MoveIt usage

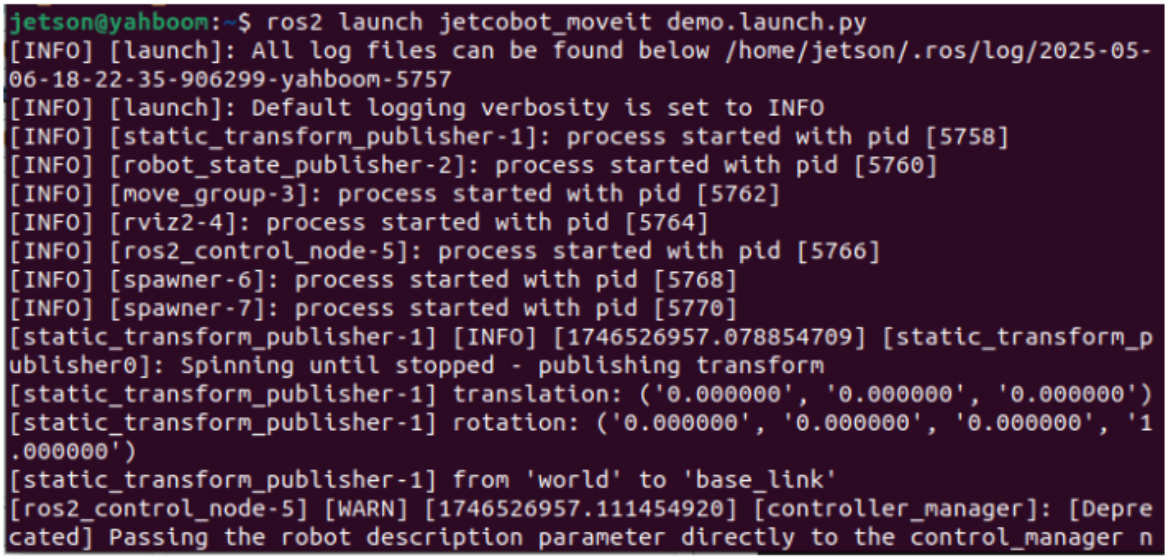
1. Usage environment

Motherboard: Jetson Orin Nano/Nx

ROS2: Humble

2. Start MoveIt

```
ros2 launch jetcobot_moveit demo.launch.py
```

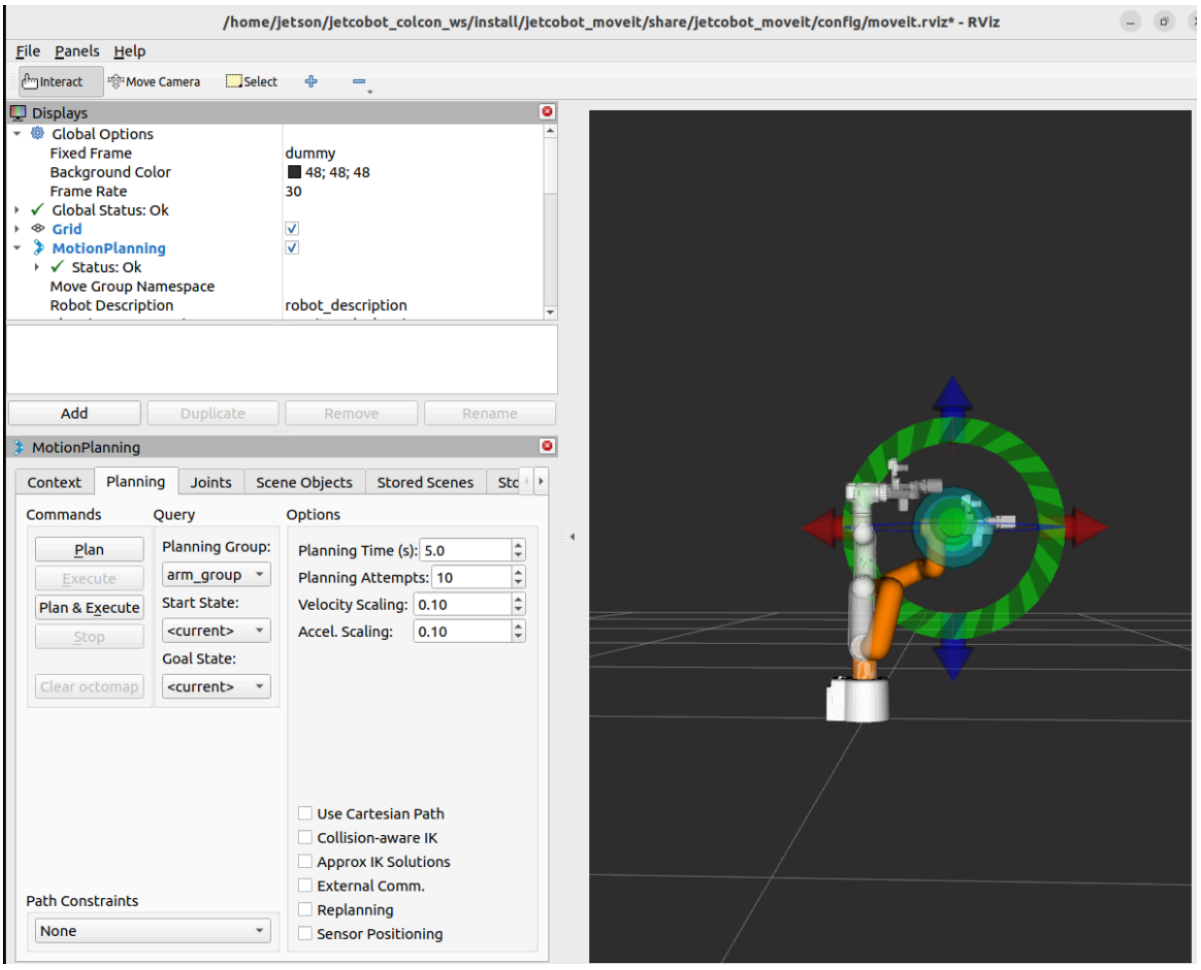


3. Custom pose

3.1. Set pose

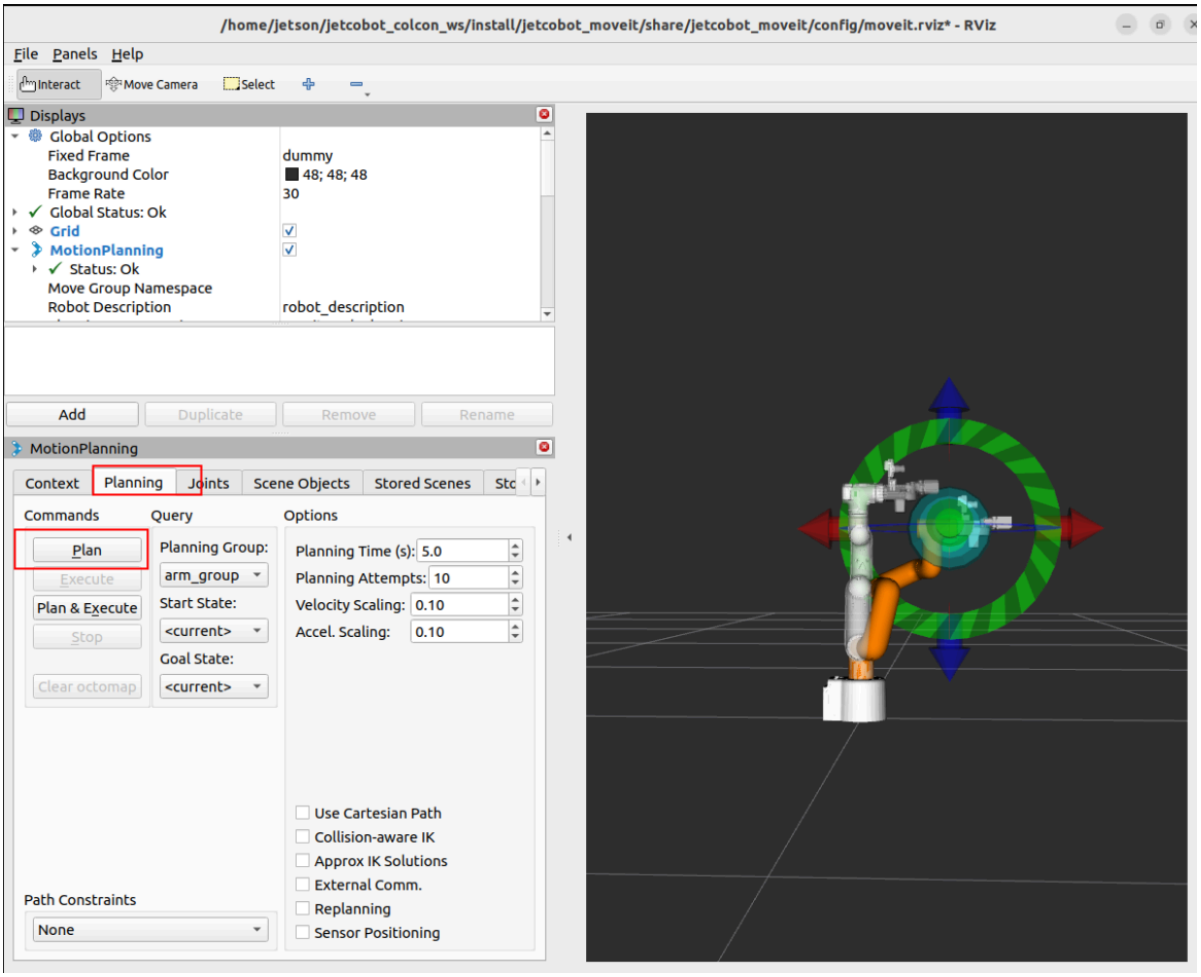
Control the pose of the robot arm by dragging the trackball on the robot arm in RViz: the trackball is a newly added sphere on the robot arm, and the yellow robot arm is the target state.

Note: The robot arm will change its pose only when the dragged trackball is in a reachable position.



