CS3530 Networking Hans-on
Module-1: VM Hosts Installation

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Objective and Contents

- Objective
  - Getting prepared for Module 2 and beyond
- Contents
  - Installing 2 VM instances of a Linux server on your Ubuntu desktop

Prerequisites

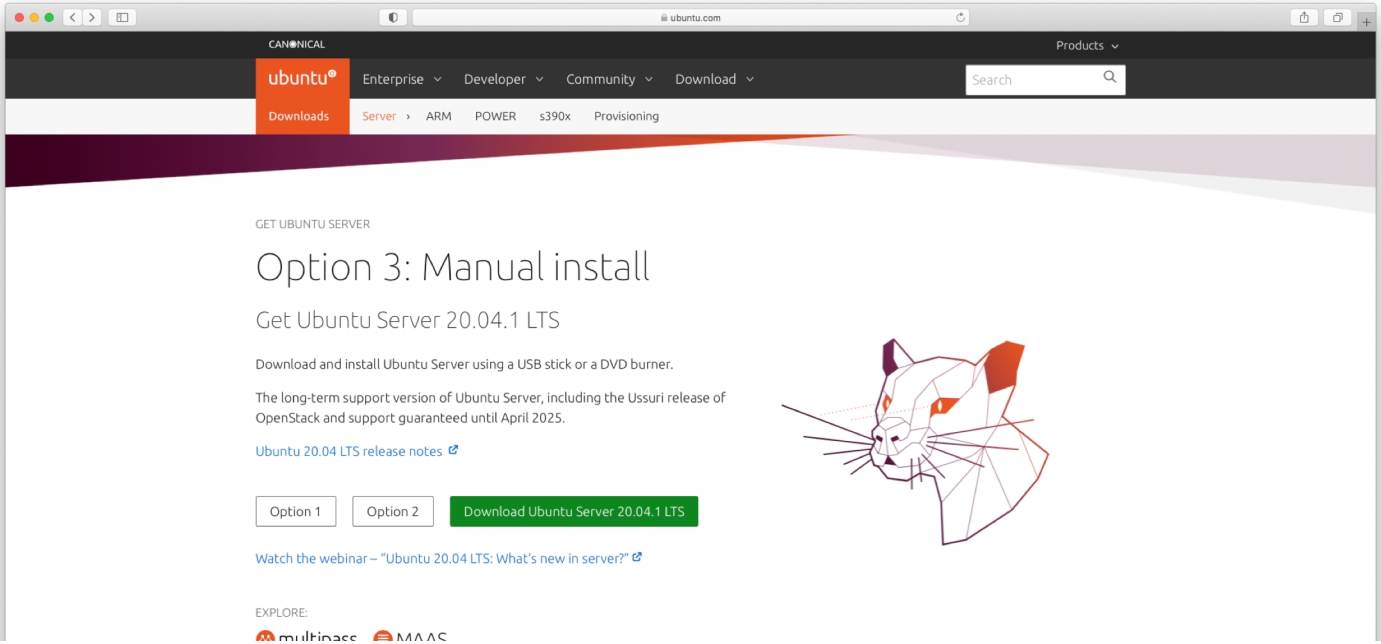
- This hands-on is assuming that you have Ubuntu Desktop as the native OS on your laptop or desktop computer.
- Mac and Windows users are recommended to enable dual boot on your laptop or desktop computer so that the hands-on can be performed properly.
- You may also use the free compute services (such as Amazon AWS) to run VMs.

Steps

- Downloading Ubuntu “Server” ISO Image
- Installing “virt-manager”
- Installing 2 VM instances of Ubuntu Server using virt-manager
- Performing post-installation configuration of Ubuntu Servers

Downloading Ubuntu “Server” ISO Image

- By the way, why ”server”?
  - Less system requirement to run
  - CLI is good enough to perform the hands-on



Installing “virt-manager” to your Ubuntu Desktop

- Works for Ubuntu Desktop 20.04 LTS

```
sudo apt-get update
sudo apt-get install qemu-kvm libvirt-clients libvirt-daemon-system bridge-utils virt-manager vlan
sudo apt-get install iperf traceroute
```

