Ex No: 5b **KVM – Create Images from ISO, Image Resizing, and Image Conversion**

28/07/26

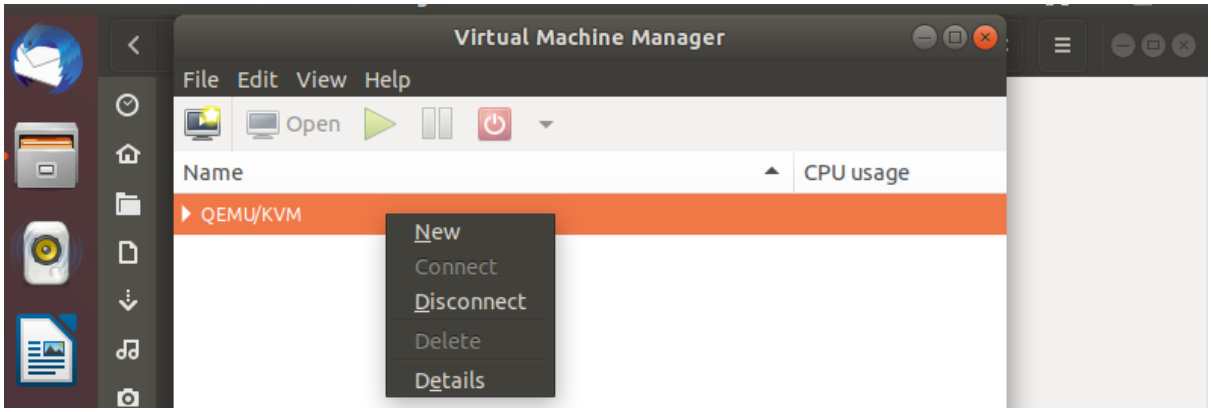
Aim:

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

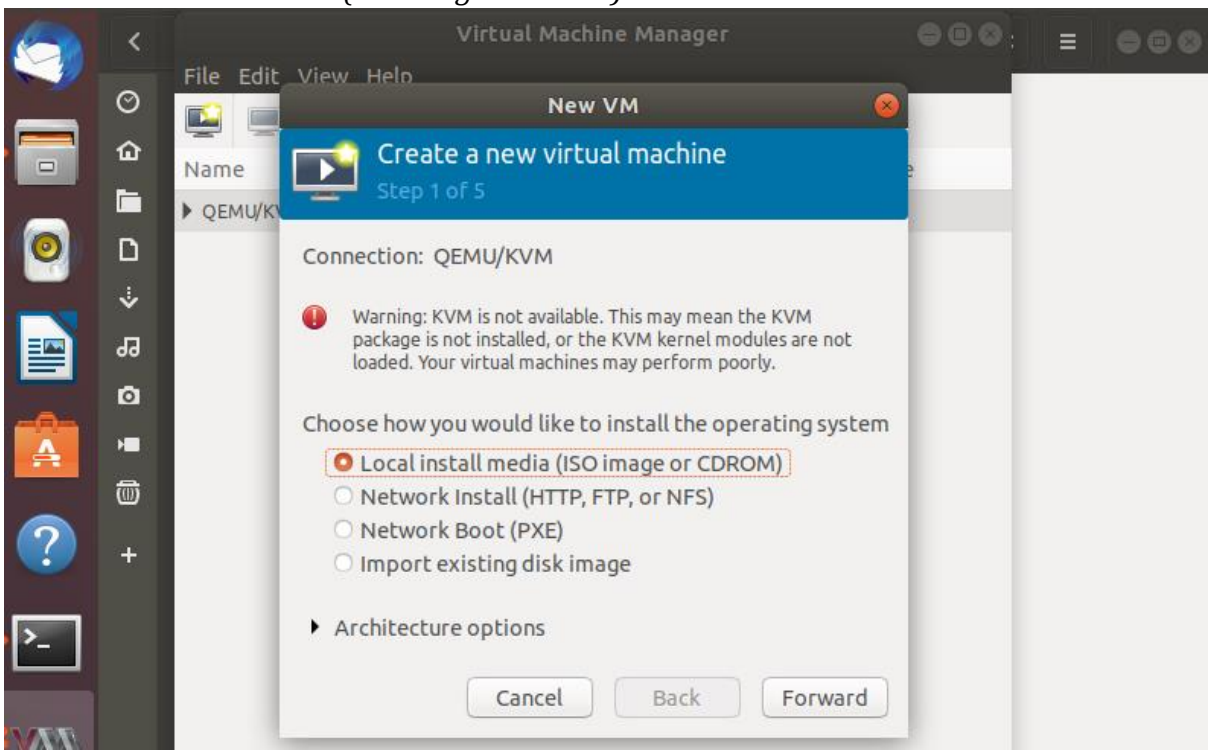
Procedure:

Creating VM image from ISO

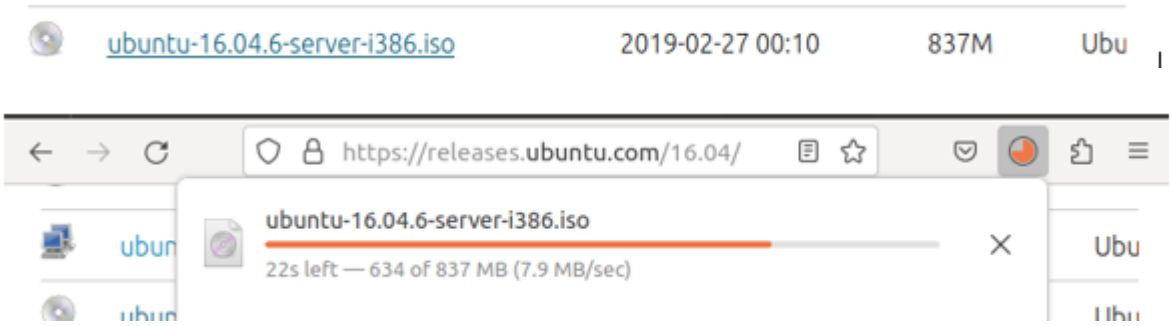
1. Go to virtual machine manager (virt-manager) in your linux system. Then, right click QEMU/KVM and select *New* to create new VM.



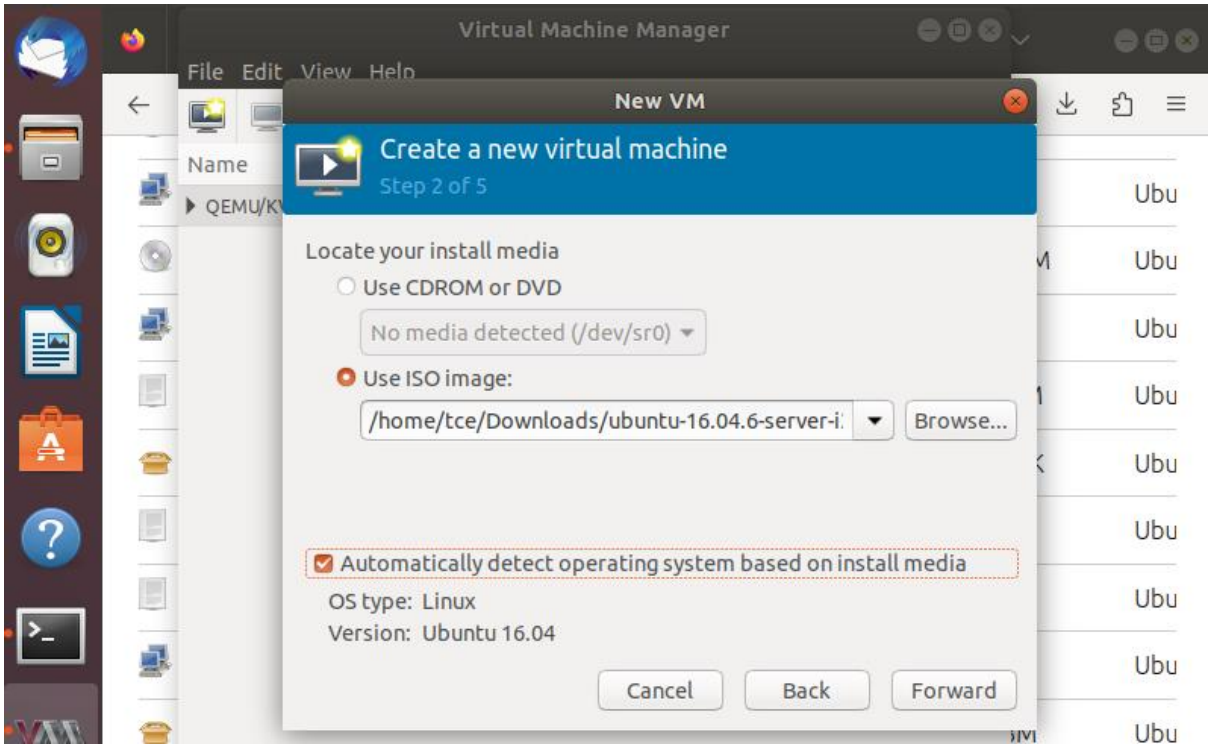
2. Select *Local install media (ISO image or CDOM).*



