


A-LOAM mapping

1、Radar configuration

Enter the command in the terminal and press the Enter key:

```
sudo nano ~/aloam/src/vanjee_lidar_v2.4/src/config/config.yaml
```

Taking my car as an example, the Jetson nano's IP is 10.168.1.100 and the radar IP is 10.168.1.68, so modify it as shown in the picture below.



```
ros_send_imu_topic: wlr_720/imu
imu_frame_id: wlr_720
ros_send_point_cloud_topic: wlr_720/cloud_points
point_frame_id: wlr_720
proto:
  lidar_ip: 192.168.2.86 → 10.168.1.86
  dest_ip: 224.1.1.1
  dest_port: 3001
  local_ip: 192.168.2.88 → 10.168.1.100
```

The image shows a terminal window with the nano text editor open to the file ~/aloam/src/vanjee_lidar_v2.4/src/config/config.yaml. The file contains configuration parameters for A-LOAM. Two red arrows indicate modifications: the first arrow points from the original value 192.168.2.86 to the new value 10.168.1.86 for the lidar_ip parameter; the second arrow points from the original value 192.168.2.88 to the new value 10.168.1.100 for the local_ip parameter. The dest_ip and dest_port parameters remain unchanged.

2、Run mapping

There are two ways to run mapping, one is online mapping and the other is offline mapping. Online mapping uses lidar scanning and mapping in real time. Offline mapping uses a bag with radar data for mapping, which can be done without radar.

1. Offline mapping

Enter the aloam workspace through the terminal and enter the command in the terminal:

```
source devel/setup.bash
roslaunch aloam_velodyne aloam_velodyne_VLP_16.launch
```

Open a new terminal, enter the aloam workspace, and enter the command in the terminal:

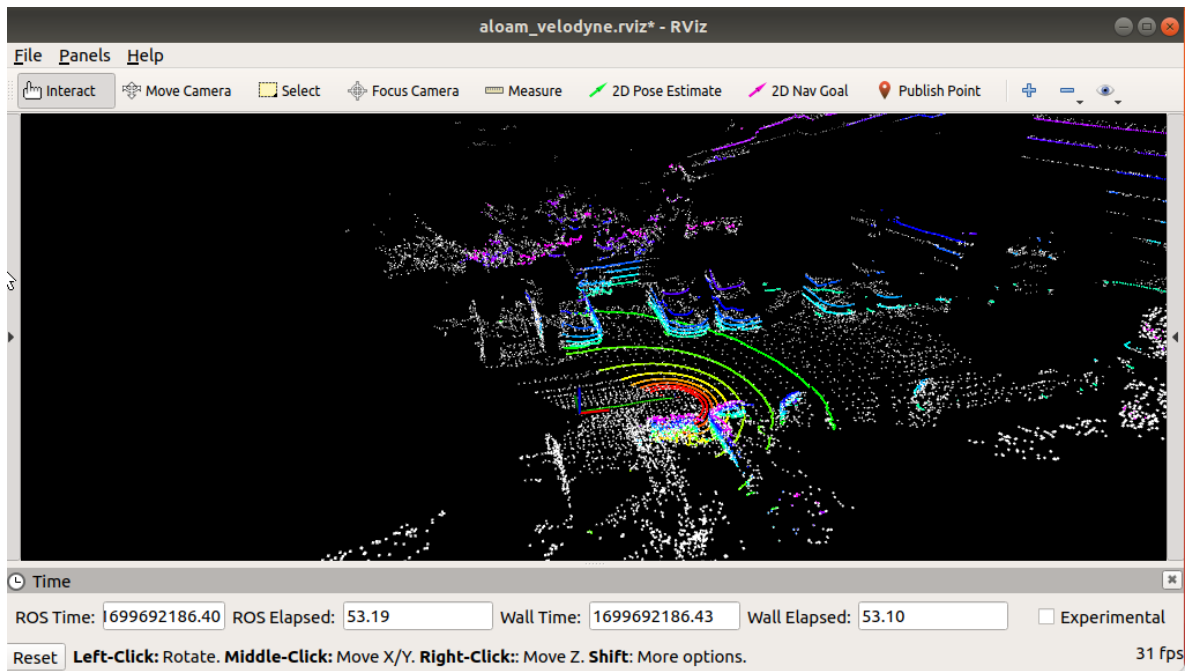
```
source devel/setup.bash
roslaunch vanjee_to_velodyne vanjee_to_velodyne.launch
```

Open a new terminal, enter the aloam workspace, and enter the command in the terminal:

```
rosbag play nsh_indoor_outdoor.bag
```

Note: nsh_indoor_outdoor.bag is a recorded bag with lidar data. The path is aloam/data/nsh_indoor_outdoor.bag. The specific data needs to be recorded in advance. This package was recorded during my test. Everyone must first run the map before running it. Record lidar data and save it.

The picture below shows the successful startup screen.

