1、Environment construction

1.1、Installation related dependencies

Input following command in terminal.

```
sudo apt install libgflags-dev  ros-$ROS_DISTRO-image-geometry ros-$ROS_DISTRO-camera-info-manager ros-$ROS_DISTRO-image-transport ros-$ROS_DISTRO-image-publisher libgoogle-glog-dev libusb-1.0-0-dev libeigen3-dev nlohmann-json3-dev
```

1.2、Install libuvc

Input following command in terminal.

```
git clone https://github.com/libuvc/libuvc.git
cd libuvc
mkdir build && cd build
cmake .. && make -j2
sudo make install
sudo ldconfig
```

1.3、Compile function package

Set up the workspace (Take astra_ws as an example here).

Extract the folder, and get ros2_ astra_ camera folder.

Copy this folder to the src directory of the workspace, and then input the following instructions to compile.

```
cd ~/astra_ws   #My workspace in the~directory. Modify it according to your workspace directory
colcon build --event-handlers  console_direct+  --cmake-args  -DCMAKE_BUILD_TYPE=Release
```

Compilation will take some time, please wait patiently.

1.4、Install libusb rules

Input following command in terminal.

```
cd ~/astra_ws/src/ros2_astra_camera/astra_camera/scripts  #My workspace in the~directory. Modify it according to your workspace directory
sudo chmod 777 *
sudo bash install.sh
sudo udevadm control --reload-rules && sudo udevadm trigger
```

1.5、Add environment working variables

Edit the~/. bashrc file and add the following statement to the last line.

```
sudo vim ~/.bashrc
source ~/astra_ws/install/setup.bash    #My workspace in the~directory. Modify it according to your workspace directory
```

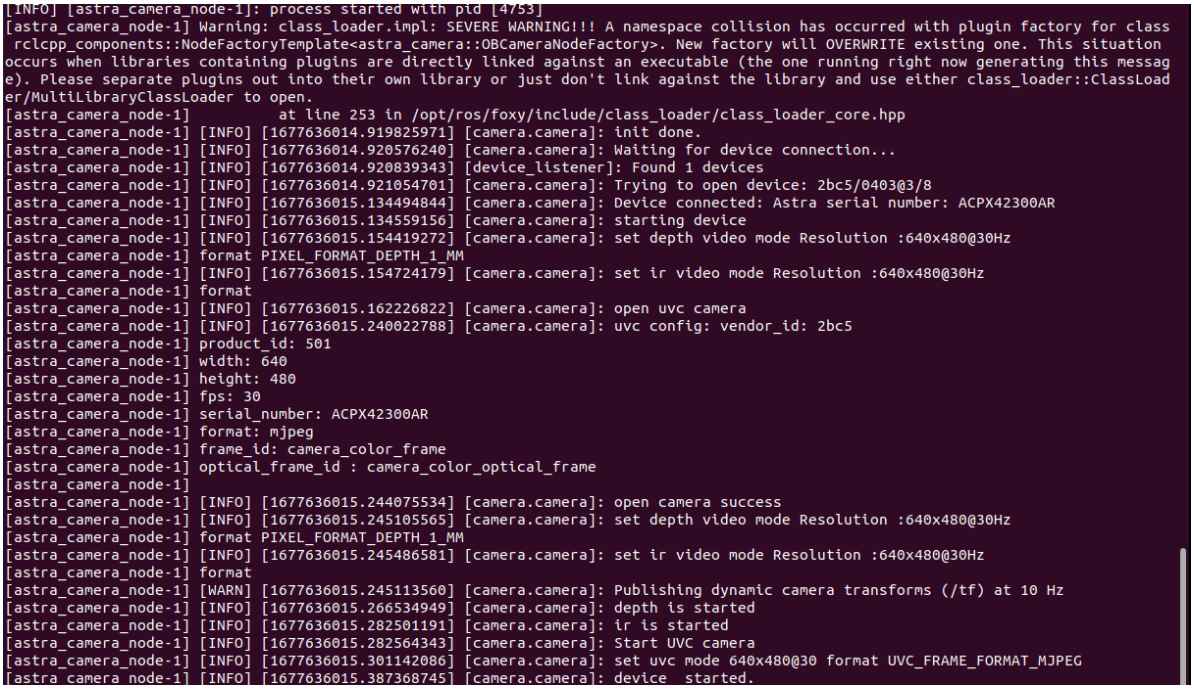
After saving and exiting. Then, refresh the environment variables

1.6、Run camera

Connect the camera to the motherboard or computer. If it is a virtual machine, you need to ensure the USB3.0 connection.

