

# Movelt usage

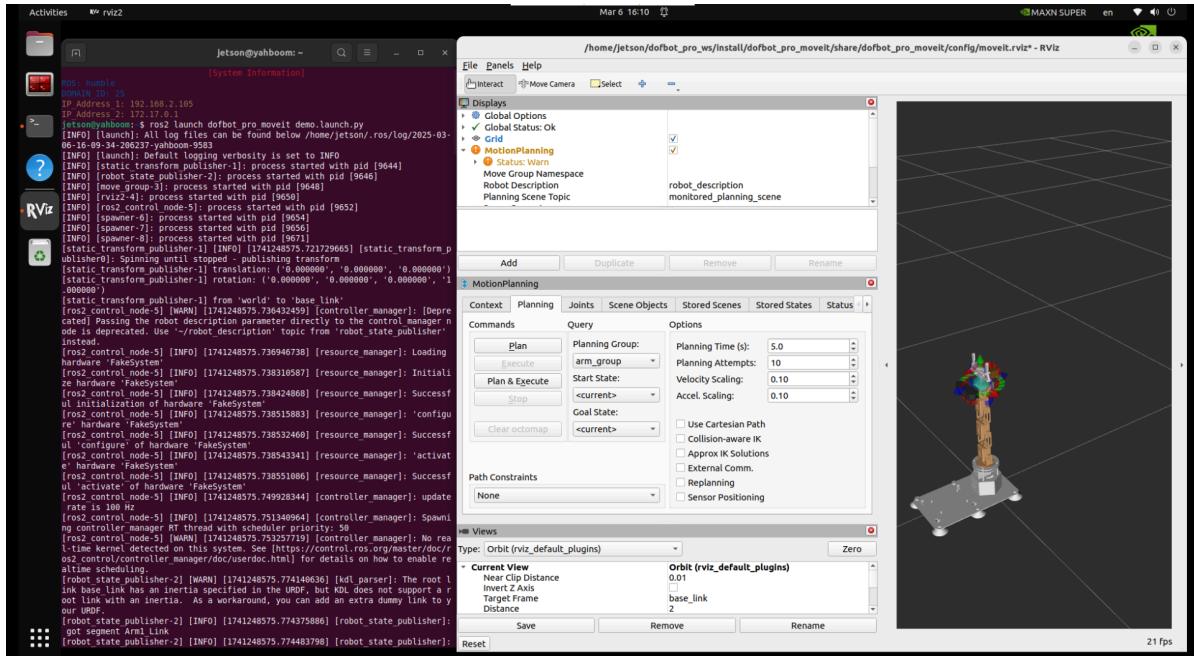
## 1. Usage environment

Motherboard: Jetson Orin Nano/Nx

ROS2: Humble

## 2. Start Movelt

```
ros2 launch dofbot_pro_moveit demo.launch.py
```

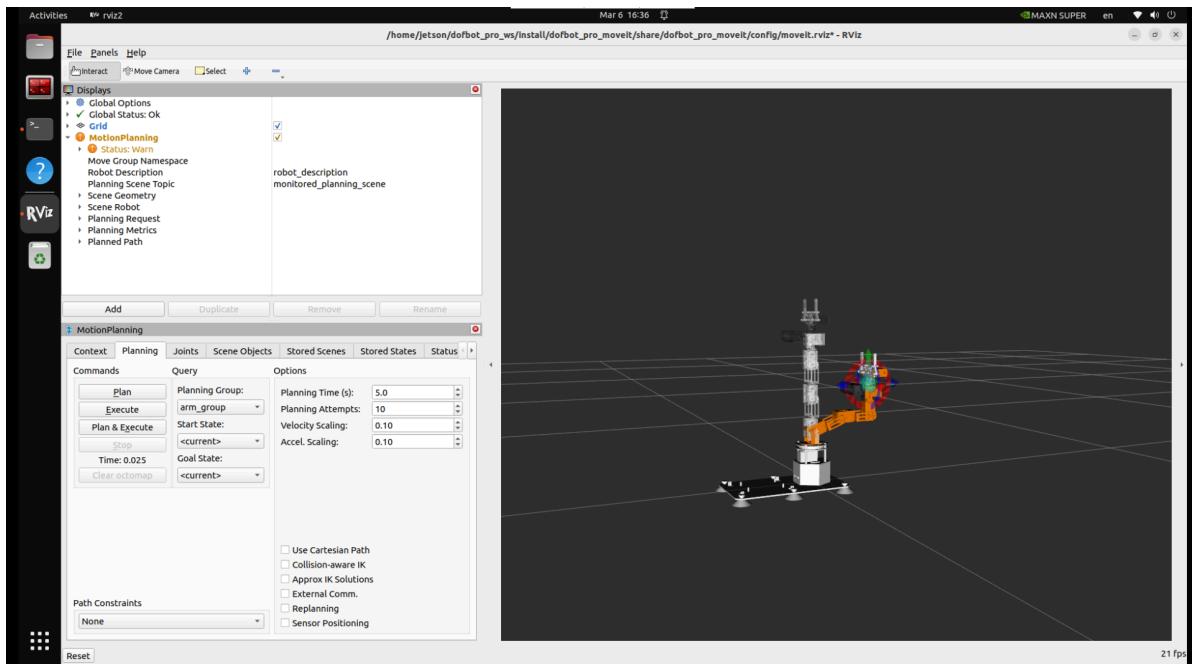