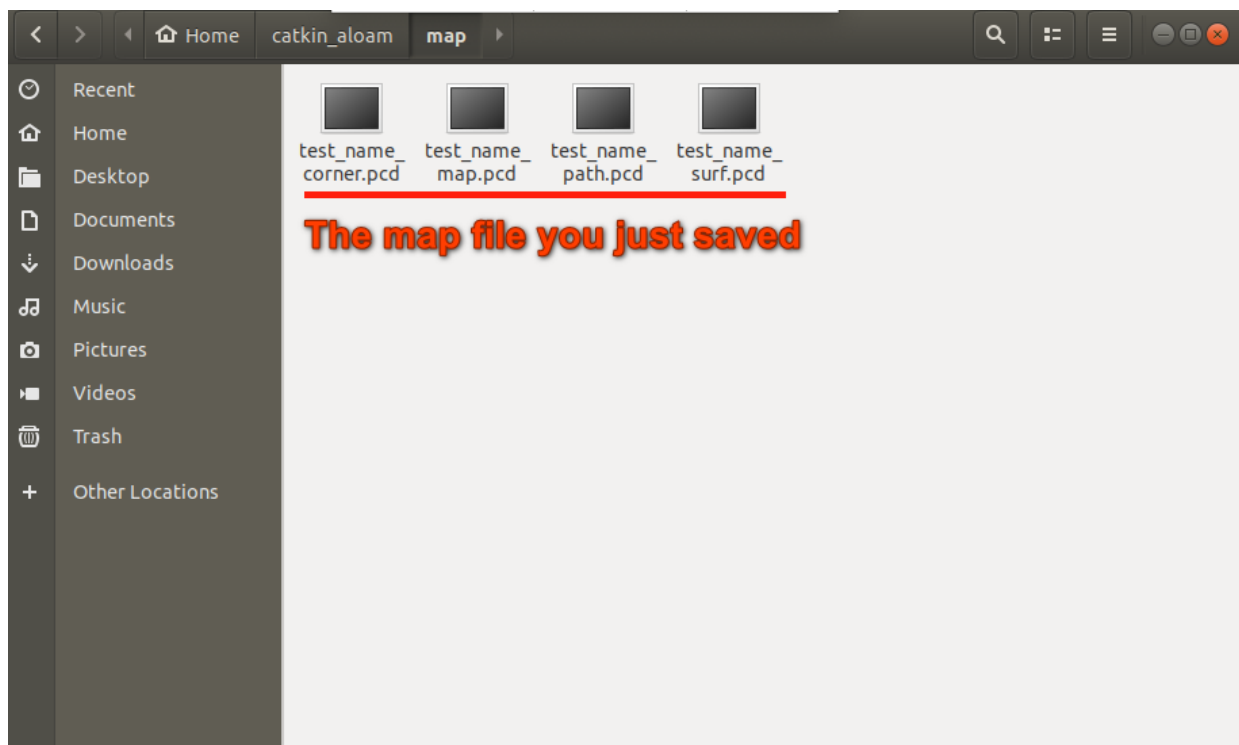


save map:

Open a new terminal, enter the aloam workspace, and enter the command in the terminal:

```
source devel/setup.bash
roslaunch save_map save_map.launch
```

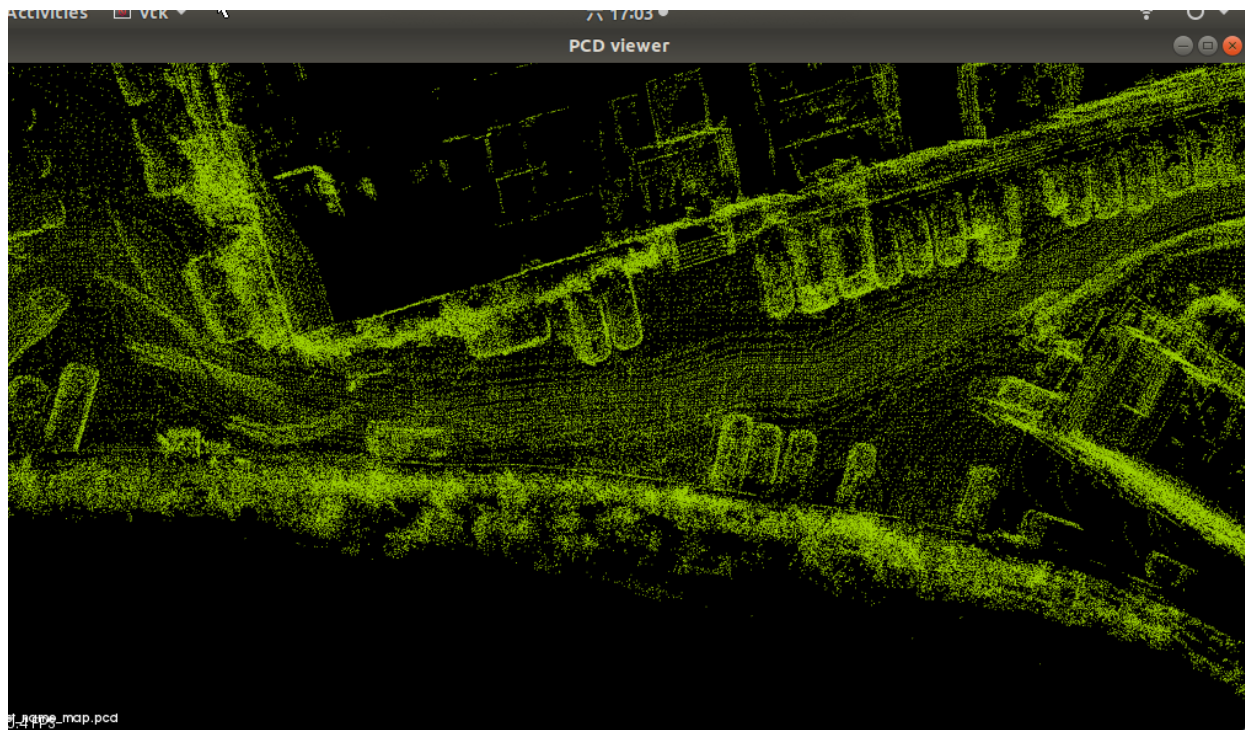
At this time, you will find the map you just saved in the working directory of aloam.



