

hyperci_tof_camera ros sdk

1. 环境

sdk 在 ubuntu 16.04 环境下编译运行，ros 版本为 kinetic，包含一个预编译的第三方库 mosquito。

2. 编译

(1)安装 ros, catkin 等工具。

(2)解压缩 tof_SDK4.zip，进入[path]/tof_SDK4 文件夹，可以 source 路径之后直接运行。编译的话，删除 build 和 devel 文件夹，在终端 catkin_make 即可。

(3) hyperci_tof_camera.launch 中有配置节点默认参数，如 ip 地址，是否自动传输等等。

3. 运行

(1)设备默认 ip 为 192.168.99.33，电脑须将网卡配置为 192.168.99.*网段的其他 ip，如 192.168.99.65 等等，并更改网关，同时关闭无线或其他有线链接。将设备网口接入电脑，设备上电。成功链接的话，可以在终端 ping 通 192.168.99.33。

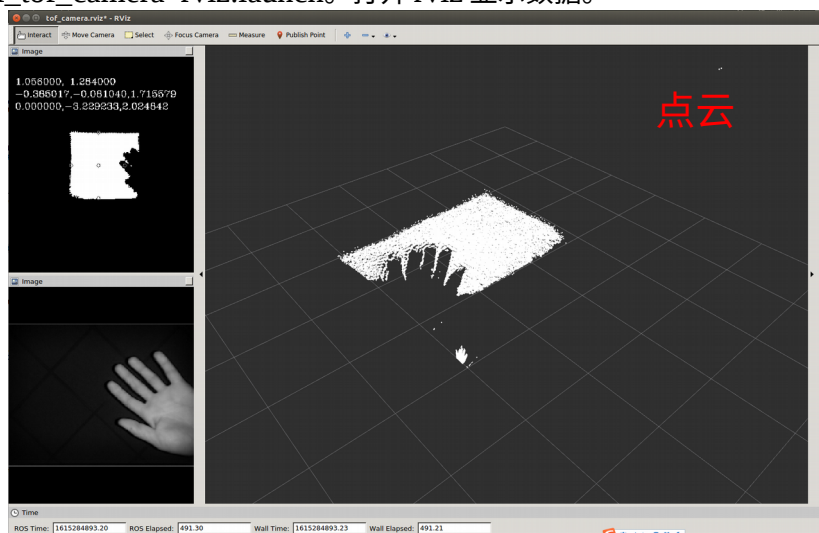
(2)打开终端，进入[path]/tof_SDK4 文件夹，执行 source ./devel/setup.bash，再执行 roslaunch hyperci_tof_camera hyperci_tof_camera.launch。运行成功的话，会如下图所示。上面是在 launch 文件中配置的参数，底下出现 connect succeeded

```
=====  
PARAMETERS  
* /hyperci_tof_camera/auto_start: False  
* /hyperci_tof_camera/data_translation: 100  
* /hyperci_tof_camera/fps: 10  
* /hyperci_tof_camera/ip: 192.168.99.33  
* /rostdistro: kinetic  
* /rosversion: 1.12.17  
  
NODES  
/  
  hyperci_tof_camera (hyperci_tof_camera/hyperci_tof_camera)  
  
auto-starting new master  
process[master]: started with pid [31523]  
ROS_MASTER_URI=http://localhost:11311  
  
setting /run_id to 09afeff2-80bf-11eb-b759-68f72893cc60  
process[rosout-1]: started with pid [31536]  
started core service [/rosout]  
process[hyperci_tof_camera-2]: started with pid [31544]  
/home/chq/tof_SDK4/devel/lib/hyperci_tof_camera/hyperci_tof_camera: /home/chq/tof_SDK4/src/hyperci_tof_camera/3rdparty/mosquito-1.4.9/lib/libmosquito.so.1: no version information available (required by /home/chq/tof_SDK4/devel/lib/hyperci_tof_camera/hyperci_tof_camera)  
Connect succeeded
```

(3) 打开终端，进入[path]/tof_SDK4 文件夹，执行 source ./devel/setup.bash，再执行 roslaunch hyperci_tof_camera rviz.launch。打开 rviz 显示数据。

盒状物
尺寸及
位姿

灰度图



(4) 打开终端，进入[path]/tof_SDK4 文件夹，执行 source ./devel/setup.bash。

执行 rosservice list 可以查看开启的 rosservice，主要包括

- data_translation，需要传输的数据，可选择传输点云和灰度图，前方盒状物体的尺寸和位姿。
- start_translate，开始传输。
- end_translate，结束传输。
- ip_address，修改设备 ip
- fps，修改设备 fps，尚未完成

