# Robot keyboard control

Note: The virtual machine needs to be in the same LAN as the car, and the ROS_DOMAIN_ID needs to be consistent. You can check [Read me] to set the IP and ROS_DOMAIN_ID on the board.

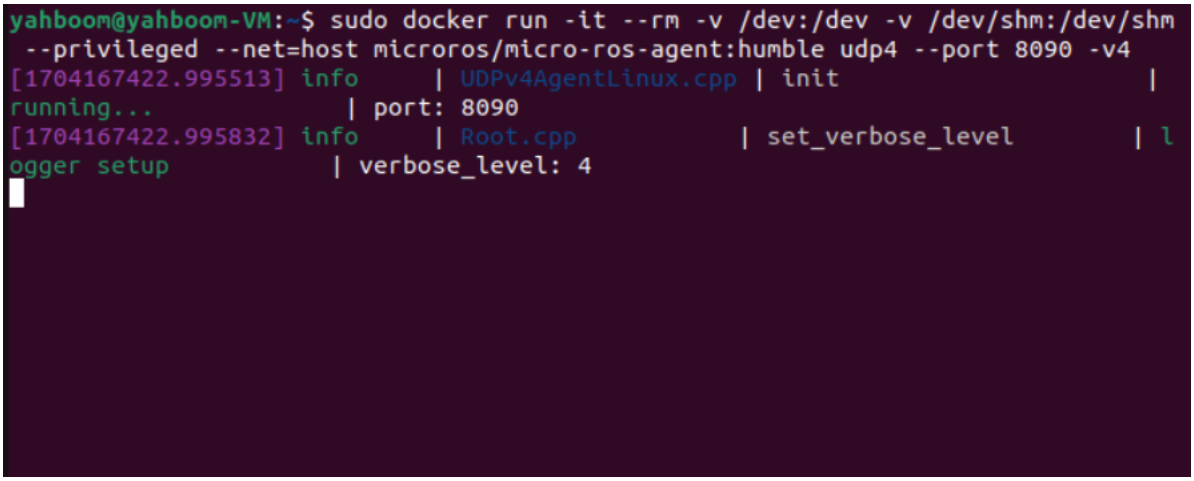
## 1. Program function description

After the program is started, the car movement can be controlled through the keyboard.

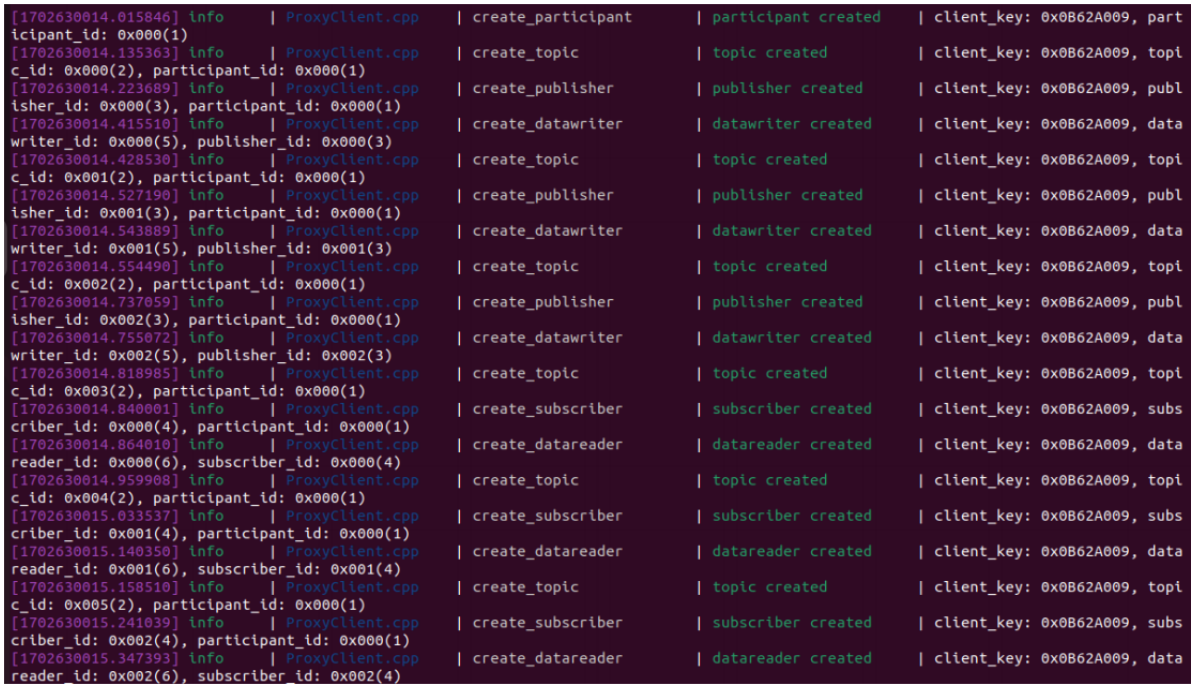
## 2. Start and connect to the agent

Taking the supporting virtual machine as an example, enter the following command to start the agent:

```
sudo docker run -it --rm -v /dev:/dev -v /dev/shm:/dev/shm --privileged --
net=host microros/micro-ros-agent:humble udp4 --port 8090 -v4
```