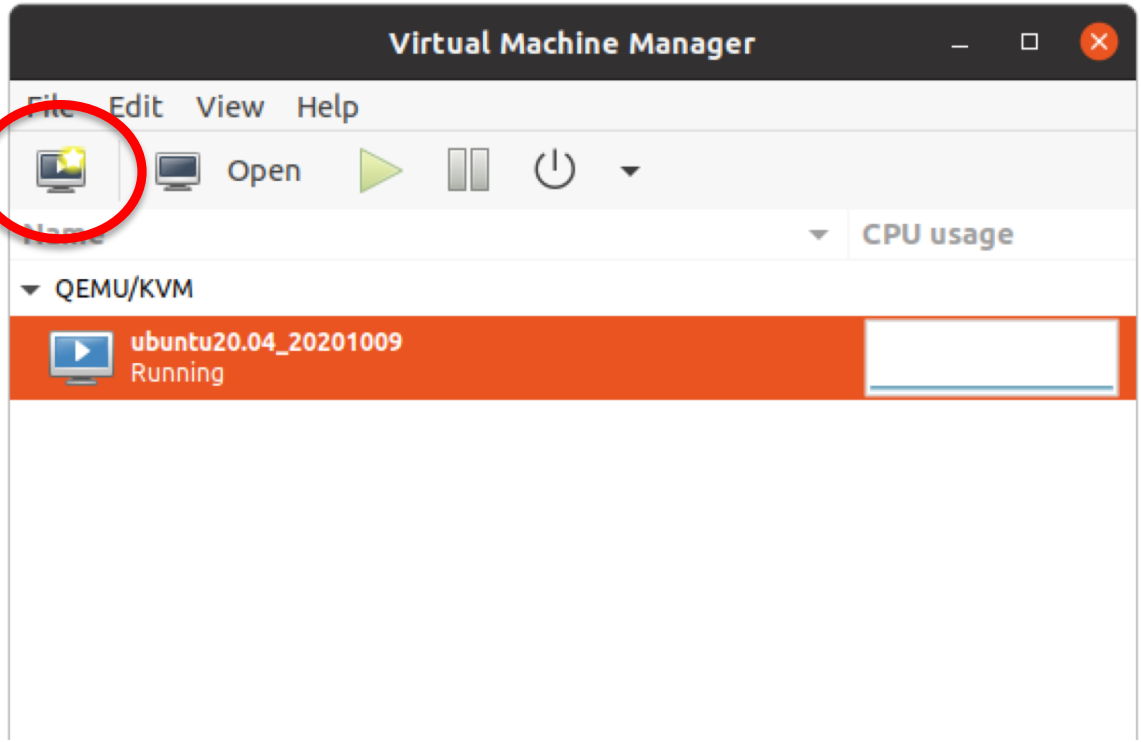
- Used to Work for Ubuntu Desktop 18.04 LTS

```
sudo apt-get update
sudo apt-get install kvm libvirt-bin bridge-utils virt-manager vlan
sudo apt-get install iperf traceroute
```

Installing Ubuntu Server as a VM (1/4)

