2、MoveIt control the real machine

MoveIt website：http://docs.ros.org/en/melodic/api/moveit_tutorials/html/index.html

2.1. Simulation start

Just control the robot in simulation under MoveIT simulation. It is not recommended to use the main control board as the host, the main control board will have incomplete interface display and freeze.

```
roslaunch transbot_se_moveit_config demo.launch   # recommended virtual machine、
```

2.2. Control the real machine

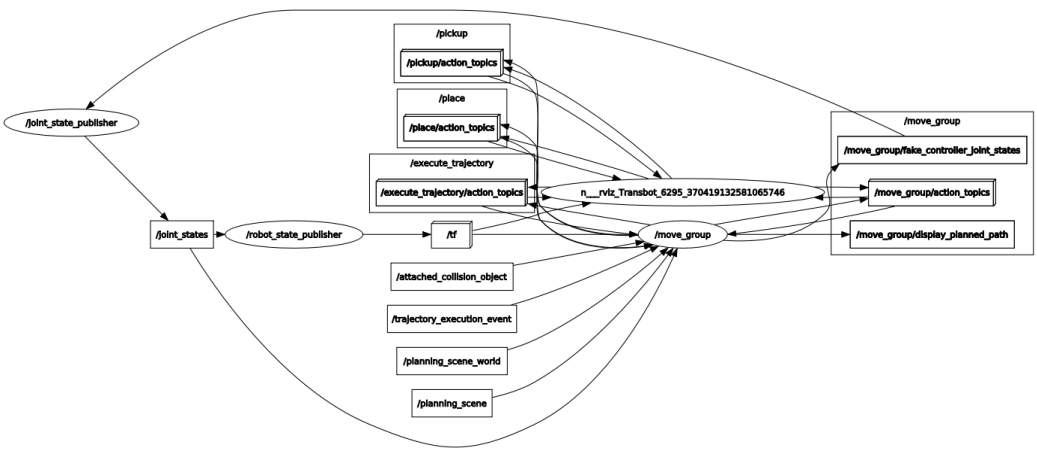
Controlling the real machine is to control the real robot in combination with MoveIT.

Multi-device communication needs to be configured, for details, please refer to the [Multi-device Communication Configuration] chapter.

Please operate with caution! ! !

```
roscore                                                    # virtual
machine
roslaunch transbot_se_moveit_config demo.launch            # virtual
machine
rosrun transbot_se_moveit_config 03_machine_move.py        # robot
```

Node diagram is as follows:



The corresponding relationship between the robot arm servo and the joint: from the lowest end of the robot arm to the end of the gripper.

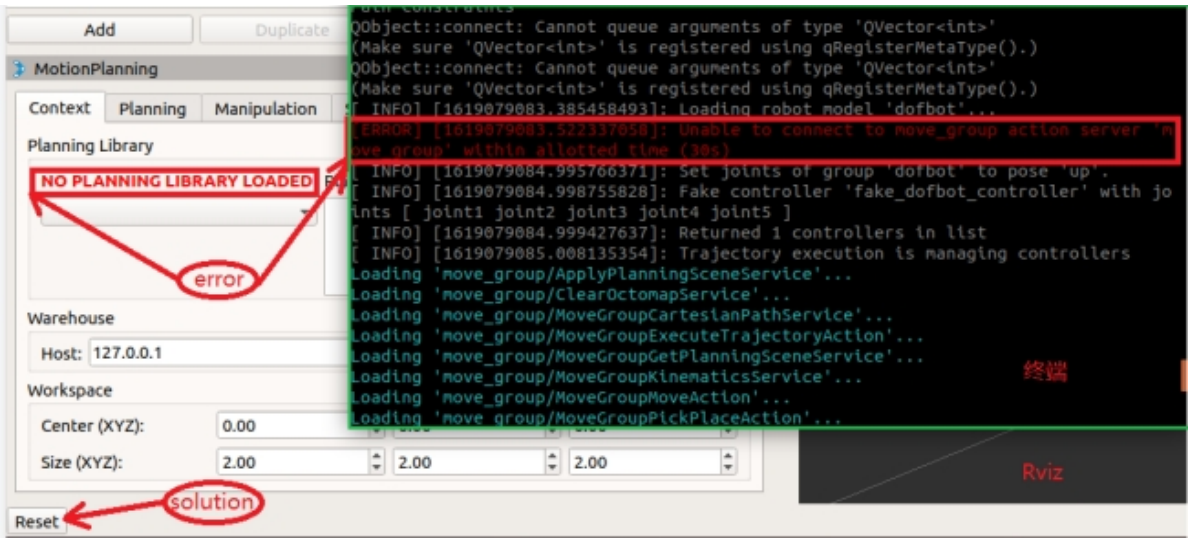
Robotic Arm Servo	joint	joint
The first servo	arm_Joint	joint1
The second servo	arm1_Joint	joint2
The third servo	arm2_Joint	joint3

