Basic Use of Lidar

This lesson uses a Raspberry Pi 5 as an example.

For Raspberry Pi and Jetson Nano boards, you need to open a terminal on the host computer and enter the command to enter the Docker container. Once inside the Docker container, enter the commands mentioned in this lesson in the terminal. For instructions on entering the Docker container from the host computer, refer to **[01. Robot Configuration and Operation Guide] -- [5.Enter Docker (For JETSON Nano and RPi 5)]**.

For Orin boards, simply open a terminal and enter the commands mentioned in this lesson.

1. Program Functionality

> After running the program, it drives the Slamtem LiDAR or EAI LiDAR, enables Lidar scan data, and visualizes the LiDAR scan data in rviz.

2. Program Code Reference Path

The source code for this function is located at:

```
#C1 Lidar
~/yahboomcar_ros2_ws/software/library_ws/src/sllidar_ros2/launch/sllidar_c1_launch.py
#Timiniplus Lidar
~/yahboomcar_ros2_ws/software/library_ws/src/ydlidar_ros2_driver-humble/launch/ydlidar_launch h.py
#C1 Lidar visualization
~/yahboomcar_ros2_ws/software/library_ws/src/sllidar_ros2/launch/view_sllidar_c1_launch.py
#Timiniplus Lidar visualization
~/yahboomcar_ros2_ws/software/library_ws/src/ydlidar_ros2_driver-humble/launch/ydlidar_launch_view.py
```

3. Program Startup

For the Raspberry Pi 5 controller, you must first enter the Docker container. The Orin controller does not require this.

Enter the Docker container (for steps, see [Docker Course] --- [4. Docker Startup Script]).

All the following Docker commands must be executed from the same Docker container **(for steps, see [Docker Course] --- [3. Docker Submission and Multi-Terminal Access]).**

Run the corresponding program for your Lidar model.

```
#Start the Tminiplus Lidar
ros2 launch ydlidar_ros2_driver ydlidar_launch.py
#Start the Tminiplus Lidar and visualize data with rviz
ros2 launch ydlidar_ros2_driver ydlidar_launch_view.py
#Start the C1 Lidar
ros2 launch sllidar_ros2 sllidar_c1_launch.py
#Start the C1 Lidar and visualize data with rviz
ros2 launch sllidar_ros2 view_sllidar_c1_launch.py
```

Let's use the Tminiplus Lidar and visualization as an example:
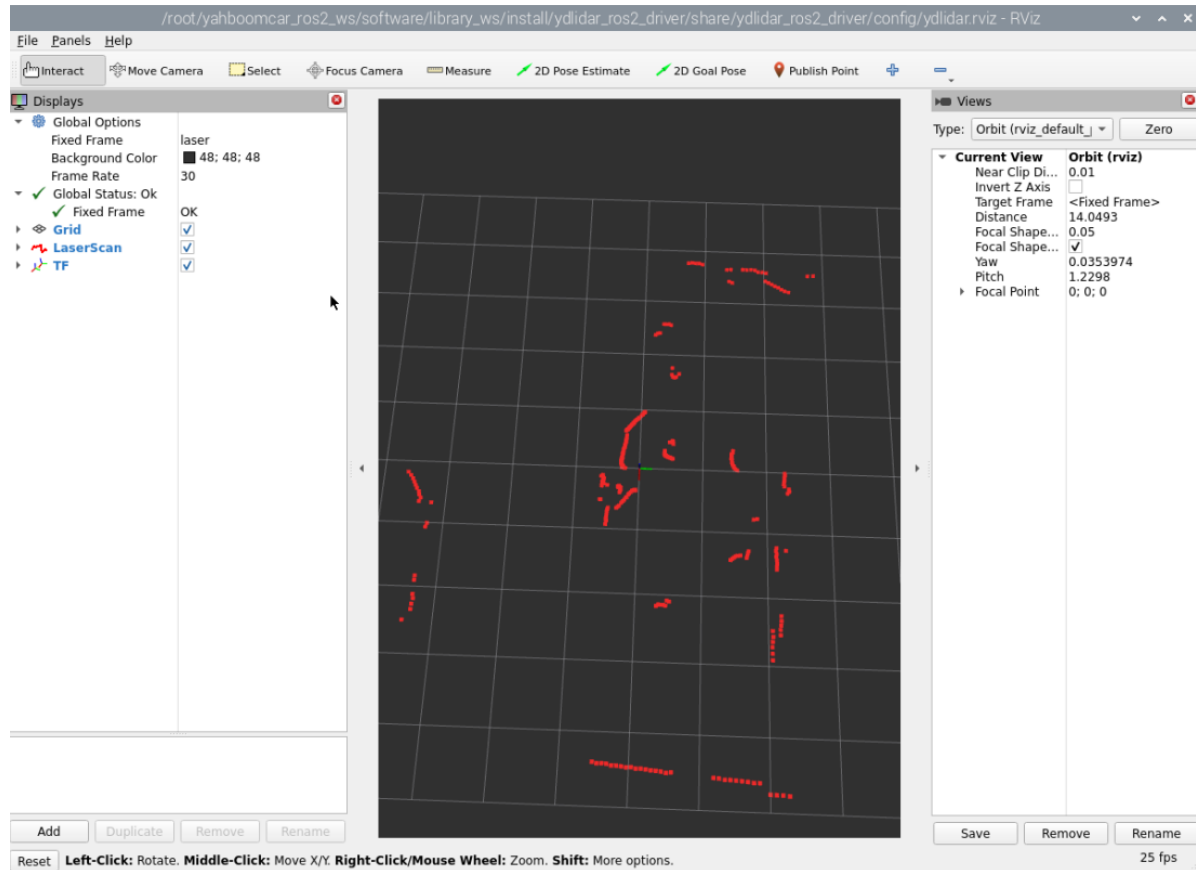
You can print the Lidar scan data using the following command:

```
ros2 topic echo /scan
```