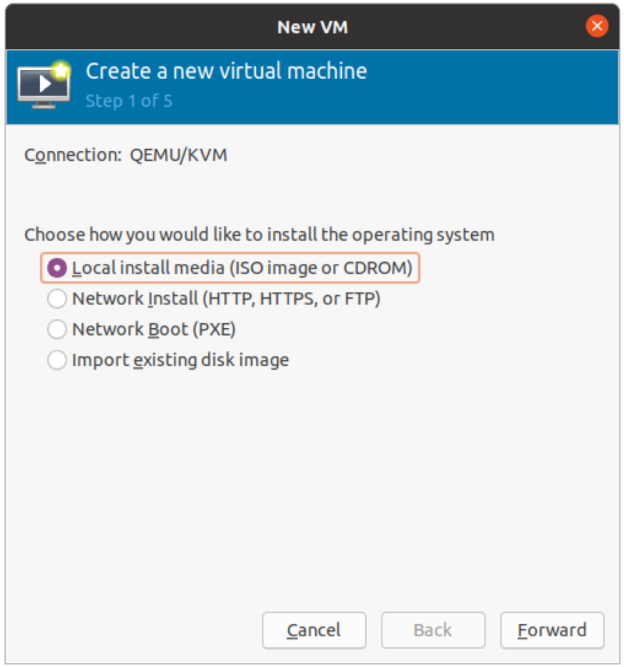
- Launch virt-manager and install a VM

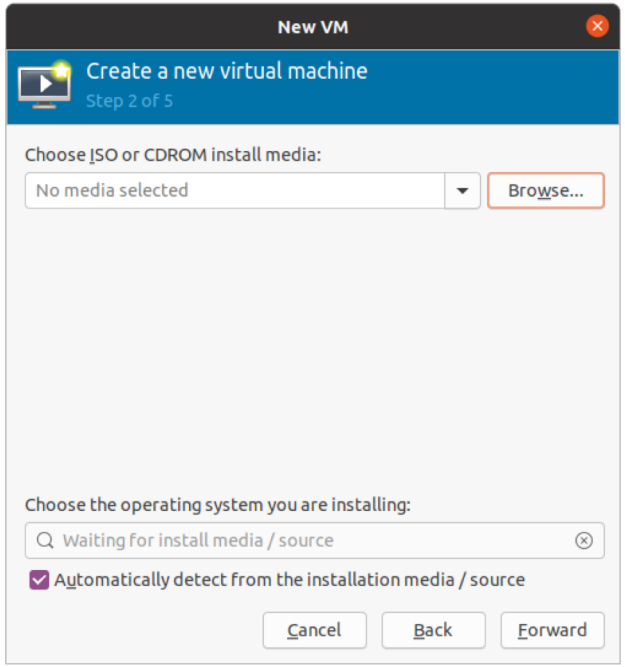
```
sudo virt-manager
```

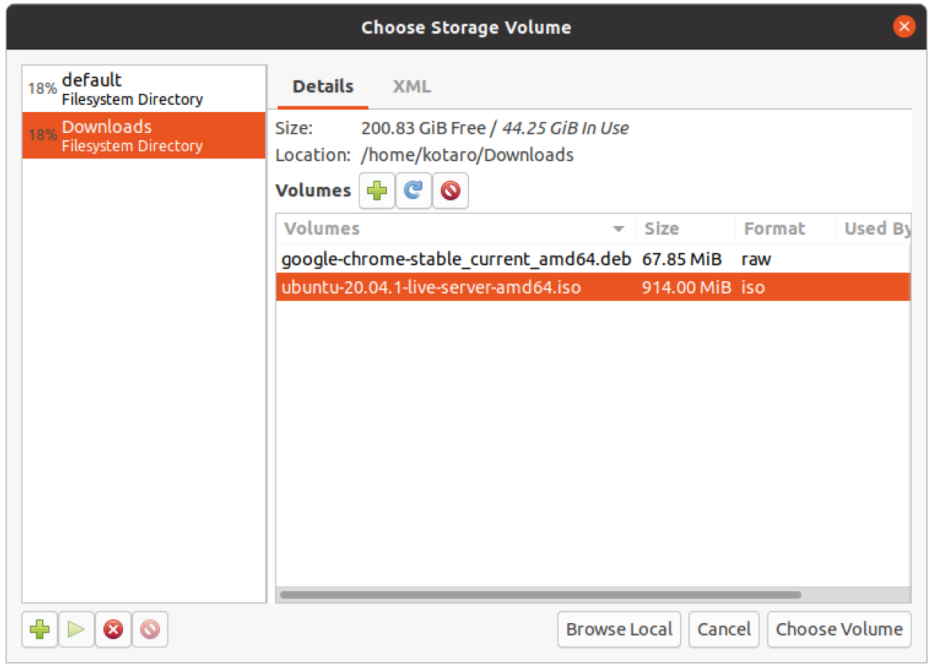


Installing Ubuntu Server as a VM (2/4)

