

Configuring host and guest machines for OpenFOAM and Octave

Download:

- <https://1drv.ms/f/s!AqT2YEB97-1RgP8MtsMPqoOGsq4ddg?e=locXv0>

Install Visual C++

- Install **VC_redist.x64.exe**. Sometimes this is needed to run virtual box without issues.

Install AnyDesk

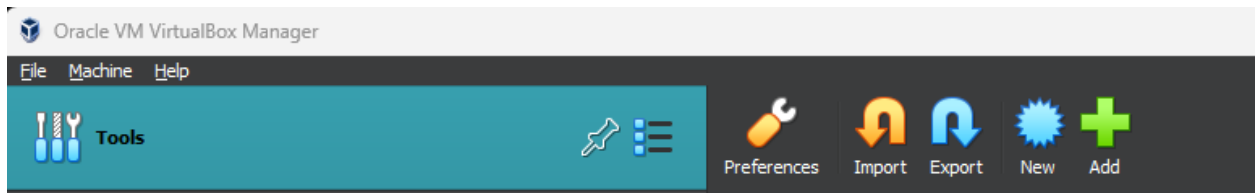
- Install **AnyDesk.exe** to enable remote access for instructors or TA when help is required.

Install VirtualBox

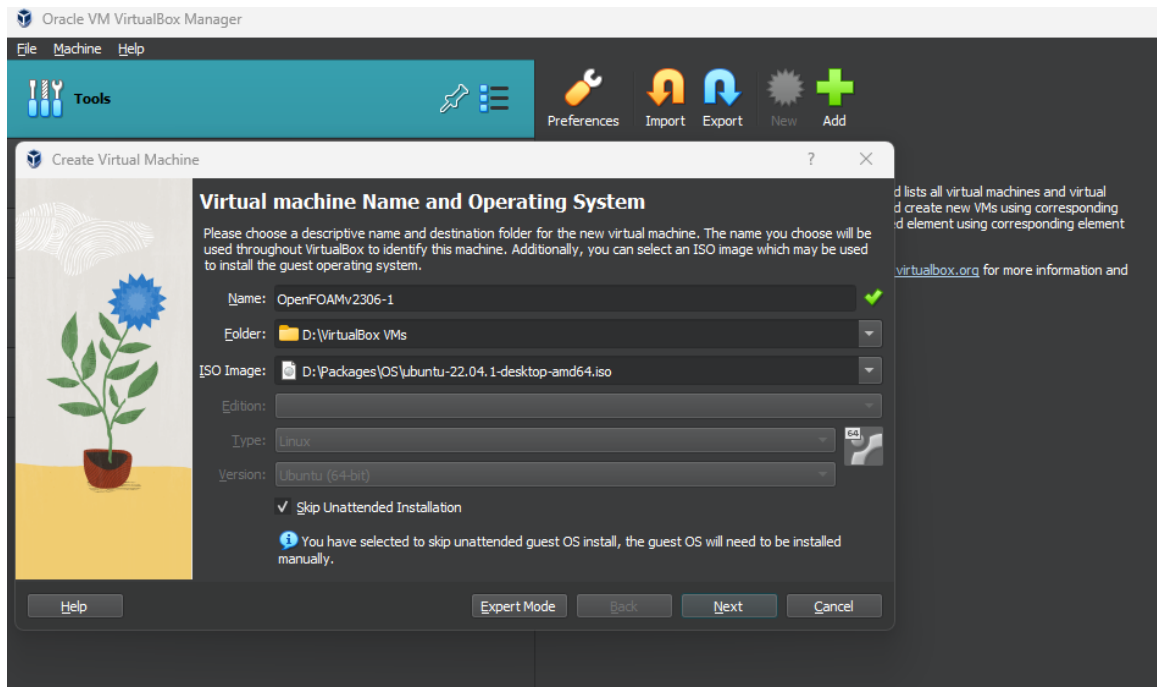
- Install **VirtualBox-7.0.10-158379-Win.exe**.

Create Ubuntu 22.04 virtual image

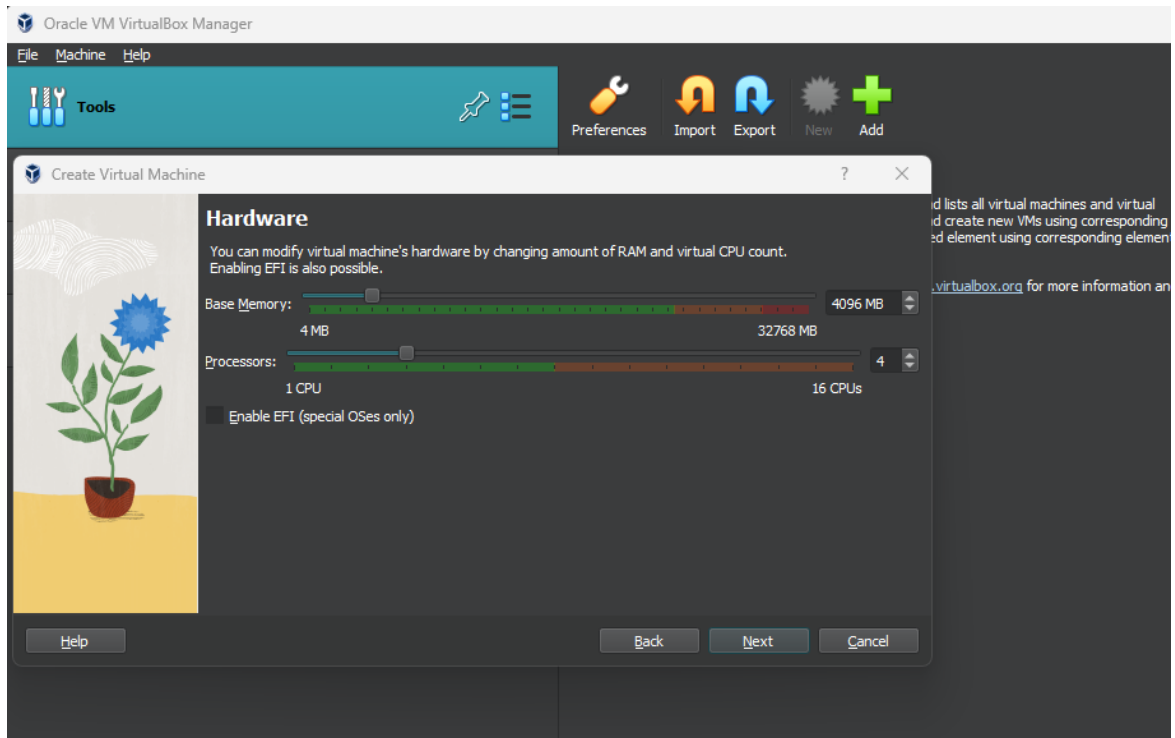
- Run Virtual Box and click “New”



