1. Environment Construction

Note: The environment of the supporting virtual machine has been built, so there is no need to build it again. Here is the work that needs to be done on a new motherboard or a new virtual machine.

The configuration of the virtual machine environment is as follows:

Ubuntu20.04 + ROS-Noetic+ OpenCV 4.2+Python3.8

1.1. Install related dependencies

Terminal input,

```
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
```

1.2. Create a ROS workspace

Take the creation of a workspace named orbbec_ws in the ~ directory as an example.

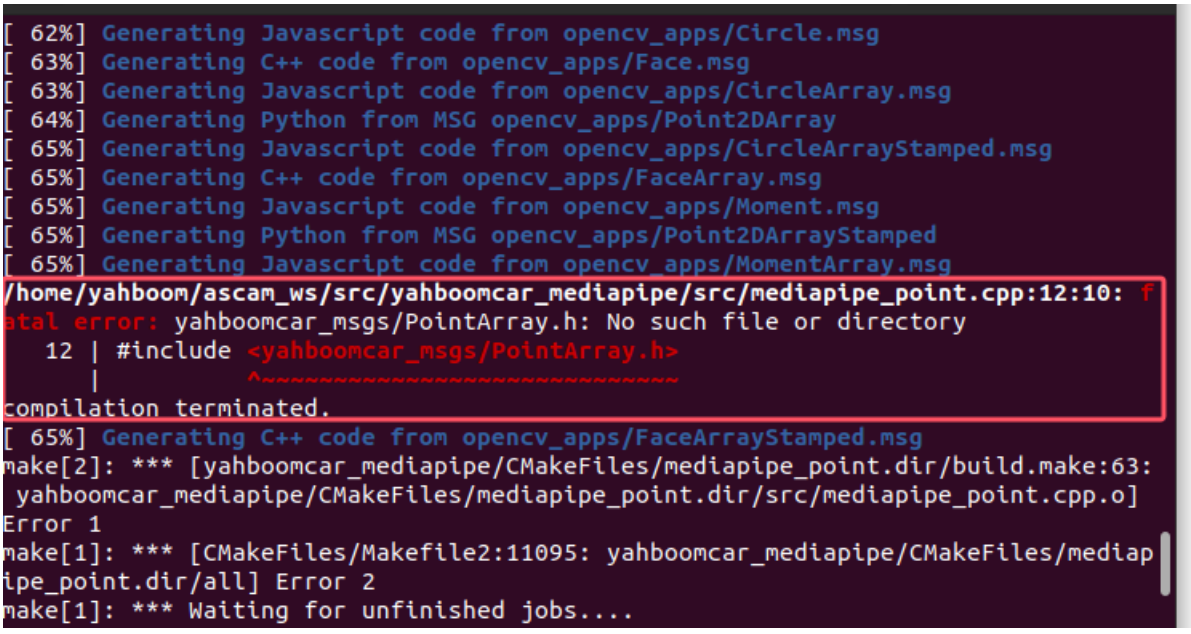
Input in terminal,

```
mkdir -p ~/ascam_ws/src
```

Unzip the source code folder, copy the folder in src to ~/ascam_ws/src, and then input the following command to compile,

```
cd ~/ascam_ws
catkin_make
```

If the following error appears during compilation, please run the compilation command several times. Until the compilation is successful.



After the compilation is complete, enter the following command to open and edit the ~/.bashrc file,

```
echo "source ~/ascam_ws/devel/setup.bash" >> ~/.bashrc
```

