

How to use M2M2lidar

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Lidar technology support Email : support@slamtec.com

Lidar wiki: <http://wiki.ros.org/rplidar>

Lidar SDK: https://github.com/Slamtec/rplidar_sdk

Lidar ROS: https://github.com/Slamtec/rplidar_ros

Lidar tutorials: https://github.com/robopeak/rplidar_ros/wiki

Lidar website: <http://www.slamtec.com/cn/Support>

RoboStudio website: <https://www.slamtec.com/cn/RoboStudio>

1、 Overview

Slamtec Mapper, a brand-new lidar category that integrates map building and real-time positioning, includes Slamtec's third-generation high-performance SLAM engine and lidar. It does not require any external dependencies and is ready to use when powered on.

It is suitable for robot navigation and positioning, environmental surveying and mapping, handheld surveying and many other fields.

Slamtec Mapper does not need to provide any additional support, just a USB power supply line, power on and start working.

Built-in AP/Station dual-mode WiFi, and 100M Ethernet interface. The map and location data generated by Slamtec Mapper can be obtained in real time through the supporting mobile APP.

3、 RoboStudio test

Test tool download link: <https://www.slamtec.com/cn/RoboStudio>

3.1、Install

Double-click robostudio icon to install, and continue to the next step until the installation is complete.

Place the SLAMTEC MAPPER radar on a flat surface, connect the power cord to the SLAMTEC MAPPER power interface, and use 5V power supply.

When the radar starts normally, turn on the wireless network adapter of your computer, and you will see the hot spot SLAMWARE-XXXXXX ". Please connect the computer to "SLWAMWARE-XXXXXX" without a password.

3.2、Open

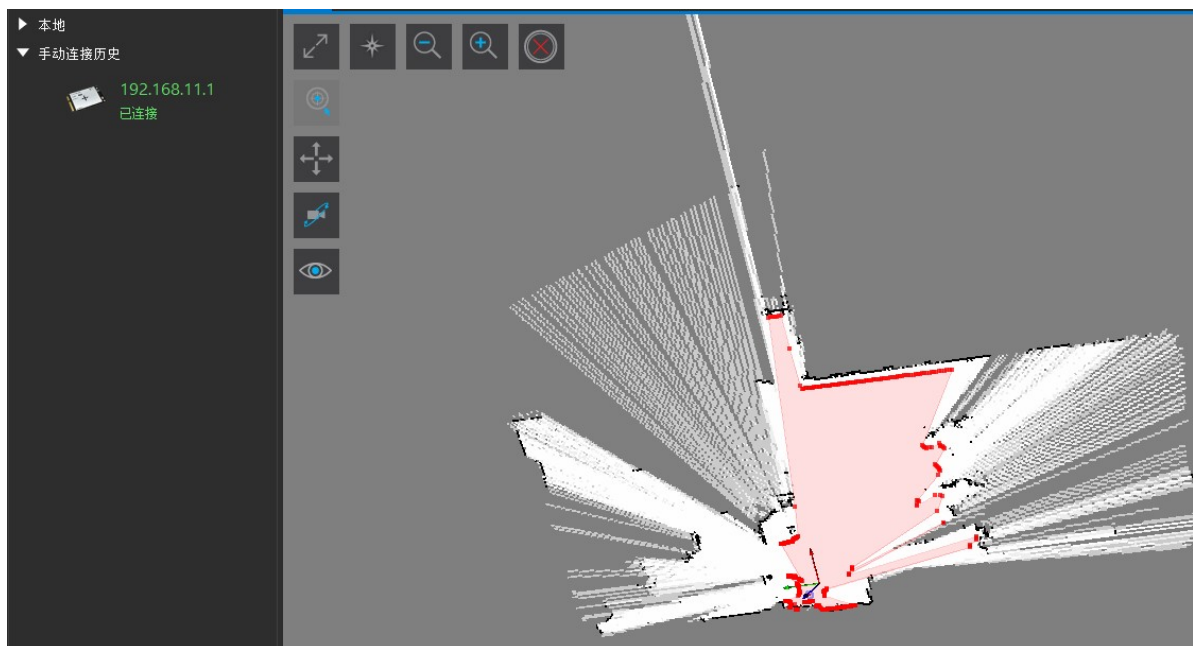
Open RoboStudio, if the system prompts that the server cannot be found, we can ignore this error.

3.3、Connect

Choose manual connect.

Connect SLAMWARE, input IP 【192.168.11.1】 port 【1445】 , click 【connect】 .

3.4、Built-in mapping function



4、Use of ROS feature pack

- Operating environment

Operating system: Ubuntu 18.04 LTS

ROS version: melodic

Device: PC

Hardware requirements: In order to use the ROS SDK, you need a Slamware-based mobile robot, open and configure a suitable IP address. After the slamware_ros_sdk_server_node node is started, it will try to connect to the robot.

