lab 10

Lab10.1 : การจัดการ Process และ Service

Part 1 (Remote Access ด้วย ssh)

1. ให้จับคู่กับเพื่อน สร้าง User และกำหนด Password สำหรับให้เพื่อน Login เข้ามาได้

   ใช้คำสั่ง : sudo adduser best
   sudo passwd best
   sudo apt update
   sudo apt install openssh-server
   sudo systemctl enable ssh

2. ให้ใช้ ssh ทำการ Remote Acess เข้าเครื่องเพื่อนโดยใช้ User/Password ที่เพื่อนสร้างให้

   ใช้คำสั่ง : ssh chat@192.168.93.129

3. ให้ใช้ ssh ทำการ Remote Acess เข้าเครื่องเพื่อนโดยใช้ User/Password ที่เพื่อนสร้างให้

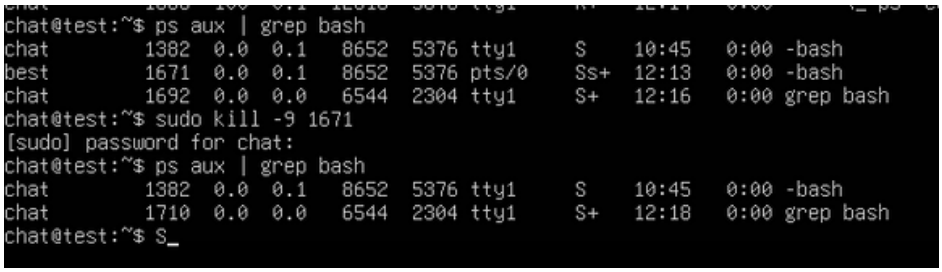
Part 2 (Kill Shell Process ของเพื่อน)

1. ใช้คำสั่ง w เพื่อดูว่ามีใคร Login เข้ามาบ้าง และใช้ ps -eufa เพื่อมองหา Shell เพื่อน

2. ใช้คำสั่ง kill ทำลาย Shell เพื่อน

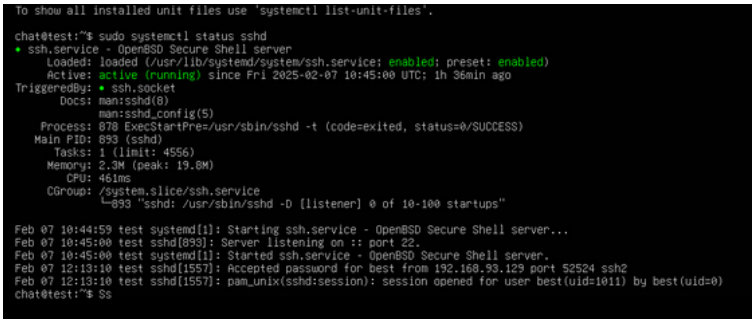
ใช้คำสั่ง : ps aux | grep bash
sudo kill -9 1671
ps aux | grep bash (ตรวจสอบอีกครั้ง)

3.บันทึกคำสั่งและผลการทดลอง

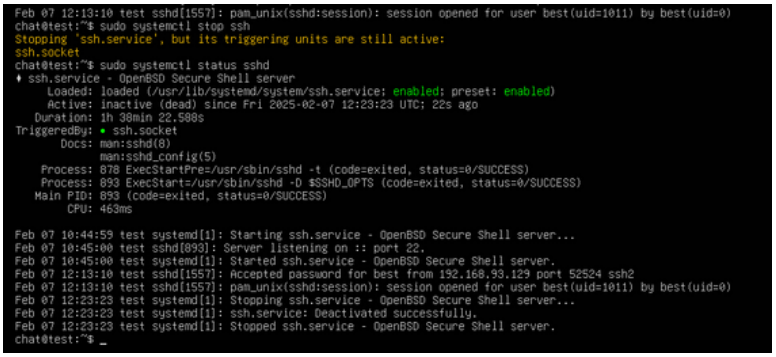


Part 3 (ปิด Service)