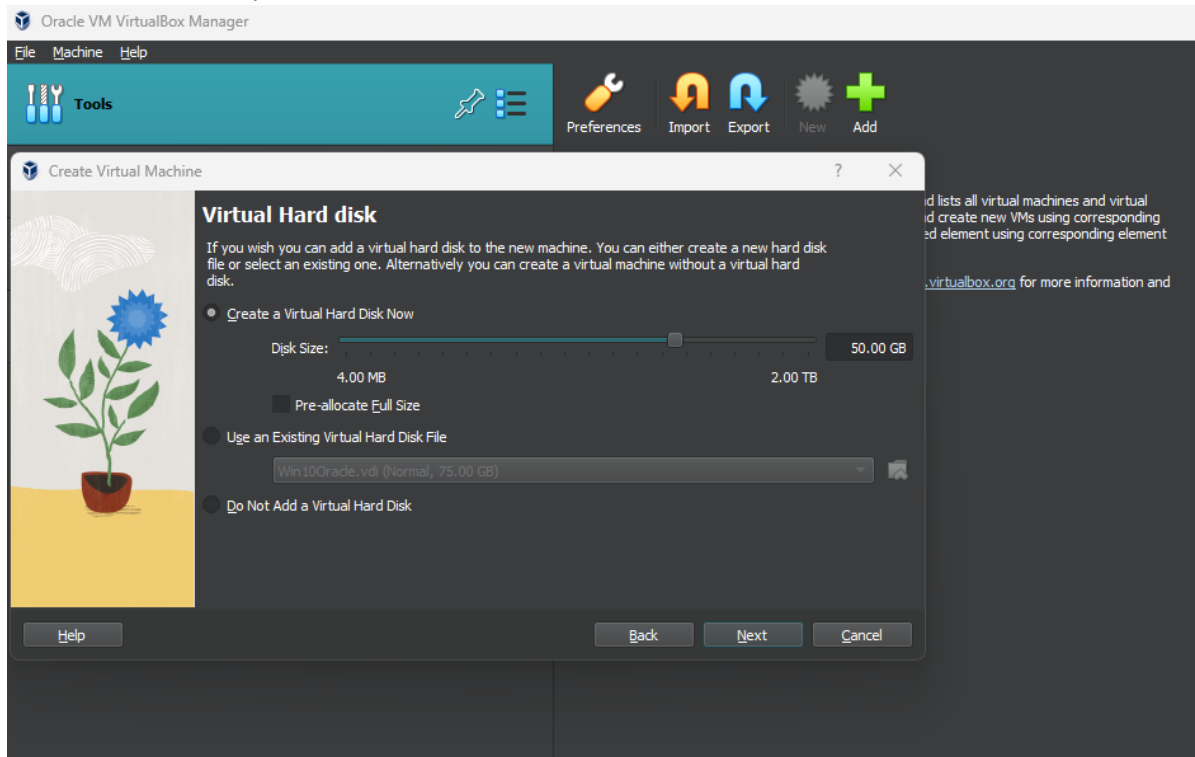
- Enter the details in the fields. Make sure to correctly select above downloaded Ubuntu 22.04 image into the field “ISO Image”
 - For this configuration, check the box to the side of “Skip Unattended Installation”
 - Click Next.



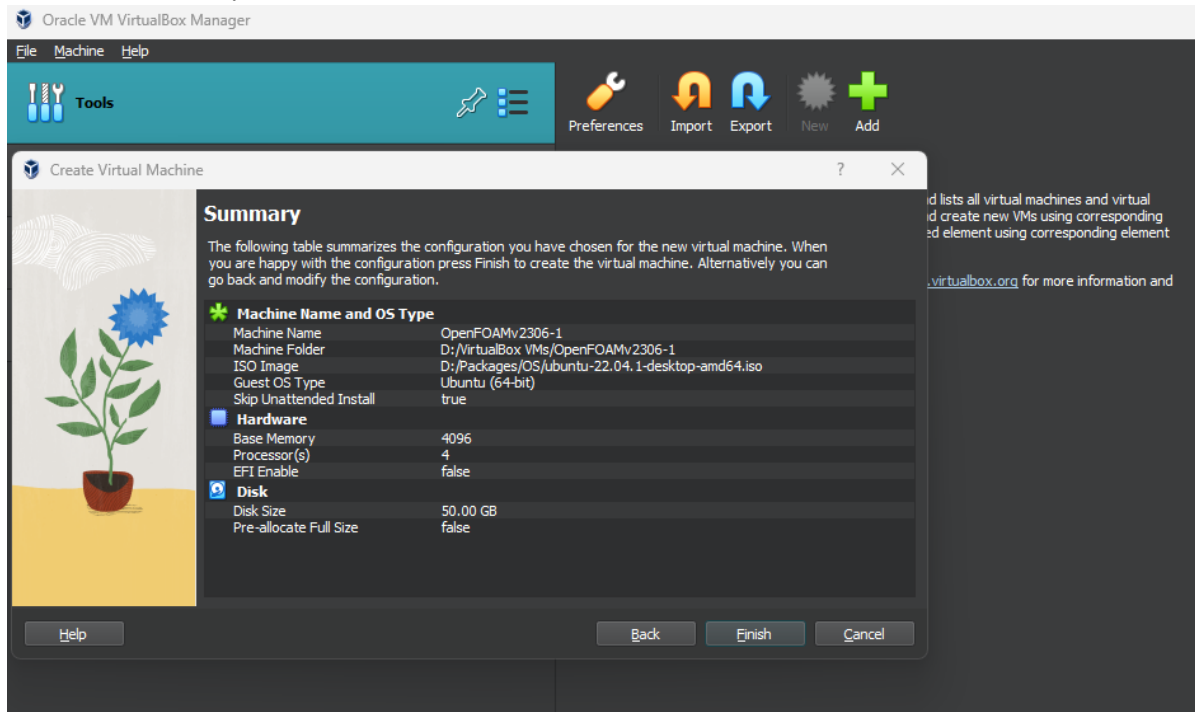
- Select 4096MB for RAM and 4 CPU cores. Click Next.



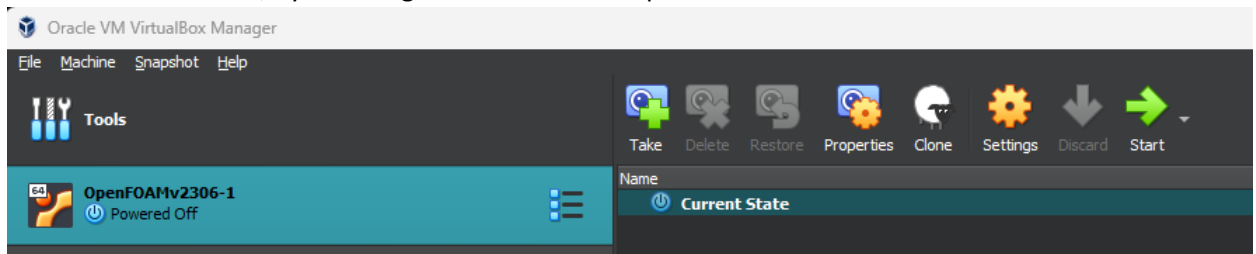
- Select 50GB of disk space and click Next.



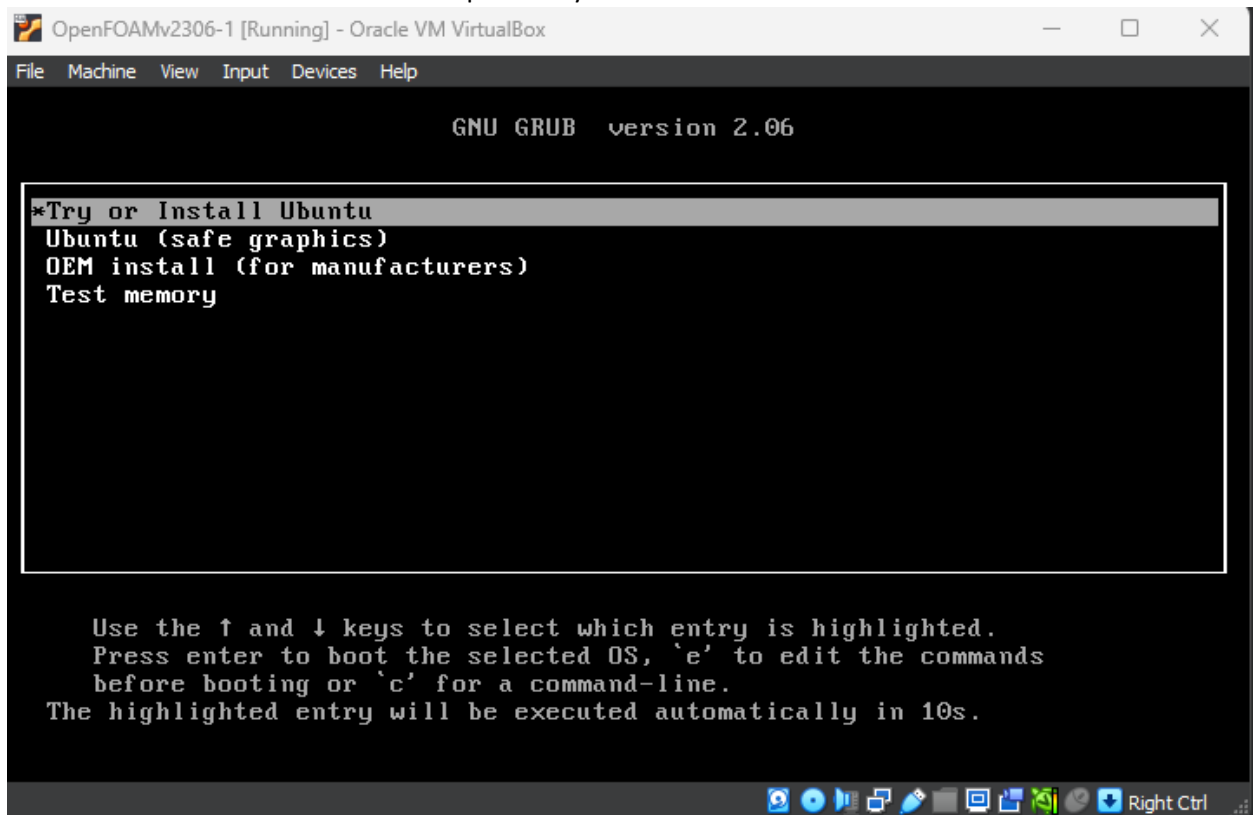
- Check the summary and click Finish.

