xArm6应用测试

笔记本：	实训台		
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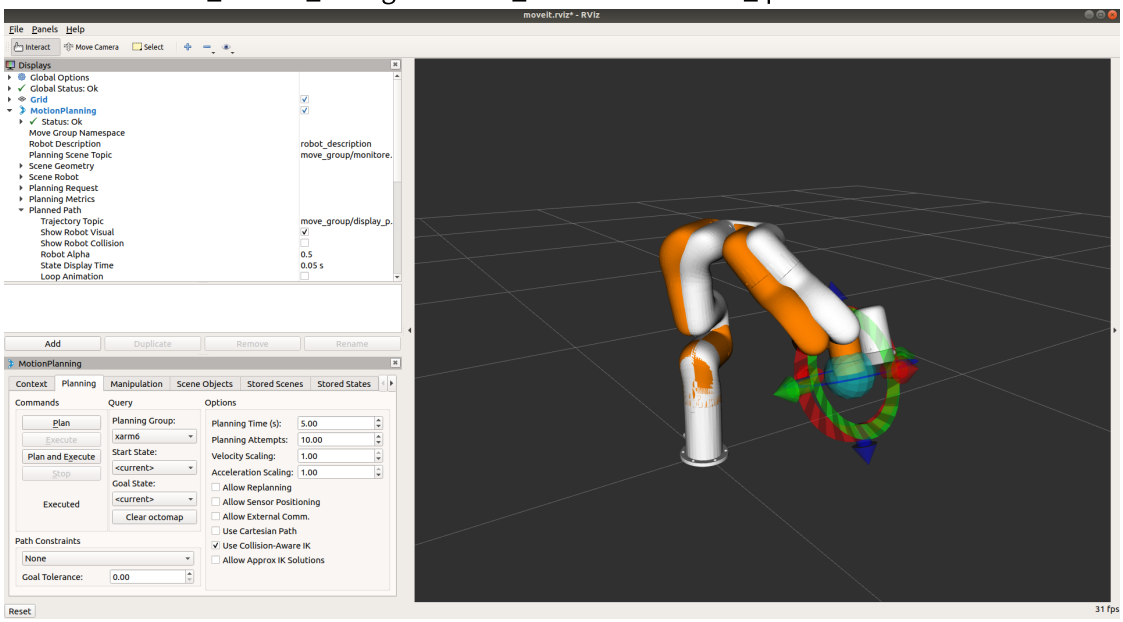
1.启动xArm6

roslaunch xarm6_moveit_config realMove_exec.launch robot_ip:=192.168.1.196



2.运行例程
rosrun xarm_demo moveit_cartesian_demo.py
rosrun xarm_demo draw_star_demo.py
rosrun xarm_demo motion_demo.py
rosrun xarm_demo moveit_circle_demo.py

3. 带有夹爪的启动
roslaunch xarm6_gripper_moveit_config realMove_exec.launch robot_ip:=192.168.1.196

控制夹爪：
rosservice call /xarm/gripper_config "pulse_vel: 1500"
rosservice call /xarm/gripper_move "pulse_pos: 300"

笛卡尔轨迹规划的时候不能添加起始点作为第一个点，不然会报错：
Trajectory message contains waypoints that are not strictly increasing in time.

4.视觉抓取（需要依赖opencv3.3）

标定过程
启动机械臂+夹爪
roslaunch xarm6_gripper_moveit_config realMove_exec.launch robot_ip:=192.168.1.196

启动摄像头和识别节点

roslaunch object_color_detector object_detect_hsv.launch

启动自动标定程序
roslaunch object_color_detector camera_calibration_hsv.launch

抓取过程
roslaunch xarm6_gripper_moveit_config realMove_exec.launch robot_ip:=192.168.1.196
roslaunch object_color_detector object_detect_hsv.launch
rosrun xarm_demo vision_sorting_demo.py

5.写字
roslaunch xarm6_moveit_config realMove_exec.launch robot_ip:=192.168.1.196
rosrun writing_demo writing_demo.py

6.传送带测试
IO控制，需要使用xArm的python SDK
https://github.com/xArm-Developer/xArm-Python-SDK

