Operating system project
Create a Basic Virtual Machine

project members :

Albatool Hassan Ghannam. ID: 444006718

Raydaa Barak Almabadi. ID: 444002439

Group 3

Supervisor/ Dr. Hind Alsharif

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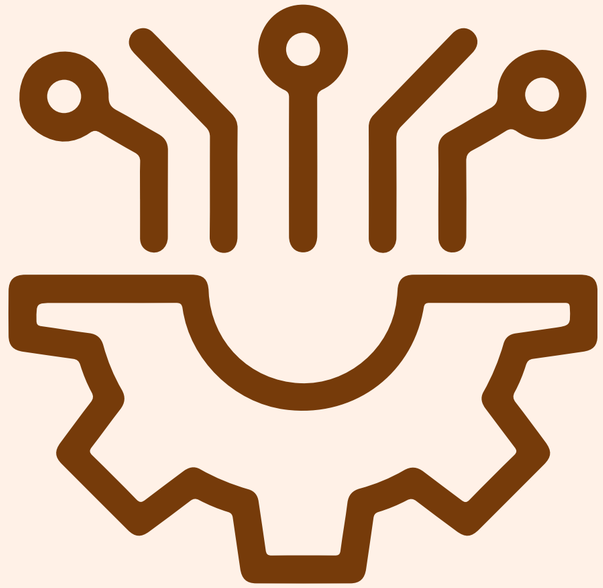
Project Goal :

To demonstrate the creation and configuration of virtual machines using both graphical interfaces (VirtualBox on macOS) and command-line tools (on Ubuntu)



What is the Virtual Machine?

VM

It’s a logical version of a physical computer. and It runs on a physical computer (the host) and behaves like a real computer with its own operating system, memory, storage, and applications.

For example:

VM

you can use virtual machine software to create isolated environments on this computer, like separate rooms in a house.
Each virtual machine acts like a completely independent computer.

HOW TO CREATE THE VIRTUAL MACHINE?

There is several ways, but we do two:

1

Create Virtual Machine by using VirtualBox in MAC operating system.

2

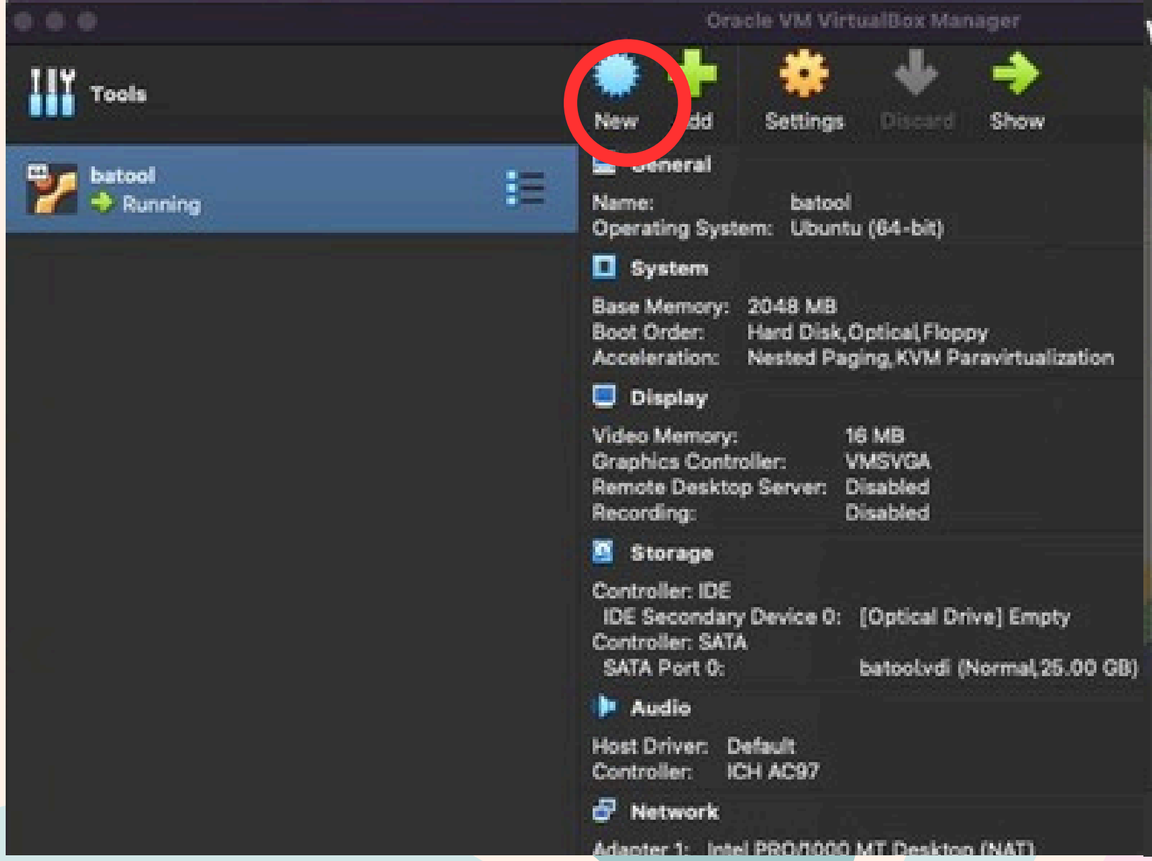
Create Virtual Machine by using commands inside Ubuntu system.

