

Linux Hands - On

Through this hands-on you will install Ubuntu Server on a vm.

Installation of virtualbox and Downloading Ubuntu iso image

Download and install virtualbox

1.Download the installer from Oracle

You will find all the installers here

<https://www.oracle.com/virtualization/technologies/vm/downloads/virtualbox-downloads.html>. For modern 64 bit Windows 10 and 11 the correct one is

<https://download.virtualbox.org/virtualbox/6.1.40/VirtualBox-6.1.40-154048-Win.exe>. Download it!

2.To install the virtualbox ,please go through this guide.

[How to install the Oracle VirtualBox](#)

3.Download the Ubuntu image from the website (Ubuntu Server 22.04.1 LTS)

<https://ubuntu.com/download/server>

Creating the VM

- Start virtualbox and Click on **New** button to create new virtual machine
- Enter name of the VM as: **ubuntuserver**.
- Select OS Type: **Linux**
 - Select Version: **Ubuntu (64-bit)**
 - Then click on **Continue** button
 - Set VM's memory size to **4096 MB** and click on Continue button
 - Set VM's hard disk option to **Create a virtual hard disk now** and then click on **Continue**
 - Select disk type to **VDI**
 - Select storage type to **Dynamically allocated** and **Continue**

When you create a dynamically created disk image, we specify a maximum size for the disk, but the actual file size starts small and grows when we add data to it. This allows you to conserve space on your physical hard disk,

On the other hand, a fixed size virtual hard disk image file is one that is created with a specific size and does not grow. The entire size of the file is allocated on our physical hard disk when we create it

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- adjust the disk size to **20.0GB** and click on **Create** to create the VM

This might take couple of minutes

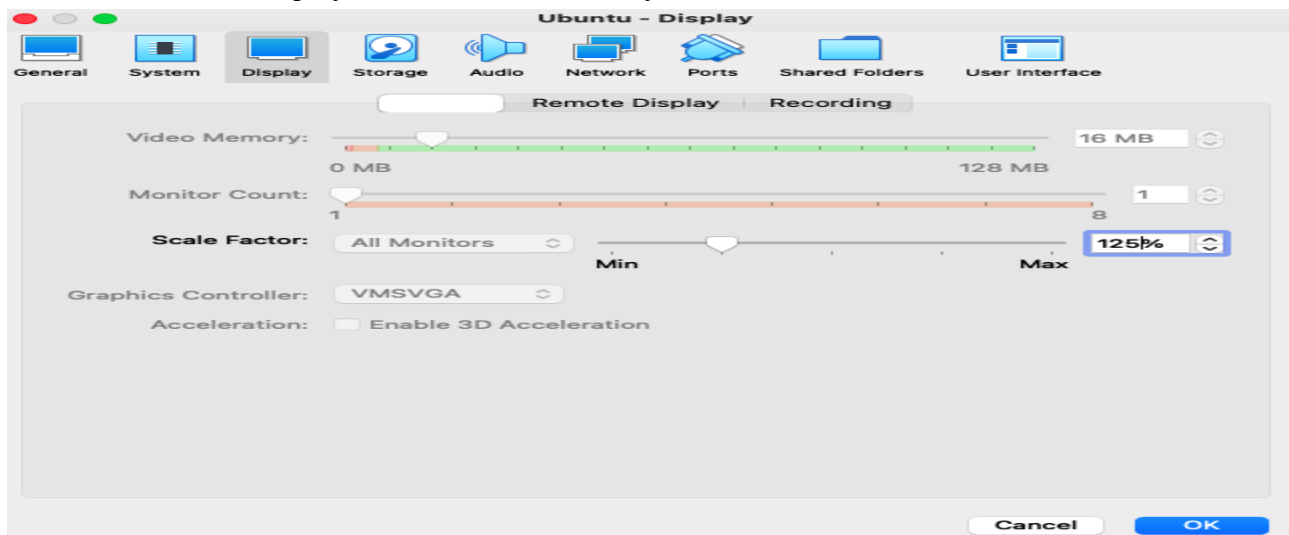
(Note down the location of vdi image file when virtualbox flashes it on the screen)

If you have any difficulties above steps ,please go through this guide

[Guide1](#)

