

Install Astra ROS package on RDK-X3

Operating environment: **RDk-X3**Ubuntu20.04 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 libsfm1-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

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

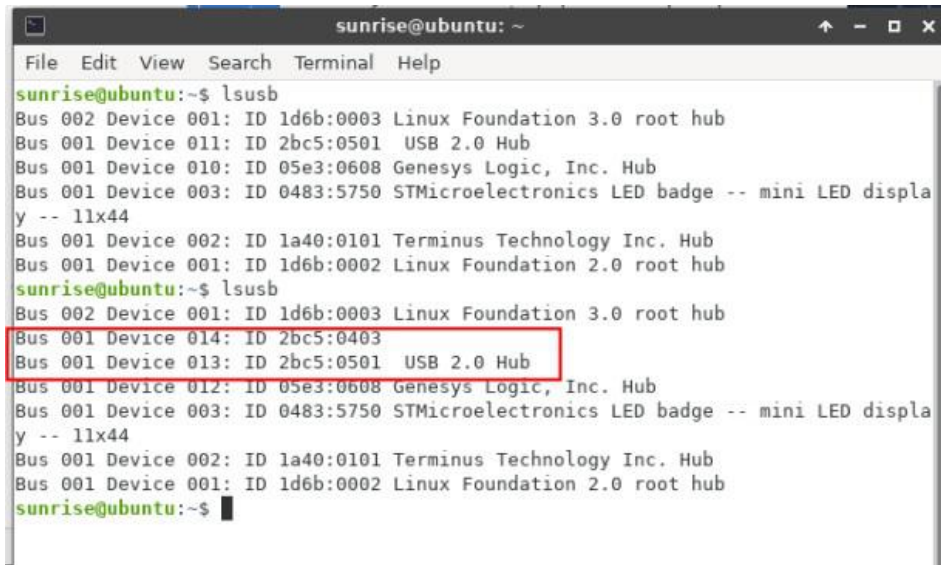
6. Compile with catkin_make

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

7. Start the Astra pro camera

```
lsusb
```

```
roslaunch astra_camera astrapro.launch
```



```
sunrise@ubuntu: ~  
File Edit View Search Terminal Help  
sunrise@ubuntu:~$ lsusb  
Bus 002 Device 001: ID 1d6b:0003 Linux Foundation 3.0 root hub  
Bus 001 Device 011: ID 2bc5:0501 USB 2.0 Hub  
Bus 001 Device 010: ID 05e3:0608 Genesys Logic, Inc. Hub  
Bus 001 Device 003: ID 0483:5750 STMicroelectronics LED badge -- mini LED display -- 11x44  
Bus 001 Device 002: ID 1a40:0101 Terminus Technology Inc. Hub  
Bus 001 Device 001: ID 1d6b:0002 Linux Foundation 2.0 root hub  
sunrise@ubuntu:~$ lsusb  
Bus 002 Device 001: ID 1d6b:0003 Linux Foundation 3.0 root hub  
Bus 001 Device 014: ID 2bc5:0403  
Bus 001 Device 013: ID 2bc5:0501 USB 2.0 Hub  
Bus 001 Device 012: ID 05e3:0608 Genesys Logic, Inc. Hub  
Bus 001 Device 003: ID 0483:5750 STMicroelectronics LED badge -- mini LED display -- 11x44  
Bus 001 Device 002: ID 1a40:0101 Terminus Technology Inc. Hub  
Bus 001 Device 001: ID 1d6b:0002 Linux Foundation 2.0 root hub  
sunrise@ubuntu:~$
```

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.

