

2. Handheld Radar Mapping

This function requires launching a program from the `slam_gmapping` package, the source code of which is located in the `【ydlidar_ros2_ws】` source code. This guide uses the accompanying virtual machine to illustrate how to launch the program. If you want to run it on your own motherboard, place `ydlidar_ros2_ws` in the root directory and compile it.

2.1. Activate the radarTerminal input

```
ros2 launch ydlidar_ros2_driver ydlidar_launch.py
```

2.2 Publish static odom conversions

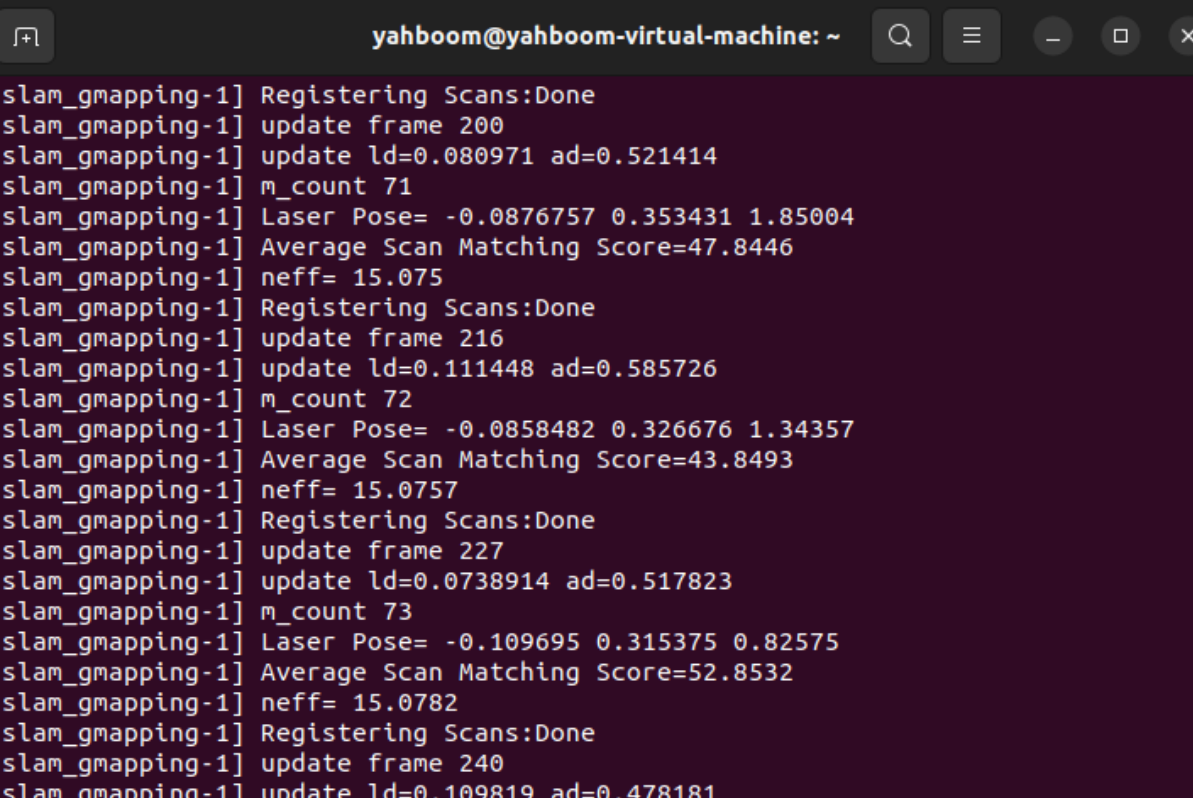
Terminal input

```
ros2 launch rf2o_laser_odometry rf2o_laser_odometry.launch.py
```