Increase the display size

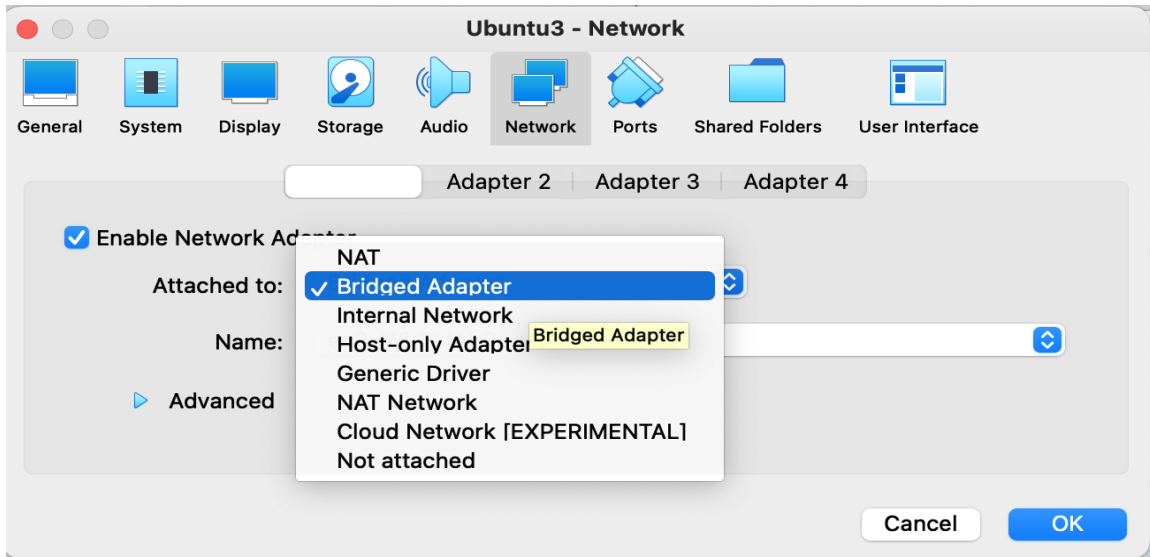
- Click to the display and increase the size by 125% or more



Setting up Network Interface

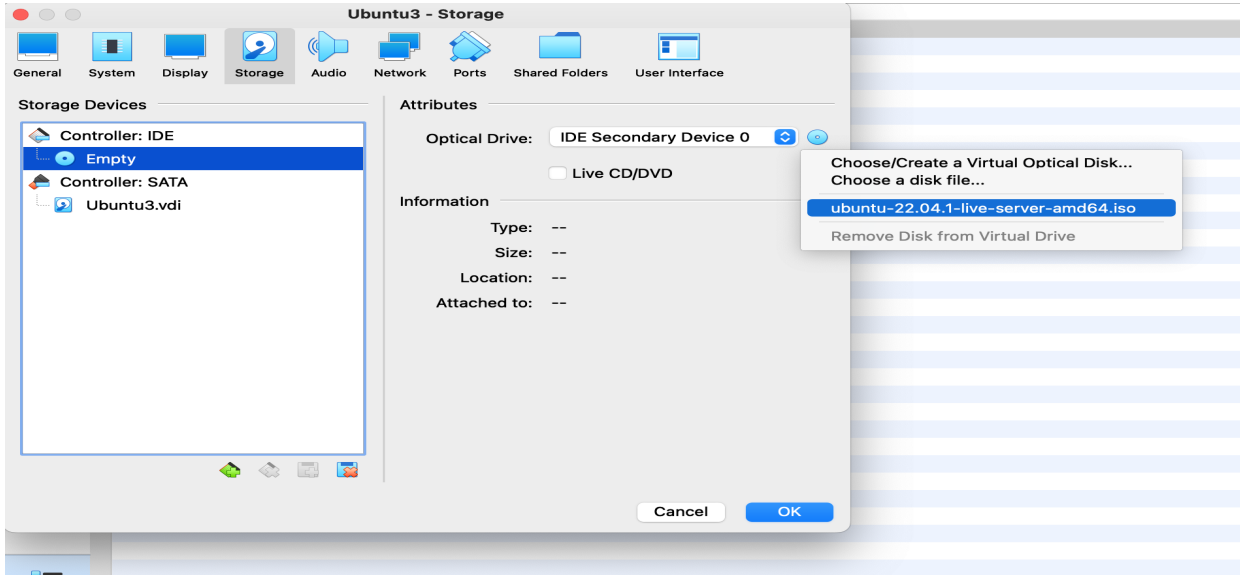
- Select the VM from left panel on Virtual box, right click and open **Settings**
- Click on the **Network** title
- On **Adapter 1** While *Enable* Network Adapter selected choose Attached to be **Bride Adapter**

