Task 1: Steps to install Ros1 and Ros1 version

1- Download VirtualBox

VirtualBox download link:

https://www.virtualbox.org/wiki/Downloads

2- Download ubuntu20.04

ubuntu20.04 download link:

https://releases.ubuntu.com/20.04/

3- Then go to the VirtualBox program and click on new, type a name for the device, and then click on next

4- Choose the space, then next, after that a new device will be created

5- Click on start, then choose the file in which the ubuntu copy is stored

6- Then choose install ubuntu, then press next, then choose the language, then the region, then enter the name and code, and ubuntu will be installed

7- How to install Ros1:

Run Terminal and type the following commands:

Command Prompt Link:

http://wiki.ros.org/Installation/Ubuntu

Commands:

sudo sh -c 'echo "deb http://packages.ros.org/ros/ubuntu $(lsb_release -sc) main" > /etc/apt/sources.list.d/ros-latest.list'

```
sudo apt install curl # if you haven't already installed curl
curl -s
https://raw.githubusercontent.com/ros/rosdistro/master/ros.a
sc |  sudo apt-key add -
```

```
sudo apt update
```

```
sudo apt install ros-noetic-desktop-full
```

```
sudo apt install ros-noetic-PACKAGE
```

```
sudo apt install ros-noetic-slam-gmapping
```

```
apt search ros-noetic
```

```
source /opt/ros/noetic/setup.bash
```

```
echo "source /opt/ros/noetic/setup.bash" >> ~/.bashrc
source ~/.bashrc
```

```
echo "source /opt/ros/noetic/setup.zsh" >> ~/.zshrc
source ~/.zshrc
```

sudo apt install python3-rosdep python3-rosinstall python3-rosinstall-generator python3-wstool build-essential
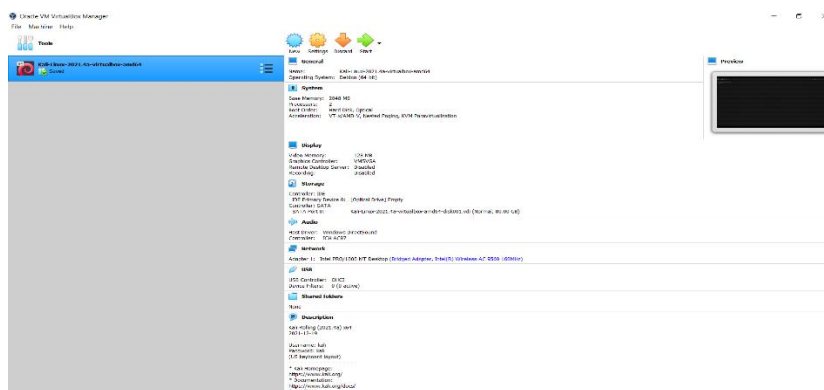
sudo apt install python3-rosdep

sudo rosdep init

rosdep update

Ros version:

Rosverstion:1.14.3

1-Download VirtualBox:

2-Download ubuntu20.04:

ubuntu releases

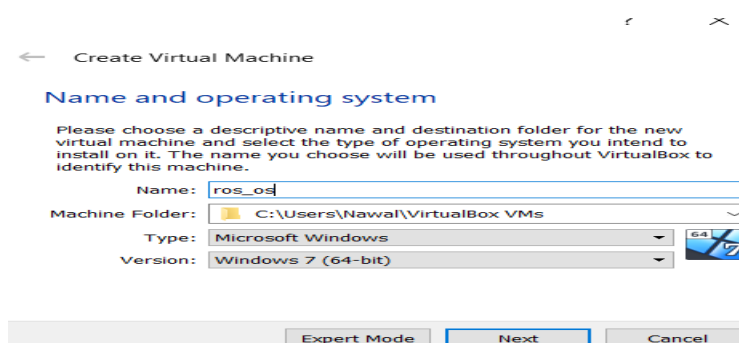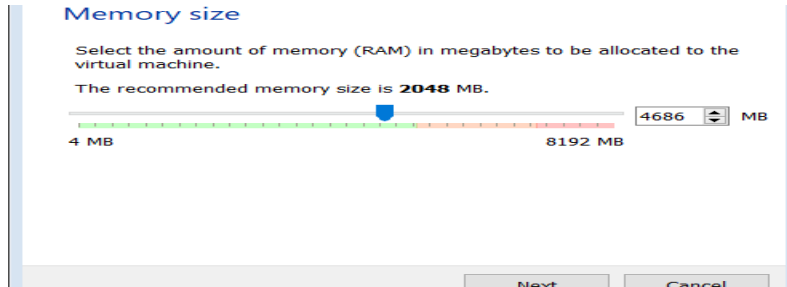# Ubuntu 20.04.4 LTS (Focal Fossa)

