ROS - Virtualizing Ubuntu Linux with Virtual Box
## ME 4140 - Introduction to Robotics - Fall 2019

What is a Virtual Machine ? :

- A VM is an Operating System that is *virtualized* in your native operating system
- this is very useful for experimenting and learning
- not perfect for permanent use
- can be resource intensive
- VirtualBox is a popular application used for this process

VirtualBox Installation and Setup :

1. Aquire Needed Files (VirtualBox + Ubuntu) :

2. Install VirtualBox Application:

3. Open VirtualBox:
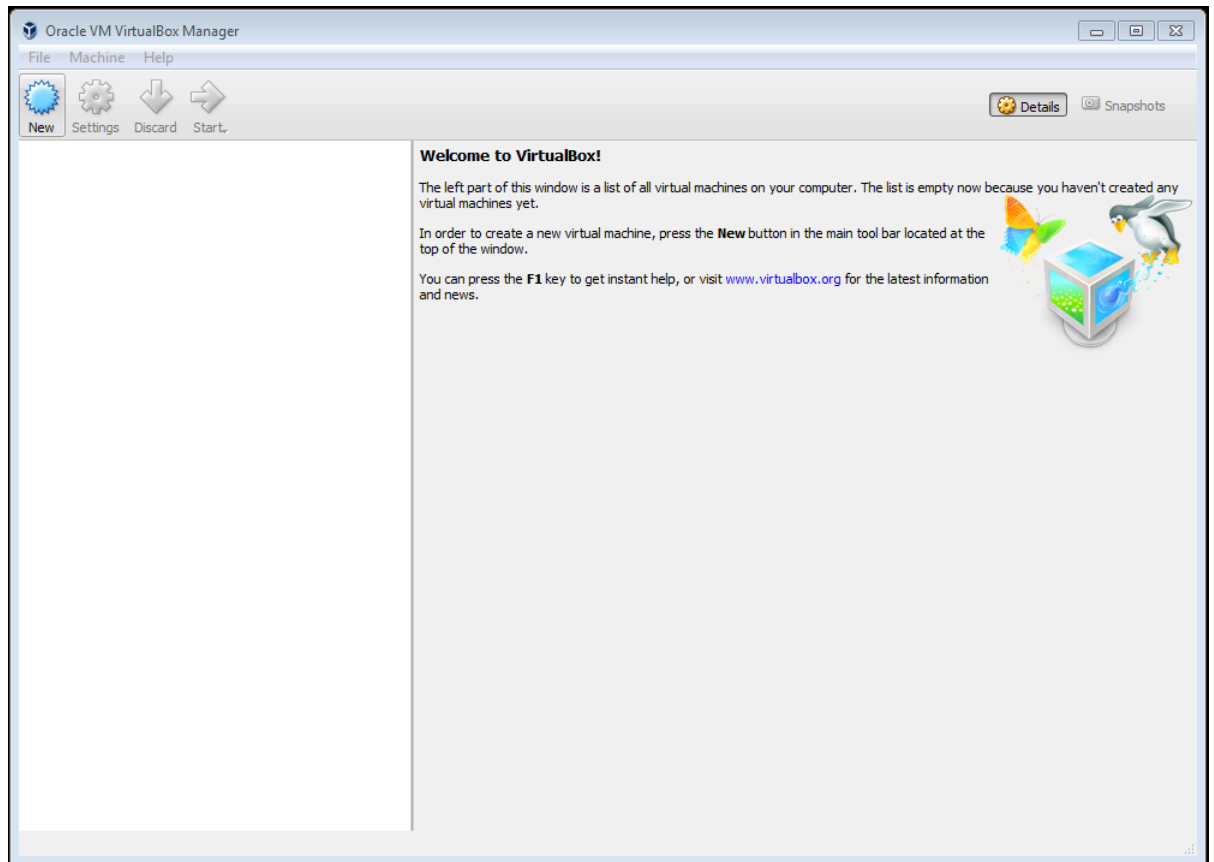
- if you have never used this before the list on the left should be empty
- before you start you should make sure you have an internet connection
- before you start you should make sure you have access to a power supply or battery

4. Create New Virtual Machine:
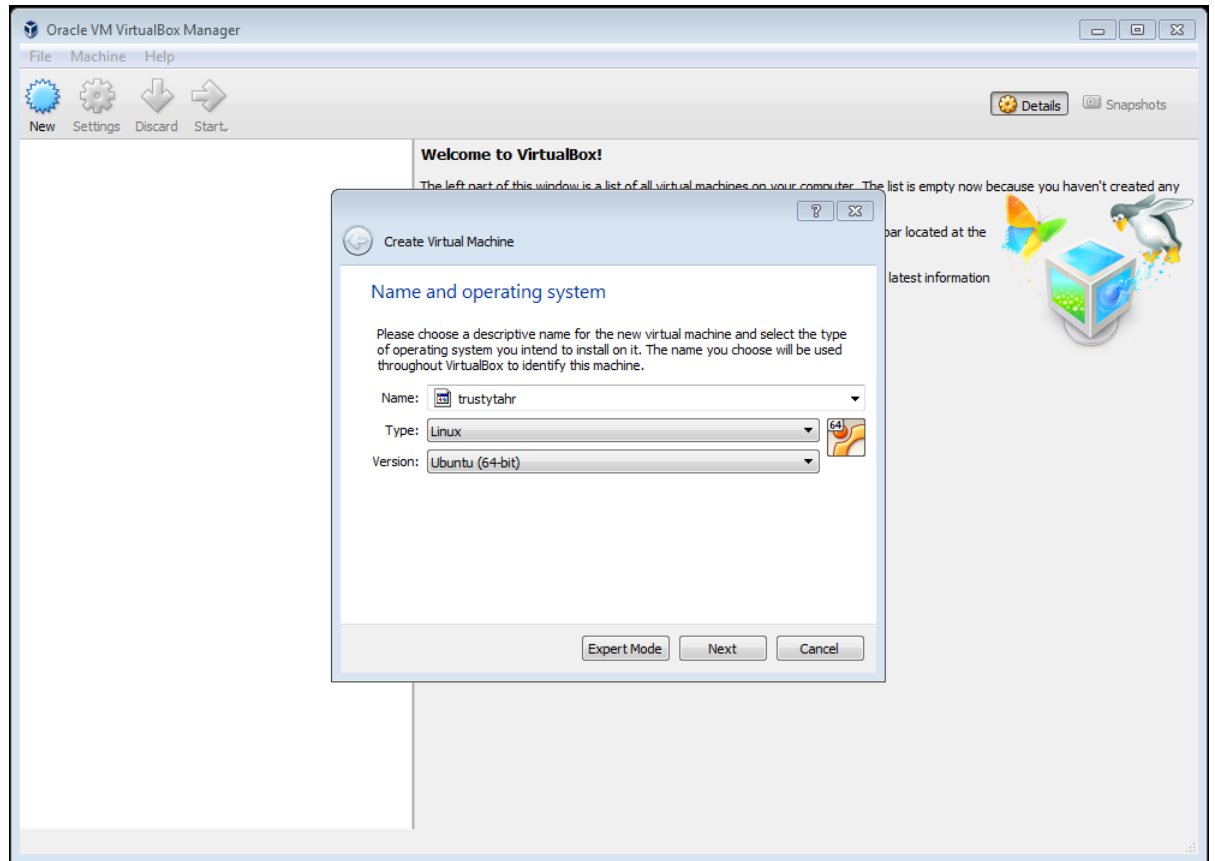
- press the **new** button
- choose a **computer name** (this is your choice but remember it!)
- choose an **operating system** type (Linux)
- choose a **version**, this depends on your physical machine This is probably Ubuntu 64-bit but possbily Ubuntu 32-bit)

