

Ex No: 5b

KVM – Create Images from ISO, Image Resizing, and Image Conversion

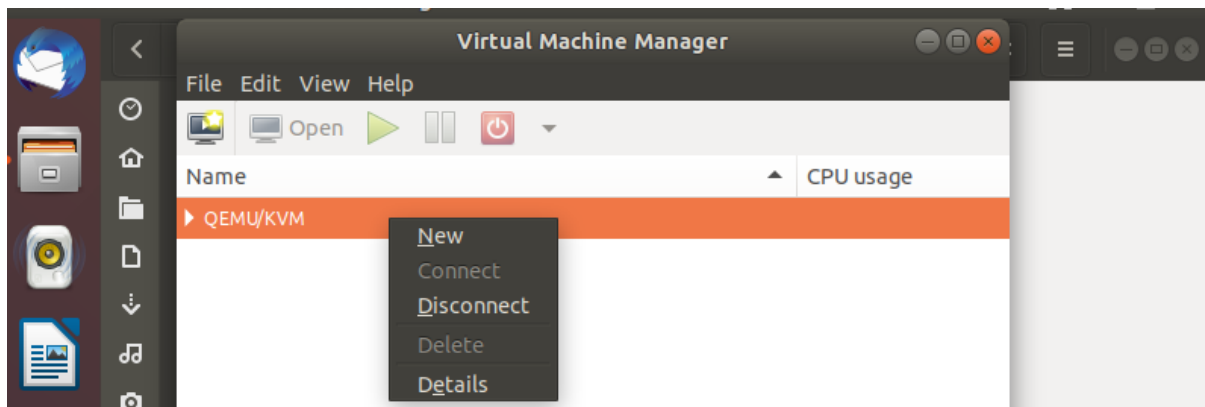
28/07/26

Aim:

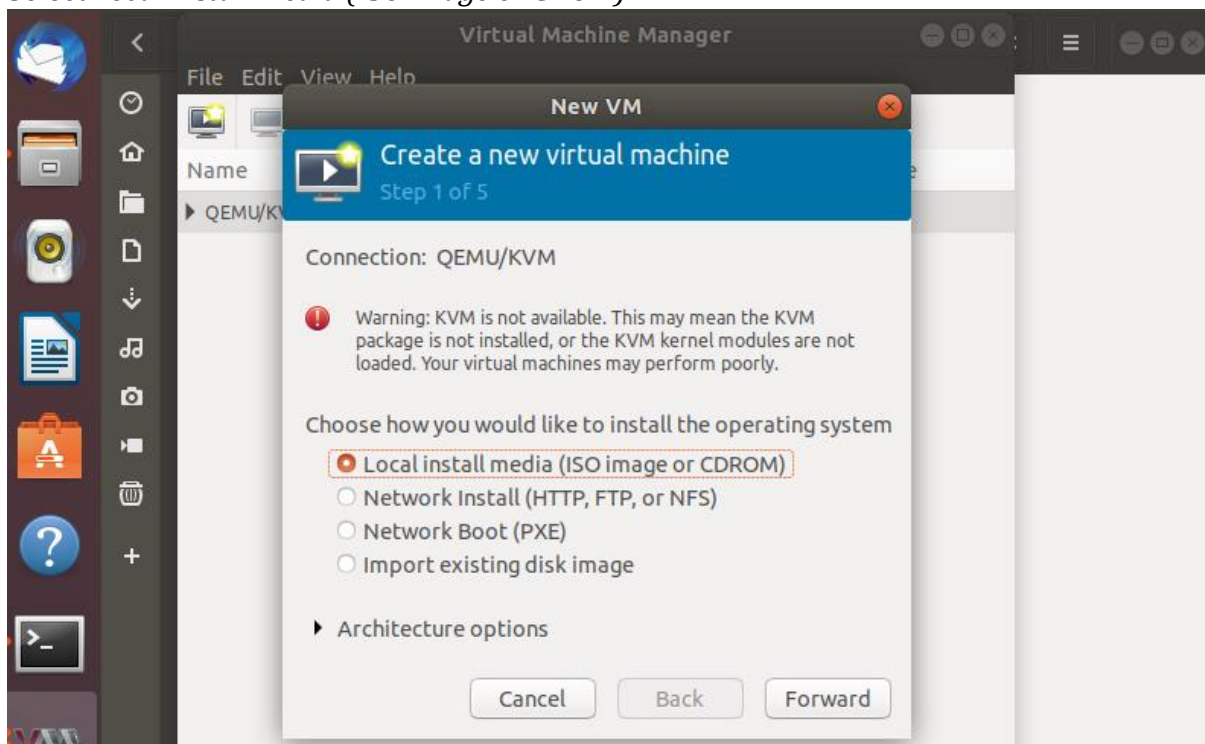
To understand and demonstrate how to create virtual machine images using ISO files, resize virtual disk images, and convert disk images between various formats.

Procedure:**Creating VM image from ISO**

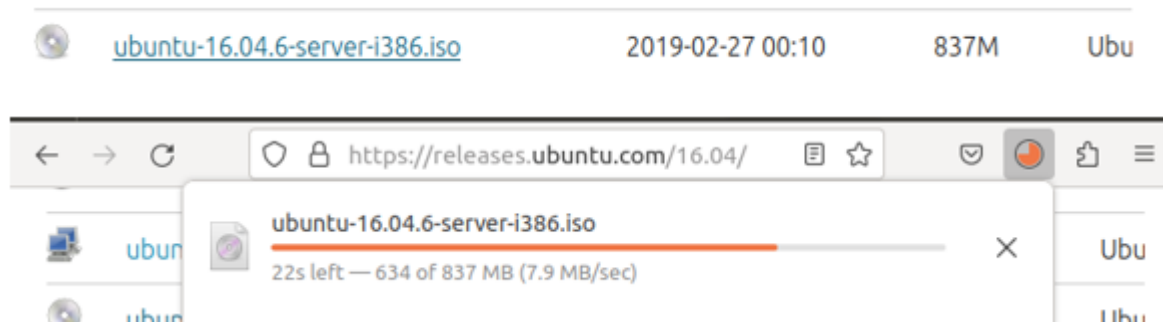
1. Go to virtual machine manager (virt-manager) in your linux system. Then, right click QEMU/KVM and select *New* to create new VM.