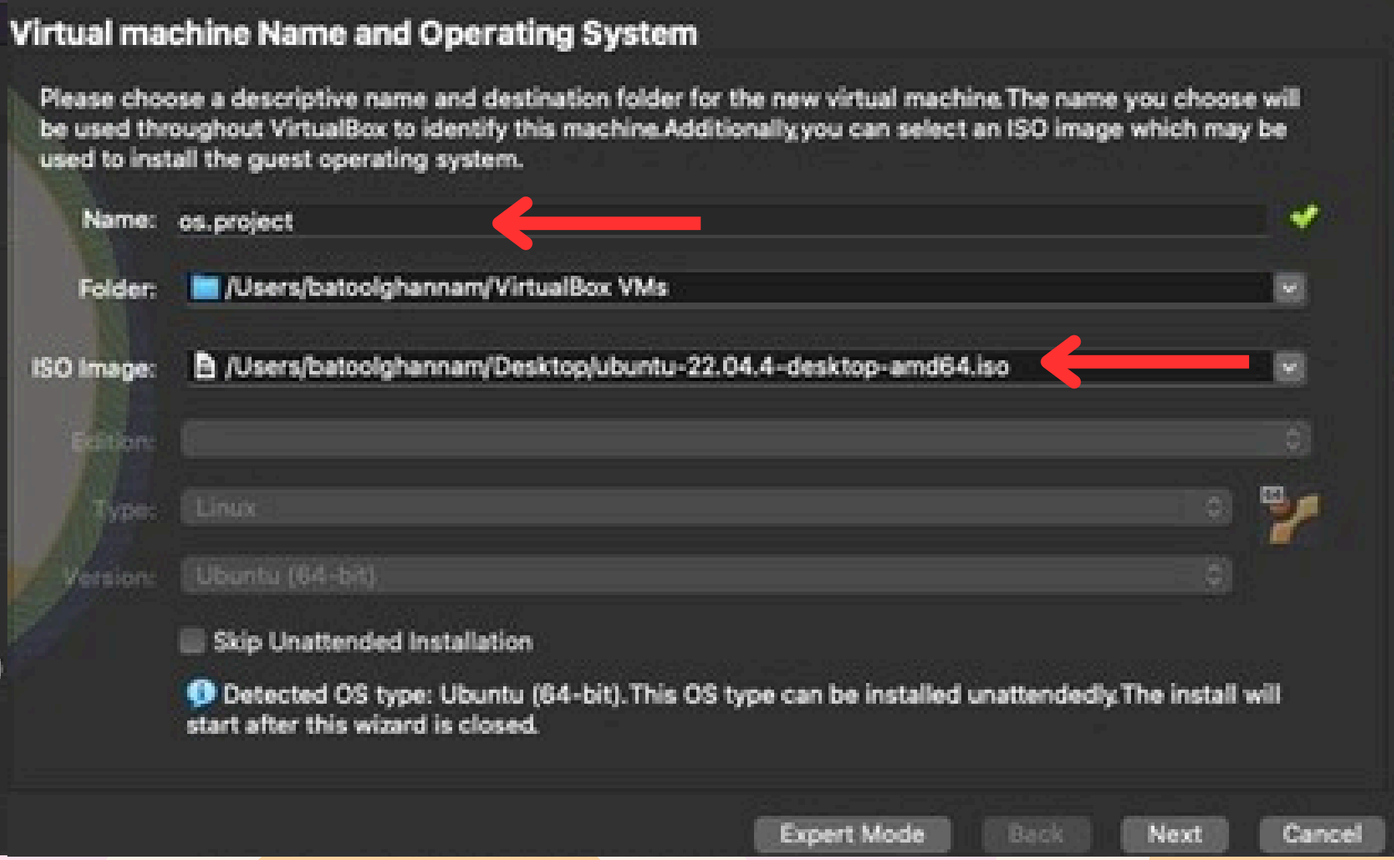
HOW TO CREATE THE VIRTUAL MACHINE?

First Way

1

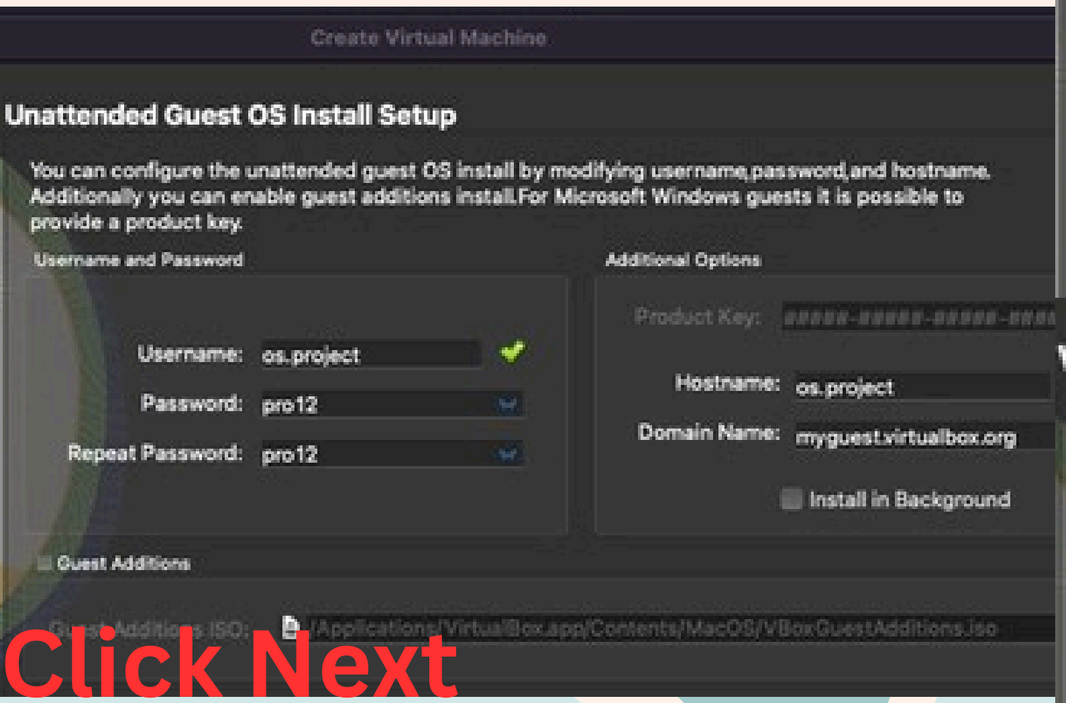
Create Virtual Machine by using VirtualBox in MAC operating system.