5. Define Virtual Machine Parameters:
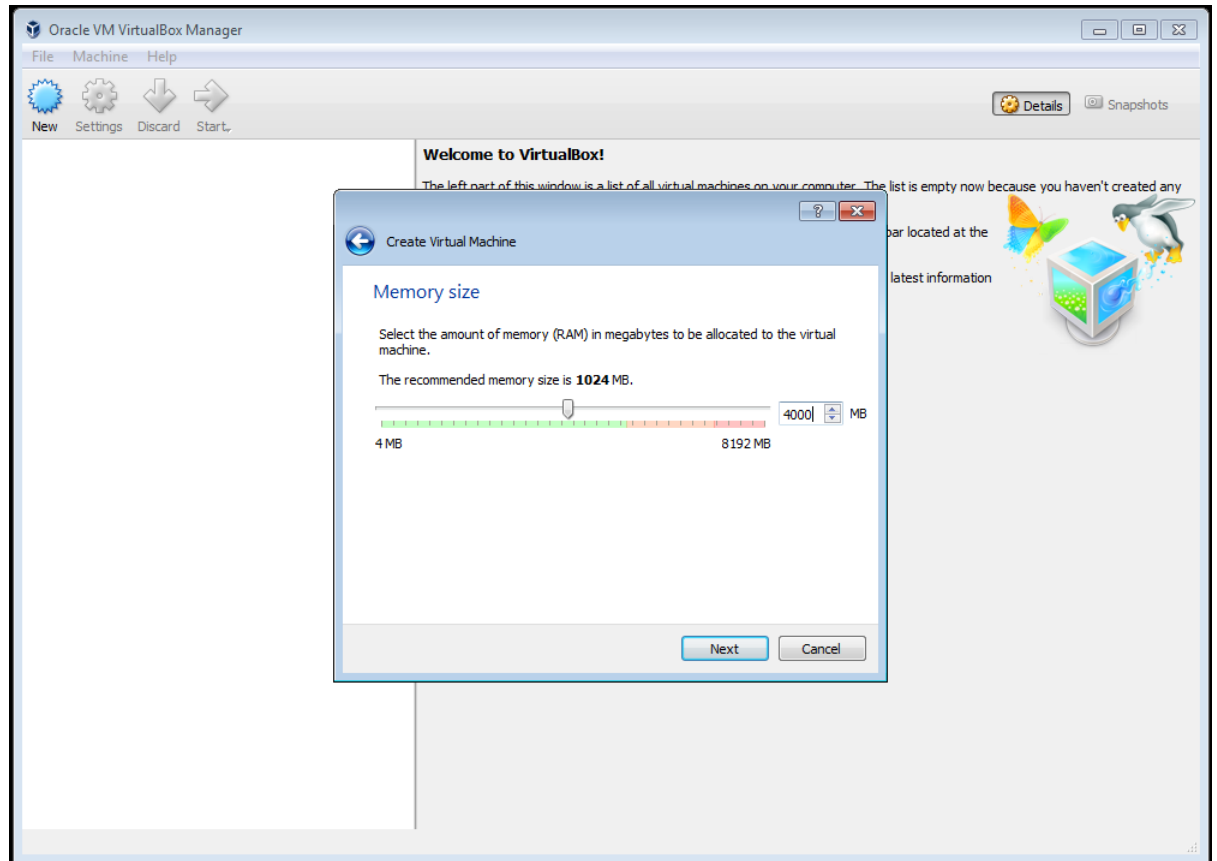
- Choose the amount of RAM you want to allocate to the VM
- This number is based on your available resources. More is better but it helps to leave some for windows. If your computer has 8GB total I suggest no more than 6GB for for VM.
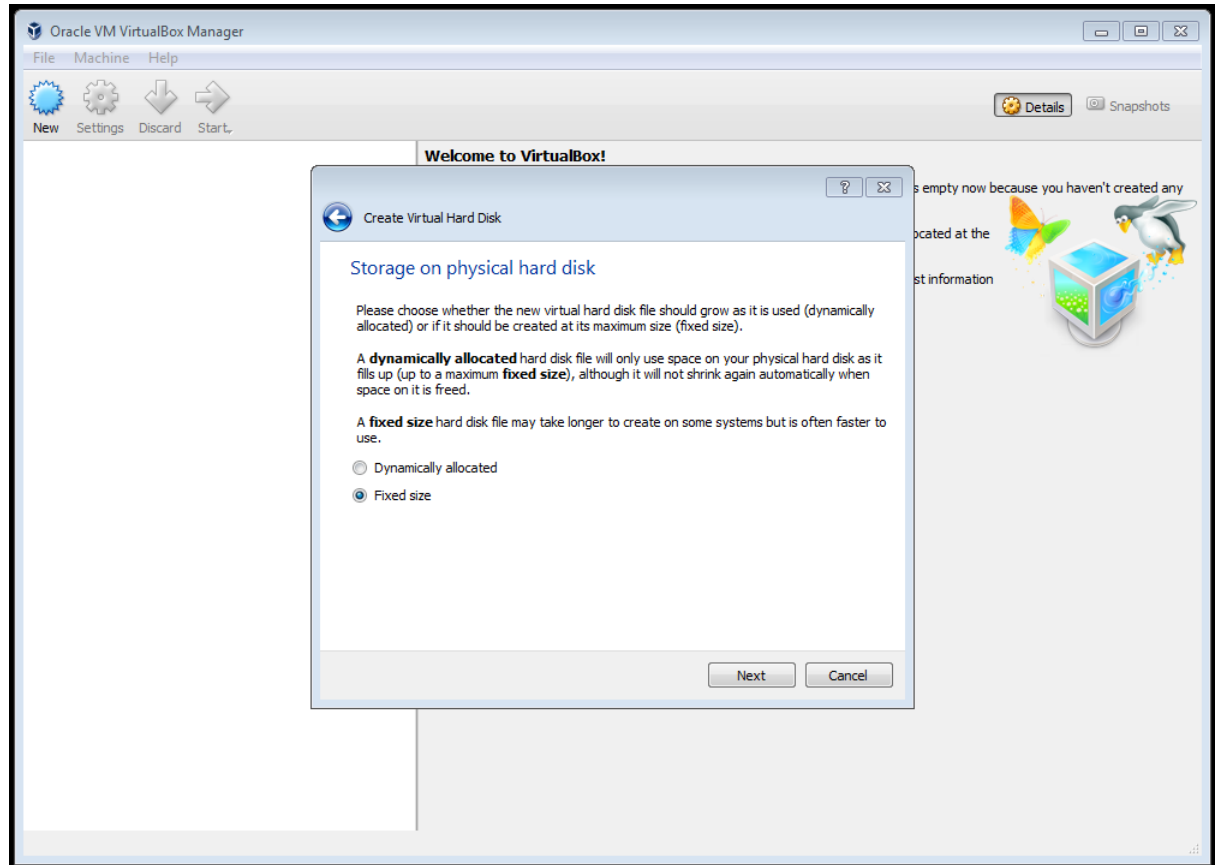