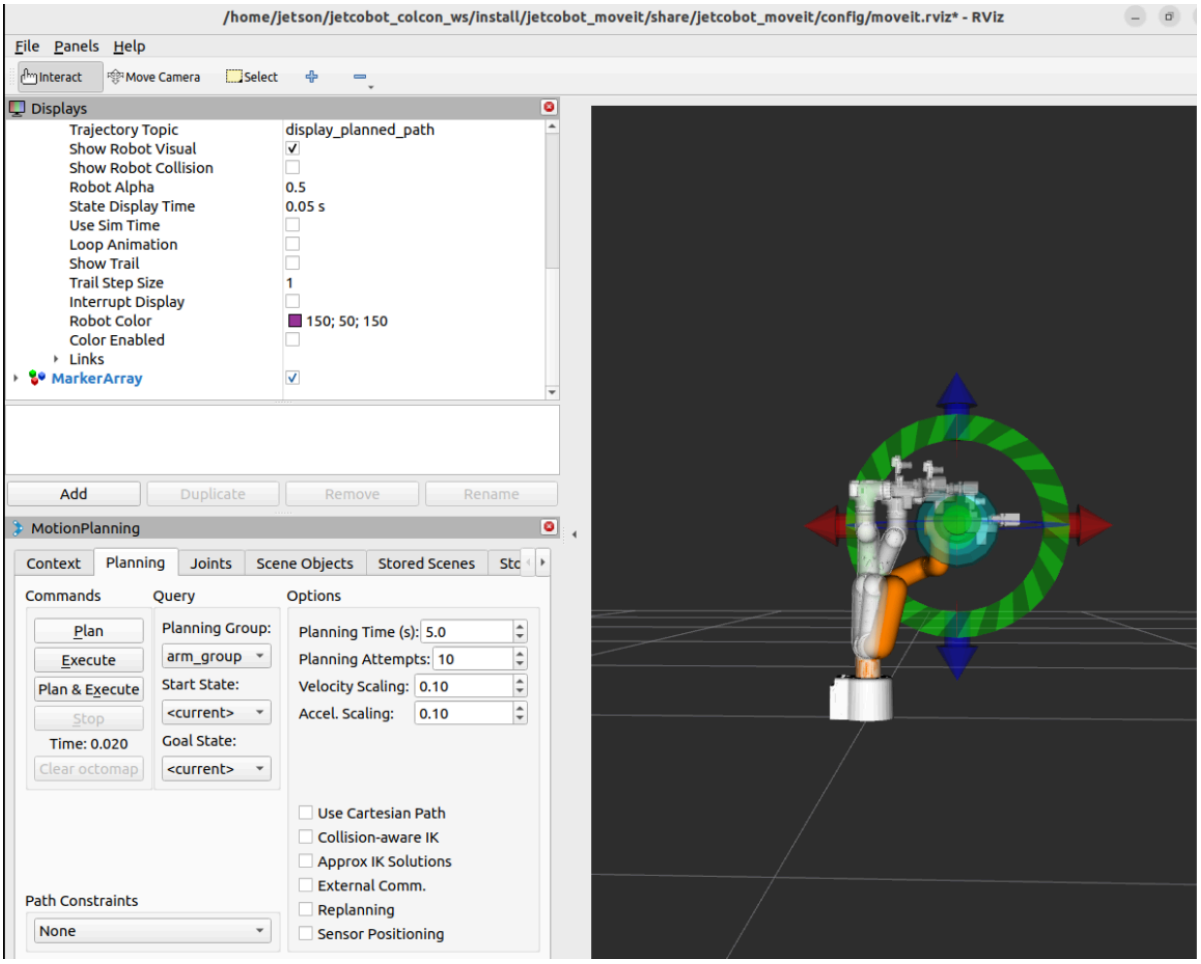
3.2、Planning Action

Click `MotionPlanning` → `Planning` → `Plan` to plan the robot arm to the specified position.