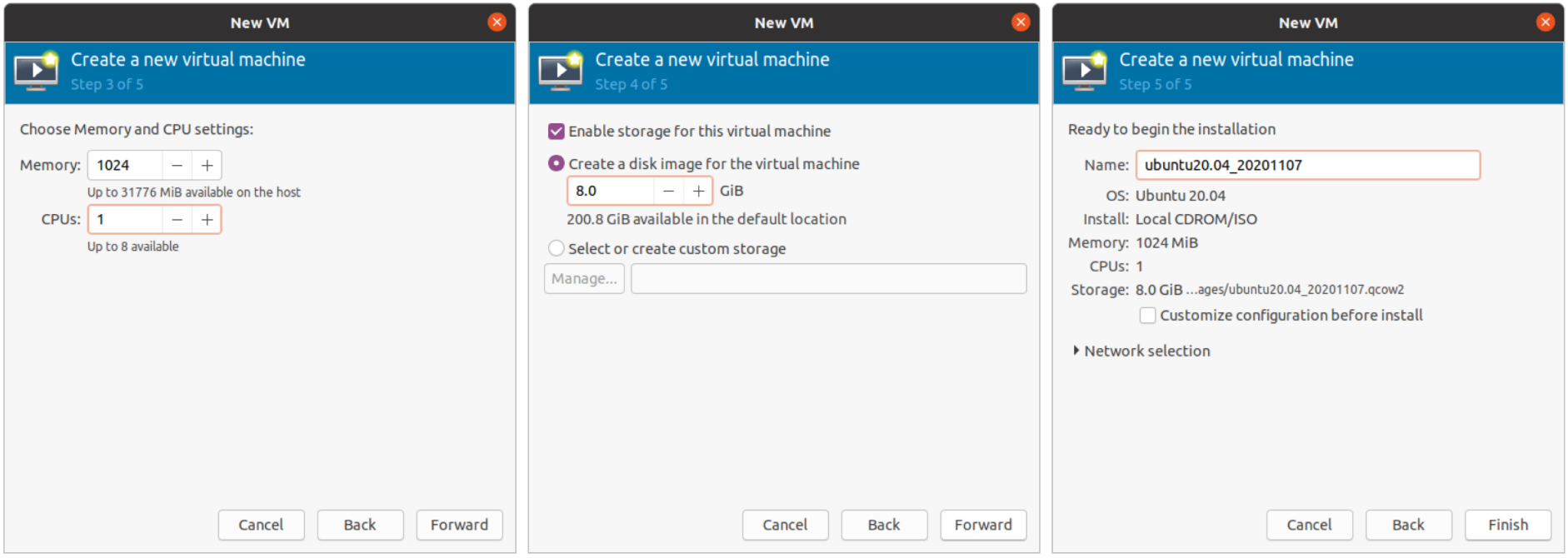
- Default configuration works





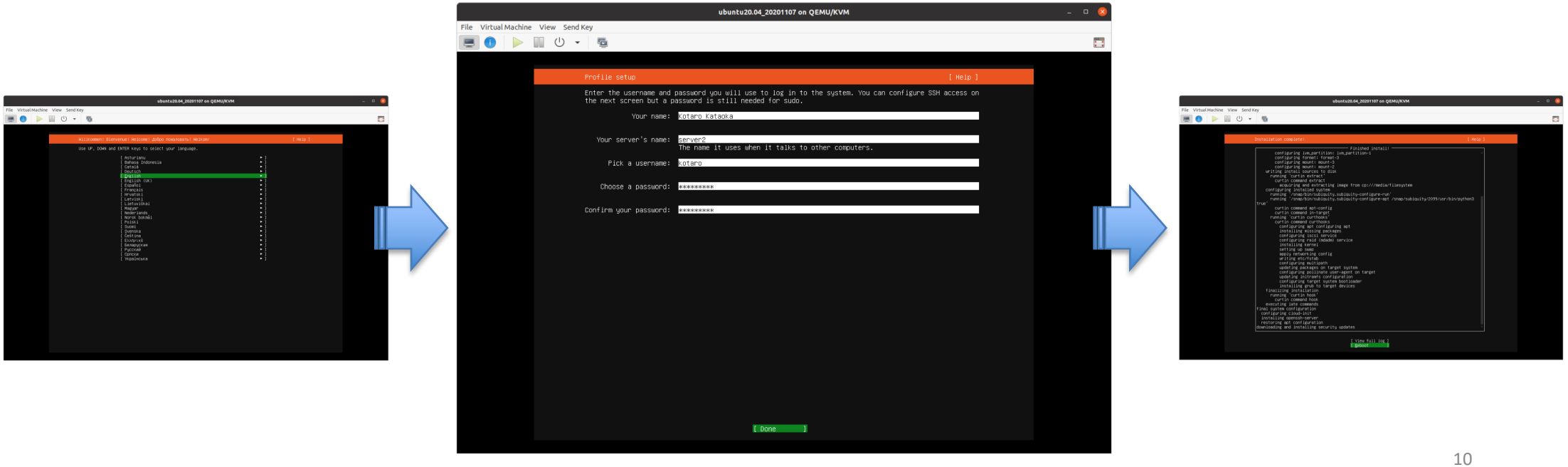