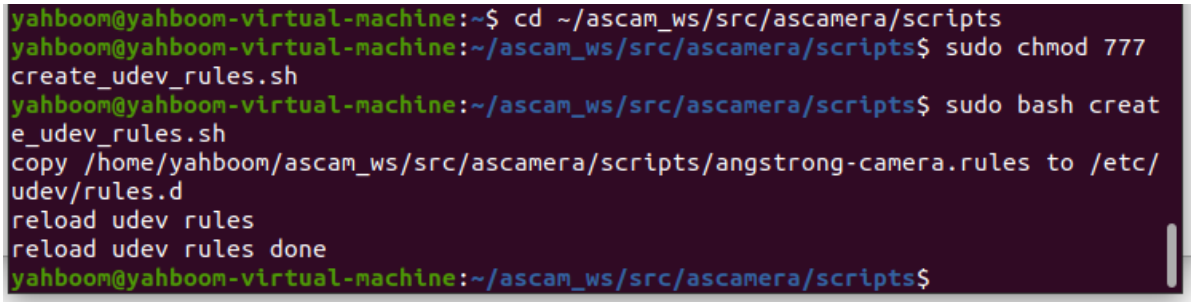
Refresh the environment,

```
source ~/.bashrc
```

1.3, Install the camera udev rule file

Terminal input,

```
cd ~/ascam_ws/src/ascamera/scripts
sudo chmod 777 create_udev_rules.sh
sudo bash create_udev_rules.sh
```

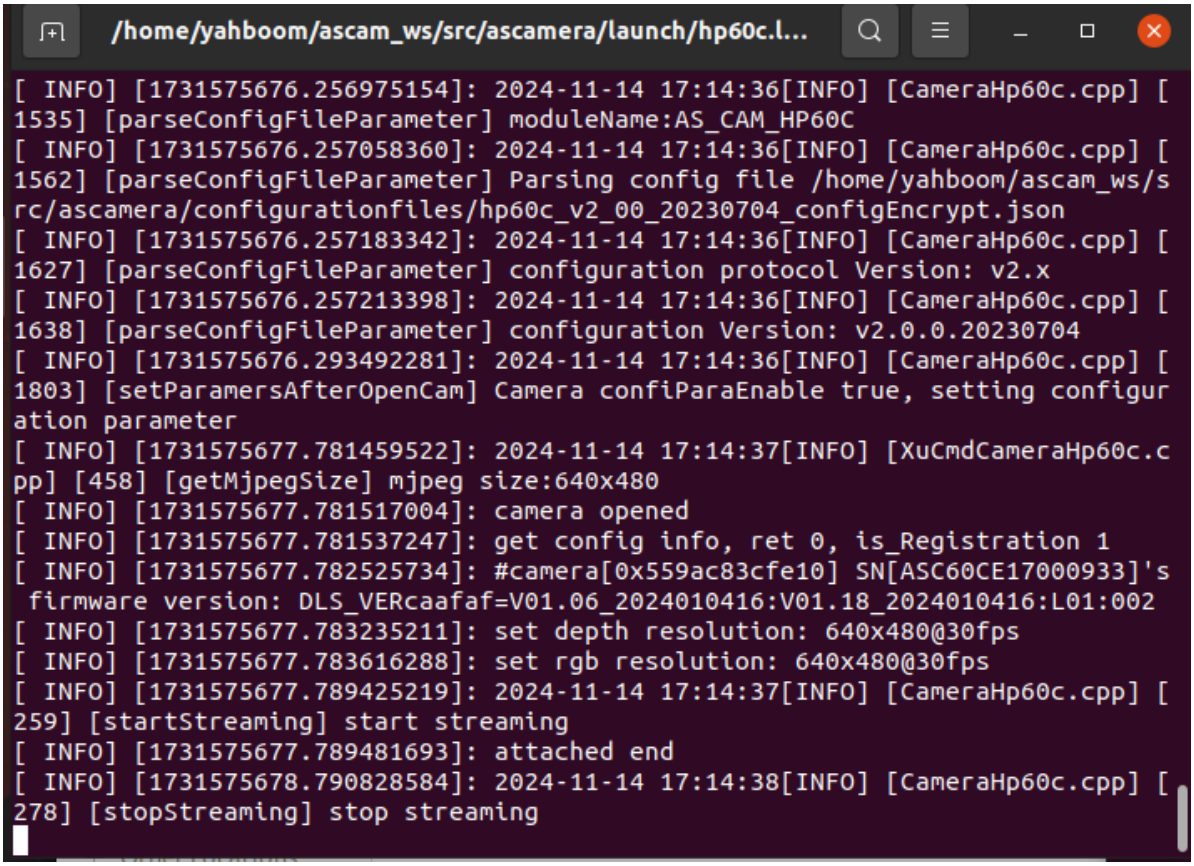


The above picture indicates that the installation is successful. After the installation is complete, it is best to restart.