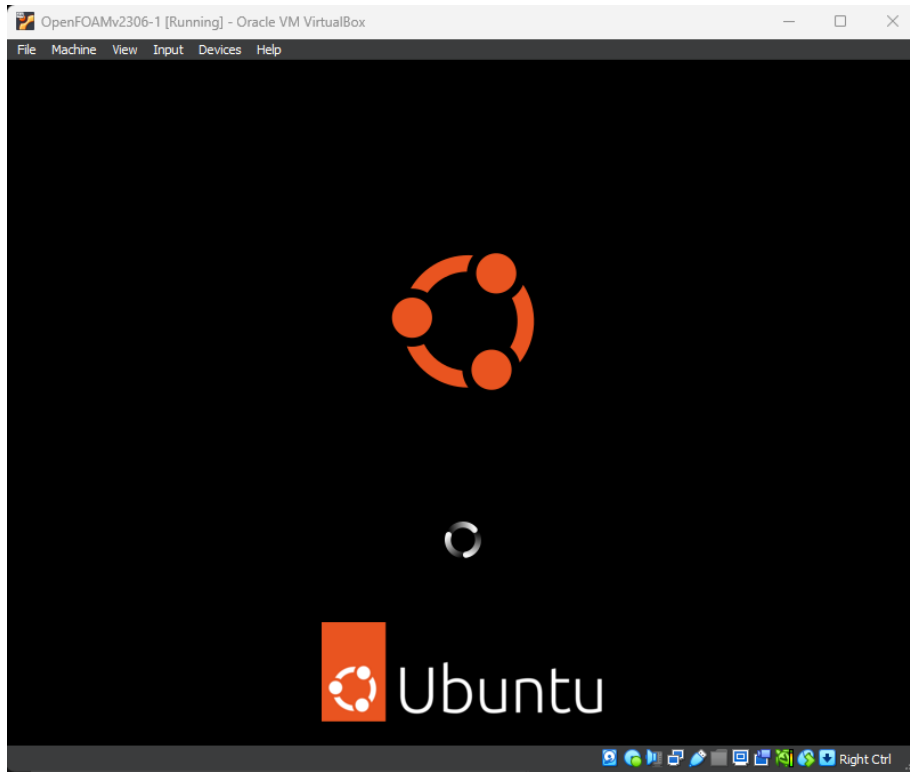


- **Start** Virtual machine, by selecting the VM on the left panel and click “Start”.

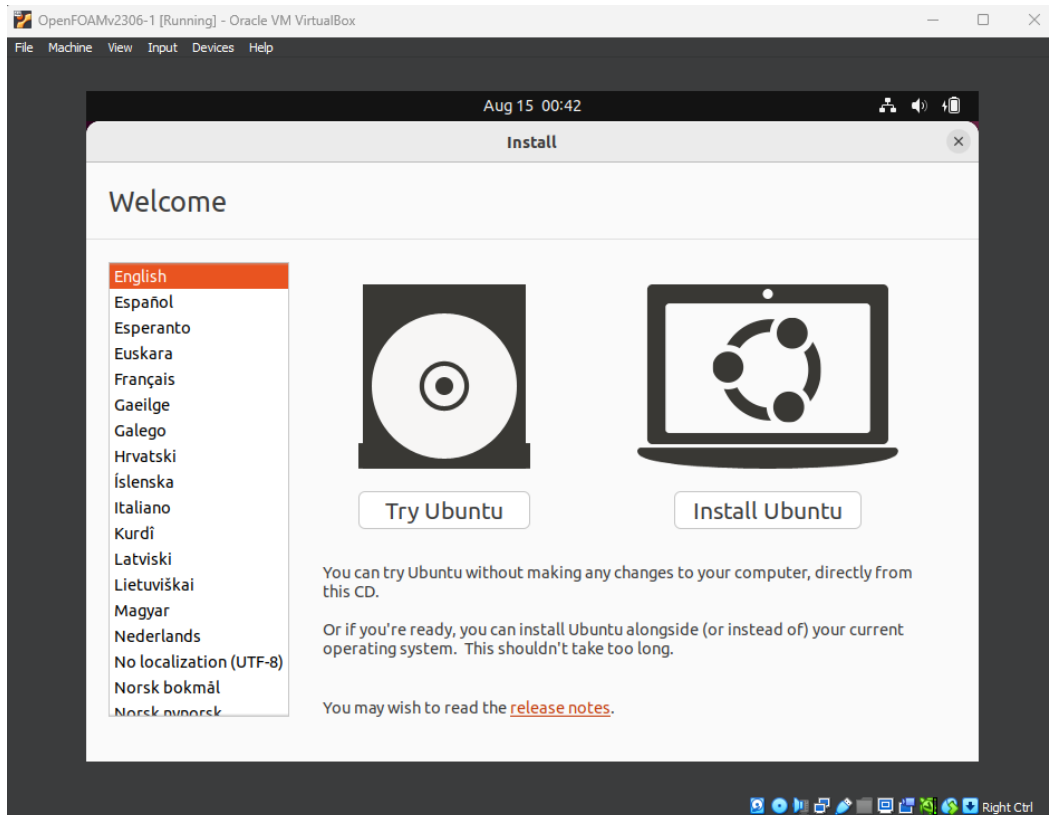


- Click enter on the bootscreen for the option “Try or Install Ubuntu”

