Environment build

system：Ubuntu20.04+ros-foxy

1、Install the SDK

Copy the YDLidar-SDK under the function package folder to the terminal directory, enter the folder, enter the terminal,

```
cd YDLidar-SDK
mkdir build
cd build
cmake ..
make
sudo make install
```

2、Create a workspace (take 4ROS_ws as an example)

```
mkdir -p 4ROS_ws/src
```

After decompressing 4ROS_ws_src.zip, get a src directory, put the ydlidar_ros2_driver-master in the directory into the src folder directory of your own workspace. Open the terminal, enter,

```
cd ~/4ROS_ws
colcon build
source install/setup.bash
echo "source ~/4ROS_ws/install/setup.bash" >> ~/.bashrc
source ~/.bashrc
```

3、Bind the radar USB serial port
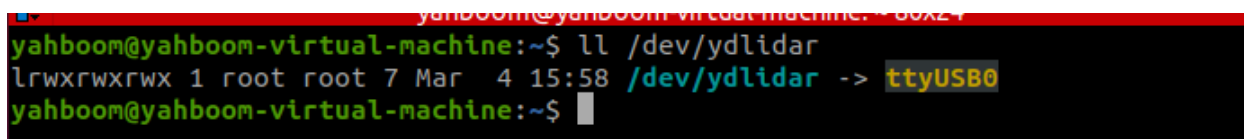
Execute the install USB port remapping command,

```
cd ~/4ROS_ws/src/ydlidar_ros2_driver-master/startup
sudo chmod 777 *
sudo ./initenv.sh
```

After binding, unplug the radar again. View modified remaps using the following command,

```
ll /dev/ydlidar
```


Note: This is not necessarily ttyUSB0, as long as /dev/ydlidar is displayed, it means that the binding is successful

4、start test

Terminal input，then enter the following command to view the data

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

```
yahboom@yahboom-virtual-machine:~$ ros2 launch ydlidar_ros2_driver ydlidar_launch.py
[INFO] [launch]: All log files can be found below /home/yahboom/.ros/log/2023-03-04-16-12-49-556933-yahboom-virtual-machine-3822
[INFO] [launch]: Default logging verbosity is set to INFO
/opt/ros/foxy/lib/python3.8/site-packages/launch_ros/actions/lifecycle_node.py:84: UserWarning: The parameter 'node_name' is depreca
ted, use 'name' instead
  warnings.warn("The parameter 'node_name' is deprecated, use 'name' instead")
/opt/ros/foxy/lib/python3.8/site-packages/launch_ros/actions/lifecycle_node.py:95: UserWarning: The parameter 'node_executable' is d
eprecated, use 'executable' instead
  super().__init__(name=name, namespace=namespace, **kwargs)
/opt/ros/foxy/lib/python3.8/site-packages/launch_ros/actions/node.py:196: UserWarning: The parameter 'node_namespace' is deprecated,
 use 'namespace' instead
  warnings.warn("The parameter 'node_namespace' is deprecated, use 'namespace' instead")
/home/yahboom/X3_ws/install/ydlidar_ros2_driver/share/ydlidar_ros2_driver/launch/ydlidar_launch.py:46: UserWarning: The parameter 'n
ode_executable' is deprecated, use 'executable' instead
  tf2_node = Node(package='tf2_ros',
/home/yahboom/X3_ws/install/ydlidar_ros2_driver/share/ydlidar_ros2_driver/launch/ydlidar_launch.py:46: UserWarning: The parameter 'n
ode_name' is deprecated, use 'name' instead
  tf2_node = Node(package='tf2_ros',
[INFO] [ydlidar_ros2_driver_node-1]: process started with pid [3834]
[INFO] [static_transform_publisher-2]: process started with pid [3836]
[ydlidar_ros2_driver_node-1] [INFO] [1677917569.710164856] [ydlidar_ros2_driver_node]: [YDLIDAR INFO] Current ROS Driver Version: 1.
0.1
[ydlidar_ros2_driver_node-1]
[ydlidar_ros2_driver_node-1] YDLidar SDK initializing
[ydlidar_ros2_driver_node-1] YDLidar SDK has been initialized
[ydlidar_ros2_driver_node-1] [YDLIDAR]:SDK Version: 1.0.6
[static_transform_publisher-2] [INFO] [1677917569.714428756] [static_tf_pub_laser]: Spinning until killed publishing transform from
'base_link' to 'laser'
[ydlidar_ros2_driver_node-1] LiDAR successfully connected
[ydlidar_ros2_driver_node-1] [YDLIDAR]:Lidar running correctly ! The health status: good
[ydlidar_ros2_driver_node-1] LiDAR init success, Elapsed time 628 ms
[ydlidar_ros2_driver_node-1] [CYdLidar] Successed to start scan mode, Elapsed time 1063 ms
```

```
ros2 topic echo /scan
```

```
---
header:
  stamp:
    sec: 1677917683
    nanosec: 381620000
  frame_id: laser
angle_min: -3.1415927410125732
angle_max: 3.1415927410125732
angle_increment: 0.0013114559696987271
time_increment: 0.00011590439680730924
scan_time: 0.5552979707717896
range_min: 0.009999999776482582
range_max: 64.0
ranges:
- 0.0
- 0.0
- 0.0
- 0.0
- 0.0
- 0.0
- 0.0
- 0.04724999889731407
- 0.0
- 0.048250000923871994
- 0.04800000041723251
- 0.04899999871850014
- 0.04975000023841858
- 0.0
- 0.0
- 0.0
- 0.0507499985396862
- 0.0
- 0.0
- 0.0
- 0.0
- 0.0
- 0.0
- 0.0487499982186066
- 0.0492499992251396
```

If you want to display it in rviz, enter in the terminal,

```
ros2 launch ydlidar_ros2_driver ydlidar_view_launch.py
```