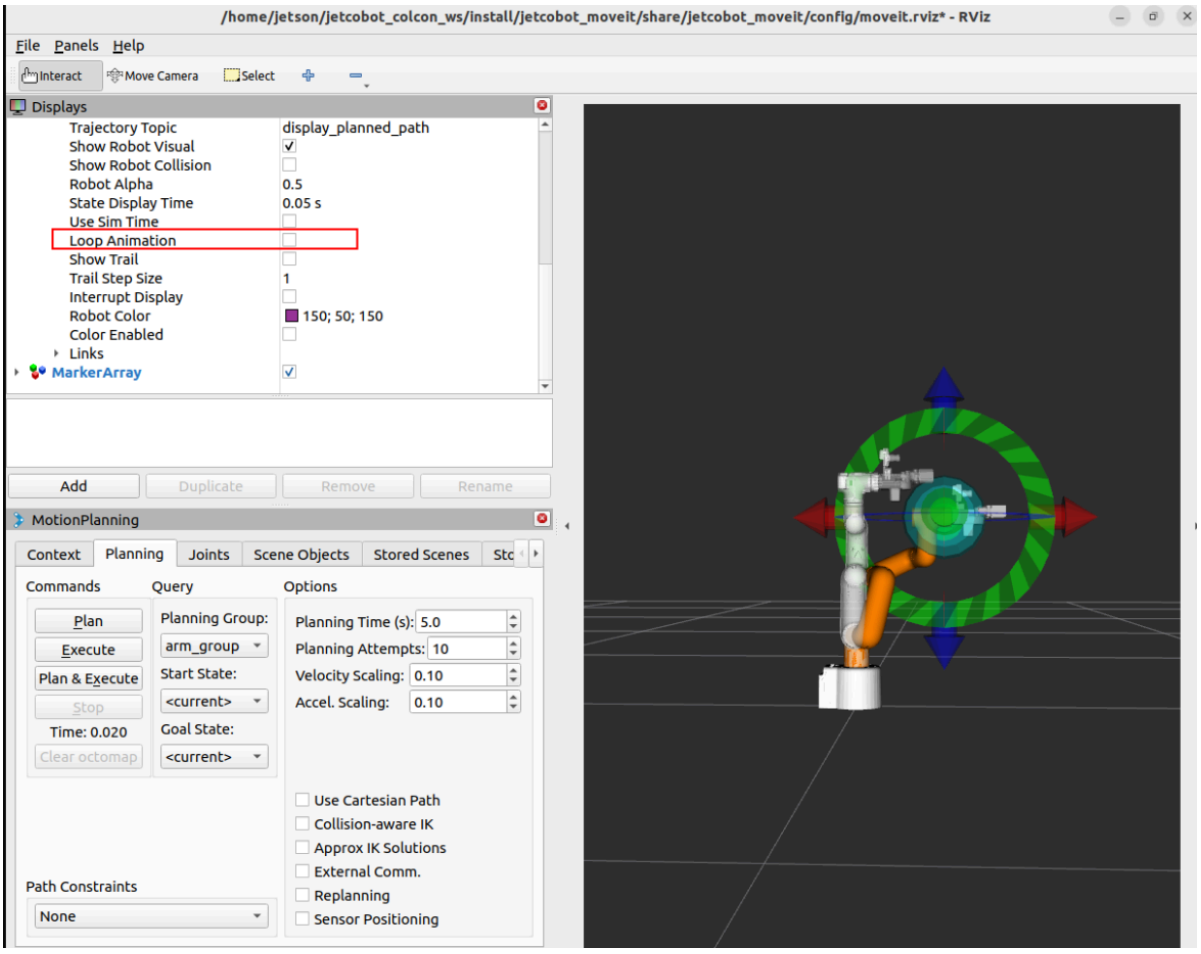


Start planning action

The shadow of the robot arm is the planned action. If the planned path is not set, the robot arm will repeat the planned path.

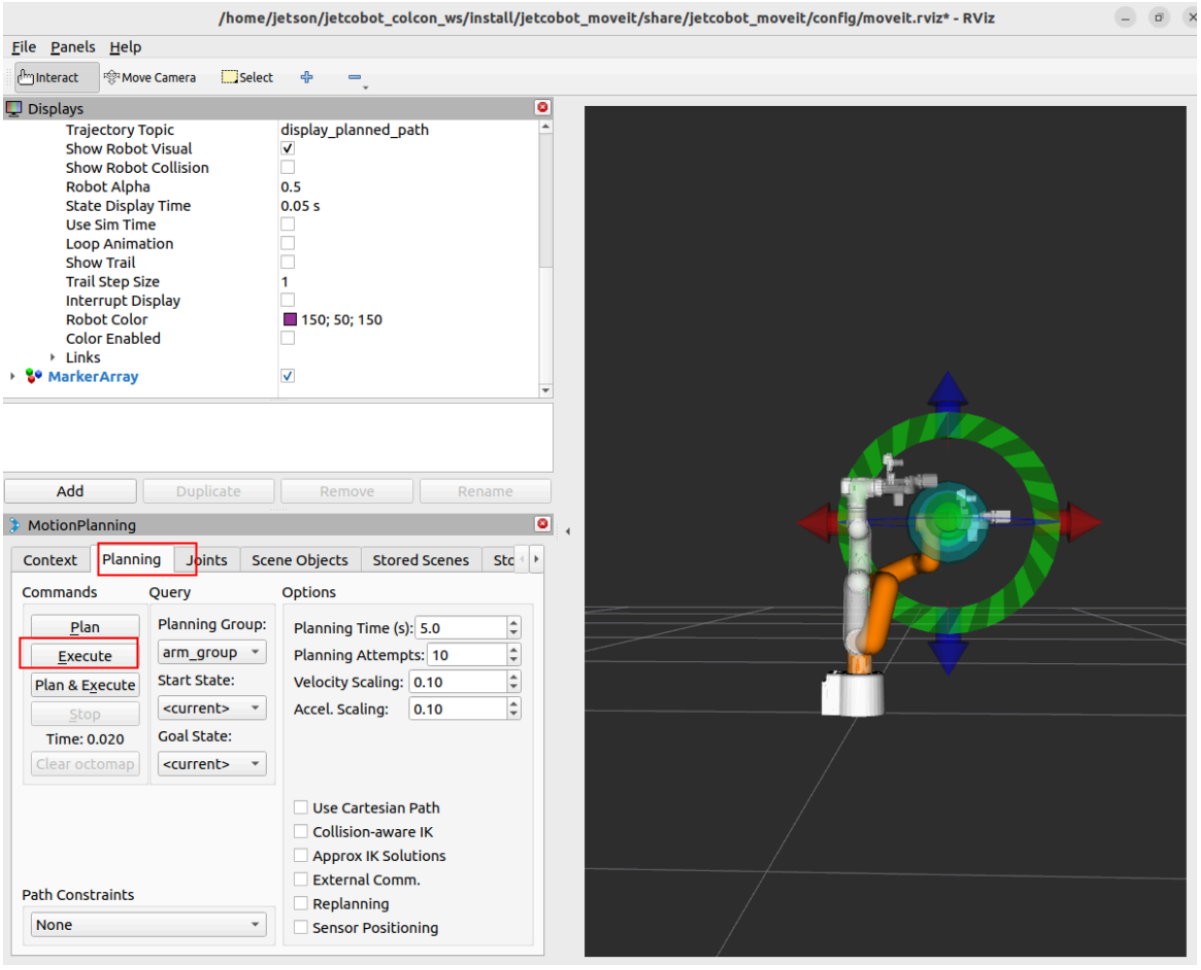


Turn off the planned path loop: After turning it off, the robot arm will only plan the path to the specified position once.



