Preparation

1. Install SDK

Unzip YDLidar-SDK-master.tar.xz in the source code folder to get YDLidar-SDK-master.

Input following command:

```
mkdir build
cd build
cmake ..
make -j4
sudo make install
```
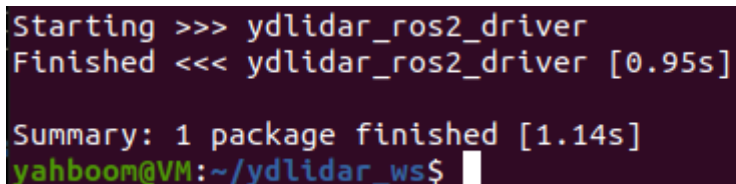
2.Compilation Function Package

Unzip ydlidar in the source folder_ ROS2_ Driver master, obtain ydlidar_ ROS2_ Driver master feature pack.

Copy ydlidar_ ROS2_ Drive master to the src directory of your own workspace

Using the workspace ydlidar_ Ws is an example, rplidar_ Ws is located in the ~ directory.

Then, go back to the workspace directory and compile it,

```
cd ~/ydlidar_ws
colcon build --symlink-install
```


The above screen indicates that the compilation has passed.

Input following command to set the environment variable.

```
echo "source ~/ydlidar_ws/install/setup.bash --extend" >> ~/.bashrc
```

Input the following command to bind lidar port name

```
cd /home/yahboom/ydlidar_ws/src/ydlidar_ros2_driver-master/startup
sudo chmod 777 initenv.sh
sudo bash initenv.sh
```

Then, re-plug the lidar wiring and enter the command ll /dev/rplidar in the terminal.

```
yahboom@VM:~$ ll /dev/ydlidar
lrwxrwxrwx 1 root root 7 11月 13 19:49 /dev/ydlidar -> ttyUSB0
yahboom@VM:~$
```

The above content indicates that the binding is successful. The end is not necessarily 0 and changes according to the order in which the devices are inserted.

3. Run launch

Input following command:

```
#x3/x3pro lidar
ros2 launch ydlidar_ros2_driver x3_ydlidar_launch.py
#4ros lidar
ros2 launch ydlidar_ros2_driver 4ros_ydlidar_launch.py
```

View lidar data with rostopic tool.

```
ros2 topic echo /scan
```

```
---
header:
  stamp:
    sec: 1699876428
    nanosec: 397563000
  frame_id: laser
angle_min: -3.1415927410125732
angle_max: 3.1415927410125732
angle_increment: 0.017849957570433617
time_increment: 0.0002537386317271739
scan_time: 0.0893160030245781
range_min: 0.009999999776482582
range_max: 64.0
ranges:
- 0.0
- 0.0
- 5.574999809265137
- 5.465000152587891
- 5.328000068664551
- 5.388500213623047
- 0.0
- 0.0
- 0.0
- 0.0
- 0.0
- 0.0
- 0.0
```

ctrl+ c closes the terminal that just drove the lidar.

Then enter the following statement in the terminal to drive the lidar, and open rviz to display the point cloud.

```
#x3/x3pro lidar
ros2 launch ydlidar_ros2_driver ydlidar_x3_view_launch.py
#4ros lidar
ros2 launch ydlidar_ros2_driver ydlidar_4ros_view_launch.py
```