

思岚雷达ROS2

注意：本节支持雷达的型号有：A1/A2/A3/S1/S2；A1/A2<115200>、A3/S1<256000>和S2<1000000>之间的波特率不同。

思岚雷达ROS2

- 1、重新映射USB串口
- 2、终端测试;
- 3、rviz2可视化测试
- 4、gmapping建图测试

ROS 2官网：<https://docs.ros.org/>

激光雷达ROS2：<https://www.slamtec.com/cn/Support#rplidar-a-series>

激光雷达官网：<http://www.slamtec.com/cn/Support>

设备：pc；A1M8

环境：Ubuntu18.04；ROS2（eloquent）

新建工作空间

```
mkdir -p my_ws/src
```

使用该雷达时，每次执行命令均需进入到工作空间下

```
cd ~/my_ws
```

将【silanlidar_ros2.zip】功能包解压后放入自己的工作空间src文件夹下，在工作空间下打开终端

```
colcon build          # 编译
source install/setup.bash # 更新环境
```

注意：每一次新打开的终端均需要【更新环境】，每次修改功能包里面的代码均需重新【编译】再【更新环境】。

1、重新映射USB串口

该步骤需要在slidar_ros2功能包scripts文件夹下，执行安装 USB 端口重映射命令

```
cd ~/my_ws/src/slilar_ros2/scripts
sudo chmod 777 *
./createudevrules.sh
```

使用以下命令查看修改重映射

```
ls -l /dev | grep ttyUSB
```

```
yahboom@pc: ~74x18
yahboom@pc:~$ ls -l /dev | grep ttyUSB
lrwxrwxrwx 1 root root 7 4月 28 10:41 rplidar -> ttyUSB0
crwxrwxrwx 1 root dialout 188, 0 4月 28 10:41 ttyUSB0
yahboom@pc:~$
```

2、终端测试;

第一步，启动相对应的雷达

```
ros2 launch sllidar_ros2 sllidar_launch.py # RPLIDAR A1/A2
ros2 launch sllidar_ros2 sllidar_a3_launch.py # RPLIDAR A3
ros2 launch sllidar_ros2 sllidar_s1_launch.py # RPLIDAR S1
ros2 launch sllidar_ros2 sllidar_s2_launch.py # RPLIDAR S2
```