1. ใช้คำสั่ง systemctl หรือ service เพื่อดู Service sshd ว่าอยู่ในสถานะ active หรือ inactive

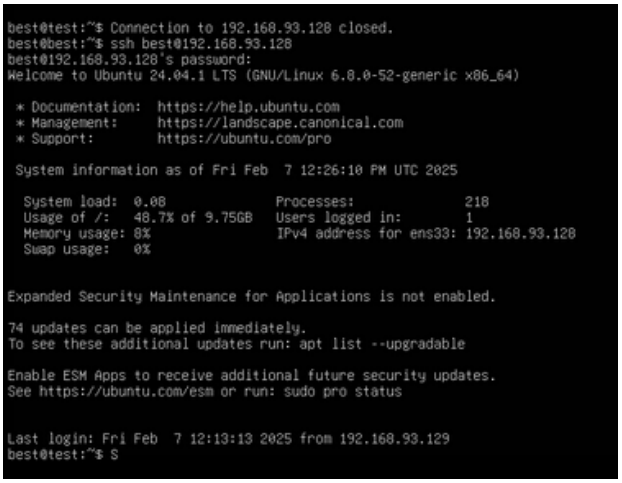


2. สั่งปิด Service sshd แล้วตรวจสอบสถานะซ้ำจนแน่ใจว่า inactive แล้ว

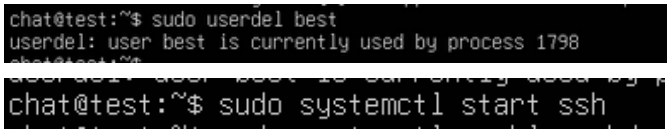


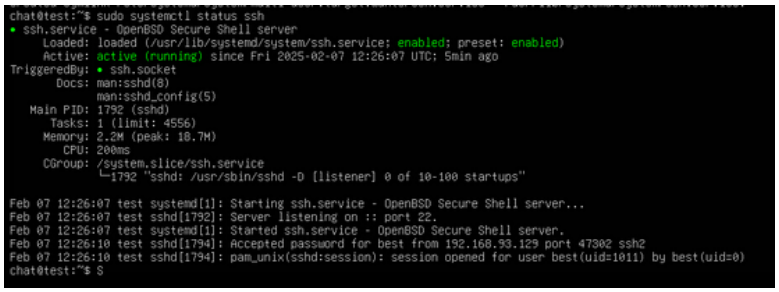
3.ให้เพื่อนลอง Remote Acess เข้ามาอีกครั้ง

4. บันทึกคำสั่งและผลการทดลอง



5. อย่าลืมลบหรือ Lock User ที่สร้างให้เพื่อน และอย่าลืมเปิด Service sshd คืนแบบเดิม

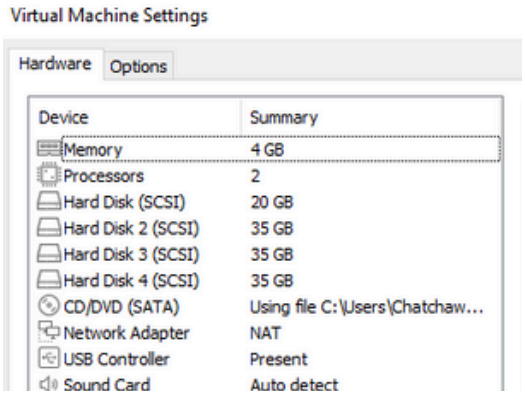




Lab10.2 : การจัดการ File System

Part 1 (เพิ่ม HDD สร้าง Volume)