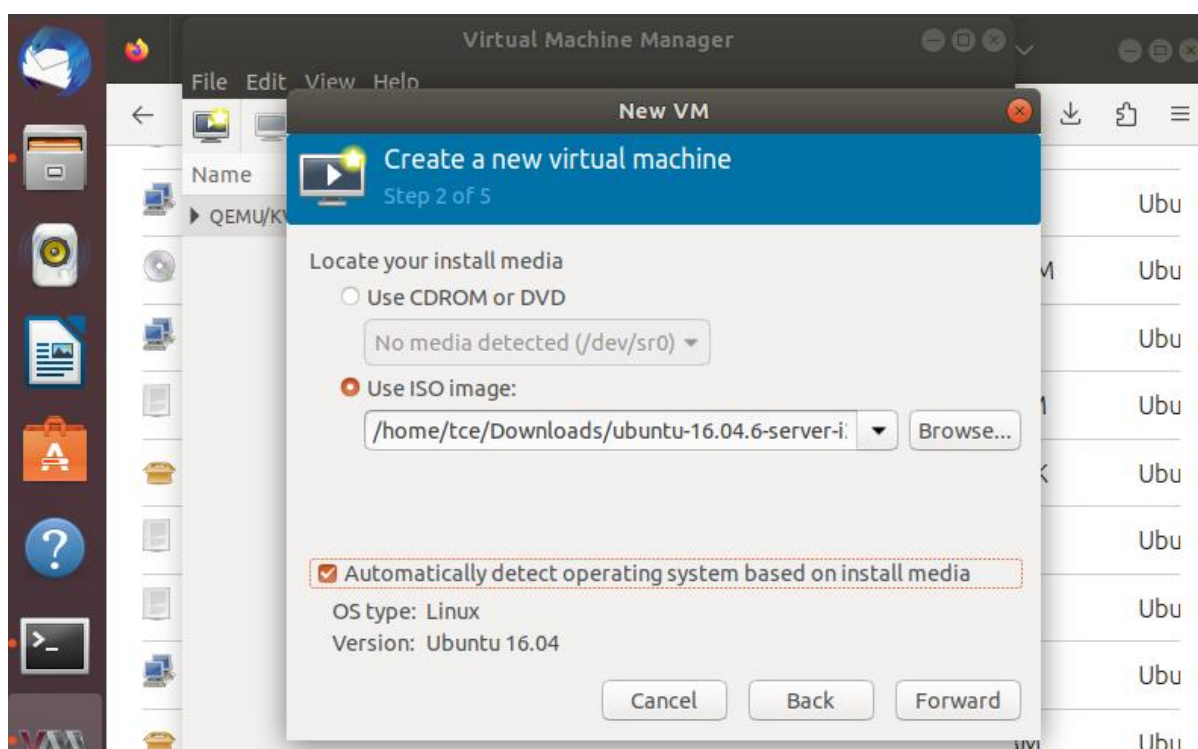
2. Select *Local install media (ISO image or CDROM)*.



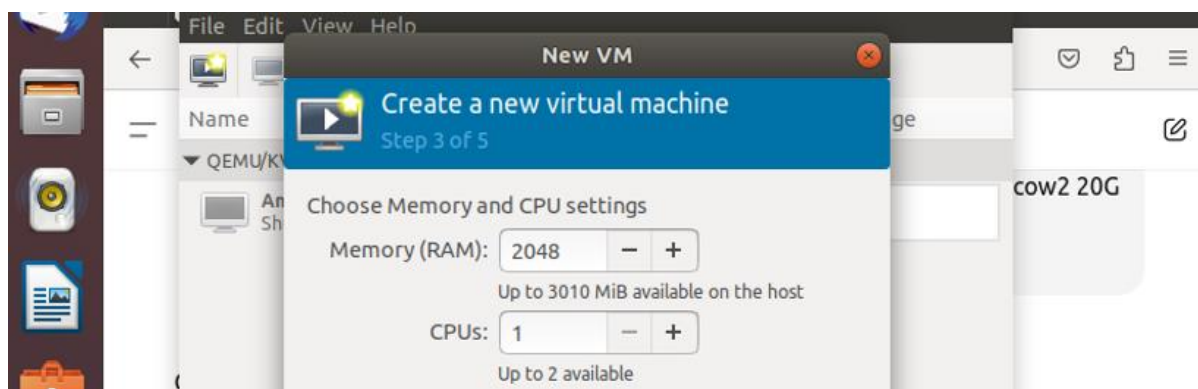
3. Download ubuntu server iso from the link: <https://releases.ubuntu.com/16.04/>



4. Select the downloaded ubuntu server iso path and click Forward.



5. Specify the memory and CPU required and click Forward.



6. Run the command : `qemu-img create -f qcow2 ubuntu_vm.qcow2 10G`

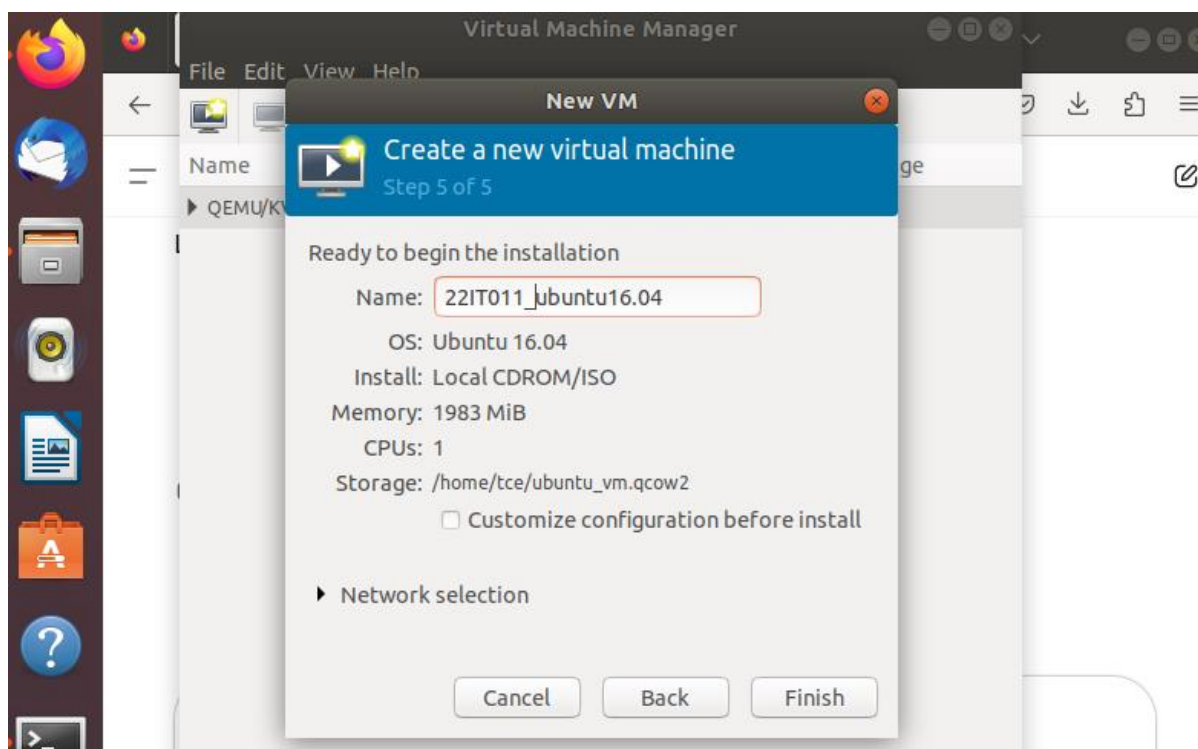
```
tce@tce-VirtualBox:~$ qemu-img create -f qcow2 ubuntu_vm.qcow2 10G
Formatting 'ubuntu_vm.qcow2', fmt=qcow2 size=10737418240 cluster_size=65536 laz
y_refcounts=off refcount_bits=16
tce@tce-VirtualBox:~$
```

This command creates a **virtual hard disk file** (ubuntu_vm.qcow2) in the **QCOW2 format**, with a **maximum size of 10 GB**. This file will act as the **virtual disk for a KVM virtual machine**.

