**ROS2 setup on the Linux(20.04)**

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Refer from link:

<https://index.ros.org/doc/ros2/Installation/Foxy/Linux-Development-Setup/>

**i.Set locale**

locale # check for UTF-8

sudo apt update && sudo apt install locales

sudo locale-gen en\_US en\_US.UTF-8

sudo update-locale LC\_ALL=en\_US.UTF-8 LANG=en\_US.UTF-8export LANG=en\_US.UTF-8

locale # verify settings

**ii.Add the ROS 2 apt repository**

sudo apt update && sudo apt install curl gnupg2 lsb-release

curl -s https://raw.githubusercontent.com/ros/rosdistro/master/ros.asc | sudo apt-key add -

**iii. Add the repository to your sources list**

sudo sh -c 'echo "deb [arch=$(dpkg --print-architecture)] http://packages.ros.org/ros2/ubuntu $(lsb\_release -cs) main" > /etc/apt/sources.list.d/ros2-latest.list'

**iv.Install ROS2 Packages**

source apt update

**For ROS RViz, demos, tutorials**

sudo apt install ros-foxy-desktop [USE]

**For Communication library, message packages, command line tools No GUI Tools**

sudo apt install ros-foxy-ros-base

**v.Install Argcomplete**

sudo apt install -y python3-pip

pip3 install -U argcomplete

Reboot the Virtual Machine

**vi. Install development tools and ROS tools**

sudo apt update && sudo apt install -y \

build-essential \

cmake \

git \

libbullet-dev \

python3-colcon-common-extensions \

python3-flake8 \

python3-pip \

python3-pytest-cov \

python3-rosdep \

python3-setuptools \

python3-vcstool \

wget# install some pip packages needed for testing

python3 -m pip install -U \

argcomplete \

flake8-blind-except \

flake8-builtins \

flake8-class-newline \

flake8-comprehensions \

flake8-deprecated \

flake8-docstrings \

flake8-import-order \

flake8-quotes \

pytest-repeat \

pytest-rerunfailures \

pytest# install Fast-RTPS dependencies

sudo apt install --no-install-recommends -y \

libasio-dev \

libtinyxml2-dev# install Cyclone DDS dependencies

sudo apt install --no-install-recommends -y \

libcunit1-dev

**vii.Environment Setup for setup.bash**

$cd opt/ros/foxy/

Setup.bash

$gedit ~/.bashrc

Put the following at the end

source opt/ros/foxy/setup.bash

\*\*\*Whenever open new terminal, it is needed to use this command:

$source opt/ros/foxy/setup.bash

## **Get ROS2 code**

mkdir -p ~/ros2\_foxy/srccd ~/ros2\_foxy

wget https://raw.githubusercontent.com/ros2/ros2/foxy/ros2.repos

vcs import src < ros2.repos

**Install Dependencies using rosdep**

sudo rosdep init

rosdep update

rosdep install --from-paths src --ignore-src --rosdistro foxy -y --skip-keys "console\_bridge fastcdr fastrtps rti-connext-dds-5.3.1 urdfdom\_headers"

**Build code in the workspace**

cd ~/ros2\_foxy/

colcon build --symlink-install

colcon build --symlink-install --merge-install

**Environment Setup**

. ~/ros2\_foxy/install/setup.bash

**Talker and Listener Example Setup**

Talker

. ~/ros2\_foxy/install/local\_setup.bash

ros2 run demo\_nodes\_cpp talker

Listener

. ~/ros2\_foxy/install/local\_setup.bash

ros2 run demo\_nodes\_py listener

**Clang**

Clang is used to configure CMake.

sudo apt install clang

export CC=clangexport CXX=clang++

colcon build --cmake-force-configure