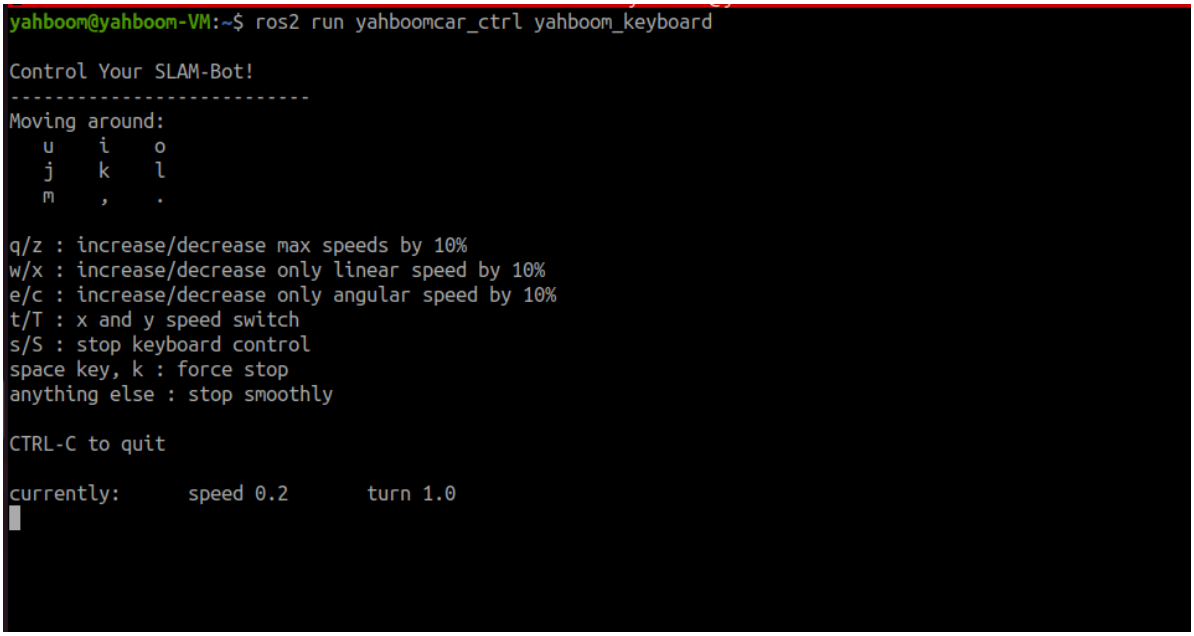

Then, turn on the car switch and wait for the car to connect to the agent. The connection is successful, as shown in the figure below.



## 3、Start the keyboard control program

Enter the following command in the terminal to start the keyboard control program.

```
ros2 run yahboomcar_ctrl yahboom_keyboard
```




Keyboard key descriptions are as follows

Directional control.

| 【i】or【I】 | 【linear，0】 | 【u】or【U】 | 【linear，angular】 |
| --- | --- | --- | --- |
| 【,】 | 【-linear，0】 | 【o】or【U】 | 【linear，-angular】 |
| 【j】or【J】 | 【0，angular】 | 【m】or【M】 | 【-linear，-angular】 |
| 【l】or【L】 | 【0，-angular】 | 【.】 | 【-linear，angular】 |

According to the control table description, you can go forward by pressing the **[i]** key. Press **[,]** to go back，Press **[l]** to rotate to the right, press **[j]** to rotate to the left, and so on.

speed control table

| speed change | speed change | keyboard keys | speed change |
| --- | --- | --- | --- |
| 【q】 | Linear speed and angular speed increased by 10% | 【z】 | Linear speed and angular speed are reduced by 10% |
| 【w】 | Only line speed increases by 10% | 【x】 | Only line speed is reduced by 10% |
| 【e】 | Only the angular velocity is increases by 10% | 【c】 | Only the angular velocity is reduced by 10% |
| 【t】 | Linear speed X-axis/Y-axis direction switching | 【s】 | Stop keyboard control |

Note: Since the car has a four-wheel drive structure with ordinary tires and cannot move sideways, the [t] button has no meaning. Before each use of keyboard control, you need to click on the terminal that starts the program, otherwise the key event cannot be detected.