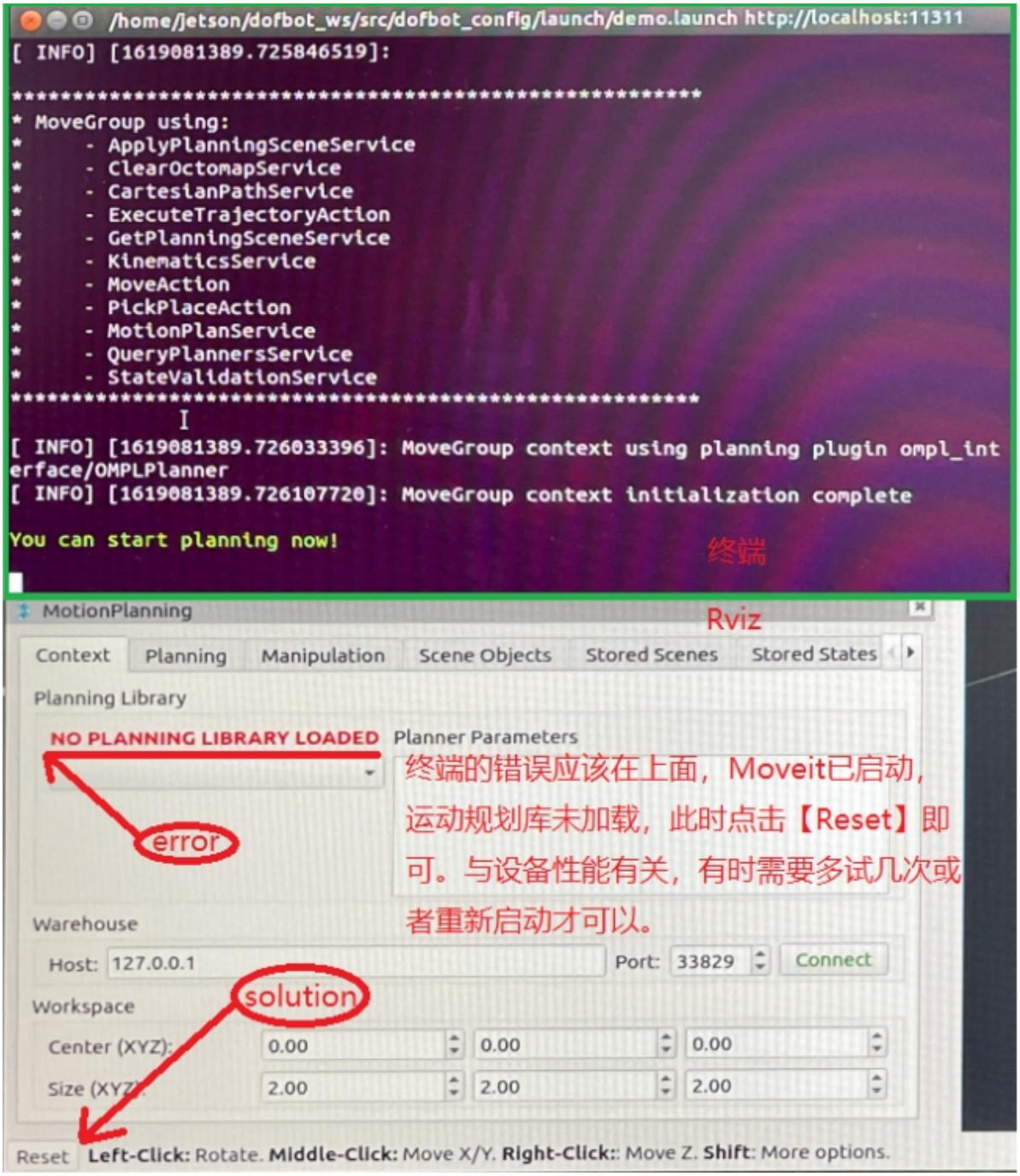
2.3.matters needing attention

Note: There may be problems, not necessarily.