● **Bridge Adapter** → → → → **With bridged networking, the virtual network adapter in the virtual machine connects to a physical network adapter in the host system. The host network adapter enables the virtual machine to connect to the LAN that the host system uses.**



Setting up boot device and Booting

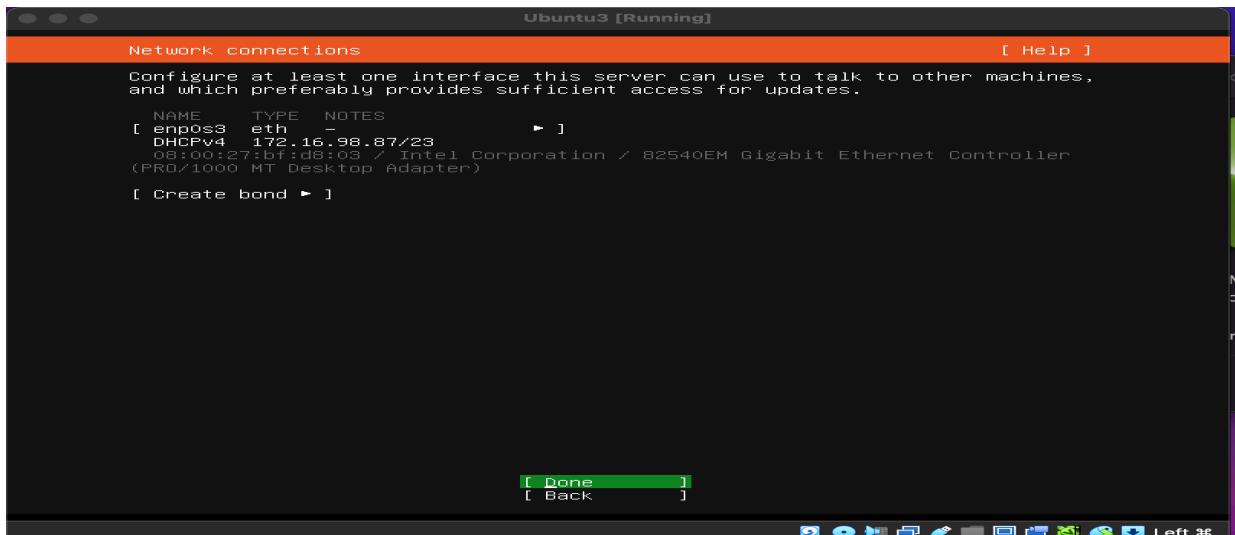
- Click on Storage title, under the Controller:IDE select CD ROM icon with Caption "Empty", Click on CD ROM icon under the Attributes on the left side to select
- Choose/Create Virtual Optical Disk File
- Locate the Ubuntu CD Image file you downloaded from the above mentioned link. Press OK to close the settings window.
- Right click on VM and select Start to make a Normal Start. You should now see a separate window with Installation screen"



Installation Method 1

Initial Installation options

- Select **English** as language for the installation wizard
- Select **Continue without updating**
- Select **Done** for keyboard configuration
- Select 'Done' for Network connection (it will automatically get an IP address from dhcp), If it is not assigned the IP address click **continue without networking**, We will configure the IP address manually after installation.



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- Select **Done** for Proxy settings

- **Use an entire disk** → → → **remove everything and install Ubuntu, using whole disk. This will also automatically create partitions (root, boot and swap, at least) for Ubuntu. Difference is that it'll first remove all old partitions.**

- Select **use an entire disk** and select **Done**
- **Swap partition**-The purpose of the swap partition is to act as virtual memory for the operating system. When the physical memory (RAM) is filled, the operating system will start using the swap space to temporarily store less frequently accessed data. This can help prevent the system from becoming unresponsive or crashing due to lack of memory.