## 3. Custom pose

### 3.1. Set pose

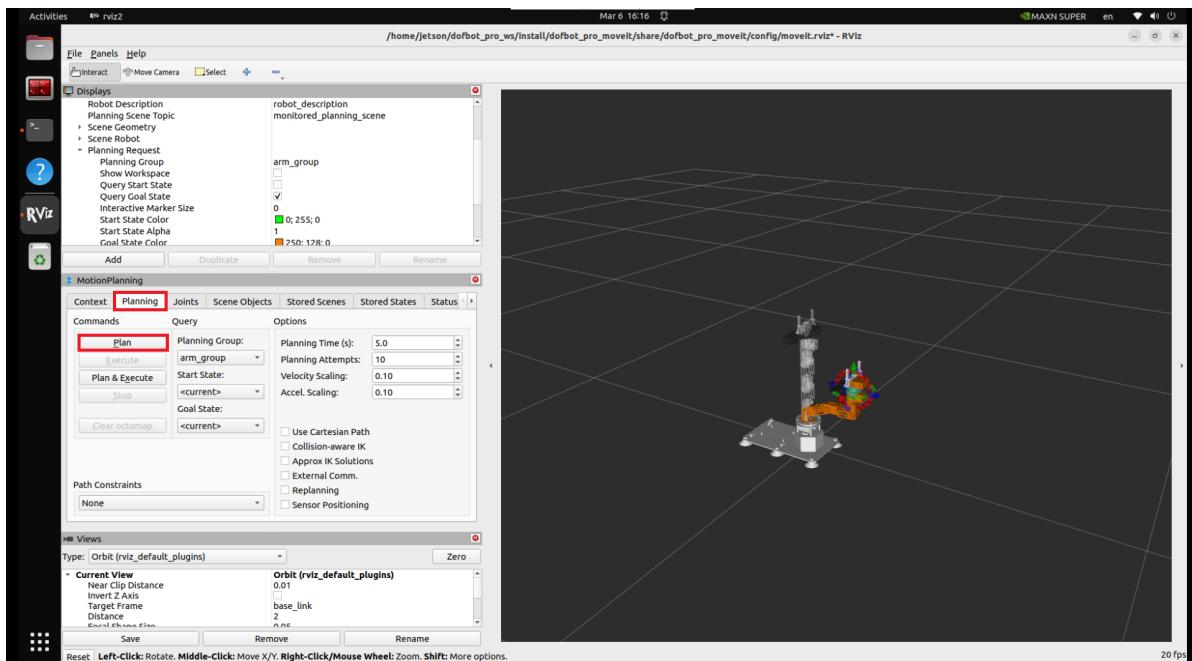
Control the pose of the robot arm by dragging the trackball on the robot arm in RViz: the trackball is the newly added sphere on the robot arm, and the yellow robot arm is the target state.

