

تنصيب روز نويتيك على نظام تشغيل اوبنتو installing ROS Noetic on Ubuntu 20.04 OS

1. نقوم بفتح الترمينال: **Ctrl+Alt+T**

After installing Ubuntu 20.04 on Virtualbox and having access to Linux virtual interface, open the terminal by >> **Ctrl+Alt+T**, or by just clicking on it from programs menu. It can also be added to the side bar that contains your favorite apps, for fast and easy access.

2. ننسخ الكود التالي ونلصقه فيه ونضغط **Enter**, سيطلب منا كلمة مرور الحساب ندخلها ونضغط **Enter**

We copy a single line code:

```
wget -c https://raw.githubusercontent.com/qboticslabs/ros_install_noetic/master/ros_install_noetic.sh && chmod +x ./ros_install_noetic.sh && ./ros_install_noetic.sh
```

You can paste easily into the terminal window by >> **Ctrl+Shift+V**, or by the right mouse click, then choose “paste”. We paste it in the terminal and press **Enter**, then we enter the password and press **Enter**.

P.S: (During the next few graphs, zoom in to see them clearly)

```
wasted@V-wasted: ~
wasted@V-wasted:~$ wget -c https://raw.githubusercontent.com/qboticslabs/ros_install_noetic/master/ros_install_noetic.sh
&& chmod +x ./ros_install_noetic.sh && ./ros_install_noetic.sh
--2020-06-17 19:55:54-- https://raw.githubusercontent.com/qboticslabs/ros_install_noetic/master/ros_install_noetic.sh
Resolving raw.githubusercontent.com (raw.githubusercontent.com)... 151.101.36.133
Connecting to raw.githubusercontent.com (raw.githubusercontent.com)|151.101.36.133|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 5518 (5.4K) [text/plain]
Saving to: 'ros_install_noetic.sh'

ros_install_noetic. 100%[=====] 5.39K --.-KB/s in 0s

2020-06-17 19:55:55 (16.8 MB/s) - 'ros_install_noetic.sh' saved [5518/5518]

#####

>>> {Starting ROS Noetic Installation}

>>> {Checking your Ubuntu version}

>>> {Your Ubuntu version is: [Ubuntu focal 20.04]}

>>> {Ubuntu Focal 20.04 is fully compatible with Ubuntu Focal 20.04}

#####

>>> {Step 1: Configure your Ubuntu repositories}

[sudo] password for wasted:
'universe' distribution component is already enabled for all sources.
'restricted' distribution component is already enabled for all sources.
'multiverse' distribution component is already enabled for all sources.

>>> {Done: Added Ubuntu repositories}

#####

>>> {Step 2: Setup your sources.list}

>>> {Done: Added sources list}
```