7. For storage, choose the option : *Select or create custom storage* and locate to the *ubuntu_vm.qcow2* path and click Forward.



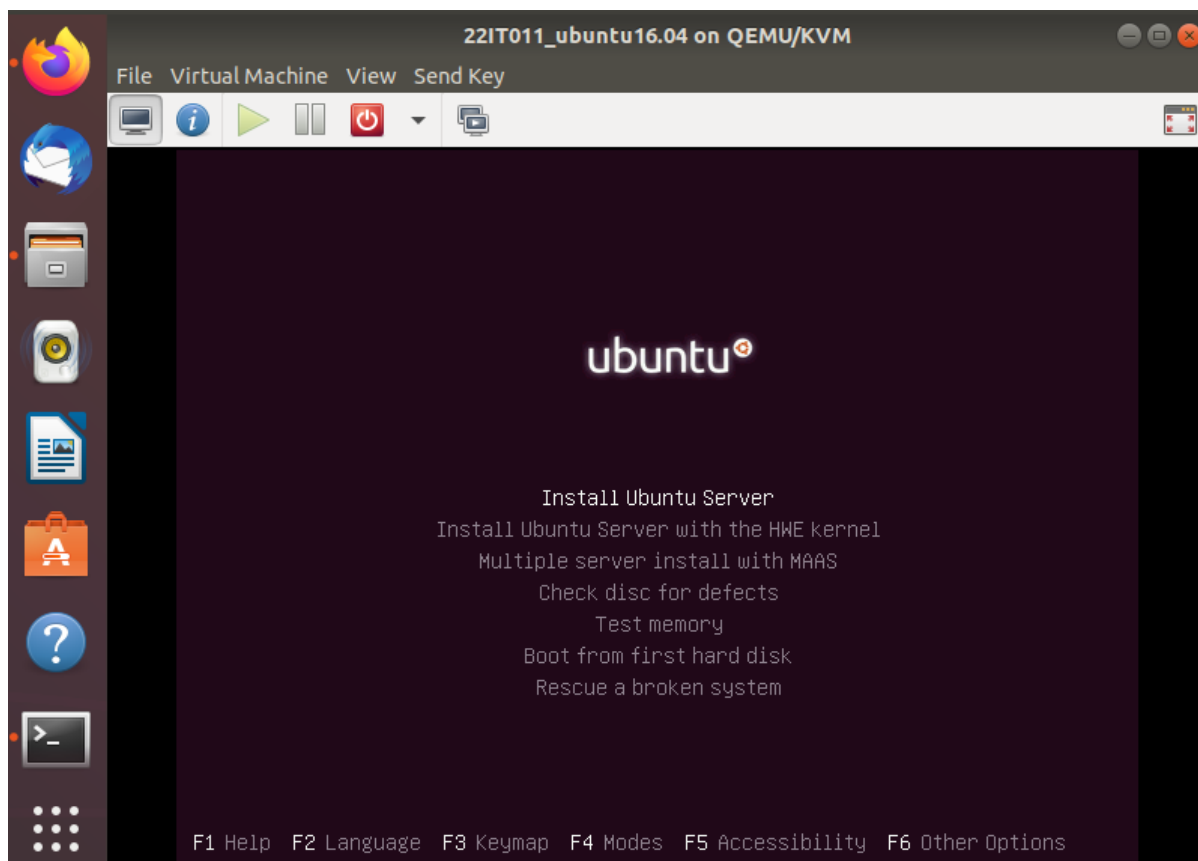
8. Name the VM and click Finish.



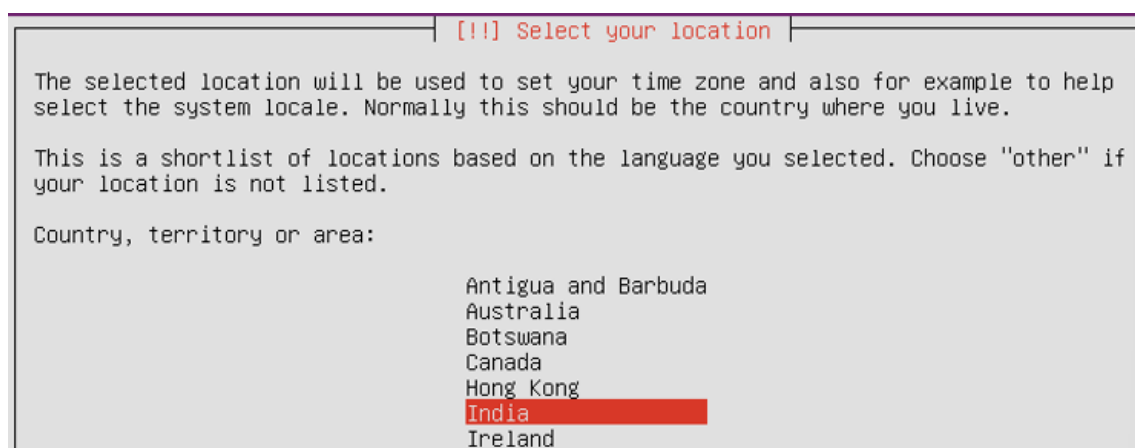
9. Select the language.



