

2、环境搭建

注：配套的虚拟机已经搭建好环境，无需要再做搭建。这里是说明在新的主板或者虚拟机上搭建需要进行的工作。

虚拟机环境的配置如下：

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

2.1、安装相关依赖

终端输入，

```
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
```

2.2、创建ROS工作空间

以在~目录下，建立名为orbbsc_ws的工作空间为例。

终端输入，

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

解压""源码""文件夹，把其中的src里面的文件夹复制到~/ascam_ws/src下，然后输入以下命令进行编译，

```
cd ~/ascam_ws
catkin_make
```

编译时出现以下报错，请多运行几次编译命令。直到编译成功。

```
[ 62%] Generating Javascript code from opencv_apps/Circle.msg
[ 63%] Generating C++ code from opencv_apps/Face.msg
[ 63%] Generating Javascript code from opencv_apps/CircleArray.msg
[ 64%] Generating Python from MSG opencv_apps/Point2DArray
[ 65%] Generating Javascript code from opencv_apps/CircleArrayStamped.msg
[ 65%] Generating C++ code from opencv_apps/FaceArray.msg
[ 65%] Generating Javascript code from opencv_apps/Moment.msg
[ 65%] Generating Python from MSG opencv_apps/Point2DArrayStamped
[ 65%] Generating Javascript code from opencv_apps/MomentArray.msg
/home/yahboom/ascam_ws/src/yahboomcar_mediapipe/src/mediapipe_point.cpp:12:10: fatal error: yahboomcar_msgs/PointArray.h: No such file or directory
 12 | #include <yahboomcar_msgs/PointArray.h>
    |
compilation terminated.
[ 65%] Generating C++ code from opencv_apps/FaceArrayStamped.msg
make[2]: *** [yahboomcar_mediapipe/CMakeFiles/mediapipe_point.dir/build.make:63: yahboomcar_mediapipe/CMakeFiles/mediapipe_point.dir/src/mediapipe_point.cpp.o] Error 1
make[1]: *** [CMakeFiles/Makefile2:11095: yahboomcar_mediapipe/CMakeFiles/mediapipe_point.dir/all] Error 2
make[1]: *** Waiting for unfinished jobs....
```

编译完成后，输入以下命令，打开编辑~/.bashrc文件，

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

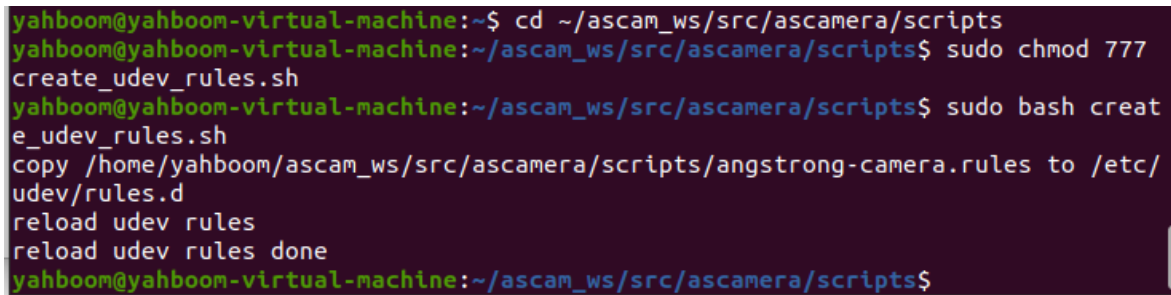
重新刷新环境,

```
source ~/.bashrc
```

2.3、安装相机udev规则文件

终端输入,

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

A terminal window screenshot showing the execution of the create_udev_rules.sh script. The user is in the directory ~/ascam_ws/src/ascamera/scripts. The script performs the following actions: sets permissions of create_udev_rules.sh to 777, copies the file to /etc/udev/rules.d, reloads the udev rules, and reports 'reload udev rules done'.

```
yahboom@yahboom-virtual-machine:~$ cd ~/ascam_ws/src/ascamera/scripts  
yahboom@yahboom-virtual-machine:~/ascam_ws/src/ascamera/scripts$ sudo chmod 777  
create_udev_rules.sh  
yahboom@yahboom-virtual-machine:~/ascam_ws/src/ascamera/scripts$ sudo bash creat  
e_udev_rules.sh  
copy /home/yahboom/ascam_ws/src/ascamera/scripts/angstrong-camera.rules to /etc/  
udev/rules.d  
reload udev rules  
reload udev rules done  
yahboom@yahboom-virtual-machine:~/ascam_ws/src/ascamera/scripts$
```