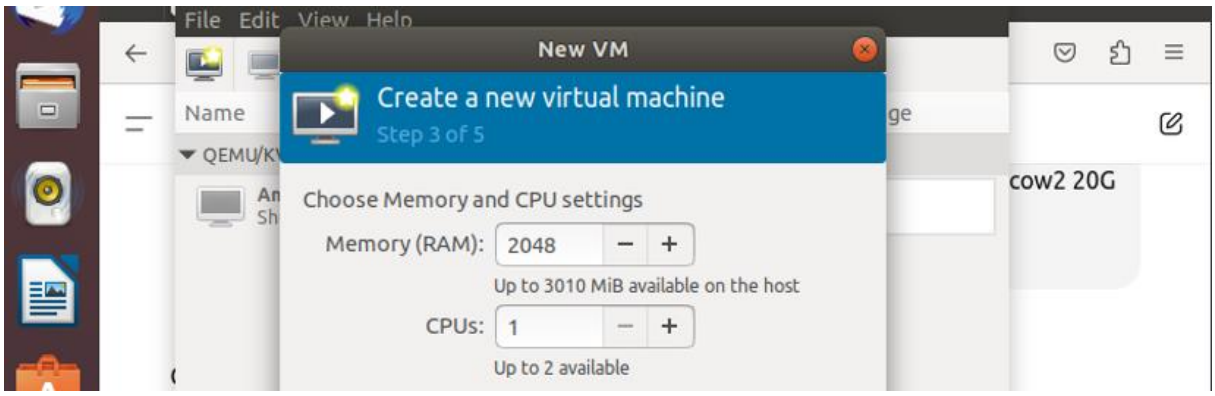
3. Download ubuntu server iso from the link: https://releases.ubuntu.com/16.04/



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



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

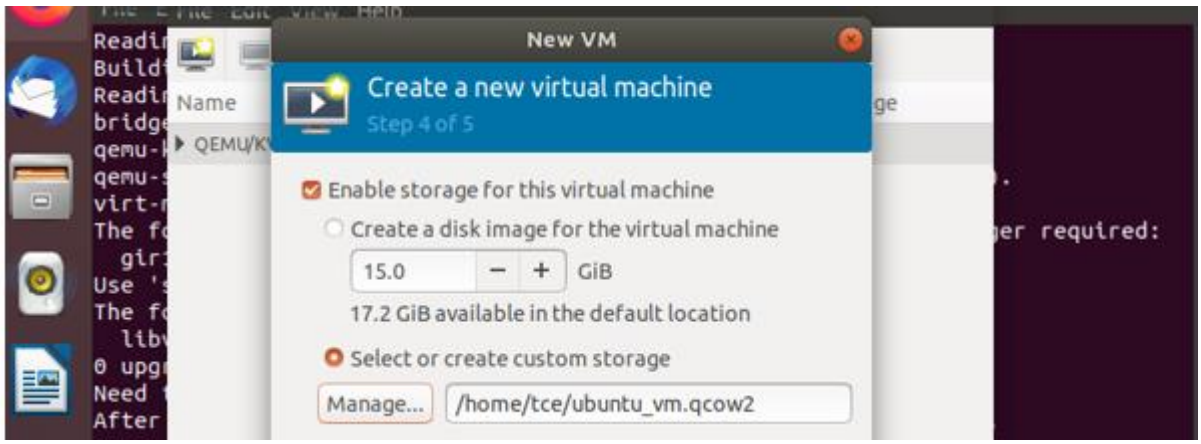


6. Run the command : *qemu-img create -f qcow2 ubuntu_vm.qcow2 10G*

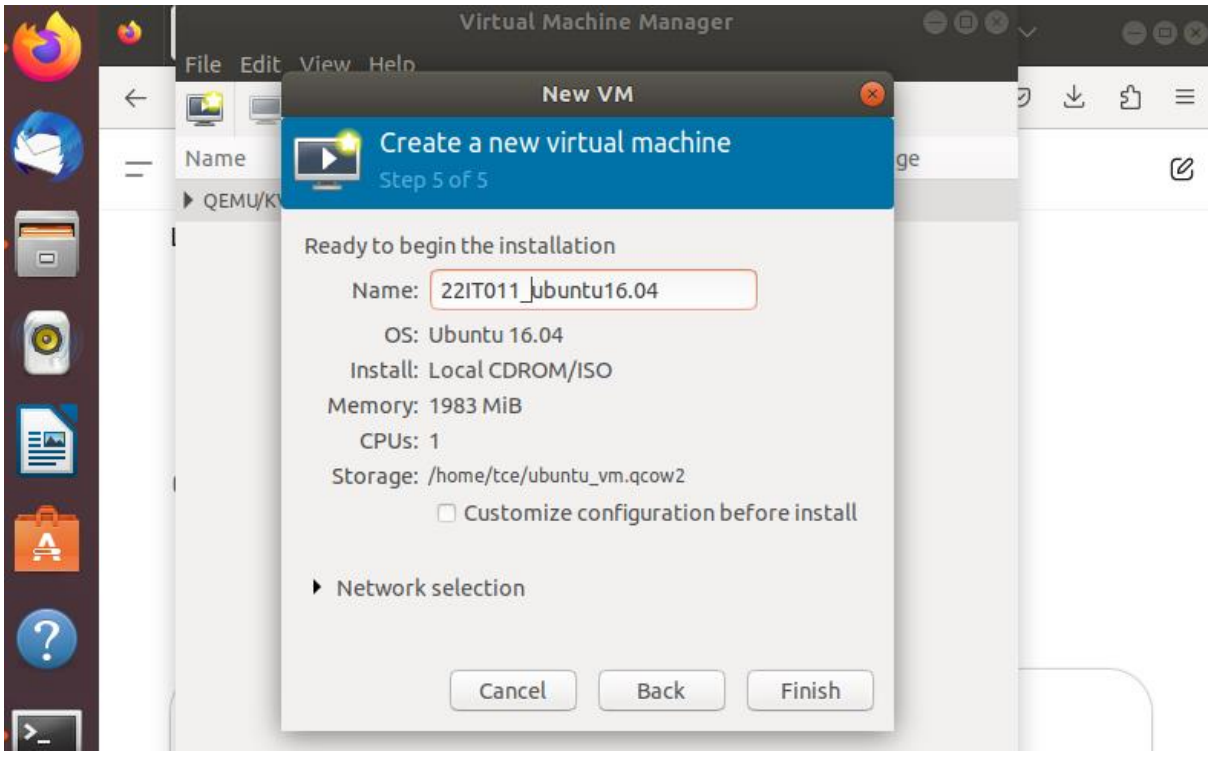
```
tce@tce-VirtualBox:~$ qemu-img create -f qcow2 ubuntu_vm.qcow2 10G
Formatting 'ubuntu_vm.qcow2', fmt=qcow2 size=10737418240 cluster_size=65536 laz
y_refcounts=off refcount_bits=16
tce@tce-VirtualBox:~$
```

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**.