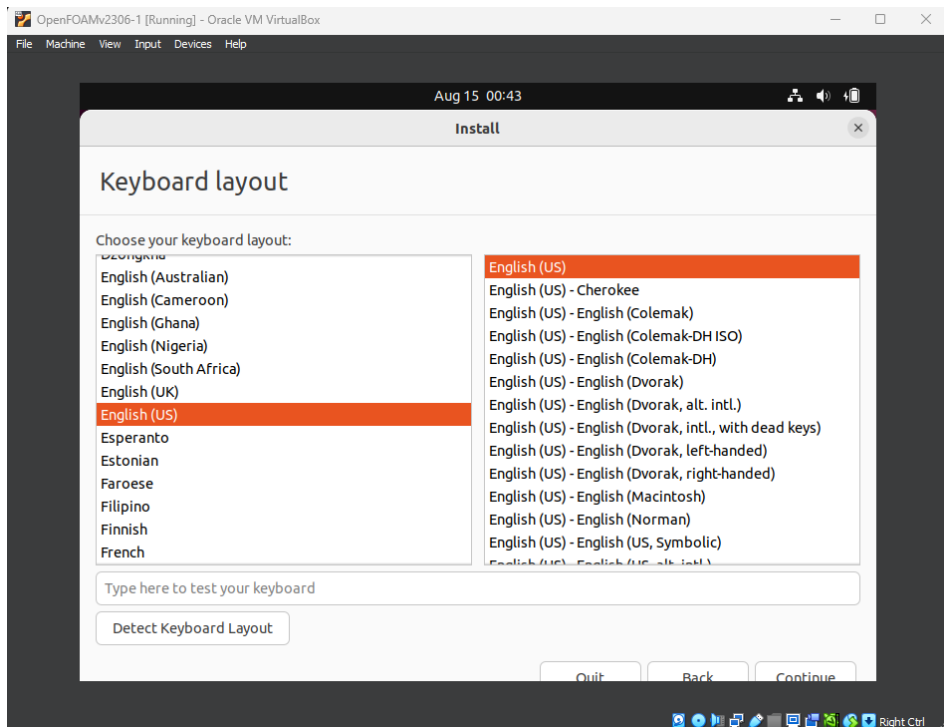




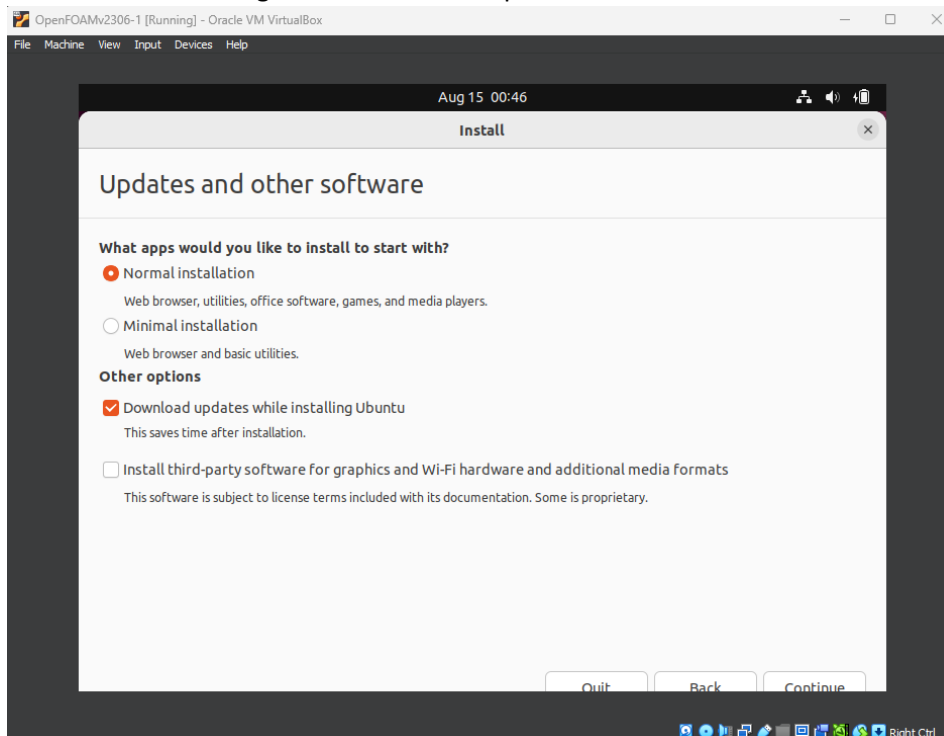
- Click "Install Ubuntu"



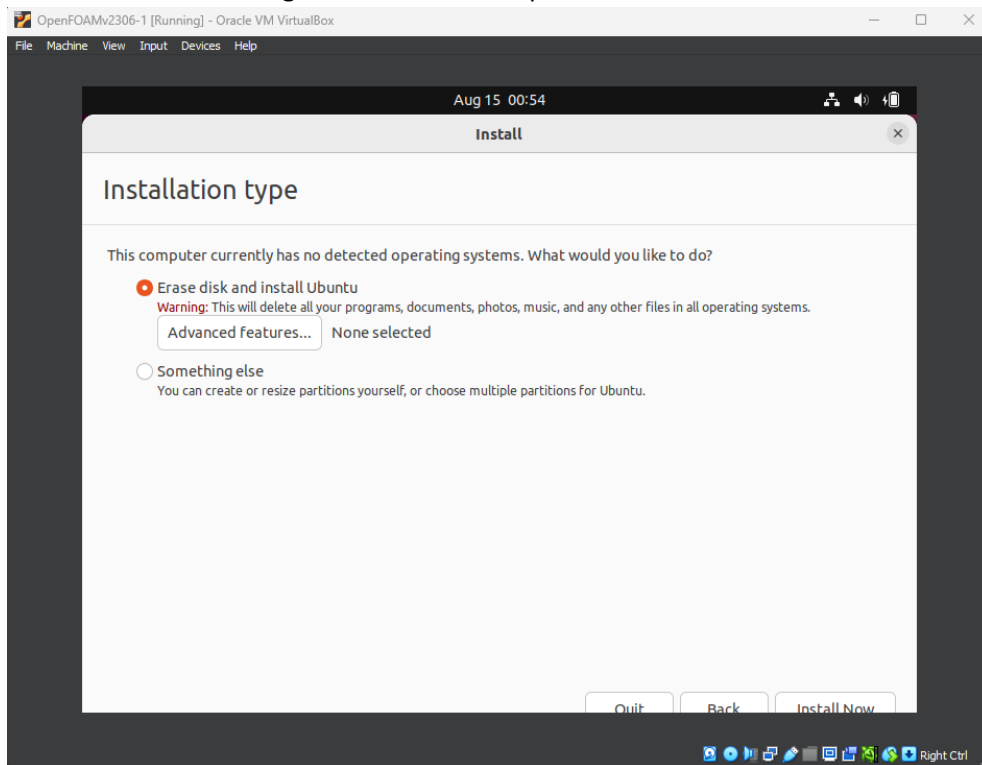
- Click “Continue”



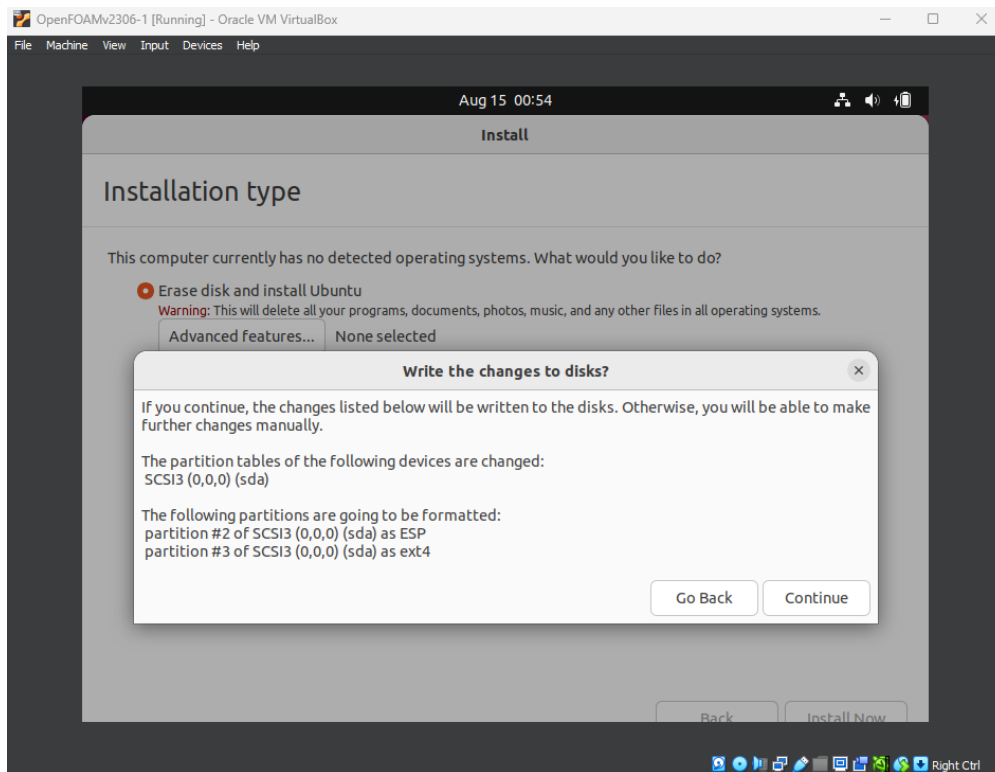
- Click “Continue” using the below shown options.



