CARTOGRAPHER安装

Cartographer简介

Cartographer是一个提供多平台和多传感器配置下完成2D和3D下的SLAM(实时地图构建和定位)系统.同时google也提供了ROS下的集成.

Cartographer安装

安装所有依赖项

```
sudo apt-get install -y google-mock libboost-all-dev  libeigen3-dev libgflags-dev libgoogle-glog-dev liblua5.2-dev libprotobuf-dev  libsuitesparse-dev libwebp-dev ninja-build protobuf-compiler python-sphinx  ros-kinetic-tf2-eigen libatlas-base-dev libsuitesparse-dev liblapack-dev
```

安装Ceres Solover

- 在Home下新建一个Car文件夹以备后面使用
- 获取cere-solver开源代码

```
1. git clone https://github.com/hitcm/ceres-solver-1.11.0.git
```

- 在ceres-solover-1.11.0下创建build文件夹，并进入build文件夹

```
2. cd ceres-solver-1.11.0
3. mkdir build
4. cd ceres-solver-1.11.0/build
```

- 编译

```
5. cmake ..
6. make
```

- 安装

```
7. sudo make install
```

安装Cartographer

- 回退到Car文件夹中
- 获取cartographer的开源代码

```
1. git clone https://github.com/hitcm/cartographer.git
```

- 在cartographer下创建build文件夹，并进入build文件夹

```
2. cd cartographer
3. mkdir build
4. cd build
```

- 编译并测试

```
5. cmake .. -G Ninja
6. ninja
7. nijia test
```

- 安装

```
8. sudo make install
```

安装Cartographer_ros

- 回退到Car文件夹
- 安装wstool和rosdep

```
1. sudo apt-get update
2. sudo apt-get install -y python-wstool python-rosdep ninja-build
```

- 创建catkin_ws文件夹并初始化src

```
3. mkdir catkin_ws
4. cd catkin_ws
5. wstol init src
```

- 进入src

```
6. cd src
```

- 获取cartographer_ros的源码

```
7. git clone https://github.com/hitcm/cartographer_ros.git
```