Boot partition-The /boot partition is a partition on a Linux system that contains the files necessary for booting the operating system.

/(root) partition-In Linux, the /(root) partition is the top-level directory in the file system hierarchy. It contains all the directories and files necessary for the operating system to function properly, such as the kernel, system libraries, system configuration files, and user home directories.

- Select **Continue** for confirm destructive actions
- Type the server's name (use this name to talk with other VMs and computers)
- When it asks, add a User by entering **Your Name, your username, password (**

Final Configuration

SSH Setup

- Select only
OpenSSH server (select by pressing space)
- Select **Done** to continue

Features server snaps

Select **Done** as the final setup of installation

Select **Reboot**

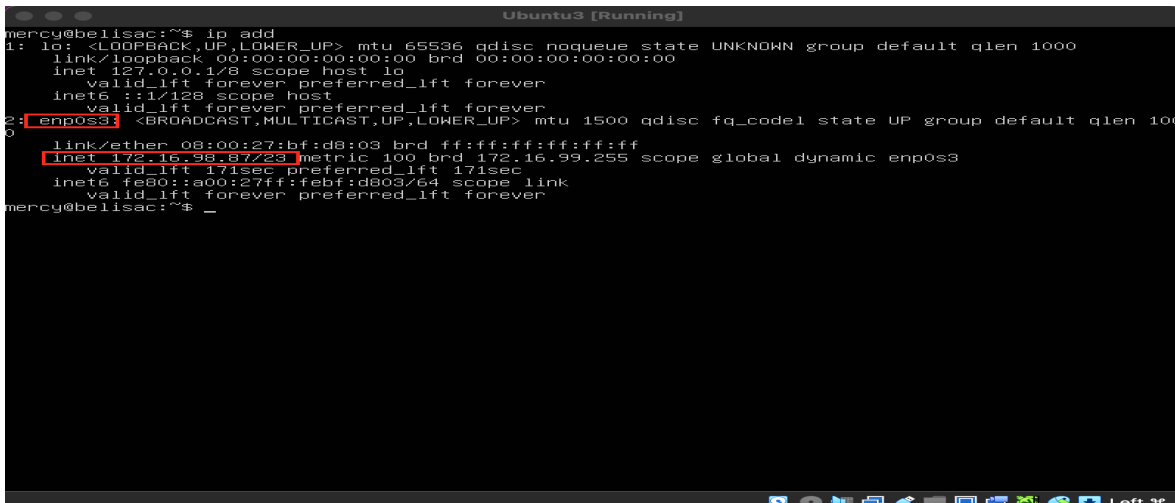
VM now should restart with the newly installed OS.

You may now login using your credentials.

If you have any difficulties above steps ,please go through this guide
[Guide2](#)

Check and Configure the IP address

1.Check your IP address and adapter using **ip add**.



```
Ubuntu3 [Running]
mercy@belisac:~$ ip add
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
        valid_lft forever preferred_lft forever
2: enpos3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether 08:00:27:bf:d8:03 brd ff:ff:ff:ff:ff:ff
    inet 172.16.98.97/23 metric 100 brd 172.16.99.255 scope global dynamic enpos3
        valid_lft 171sec preferred_lft 171sec
    inet6 fe80::a00:27ff:febf:d803/64 scope link
        valid_lft forever preferred_lft forever
mercy@belisac:~$ _
```

2.If no IP address has been assigned, follow the steps below to assign one.

If we need the VMs to receive the same IP range as in the Host server, then we need to create a network bridge interface. We have already set the bridged network.

- Please open the terminal application Change the configuration as in the below

sudo vi /etc/netplan/00-installer-config.yaml

sudo →→→ **Sudo stands for SuperUser DO and is used to access restricted files and operations. By default, Linux restricts access to certain parts of the system preventing sensitive files from being compromised**

- Type below configuration in your file

```
network:  
  ethernets:  
    enp0s3:  
      addresses:  
        - ip_address/prefix_length  
      routes:  
        - to: default  
          via: gateway_ip  
      nameservers:  
        addresses: [4.2.2.2 , 8.8.8.8]  
      version: 2
```

Check your host ip address range ,gateway and prefix_length and configure the network as follows.Please consider the space between the characters.