1.เพิ่ม HDD ขนาด 35 GB จำนวน 3 ลูก



2. HDD#1 - กำหนด Partition แล้ว Format เป็น ext4 สำหรับ /home2

```
chat@test:~$ lsblk
NAME                      MAJ:MIN RM  SIZE RO TYPE MOUNTPOINTS
sda                         8:0    0   20G  0 disk
├─sda1                      8:1    0    1M  0 part
├─sda2                      8:2    0  1.8G  0 part /boot
└─sda3                      8:3    0 18.2G  0 part
  └─ubuntu--vg-ubuntu--lv 252:0    0   10G  0 lvm  /
sdb                         8:16   0   35G  0 disk
sdc                         8:32   0   35G  0 disk
sdd                         8:48   0   35G  0 disk
sr0                        11:0    1  2.6G  0 rom
chat@test:~$ sudo fdisk /dev/sdb
[sudo] password for chat:

Welcome to fdisk (util-linux 2.39.3).
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 0x689b6620.

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 (2048-73400319, default 2048):
Last sector, +/-sectors or +/-size{K,M,G,T,P} (2048-73400319, default 73400319):

Created a new partition 1 of type 'Linux' and of size 35 GiB.

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

chat@test:~$ lsblk
NAME                      MAJ:MIN RM  SIZE RO TYPE MOUNTPOINTS
sda                         8:0    0   20G  0 disk
├─sda1                      8:1    0    1M  0 part
├─sda2                      8:2    0  1.8G  0 part /boot
└─sda3                      8:3    0 18.2G  0 part
  └─ubuntu--vg-ubuntu--lv 252:0    0   10G  0 lvm  /
sdb                         8:16   0   35G  0 disk
└─sdb1                      8:17   0   35G  0 part
sdc                         8:32   0   35G  0 disk
sdd                         8:48   0   35G  0 disk
sr0                        11:0    1  2.6G  0 rom
chat@test:~$ Ss
```

```
chat@test:~$ sudo mkfs.ext4 /dev/sdb1
mke2fs 1.47.0 (5-Feb-2023)
Creating filesystem with 9174784 4k blocks and 2293760 inodes
Filesystem UUID: 786405b9-0ba1-4530-a5af-c13ec00bc902
Superblock backups stored on blocks:
        32768, 98304, 163840, 229376, 294912, 819200, 884736, 1605632, 2654208,
        4096000, 7962624

Allocating group tables: done
Writing inode tables: done
Creating journal (65536 blocks): done
Writing superblocks and filesystem accounting information: done

chat@test:~$ df -h
Filesystem                         Size  Used Avail Use% Mounted on
tmpfs                              387M  1.5M  386M   1% /run
/dev/mapper/ubuntu--vg-ubuntu--lv  9.8G  4.8G  4.5G  52% /
tmpfs                              1.9G     0  1.9G   0% /dev/shm
tmpfs                              5.0M     0  5.0M   0% /run/lock
/dev/sda2                          1.8G  182M  1.5G  12% /boot
tmpfs                              387M   12K  387M   1% /run/user/1000
chat@test:~$
```

ใช้คำสั่ง : sudo mkdir -p /home2
sudo mount /dev/sdb1 /home2
sudo nano /etc/fstab

เพิ่ม /dev/sdb1 /home2 ext4 defaults 0 2

```
 GNU nano 7.2                                                  /etc/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/ubuntu-vg/ubuntu-lv during curtin installation
/dev/disk/by-id/dm-uuid-LVM-c291xanrpgirFYT5hkEdPcFEfhhDuWvsfqBuoPSnP1dJoWhvkPMbeQVqldkruQLia / ext4 defaults 0 1
# /boot was on /dev/sda2 during curtin installation
/dev/disk/by-uuid/300cfb4e-c346-4a57-ab7c-d38452567bb8 /boot ext4 defaults 0 1
/swap.img       none    swap    sw      0       0
/dev/sdb1       /home2  ext4    defaults        0       2_
```

3. HDD#2 - จัดการแบบ HDD#1 แต่ใช้ Logical Volume Management (LVM) และใช้สำหรับ /home3

```
chat@test:~$ sudo fdisk /dev/sdc

Welcome to fdisk (util-linux 2.39.3).
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 0x92987b4d.

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 (2048-73400319, default 2048):
Last sector, +/-sectors or +/-size{K,M,G,T,P} (2048-73400319, default 73400319):

Created a new partition 1 of type 'Linux' and of size 35 GiB.

Command (m for help): t
Selected partition 1
Hex code or alias (type L to list all): 8e
Changed type of partition 'Linux' to 'Linux LVM'.

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