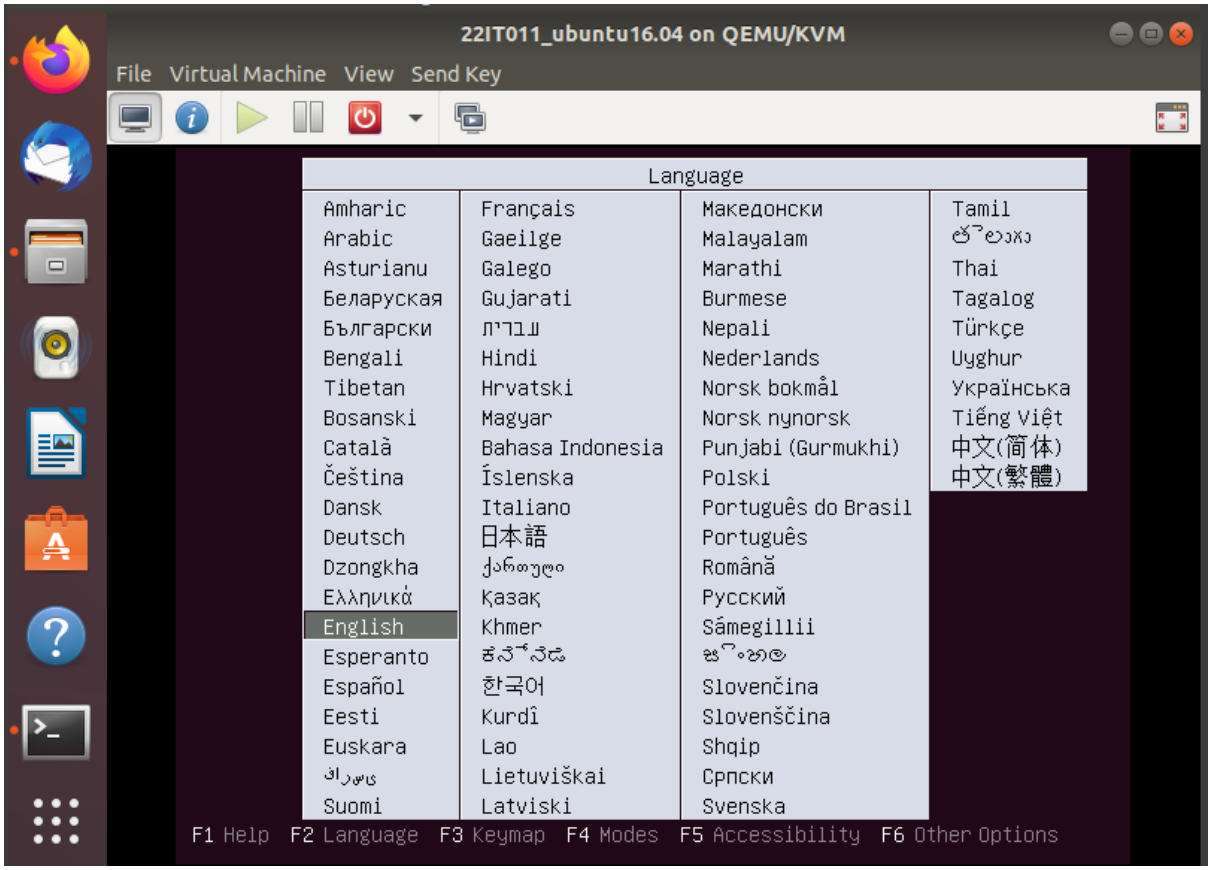
7. For storage, choose the option : *Select or create custom storage* and locate to the *ubuntu_vm.qcow2* path and click Forward.



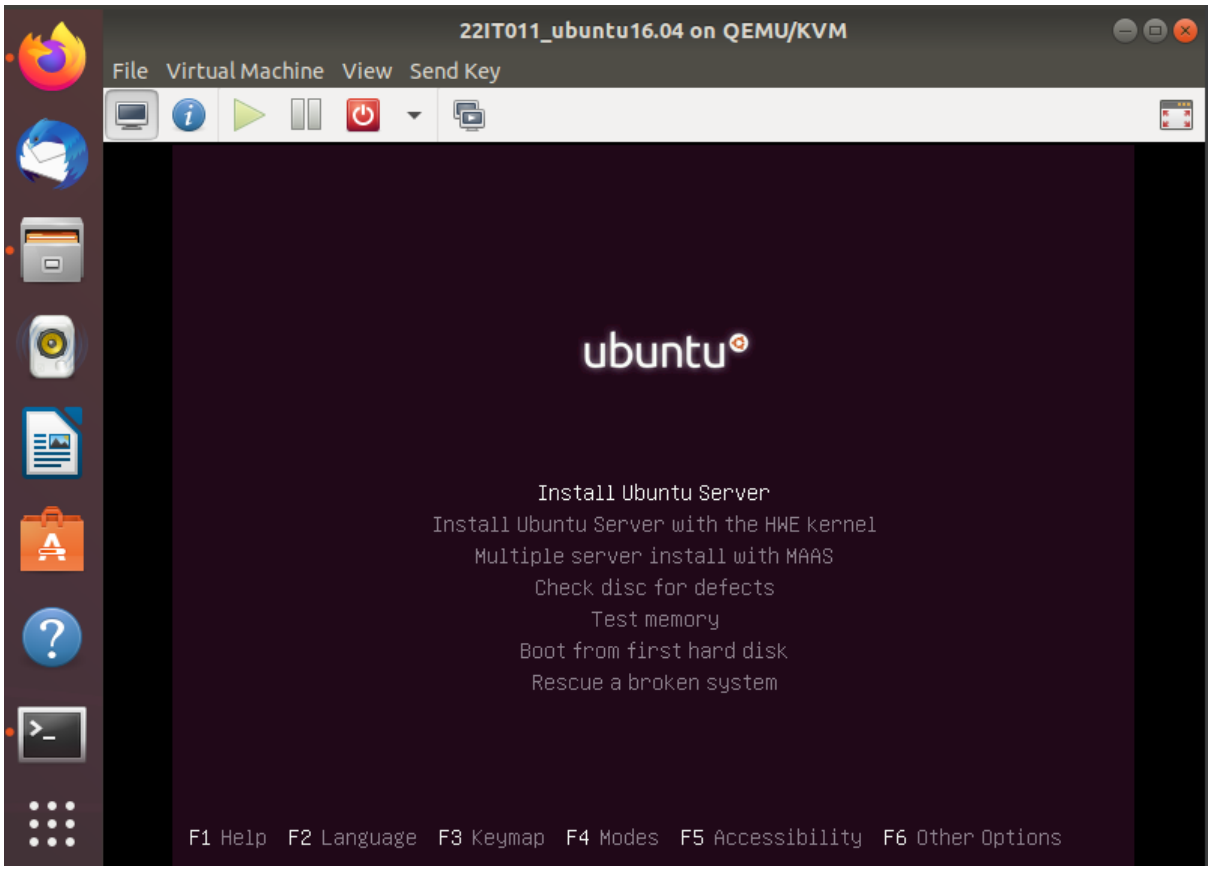
8. Name the VM and click Finish.



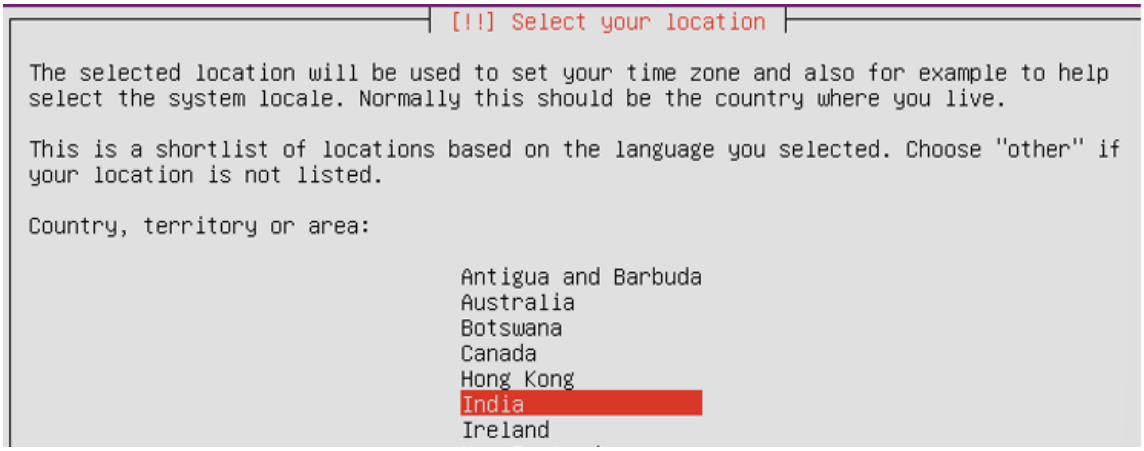
9. Select the language.



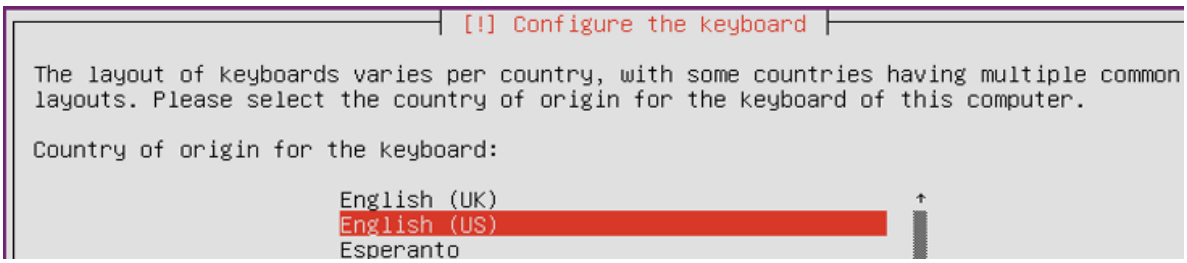
10. Select Install Ubuntu Server and then the VM boots.

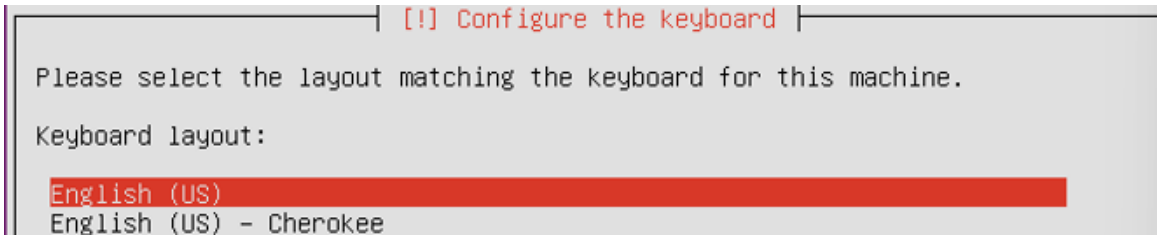


11. Select the language and location.

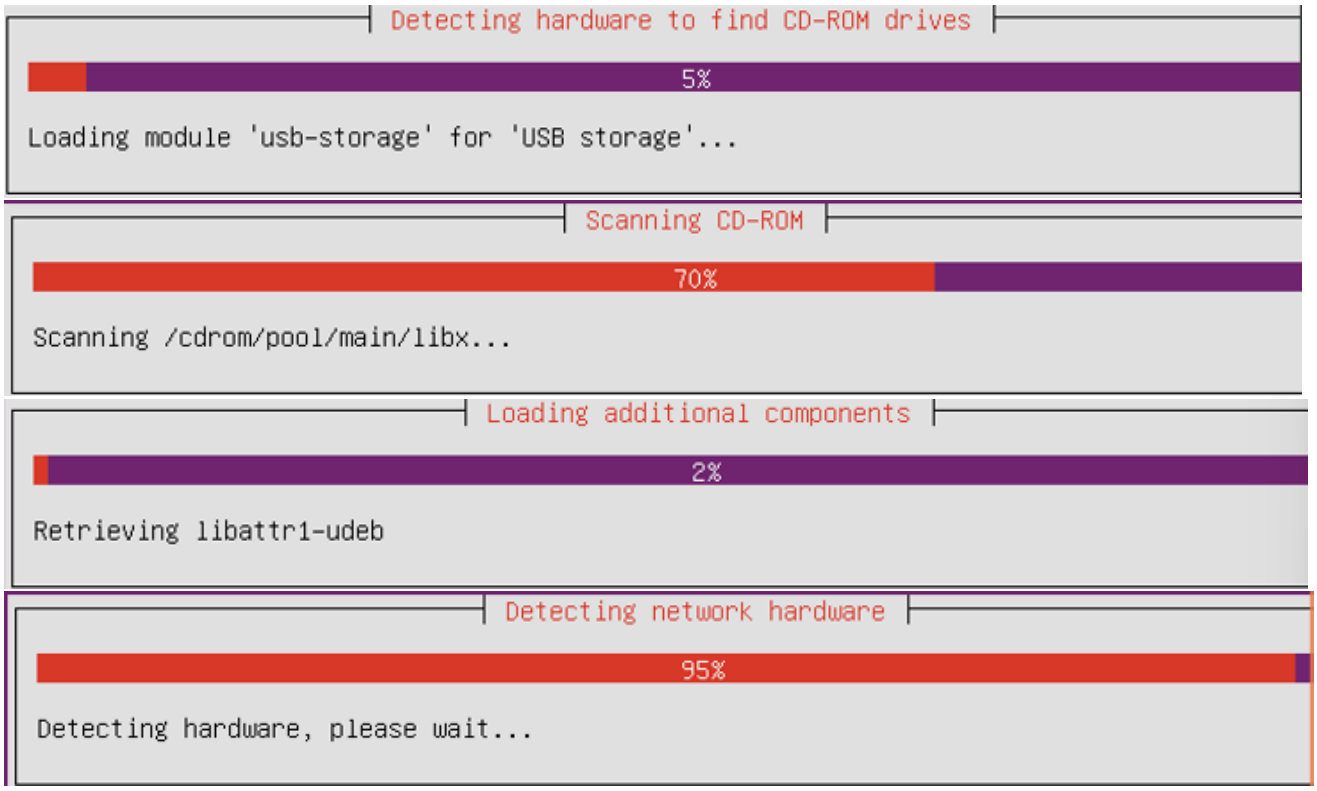


12. Set the Keyboard configuration.

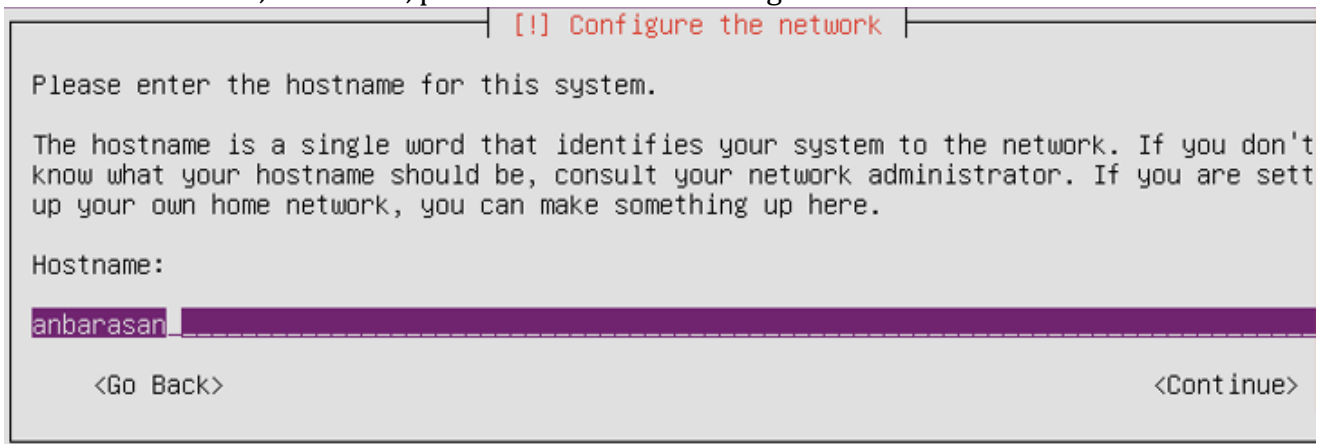


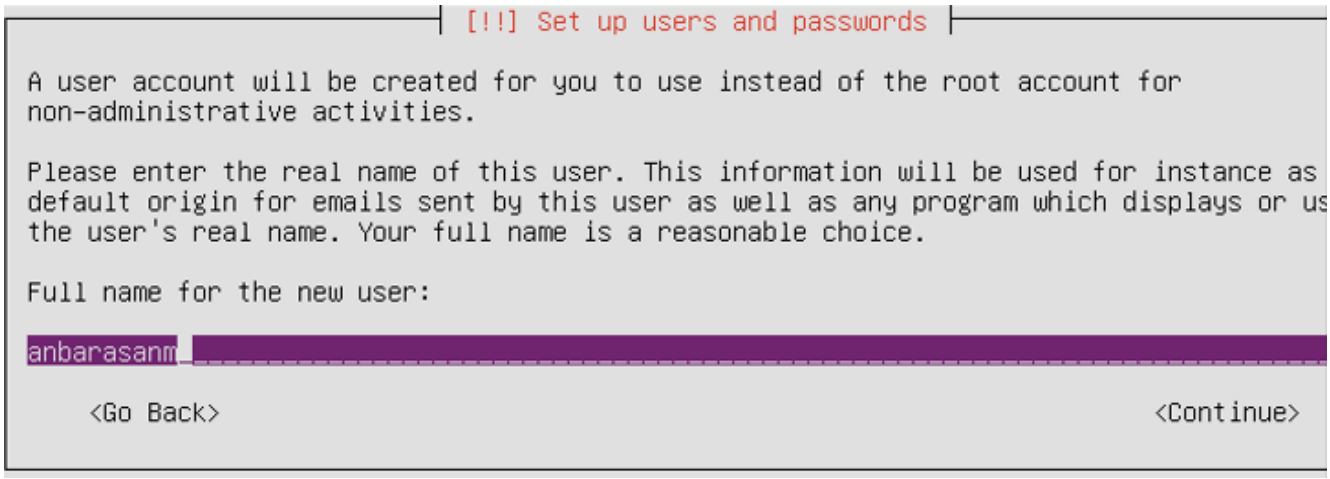


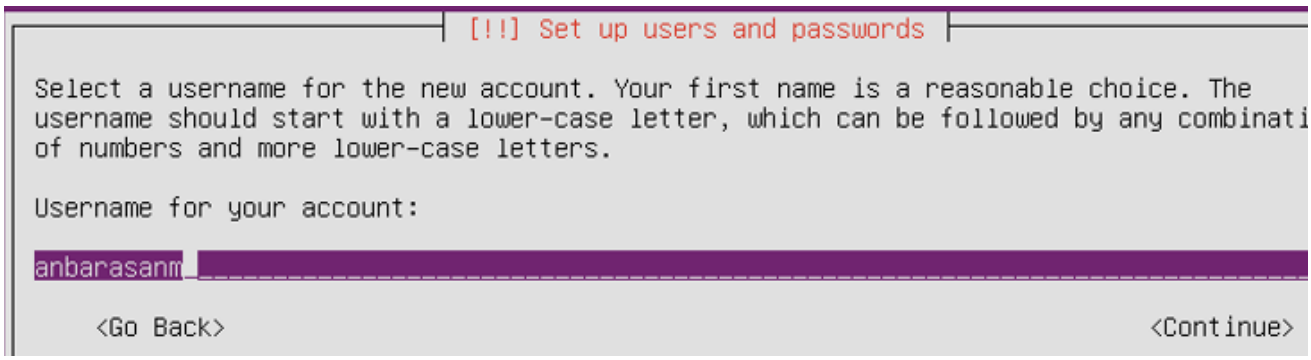
13. Then it starts detecting, loading and scanning of needed things.