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



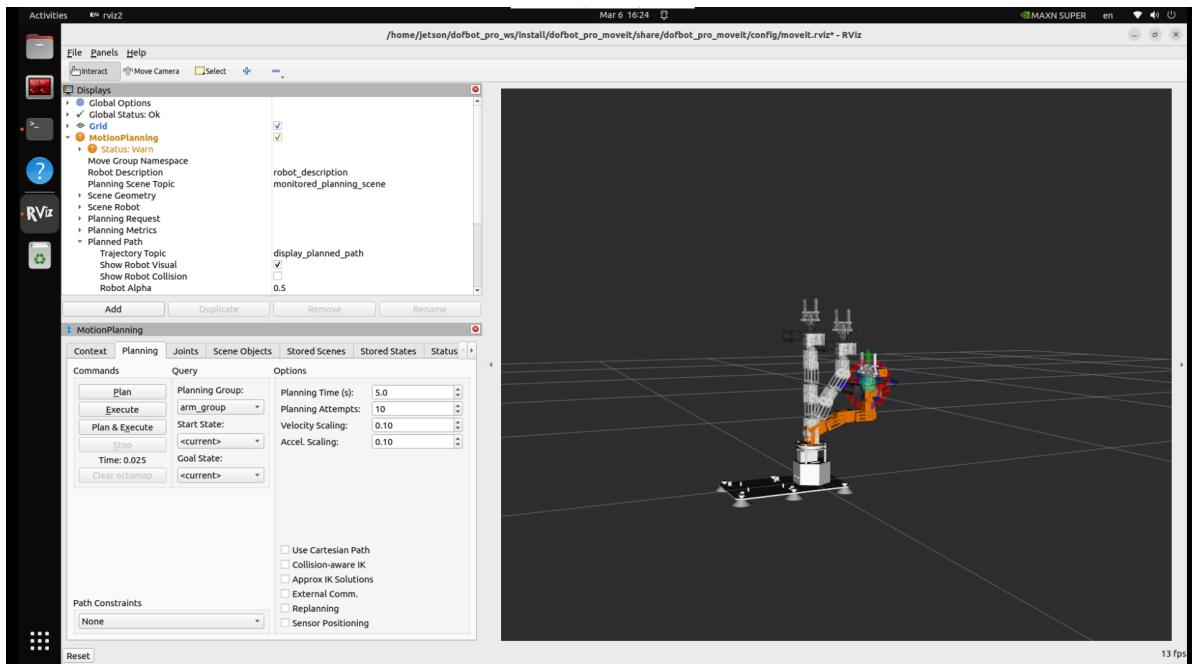
## 3.2. Planning Action

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

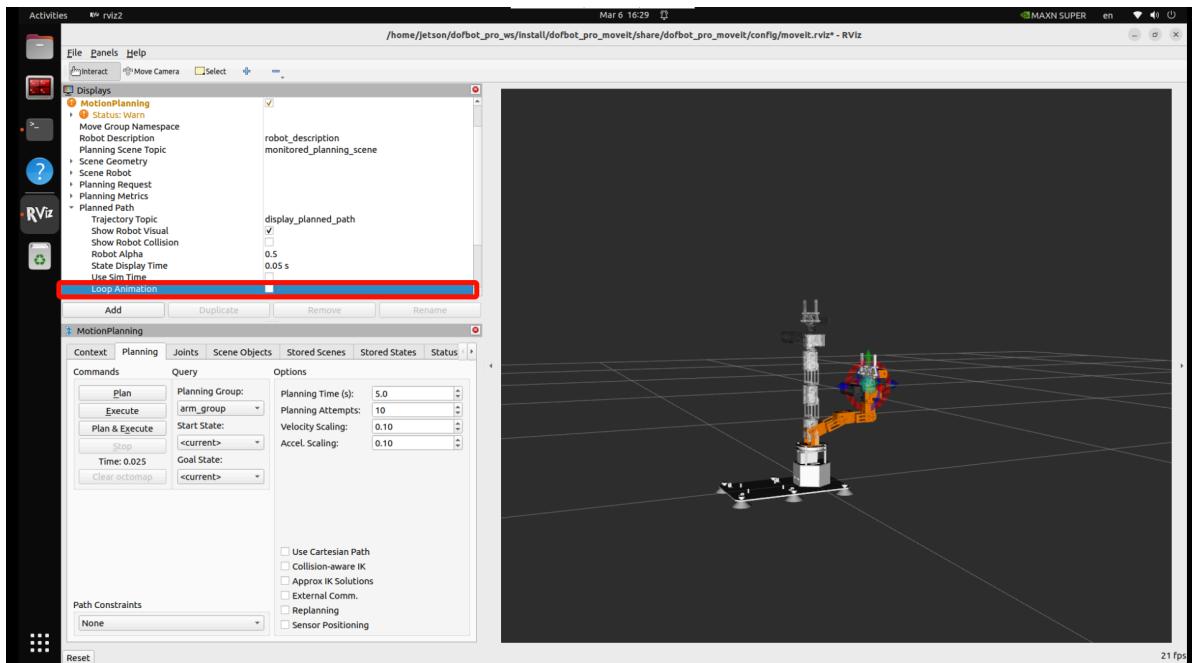


### Start planning action

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.