```
chat@test:~$ sudo pvcreate /dev/sdc1
  Physical volume "/dev/sdc1" successfully created.
chat@test:~$ sudo vgcreate vg_home3 /dev/sdc1
  Volume group "vg_home3" successfully created
chat@test:~$ sudo lvcreate -l 100%FREE -n lv_home3 vg_home3
  Logical volume "lv_home3" created.
chat@test:~$ sudo mkfs.ext4 /dev/vg_home3/lv_home3
mke2fs 1.47.0 (5-Feb-2023)
Creating filesystem with 9174016 4k blocks and 2293760 inodes
Filesystem UUID: 6cd18915-116a-4257-88e2-175bb9e8c60c
Superblock backups stored on blocks:
        32768, 98304, 163840, 229376, 294912, 819200, 884736, 1605632, 2654208,
        4096000, 7962624

Allocating group tables: done
Writing inode tables: done
Creating journal (65536 blocks): done
Writing superblocks and filesystem accounting information: done

chat@test:~$ sudo mkdir -p /home3
chat@test:~$ sudo mount /dev/vg_home3/lv_home3 /home3
mount: (hint) your fstab has been modified, but systemd still uses
       the old version; use 'systemctl daemon-reload' to reload.
chat@test:~$ df -h
Filesystem                         Size  Used Avail Use% Mounted on
tmpfs                              387M  1.5M  386M   1% /run
/dev/mapper/ubuntu--vg-ubuntu--lv  9.8G  4.8G  4.5G  52% /
tmpfs                              1.9G     0  1.9G   0% /dev/shm
tmpfs                              5.0M     0  5.0M   0% /run/lock
/dev/sda2                          1.8G  182M  1.5G  12% /boot
tmpfs                              387M   12K  387M   1% /run/user/1000
/dev/mapper/vg_home3-lv_home3       35G   24K   33G   1% /home3
chat@test:~$
```

ใช้คำสั่ง : sudo nano /etc/fstab

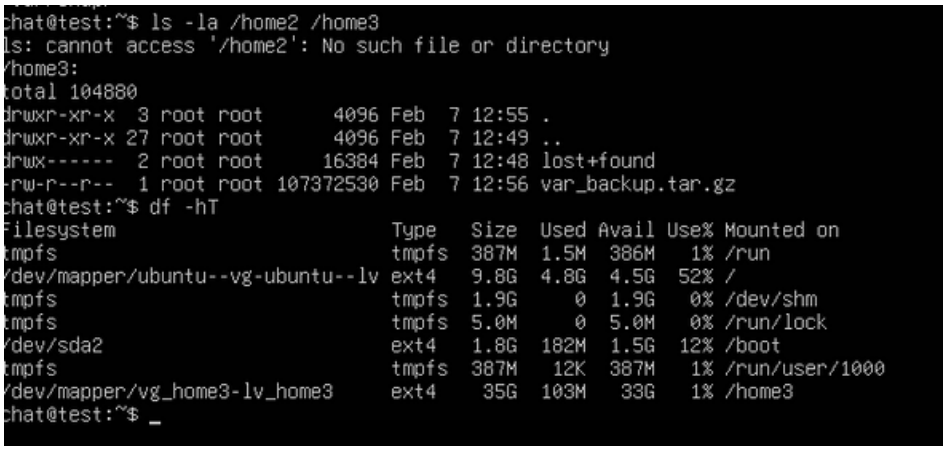
เพิ่ม /dev/vg_home3/lv-home3 /home3 ext4 defaults 0 2