第二步，启动测试应用程序

```
roslaunch rplidar_ros rplidarNodeClient
```

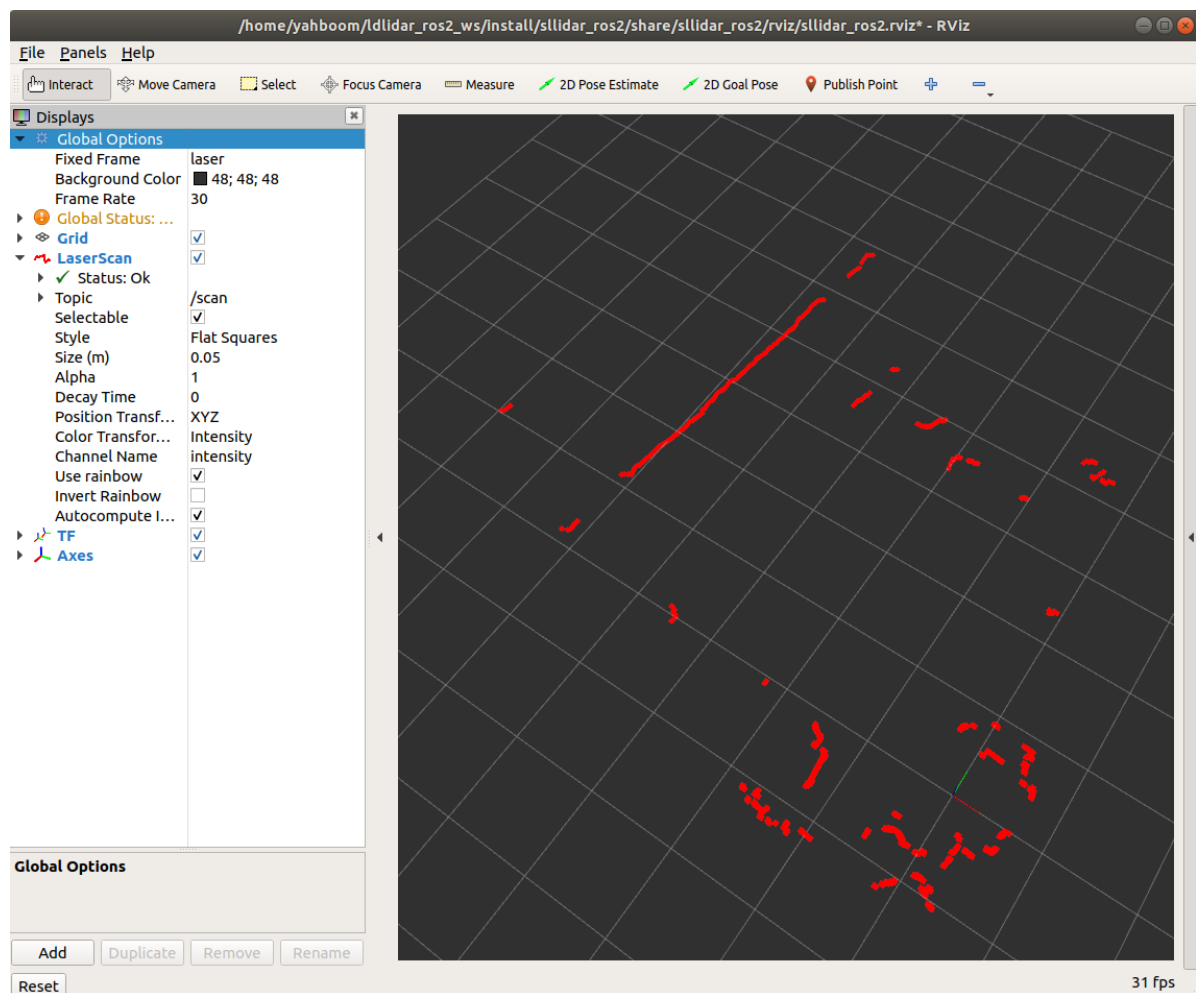
您应该在控制台中看到 rplidar 的扫描结果

```
yahboom@pc: ~89x45
[SLLIDAR INFO]: angle-distance : [14.307703, 0.133000]
[SLLIDAR INFO]: angle-distance : [14.640415, inf]
[SLLIDAR INFO]: angle-distance : [14.973127, inf]
[SLLIDAR INFO]: angle-distance : [15.305840, inf]
[SLLIDAR INFO]: angle-distance : [15.638565, inf]
[SLLIDAR INFO]: angle-distance : [15.971277, inf]
[SLLIDAR INFO]: angle-distance : [16.303989, inf]
[SLLIDAR INFO]: angle-distance : [16.636702, inf]
[SLLIDAR INFO]: angle-distance : [16.969414, inf]
[SLLIDAR INFO]: angle-distance : [17.302139, inf]
[SLLIDAR INFO]: angle-distance : [17.634851, inf]
[SLLIDAR INFO]: angle-distance : [17.967564, inf]
[SLLIDAR INFO]: angle-distance : [18.300276, inf]
[SLLIDAR INFO]: angle-distance : [18.633001, inf]
[SLLIDAR INFO]: angle-distance : [18.965714, inf]
[SLLIDAR INFO]: angle-distance : [19.298426, inf]
[SLLIDAR INFO]: angle-distance : [19.631138, inf]
[SLLIDAR INFO]: angle-distance : [19.963863, inf]
[SLLIDAR INFO]: angle-distance : [20.296576, inf]
[SLLIDAR INFO]: angle-distance : [20.629288, inf]
[SLLIDAR INFO]: angle-distance : [20.962000, inf]
[SLLIDAR INFO]: angle-distance : [21.294727, inf]
[SLLIDAR INFO]: angle-distance : [21.627439, inf]
[SLLIDAR INFO]: angle-distance : [21.960152, inf]
[SLLIDAR INFO]: angle-distance : [22.292864, inf]
[SLLIDAR INFO]: angle-distance : [22.625589, inf]
[SLLIDAR INFO]: angle-distance : [22.958302, inf]
```

3、rviz2可视化测试

```
ros2 launch sllidar_ros2 view_sllidar_launch.py # RPLIDAR A1/A2
ros2 launch sllidar_ros2 view_sllidar_a3_launch.py # RPLIDAR A3
ros2 launch sllidar_ros2 view_sllidar_s1_launch.py # RPLIDAR S1
ros2 launch sllidar_ros2 view_sllidar_s2_launch.py # RPLIDAR S2
```

