

Setting up a virtual machine for ROS

1. Download a pre-built ROS image that includes everything you need.

Recommended free space in your disk is 25GB.
Download the image from the G drive link below;

<https://drive.google.com/file/d/18waiGEW1VXLgRP7SwSqpgRG87kGjru0f/view?usp=sharing>

Unzip the downloaded file to a directory.

2. Download and Install VirtualBox to your machine.

VirtualBox is a program that lets you run virtual machine images on most common platforms, e.g, Linux, Windows(Can't promise about Macs).

Go to the downloads page at; <https://www.virtualbox.org/wiki/Downloads>

Select the right download file according to your machine, in Windows machines this should be straightforward. On a Linux machine, you can install the downloaded .deb file with the following command.

```
sudo dpkg -i virtualbox*.deb
```

If it asks you to enter a password for secure boot, do enter a password and confirm, the installation should be pretty fast.

OR

You can install virtualbox from debain with;

```
sudo apt update  
sudo apt install virtualbox virtualbox-ext-pack
```

3. Run the downloaded image with VirtualBox.

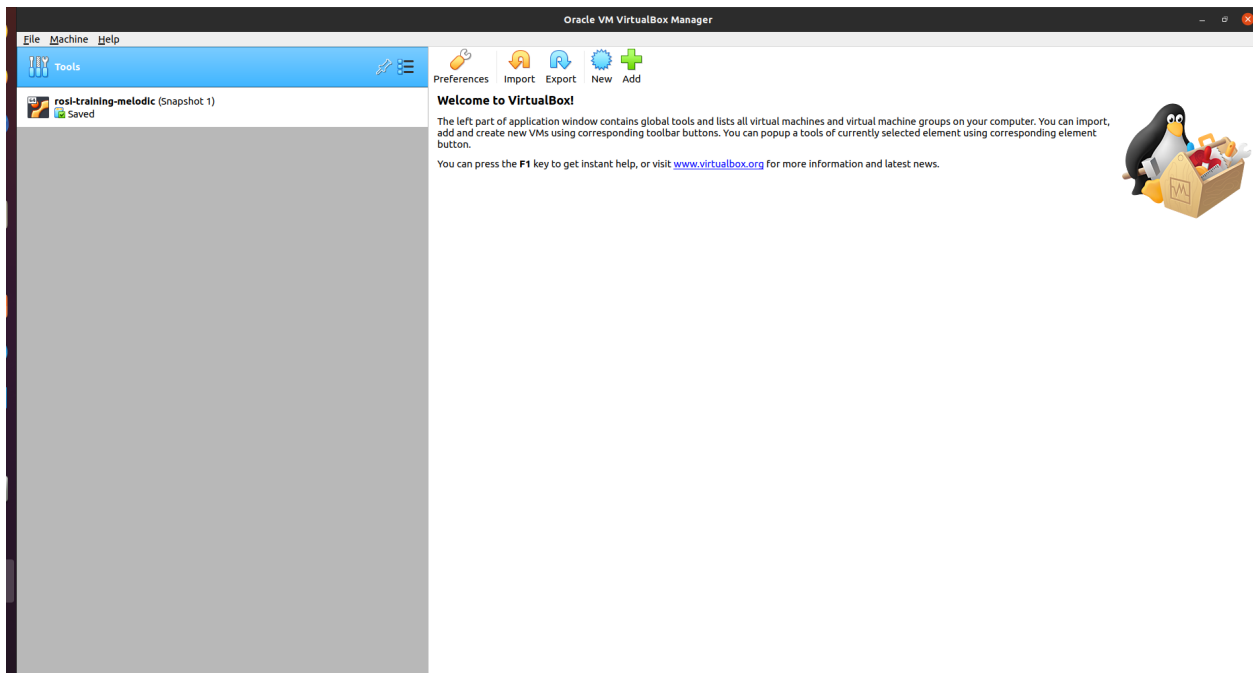
Start the VirtualBox program on your computer, in Linux you can do so by ;
Ctrl+alt+t, which will open a new terminal, type **virtualbox** and enter.

```

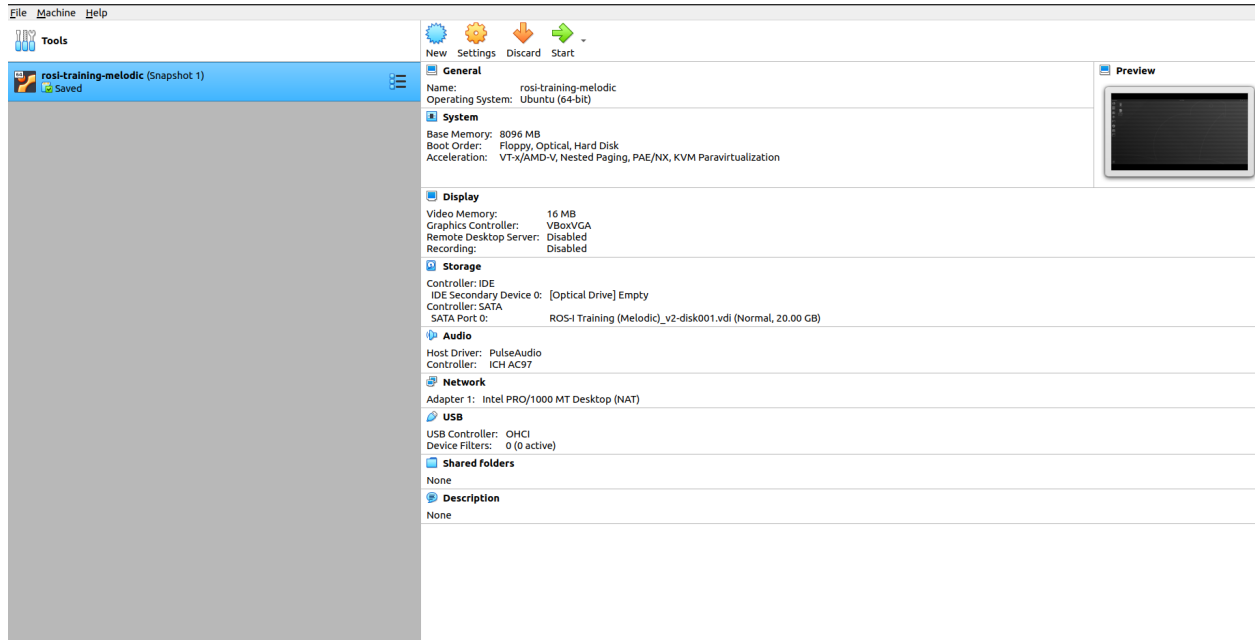