```
 GNU nano 7.2                                                  /etc/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/ubuntu-vg/ubuntu-lv during curtin installation
/dev/disk/by-id/dm-uuid-LVM-c291xanrpgirFYT5hkEdPcFEfhhDuWvsfqBuoPSnP1dJoWhvkPMbeQVqldkruQLia / ext4 defaults 0 1
# /boot was on /dev/sda2 during curtin installation
/dev/disk/by-uuid/300cfb4e-c346-4a57-ab7c-d38452567bb8 /boot ext4 defaults 0 1
/swap.img       none    swap    sw      0       0
/dev/sdb1       /home2  ext4    defaults        0       2
/dev/vg_home3/lv_home3  /home3  ext4    defaults        0       2
```

4.ทำไฟล์ Archive ของ /etc มาเก็บใน /home2 และของ /var มาเก็บใน /home3

ใช้คำสั่ง : sudo tar -cvzf /home2/etc_backup.tar.gz /etc
sudo tar -cvzf /home3/var_backup.tar.gz /var

5.สั่ง ls -la /home2 /home3 แล้วบันทึกผล และสั่ง df -hT แล้วบันทึกผล



Part 2 (ขยาย Volume ที่มีอยู่)

1.นำ HDD#3 มาเพิ่มให้ /home3

```
/dev/mapper/vg_home3-lv_home3     ext4    35G  103M   33G   1% /home3
chat@test:~$ sudo fdisk /dev/sdd

Welcome to fdisk (util-linux 2.39.3).
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 0x5bdbdaaf.

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 (2048-73400319, default 2048):
Last sector, +/-sectors or +/-size{K,M,G,T,P} (2048-73400319, default 73400319):

Created a new partition 1 of type 'Linux' and of size 35 GiB.

Command (m for help): t
Selected partition 1
Hex code or alias (type L to list all): 8e
Changed type of partition 'Linux' to 'Linux LVM'.

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

chat@test:~$
```

```
chat@test:~$ sudo pvcreate /dev/sdd1
  Physical volume "/dev/sdd1" successfully created.
chat@test:~$ sudo lvextend -l +100%FREE /dev/vg_home3/lv_home3
  New size (8959 extents) matches existing size (8959 extents).
chat@test:~$ sudo resize2fs /dev/vg_home3/lvhome3
resize2fs 1.47.0 (5-Feb-2023)
open: No such file or directory while opening /dev/vg_home3/lvhome3
chat@test:~$ sudo resize2fs /dev/vg_home3/lv_home3
resize2fs 1.47.0 (5-Feb-2023)
The filesystem is already 9174016 (4k) blocks long.  Nothing to do!

chat@test:~$ df -h /home3
Filesystem                      Size  Used Avail Use% Mounted on
/dev/mapper/vg_home3-lv_home3   35G  103M   33G   1% /home3
chat@test:~$ _
```

2.Restore ไฟล์ Archive ออกมาใน /home3

ใช้คำสั่ง : sudo tar -xvzf /home2/etc_backup.tar.gz -C /home3
sudo tar -xvzf /home3/var_backup.tar.gz -C /home3

```
etc/logrotate.d/ufw
etc/logrotate.d/cloud-init
etc/logrotate.d/bootlog
etc/logrotate.d/alternatives
etc/logrotate.d/rsyslog
etc/logrotate.d/ubuntu-pro-client
etc/logrotate.d/wtmp
etc/logrotate.d/dpkg
etc/logrotate.d/apt
etc/logrotate.d/btmp
etc/logrotate.d/apport
etc/resolv.conf
etc/rc1.d/
etc/rc1.d/K01uuidd
etc/rc1.d/K01open-iscsi
etc/rc1.d/K01ufw
etc/rc1.d/K01open-vm-tools
etc/rc1.d/K01iscsid
etc/lvm/
etc/lvm/profile/
etc/lvm/profile/thin-generic.profile
etc/lvm/profile/vdo-small.profile
etc/lvm/profile/thin-performance.profile
etc/lvm/profile/metadata_profile_template.profile
etc/lvm/profile/lvmdbusd.profile
etc/lvm/profile/command_profile_template.profile
etc/lvm/profile/cache-mq.profile
etc/lvm/profile/cache-smq.profile
etc/lvm/lvmlocal.conf
etc/lvm/archive/
etc/lvm/archive/vg_home3_00000-1410318057.vg
etc/lvm/lvm.conf
etc/lvm/backup/
etc/lvm/backup/ubuntu-vg
etc/lvm/backup/vg_home3
etc/libaudit.conf
etc/udev/
etc/udev/iocost.conf
etc/udev/rules.d/
etc/udev/rules.d/ubuntu--vg-ubuntu--lv.rules
etc/udev/udev.conf
etc/udev/hwdb.d/
etc/UPower/
etc/UPower/UPower.conf
etc/services
etc/rsyslog.d/
etc/rsyslog.d/20-ufw.conf
etc/rsyslog.d/21-cloudinit.conf
etc/rsyslog.d/50-default.conf
chat@test:~$
```

