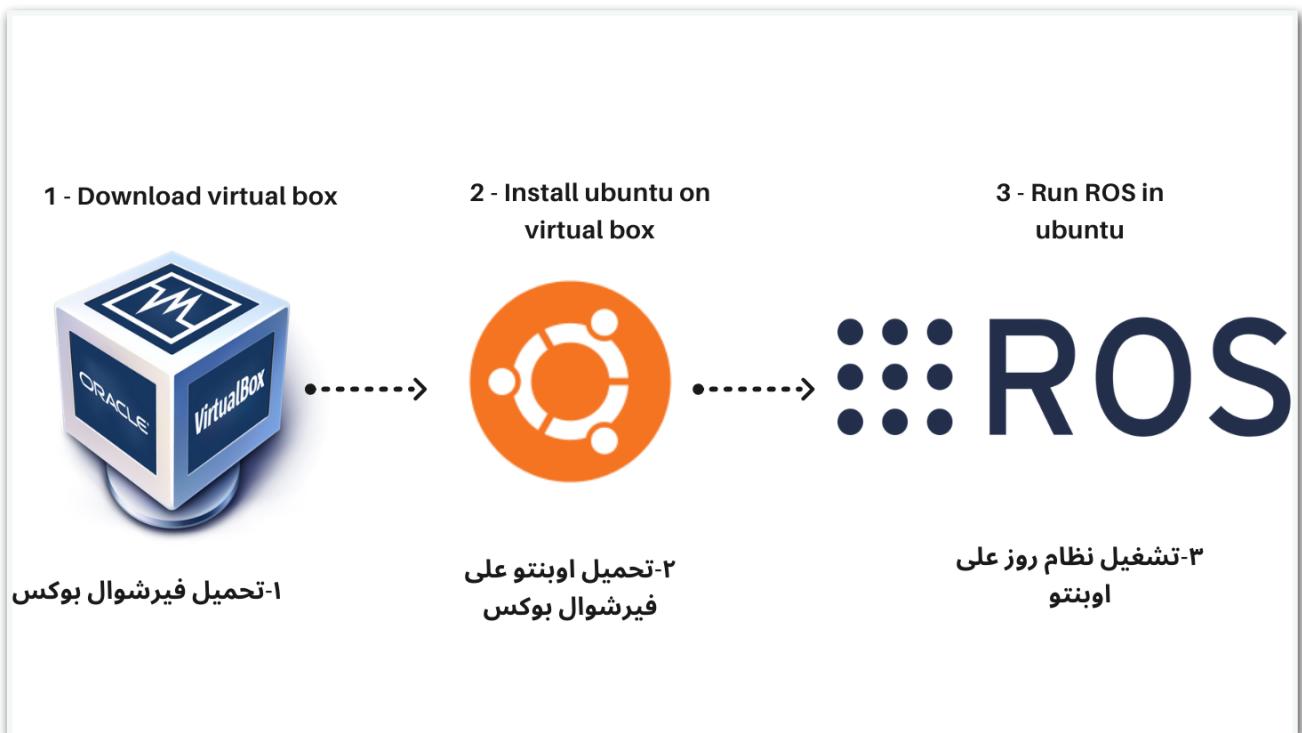


Installing Robot Operating System (ROS) Using Windows Devices and Ubuntu 20.04

تحميل نظام روز بإستخدام أجهزة ويندوز ونظام اوبنتو ٢٠٠٤

INSTALLING ROS IN 3 STEPS

تحميل نظام روز في ٣ خطوات



1- Download VBox package from this website

١- تحميل فيرشوال بوكس باكيج من خلال هذا الموقع

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

The screenshot shows the VirtualBox download page. At the top, there's a large blue banner with the VirtualBox logo and the text "Download VirtualBox". Below the banner, a message says "Here you will find links to VirtualBox binaries and its source code.". There are sections for "VirtualBox binaries", "VirtualBox 6.1.10 platform packages", and "VirtualBox 5.2 platform packages". Each section contains links for Windows hosts, OS X hosts, Linux distributions, and Solaris hosts.

- About
- Screenshots
- Downloads
- Documentation
- End-user docs
- Technical docs
- Contribute
- Community

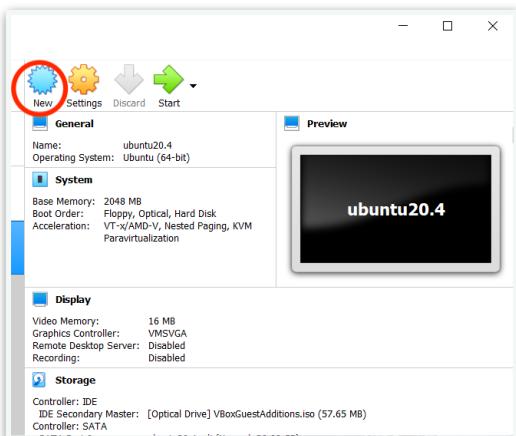
2- steps of downloading ubuntu in virtual box:

Use this link to download ubuntu:

٢- خطوات تحميل اوبنـتو على فيـرـشـوال بـوكـس

استخدم هذا الرابط لـتـحمـيل اوبـنـتو

<https://ubuntu.com/download/desktop>

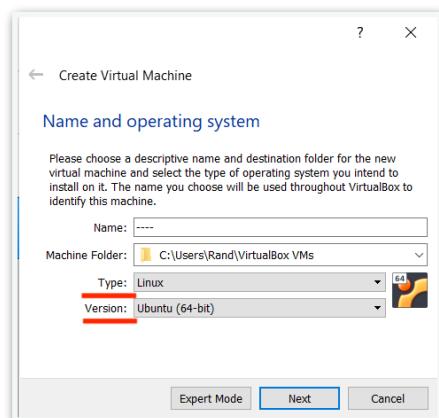


Go to VBox>>Click new to
create VBox

اذهب الى فيـرـشـوال بـوكـس>>انـشـئ
فيـرـشـوال بـوكـس جـديـد

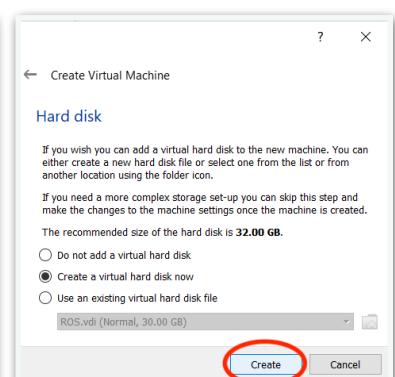
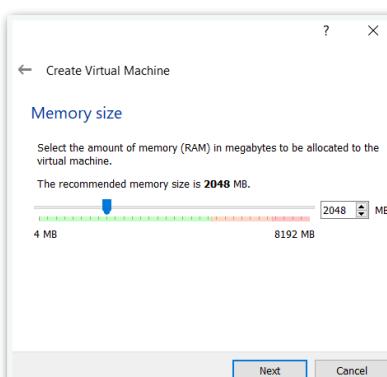
Change the type to linux, version to
ubuntu and setup the OS name then
click next

غير النوع الى لينكس و النسخة الى اوبـنـتو وضع
اسـمـاـ لـنـظـامـ التـشـغـيلـ ثمـ اـضـغـطـ عـلـىـ التـالـيـ



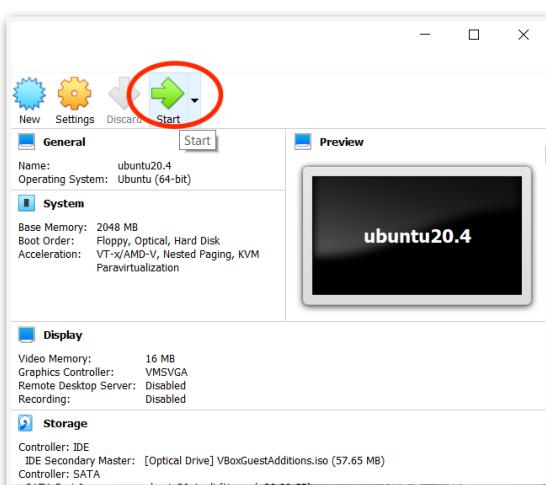
Choose the memory size
you want>>next>>create

اخـرـ حـجـمـ الـذـاـكـرـةـ الذـي
تـريـدـهـ>>التـالـيـ>>انـشـئـ



Before click start go to
settings>>storage>>choose CD icon
>>choose ubuntu>>ok>>start

قبل ان تـضـغـطـ عـلـىـ زـرـ الـبـدـءـ اـذـهـبـ الىـ
<<الـاعـدـادـاتـ>>التـخـزـينـ>>اخـرـ
علامـةـ CDـ>>اخـرـ اوـبـنـتوـ>>حـسـنـاـ>>الـبـدـءـ



3- Installing ROS by doing the following steps:

٣- تحميل روز باتباع الخطوات التالية

1-Set up ROS Noetic repo for Ubuntu 20.04

```
echo "deb http://packages.ros.org/ros/ubuntu focal main" | sudo tee /etc/apt/sources.list.d/ros-focal.list
```

2-Add official ROS keyring

```
sudo apt-key adv --keyserver 'hkp://keyserver.ubuntu.com:80' --recv-key C1CF6E31E6BADE8868B172B4F42ED6FBAB17C654
```

You have to see the word 'ok'

3-Update ROS package index

```
sudo apt update
```

4-Install ROS Noetic package

The four officially documented ROS Noetic metapackages are:

- ros-noetic-desktop-full
- ros-noetic-desktop
- ros-noetic-ros-base
- ros-noetic-ros-core

-Install ros-noetic-desktop-full

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

Then press Y for yes

5-install ros-noetic-desktop

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

6- Install ros-noetic-base

```
sudo apt install ros-noetic-base
```

7-Install ros-noetic-core

```
sudo apt install ros-noetic-core
```

8-Set up ROS Noetic environment

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

Or use

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

9-Verify Noetic installation By runing

```
Roscore
```

Resources:

<https://varhowto.com/install-ros-noetic-ubuntu-20-04/>

<https://github.com/Eng-Turki-Alameer/Smart-Methods-Internship-Tasks->