Input following command in terminal.

```
ros2 launch astra_camera astra_pro.launch.xml   #astrapro camera
ros2 launch astra_camera astra_pro_plus.launch.xml  #astraproplus camera
```



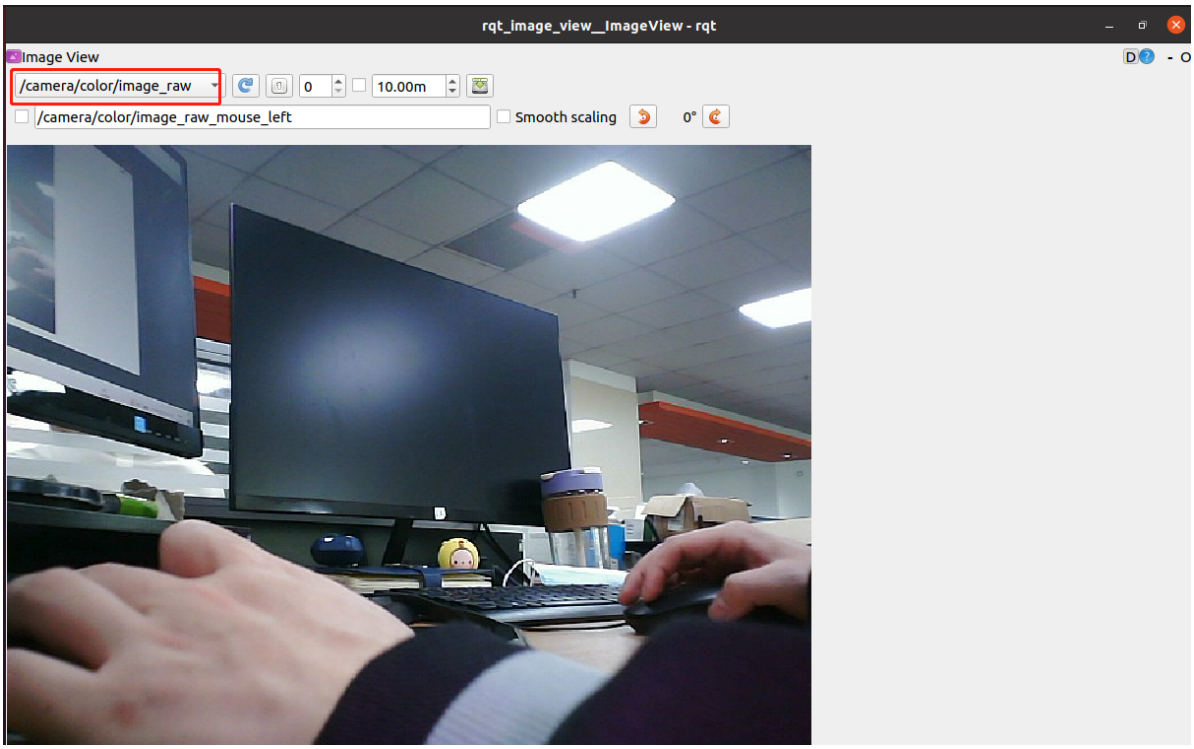
Input following command in terminal to view node and topic.