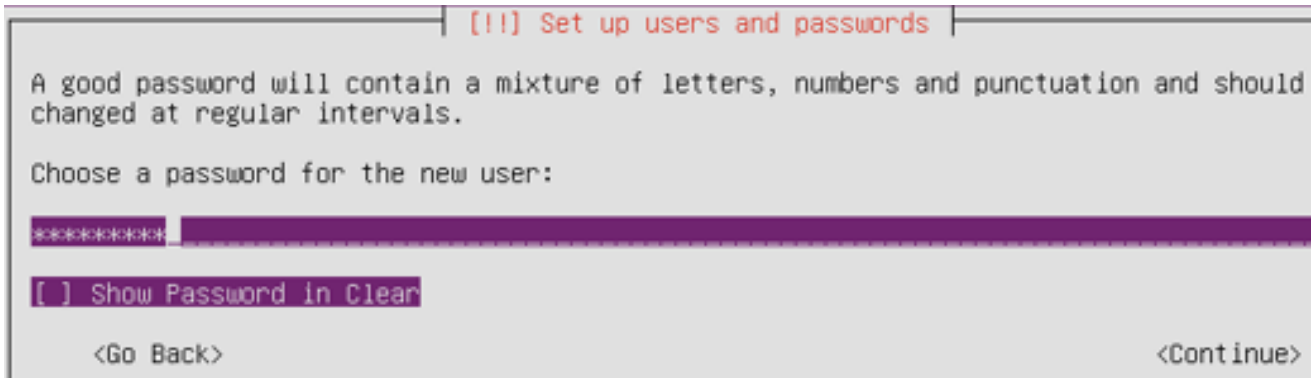


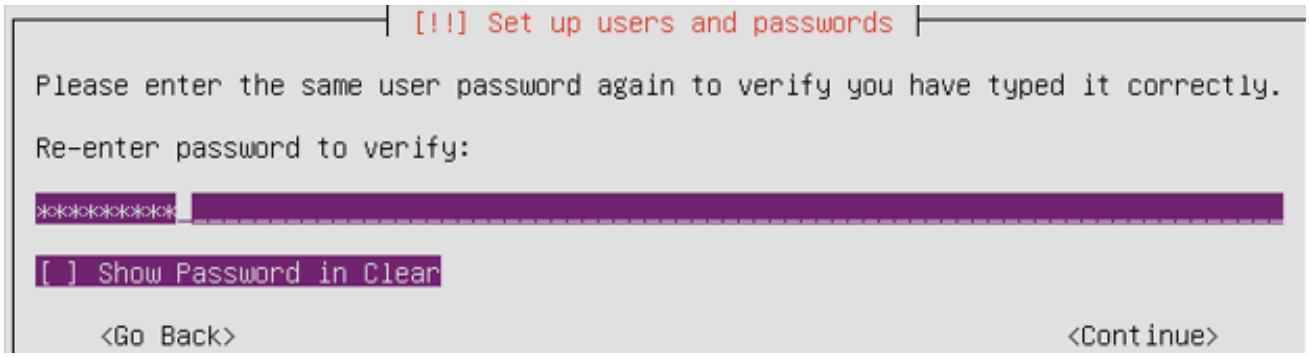
14. Then set hostname, username, password and clock settings.



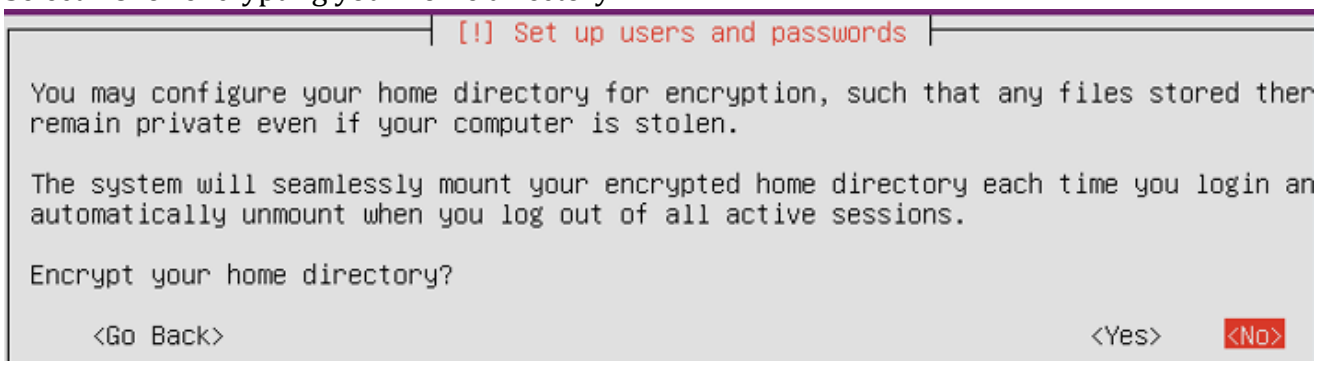


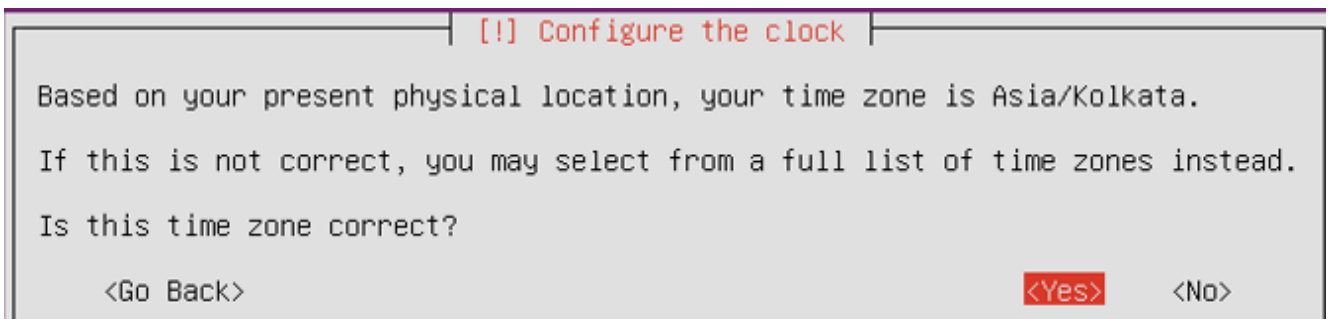




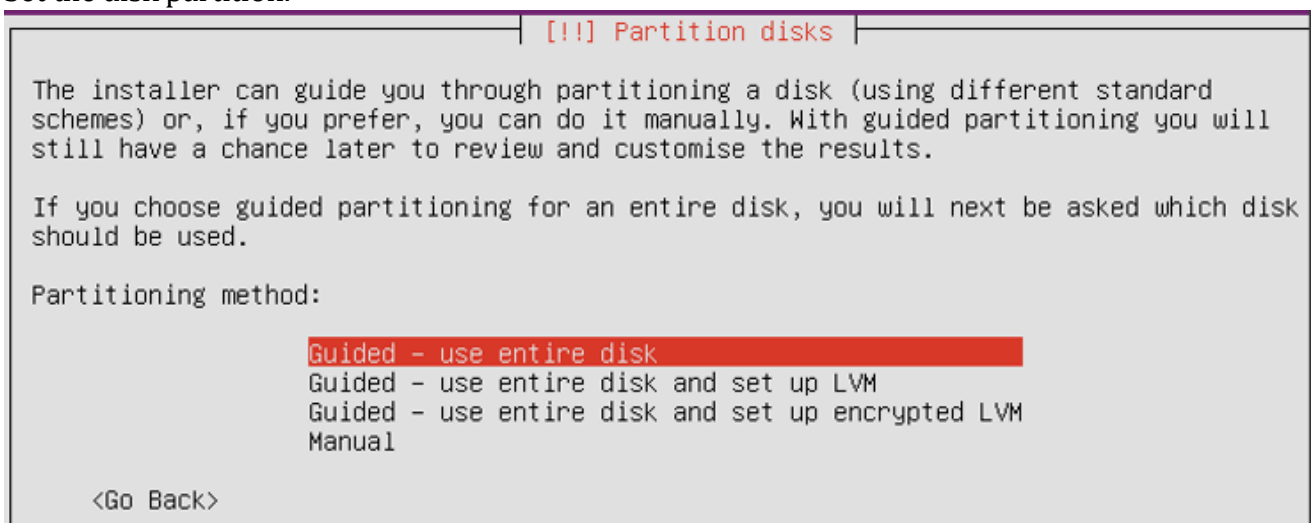


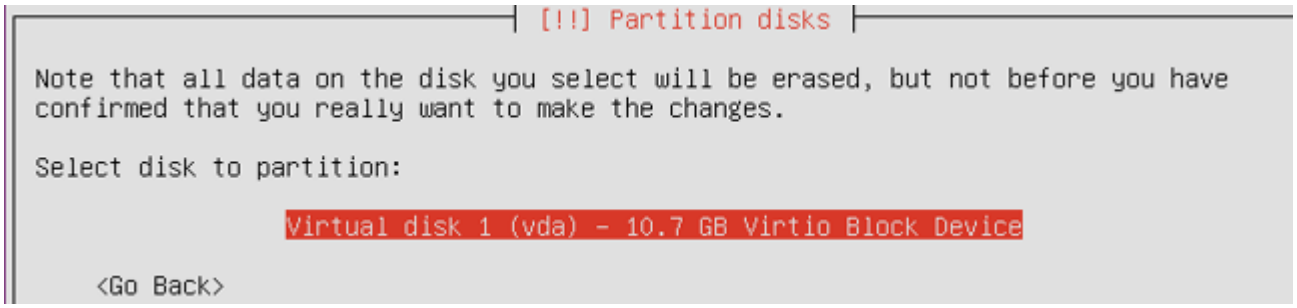
Select **No** for encrypting your home directory.