You can view the map file you just saved through the pcl_viewer tool.

Go to the working directory of aloam in the terminal and enter the command in the terminal:

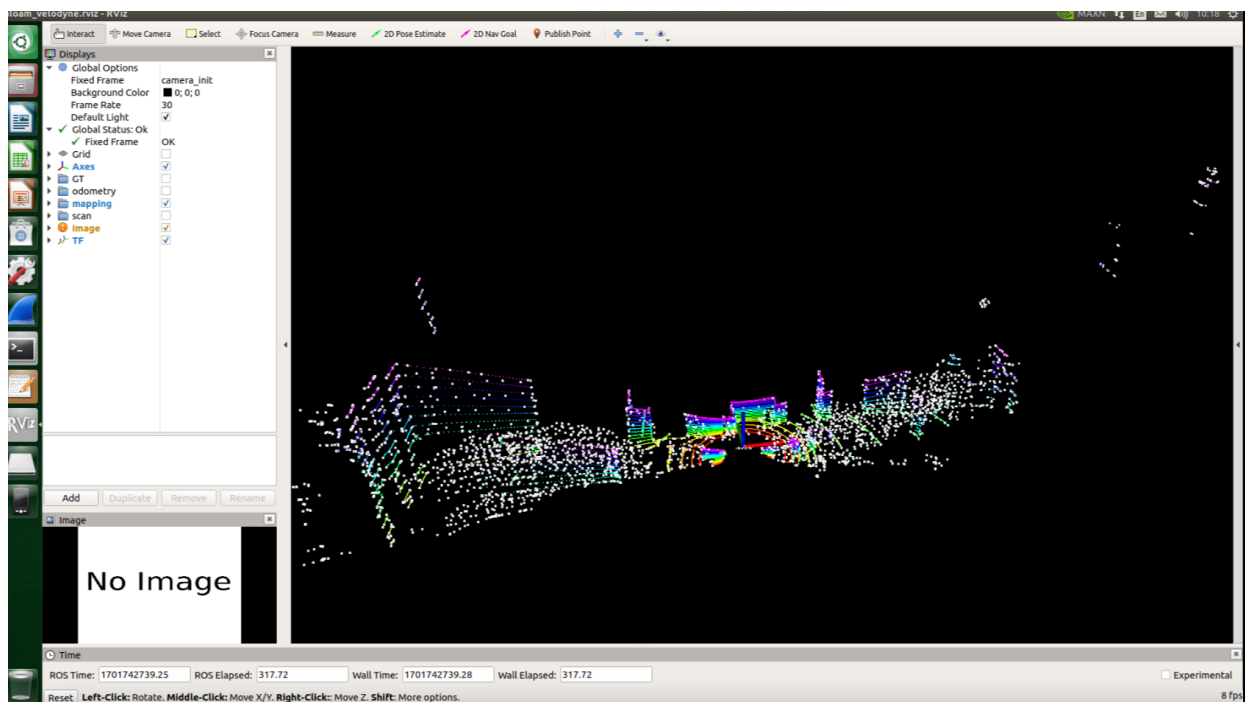
```
cd map
pcl_viewer test_name_map.pcd
```



2. Online mapping

Enter the aloam workspace through the terminal and enter the command in the terminal:

```
source devel/setup.bash
roslaunch aloam_velodyne aloam_vanjee.launch
```



Then drive the car to build the map. After building the map, follow the above offline map building method, open a new terminal, enter the aloam workspace, and enter the command in the terminal:

```
source devel/setup.bash
roslaunch save_map save_map.launch
```

To view the map, see offline mapping above.

What needs to be noted here is that due to the limitations of the A-Loam algorithm itself, this algorithm does not have a loopback function, so the effect of closed-loop path mapping is not very ideal.