1.4, Use the camera

Terminal input,

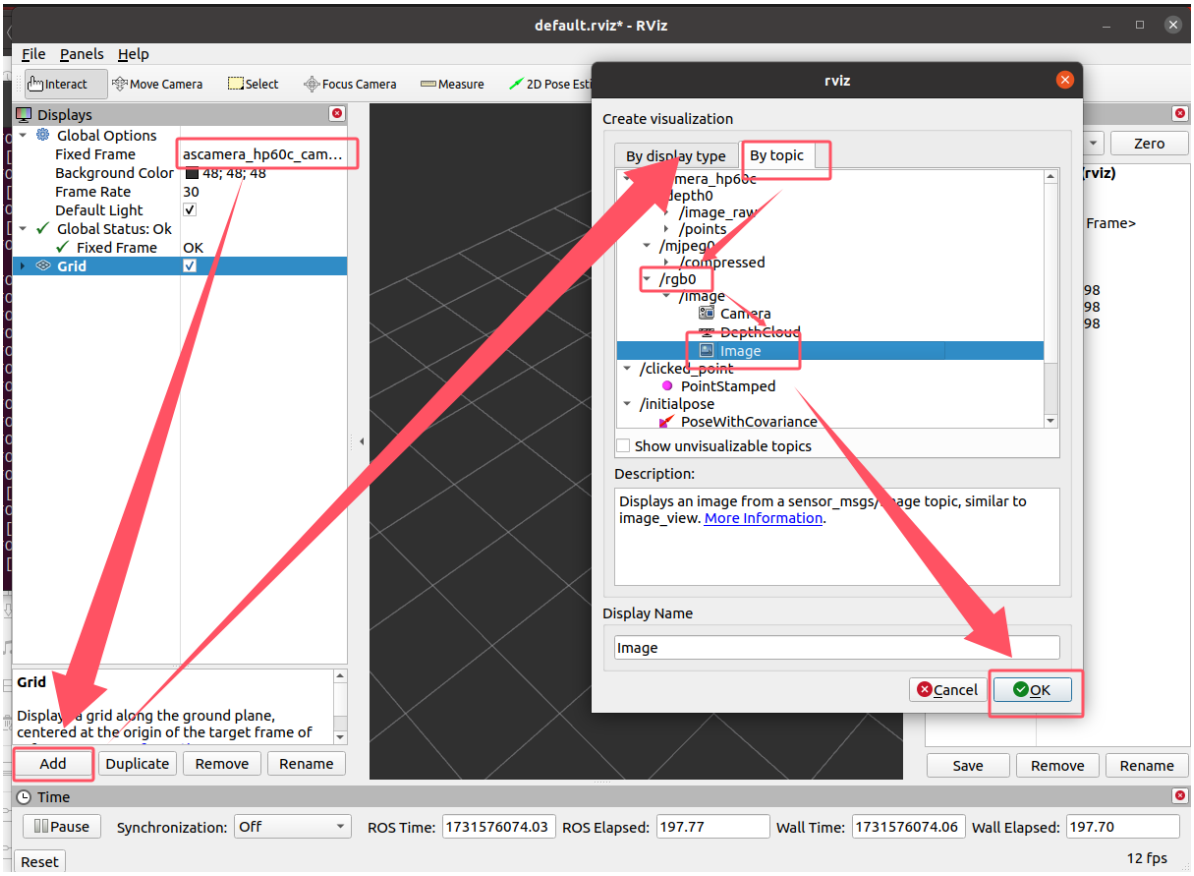
```
#Start the camera
roslaunch ascamera hp60c.launch
```