3. ننتظر بعض الوقت حتى يصل لهذه المرحلة :

```
wasted@V-wasted: ~
#####
>>> {Step 4: Updating Ubuntu package index, this will take few minutes depend on your network connection}

Hit:1 http://sa.archive.ubuntu.com/ubuntu focal InRelease
Get:2 http://sa.archive.ubuntu.com/ubuntu focal-updates InRelease [107 kB]
Get:3 http://sa.archive.ubuntu.com/ubuntu focal-backports InRelease [98.3 kB]
Get:4 http://sa.archive.ubuntu.com/ubuntu focal-updates/main amd64 DEP-11 Metadata [105 kB]
Hit:5 http://packages.ros.org/ros/ubuntu focal InRelease
Get:6 http://sa.archive.ubuntu.com/ubuntu focal-updates/universe amd64 DEP-11 Metadata [151 kB]
Get:7 http://sa.archive.ubuntu.com/ubuntu focal-backports/universe amd64 DEP-11 Metadata [532 B]
Get:8 http://security.ubuntu.com/ubuntu focal-security InRelease [107 kB]
Get:9 http://security.ubuntu.com/ubuntu focal-security/main amd64 DEP-11 Metadata [21.2 kB]
Get:10 http://security.ubuntu.com/ubuntu focal-security/universe amd64 DEP-11 Metadata [31.5 kB]
Fetched 621 kB in 7s (94.4 kB/s)
Reading package lists... Done
Building dependency tree
Reading state information... Done
All packages are up to date.

#####

>>> {Step 5: Install ROS, you pick how much of ROS you would like to install.}
[1. Desktop-Full Install: (Recommended) : Everything in Desktop plus 2D/3D simulators and 2D/3D perception packages]

[2. Desktop Install: Everything in ROS-Base plus tools like rqt and rviz]

[3. ROS-Base: (Bare Bones) ROS packaging, build, and communication libraries. No GUI tools.]

Enter your install (Default is 1):1
#####

>>> {Starting ROS installation, this will take about 20 min. It will depends on your internet connection}

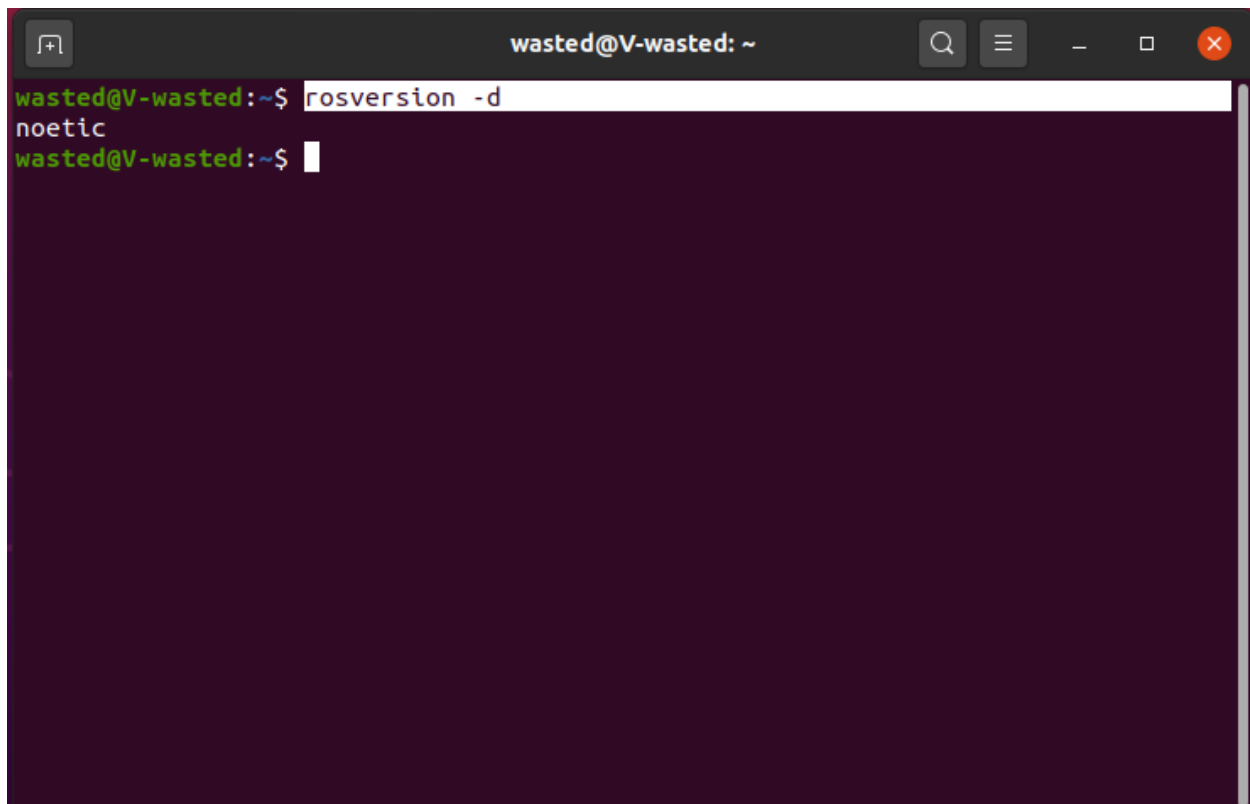
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
autoconf automake autopoint autotools-dev binfmt-support blt bzip2-doc cmake
cmake-data comerr-dev cdp-8 cvthon3 debhelper default-libmvsolclient-dev
```

نكتب **1** ونضغط **Enter** وننتظر حتى ينتهي التثبيت.

We wait until we get to the point where we are asked to "Enter your Install (Default is 1): "and we enter **1** then **Enter**, and we wait for the ROS Noetic install to complete (It could take several minutes).