2.3. Start gmapping for mapping

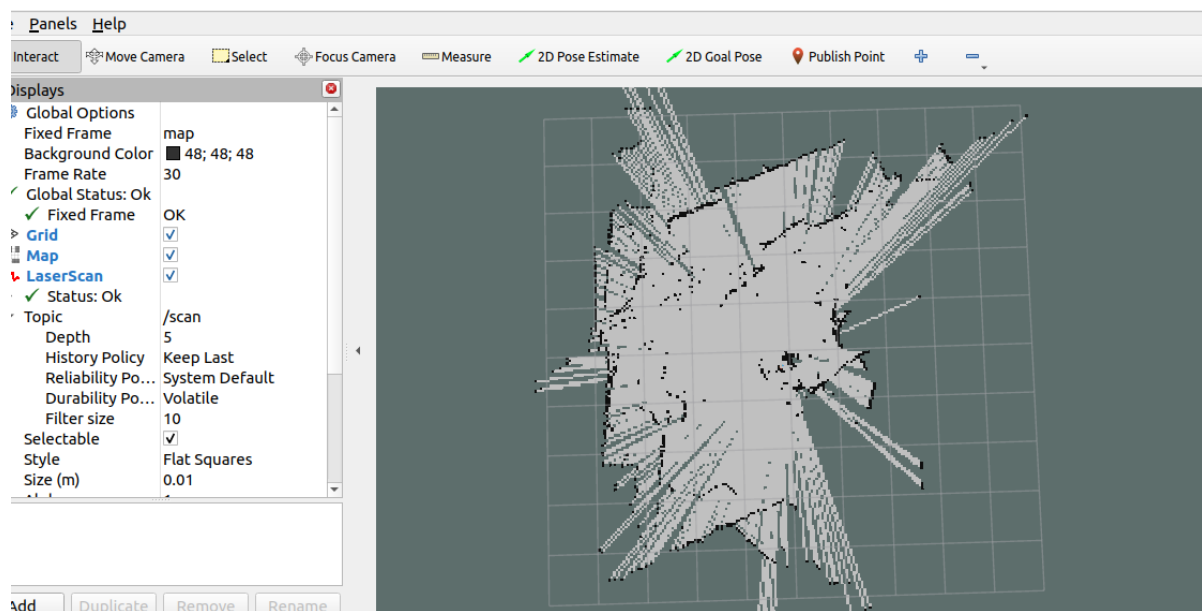
Terminal input

```
ros2 launch slam_gmapping slam_gmapping.launch.py
```



```
yahboom@yahboom-virtual-machine: ~  
slam_gmapping-1] Registering Scans:Done  
slam_gmapping-1] update frame 200  
slam_gmapping-1] update ld=0.080971 ad=0.521414  
slam_gmapping-1] m_count 71  
slam_gmapping-1] Laser Pose= -0.0876757 0.353431 1.85004  
slam_gmapping-1] Average Scan Matching Score=47.8446  
slam_gmapping-1] neff= 15.075  
slam_gmapping-1] Registering Scans:Done  
slam_gmapping-1] update frame 216  
slam_gmapping-1] update ld=0.111448 ad=0.585726  
slam_gmapping-1] m_count 72  
slam_gmapping-1] Laser Pose= -0.0858482 0.326676 1.34357  
slam_gmapping-1] Average Scan Matching Score=43.8493  
slam_gmapping-1] neff= 15.0757  
slam_gmapping-1] Registering Scans:Done  
slam_gmapping-1] update frame 227  
slam_gmapping-1] update ld=0.0738914 ad=0.517823  
slam_gmapping-1] m_count 73  
slam_gmapping-1] Laser Pose= -0.109695 0.315375 0.82575  
slam_gmapping-1] Average Scan Matching Score=52.8532  
slam_gmapping-1] neff= 15.0782  
slam_gmapping-1] Registering Scans:Done  
slam_gmapping-1] update frame 240  
slam_gmapping-1] update ld=0.109819 ad=0.478181
```

rviz displays the following:



2.4 Saving the Map

Terminal input,

```
ros2 run nav2_map_server map_saver_cli -f
~/ydlidar_ros2_ws/src/slam_gmapping/maps/my_map
```

```

yahboom@yahboom-virtual-machine:~$ ros2 run nav2_map_server map_saver_cli -f ~/y
2dlidar_ros2_ws/src/slam_gmapping/maps/my_map
9[INFO] [1764593460.400443034] [map_saver]:
   map_saver lifecycle node launched.
   Waiting on external lifecycle transitions to activate
   See https://design.ros2.org/articles/node_lifecycle.html for more inform
   ation.
n[INFO] [1764593460.400770673] [map_saver]: Creating
2[INFO] [1764593460.400903451] [map_saver]: Configuring
02[INFO] [1764593460.402731840] [map_saver]: Saving map from 'map' topic to '/home
   /yahboom/ydlidar_ros2_ws/src/slam_gmapping/maps/my_map' file
3[WARN] [1764593460.402763980] [map_saver]: Free threshold unspecified. Setting i
   t to default value: 0.250000
   [WARN] [1764593460.402779162] [map_saver]: Occupied threshold unspecified. Setti
   ng it to default value: 0.650000
3[WARN] [1764593460.416484370] [map_io]: Image format unspecified. Setting it to:
4pgm
[INFO] [1764593460.416570197] [map_io]: Received a 384 X 608 map @ 0.05 m/pix
3[INFO] [1764593460.481334569] [map_io]: Writing map occupancy data to /home/yahb
   oom/ydlidar_ros2_ws/src/slam_gmapping/maps/my_map.pgm
[INFO] [1764593460.482997098] [map_io]: Writing map metadata to /home/yahboom/yd
   lidar_ros2_ws/src/slam_gmapping/maps/my_map.yaml
n[INFO] [1764593460.483137792] [map io]: Map saved

```

Then you can find the map file we saved in the file path mentioned above.