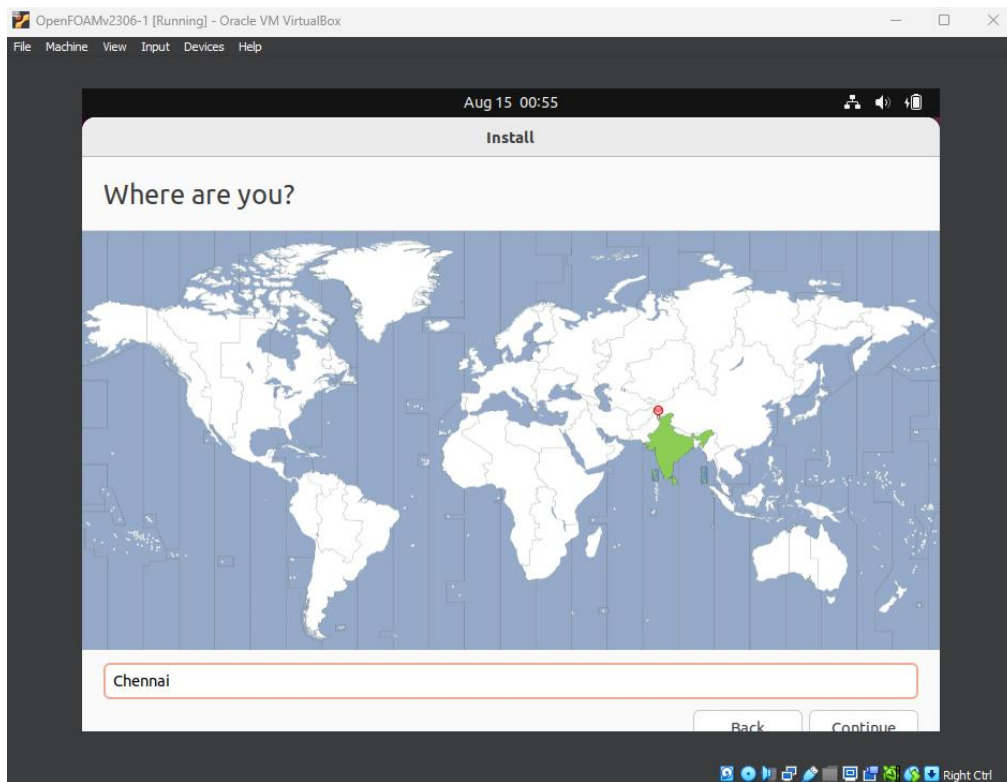
- Click “Install Now” using the below shown options



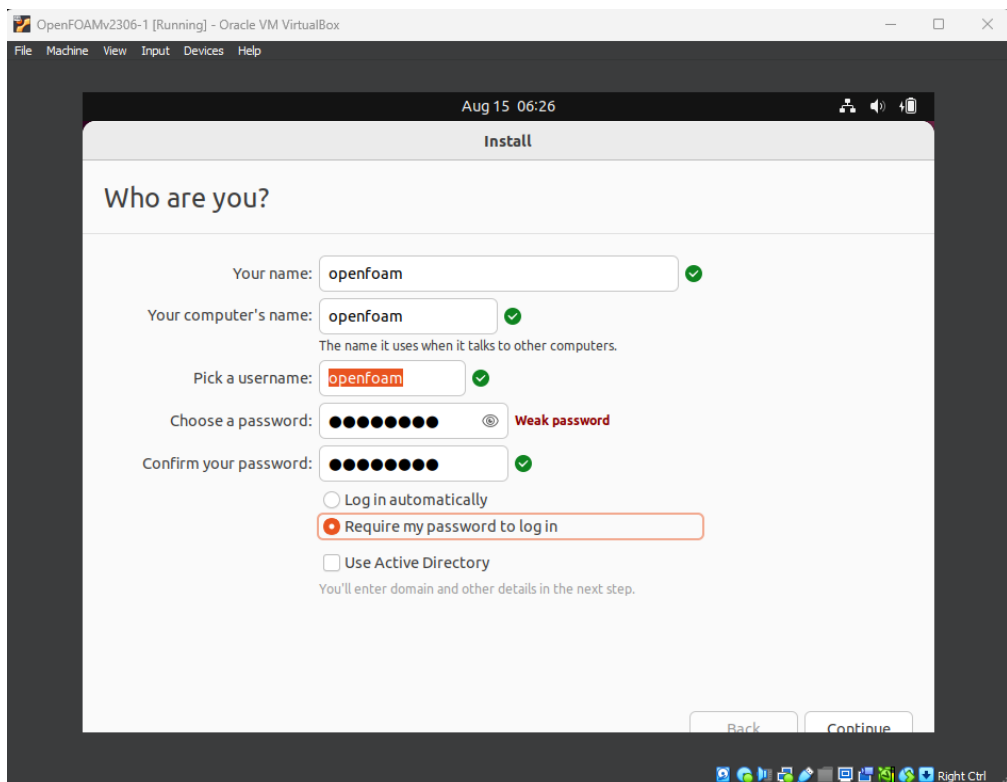
- Click “Continue”



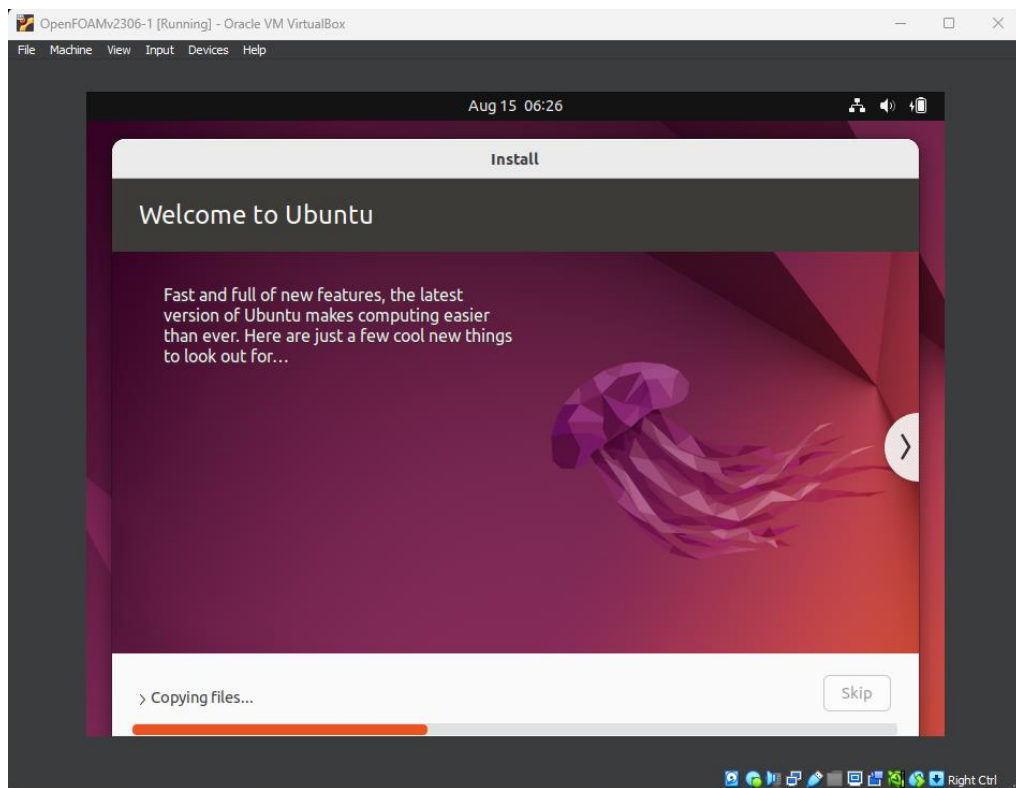
- Select the time zone and click “Continue”