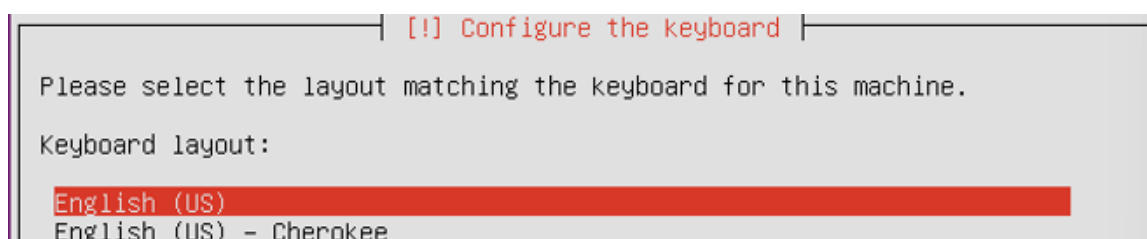
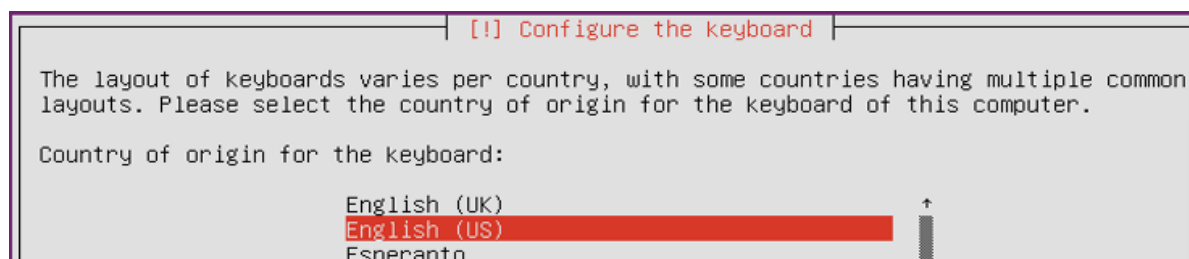
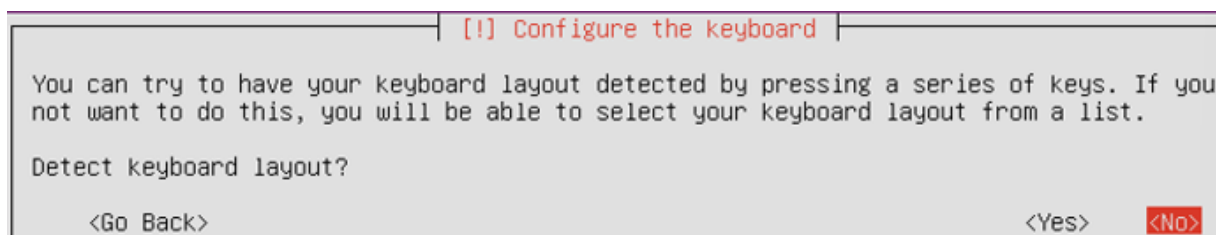
10. Select Install Ubuntu Server and then the VM boots.



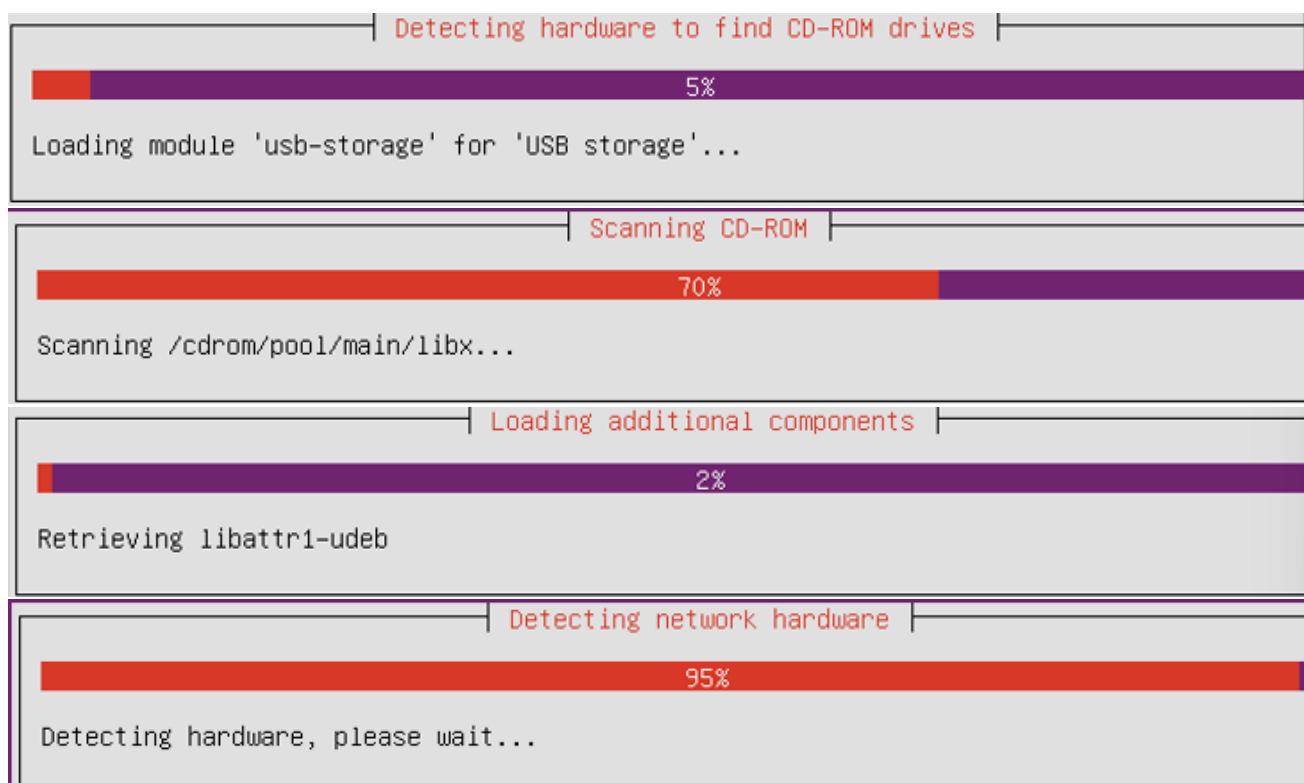
11. Select the language and location.