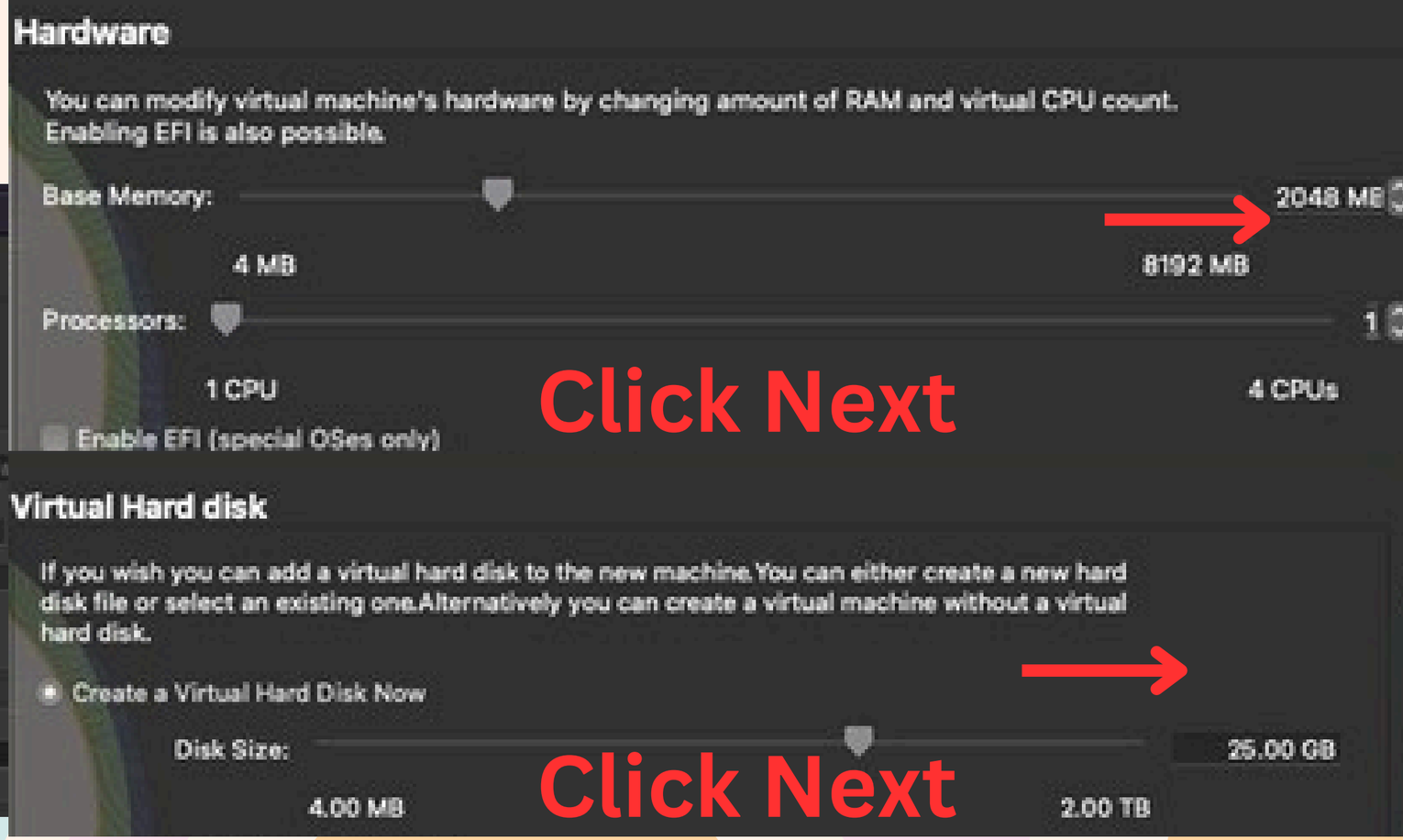




Step1/ create new Virtual Machine AND name it:

- Click on “New” the blue button.
- Enter name for your Virtual Machine
- Select the type of OS you want, and the version .
- add the iso image





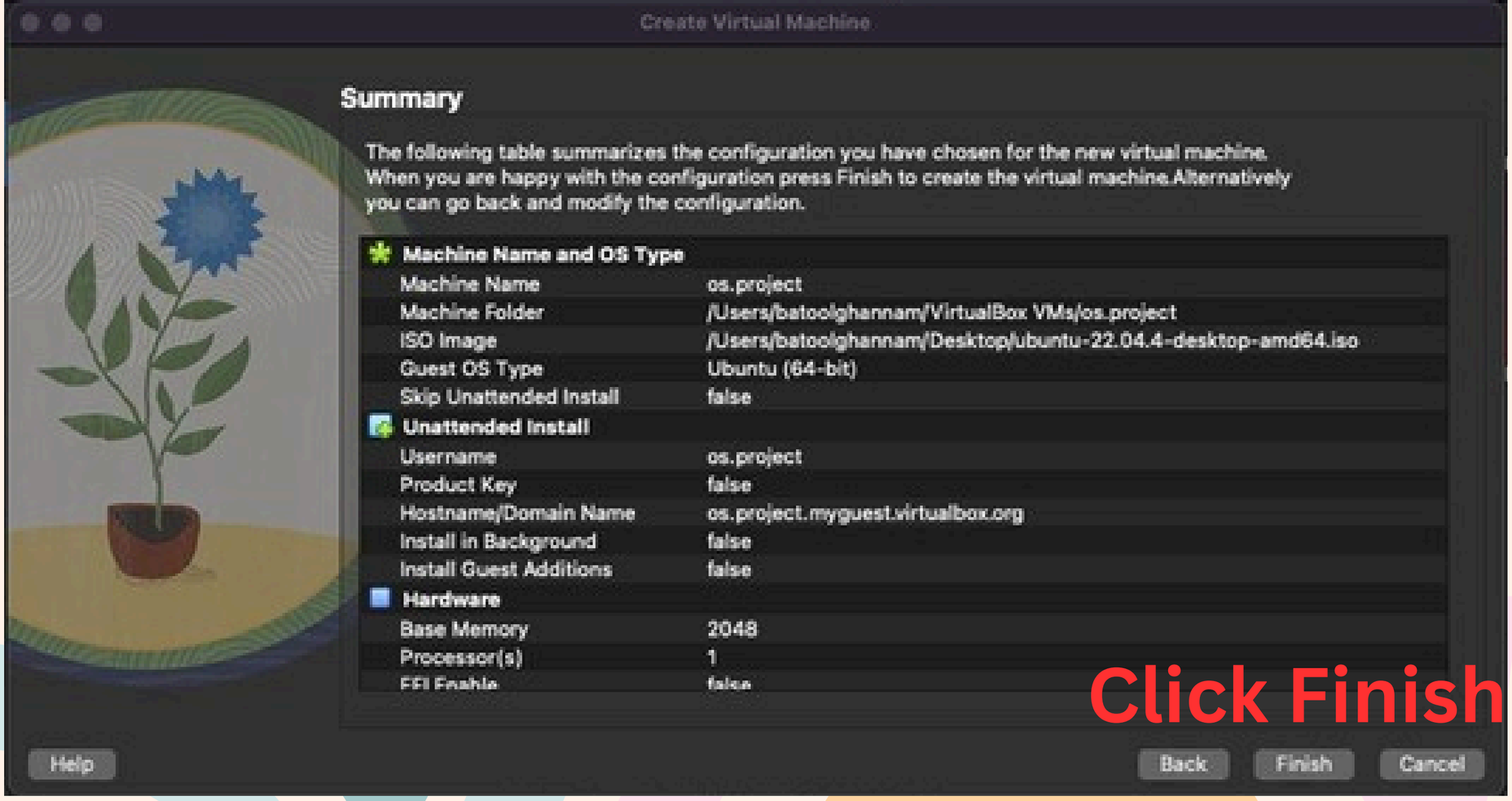
Step2/ set a username and password for our VM:

Step3/ change the RAM amount:

1) change your machine hardware to 2048MG

2) Change the virtual hard disk to 2GB

These values are the recommended for Ubuntu

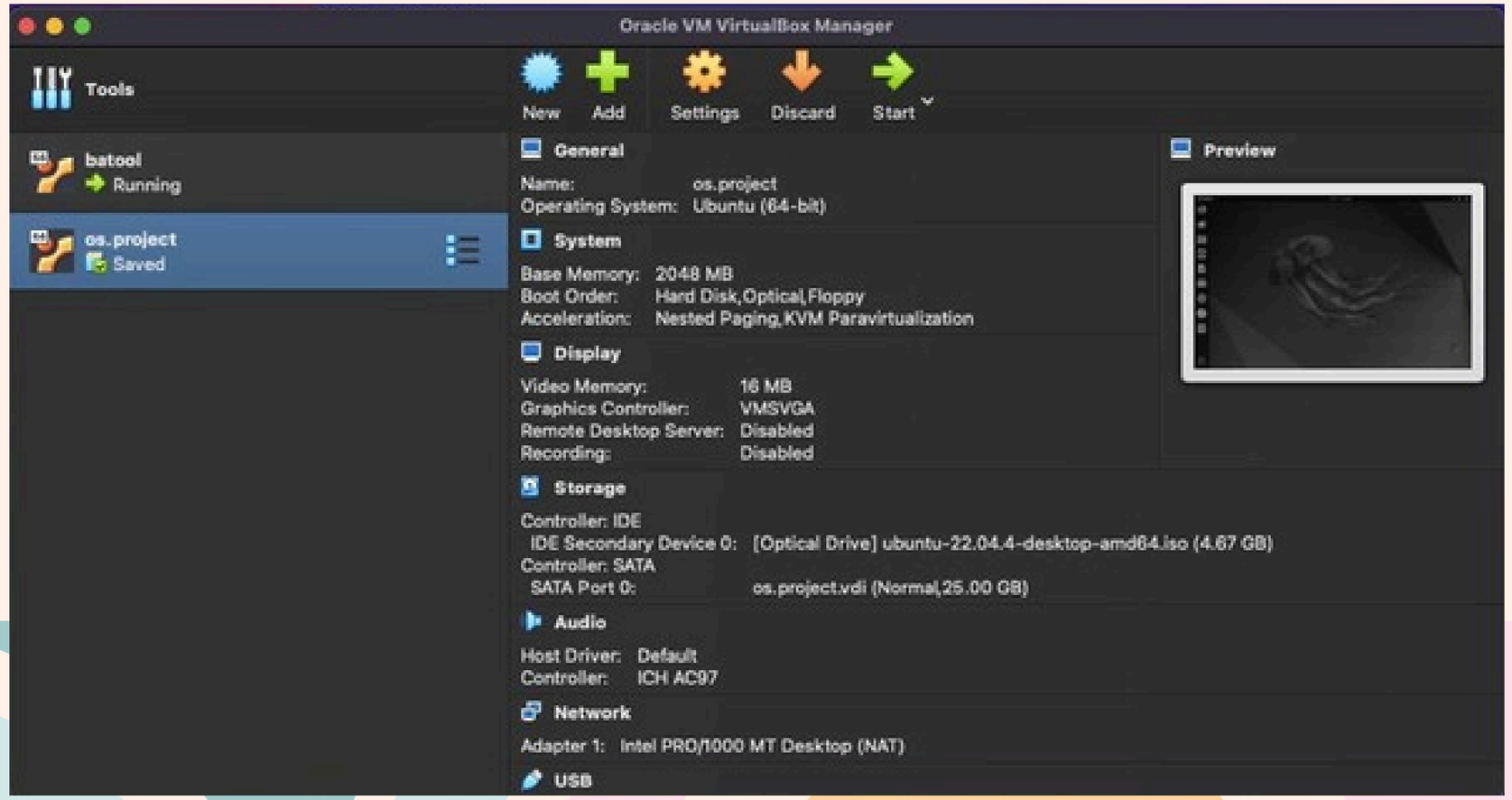


Click Finish

Step4/ our VM general information:

these information (summary) will appear after you complete the previous steps.

it’s summarised all configuration you’ve chosen.