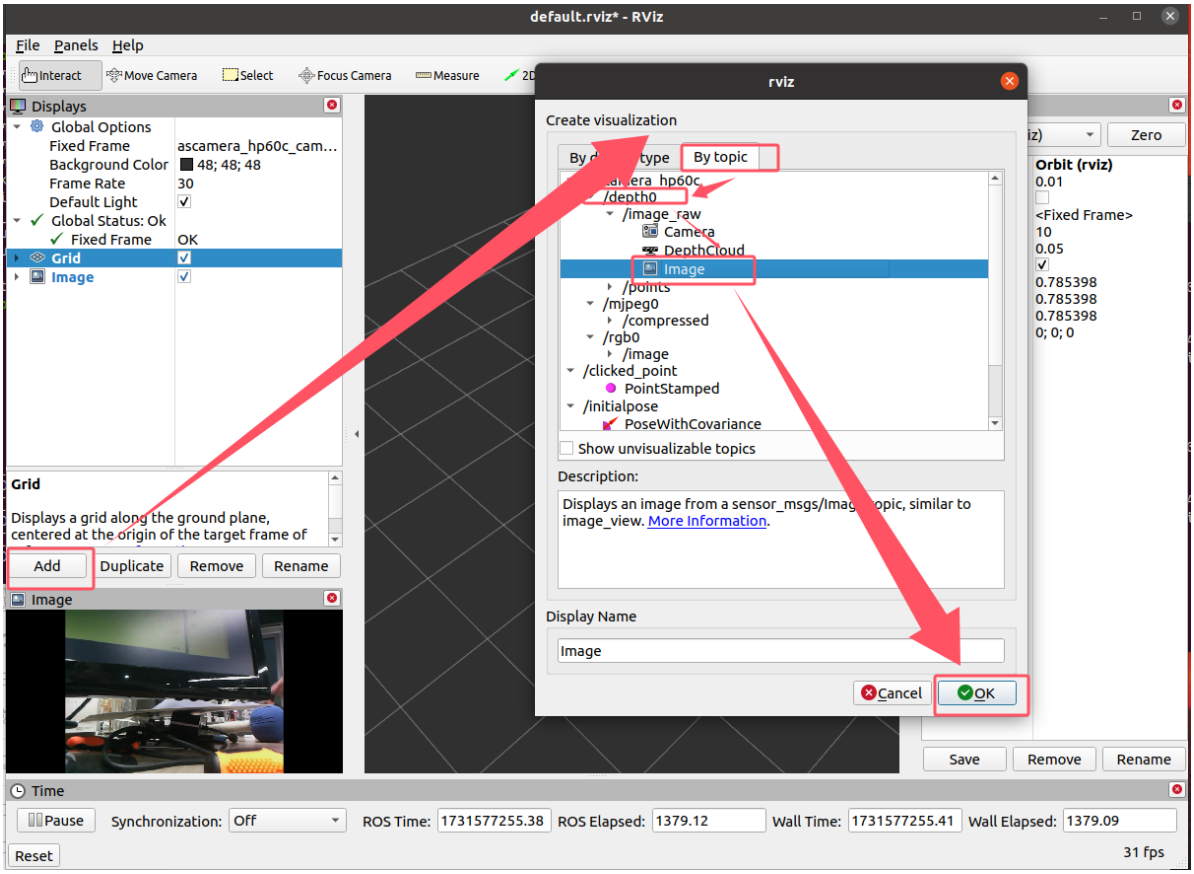
Use rviz to view the image, then open a terminal and input,

```
rviz
```