```
var/lib/cloud/instances/iid-datasource-none/boot-finished
var/lib/cloud/instances/iid-datasource-none/scripts/
var/lib/cloud/instances/iid-datasource-none/handlers/
var/lib/cloud/instances/iid-datasource-none/datasource
var/lib/cloud/instances/iid-datasource-none/obj.pkl
var/lib/cloud/instances/iid-datasource-none/vendor-data.txt.i
var/lib/cloud/instances/iid-datasource-none/sem/
var/lib/cloud/instances/iid-datasource-none/sem/config_mounts
var/lib/cloud/instances/iid-datasource-none/sem/config_seed_random
var/lib/cloud/instances/iid-datasource-none/sem/config_ssh_import_id
var/lib/cloud/instances/iid-datasource-none/sem/consume_data
var/lib/cloud/instances/iid-datasource-none/sem/config_apt_configure
var/lib/cloud/instances/iid-datasource-none/sem/config_byobu
var/lib/cloud/instances/iid-datasource-none/sem/config_write_files
var/lib/cloud/instances/iid-datasource-none/sem/config_scripts_user
var/lib/cloud/instances/iid-datasource-none/sem/config_grub_dpkg
var/lib/cloud/instances/iid-datasource-none/sem/config_set_passwords
var/lib/cloud/instances/iid-datasource-none/sem/config_scripts_per_instance
var/lib/cloud/instances/iid-datasource-none/sem/config_ssh
var/lib/cloud/instances/iid-datasource-none/sem/config_install_hotplug
var/lib/cloud/instances/iid-datasource-none/sem/config_reset_rmc
var/lib/cloud/instances/iid-datasource-none/sem/config_keys_to_console
var/lib/cloud/instances/iid-datasource-none/sem/config_users_groups
var/lib/cloud/instances/iid-datasource-none/sem/config_write_files_deferred
var/lib/cloud/instances/iid-datasource-none/sem/config_locale
var/lib/cloud/instances/iid-datasource-none/sem/config_scripts_vendor
var/lib/cloud/instances/iid-datasource-none/sem/config_ssh_authkey_fingerprints
var/lib/cloud/instances/iid-datasource-none/sem/config_set_hostname
var/lib/cloud/instances/iid-datasource-none/user-data.txt
var/lib/cloud/instances/iid-datasource-none/vendor-data2.txt.i
var/lib/cloud/instances/iid-datasource-none/user-data.txt.i
var/lib/cloud/seed/
var/lib/cloud/scripts/
var/lib/cloud/scripts/per-instance/
var/lib/cloud/scripts/per-boot/
var/lib/cloud/scripts/per-once/
var/lib/cloud/scripts/vendor/
var/lib/cloud/handlers/
var/lib/cloud/data/
var/lib/cloud/data/instance-id
var/lib/cloud/data/python-version
var/lib/cloud/data/previous-datasource
var/lib/cloud/data/status.json
var/lib/cloud/data/result.json
var/lib/cloud/data/previous-instance-id
var/lib/cloud/instance
var/lib/cloud/sem/
var/lib/cloud/sem/config_scripts_per_once.once
var/snap/
chat@test:~$
```

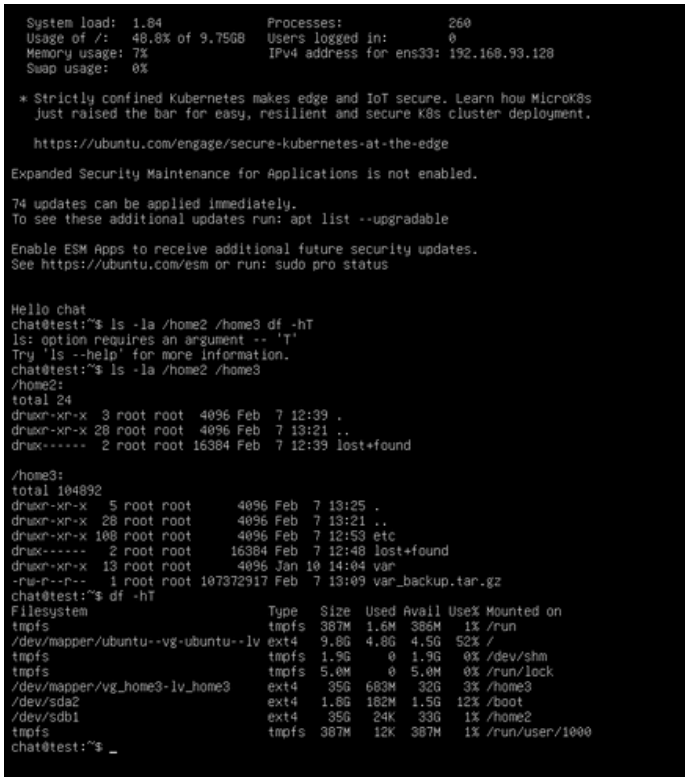
3.สั่ง ls -la /home2 /home3 และ df -hT แล้วบันทึกผล