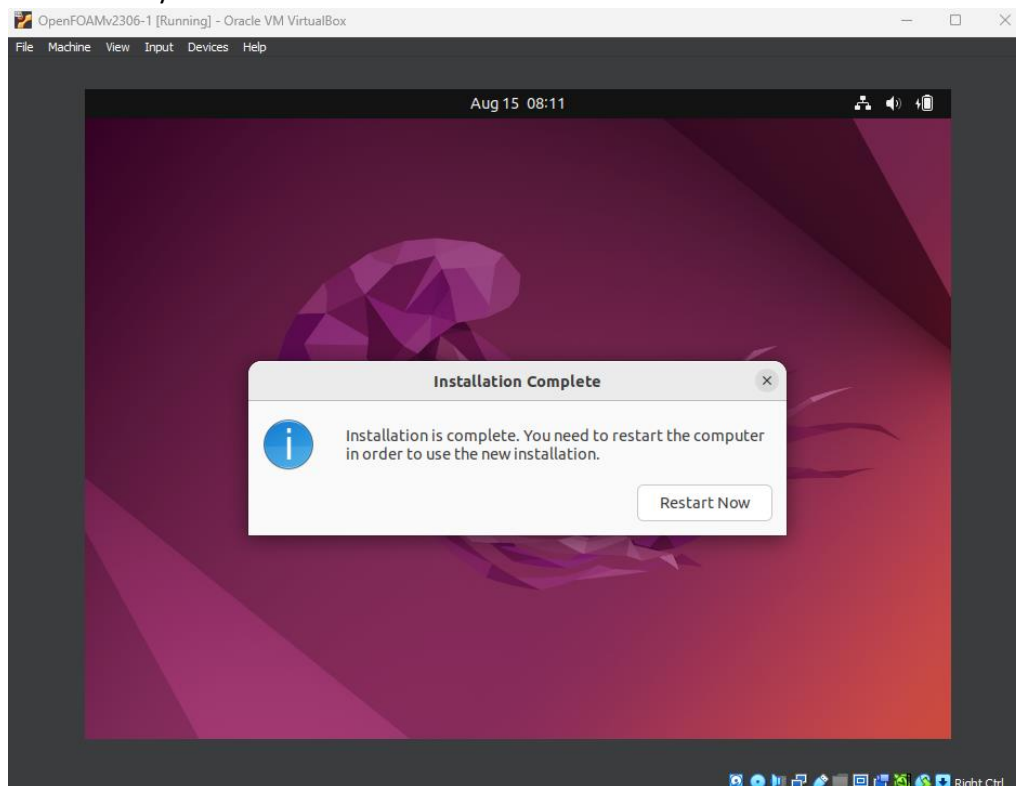
- Fill in the fields and use “openfoam” for password for consistency among all students and click “Continue”.



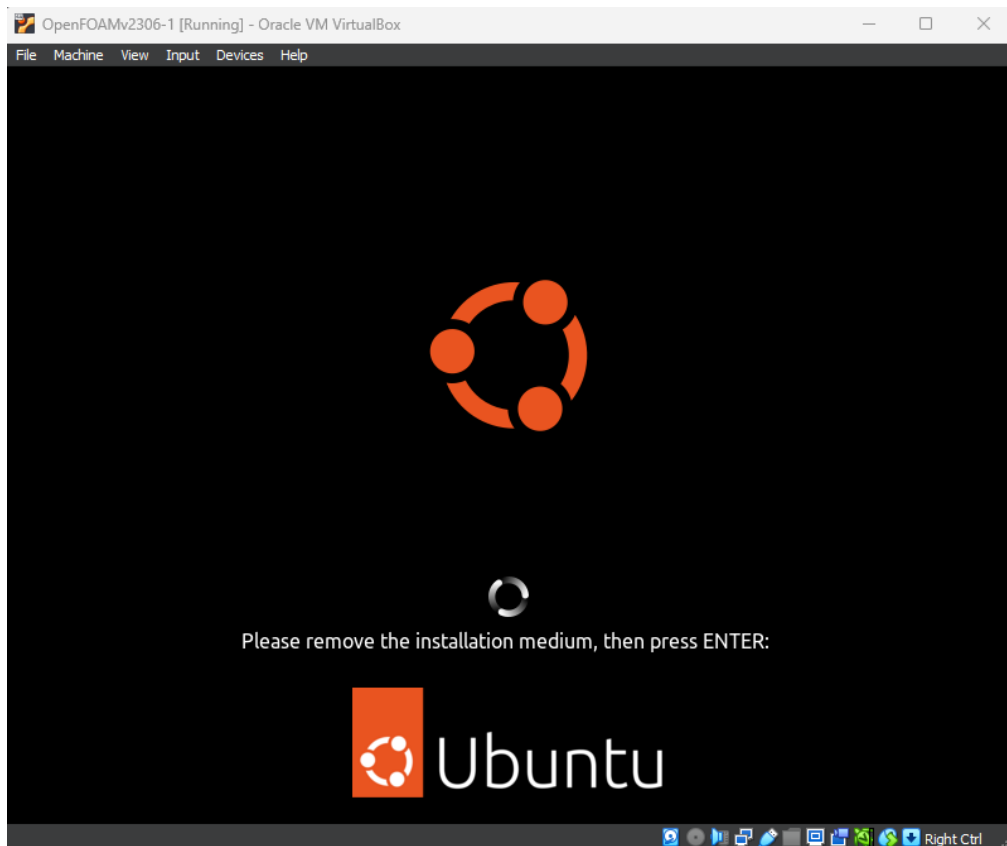
- Wait until installation finishes.



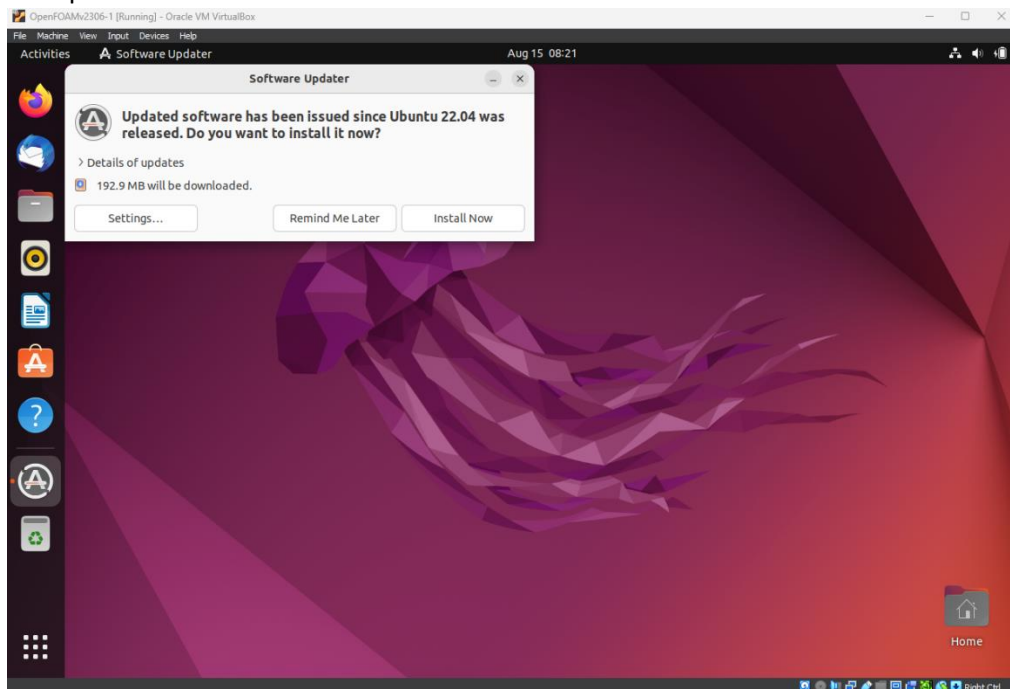
- Restart the system.