4. بعد انتهاء التثبيت نقوم بالتأكد من أن التثبيت تم بنجاح عن طريق كتابه الكود "**rosversion -d**" لنقوم باستعراض نسخة ROS

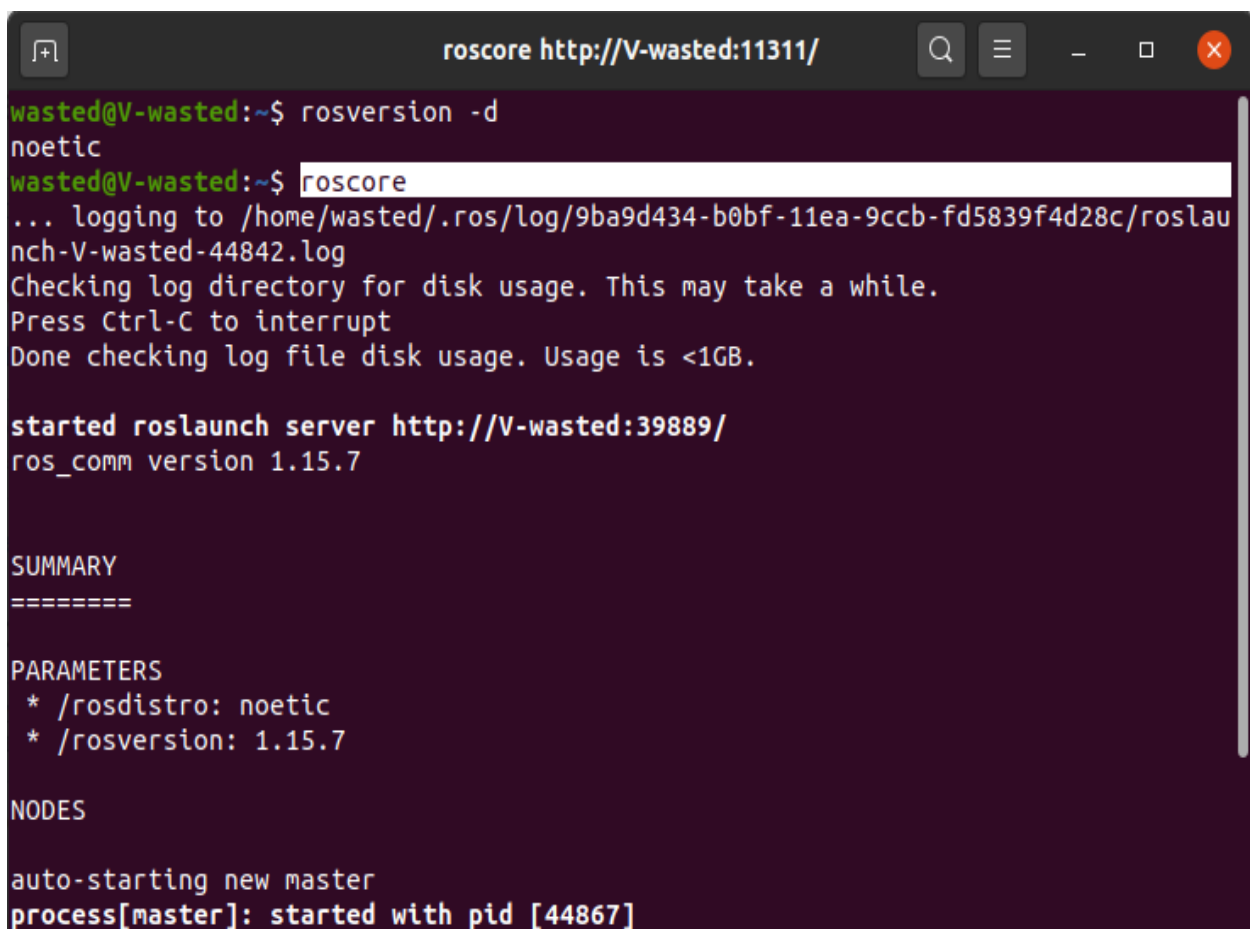
After the installation is finished and the terminal is ready to receive the next command, we enter the code: **rosversion -d** to check the installed version of ROS:

A terminal window with a dark background and light green text. The window title is 'wasted@V-wasted: ~'. The prompt is 'wasted@V-wasted:~\$'. The command 'rosversion -d' has been entered and executed. The output 'noetic' is displayed on the next line. The prompt 'wasted@V-wasted:~\$' is shown again on the third line, followed by a cursor.

```
wasted@V-wasted:~$ rosversion -d
noetic
wasted@V-wasted:~$
```

5. Optional:

A few more tests to ensure that our installation went well: enter the following codes into the terminal window, each in a new window by pressing the “+” button at the top left of the terminal window:

A terminal window titled 'roscore http://V-wasted:11311/' with standard window controls. The terminal shows the user 'wasted@V-wasted' running 'rosversion -d' which returns 'noetic'. Then they run 'roscore' which shows logging to a specific directory, checks disk usage (reporting <1GB), and starts a roslaunch server on http://V-wasted:39889/. The output includes a summary, parameters for rosdistro (noetic) and rosversion (1.15.7), and a message that the master process started with pid [44867].

```
wasted@V-wasted:~$ rosversion -d
noetic
wasted@V-wasted:~$ roscore
... logging to /home/wasted/.ros/log/9ba9d434-b0bf-11ea-9ccb-fd5839f4d28c/roslau
nch-V-wasted-44842.log
Checking log directory for disk usage. This may take a while.
Press Ctrl-C to interrupt
Done checking log file disk usage. Usage is <1GB.

started roslaunch server http://V-wasted:39889/
ros_comm version 1.15.7

SUMMARY
=====

PARAMETERS
* /rosdistro: noetic
* /rosversion: 1.15.7

NODES

auto-starting new master
process[master]: started with pid [44867]
```

```
wasted@V-wasted: ~  
roscore http://V-wasted:11311/ x wasted@V-wasted: ~  
wasted@V-wasted:~$ roslaunch rscpp tutorials talker  
[ INFO] [1592414876.975620236]: hello world 0  
[ INFO] [1592414877.076171517]: hello world 1  
[ INFO] [1592414877.177496937]: hello world 2  
[ INFO] [1592414877.276350050]: hello world 3  
[ INFO] [1592414877.375952076]: hello world 4  
[ INFO] [1592414877.477096397]: hello world 5  
[ INFO] [1592414877.578507072]: hello world 6  
[ INFO] [1592414877.678996664]: hello world 7  
[ INFO] [1592414877.776812835]: hello world 8  
[ INFO] [1592414877.881347032]: hello world 9  
[ INFO] [1592414877.975666423]: hello world 10  
[ INFO] [1592414878.076788360]: hello world 11  
[ INFO] [1592414878.177775388]: hello world 12  
[ INFO] [1592414878.277131158]: hello world 13  
[ INFO] [1592414878.377567290]: hello world 14  
[ INFO] [1592414878.475987537]: hello world 15  
[ INFO] [1592414878.576000223]: hello world 16  
[ INFO] [1592414878.677300414]: hello world 17  
[ INFO] [1592414878.776080685]: hello world 18  
[ INFO] [1592414878.879330355]: hello world 19  
[ INFO] [1592414878.977235605]: hello world 20  
[ INFO] [1592414879.077721667]: hello world 21  
[ INFO] [1592414879.178688292]: hello world 22
```

```
wasted@V-wasted: ~  
roscore http://V-wast... x wasted@V-wasted: ~ x wasted@V-wasted: ~  
wasted@V-wasted:~$ roslaunch rscpp tutorials listener  
[ INFO] [1592415279.070053659]: I heard: [hello world 285]  
[ INFO] [1592415279.167762199]: I heard: [hello world 286]  
[ INFO] [1592415279.267896763]: I heard: [hello world 287]  
[ INFO] [1592415279.370885595]: I heard: [hello world 288]  
[ INFO] [1592415279.467462206]: I heard: [hello world 289]  
[ INFO] [1592415279.567028220]: I heard: [hello world 290]  
[ INFO] [1592415279.666860906]: I heard: [hello world 291]  
[ INFO] [1592415279.766743417]: I heard: [hello world 292]  
[ INFO] [1592415279.867028282]: I heard: [hello world 293]  
[ INFO] [1592415279.967506275]: I heard: [hello world 294]  
[ INFO] [1592415280.066979874]: I heard: [hello world 295]  
[ INFO] [1592415280.168013904]: I heard: [hello world 296]  
[ INFO] [1592415280.267975595]: I heard: [hello world 297]  
[ INFO] [1592415280.372958060]: I heard: [hello world 298]  
[ INFO] [1592415280.467882589]: I heard: [hello world 299]  
[ INFO] [1592415280.568442793]: I heard: [hello world 300]  
[ INFO] [1592415280.667924355]: I heard: [hello world 301]  
[ INFO] [1592415280.771600077]: I heard: [hello world 302]  
[ INFO] [1592415280.868179715]: I heard: [hello world 303]  
[ INFO] [1592415280.967877911]: I heard: [hello world 304]  
[ INFO] [1592415281.067050811]: I heard: [hello world 305]  
[ INFO] [1592415281.167417729]: I heard: [hello world 306]  
[ INFO] [1592415281.266864746]: I heard: [hello world 307]
```

By now, you should have successfully installed ROS Noetic on your Ubuntu OS