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```

You should see something like;



Click to “ADD” with green + sign, navigate to the unzipped folder of the image you downloaded in the first step. Double click to `rosi-training-melodic.vbox`, Next you must see ;



Now, click start and wait for a while until the machine is started properly.

4. Confirming that the machine is properly set up.

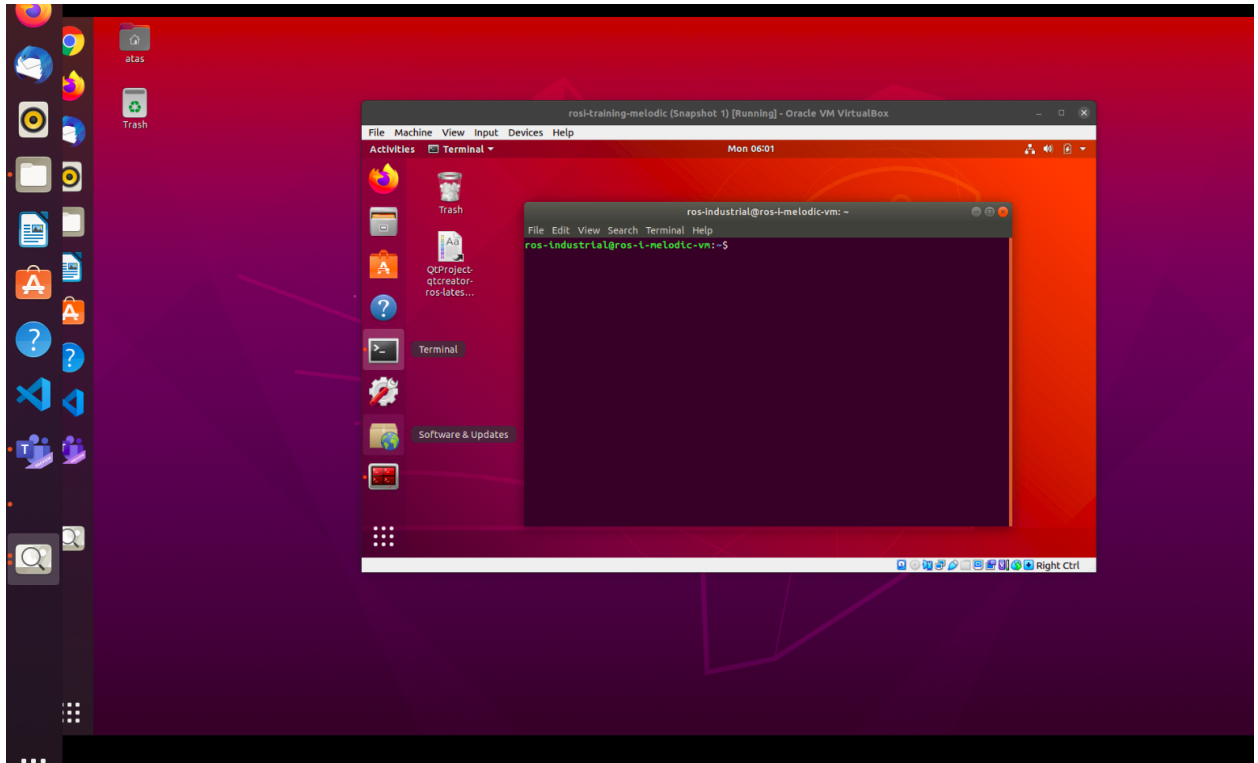
NOTE: The machine's password is; **te1211**

Whenever you execute a command with **sudo**, this password will be requested, please familiarize yourself with this password.

The machine is supposed to not ask for passwords on start-up though.