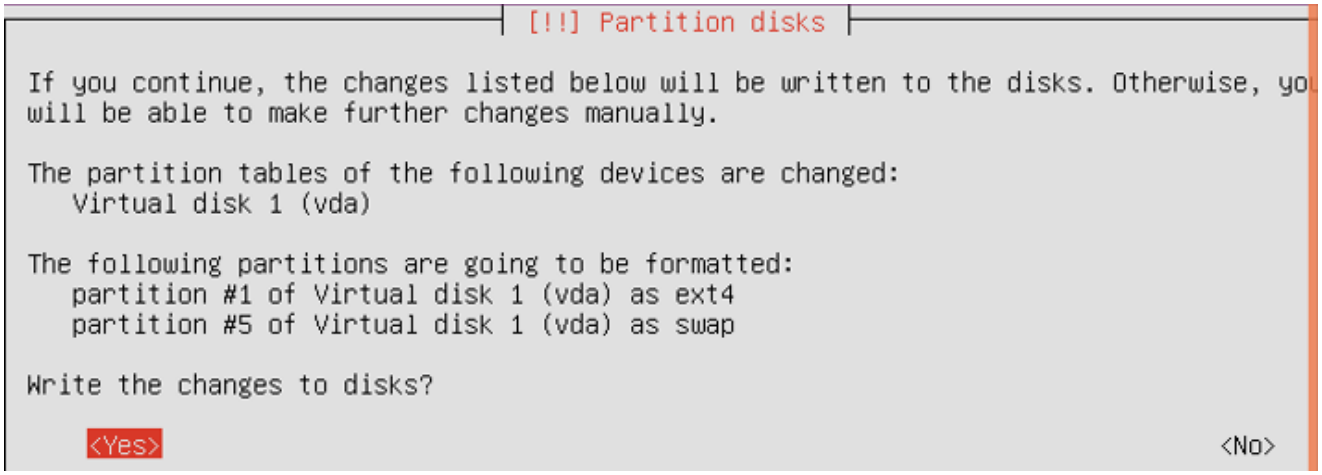


15. Set the disk partition.

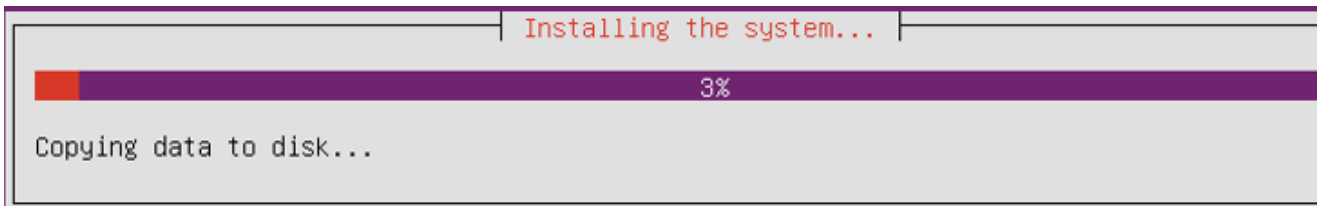




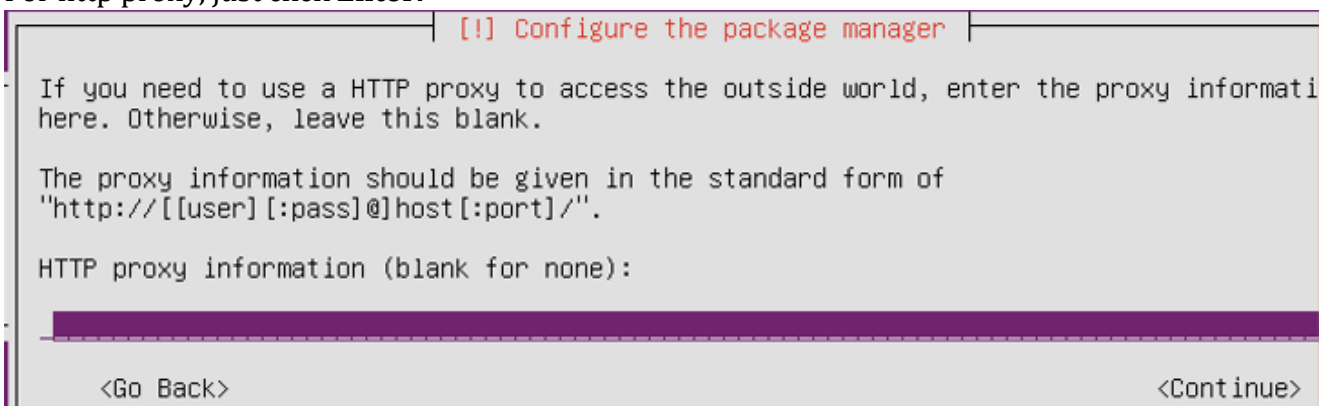
Select **Yes** to write the changes to disks.

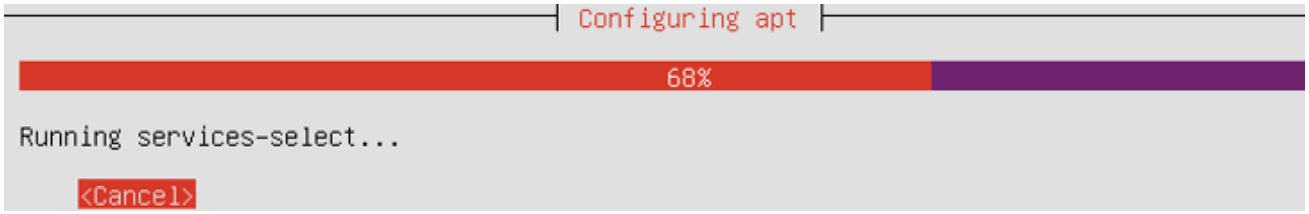


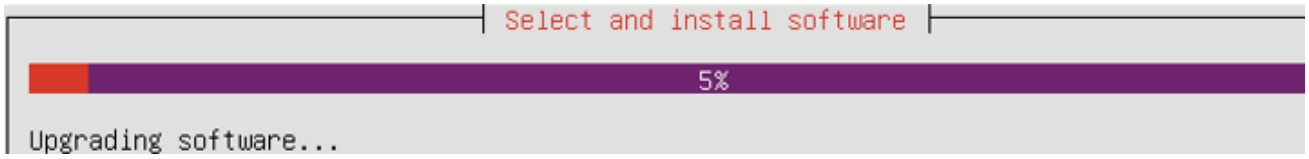
Then, the system installation starts.