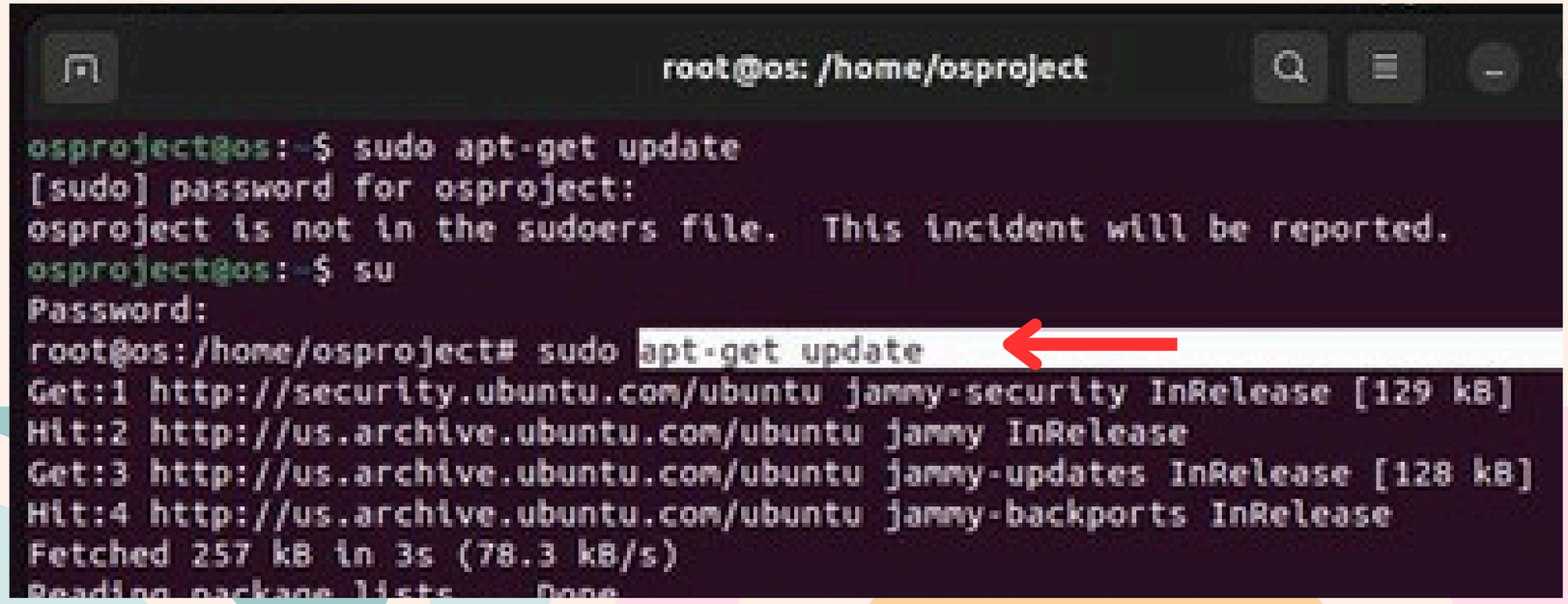


Now your VM is ready to be used

Click on start

Additional Steps

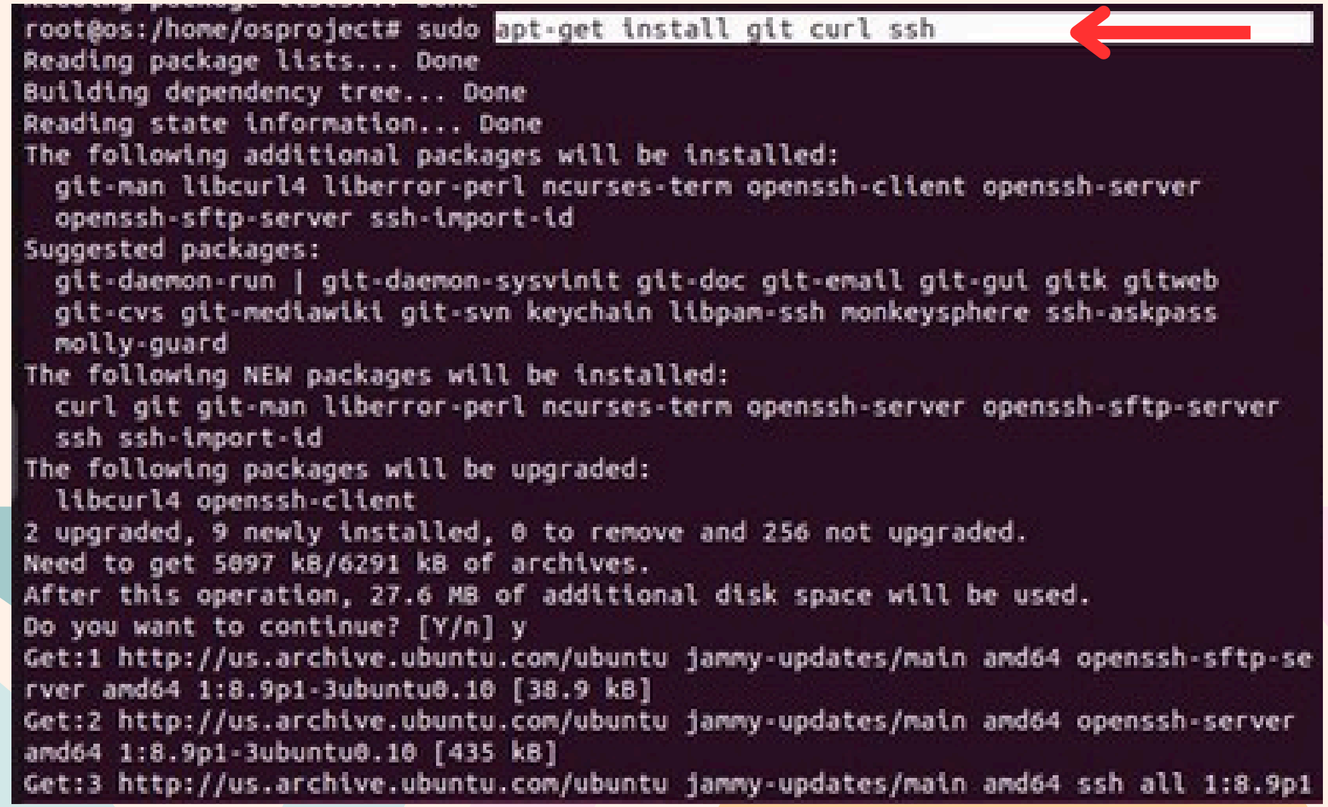
Step8/ here we run the VM and go to the terminal to use some commands to insure that our VM is working successfully



we use this command to retrieves
the information in the system

Additional Steps

Step8/ here we run the VM and go to the terminal to use some commands to insure that our VM is working successfully



we use this command to install the Git Because we want to put our project in the GitHub

Additional Steps

Step8/ here we run the VM and go to the terminal to use some commands to insure that our VM is working successfully