传送带视觉抓取

```
rosservice call /xarm/set_controller_dout 5 1
```

标定过程
启动机械臂+夹爪
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启动摄像头和识别节点

roslaunch object_color_detector object_detect_hsv.launch

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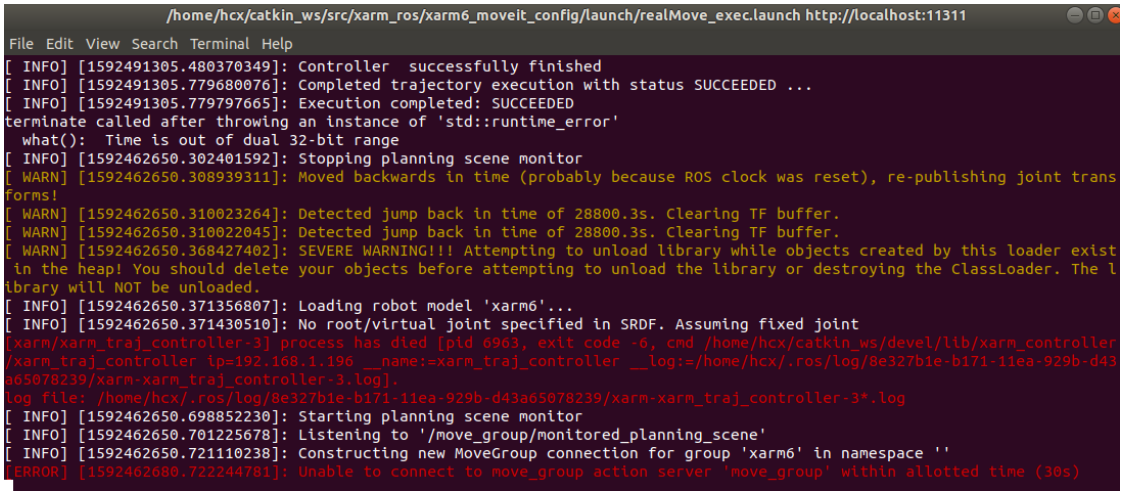
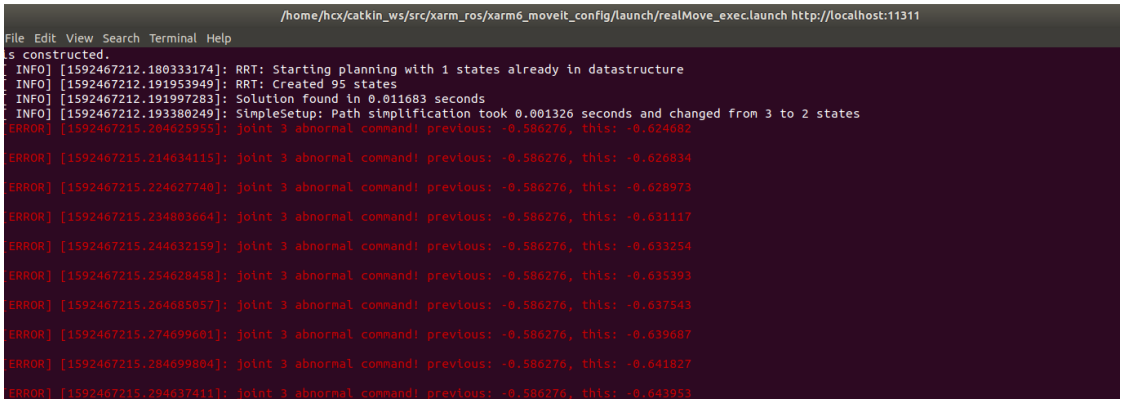
roslaunch xarm6_gripper_moveit_config realMove_exec.launch robot_ip:=192.168.1.196
python pick_place_with_conveyer_belt.py
python3 conveyer_belt_test.py

问题总结

1.连接一段时间后（大概10分钟静置），move group挂掉，上位机重启可恢复，使用3小时过程中只出现过一次，报错如下：



2.有一次在运动过程中出现中途突然停止，终端报错，6个关节都报位置不对，关节会有异响，急停处理了，也是只出现过出一次。



3.机器人moveit轨迹规划的稳定性不足，已经通过限制机器人的关节限位值做优化。