacheck để xem có file chưa

```
nguyendhse171946 - VMware Workstation
File Edit View VM Tabs Help
nguyendhse171946
Applications Places Terminal
nguyendh@nguyendh:/home/nguyendh
File Edit View Search Terminal Help
[root@nguyendh nguyendh]# quotacheck -mcug /raid1
[root@nguyendh nguyendh]# ls -la /raid1
total 36
drwxr-xr-x 3 root root 4096 Feb 6 20:44 .
dr-xr-xr-x 18 root root 287 Feb 6 20:34 ..
-rw-r--r-- 1 root root 6144 Feb 6 20:44 aquota.group
-rw-r--r-- 1 root root 6144 Feb 6 20:44 aquota.user
drwx-r--r-- 2 root root 16384 Feb 6 20:32 lost+found
[root@nguyendh nguyendh]# repquota -a
*** Report for user quotas on device /dev/md0
Block grace time: 7days; Inode grace time: 7days
Block limits
User      used  soft  hard  grace
-----
root      --    20    0     0
File limits
User      used  soft  hard  grace
-----
root      2     0     0
```

Chỉnh lại quyền cho nhoms dùng và người dùng thông qua lệnh **chown** và **chmod**



Chỉnh edquota cho user1 và user2



The screenshot shows a terminal window titled "nguyendhse171946" within a VMware Workstation environment. The terminal prompt is "nguyendh@nguyendh:/home/nguyendh". The command executed is "Disk quotas for user user2 (uid 1007):". The output is a table showing disk quotas for the filesystem "/dev/md0".

Filesystem	blocks	soft	hard	inodes	soft	hard
/dev/md0	0	10240	11000	0	0	0

Below the table, there are several tilde (~) characters and a line indicating a temperature: "/tmp//EdP.aEgCTAE" 3L, 217C". The terminal window has a status bar at the bottom showing "Mon 21:32" and "9:32 PM 2/6/2023".

Chỉn thành thời gian xóa thành 1h

The screenshot shows the same terminal window as before, but now displaying the output of the "repquota -a" command. The output shows the grace period configuration for the filesystem "/dev/md0".

Filesystem	Block grace period	Inode grace period
/dev/md0	1hours	1hours

Below the table, there are several tilde (~) characters and a line indicating a temperature: "-- INSERT --". The terminal window has a status bar at the bottom showing "Mon 21:33" and "9:33 PM 2/6/2023".

Sau khi cài đặt xong, thử vào bên trong user1 thì t thấy có trong repquota -a

nguyendhse171946 - VMware Workstation

File Edit View VM Tabs Help

nguyendhse171946

Applications Places Terminal

Mon 21:36

nguyendh@nguyendh:/home/nguyendh

File Edit View Search Terminal Help

```
[root@nguyendh nguyendh]# su user1
[user1@nguyendh nguyendh]$ cd /raid1/
[user1@nguyendh raid1]$ ls
aquota.group aquota.user  lost+found
[user1@nguyendh raid1]$ seq 1000 > Inghin.txt
[user1@nguyendh raid1]$ ls
Inghin.txt aquota.group aquota.user  lost+found
[user1@nguyendh raid1]$ exit
exit
[root@nguyendh nguyendh]# requota -a
bash: requota: command not found...
[root@nguyendh nguyendh]# repquota -a
*** Report for user quotas on device /dev/md0
Block grace time: 01:00; Inode grace time: 01:00
```

User	used	Block limits	File limits				
		soft	hard	used	soft	hard	grace
root	--	20	0	0	2	0	0
user1	--	4	10240	11000	1	0	0

```
[root@nguyendh nguyendh]#
```

nguyendh@nguyendh2/home/nguy...

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To direct input to this VM, move the mouse pointer inside or press Ctrl+G.

9:36 PM 2/6/2023