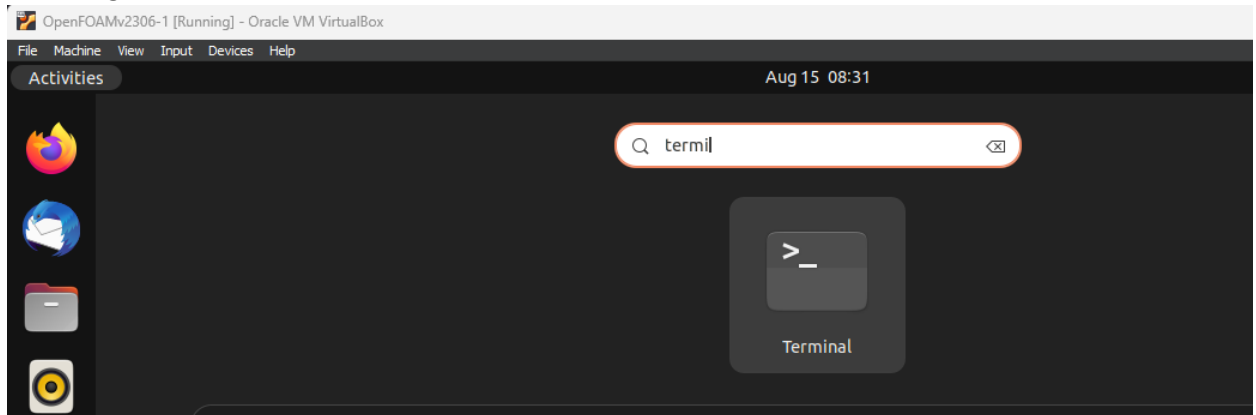
- Press enter at the below shown screen.



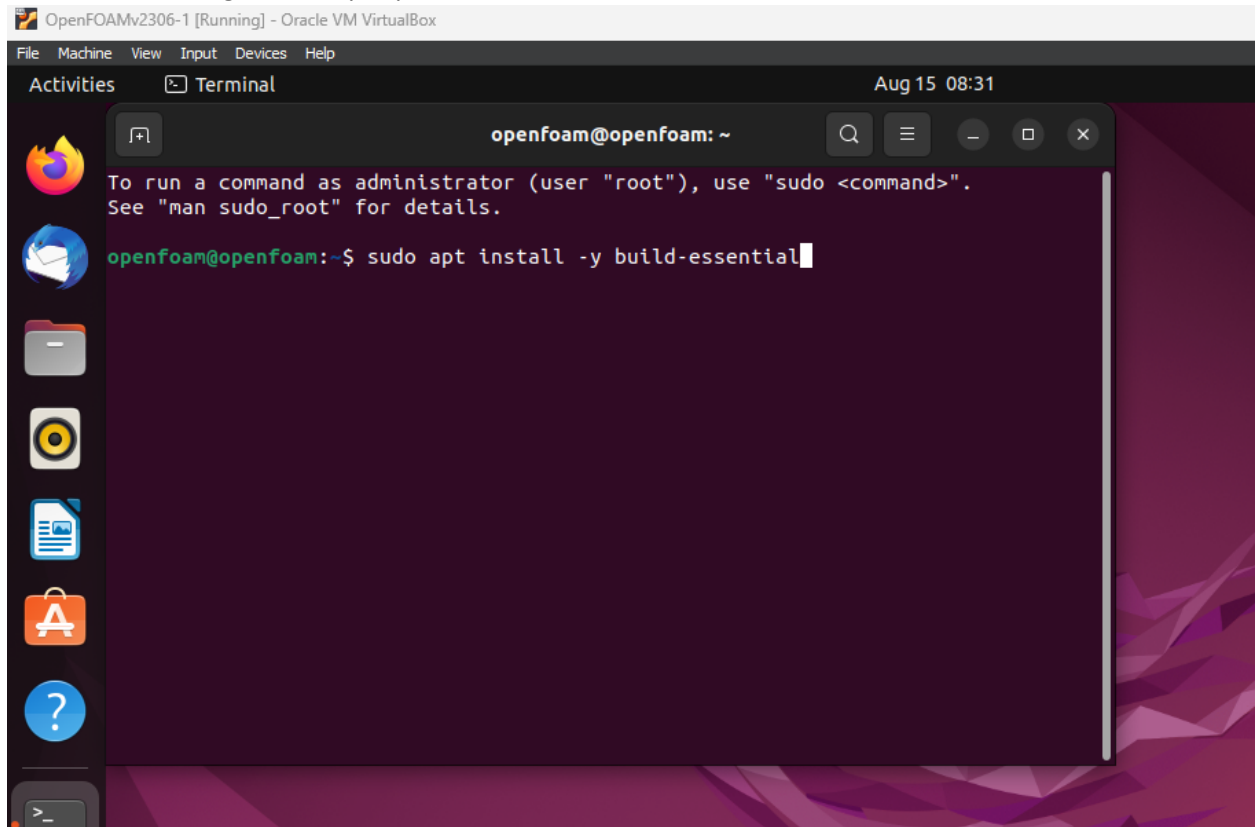
- After system restarts, “if it shows below screen”, then click “Install Now” and let it finish installing the updates.



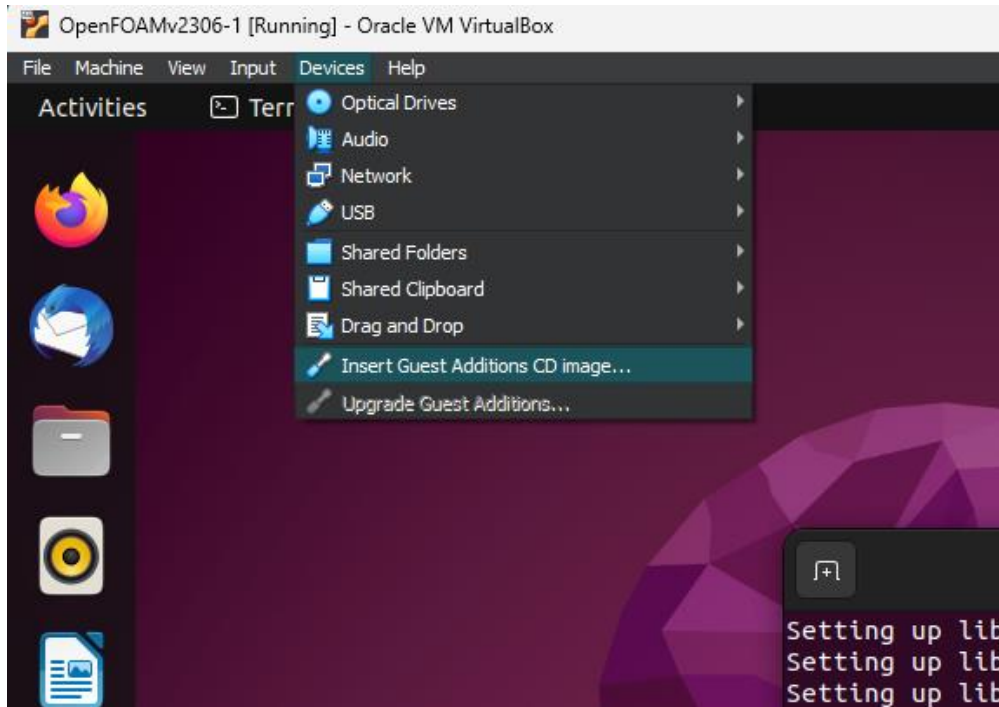
- After updates are installed, open a “terminal” window by clicking on “window” button and searching for “terminal”.