6. Define Virtual Hard Drive Parameters:
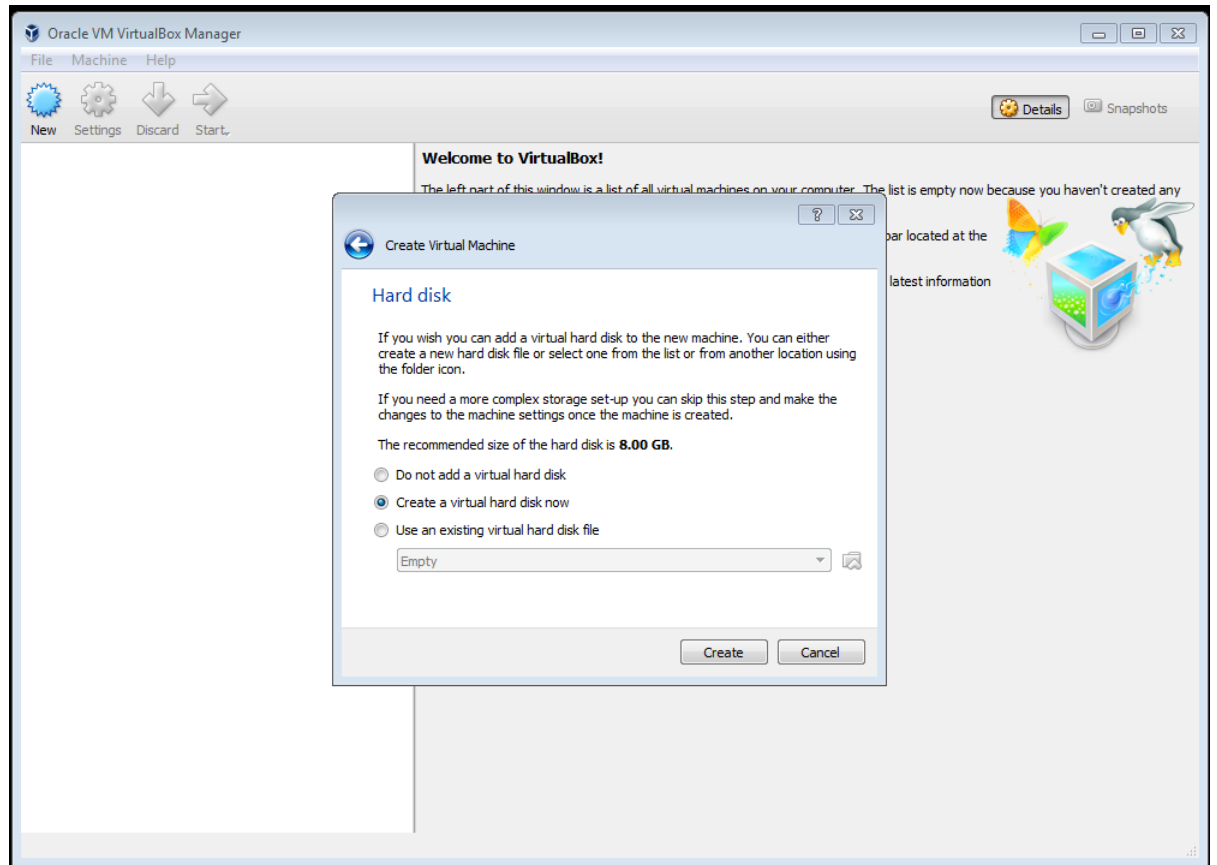
- You must have enough space on your hard drive to virutalize linux and install ros.
- **create a virtual hard drive now**
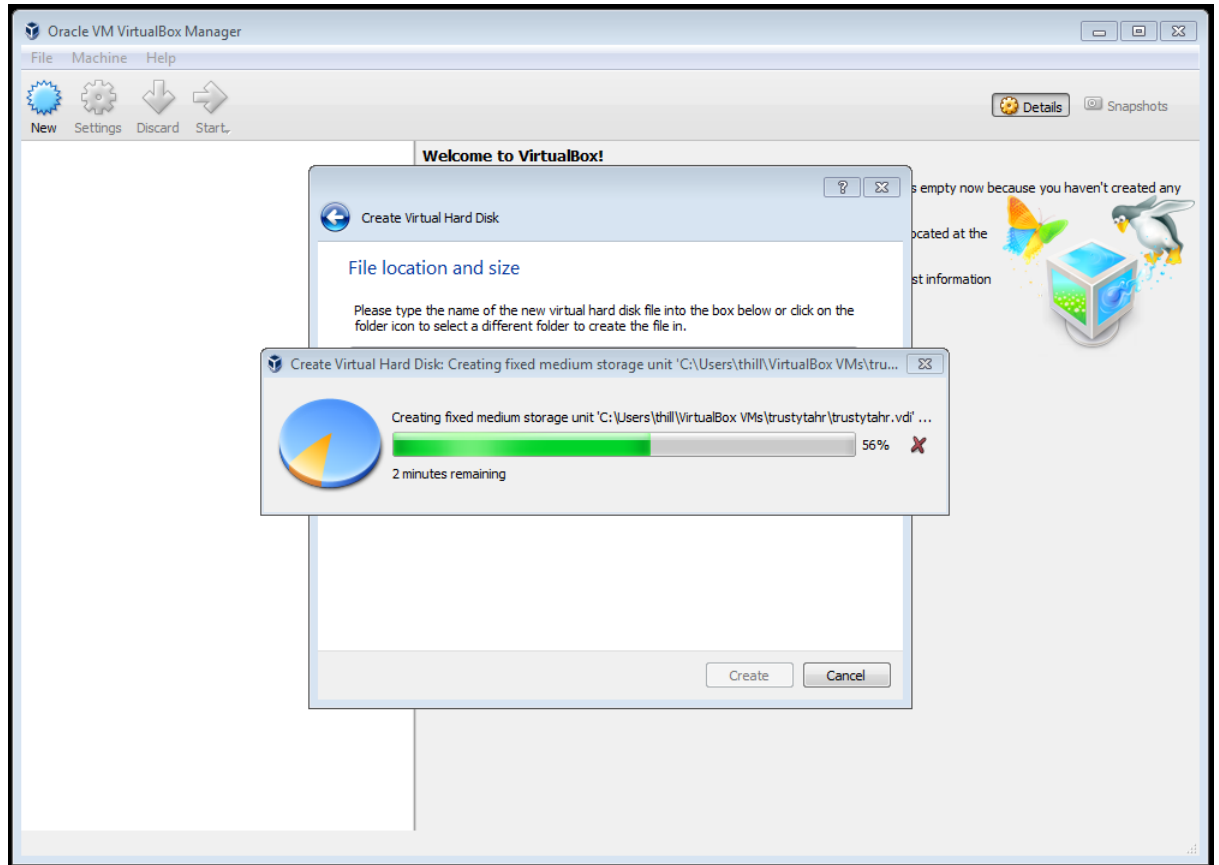
7. Virtual Hard Drive Setup:
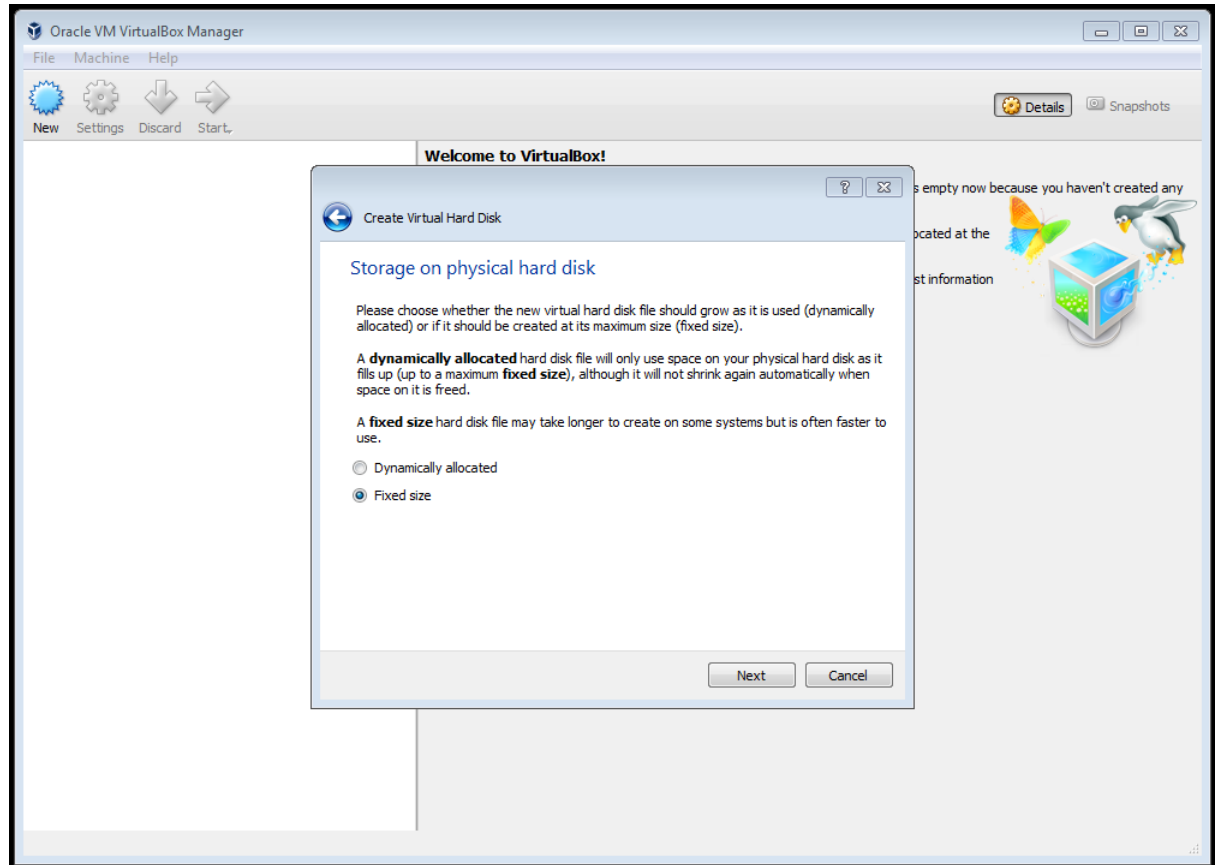
- Create a **fixed size** virtual hard drive.

