Install Astra ROS package on RDK-X3

Operating environment: **RDK-X3**Ubantu20.04 ROS Noetic

1. Install astra_camera package

1. Install ROS

Please check this website: http://wiki.ros.org/noetic/Installation/Ubuntu

2. The installation environment depends.

```
sudo apt install ros-$ROS_DISTRO-rgbd-launch ros-$ROS_DISTRO-libuvc-ros
ros-$ROS_DISTRO-libuvc-camera ros-$ROS_DISTRO-rgbd-launch ros-$ROS_DISTRO-libuvc-
ros ros-$ROS_DISTRO-camera-calibration ros-$ROS_DISTRO-rqt-image-view build-
essential freeglut3 freeglut3-dev libsfml-dev
```

3. Create a ROS workspace

```
mkdir -p ~/astra_ws/src cd
~/astra_ws/ catkin_make
source devel/setup.bash #Set environment variables
echo "source ~/astra_ws/devel/setup.bash" >> ~/.bashrc #Permanently add environment variables
source ~/.bashrc
```

4. Download the astra_camera package from git clone

```
cd ~/astra_ws/src
git clone https://github.com/orbbec/ros_astra_camera
```

A ros_astra_camera work package will be generated under src, it is recommended to modify it to astra_camera

5. Create astra udev rules

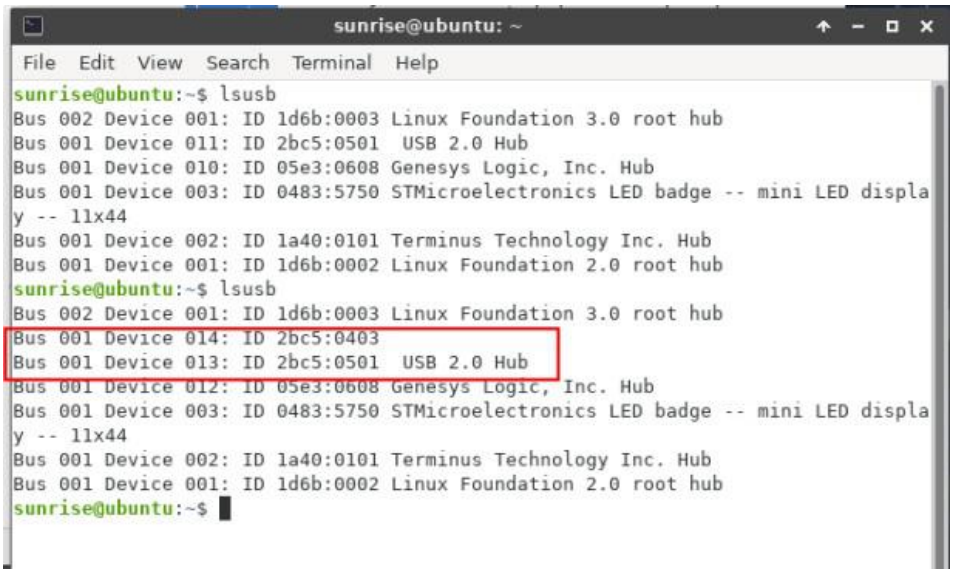
```
roscd astra_camera
chmod 777 scripts/create_udev_rules
./scripts/create_udev_rules
```