Installing Ubuntu Server as a VM (3/4)



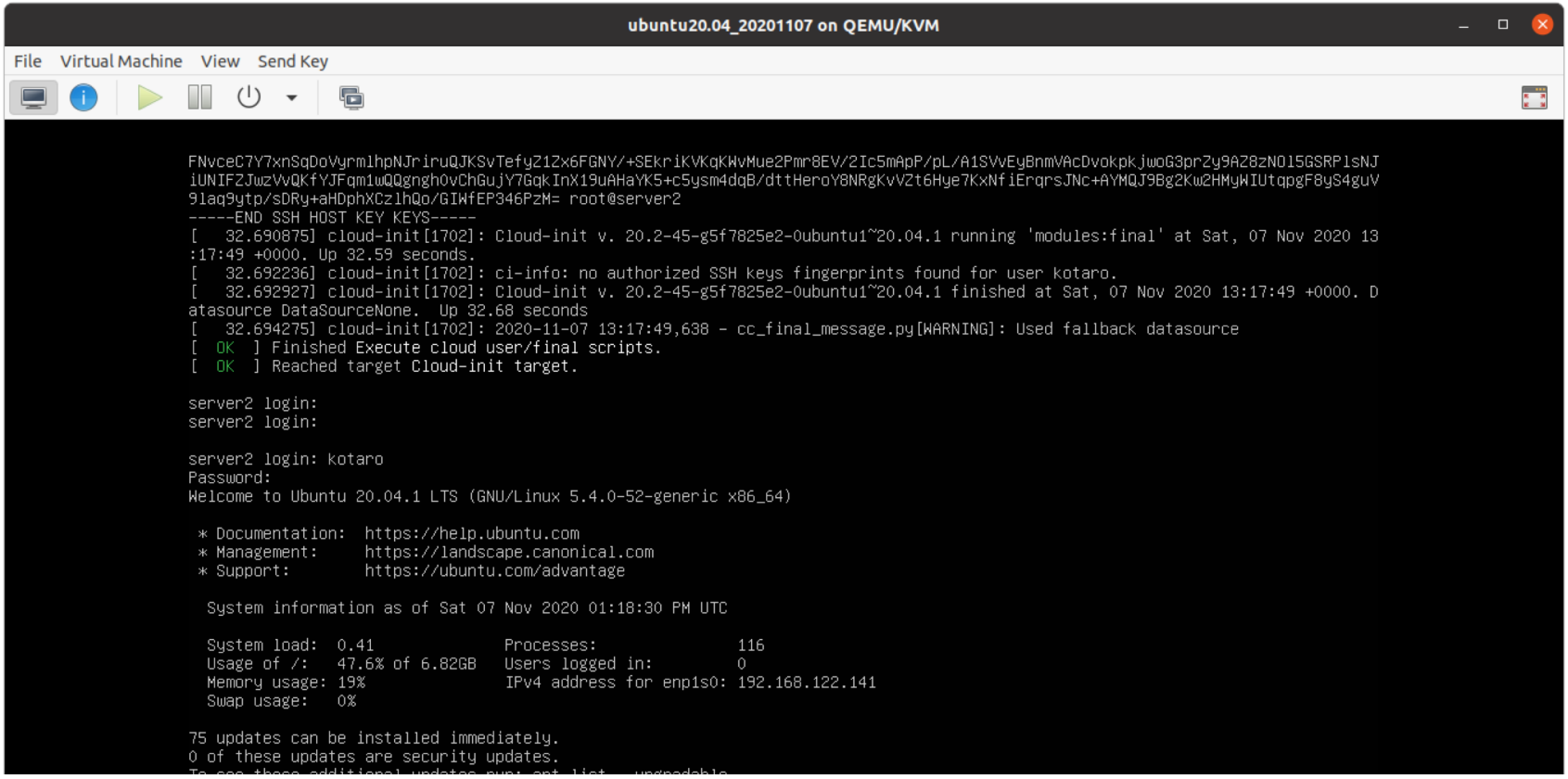
Installing Ubuntu Server as a VM (4/4)