Select an image

Ubuntu is distributed on three types of images described below.

Desktop image

The desktop image allows you to try Ubuntu without changing your computer at all, and at your option to install it permanently later. This type of image is what most people will want to use. You will need at least 2048MiB of RAM to install from this image.

64-bit PC (AMD64) desktop image
Choose this if you have a computer based on the AMD64 or EM64T architecture (e.g., Athlon64, Opteron, EM64T Xeon, Core 2). Choose this if you are at all unsure.

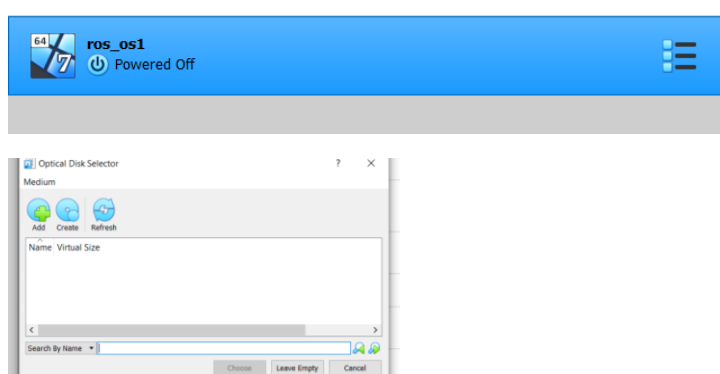**Server install image**

64-bit PC (AMD64) server install image

Then go to the VirtualBox program and click on new, type a name for the device, and then click on next
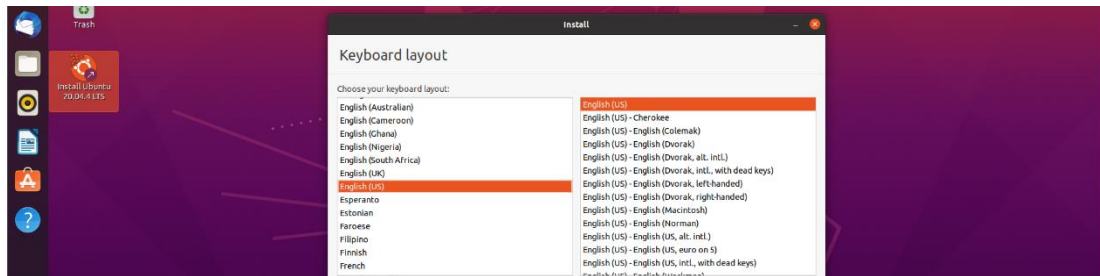

Create Virtual Machine

Name and operating system

Please choose a descriptive name and destination folder for the new virtual machine and select the type of operating system you intend to install on it. The name you choose will be used throughout VirtualBox to identify this machine.

Name: ros_os
Machine Folder: C:\Users\Nawal\VirtualBox VMs
Type: Microsoft Windows
Version: Windows 7 (64-bit)

Expert Mode   Next   Cancel

Choose the space, then next, after that a new device will be created

Memory size

Select the amount of memory (RAM) in megabytes to be allocated to the virtual machine.
The recommended memory size is **2048** MB.

4686 MB

4 MB   8192 MB

Next   Cancel

Click on start and then choose the file in which the ubuntu copy is stored

ros_os1
Powered Off

Optical Disk Selector

Medium

Add Create Refresh

Name Virtual Size

Search By Name

Choose Leave Empty Cancel

Then choose install ubuntu, then press next, then choose the language, then the region, then enter the name and code, and ubuntu will be installed

3-How to install Ros1: