

Lab 1:

LVM

```
[root@pmtuan ~]# mount | grep sd
/dev/sda1 on /boot type xfs (rw,relatime,seclabel,attr2,inode64,noquota)
gvfsd-fuse on /run/user/0/gvfs type fuse.gvfsd-fuse (rw,nosuid,nodev,relatime,user_id=0,group_id=0)
/dev/sdb1 on /b1 type ext4 (rw,relatime,seclabel,data=ordered)
/dev/sdb2 on /b2 type ext4 (rw,relatime,seclabel,data=ordered)
/dev/sdb3 on /b3 type ext4 (rw,relatime,seclabel,data=ordered)
/dev/sdb5 on /b5 type ext4 (rw,relatime,seclabel,data=ordered)
/dev/sdb6 on /b6 type ext4 (rw,relatime,seclabel,data=ordered)
/dev/sdc1 on /c1 type ext4 (rw,relatime,seclabel,data=ordered)
/dev/sdc2 on /c2 type ext4 (rw,relatime,seclabel,data=ordered)
/dev/sdc3 on /c3 type ext4 (rw,relatime,seclabel,data=ordered)
/dev/sdc5 on /c5 type ext4 (rw,relatime,seclabel,data=ordered)
/dev/sdc6 on /c6 type ext4 (rw,relatime,seclabel,data=ordered)
/dev/sdd1 on /d1 type ext4 (rw,relatime,seclabel,data=ordered)
/dev/sdd2 on /d2 type ext4 (rw,relatime,seclabel,data=ordered)
/dev/sdd3 on /d3 type ext4 (rw,relatime,seclabel,data=ordered)
/dev/sdd5 on /d5 type ext4 (rw,relatime,seclabel,data=ordered)
/dev/sdd6 on /d6 type ext4 (rw,relatime,seclabel,data=ordered)
[root@pmtuan ~]#
```

RAID 1

Trước khi phá



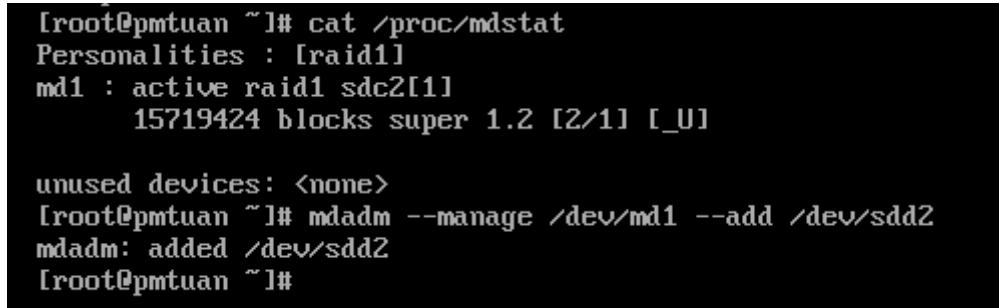
The image shows two terminal windows side-by-side. The left window displays the output of the command `cat /proc/mdstat`, which shows a raid1 array (md1) active with two members (sdc2[1] and sdb2[0]). The right window shows the output of `cat /etc/mdadm.conf`, which defines an array named `f23140dd:af547437:bc8bdb79:81b2` with level raid1, metadata=1.2, and devices=/dev/sdb2,/dev/sdc2.

```
[root@pmtuan ~]# cat /proc/mdstat
Personalities : [raid1]
md1 : active raid1 sdc2[1] sdb2[0]
      15719424 blocks super 1.2 [2/2] [_U]

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