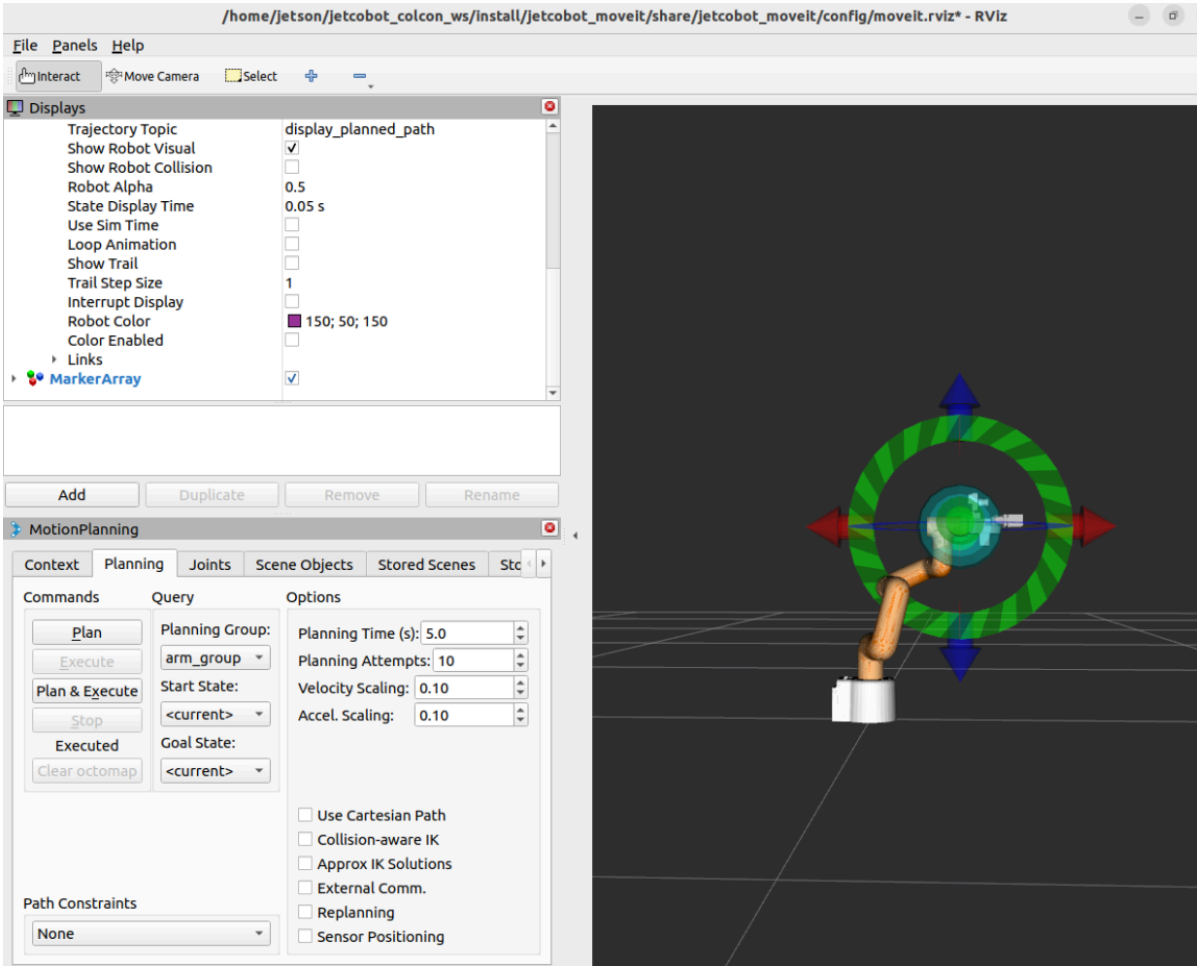
3.2. Execute Action

Click `MotionPlanning` → `Planning` → `Execute` to let the robot move to the specified position.



> **Start Executing Action**

After clicking the Execute option, the robot will move to the target state until it overlaps.



4. Preset Position

The preset position is the several positions set by the robot in the MoveIt Setup Assistant.