6. Compile with catkin_make

```
cd ~/catkin_ws
catkin_make --pkg astra_camera
```

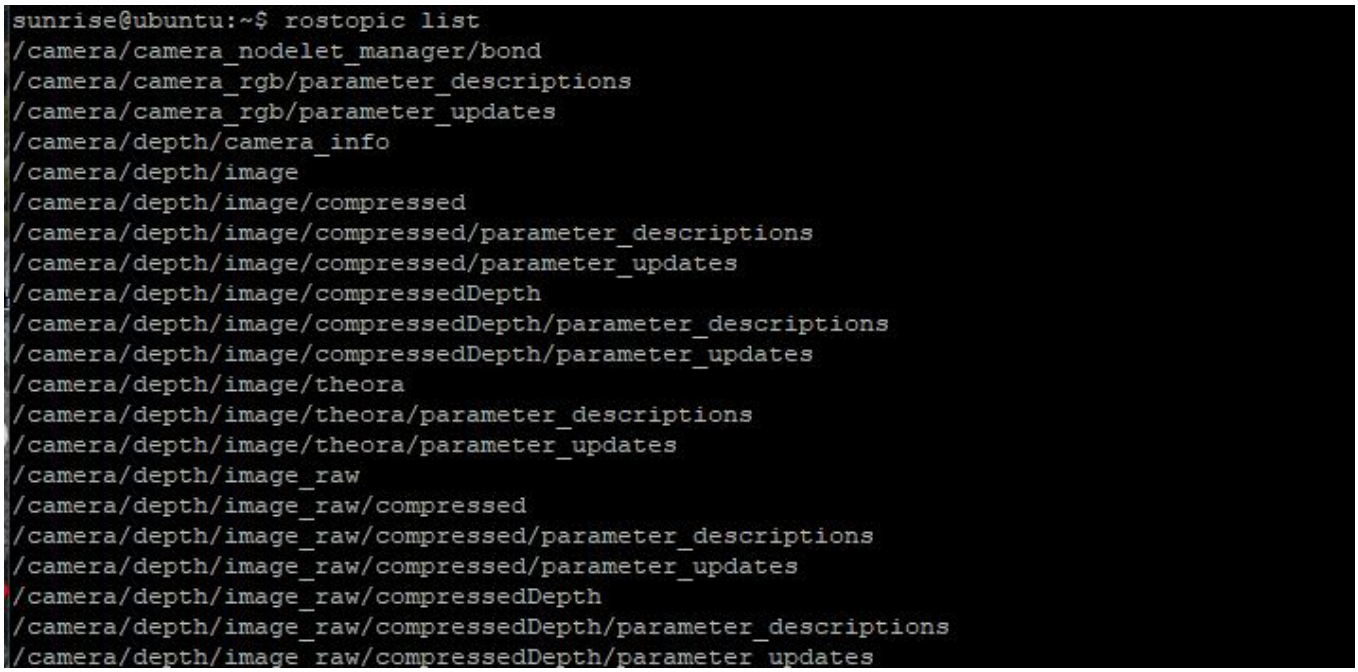
7. Start the Astra pro camera

```
lsusb
roslaunch astra_camera astrapro.launch
```



Note: Inserting the Astra camera can recognize two USB device IDs, if only one is recognized, you need to re-plug the camera.
Among them, 2bc5:0403 is the depth module, and 2bc5:0502 is the RGB module

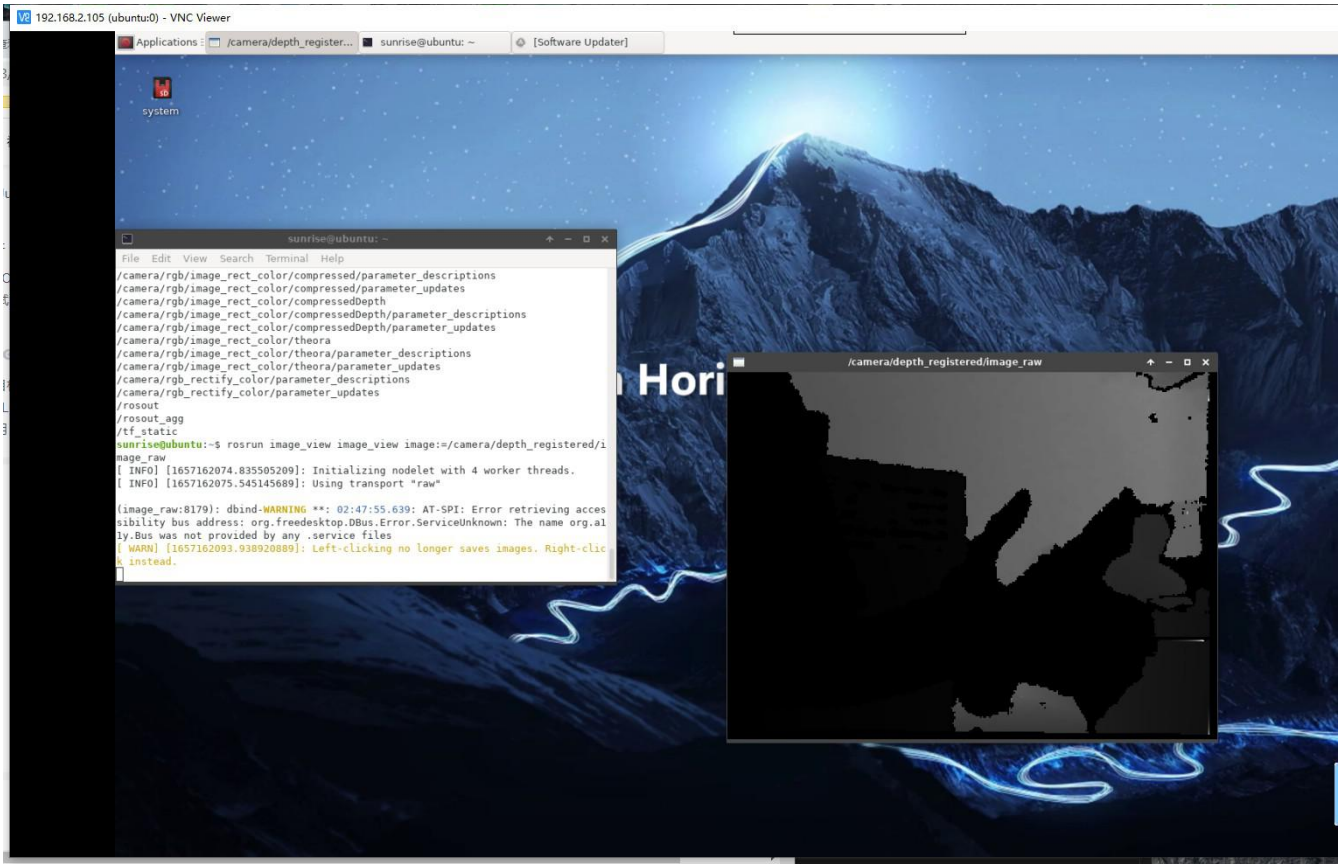
8. View image output
View the topic node through the rostopic list, where */image_raw: depth/tgb/ir is the original image.