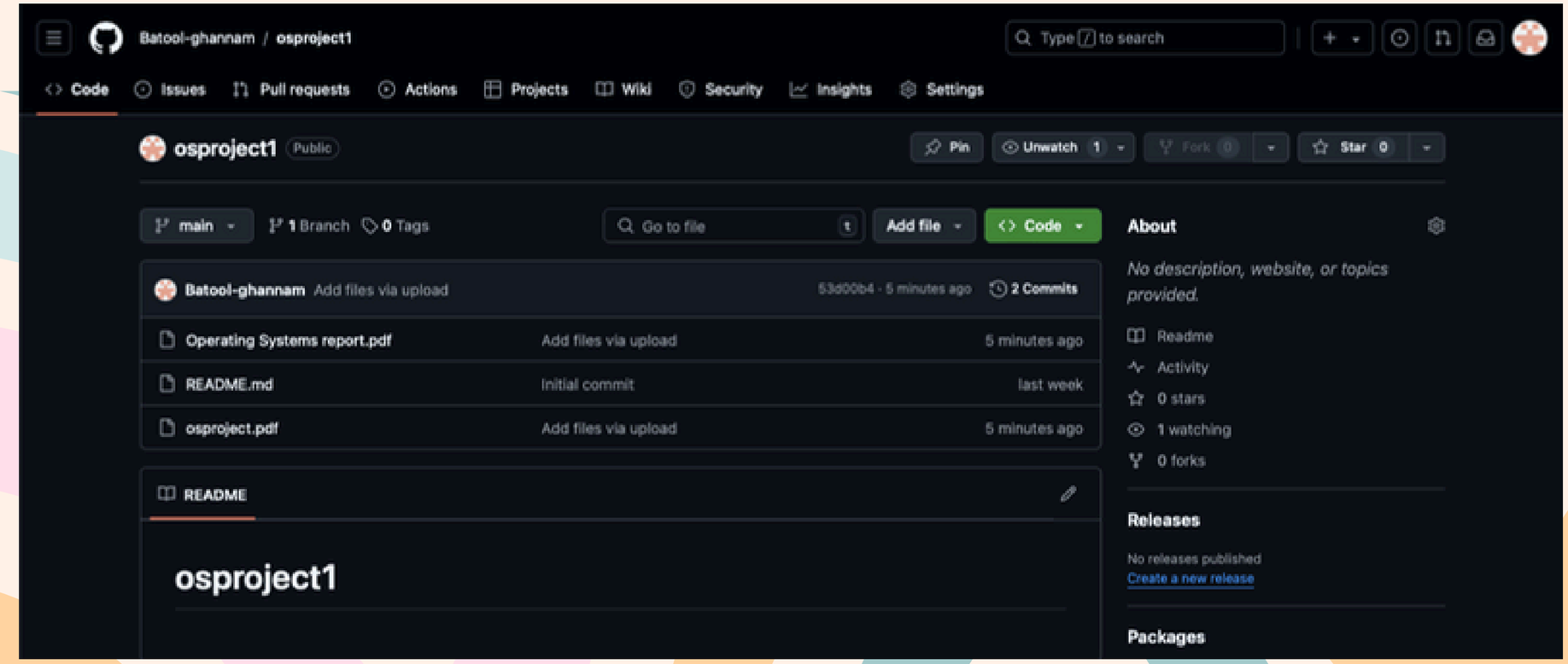
```
root@os:/home/osproject# git clone https://github.com/Batool-ghannam/osproject1.gi
t
Cloning into 'osproject1'...
remote: Enumerating objects: 3, done.
remote: Counting objects: 100% (3/3), done.
remote: Total 3 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
Receiving objects: 100% (3/3), done.
```

we use this command to put our repository link to upload our project in it

Additional Steps

Our GitHub Repository You can visit it and see our project Report and Presentation.

https://github.com/Batool-ghannam/osproject1.git

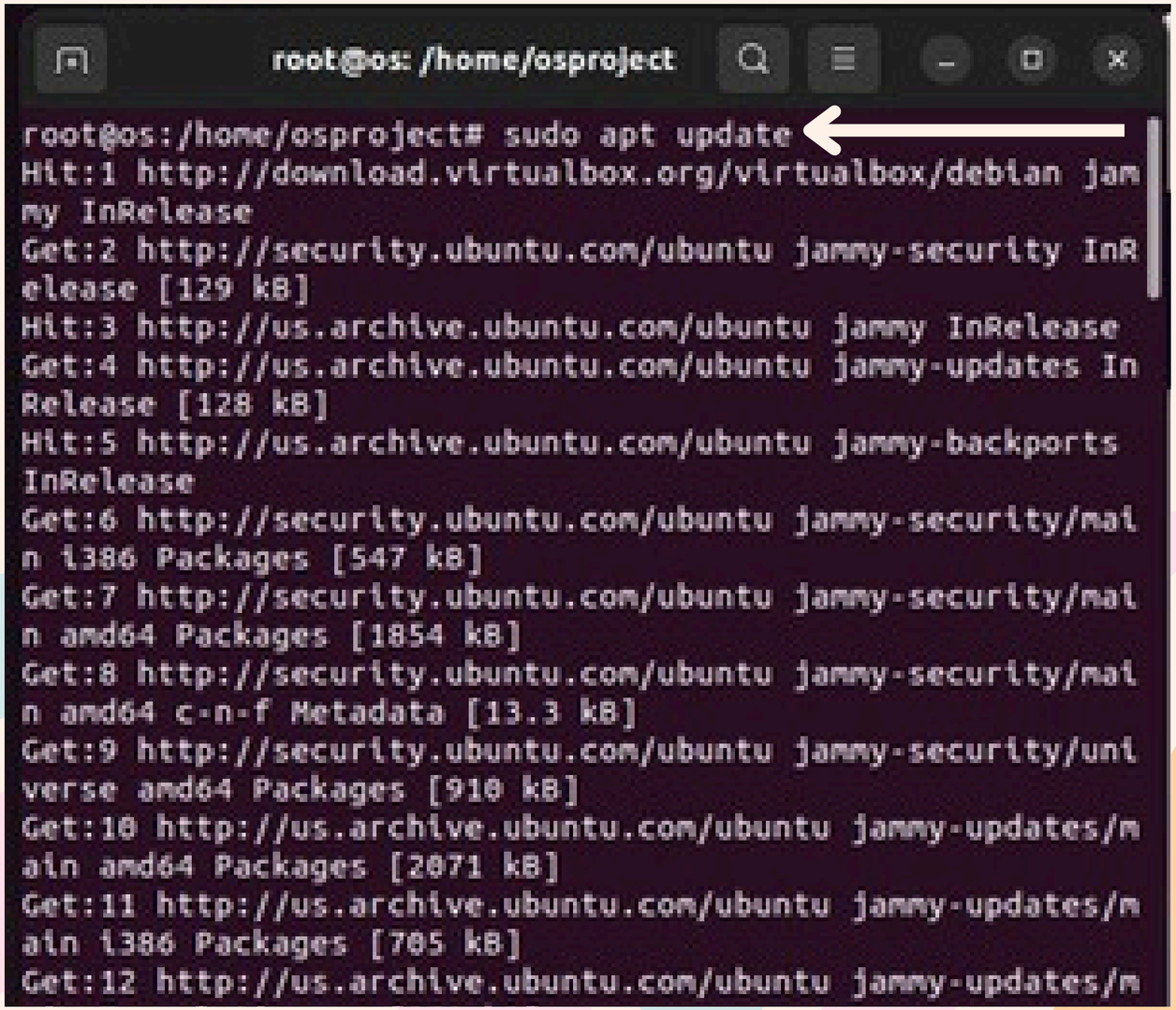


HOW TO CREATE THE VIRTUAL MACHINE?