```
chat@test:~$ ls -la /home2 /home3
/home2:
total 592
drwxr-xr-x  2 root root   4096 Feb  7 13:21 .
drwxr-xr-x 28 root root   4096 Feb  7 13:21 ..
-rw-r--r--  1 root root 594696 Feb  7 13:21 etc_backup.tar.gz

/home3:
total 104892
drwxr-xr-x   5 root root      4096 Feb  7 13:25 .
drwxr-xr-x  28 root root      4096 Feb  7 13:21 ..
drwxr-xr-x 108 root root      4096 Feb  7 12:53 etc
drwx------   2 root root     16384 Feb  7 12:48 lost+found
drwxr-xr-x  13 root root      4096 Jan 10 14:04 var
-rw-r--r--   1 root root 107372917 Feb  7 13:09 var_backup.tar.gz
chat@test:~$ df -hT
Filesystem                         Type   Size  Used Avail Use% Mounted on
tmpfs                              tmpfs  387M  1.6M  386M   1% /run
/dev/mapper/ubuntu--vg-ubuntu--lv ext4   9.8G  4.8G  4.5G  52% /
tmpfs                              tmpfs  1.9G     0  1.9G   0% /dev/shm
tmpfs                              tmpfs  5.0M     0  5.0M   0% /run/lock
/dev/sda2                          ext4   1.8G  182M  1.5G  12% /boot
tmpfs                              tmpfs  387M   12K  387M   1% /run/user/1000
/dev/mapper/vg_home3-lv_home3      ext4    35G  683M   32G   3% /home3
chat@test:~$
```

Part 3 (ติดตั้งแบบถาวร)

1. Restart Linux แล้วสั่ง ls -la /home2 /home3 และ df -hT แล้วบันทึกผล



2. Restart Linux แล้วสั่ง ls -la /home2 /home3 และ df -hT แล้วบันทึกผล ถ้าผลที่ได้เหมือน Part 2 ให้สรุปเพื่อจบการทดลอง แต่ถ้าผลที่ได้ไม่เหมือน Part 2 ให้แก้ปัญหาจนได้ผลการทดลองเหมือน Part 2 แล้วอธิบายวิธีแก้ไข แล้วสรุปผลเพื่อจบการทดลอง

ตอบ : ผลจากpart2และpart3ไม่แตกต่างกันมาก เพราะpartition /home2 และ home3 ถูกmount อัตโนมัติไว้ก่อนหน้าที่ เลยทำให้มีไฟล์อยู่ ถ้าไม่mount อัตโนมัติไว้ เมื่อls -la /home2 /home3 หรือ df -hT จะหาไม่เจอ