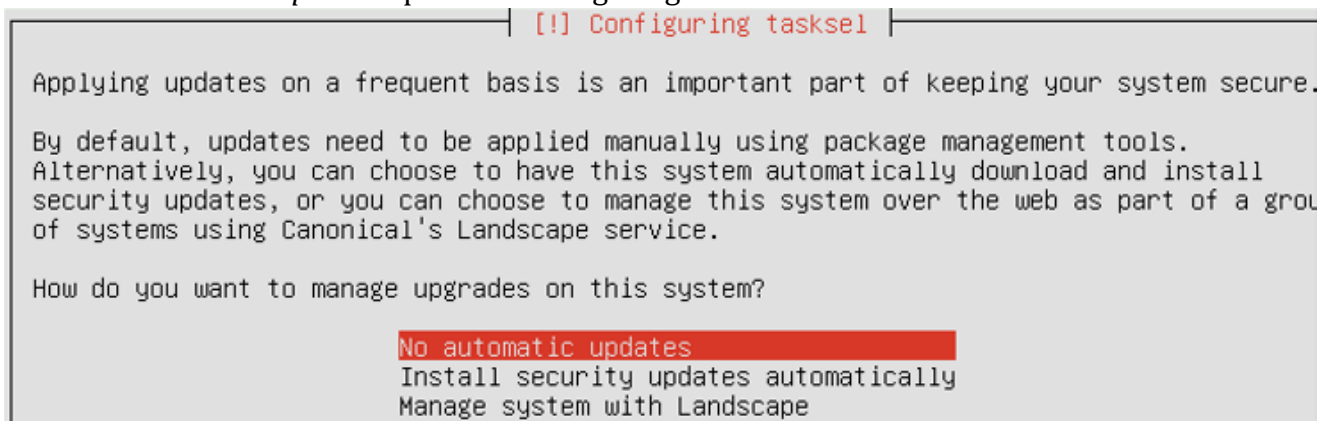
16. For http proxy, just click **Enter.**



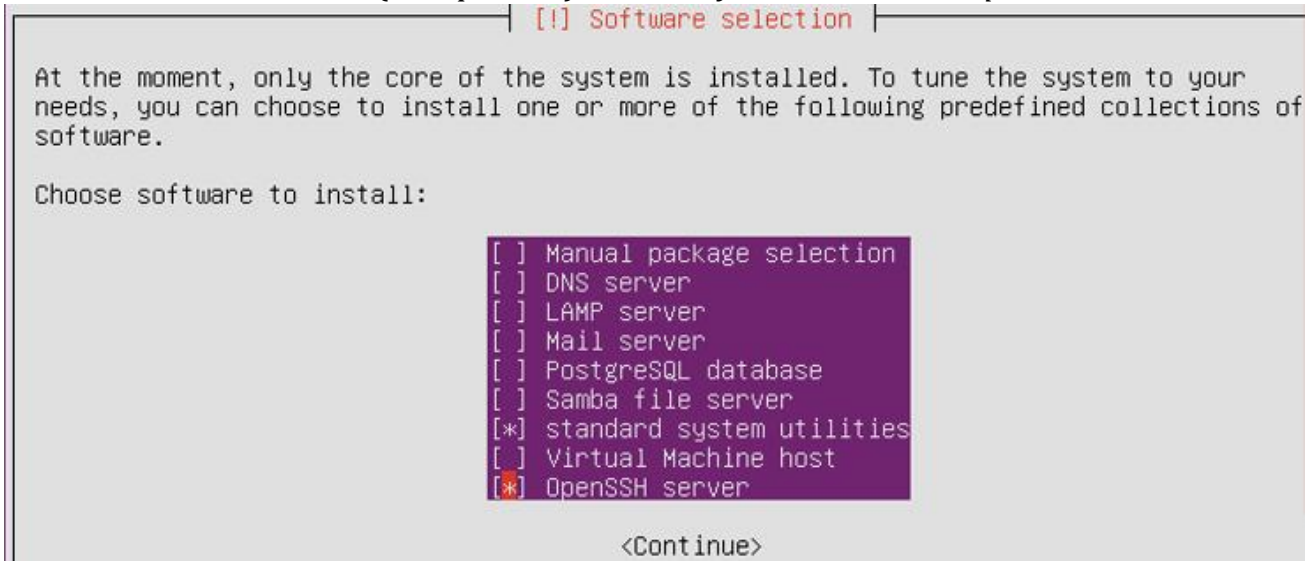


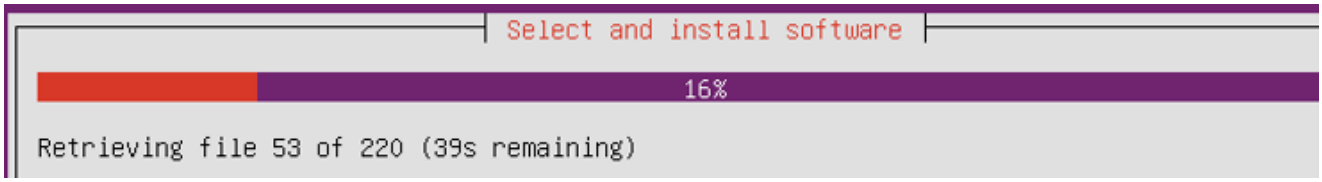


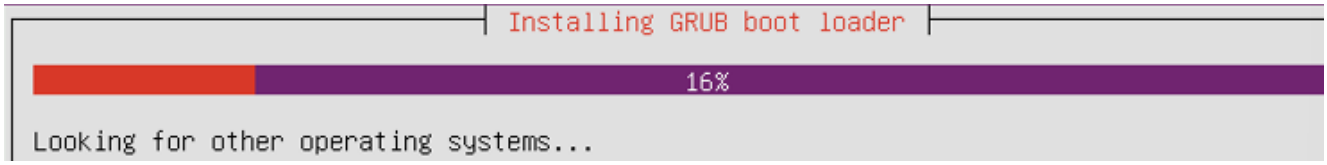
17. Select *No automatic updates* option for configuring tasksel.



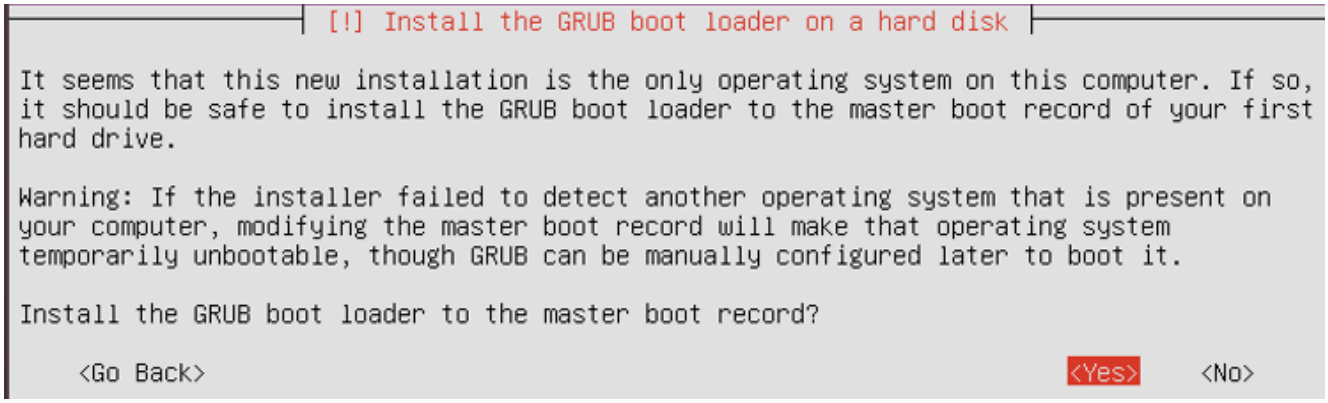
18. In Software selection, select(use Spacebar) *standard system utilities* and *OpenSSH server.*