8. Virtual Hard Drive Setup:

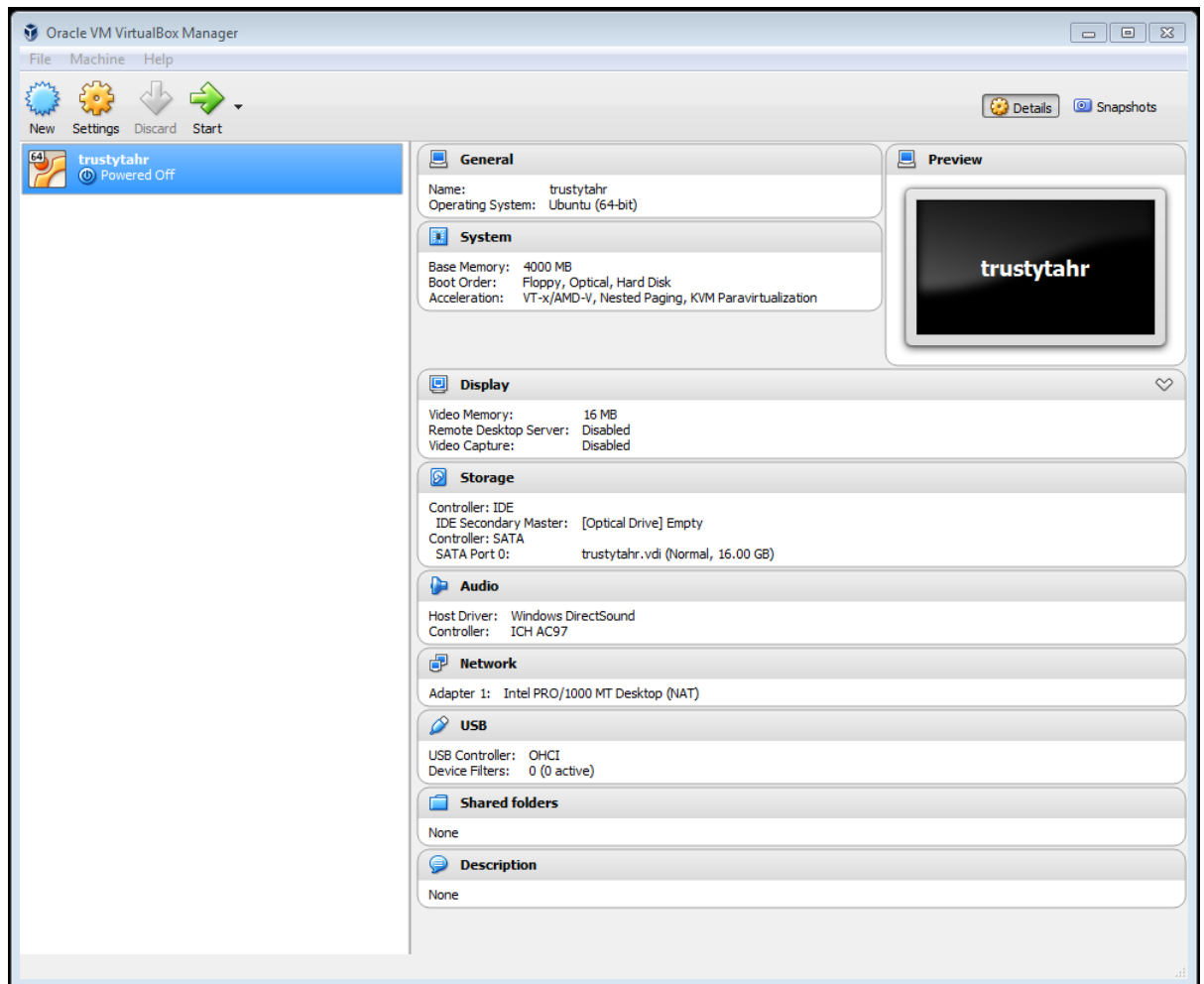- Choose the virtual hard drive type.
- VDI is recommended.