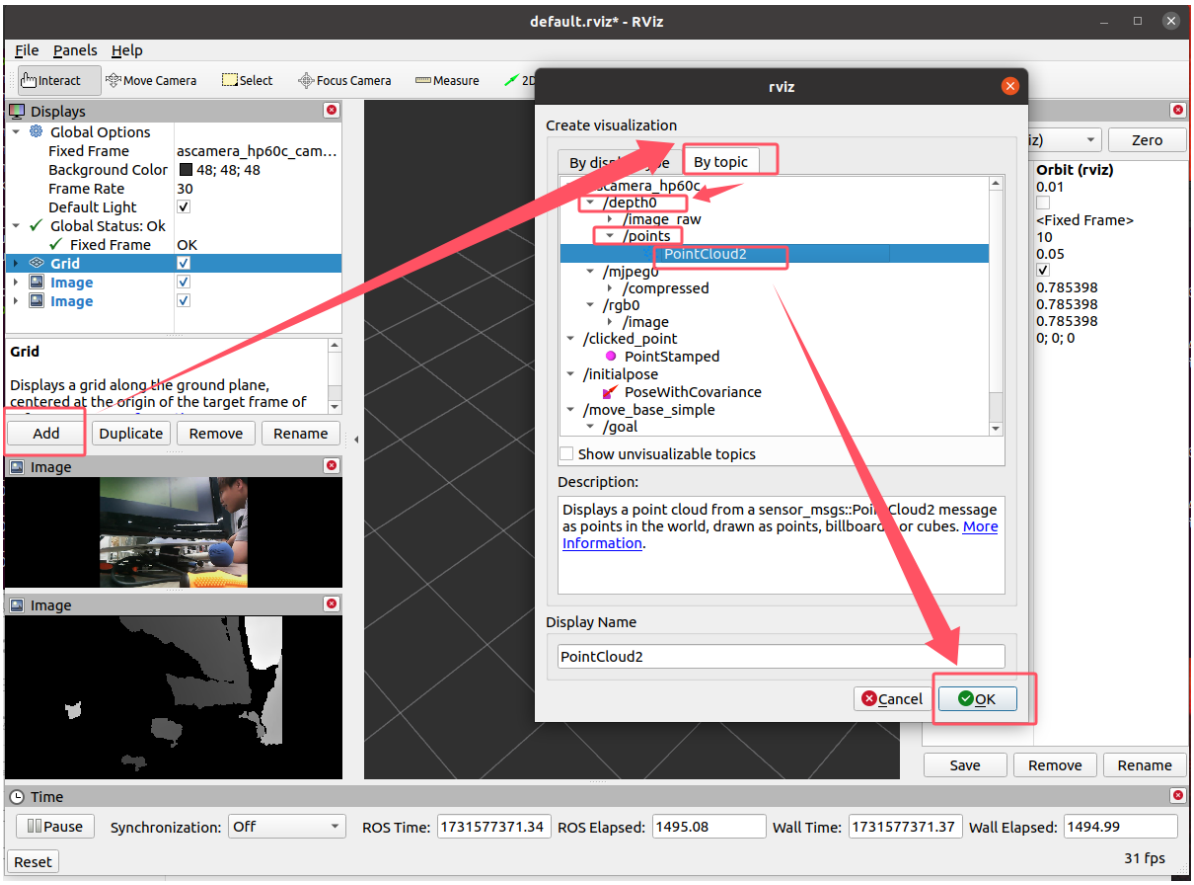
Change Fixed Frame to ascamera_hp60c_camera_link_0, then add the Image display plug-in as shown in the figure below, and select the color image display in the Image Topic column: **/ascamera_hp60c/rgb0/image**