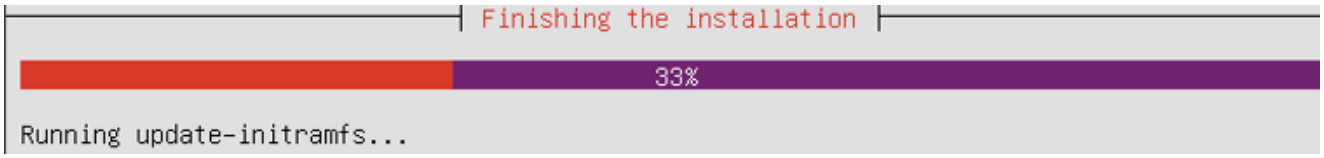


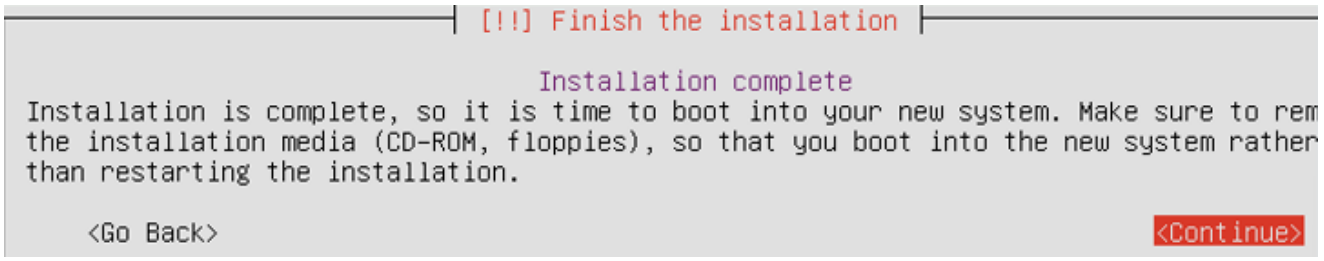


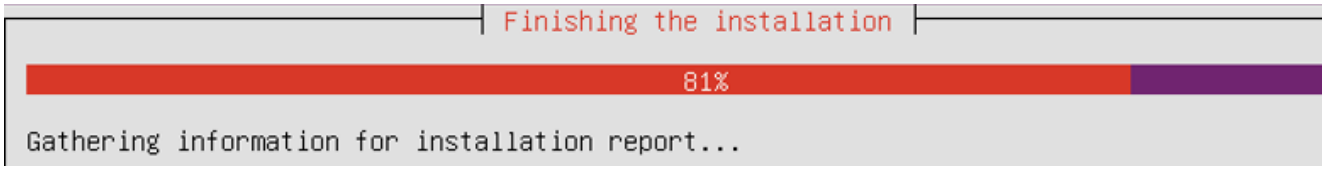


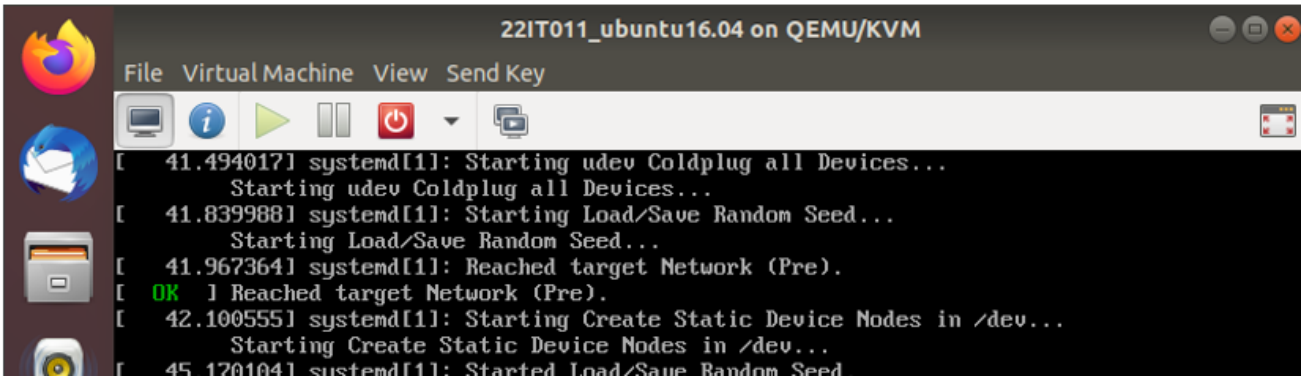
19. Give **Yes** to install GRUB boot loader.











20. Now, login to your VM.

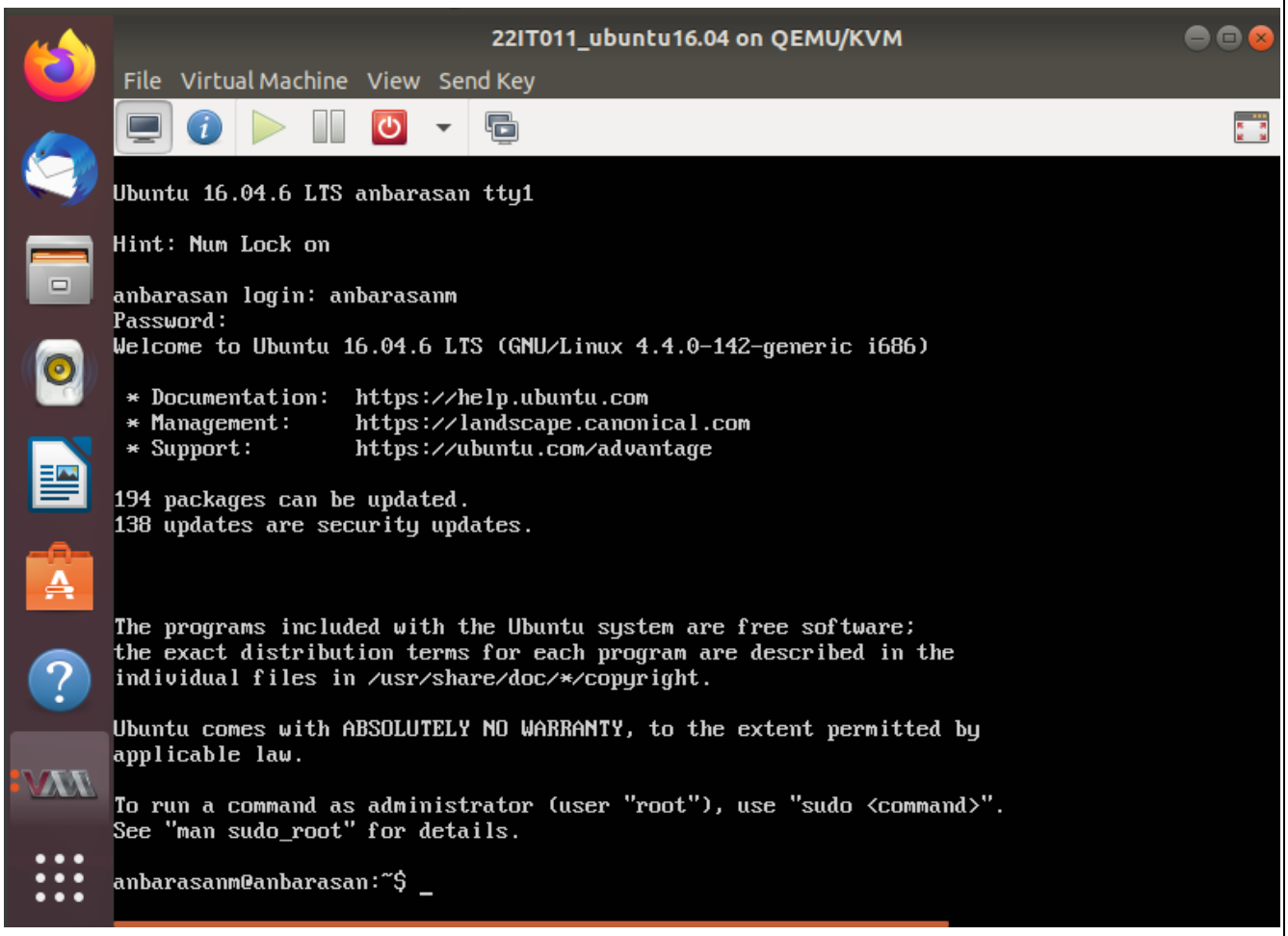


Image Resizing

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

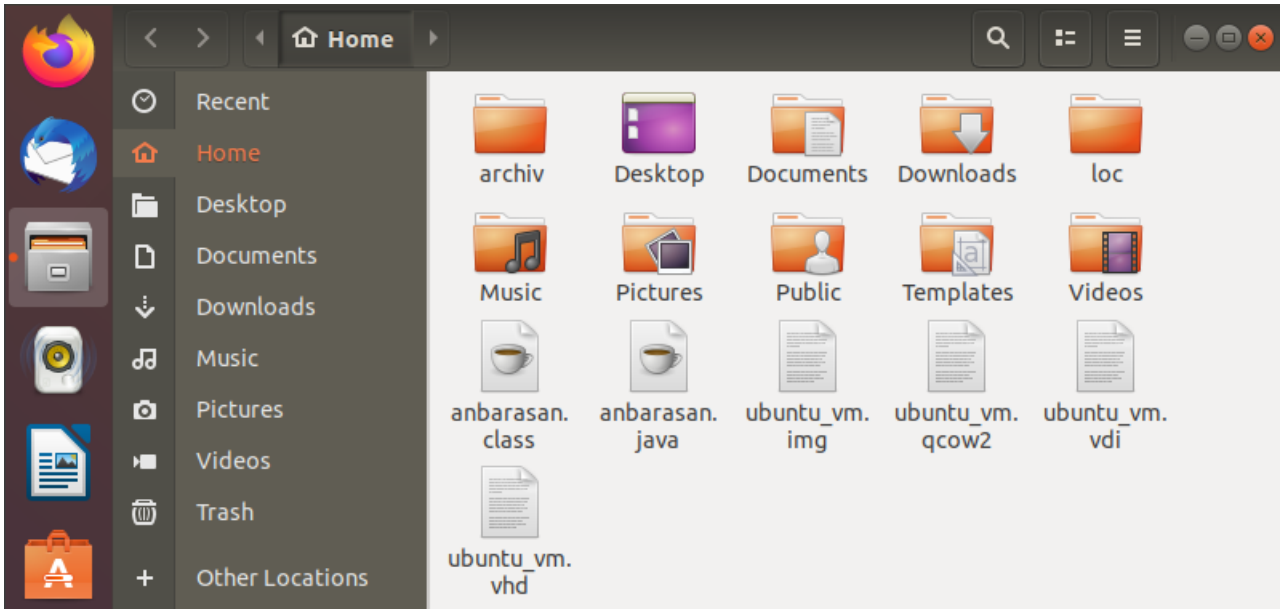
```
tce@tce-VirtualBox:~$ qemu-img convert -O vdi ubuntu_vm.qcow2 ubuntu_vm.vdi -p
    (100.00/100%)
```

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.