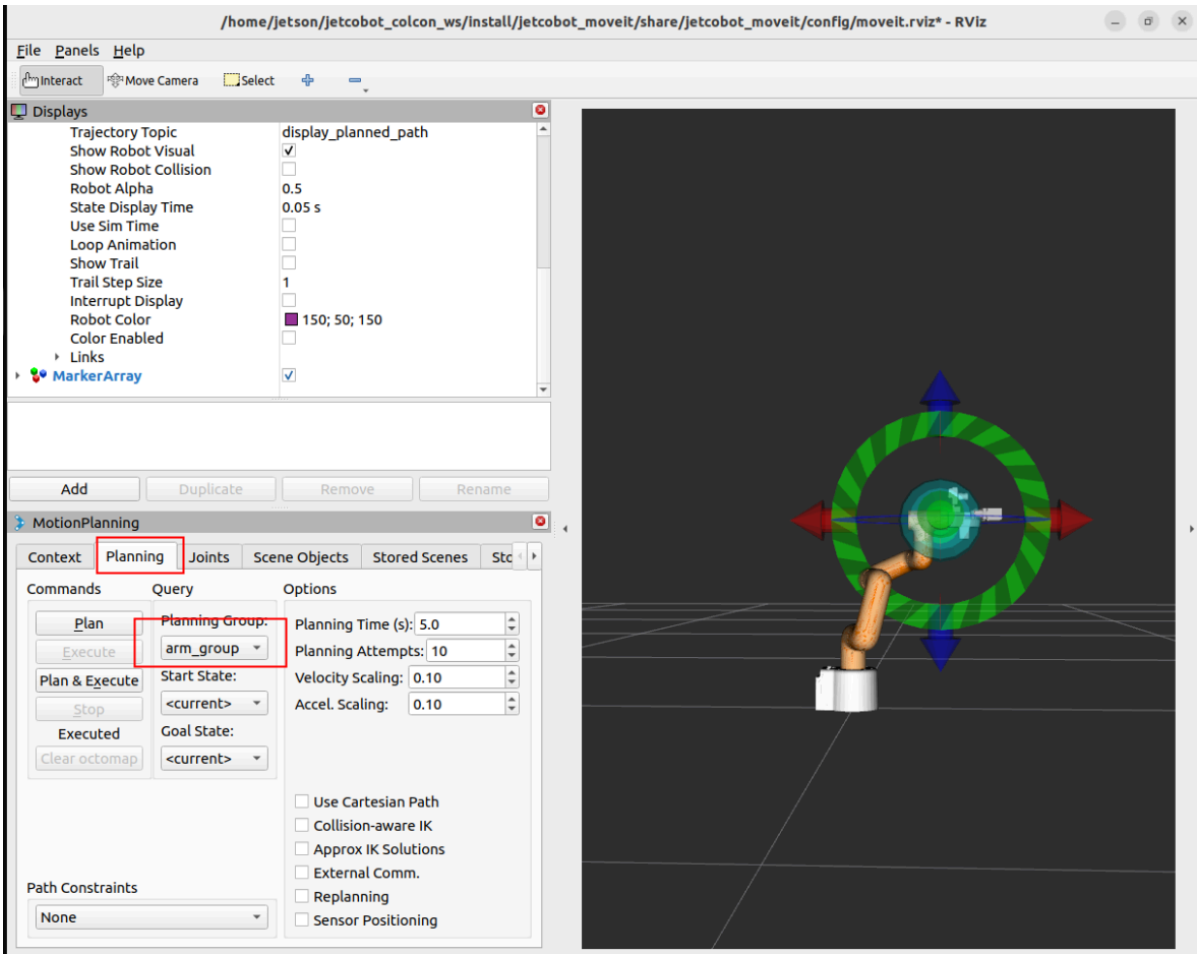
In `MotionPlanning` → `Planning` → `Planning Group`, you can set the planning group: robot arm or gripper.

In `MotionPlanning` → `Planning` → `Start State`, you can set the planning start pose.

In `MotionPlanning` → `Planning` → `Goal State`, you can set the planning target pose.

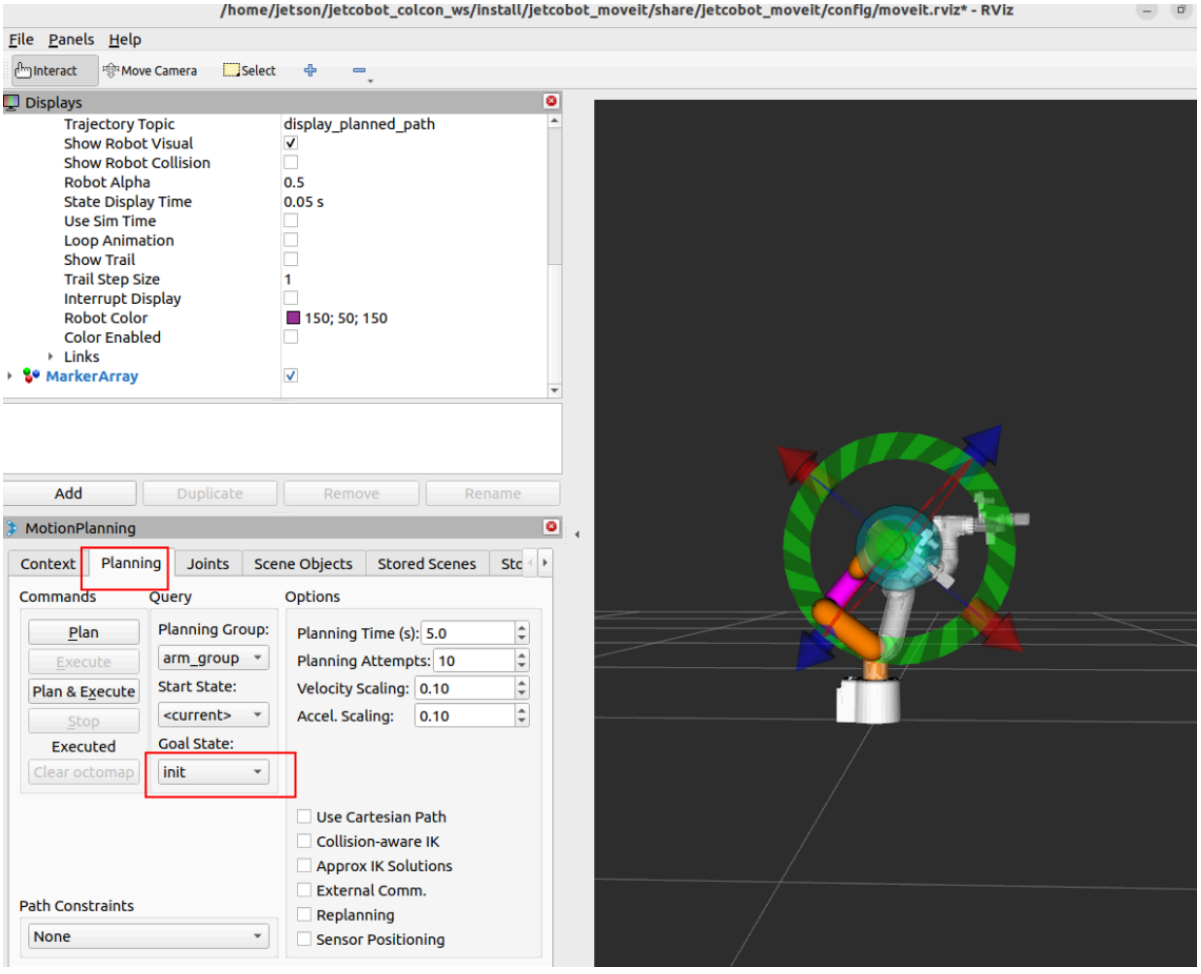
4.1, Robot arm pose

In `MotionPlanning` → `Planning` → `Planning Group`, set the planning group: arm_group.