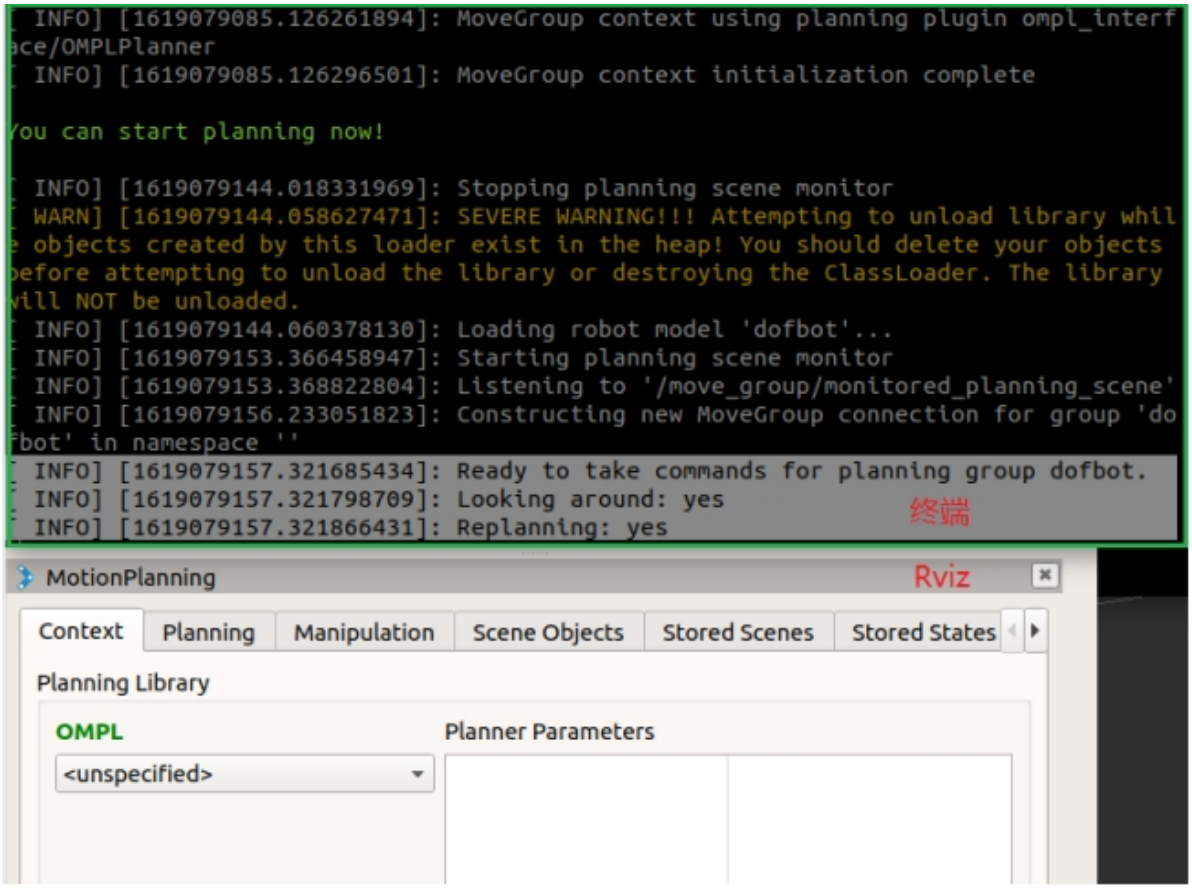
2.3.1.Start the MoveIT

The MoveIt simulation environment starts slowly, wait patiently and observe the terminal. An error as shown in the figure below occurs. The solution is shown in the figure. If the terminal reports an error and the motion planning library is not loaded, click [Reset] in the lower left corner to reload. At first, during the loading process, don't click [Reset] in a hurry. If you click it before it is loaded, the system will be reloaded, so it can't be started.





As shown in the figure below, if [Replanning: yes] appears on the terminal, and green [OMPL] appears below the Planning Library, the startup is successful.


[INFO] [1619079085.126261894]: MoveGroup context using planning plugin ompl_interf
ace/OMPLPlanner
[INFO] [1619079085.126296501]: MoveGroup context initialization complete
You can start planning now!
[INFO] [1619079144.018331969]: Stopping planning scene monitor
[WARN] [1619079144.058627471]: SEVERE WARNING!!! Attempting to unload library whil
e objects created by this loader exist in the heap! You should delete your objects
before attempting to unload the library or destroying the ClassLoader. The library
will NOT be unloaded.
[INFO] [1619079144.060378130]: Loading robot model 'dofbot'...
[INFO] [1619079153.366458947]: Starting planning scene monitor
[INFO] [1619079153.368822804]: Listening to '/move_group/monitored_planning_scene'
[INFO] [1619079156.233051823]: Constructing new MoveGroup connection for group 'do
fbot' in namespace ''
[INFO] [1619079157.321685434]: Ready to take commands for planning group dofbot.
[INFO] [1619079157.321798709]: Looking around: yes
[INFO] [1619079157.321866431]: Replanning: yes
终端
MotionPlanning
Rviz
Context
Planning
Manipulation
Scene Objects
Stored Scenes
Stored States
Planning Library
OMPL
Planner Parameters
<unspecified>