3、Multi-robot queue performance

3.1、Achieve effect

After starting this program, multiple transbots will move according to the trajectories we programmed and recorded before.

3.2、Preparation

Before enabling this function, it is necessary to enable distributed communication between the virtual machine and the transbot robot. Let the transbot be the slave and the virtual machine as the host.

The virtual machine acts as the central conductor and issues performance instructions.
Below we use two transbots as examples to demonstrate this function.

3.3、Record the running track of transbot1

3.3.1、Virtual machine side

1）、 start roscore

```
roscore
```

2）、Start the handle control node

```
roslaunch transbot_ctrl transbot_joy_multi.launch namespace:=robot1
```

3.3.2、transbot1 side

1）、Start the transbot1 robot control node

```
roslaunch transbot_mulity transbot_mulity_control.launch namespace:=robot1
```

3.3.3、Start recording

Input following command in a new terminal in the virtual machine

```
rosbag record /robot1/cmd_vel
```

This command will record the speed of transbot1 at every moment. Press ctrl+c to end the recording, and a bag file with the suffix of .bag and the start time of recording will be generated in the terminal directory.

3.4、Record the running track pieces of No.2 transbot.

For the recording method, please refer to the content of 3.3, just replace robot1 with robot2.

3.5、Modify the launch file

launch file location：

```
/home/yahboom/transbot_ws/src/transbot_ctrl/launch/play_robot_bag1.launch
/home/yahboom/transbot_ws/src/transbot_ctrl/launch/play_robot_bag2.launch
```

1). In play_robot_bag1.launch, replace the .bag file with the .bag file generated when transbot1 was recorded just now.

2). In play_robot_bag2.launch, replace the .bag file with the .bag file generated when transbot2 was recorded just now.

3.6、Start up

Input following command in a terminal in the virtual machine

```
roslaunch transbot_ctrl play_robot_show.launch
```

3.7、Phenomenon

After startup, the two transbots will move according to the previously recorded trajectories.

3.8、Principle

Record the speed of each car at each moment with rosbag record, and then use the command of rosbag play to play the data packet. At this time, each car will receive the speed command and move according to the original trajectory.