- 回退到catkin*ws文件夹并运行catkim*make

```
8. cd ..
9. catkin_make
```

Cartographer测试

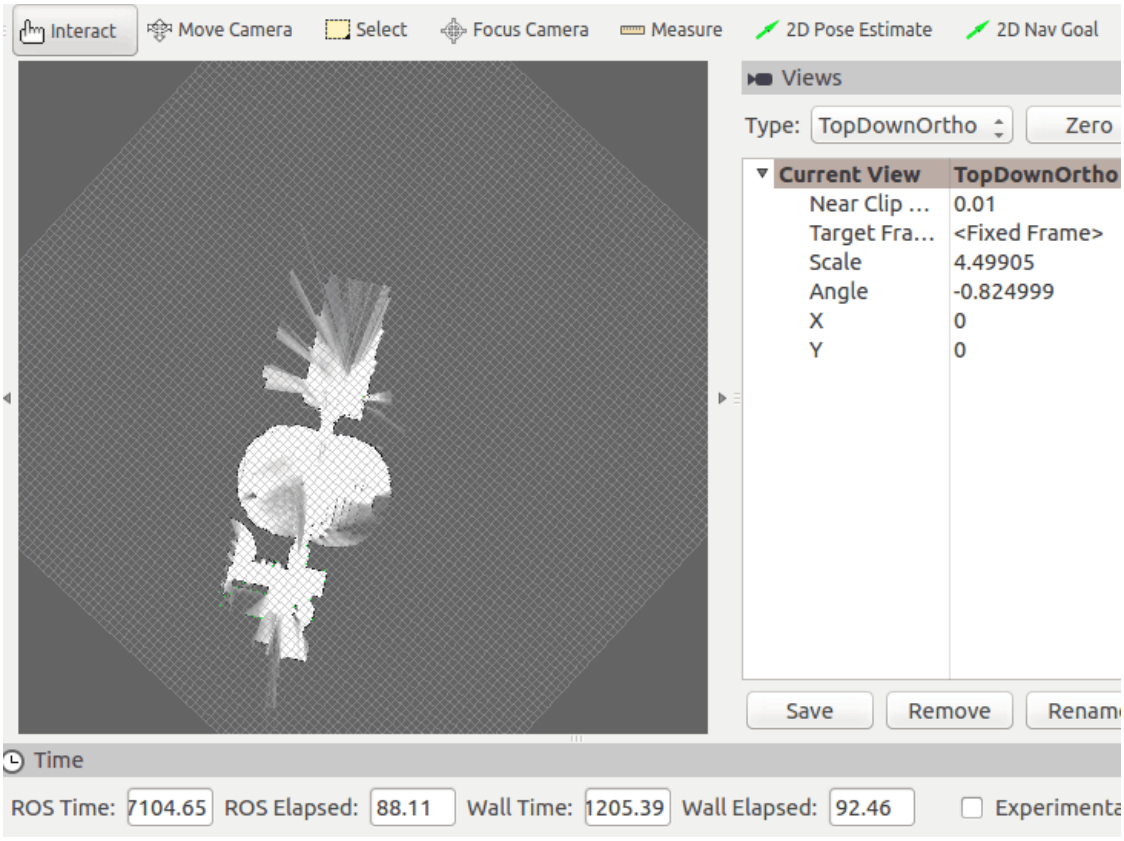
- 将2d数据包放置在home文件夹下
- 配置catkin_ws

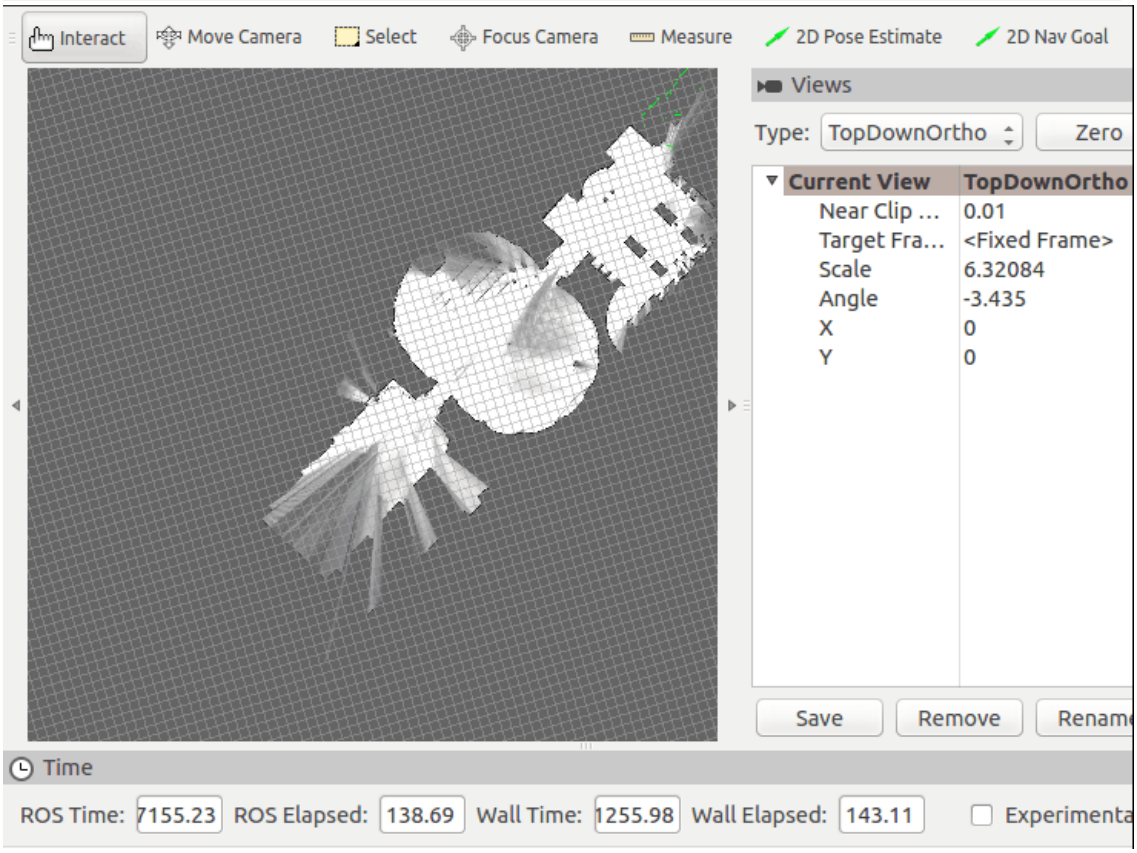
```
1. source ~/catkin_ws/devel/setup.bash
2. rospack profile
```

- 运行数据包

```
3. roslaunch cartographer_ros demo_backpack_2d.launch
bag_filename:=${HOME}/Downloads/cartographer_paper_deutsches_museum.bag
```

- 结果


Interact
Move Camera
Select
Focus Camera
Measure
2D Pose Estimate
2D Nav Goal
Views
Type: TopDownOrtho
Zero
Current View
TopDownOrtho
Near Clip ...
0.01
Target Fra...
<Fixed Frame>
Scale
4.49905
Angle
-0.824999
X
0
Y
0
Save
Remove
Time
ROS Time: 7104.65
ROS Elapsed: 88.11
Wall Time: 1205.39
Wall Elapsed: 92.46


Interact
Move Camera
Select
Focus Camera
Measure
2D Pose Estimate
2D Nav Goal
Views
Type: TopDownOrtho
Zero
Current View
TopDownOrtho
Near Clip ...
0.01
Target Fra...
<Fixed Frame>
Scale
6.32084
Angle
-3.435
X
0
Y
0
Save
Remove
Time
ROS Time: 7155.23
ROS Elapsed: 138.69
Wall Time: 1255.98
Wall Elapsed: 143.11