- Directory Structure

Contents	Explanation
src	Source code
--slamware_ros_sdk	ROS SDK package
--slamware_sdk	SDK related header files and library files
--slamware_ros_sample	Several routines based on slamware_ros_sdk

4.1、 Create a workspace

Extract 【slamware_ws】 file.

```
cd ~/slamware_ws          # Enter the workspace
catkin_make                # Compile
source devel/setup.bash    # Configure the workspace system environment
```

4.2、 Start node

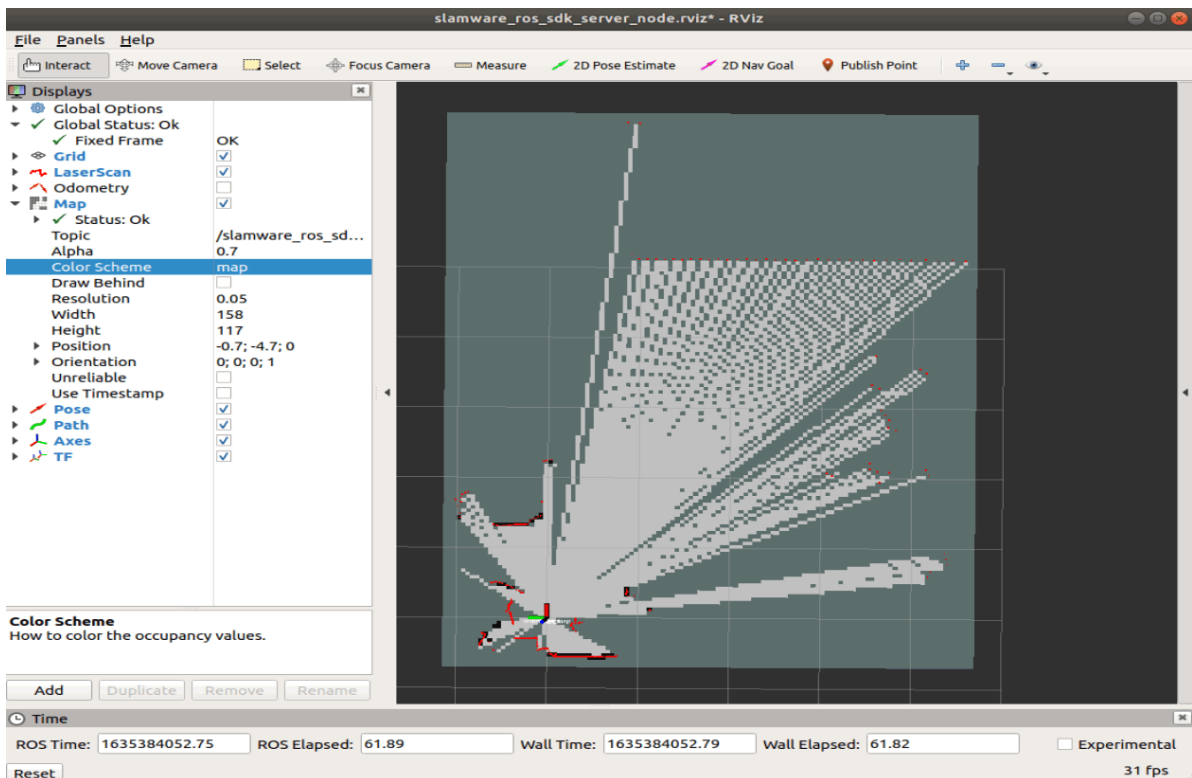
[Source devel/setup.bash] must be executed before starting the following command.

If the mobile robot is in AP mode, connect to the robot's WIFI and start the node

```
roslaunch slamware_ros_sdk slamware_ros_sdk_server_node.launch
ip_address:=192.168.11.1
```

View by rviz

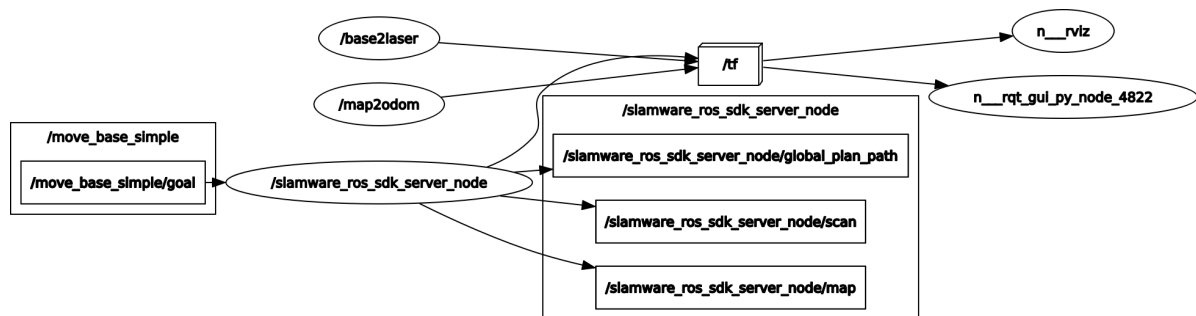
```
roslaunch slamware_ros_sdk view_slamware_ros_sdk_server_node.launch
```



4.3、View related information

- View node

```
roslaunch rqt_graph rqt_graph
```



- View tf tree

```
roslaunch rqt_tf_tree rqt_tf_tree
```

Recorded at time: 1635383811.32

slamware_map

**Broadcaster: /slamware_ros_sdk_server_node
Average rate: 28.837
Buffer length: 1.318
Most recent transform: 1635383811.36
Oldest transform: 1635383810.04**

odom

**Broadcaster: /slamware_ros_sdk_server_node
Average rate: 19.869
Buffer length: 1.258
Most recent transform: 1635383811.3
Oldest transform: 1635383810.04**

base_link

**Broadcaster: /base2laser
Average rate: 19.353
Buffer length: 1.292
Most recent transform: 1635383811.4
Oldest transform: 1635383810.11**

laser