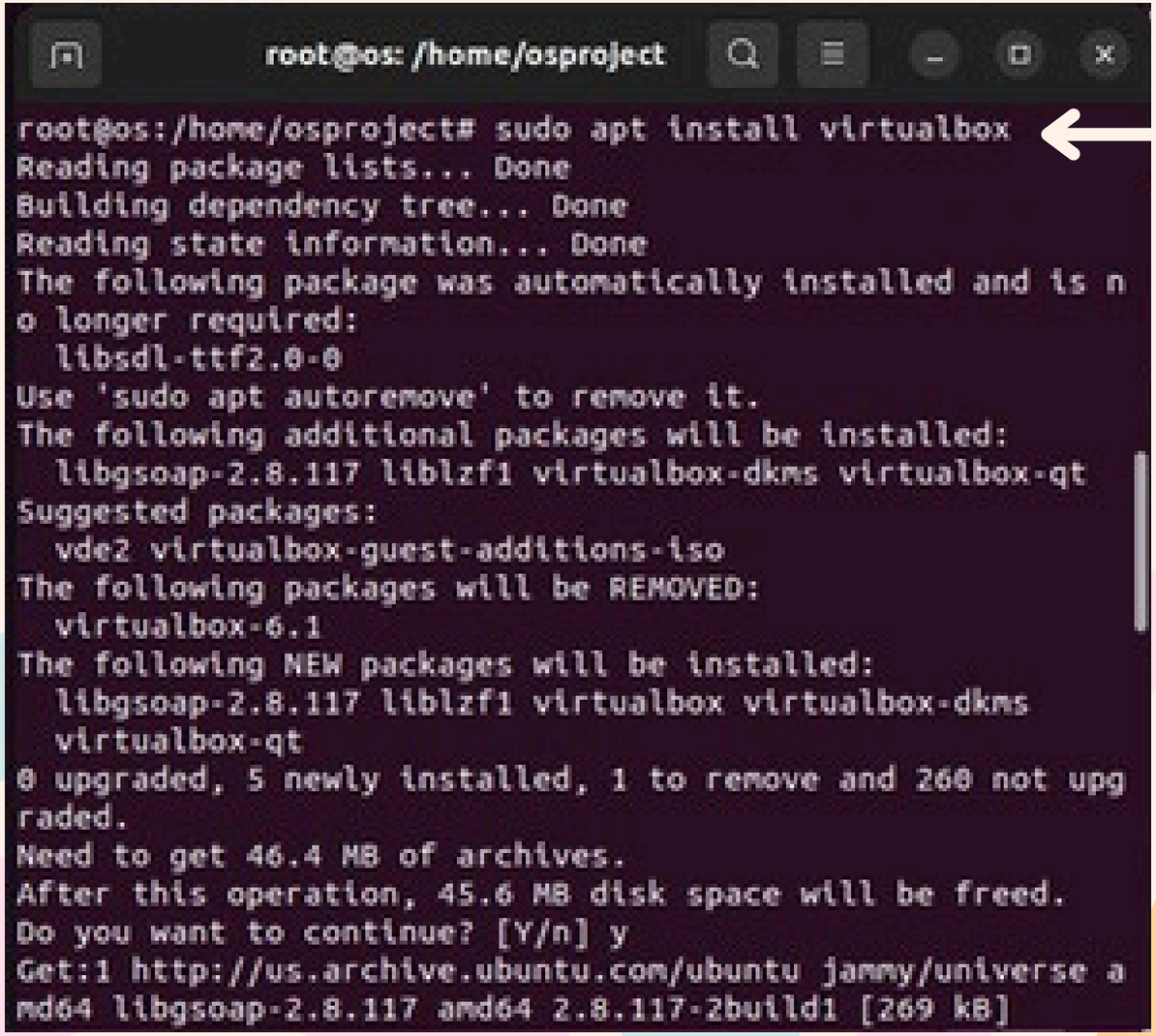
Second Way

2

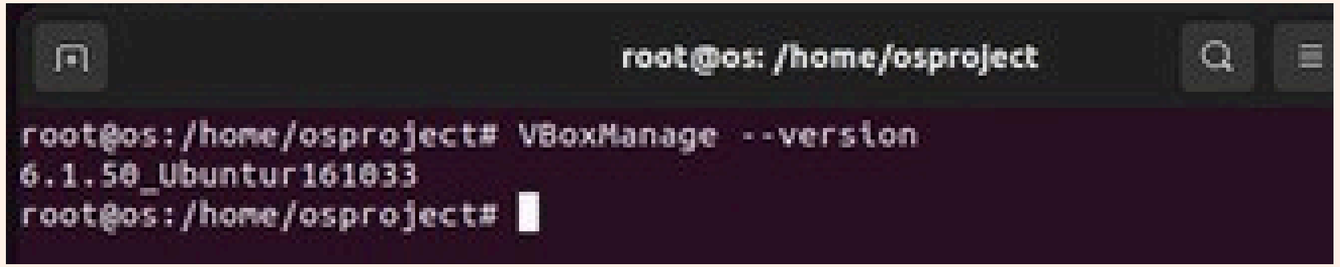
Create Virtual Machine inside Ubuntu system.



we use this command to downloads the package information from the Internet. and It is useful to get info on the updated version of packages or their dependencies



we use this command to install VirtualBox package from the officialrepositories on the Ubuntu



we use this command to see the latest VirtualBox version installed via the Ubuntu repository

```
root@os:/home/osproject# wget https://download.virtualbox.org/virtualbox/7.0.14/
Oracle_VM_VirtualBox_Extension_Pack-7.0.14.vbox-extpack
--2024-10-15 13:57:28--  https://download.virtualbox.org/virtualbox/7.0.14/Oracl
e_VM_VirtualBox_Extension_Pack-7.0.14.vbox-extpack
Resolving download.virtualbox.org (download.virtualbox.org)... 23.209.88.118
Connecting to download.virtualbox.org (download.virtualbox.org)|23.209.88.118|:4
43... connected.
HTTP request sent, awaiting response... 200 OK
Length: 18331089 (17M) [text/plain]
Saving to: 'Oracle_VM_VirtualBox_Extension_Pack-7.0.14.vbox-extpack'

Oracle_VM_VirtualBo 100%[===================>]  17.48M  6.94MB/s    in 2.5s

2024-10-15 13:57:33 (6.94 MB/s) - 'Oracle_VM_VirtualBox_Extension_Pack-7.0.14.vb
ox-extpack' saved [18331089/18331089]

root@os:/home/osproject# sudo VBoxManage extpack install Oracle_VM_VirtualBox_Ex
tension_Pack-7.0.14.vbox-extpack
VirtualBox Extension Pack Personal Use and Evaluation License (PUEL)
```

we use this command to The current extension pack version on the VirtualBox website is 7.0.14.
And it’s adds additional features to VirtualBox

```
root@os:/home/osproject# sudo VBoxManage extpack install Oracle_VM_VirtualBox_Ex
tension_Pack-7.0.14.vbox-extpack
VirtualBox Extension Pack Personal Use and Evaluation License (PUEL)
```