9. Virtual Hard Drive Setup :

- choose the size of your virtual hard drive
- to virtualize Ubuntu and install ROS it is recommended to make a 16 GB VDI
- you can experiment with 'lighter versions'
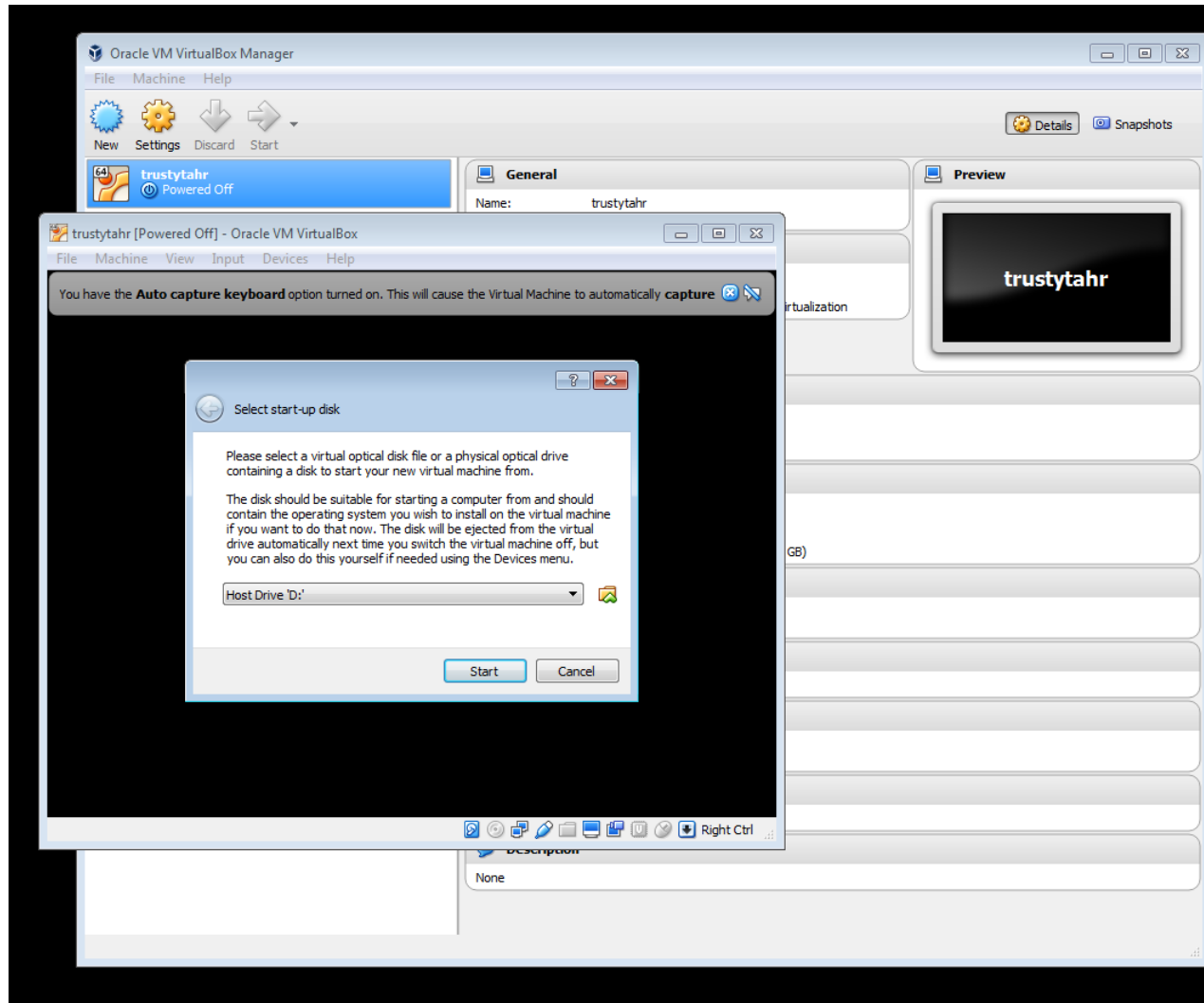 - lubuntu
  - many more
  - I am working on this

Ubuntu OS Installation and Setup :
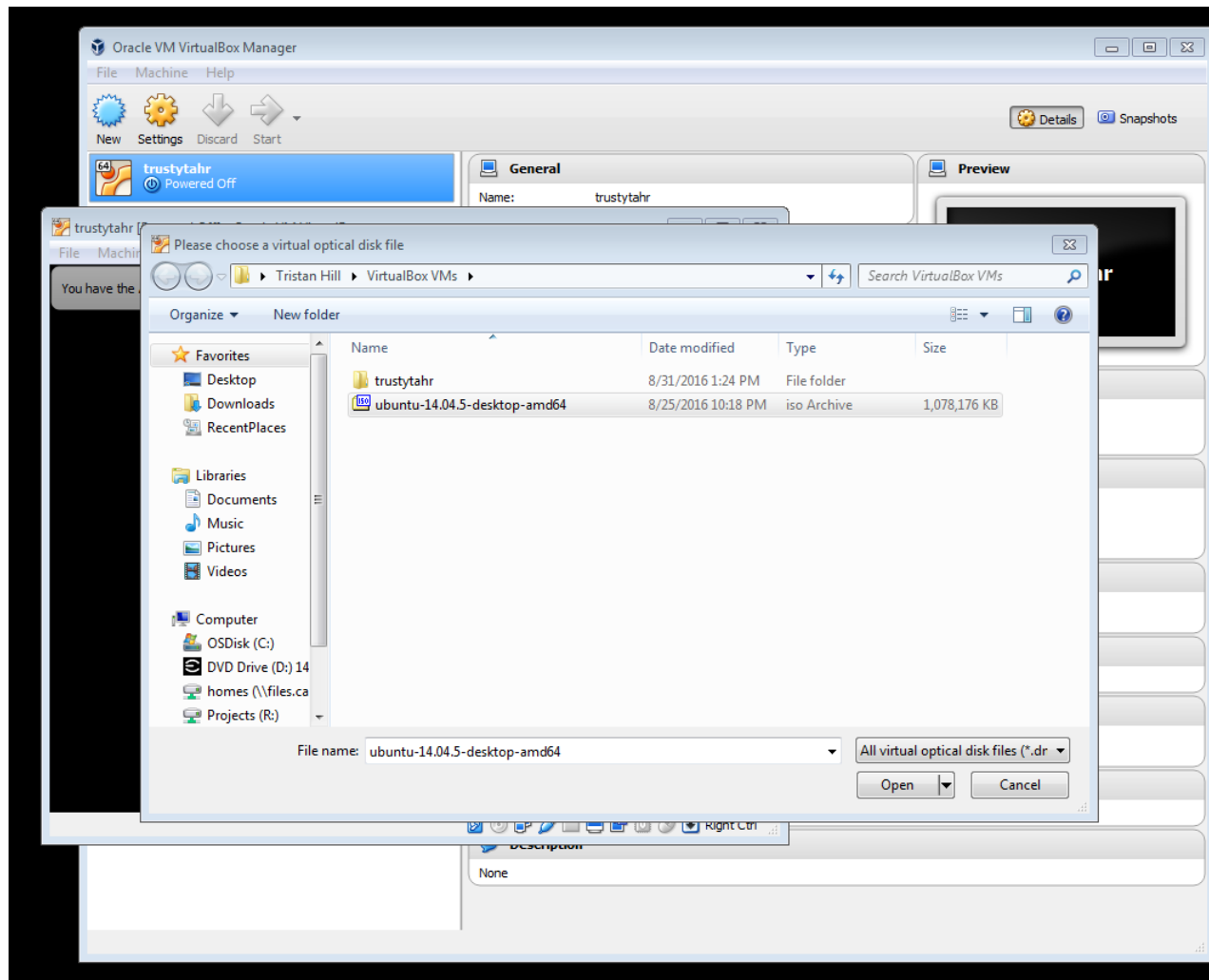
1. Start the VM for the first time:

- select your newly created VM
- press the green start button
- wait for it...