```
[root@pmtuan ~]# cat /etc/mdadm.conf
ARRAY /dev/md1 level=raid1 num-devices=2 metadata=1.2 name=pmtuan:1 UUID=f23140dd:af547437:bc8bdb79:81b2
  /dev/sdb2
    devices=/dev/sdb2,/dev/sdc2
[root@pmtuan ~]#
```

Trong khi phá

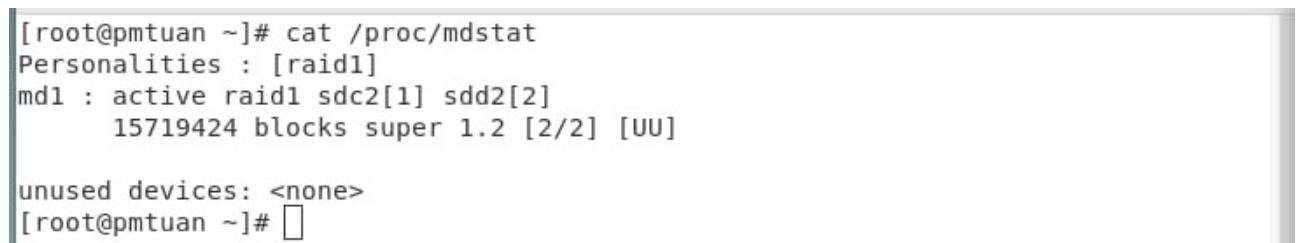


This terminal window shows the process of adding a new device to a RAID 1 array. It first displays the current mdstat status, then runs `mdadm --manage /dev/ md1 --add /dev/sdd2`, and finally shows the updated mdstat status where the array now has three members.

```
[root@pmtuan ~]# cat /proc/mdstat
Personalities : [raid1]
md1 : active raid1 sdc2[1] sdb2[0]
      15719424 blocks super 1.2 [2/1] [_U]

unused devices: <none>
[root@pmtuan ~]# mdadm --manage /dev/	md1 --add /dev/sdd2
mdadm: added /dev/sdd2
[root@pmtuan ~]#
```

Sau khi phá



This terminal window shows the final state of the RAID 1 array after the new device was added. The mdstat output indicates that the array (md1) is now active with three members (sdc2[1], sdb2[0], and sdd2[2]), and the array status is [UU].

```
[root@pmtuan ~]# cat /proc/mdstat
Personalities : [raid1]
md1 : active raid1 sdc2[1] sdb2[0] sdd2[2]
      15719424 blocks super 1.2 [2/2] [UU]

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

RAID 5

Trước khi phá

```
[root@pmtuan ~]# cat /proc/mdstat
Personalities : [raid1] [raid6] [raid5] [raid4]
md5 : active raid5 sdd3[3] sdc3[1] sdb3[0]
      41908224 blocks super 1.2 level 5, 512k chunk, algorithm 2 [3/3] [UUU]

md1 : active raid1 sdc2[1] sdd2[2]
      15719424 blocks super 1.2 [2/2] [UU]

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

```
[root@pmtuan ~]# cat /etc/mdadm.conf
ARRAY /dev/md1 level=raid1 num-devices=2 metadata=1.2 name=pmtuan:
  1 UUID=f23140dd:af547437:bc8bdb79:81b2c7d1
    devices=/dev/sdb2,/dev/sdc2
ARRAY /dev/md/1 level=raid1 num-devices=2 metadata=1.2 name=pmtuan:
  1 UUID=f23140dd:af547437:bc8bdb79:81b2c7d1
    devices=/dev/sdc2,/dev/sdd2
ARRAY /dev/md5 level=raid5 num-devices=3 metadata=1.2 name=pmtuan:
  5 UUID=7bde6a85:4d263f35:a4833aec:26a3d3c6
    devices=/dev/sdb3,/dev/sdc3,/dev/sdd3
[root@pmtuan ~]# █ █
```

Trong khi phá

```
[root@pmtuan ~]# cat /proc/mdstat
Personalities : [raid6] [raid5] [raid4]
md5 : active (auto-read-only) raid5 sdd3[3] sdc3[1]
      41908224 blocks super 1.2 level 5, 512k chunk, algorithm 2 [3/2] [_UU]

unused devices: <none>
[root@pmtuan ~]# mdadm --manage /dev/md5 --add /dev/sde3
mdadm: added /dev/sde3
[root@pmtuan ~]# cat /proc/mdstat
Personalities : [raid6] [raid5] [raid4]
md5 : active raid5 sde3[4] sdd3[3] sdc3[1]
      41908224 blocks super 1.2 level 5, 512k chunk, algorithm 2 [3/2] [_UU]
      [=.....] recovery = 5.5% (1159424/20954112) finish=1.1min speed=289856K/sec

unused devices: <none>
[root@pmtuan ~]# _
```

Sau khi phá

```
[root@pmtuan ~]# cat /proc/mdstat
Personalities : [raid6] [raid5] [raid4]
md5 : active raid5 sde3[4] sdd3[3] sdb3[0]
      41908224 blocks super 1.2 level 5, 512k chunk, algorithm 2 [3/3] [UUU]

unused devices: <none>
[root@pmtuan ~]# █
```