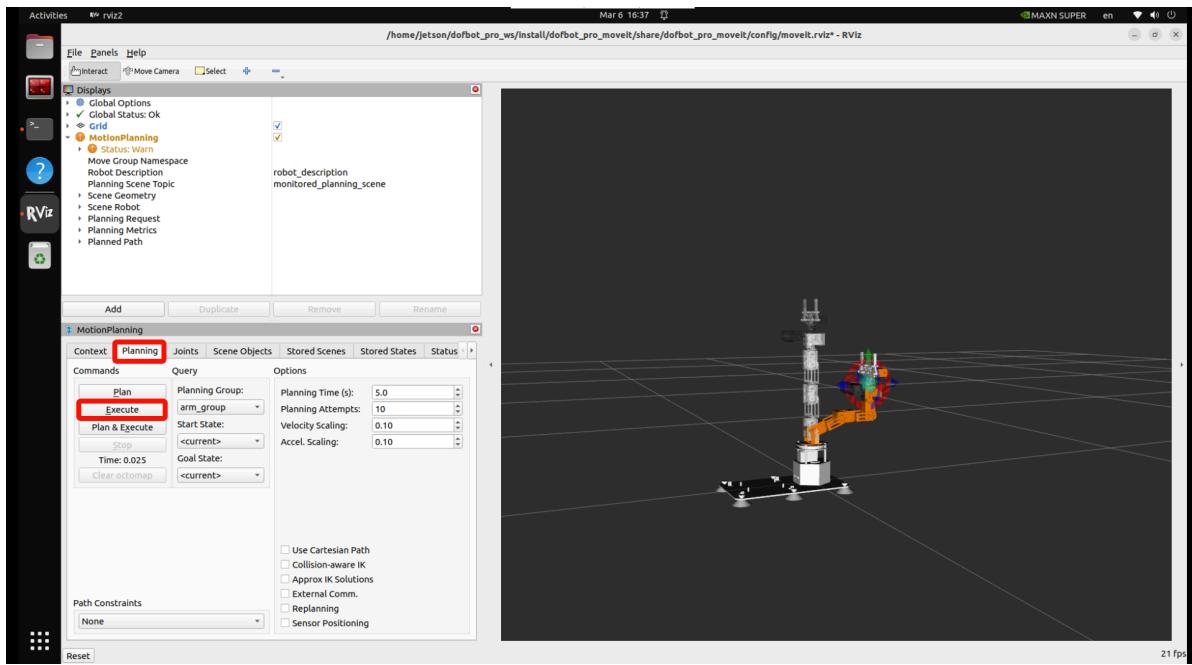


Turn off the planned path loop: After turning it off, the robot arm will only plan the path to the specified position once.