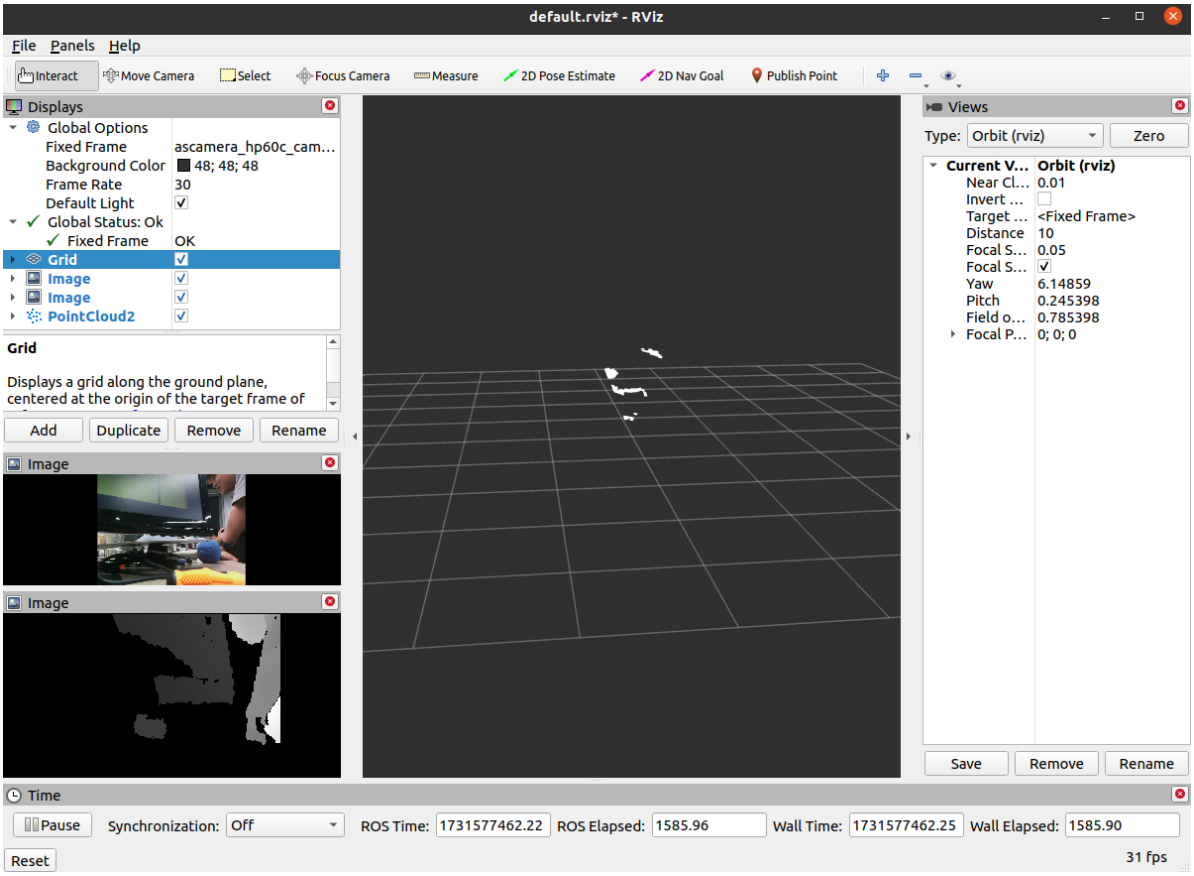


As shown below, also in Image Select the depth image to be displayed in the Topic column: **/ascamera_hp60c/depth/image_raw**



View the depth point cloud




default.rviz* - RViz
File Panels Help
Interact
Move Camera
Select
Focus Camera
Measure
2D Pose Estimate
2D Nav Goal
Publish Point
Displays
Global Options
Fixed Frame
ascamera_hp60c_cam...
Background Color
48; 48; 48
Frame Rate
30
Default Light
Global Status: Ok
Fixed Frame
OK
Grid
Image
Image
PointCloud2
Grid
Displays a grid along the ground plane, centered at the origin of the target frame of
Add
Duplicate
Remove
Rename
Image
Image
Views
Type:
Orbit (rviz)
Zero
Current V...
Orbit (rviz)
Near Cl...
0.01
Invert ...
Target ...
<Fixed Frame>
Distance
10
Focal S...
0.05
Focal S...
Yaw
6.14859
Pitch
0.245398
Field o...
0.785398
Focal P...
0; 0; 0
Save
Remove
Rename
Time
Pause
Synchronization:
Off
ROS Time:
1731577462.22
ROS Elapsed:
1585.96
Wall Time:
1731577462.25
Wall Elapsed:
1585.90
Reset
31 fps