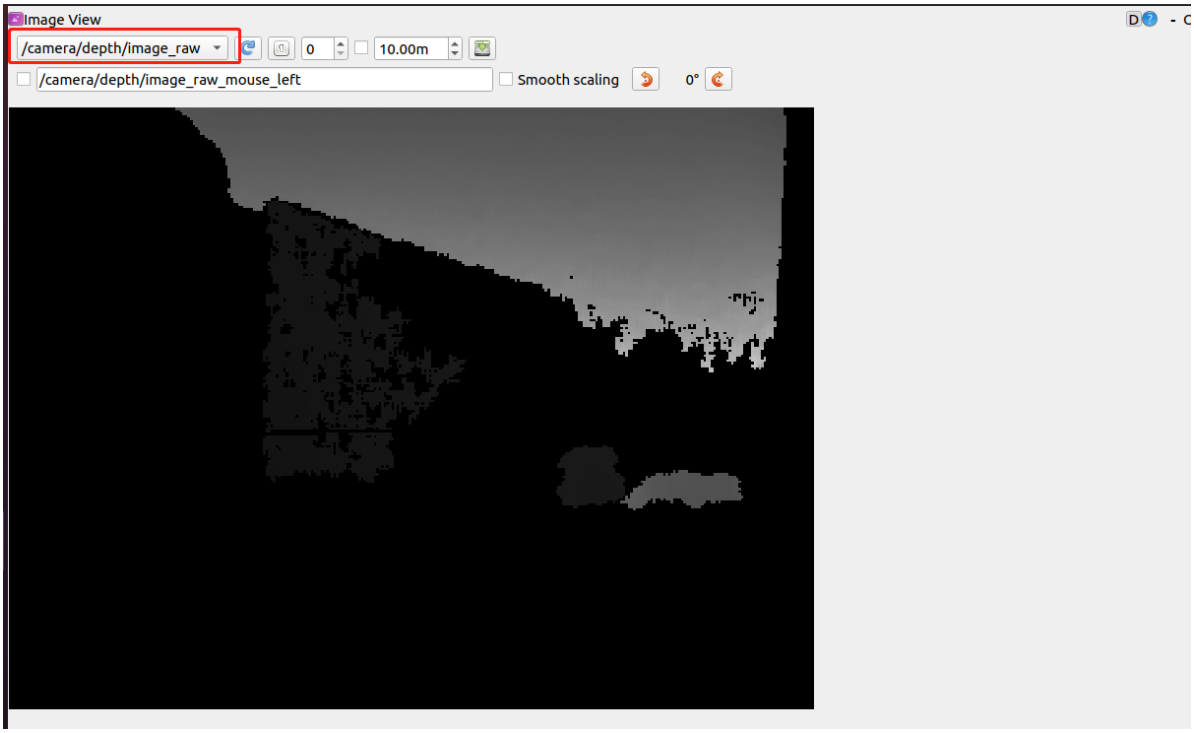
```
ros2 topic list
```

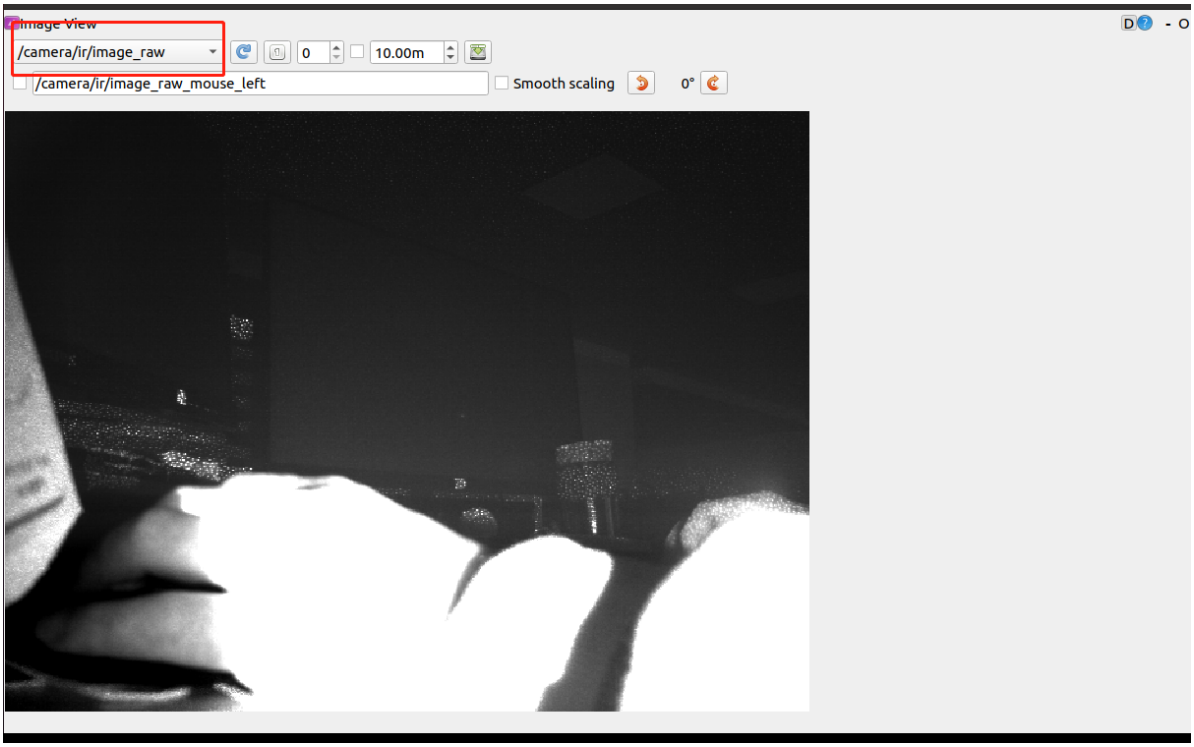
```
yahboom@yahboom-virtual-machine:~$ ros2 topic list
/camera/color/camera_info
/camera/color/image_raw
/camera/depth/camera_info
/camera/depth/image_raw
/camera/depth/points
/camera/ir/camera_info
/camera/ir/image_raw
/clicked_point
/goal_pose
/initialpose
/parameter_events
/rosout
/tf
/tf_static
```

Input following command in terminal to view imgae by rqt_image tool.

