

Task 0 : Installations

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Installations



1. Ubuntu 20.04 Installation

Before proceeding, first step is to install Ubuntu 20.04 operating system (do not use any kind of virtual machines or Windows Subsystem for Linux (WSL) as we do not recommend and we wont be providing support). You can follow any tutorial on internet or YouTube to dual boot your system and install Ubuntu 20.04 alongside your existing operating system.

NOTE: The following steps will only run in Ubuntu 20.04, so before proceeding, you need to have a working Ubuntu 20.04 operating system

2. ROS Installation

First thing after installing a fresh Ubuntu os is upgrading your system to the latest one, to do that, open a terminal, to open one, press Ctrl+Alt+t on your keyboard and type these

[Skip to main content](#) ↵ press enter to execute a command.

```
sudo apt upgrade
```


Setup your computer to accept software from packages.ros.org

```
sudo sh -c 'echo "deb http://packages.ros.org/ros/ubuntu $(lsb_releas
```



Set up your keys

```
sudo apt install curl # if you haven't already installed curl  
curl -s https://raw.githubusercontent.com/ros/rosdistro/master/ros.as
```



Installation

```
sudo apt update
```

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

Environment setup

You must source this script in every **bash** terminal you use ROS in

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

It can be convenient to automatically source this script every time a new shell is launched. These commands will do that for you

```
echo "source /opt/ros/noetic/setup.bash" >> ~/.bashrc  
echo 'export PATH="$PATH:$HOME/.local/bin"' >> ~/.bashrc
```

```
source ~/.bashrc
```

Dependencies for building packages

```
sudo apt install python3-rosdep python3-rosinstall python3-rosinstall
```



Initialize rosdep

```
sudo apt install python3-rosdep
```

With the following you can initialize rosdep

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```
sudo rosdep init
```

```
rosdep update
```

3.Geospatial softwares and library Installation

Installing QGIS software

First install some tools you will need for this instructions:

```
sudo apt install gnupg software-properties-common
```

Now install the QGIS Signing Key, so QGIS software from the QGIS repo will be trusted and installed:

```
sudo mkdir -m755 -p /etc/apt/keyrings # not needed since apt version  
sudo wget -O /etc/apt/keyrings/qgis-archive-keyring.gpg https://downl
```



Update your repository information to reflect also the just added QGIS one:

```
sudo apt update
```

Now, install QGIS:

```
sudo apt install qgis qgis-plugin-grass
```

Installing GDAL library

```
sudo apt install libpq-dev gdal-bin libgdal-dev
```

Check if gdal is installed properly using the following command:

```
gdalinfo --version
```

You will be getting the GDAL version 3.0.4.

Installing python GDAL module

```
pip3 install GDAL
```

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