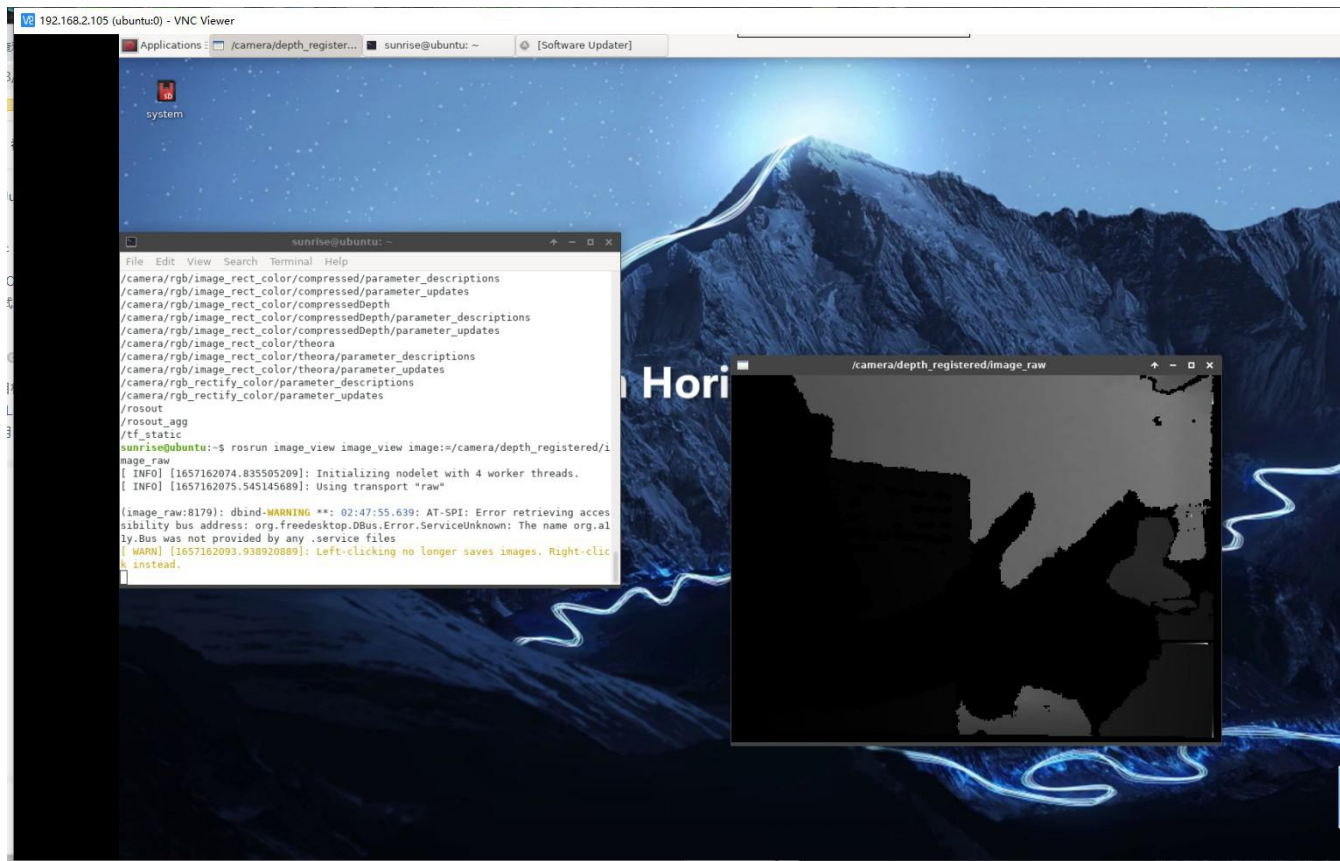
```
sunrise@ubuntu:~$ rostopic list  
/camera/camera_nodelet_manager/bond  
/camera/camera_rgb/parameter_descriptions  
/camera/camera_rgb/parameter_updates  
/camera/depth/camera_info  
/camera/depth/image  
/camera/depth/image/compressed  
/camera/depth/image/compressed/parameter_descriptions  
/camera/depth/image/compressed/parameter_updates  
/camera/depth/image/compressedDepth  
/camera/depth/image/compressedDepth/parameter_descriptions  
/camera/depth/image/compressedDepth/parameter_updates  
/camera/depth/image/theora  
/camera/depth/image/theora/parameter_descriptions  
/camera/depth/image/theora/parameter_updates  
/camera/depth/image_raw  
/camera/depth/image_raw/compressed  
/camera/depth/image_raw/compressed/parameter_descriptions  
/camera/depth/image_raw/compressed/parameter_updates  
/camera/depth/image_raw/compressedDepth  
/camera/depth/image_raw/compressedDepth/parameter_descriptions  
/camera/depth/image_raw/compressedDepth/parameter_updates
```

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

image_view

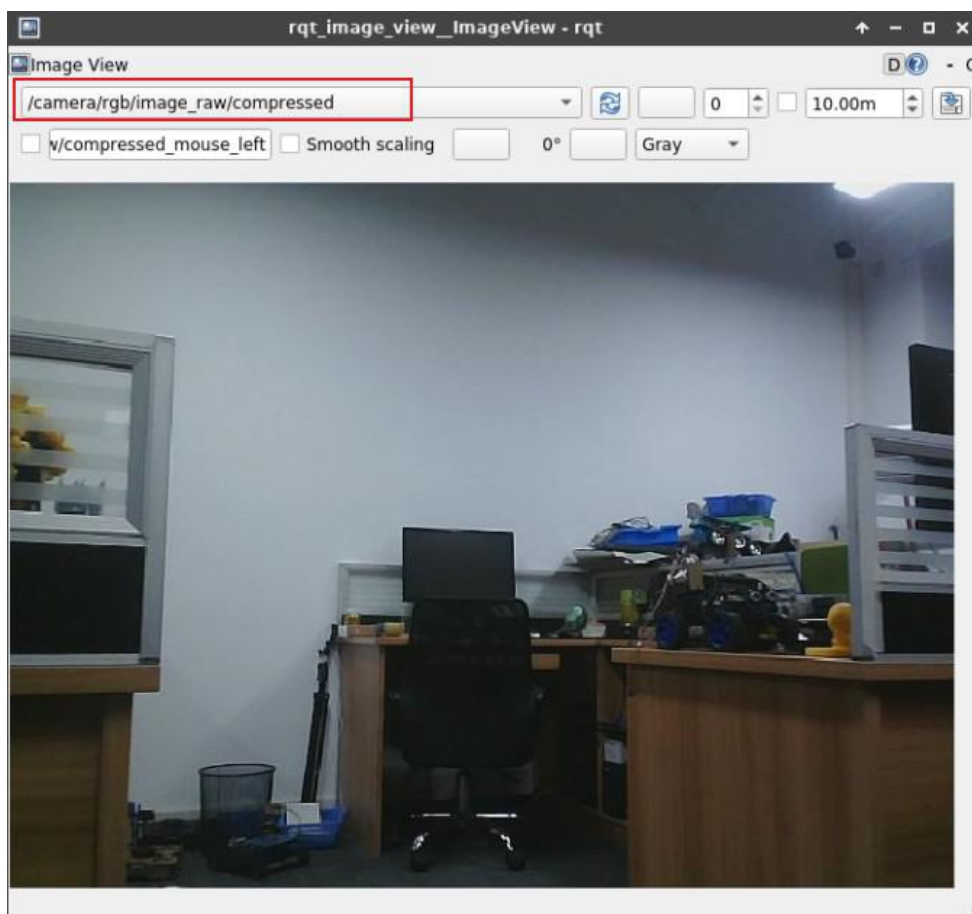
```
roslaunch image_view image_view image:=/Image topic nodes, for example:
```

```
roslaunch 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

```
roslaunch 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