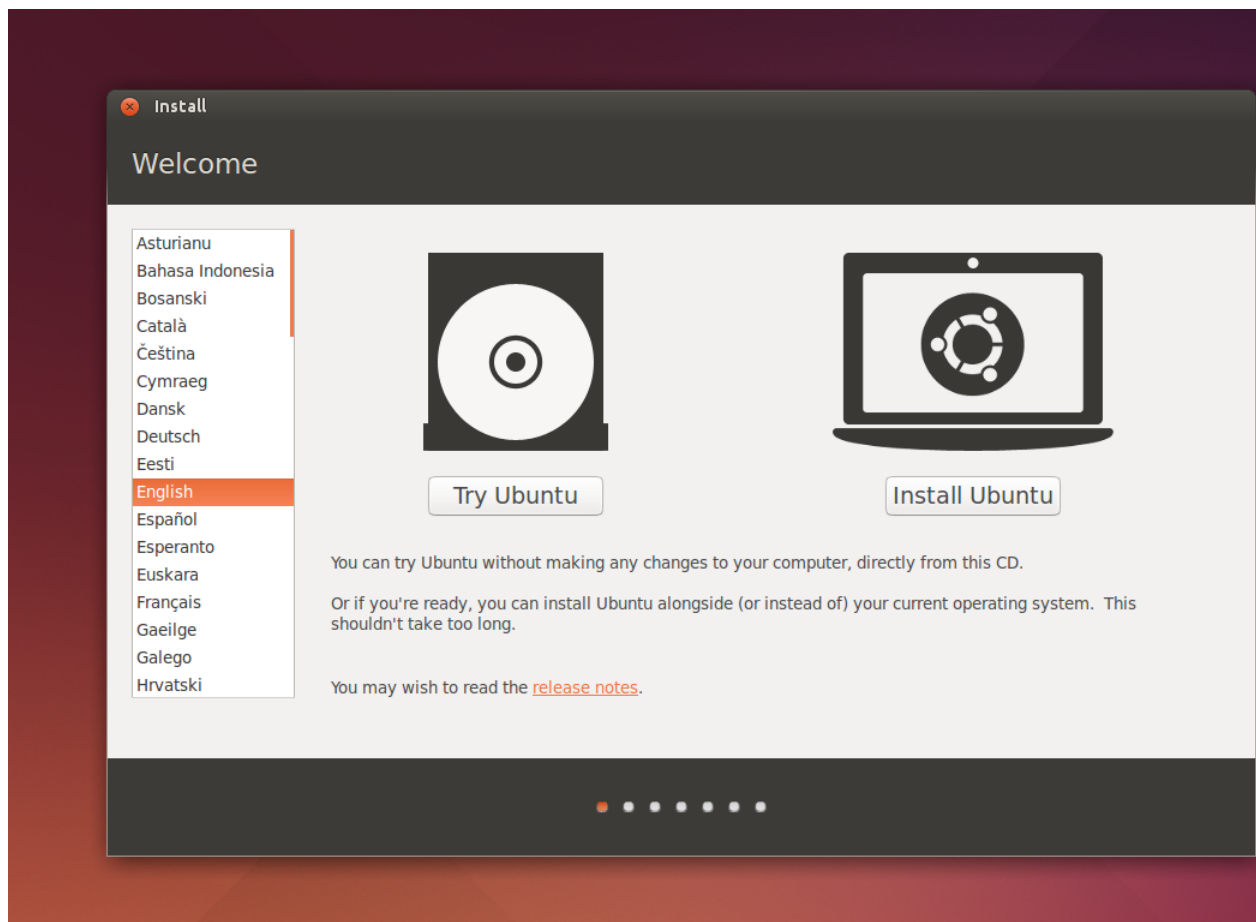2. Start the VM for the first time:

- choose to select media from a local folder
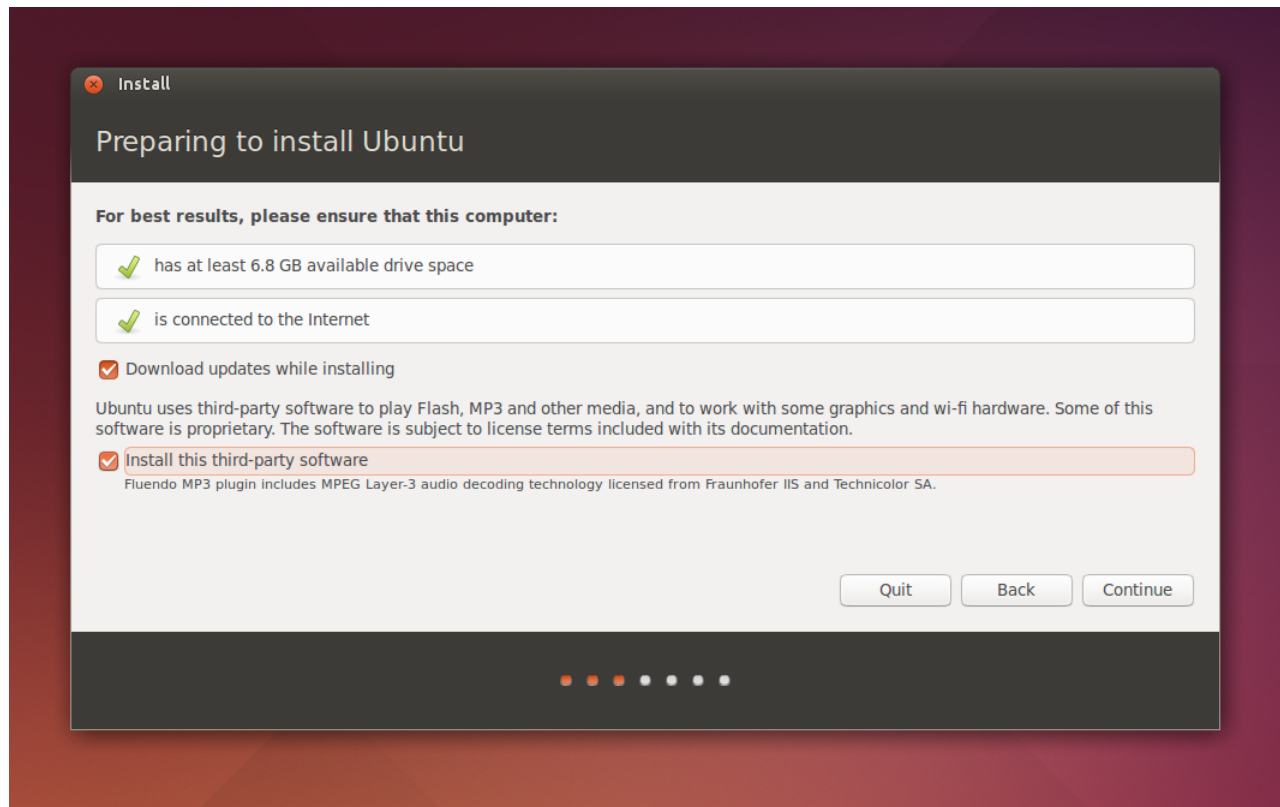- wait for it...