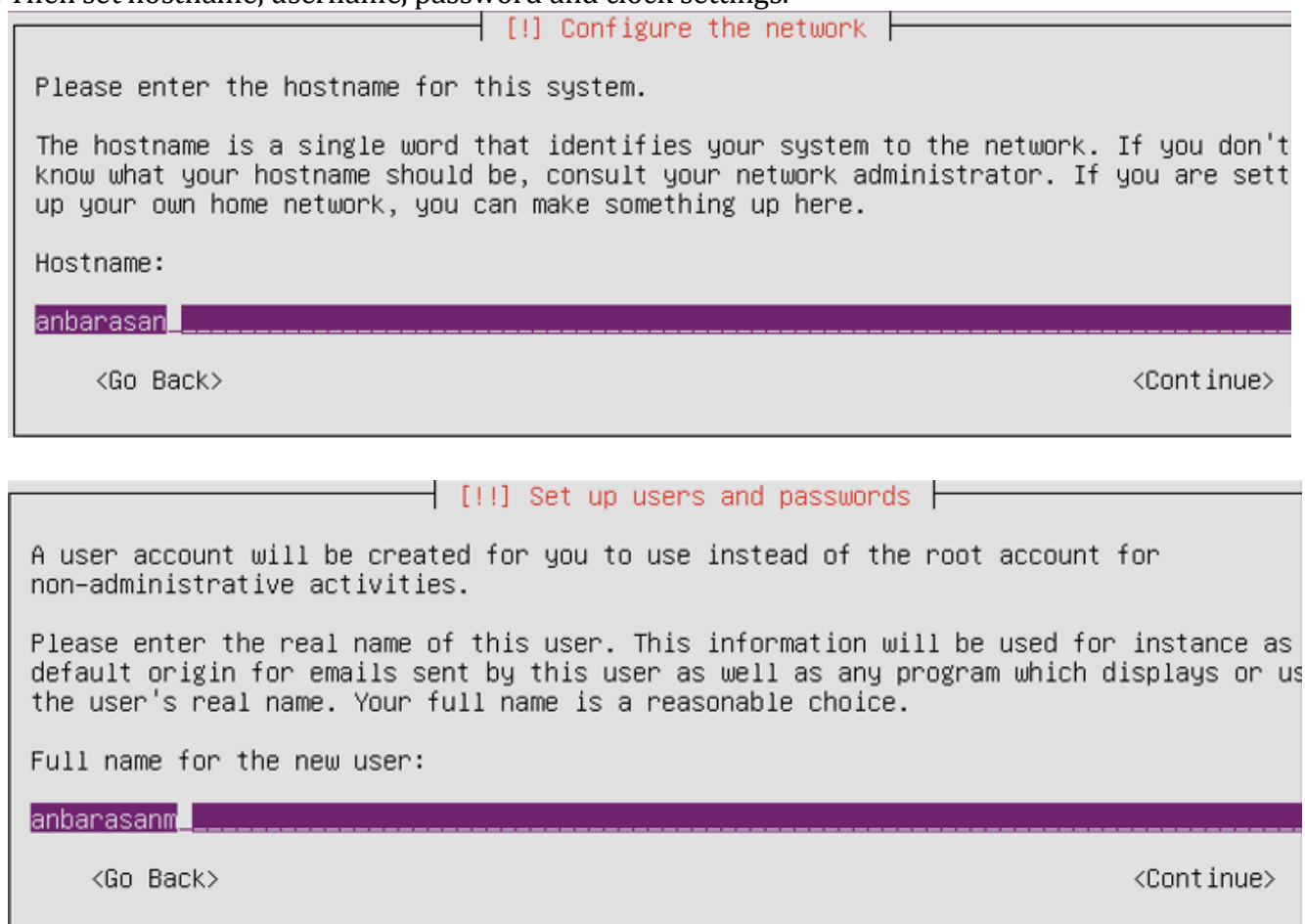
12. Set the Keyboard configuration.



13. Then it starts detecting, loading and scanning of needed things.



14. Then set hostname, username, password and clock settings.



[!!] Set up users and passwords	
<p>Select a username for the new account. Your first name is a reasonable choice. The username should start with a lower-case letter, which can be followed by any combination of numbers and more lower-case letters.</p> <p>Username for your account:</p> <p><input type="text" value="anbarasanm"/></p>	
<Go Back>	<Continue>

[!!] Set up users and passwords	
<p>A good password will contain a mixture of letters, numbers and punctuation and should be changed at regular intervals.</p> <p>Choose a password for the new user:</p> <p><input type="password" value="*****"/></p> <p><input type="checkbox"/> Show Password in Clear</p>	
<Go Back>	<Continue>

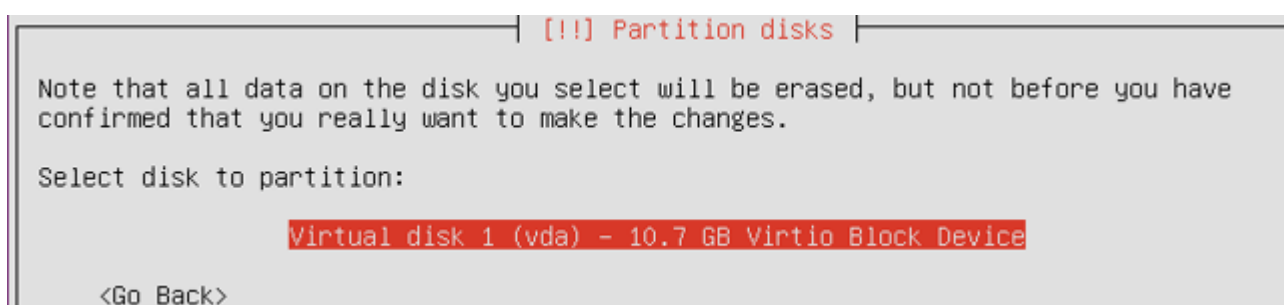
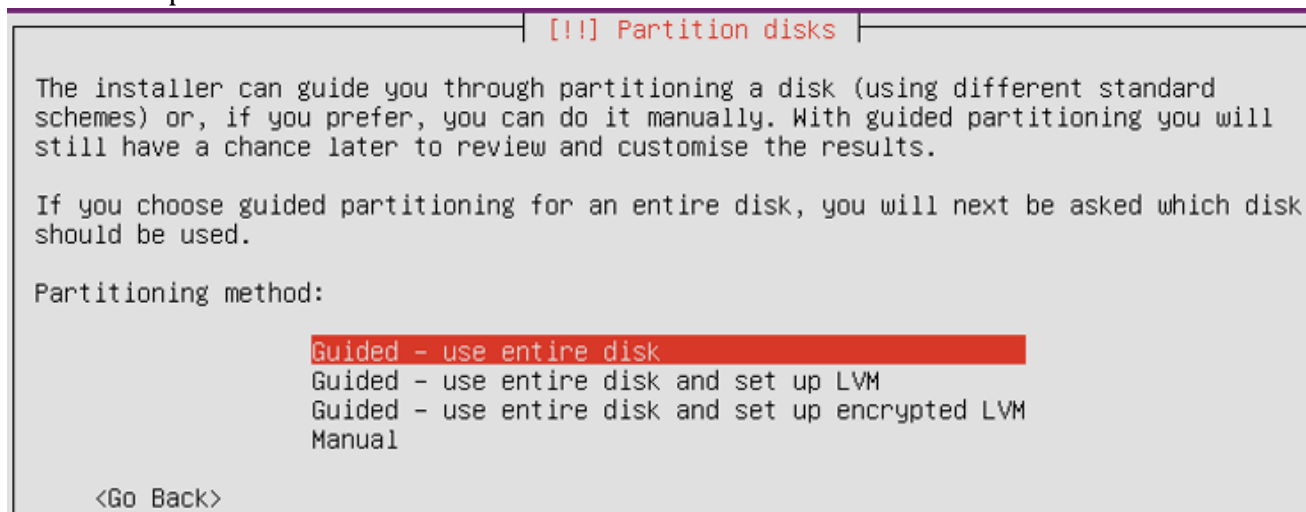
[!!] Set up users and passwords	
<p>Please enter the same user password again to verify you have typed it correctly.</p> <p>Re-enter password to verify:</p> <p><input type="password" value="*****"/></p> <p><input type="checkbox"/> Show Password in Clear</p>	
<Go Back>	<Continue>

Select **No** for encrypting your home directory.

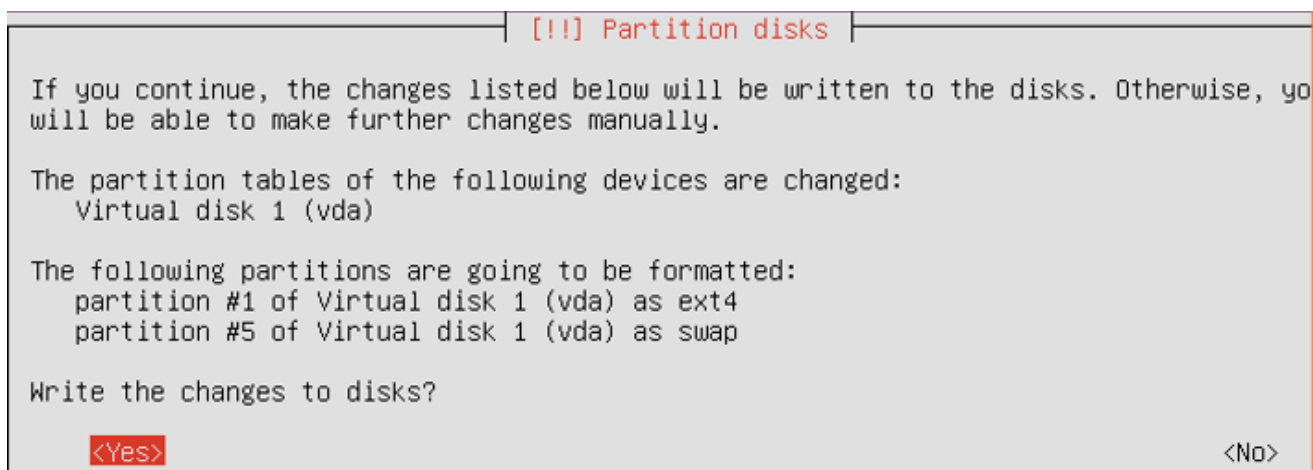
[!] Set up users and passwords	
<p>You may configure your home directory for encryption, such that any files stored there remain private even if your computer is stolen.</p> <p>The system will seamlessly mount your encrypted home directory each time you login and automatically unmount when you log out of all active sessions.</p> <p>Encrypt your home directory?</p>	
<Go Back>	<Yes> <No>

[!] Configure the clock	
<p>Based on your present physical location, your time zone is Asia/Kolkata.</p> <p>If this is not correct, you may select from a full list of time zones instead.</p> <p>Is this time zone correct?</p>	
<Go Back>	<Yes> <No>

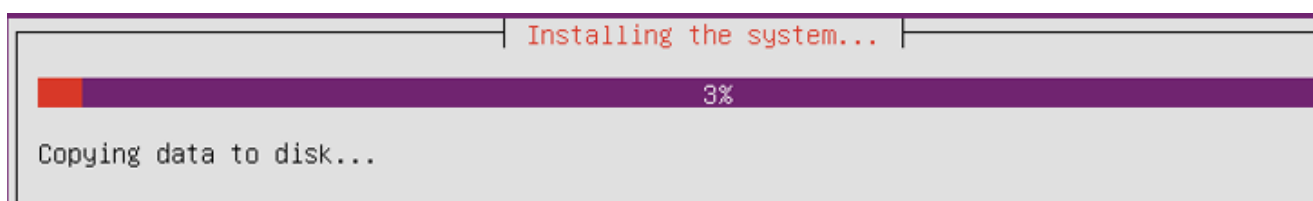
15. Set the disk partition.



Select **Yes** to write the changes to disks.



Then, the system installation starts.



16. For http proxy, just click **Enter**.

[!] Configure the package manager

If you need to use a HTTP proxy to access the outside world, enter the proxy information here. Otherwise, leave this blank.

The proxy information should be given in the standard form of "http://[[user][:pass]@]host[:port]/".

HTTP proxy information (blank for none):

<Go Back> <Continue>

Configuring apt

68%

Running services-select...

<Cancel>

Select and install software

5%

Upgrading software...

17. Select *No automatic updates* option for configuring tasksel.

[!] Configuring tasksel

Applying updates on a frequent basis is an important part of keeping your system secure.

By default, updates need to be applied manually using package management tools. Alternatively, you can choose to have this system automatically download and install security updates, or you can choose to manage this system over the web as part of a group of systems using Canonical's Landscape service.

How do you want to manage upgrades on this system?

☒ No automatic updates
☐ Install security updates automatically
☐ Manage system with Landscape

18. In Software selection, select(use Spacebar) *standard system utilities* and *OpenSSH server*.

[!] Software selection

At the moment, only the core of the system is installed. To tune the system to your needs, you can choose to install one or more of the following predefined collections of software.

Choose software to install:

☐ Manual package selection

☐ DNS server

☐ LAMP server

☐ Mail server

☐ PostgreSQL database

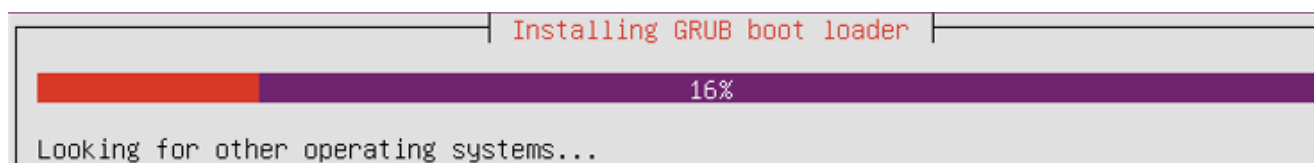
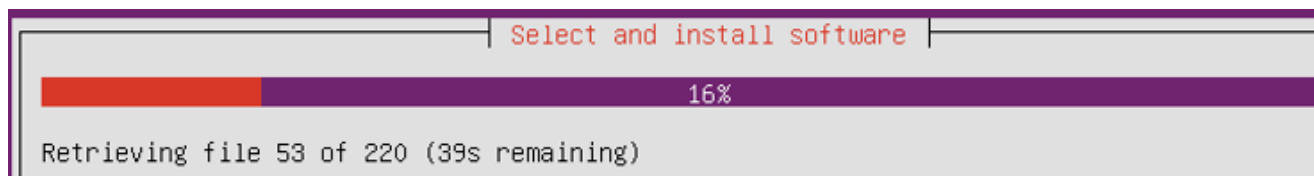
☐ Samba file server

☒ standard system utilities

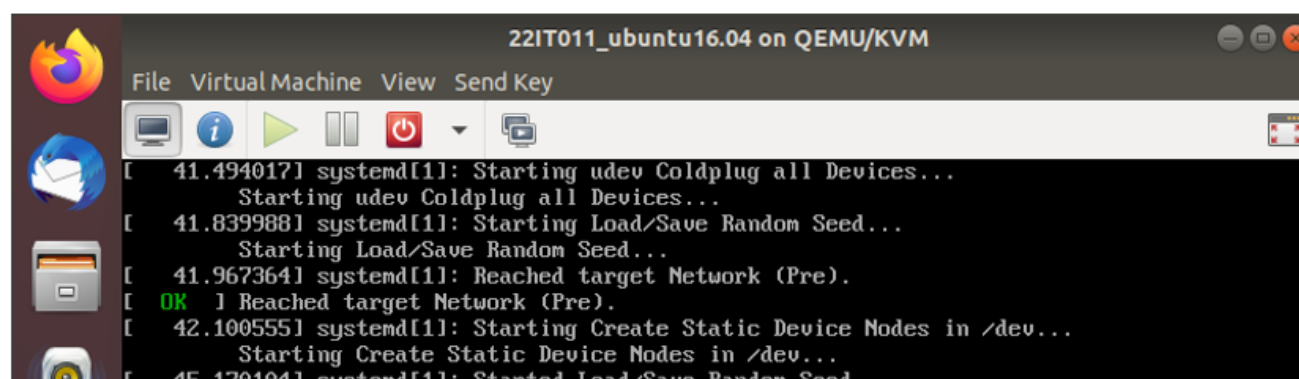
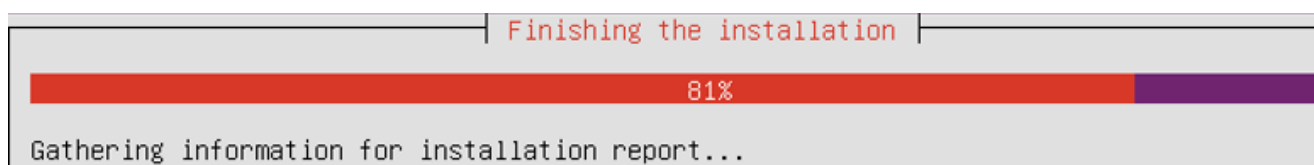
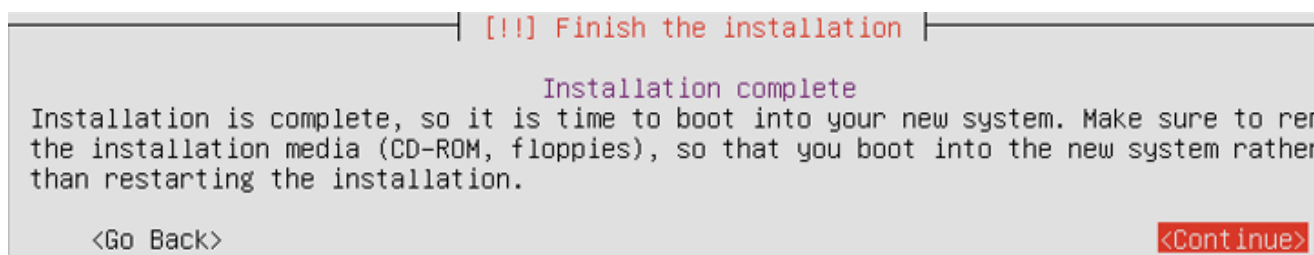
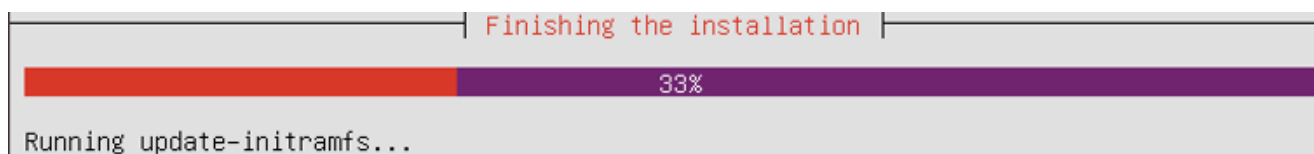
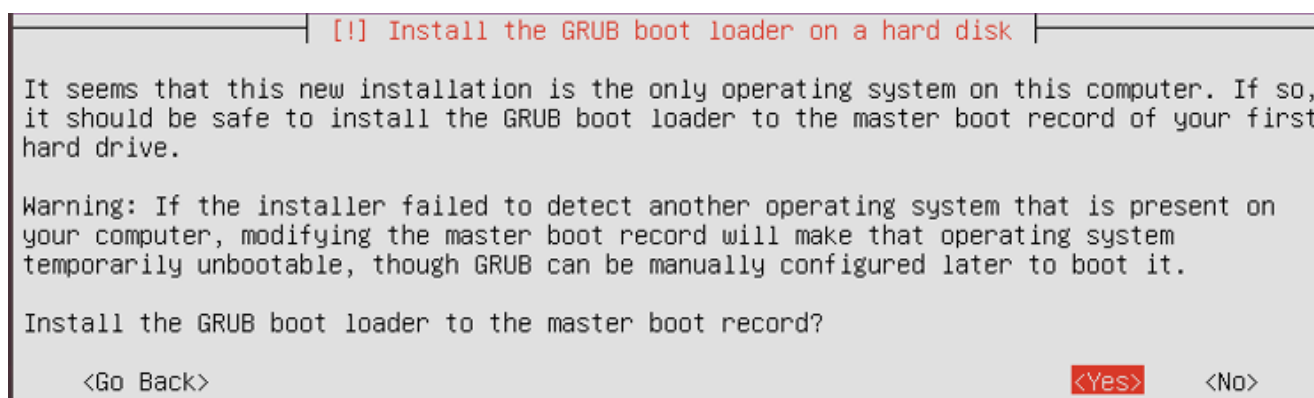
☐ Virtual Machine host