出现上图代表安装成功。安装结束后，最好是重启一下。

2.4、使用相机

终端输入,

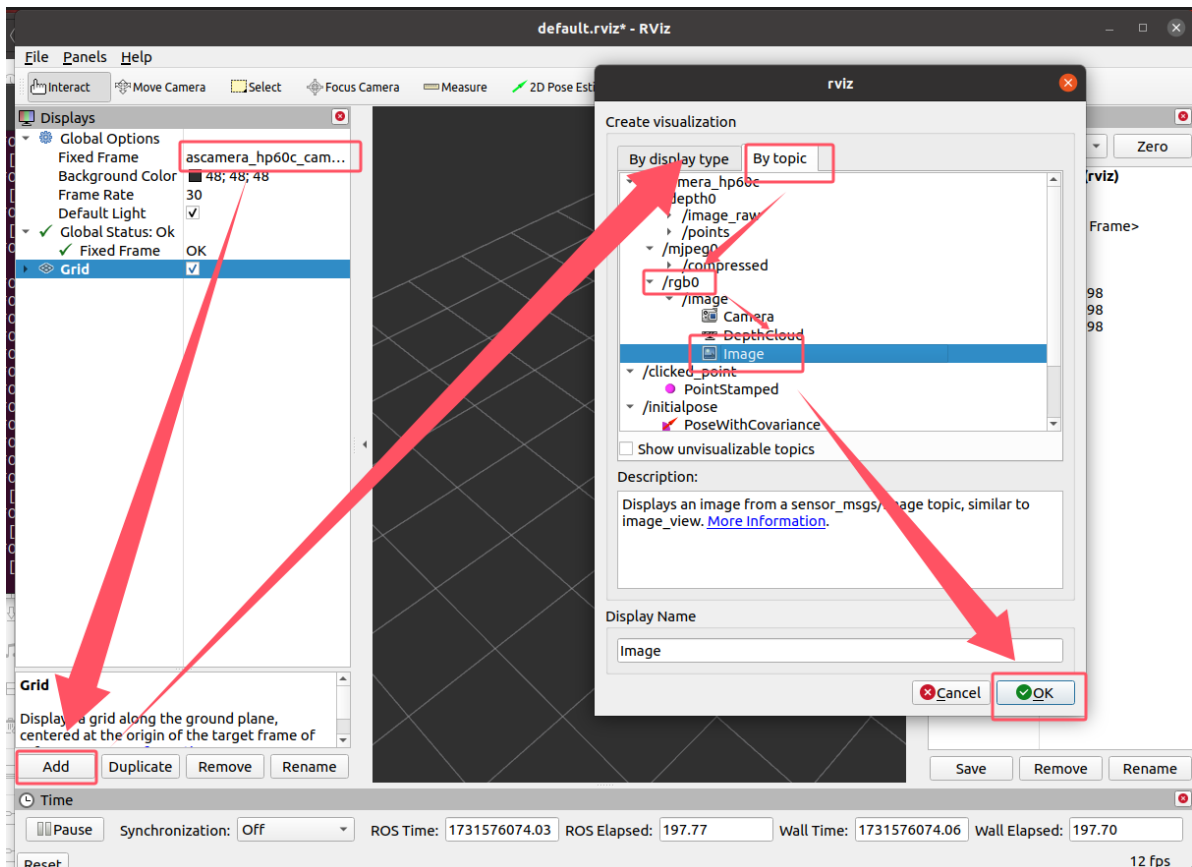
```
#启动相机  
roslaunch ascamera hp60c.launch
```

```
/home/yahboom/ascam_ws/src/ascamera/launch/hp60c.l...
[ INFO] [1731575676.256975154]: 2024-11-14 17:14:36[INFO] [CameraHp60c.cpp] [
1535] [parseConfigFileParameter] moduleName:AS_CAM_HP60C
[ INFO] [1731575676.257058360]: 2024-11-14 17:14:36[INFO] [CameraHp60c.cpp] [
1562] [parseConfigFileParameter] Parsing config file /home/yahboom/ascam_ws/s
rc/ascamera/configurationfiles/hp60c_v2_00_20230704_configEncrypt.json
[ INFO] [1731575676.257183342]: 2024-11-14 17:14:36[INFO] [CameraHp60c.cpp] [
1627] [parseConfigFileParameter] configuration protocol Version: v2.x
[ INFO] [1731575676.257213398]: 2024-11-14 17:14:36[INFO] [CameraHp60c.cpp] [
1638] [parseConfigFileParameter] configuration Version: v2.0.0.20230704
[ INFO] [1731575676.293492281]: 2024-11-14 17:14:36[INFO] [CameraHp60c.cpp] [
1803] [setParametersAfterOpenCam] Camera configParaEnable true, setting configur
ation parameter
[ INFO] [1731575677.781459522]: 2024-11-14 17:14:37[INFO] [XuCmdCameraHp60c.c
pp] [458] [getMjpegSize] mjpeg size:640x480
[ INFO] [1731575677.781517004]: camera opened
[ INFO] [1731575677.781537247]: get config info, ret 0, is_Registration 1
[ INFO] [1731575677.782525734]: #camera[0x559ac83cfe10] SN[ASC60CE17000933]'s
firmware version: DLS_VERcaafaf=V01.06_2024010416:V01.18_2024010416:L01:002
[ INFO] [1731575677.783235211]: set depth resolution: 640x480@30fps
[ INFO] [1731575677.783616288]: set rgb resolution: 640x480@30fps
[ INFO] [1731575677.789425219]: 2024-11-14 17:14:37[INFO] [CameraHp60c.cpp] [
259] [startStreaming] start streaming
[ INFO] [1731575677.789481693]: attached end
[ INFO] [1731575678.790828584]: 2024-11-14 17:14:38[INFO] [CameraHp60c.cpp] [
278] [stopStreaming] stop streaming
```