您应该在 rviz2 中看到雷达的扫描结果



注意：【Fixed Frame】坐标系、【LaserScan】的话题要与发布的一致。

4、gmapping建图测试

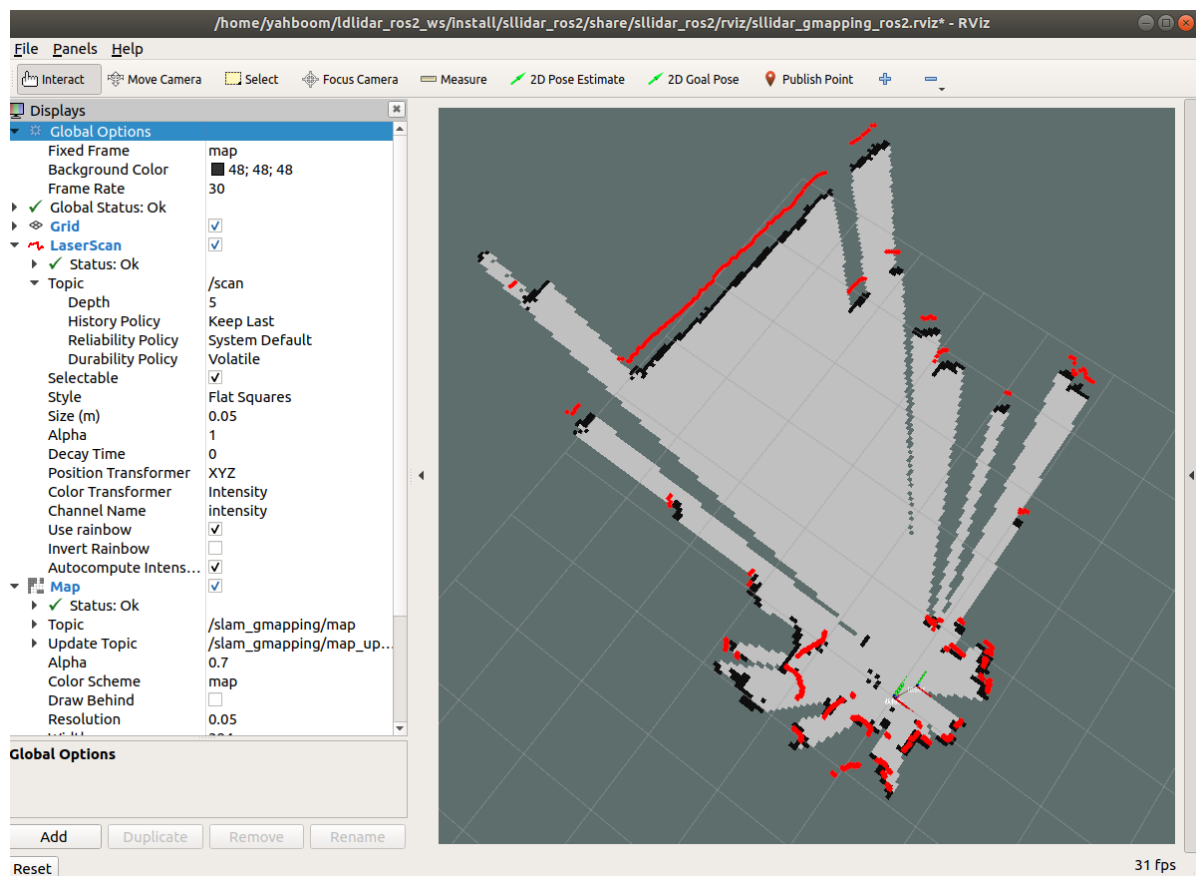
第一步，启动相对应的雷达

```
ros2 launch sllidar_ros2 sllidar_launch.py    # RPLIDAR A1/A2
ros2 launch sllidar_ros2 sllidar_a3_launch.py # RPLIDAR A3
ros2 launch sllidar_ros2 sllidar_s1_launch.py  # RPLIDAR S1
ros2 launch sllidar_ros2 sllidar_s2_launch.py  # RPLIDAR S2
```

第二步，启动gmapping建图

```
ros2 launch sllidar_ros2 gmapping_launch.py    # 其他
ros2 launch sllidar_ros2 gmapping_s2_launch.py # S2
```

您应该在 rviz2 中看到建图结果



注意：【Fixed Frame】坐标系、【LaserScan】的话题、【map】的话题要与发布的一致。