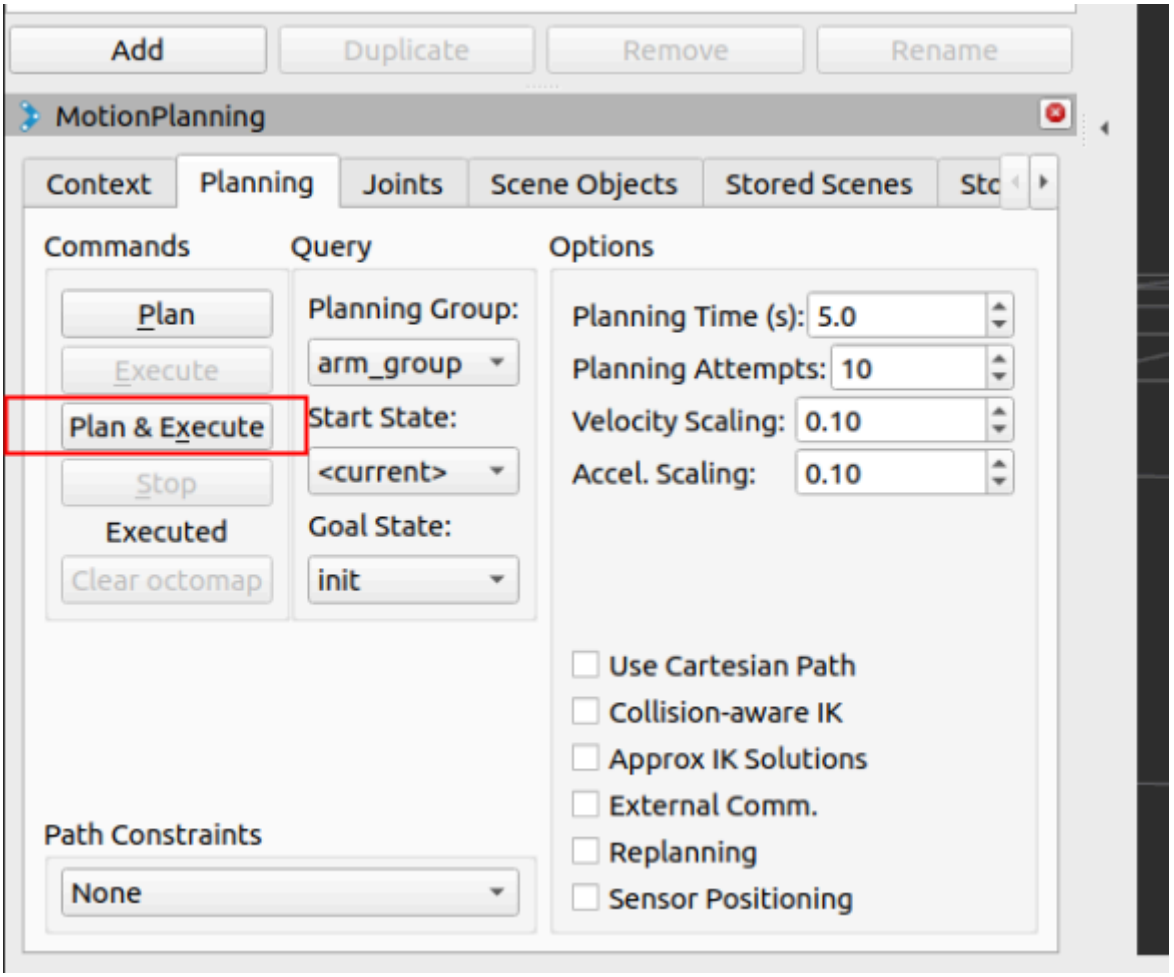
4.1.1, Set the pose

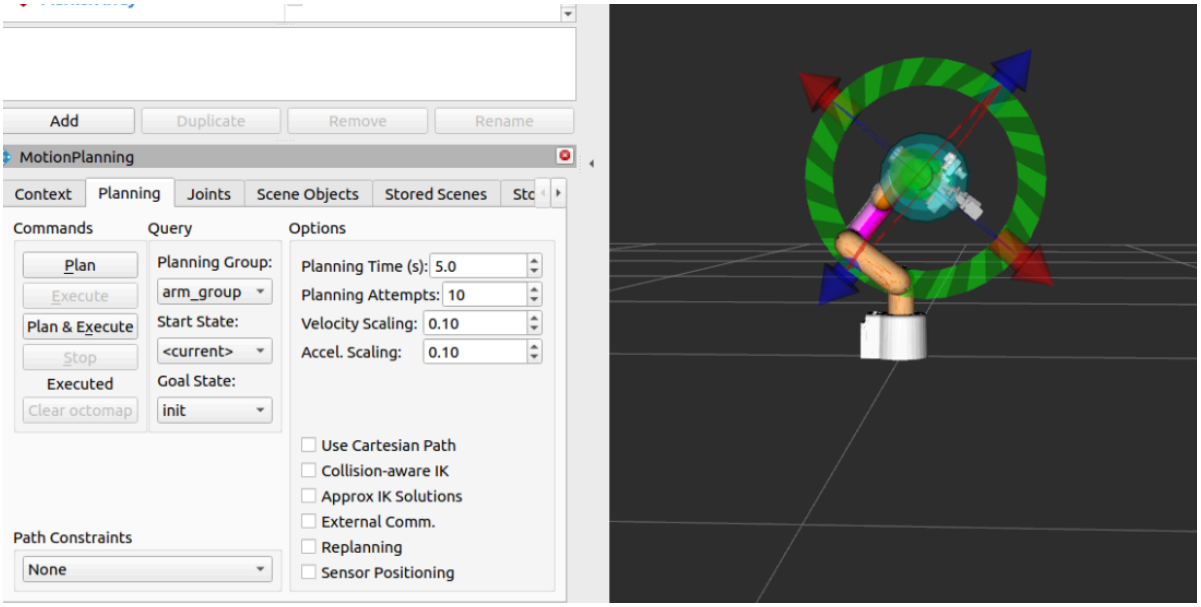
In `MotionPlanning` → `Planning` → `Goal State`, set the target pose of the plan: init