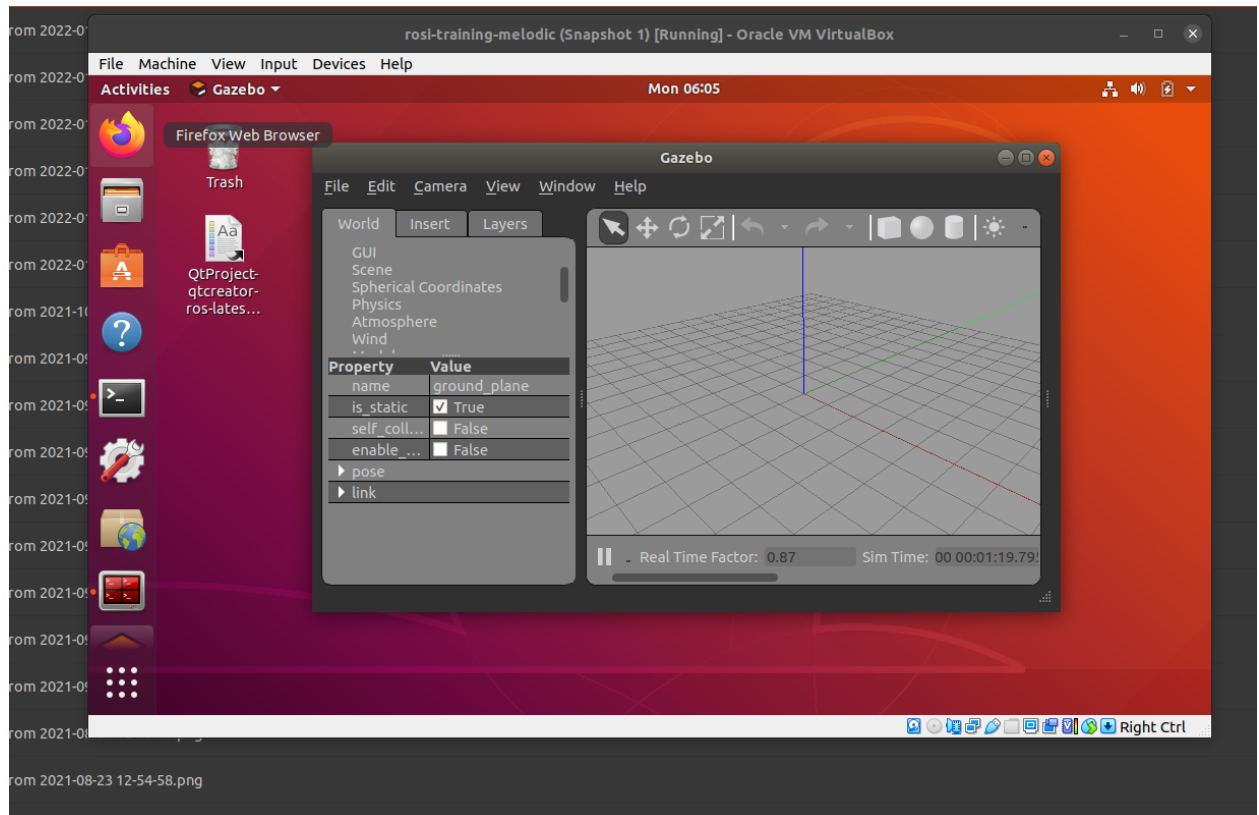
If it asks you to upgrade to a newer version of Ubuntu, please reject it, do not upgrade the ubuntu to 20.04, We will be using Ubuntu 18.04 Bionic with ROS melodic.

Now let's test whether we got things right. In the virtual machine, click on the terminal to open a window,

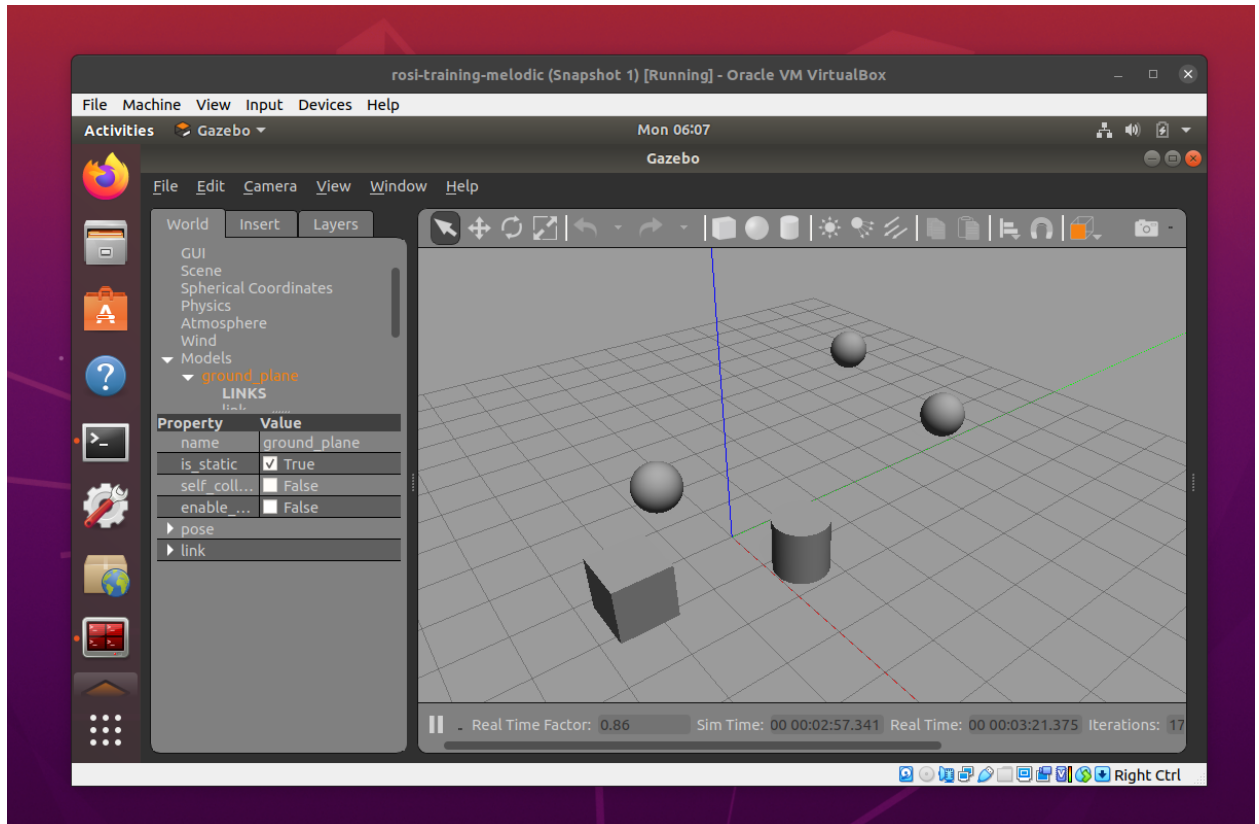


Next, type **gazebo** in the terminal and click enter.

Now hopefully you will see the Gazebo simulator open as;

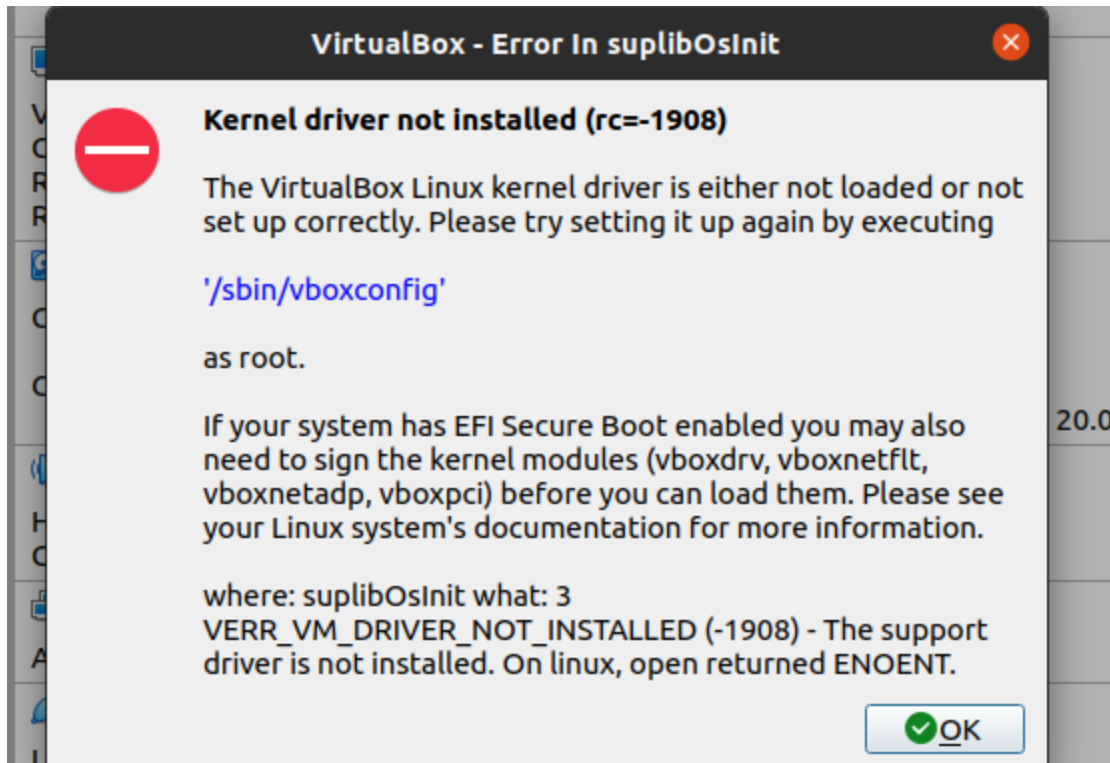


Drop some objects into the simulator for fun by clicking on the primitive shapes(sphere, cylinder, box etc.) at upper right of gazebo window;



5. Troubleshooting.

- a. Kernel driver not installed (rc=-1908)
In a Linux machine I encountered this error;



To get rid of this error do the following;

First, close everything related to VirtualBox and make sure it is not running.

run this command:

```
sudo modprobe vboxdrv
```

If it's not helpful run these commands:

```
sudo apt update sudo apt install --reinstall linux-headers-$(uname
-r) virtualbox-dkms dkms
```

Then **reboot** your system and after reboot run this command:

```
sudo modprobe vboxdrv
```

And if it doesn't work you must **disable Secure Boot** in your BIOS/UEFI settings because Secure Boot prevents unsigned modules from being loaded.