☒ OpenSSH server

<Continue>



19. Give **Yes** to install GRUB boot loader.



20. Now, login to your VM.

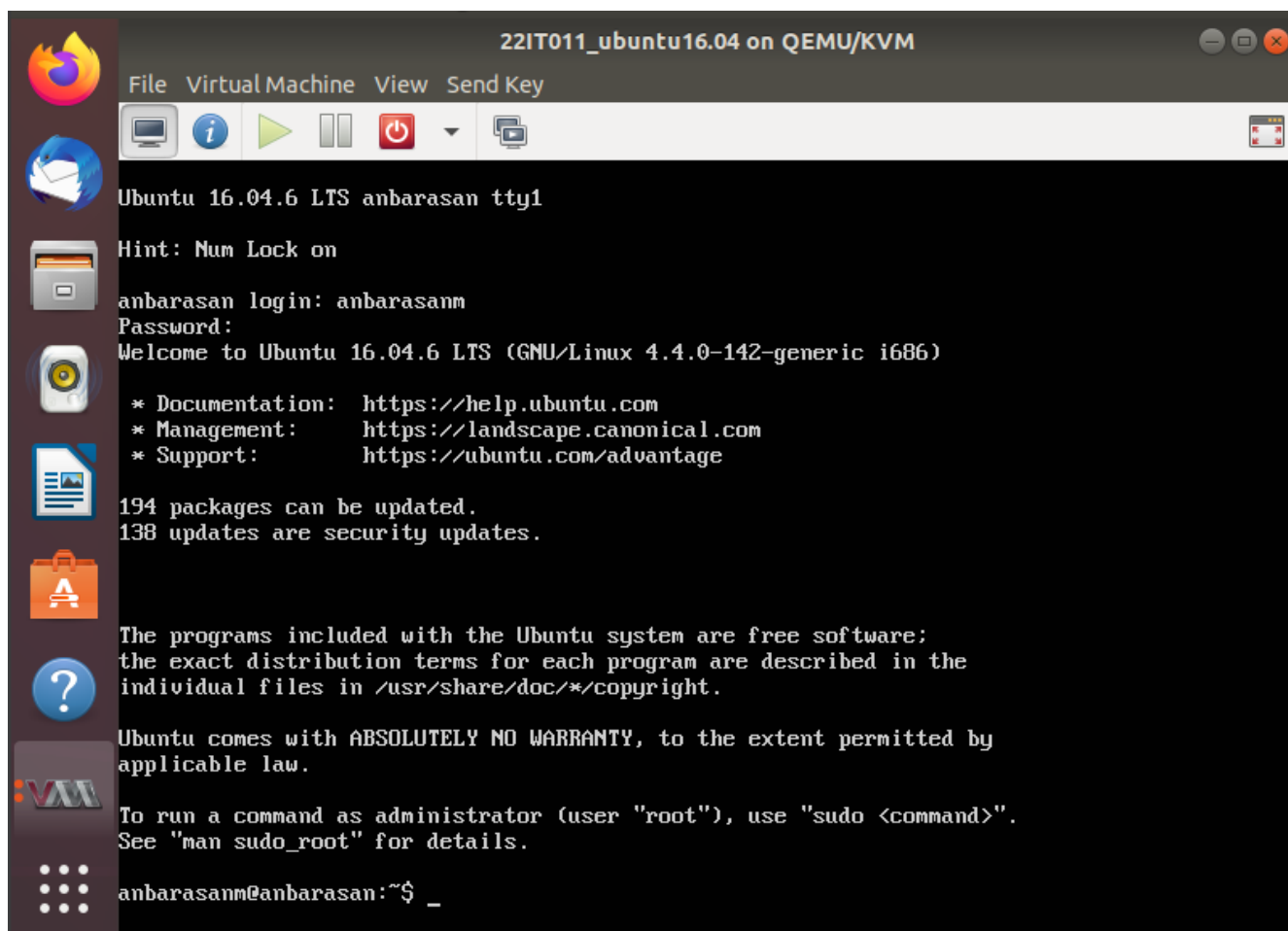


Image Resizing

1. Shut down the VM if it's running.
2. Resize the qcow2 image.

```
tce@tce-VirtualBox:~$ sudo qemu-img resize ubuntu_vm.qcow2 +10G
[sudo] password for tce:
Image resized.
tce@tce-VirtualBox:~$
```

```
tce@tce-VirtualBox:~$ qemu-img info ubuntu_vm.qcow2
image: ubuntu_vm.qcow2
file format: qcow2
virtual size: 20G (21474836480 bytes)
disk size: 2.0G
cluster_size: 65536
Format specific information:
  compat: 1.1
  lazy refcounts: false
  refcount bits: 16
  corrupt: false
tce@tce-VirtualBox:~$
```

3. Resize partitions inside the VM.
Once you've resized the image, boot into the VM and resize the partition/filesystem:

```
sudo growpart /dev/sda 1
sudo resize2fs /dev/sda1
```

Image Conversion

1. Conversion of qcow2 to vhd, vdi using qemu-img.

qcow2 to vdi

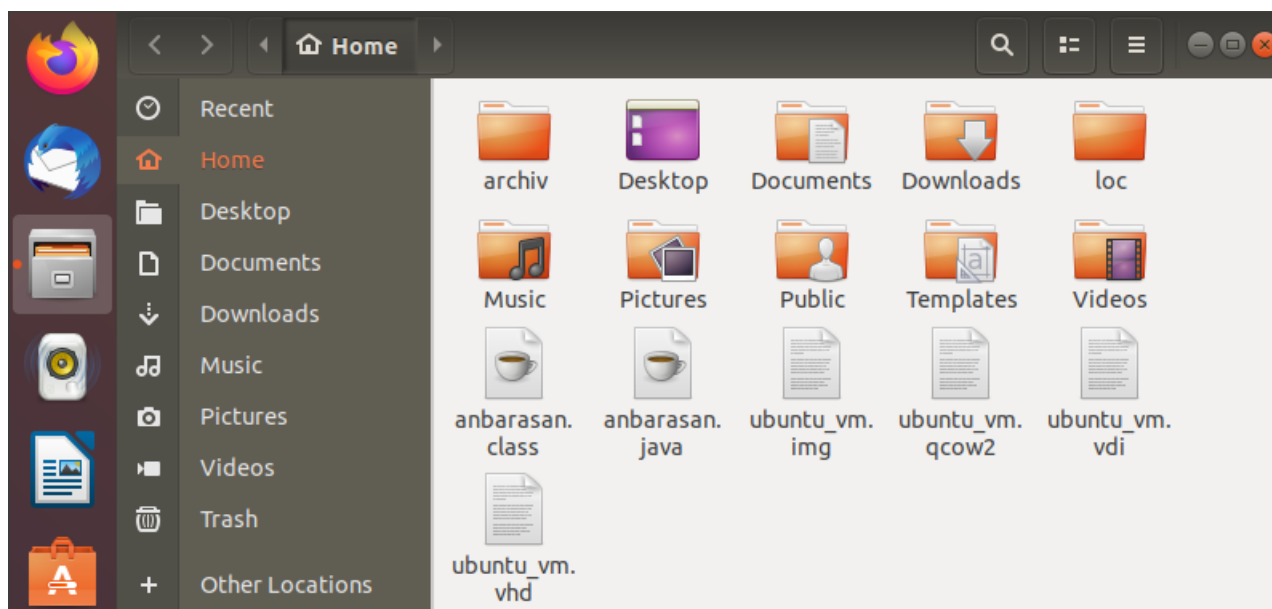
```
tce@tce-VirtualBox:~$ qemu-img convert -O vdi ubuntu_vm.qcow2 ubuntu_vm.vdi -p
(100.00/100%)
```

qcow2 to vhd

```
tce@tce-VirtualBox:~$ qemu-img convert -O vpc ubuntu_vm.qcow2 ubuntu_vm.vhd -p
(100.00/100%)
tce@tce-VirtualBox:~$
```

qcow2 to img

```
tce@tce-VirtualBox:~$ qemu-img convert -O raw ubuntu_vm.qcow2 ubuntu_vm.img -p
(100.00/100%)
tce@tce-VirtualBox:~$
```



Result:

Thus, the creation, resizing, and format conversion of a KVM virtual disk image were successfully demonstrated.