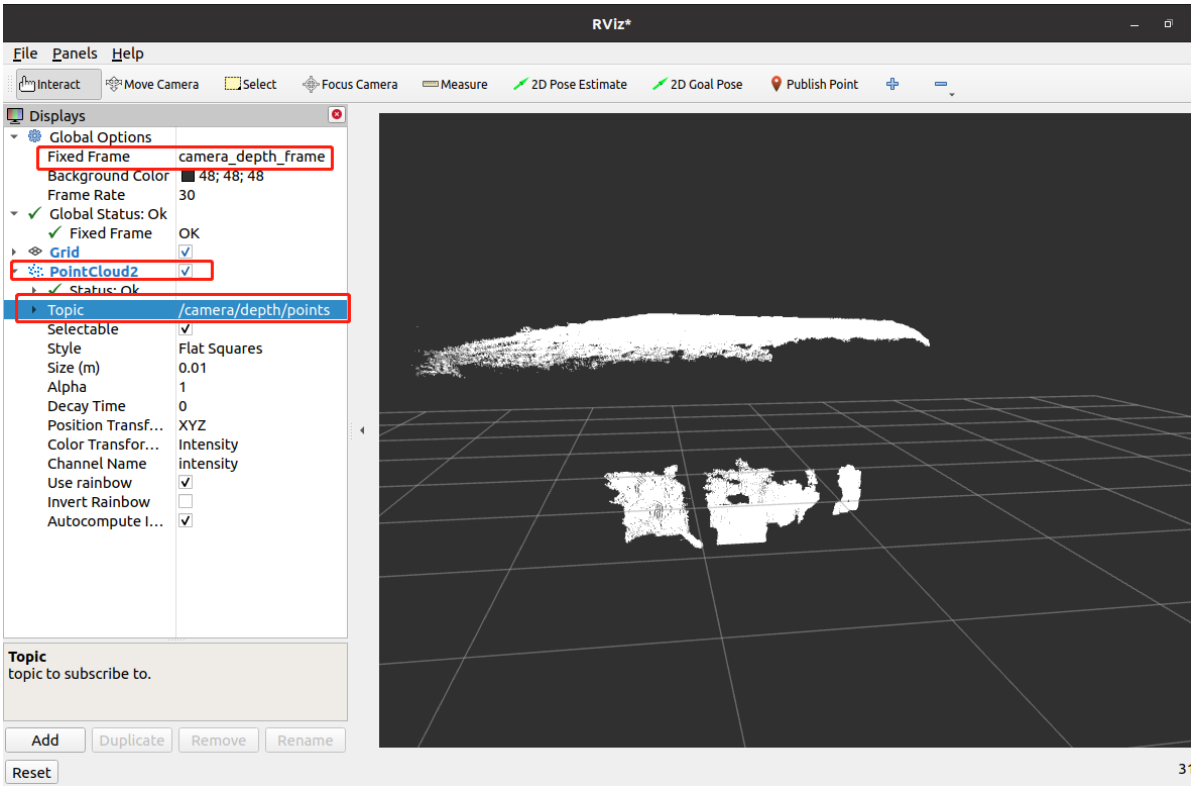
```
ros2 run rqt_image_view rqt_image_view
```







Turn on RVIZ to view the depth point cloud information.


RViz*
File Panels Help
Interact
Move Camera
Select
Focus Camera
Measure
2D Pose Estimate
2D Goal Pose
Publish Point
Displays
Global Options
Fixed Frame camera_depth_frame
Background Color 48; 48; 48
Frame Rate 30
Global Status: Ok
Fixed Frame OK
Grid
PointCloud2
Topic /camera/depth/points
Selectable
Style Flat Squares
Size (m) 0.01
Alpha 1
Decay Time 0
Position Transf... XYZ
Color Transfor... Intensity
Channel Name intensity
Use rainbow
Invert Rainbow
Autocompute I...
Topic
topic to subscribe to.
Add
Duplicate
Remove
Rename
Reset