如果第(3)步开启 rviz 之后无数据显示，手动开始传输就可以了

```
chq@chq-ThinkPad-T450s: ~/tof_SDK4
File Edit View Search Terminal Help
chq@chq-ThinkPad-T450s:~/tof_SDK4$ source ./devel/setup.bash
chq@chq-ThinkPad-T450s:~/tof_SDK4$ rosservice list
/boxfront_img/compressed/set_parameters
/boxfront_img/compressedDepth/set_parameters
/boxfront_img/theora/set_parameters
/data_translation
/end_translate
/fps
/gray_img/compressed/set_parameters
/gray_img/compressedDepth/set_parameters
/gray_img/theora/set_parameters
/hyperct_tof_camera/camera_rviz/get_loggers
/hyperct_tof_camera/camera_rviz/reload_shaders
/hyperct_tof_camera/camera_rviz/set_logger_level
/hyperct_tof_camera/get_loggers
/hyperct_tof_camera/set_logger_level
/ip_address
/rosout/get_loggers
/rosout/set_logger_level
/start_translate
chq@chq-ThinkPad-T450s:~/tof_SDK4$ rosservice call /start_translate "start: true"
success: True
chq@chq-ThinkPad-T450s:~/tof_SDK4$ rosservice call /data_translation "data_translation: '111'"
success: True
chq@chq-ThinkPad-T450s:~/tof_SDK4$ rosservice call /end_translate "end: true"
success: True
chq@chq-ThinkPad-T450s:~/tof_SDK4$ rosservice call /start_translate "start: true"
success: True
chq@chq-ThinkPad-T450s:~/tof_SDK4$
```

(5) 打开终端，进入[path]/tof_SDK4 文件夹，执行 source ./devel/setup.bash。

执行 rostopic list 可以查看开启的 topic。rostopic echo /box_size_and_pose 输出 前方盒状物体的尺寸和位姿。

```
chq@chq-ThinkPad-T450s: ~/tof_SDK4
File Edit View Search Terminal Help
xyz: [0.007545942906290293, -0.06789190322160721, 1.707463264465332]
rpy: [0.0, -2.865915060043335, 0.6943530440330505]
---
^Cchq@chq-ThinkPad-T450s:~/tof_SDK4$ rostopic list
/box_size_and_pose
/boxfront_img
/boxfront_img/compressed
/boxfront_img/compressed/parameter_descriptions
/boxfront_img/compressed/parameter_updates
/boxfront_img/compressedDepth
/boxfront_img/compressedDepth/parameter_descriptions
/boxfront_img/compressedDepth/parameter_updates
/boxfront_img/theora
/boxfront_img/theora/parameter_descriptions
/boxfront_img/theora/parameter_updates
/clicked_point
/gray_img
/gray_img/compressed
/gray_img/compressed/parameter_descriptions
/gray_img/compressed/parameter_updates
/gray_img/compressedDepth
/gray_img/compressedDepth/parameter_descriptions
/gray_img/compressedDepth/parameter_updates
/gray_img/theora
/gray_img/theora/parameter_descriptions
/gray_img/theora/parameter_updates
/point_cloud
/rosout
/rosout_agg
/tf
/tf_static
chq@chq-ThinkPad-T450s:~/tof_SDK4$
```

```
chq@chq-ThinkPad-T450s: ~/tof_SDK4
File Edit View Search Terminal Help
/gray_img/compressedDepth/parameter_descriptions
/gray_img/compressedDepth/parameter_updates
/gray_img/theora
/gray_img/theora/parameter_descriptions
/gray_img/theora/parameter_updates
/point_cloud
/rosout
/rosout_agg
/tf
/tf_static
chq@chq-ThinkPad-T450s:~/tof_SDK4$ rostopic echo /box_size_and_pose
u: 1848.0
v: 1284.0
xyz: [0.00755629688501358, -0.069244883954525, 1.7085790634155273]
rpy: [0.0, -2.908722400665283, 0.7025629281997681]
---
u: 1848.0
v: 1284.0
xyz: [0.007076951675117016, -0.06953988969326019, 1.7084877490997314]
rpy: [0.0, -2.9719831943511963, 0.6875966787338257]
---
u: 1836.0
v: 1284.0
xyz: [0.006653260439634323, -0.07126990705728531, 1.7093605995178223]
rpy: [0.0, -3.2278904914855957, 0.7129543423652649]
```

4. 说明

(1)如果编译或运行时找不到 mosquito 库，则修改 CMakeLists.txt 中 177 和 183 行 mosquito 库路径