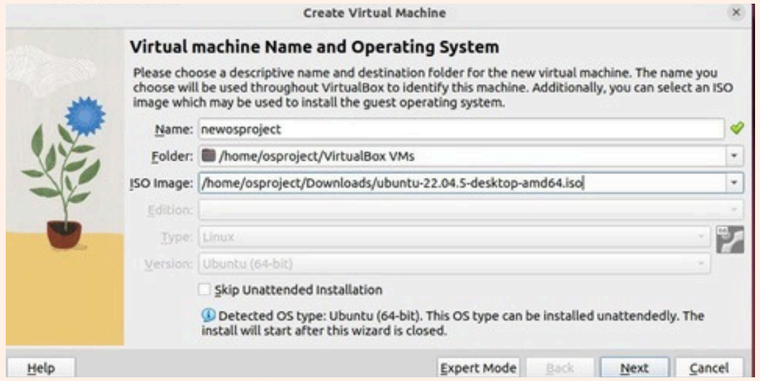
we use this command to install the Oracle VM VirtualBox Extension Pack that we've previously downloaded.

```
or Santa Clara counties in California in any dispute arisi
relating to this Agreement. Upon 45 days written notice, O
audit your use of the Product to confirm that you are in c
with the terms of this Agreement. You agree to cooperate w
audit and provide reasonable assistance and access to infor
such audit shall not unreasonably interfere with your norm
operations. You agree to pay within 30 days of written not
any fees applicable to your unlicensed use of the Product.
that Oracle shall not be responsible for any of your costs
cooperating with the audit. If a legal action or proceedin
by either party in connection with the enforcement of this
the prevailing party shall be entitled to its costs and att
fees actually incurred in connection with such action or p

Do you agree to these license terms and conditions (y/n)? y

License accepted. For batch installation add
--accept-license=33d7284dc4a0ece381196fda3cfe2ed0e1e8e7ed7
c
to the VBoxManage command line.

0%...10%...20%...30%...40%...50%...60%...70%...80%...90%...
Successfully installed "Oracle VM VirtualBox Extension Pack
root@os:/home/osproject#
```

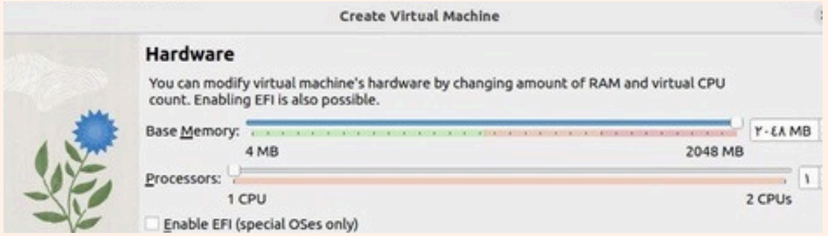
- Oracle Linux 9 / Red Hat Enterprise Linux 9
- Oracle Linux 8 / Red Hat Enterprise Linux 8
- Ubuntu 24.04
- Ubuntu 22.04
- Ubuntu 20.04
- Debian 12
- Debian 11
- openSUSE 15.3 / 15.4 / 15.5 / 15.6
- Fedora 40
- Fedora 36 / 37 / 38 / 39
- All distributions (built on EL6 and therefore not requiring recent system libraries)

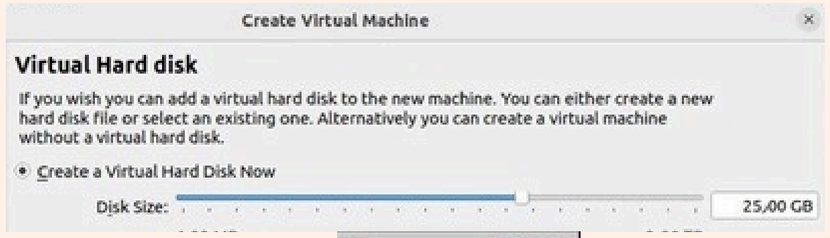
we use this command to Confirm
the installation and
allow the process to complete

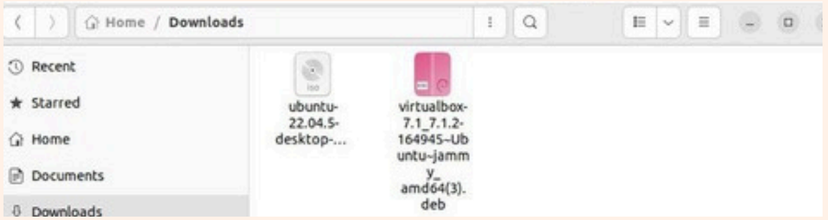
Choose the appropriateversion

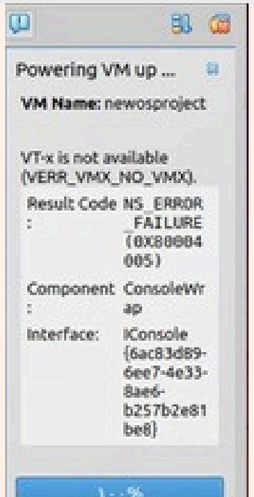


After downloading the VirtualBox successfully, this page will appear when you open it





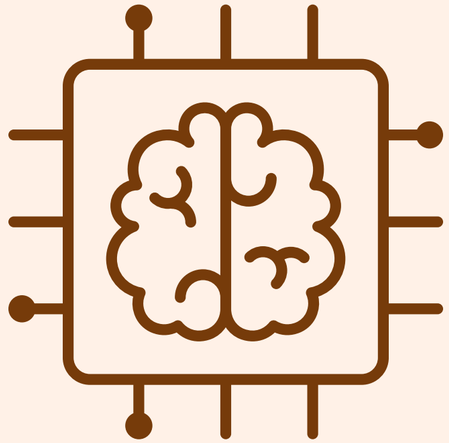




Some issues are appeared when we want run the VM.
-we've downloded the ISO file successfully.
but we think the issues appear because the storage of the RAM is full so it's can not run the VM.

What we learn ?

1- There is several ways to Create Virtual Machine.
2- You can Create Virtual Machine inside different Virtual Machine.
3- The Virtual Machine used the physical computer resources.
4- You should making sure that you have an enough storage space Before create it.



Thank you for listening