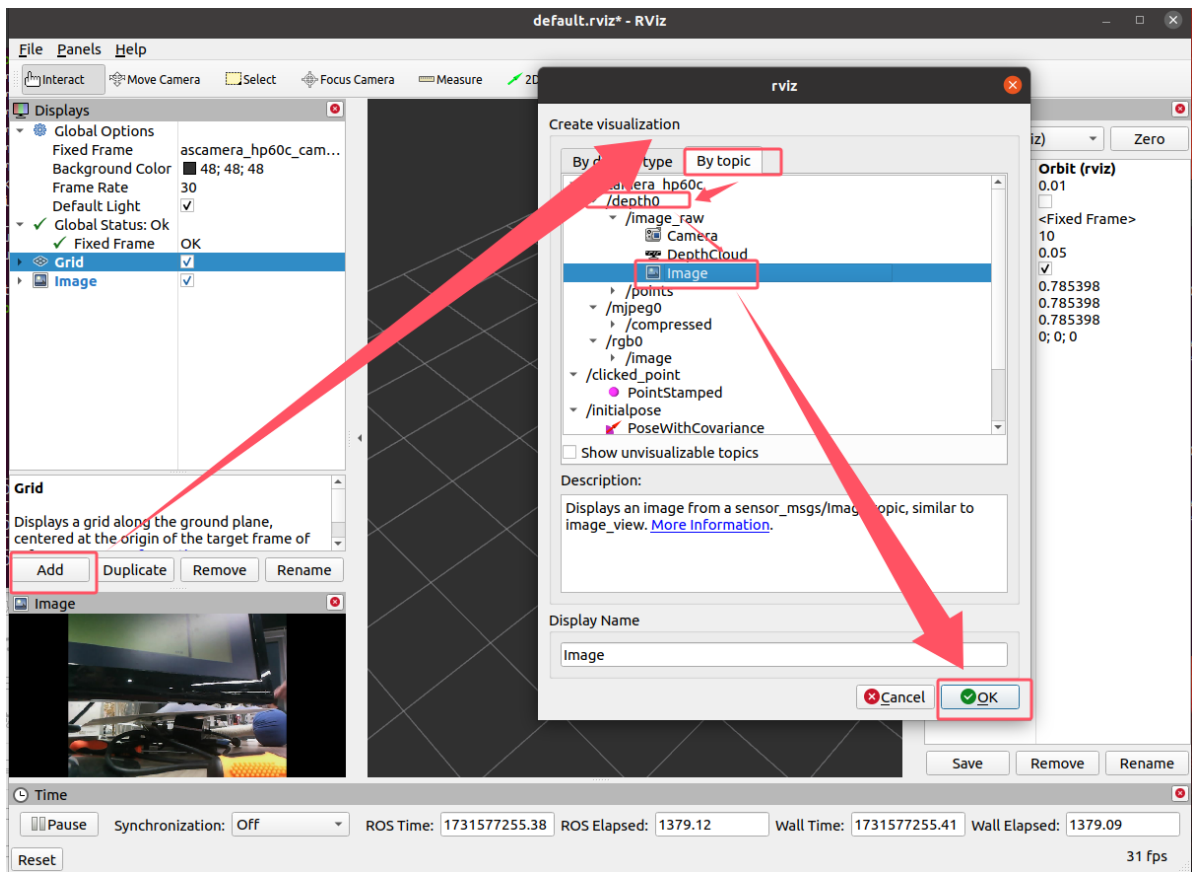
使用rviz查看图像，再打开一个终端输入，

```
rviz
```

把Fixed Frame修改成ascamera_hp60c_camera_link_0，然后按下图所示，添加Image显示插件，在Image Topic栏选择显示彩色图像:/ascamera_hp60c/rgb0/image



如下图，同样在Image Topic栏选择显示深度图像:/ascamera_hp60c/depth/image_raw



查看深度点云