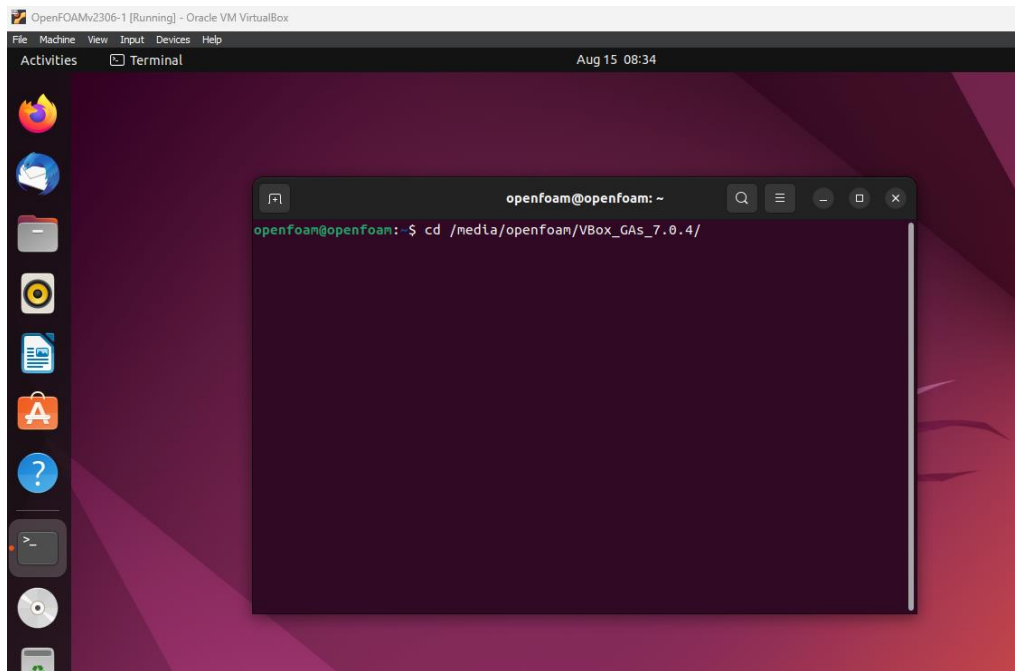
- Enter the following command “**sudo apt update && sudo apt-get install -y build-essential**”
 - Even though “sudo apt update” is not shown in the screenshot, we recommend to use it.



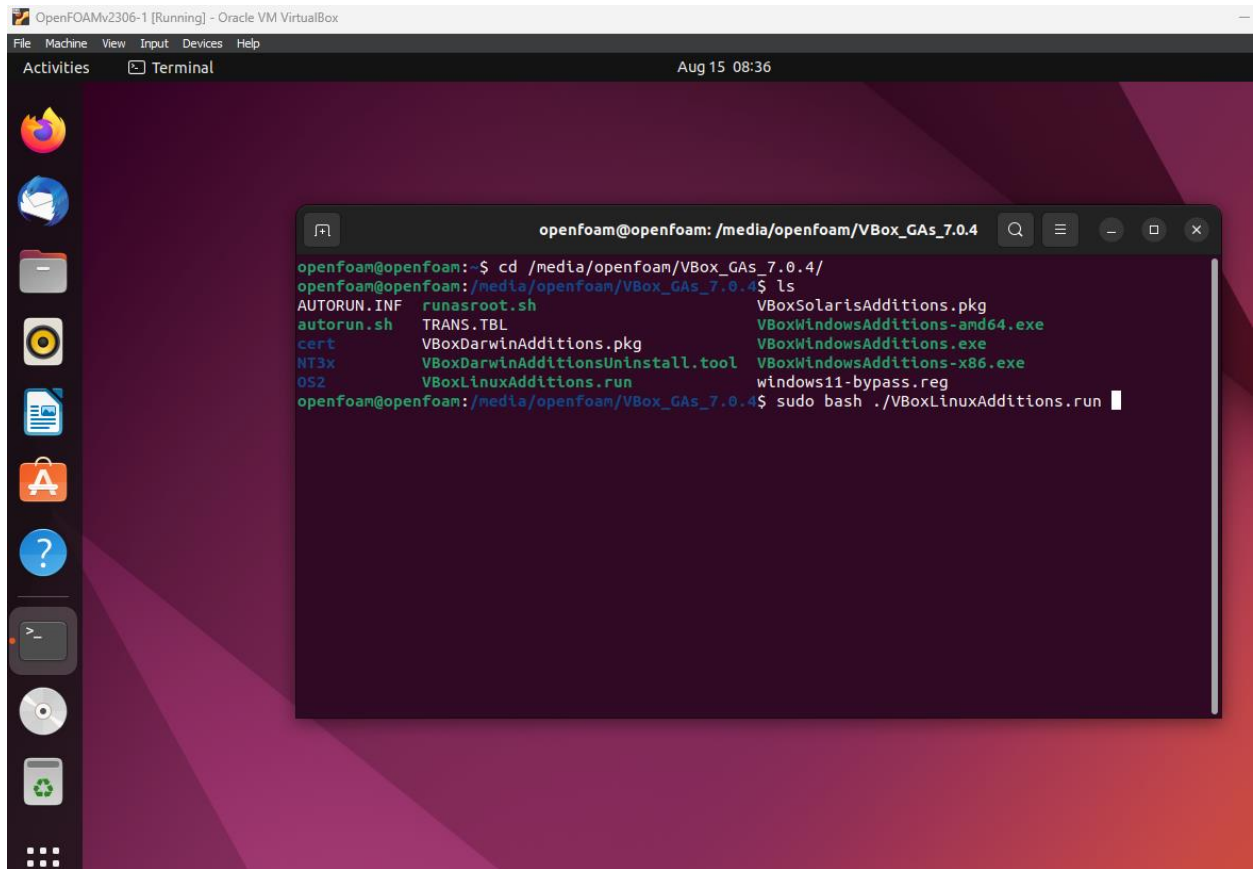
- It is time to install guest additions. Click “Insert Guest Additions CD image...” from **Devices** menu button.



- Change the directory to “**cd /media/openfoam/VBox_GAs_7.0.4/**”
 - Note that the version may be different after VBox_Gas_, try using “tab” button to populate the field.



- Run the script using “**sudo bash ./VBoxLinuxAdditions.run**”



The screenshot shows a VirtualBox window titled "OpenFOAMv2306-1 [Running] - Oracle VM VirtualBox". The main display area shows a Linux desktop environment with a terminal window open. The terminal window title is "openfoam@openfoam: /media/openfoam/VBox_GAs_7.0.4". The terminal output shows the user navigating to the directory and listing files:

```
openfoam@openfoam:~$ cd /media/openfoam/VBox_GAs_7.0.4/
openfoam@openfoam:/media/openfoam/VBox_GAs_7.0.4$ ls
AUTORUN.INF  runasroot.sh          VBoxSolarisAdditions.pkg
autorun.sh   TRANS.TBL             VBoxWindowsAdditions-amd64.exe
cert         VBoxDarwinAdditions.pkg  VBoxWindowsAdditions.exe
NT3x         VBoxDarwinAdditionsUninstall.tool  VBoxWindowsAdditions-x86.exe
OS2          VBoxLinuxAdditions.run  windows11-bypass.reg
openfoam@openfoam:/media/openfoam/VBox_GAs_7.0.4$ sudo bash ./VBoxLinuxAdditions.run
```

- **INSTALL OPENFOAM**
 - Download **install_openfoam.sh** onto Ubuntu
 - Run the script as “**bash ./install_openfoam.sh**” (after going into the folder that has this script).
 - This script installs OpenFOAM and Octave and prepares the system for use.