4.1.2, Plan and execute pose

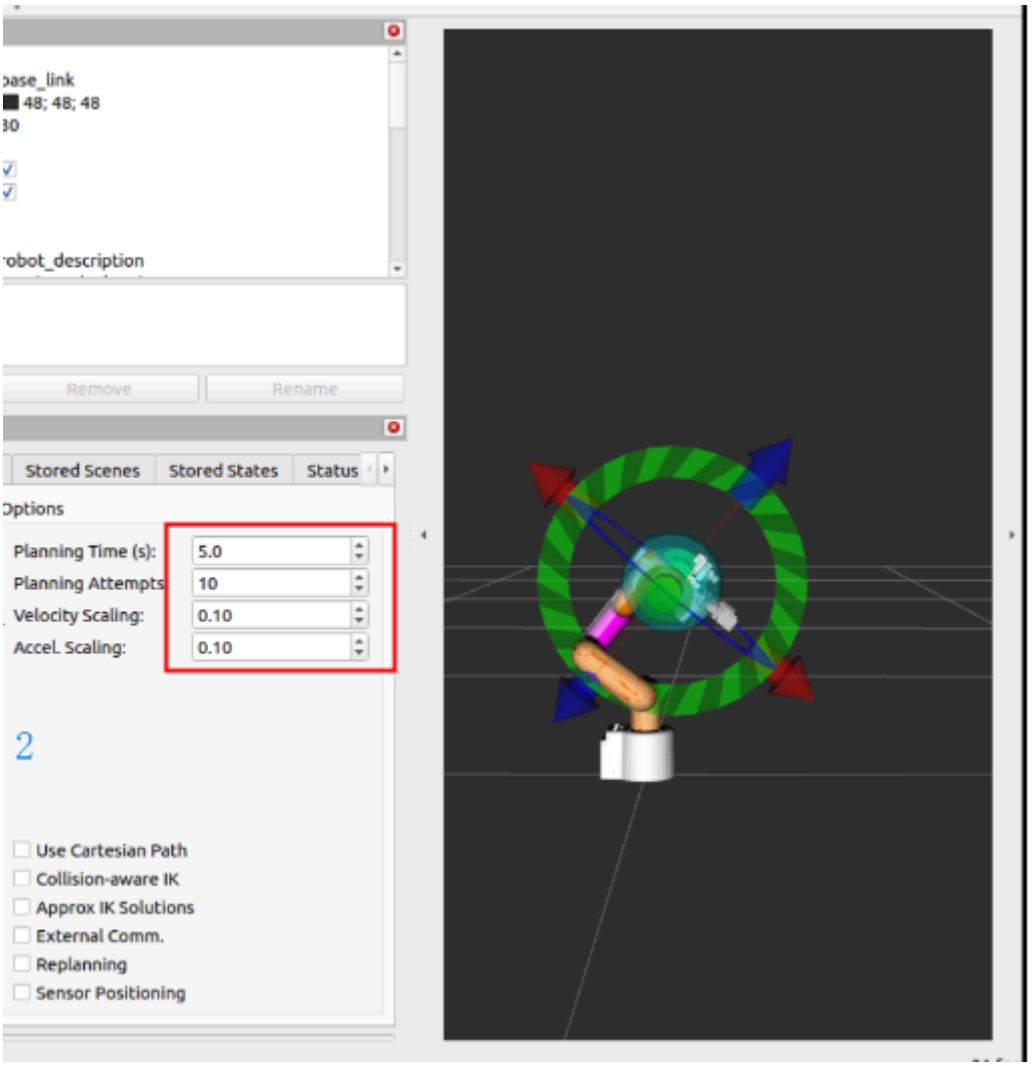
Click `MotionPlanning` → `Planning` → `Plan & Execute` to let the robot arm plan and execute to the specified pose.





4.2, Planning Options

`MotionPlanning` → `Planning` → `Options` can control the planning time (Planning Time), planning attempts (Planning Attempts), scaling planning/execution speed (Velocity Scaling), scaling planning/execution acceleration (Accel. Scaling).


base_link
48; 48; 48
robot_description
Remove
Rename
Stored Scenes
Stored States
Status
Options
Planning Time (s):
5.0
Planning Attempts:
10
Velocity Scaling:
0.10
Accel. Scaling:
0.10
2
Use Cartesian Path
Collision-aware IK
Approx IK Solutions
External Comm.
Replanning
Sensor Positioning