1.Preparation

1. Install the SDK Driver

Based on the specifications of the lidar you purchased, locate the compressed file labeled "YDLidar-SDK" in the provided source code package. Extract the "YDLidar-SDK" folder; this folder contains the SDK files for this lidar. Since using the ROS function package for this lidar requires the SDK to be installed beforehand, the "YDLidar-SDK" folder contains the lidar's driver files. Open a terminal in this folder and type:

```
mkdir build
cd build
cmake ..
make -j4
sudo make install
```

If no errors are reported during the process, it means that the driver has been successfully installed.

2. Create a new workspace and compile the package.

- (Recommended) The first method is to extract the yahboomcar_ws source code to your own root directory, and then directly use colcon build to compile it.

```
cd yahboomcar_ws
colcon build
```

After successful compilation, add the workspace path to your .bashrc file.

```
sudo gedit ~/.bashrc
```

Copy the following content to the end of the file:

```
source ~/yahboomcar_ws/devel/setup.bash --extend
```

- The second method involves creating a self-named workspace, for example, named oradar_ws. In the terminal, type:

```
mkdir oradar_ws
cd oradar_ws
mkdir src
cd src
catkin_init_workspace
```

Then copy the extracted source code packages from yahboomcar_ws/src to the oradar_ws/src directory. Then, in the oradar_ws directory, use colcon build to compile.

```
cd oradar_ws
colcon build
```

After successful compilation, add the workspace path to your .bashrc file.

```
sudo gedit ~/.bashrc
```

Copy the following content to the end of the file:

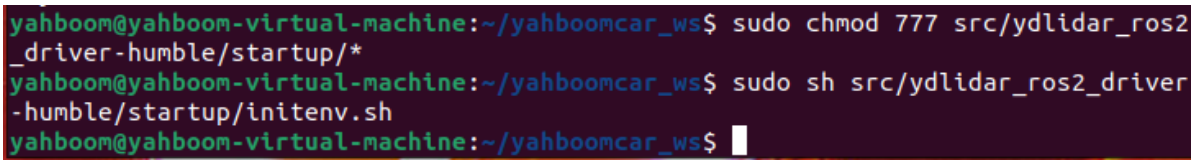
```
source ~/oradar_ws/devel/setup.bash --extend
```

3. Bind lidar port name

Open a terminal in the yahboomcar_ws workspace and enter the following command.

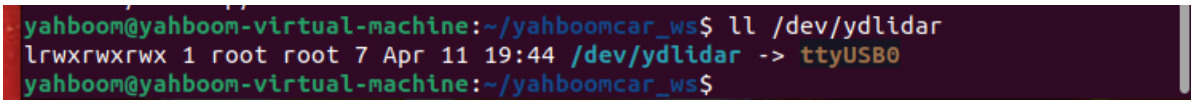
```
#Tmini-plus-12m Run the following command
sudo chmod 777 src/ydlidar_ros2_driver-humble/startup/*
sudo sh src/ydlidar_ros2_driver-humble/startup/initenv.sh

#Tmini-plus-25m Run the following command
sudo chmod 777 src/ydlidar_ros2_driver/startup/*
sudo sh src/ydlidar_ros2_driver/startup/initenv.sh
```



Then reconnect the lidar serial port and enter `ll /dev/ydlidar` in the terminal.

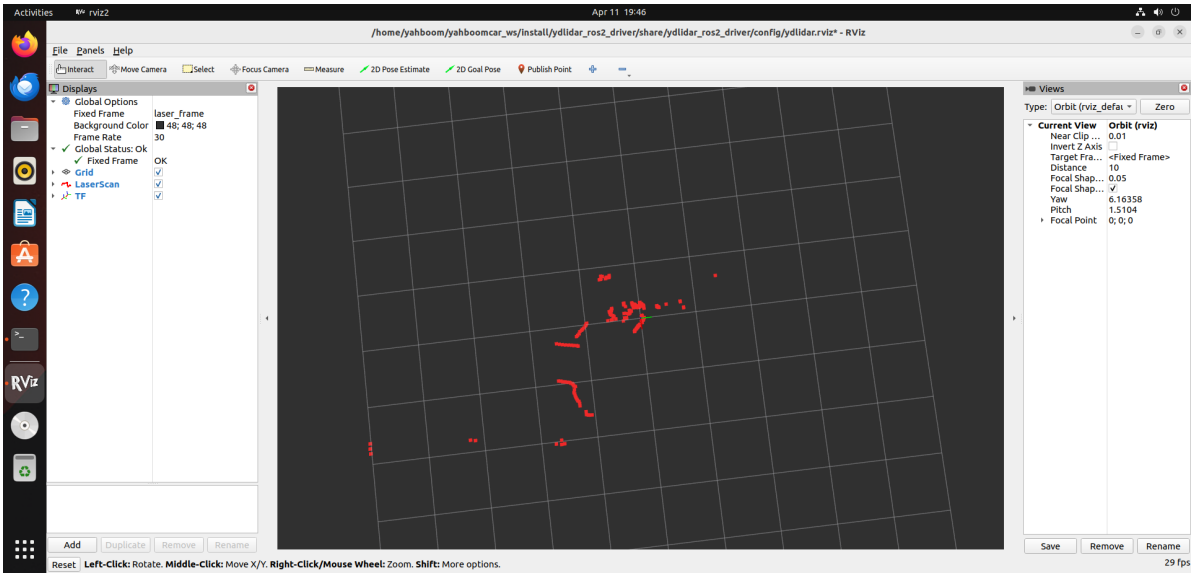
```
 ll /dev/ydlidar
```



4. Drive lidar

Save and exit, then open a new terminal and enter the following command to enable lidar and display it in rviz.

```
ros2 launch ydlidar_ros2_driver ydlidar_launch_view.py
```



The following commands can be used to view lidar node data.

```
ros2 topic echo /scan
```

```
yahboom@yahboom-virtual-machine:~/yahboomcar_ws$ ros2 topic echo /scan
header:
  stamp:
    sec: 1712836021
    nanosec: 44564000
  frame_id: laser_frame
angle_min: -3.1415927410125732
angle_max: 3.1415927410125732
angle_increment: 0.015591030940413475
time_increment: 0.0002511637285351753
scan_time: 0.09971199929714203
range_min: 0.029999999329447746
range_max: 12.0
ranges:
- 0.0
- 0.210999995470047
- 0.2029999941587448
- 0.20200000703334808
- 0.1979999989271164
- 0.19599999487400055
- 0.19499999284744263
- 0.0
- 0.1979999989271164
- 0.19499999284744263
```