3. Start the VM for the first time:

- choose the Ubuntu .iso file that you aquired
- it is recommended that the media is on the local machine
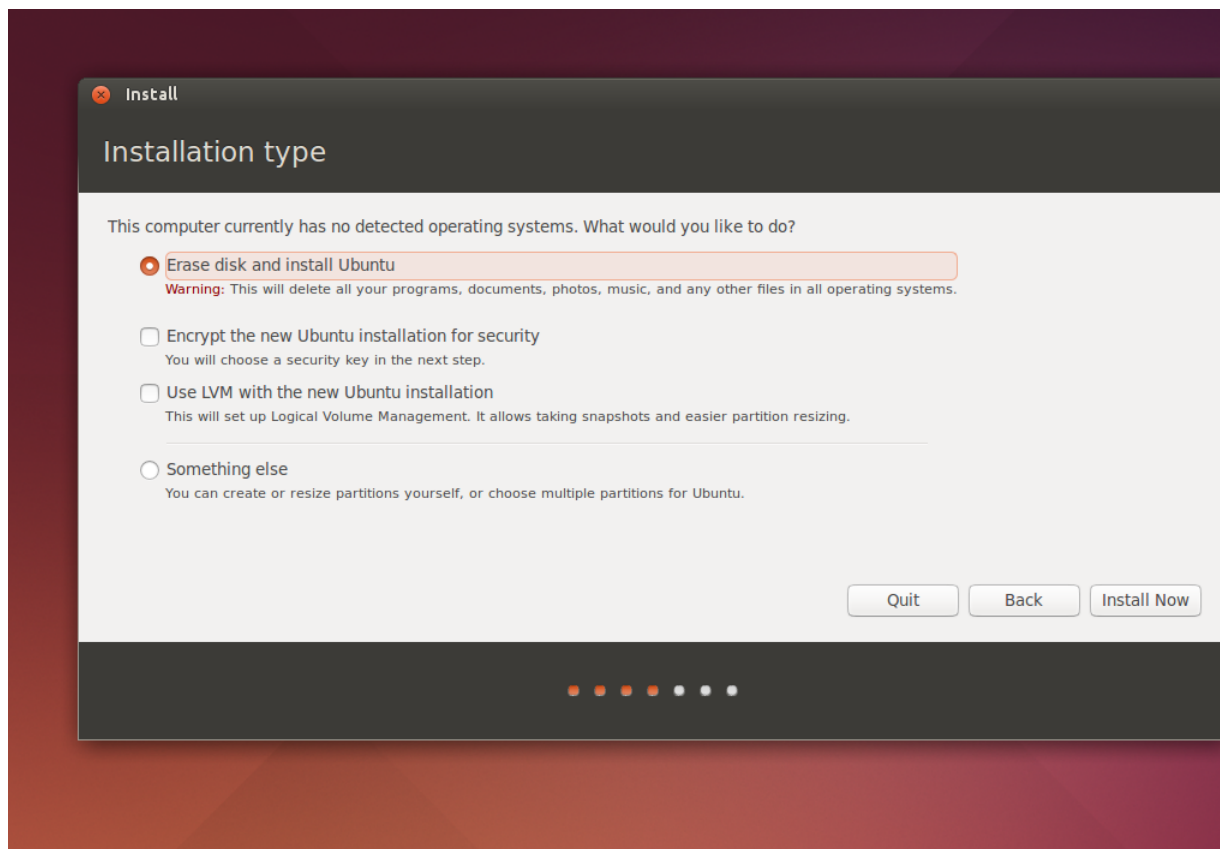- wait for it...

4. Ubuntu Installation:

- **Install Ubuntu** (harmless if using VirtualBox)
- try is just temporary (single session)
- wait for it...

5. Ubuntu Installation:

- check that you meet the requirements
- click the two check boxes for proprietary drivers
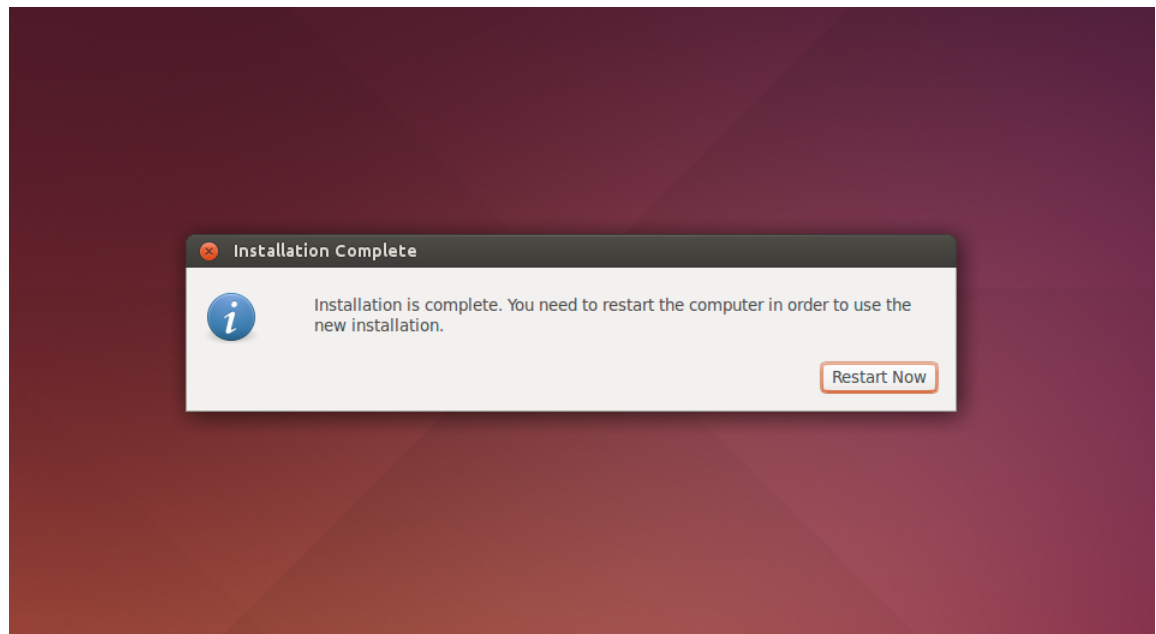
6. Ubuntu Installation:

