Arabic:

في البداية يجب تحميل نسخة ROS المتوافقة مع نظامك في هذا الشرح سنثبت البرنامج على أوبونتو
20.04

1- إذهب للصفحة الرسمية لبرنامج ROS http://wiki.ros.org/ROS/Installation

ROS Installation Options

There is more than one ROS distribution supported at a time. Some are older releases with long term support, making them more stable, while others are newer with shorter support life times, but with binaries for more recent platforms and more recent versions of the ROS packages that make them up. See the Distributions page for more details. We recommend one of the versions below:

ROS Kinetic Kame
Released May, 2016
LTS, supported until April, 2021
This version isn't recommended for new installs.

ROS Melodic Morenia
Released May, 2018
LTS, supported until May, 2023
Recommended for Ubuntu 18.04

ROS Noetic Ninjemys
Released May, 2020
Latest LTS, supported until May, 2025
Recommended for Ubuntu 20.04

2- قم باختيار النسخة المطابقة لنظامك التشغيلي.

3- اضف مصدر تحميل البرامج لنظامك عن طريق ال Terminal

```
sudo sh -c 'echo "deb http://packages.ros.org/ros/ubuntu $(lsb_release -sc) main" >
/etc/apt/sources.list.d/ros-latest.list'
```

4- اضف المفتاح الخاص لخادم الموقع

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


5- تأكد بأن نظامك على آخر تحديث

6- قم بتنزيل الحزمة الكاملة للبرنامج

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

لضبط بيئة العمل قم بادخال الاوامر التالية واحدة تلو الأخرى

Bash

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

zsh

```
echo "source /opt/ros/noetic/setup.zsh" >> ~/.zshrc
source ~/.zshrc
```

7- وأخيرًا استخدم أمر rosversion -d للتأكد من نجاح التثبيت.

```
hassan@hassan-VirtualBox:~$ rosversion -d
noetic
hassan@hassan-VirtualBox:~$
```

English

1- Go to ROS installation guide http://wiki.ros.org/ROS/Installation

ROS Installation Options

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Latest LTS, supported until May, 2025
Recommended for Ubuntu 20.04

2- Choose the suitable version according to your Linux distribution and version

3- Add the source list to your system

```
sudo sh -c 'echo "deb http://packages.ros.org/ros/ubuntu $(lsb_release -sc) main" >
/etc/apt/sources.list.d/ros-latest.list'
```

4- Add the key of the ROS's server to your system

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


5- Before start installing, make sure that your system is up to date

```
untu $(lsb_release -sc) main" > /etc/apt/sources.list.d/ros-latest.list'
hassan@hassan-VirtualBox:~$ sudo apt-key adv --keyserver 'hkp://keyserver.ubuntu
.com:80' --recv-key C1CF6E31E6BADE8868B172B4F42ED6FBAB17C654
Executing: /tmp/apt-key-gpghome.Igw0ymtD0H/gpg.1.sh --keyserver hkp://keyserver.
ubuntu.com:80 --recv-key C1CF6E31E6BADE8868B172B4F42ED6FBAB17C654
gpg: key F42ED6FBAB17C654: "Open Robotics <info@osrfoundation.org>" not changed
gpg: Total number processed: 1
gpg:              unchanged: 1
hassan@hassan-VirtualBox:~$ sudo apt update
Hit:1 http://us.archive.ubuntu.com/ubuntu focal InRelease
Hit:2 http://archive.canonical.com/ubuntu focal InRelease
Hit:3 http://us.archive.ubuntu.com/ubuntu focal-updates InRelease
Hit:4 http://us.archive.ubuntu.com/ubuntu focal-backports InRelease
Hit:5 http://packages.ros.org/ros/ubuntu focal InRelease
Hit:6 http://us.archive.ubuntu.com/ubuntu focal-security InRelease
Reading package lists... Done
Building dependency tree
Reading state information... Done
293 packages can be upgraded. Run 'apt list --upgradable' to see them.
W: Target Sources (restricted/source/Sources) is configured multiple times in /e
tc/apt/sources.list:2 and /etc/apt/sources.list:7
W: Target Sources (restricted/source/Sources) is configured multiple times in /e
tc/apt/sources.list:2 and /etc/apt/sources.list:7
hassan@hassan-VirtualBox:~$
```

6- Install the full desktop package

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

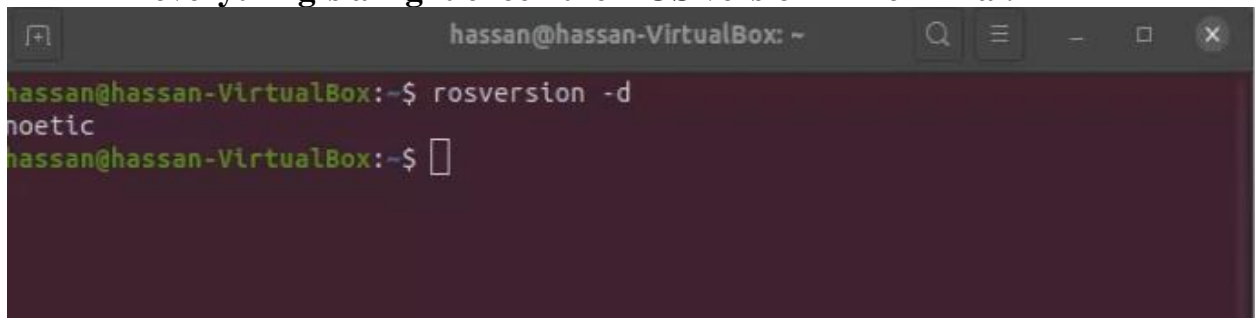## To setup the working environments do the following commands!

Bash

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

zsh

```
echo "source /opt/ros/noetic/setup.zsh" >> ~/.zshrc
source ~/.zshrc
```

Congrats, now you have already installed the ROS! To make sure that everything's alright check the ROS version in Terminal.

from packages.ros.org.

```
sudo sh -c 'echo "deb http://packages.ros.org/ros/ubuntu $(lsb_release -sc) main" >
/etc/apt/sources.list.d/ros-latest.list'
```