Computer System & Network Administration

Lab 04. Disk Management & File System - mdadm issues
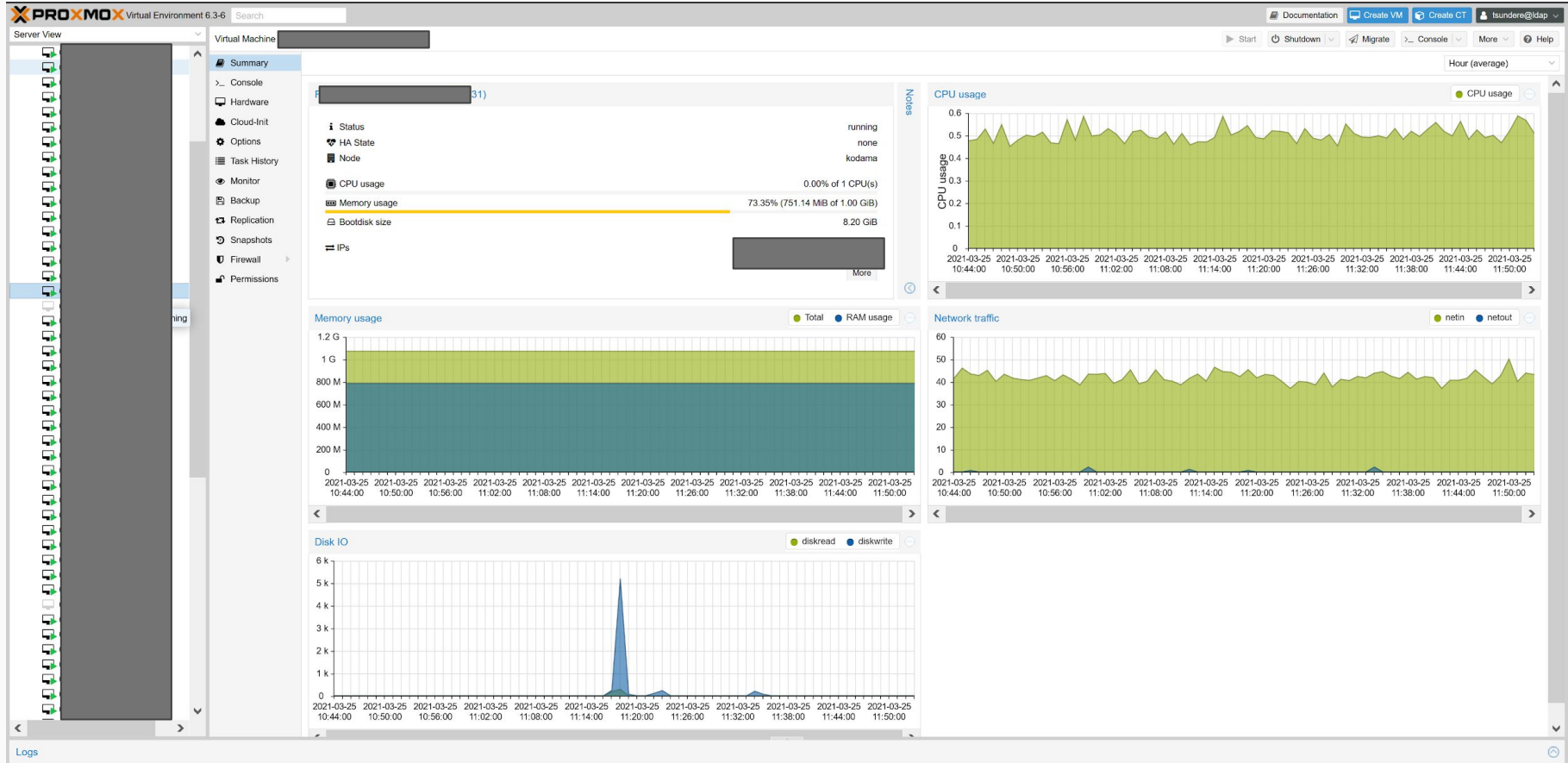
Okay...what happened?

- Some of your VMs were restarted
    - Resulting in RAID array renamed

First, there's something you need to know about your VM...

- Due to limited resources
  - Your VM's boot drive only can do 10MB/s Write/Read
  - vdb / vdc can only do 5MB/s Write/Read
- Your laptop / desktop can perform much better than this

And we have eye on every VM

Then...

- We noticed some strange behavior in some VM in one of our hypervisor
  - Lots of VM are doing 5xx MB/s write / read
  - Some of them are not responding to our requests
    - We can't login, can't ping...etc
  - So we decided to reboot the VM
    - A more ideal solution is to migrate your VM to other hypervisor live

After the reboot...

- Everything looks fine
  - Until we judged every VM that night
  - Some students that have already passed the test, failed

And this happened...

Why?

Booting process

```
[    1.804314] Run /init as init process
[    2.030809] FDC 0 is a S82078B
[    2.065737] virtio_blk virtio2: [vda] 17195008 512-byte logical blocks (8.80 GB/8.20 GiB)
[    2.088459] input: VirtualPS/2 VMware VMMouse as /devices/platform/i8042/serio1/input/input4
[    2.090230] input: VirtualPS/2 VMware VMMouse as /devices/platform/i8042/serio1/input/input3
[    2.131657]  vda: vda1 vda14 vda15
[    2.133965] virtio_blk virtio3: [vdb] 16777216 512-byte logical blocks (8.59 GB/8.00 GiB)
[    2.161297]  vdb: vdb1 vdb2
[    2.163582] virtio_blk virtio4: [vdc] 16777216 512-byte logical blocks (8.59 GB/8.00 GiB)
[    2.205291]  vdc: vdc1 vdc2
[    2.224385] virtio_net virtio5 ens18: renamed from eth0
[    2.232011] random: fast init done
[    2.232994] random: systemd-udevd: uninitialized urandom read (16 bytes read)
[    2.236774] random: systemd-udevd: uninitialized urandom read (16 bytes read)
[    2.240973] random: systemd-udevd: uninitialized urandom read (16 bytes read)
[    2.358286] md/raid1:md127: active with 2 out of 2 mirrors
[    2.359305] md127: detected capacity change from 0 to 4290772992
```

How to avoid this issue?

- Use UUID instead of device name
  - UUID is one-and-the-only
  - Device Name may not be the same
- update-initramfs -u
- /etc/mdadm/mdadm.conf

mdadm --detail --scan

```
ncku-nasa@F74061030:~$ sudo mdadm --detail --scan
ARRAY /dev/md/F74061030:0 metadata=1.2 name=F74061030:0 UUID=f364515a:539b9d3c:3c8ead75:2a83f8eb
```