- **Erase Everything and Install Ubuntu** (harmless if using VirtualBox)
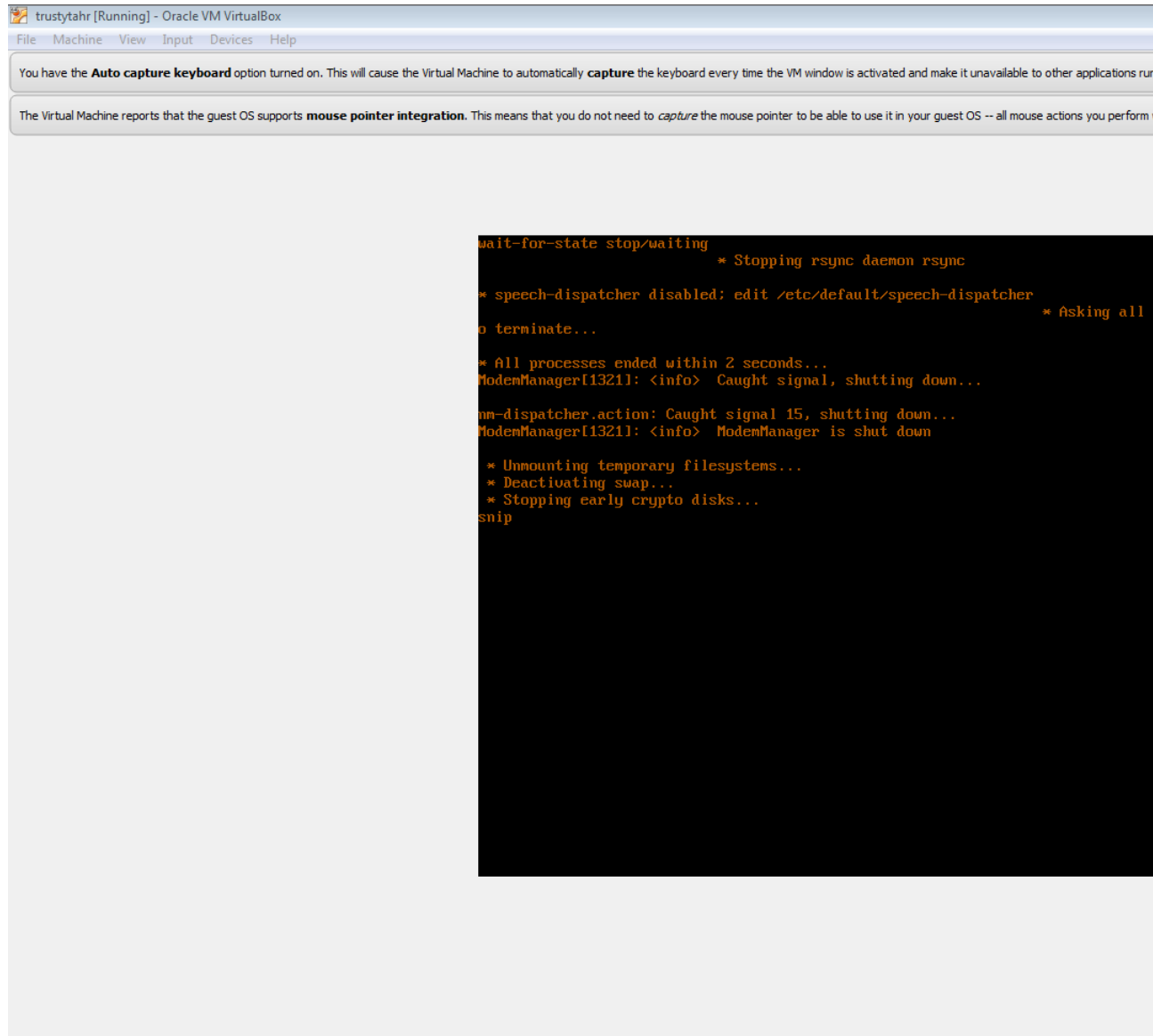- DANGEROUS AND PERMANENT IF NOT USING VIRTUALBOX
- wait for it...

7. Wait Wait Wait:

8. Shut Down The VM:

9. Shut Down The VM:

- wait for it...
- after waiting a few moments you may have to close the window of the VM

10. Finally!:
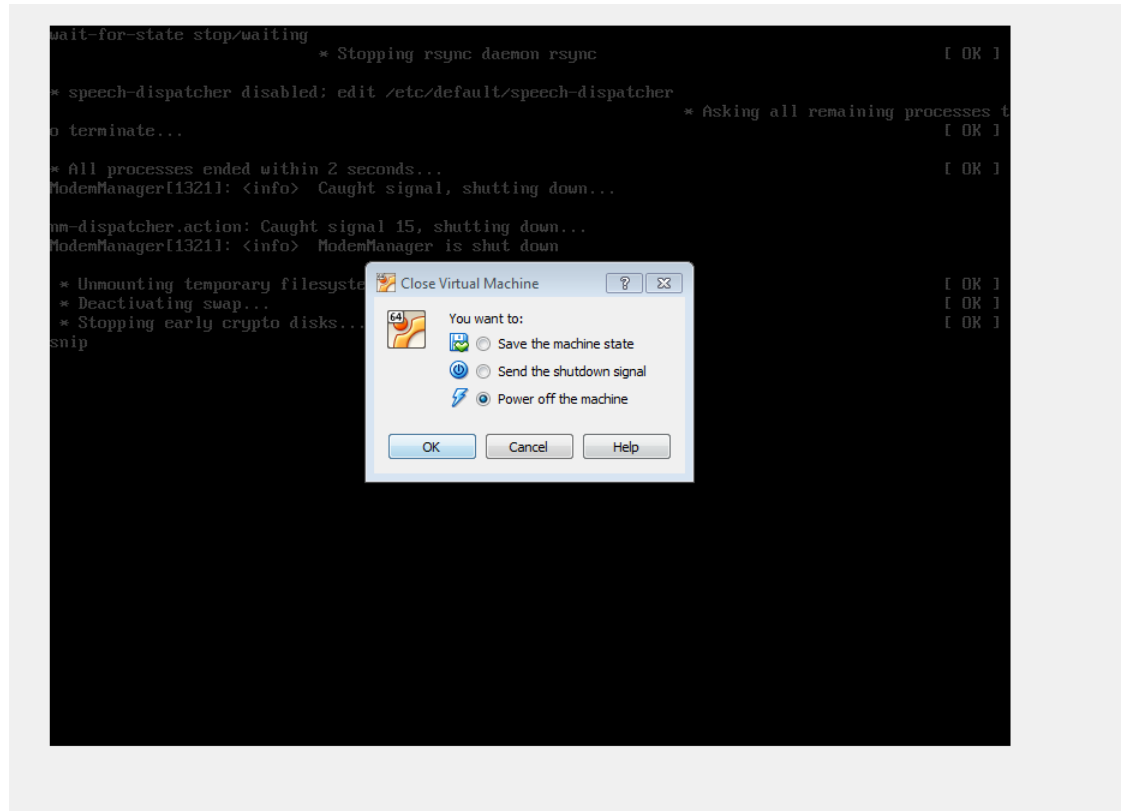
- POWER OFF the Machine

11. Now restart the VM!!!:
    - the VM you made should be in the left list
    - select it and click start
    - the Ubuntu OS should appear