- No need of specific configuration other than specifying a host name and a user account

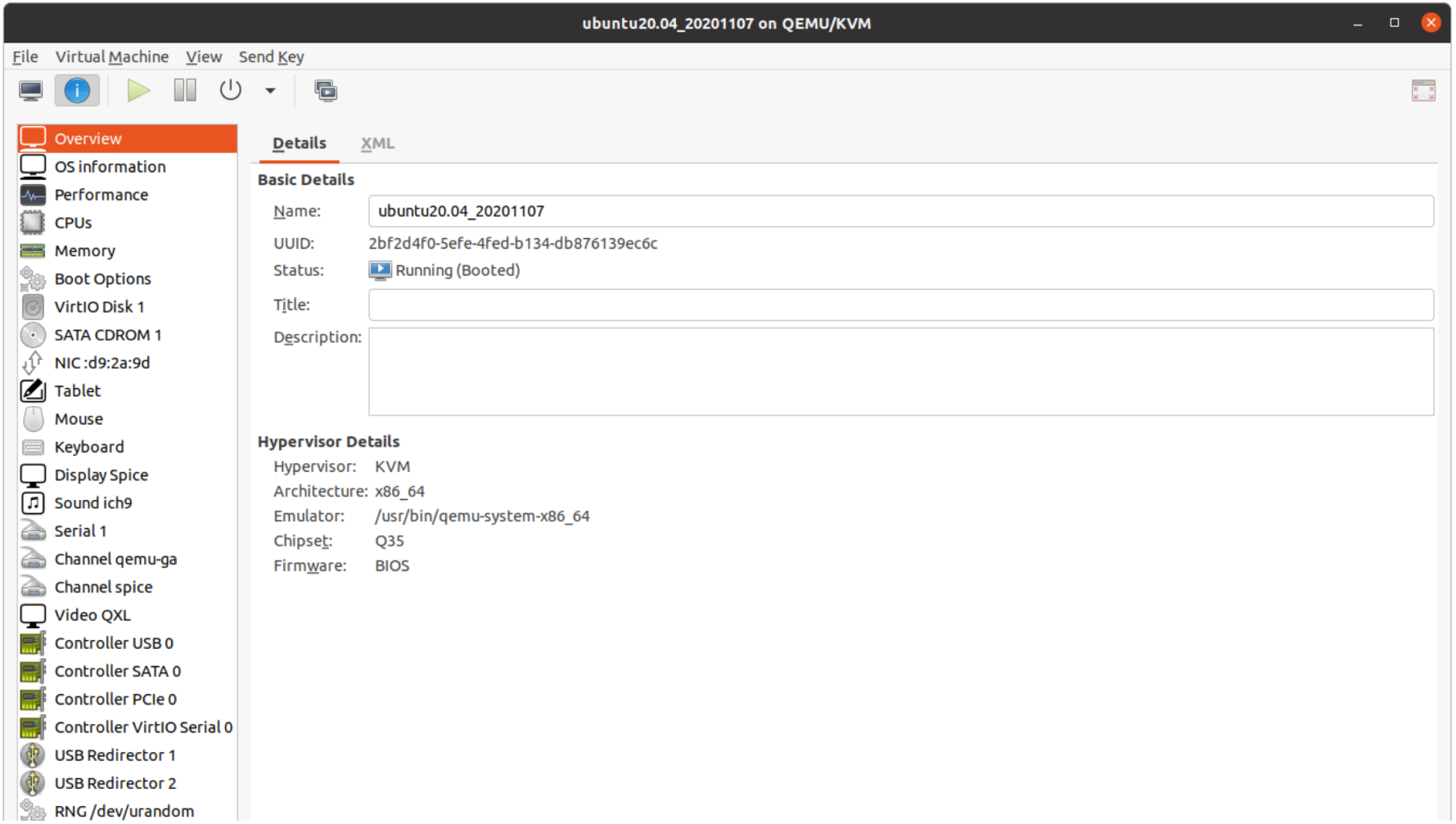


Console Window (CLI) of Ubuntu Server VM

- Let the system reboot and login to the system



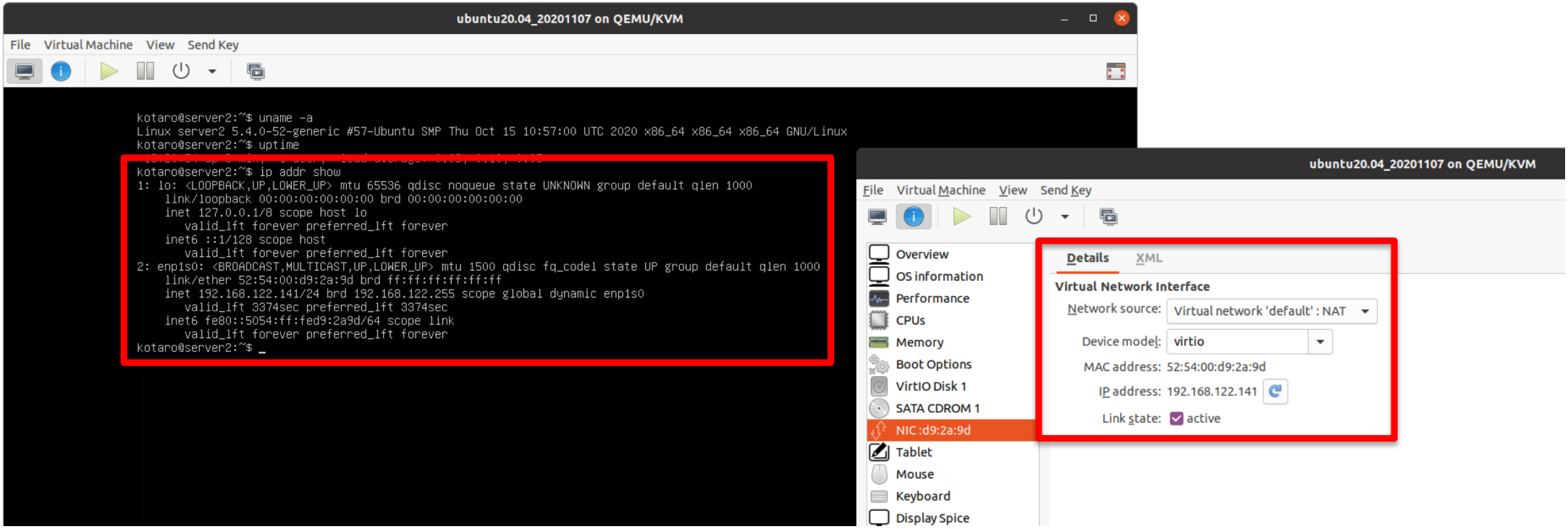
Information (Property) of Ubuntu Server VM



Network Interface Card (NIC) Information on CLI and Information Property of virt-manager

- Use the following command to show the NIC information

`ip addr show`



Performing post-installation configuration of Ubuntu Servers

- Check the Internet connectivity from your VM

```
ping www.iith.ac.in
```

- Install some important network utilities

```
sudo apt-get install iperf traceroute
```

Installing 2nd Ubuntu Server

- Repeat the same installation procedure
  or
- Copy the VM image with a different name and activate it

- If virt-manager uses “Virtual network ‘default’ : NAT” as Network Source, 2 VMs cannot communicate with each other. This situation is correct.

Done!!