

Installation Guide: Pre-Session 1

ROS

For Ubuntu 18.04

Reference: [ROS Wiki](#)

1. Configure your Ubuntu repositories to allow "restricted," "universe," and "multiverse."

Open Software and Updates and confirm that the first 4 checkboxes are ticked.

2. Setup your computer to accept software 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'
```

This will update the list of packages Ubuntu looks through for installing.

3. Setup authentication

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

4. Update package index. Install the **desktop-full** version

```
sudo apt update  
sudo apt install ros-melodic-desktop-full
```

5. Setup ROS and install dependencies

```
sudo rosdep init  
rosdep update  
sudo apt install python-rosinstall python-rosinstall-generator python-wstool build-essential
```

6. Configure bash terminal to detect ROS installation

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

7. Test your ROS installation by running:

```
roscore
```

The output should look like:

```
roscore
... logging to /home/ashwin/.ros/log/44d492ce-e95e-11eb-9248-24ee9ab19ed7/roslaunch-Strix28-17209.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://Strix28:41967/
ros_comm version 1.14.11

SUMMARY
=====

PARAMETERS
* /rosdistro: melodic
* /rosversion: 1.14.11

NODES

auto-starting new master
process[master]: started with pid [17226]
ROS_MASTER_URI=http://Strix28:11311/

setting /run_id to 44d492ce-e95e-11eb-9248-24ee9ab19ed7
process[rosout-1]: started with pid [17250]
started core service [/rosout]
```

Use **Ctrl+C** to terminate the process before closing the terminal.

Gazebo

Comes packaged with the ROS Distro. Check the version by

```
gazebo --version
```

The output should look like:

```
gazebo --version
Gazebo multi-robot simulator, version 9.19.0
Copyright (C) 2012 Open Source Robotics Foundation.
Released under the Apache 2 License.
http://gazebosim.org
```

```
Gazebo multi-robot simulator, version 9.19.0
Copyright (C) 2012 Open Source Robotics Foundation.
Released under the Apache 2 License.
http://gazebosim.org
```

Check the installation with:

```
gazebo
```

This should start Gazebo with an empty world.

Additional Requirements:

Install Git:

```
sudo apt install git
```

Install VSCode (or any other IDE):

```
sudo snap install code --classic
```