Because RDK-X3 cannot run RVIZ, we need to use image_view or rqt_image_view to view image information.
image_view

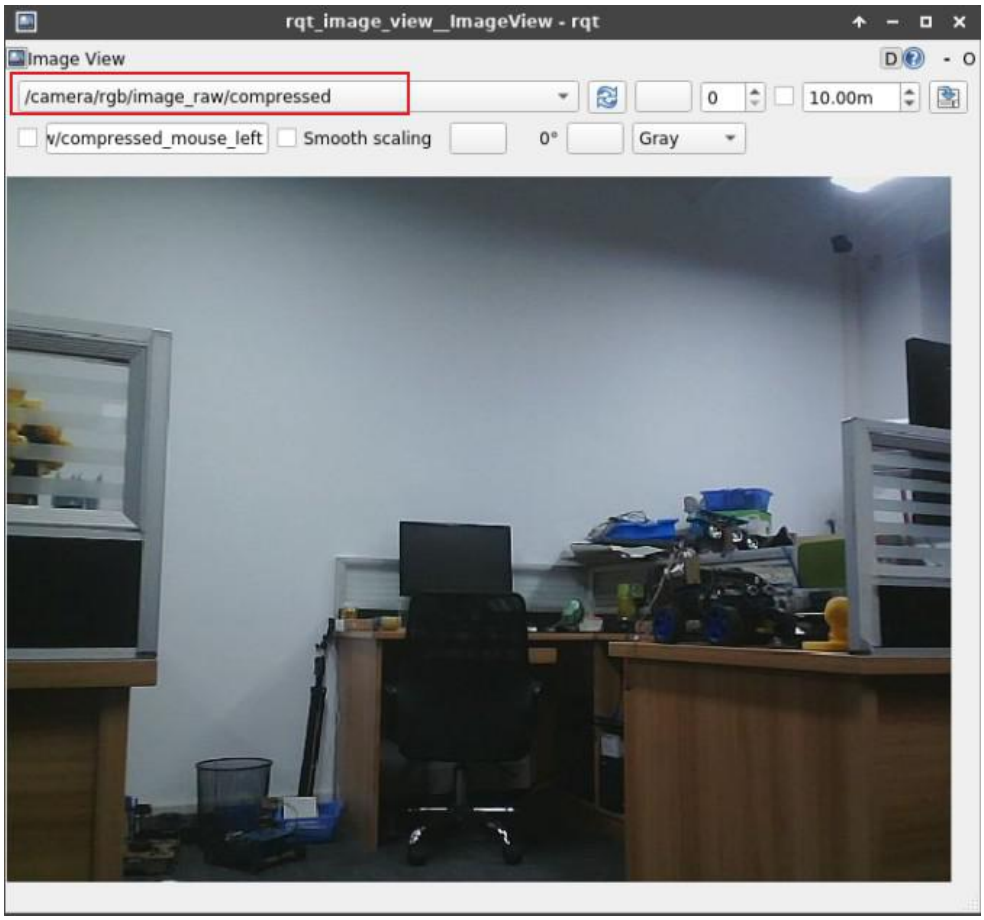
```
rosrun image_view image_view image:=/Image topic nodes, for example:

rosrun image_view image_view image:=/camera/depth/image_raw
```



rat_image_view

Terminal input rat_image_view, select an image topic



Web monitoring

Environment build

```
sudo apt-get install ros-$ROS_DISTRO-async-web-server-cpp ros-$ROS_DISTRO-web-video-server ros-$ROS_DISTRO-usb-cam
```

Start camera

```
roslaunch astra_camera astrapro.launch    # Astra
```

Start web_video_server

```
rosrun web_video_server web_video_server
```

View

Local web browser viewing
http://localhost:8080/
Must be in the same LAN, other devices can view
http://192.168.2.103:8080/
(192.168.2.103 is the IP address of the master)
Note: It is recommended to use Google Chrome or mobile QQ browser, other browsers may not be able to open the image