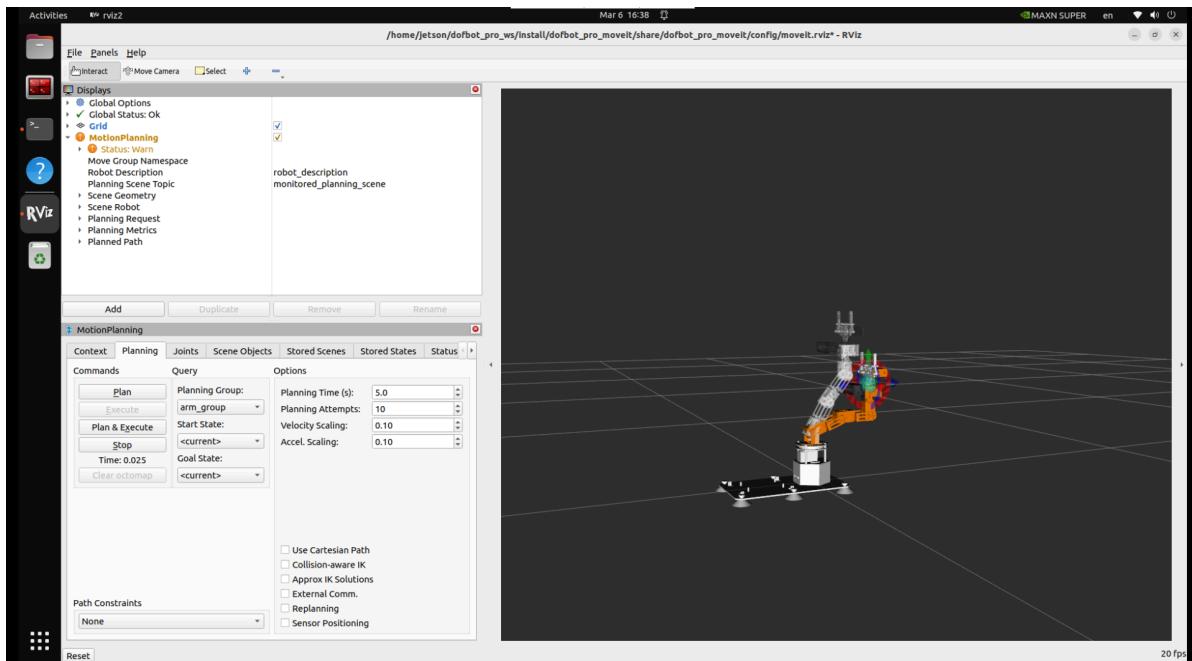
## 3.2、Execute the action

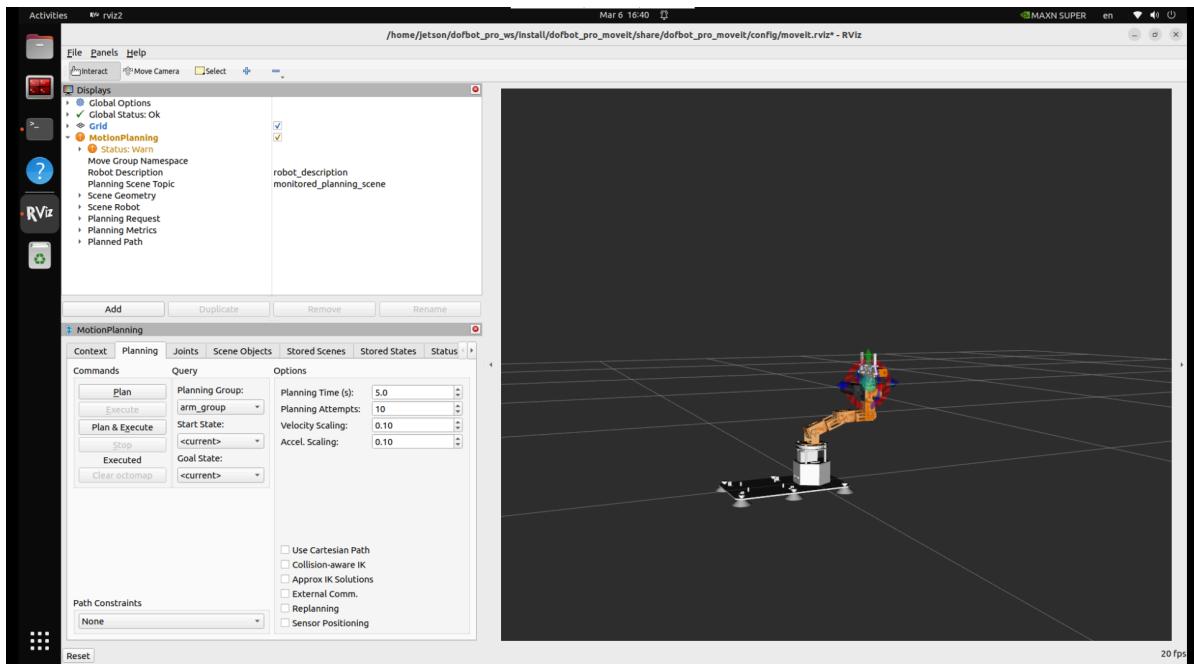
Click `MotionPlanning` → `Planning` → `Execute` to make the robot move to the specified position.



## Start executing the action

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





## 4. Preset poses

Preset poses are several poses that the robot arm is set to in the MoveIt Setup Assistant.

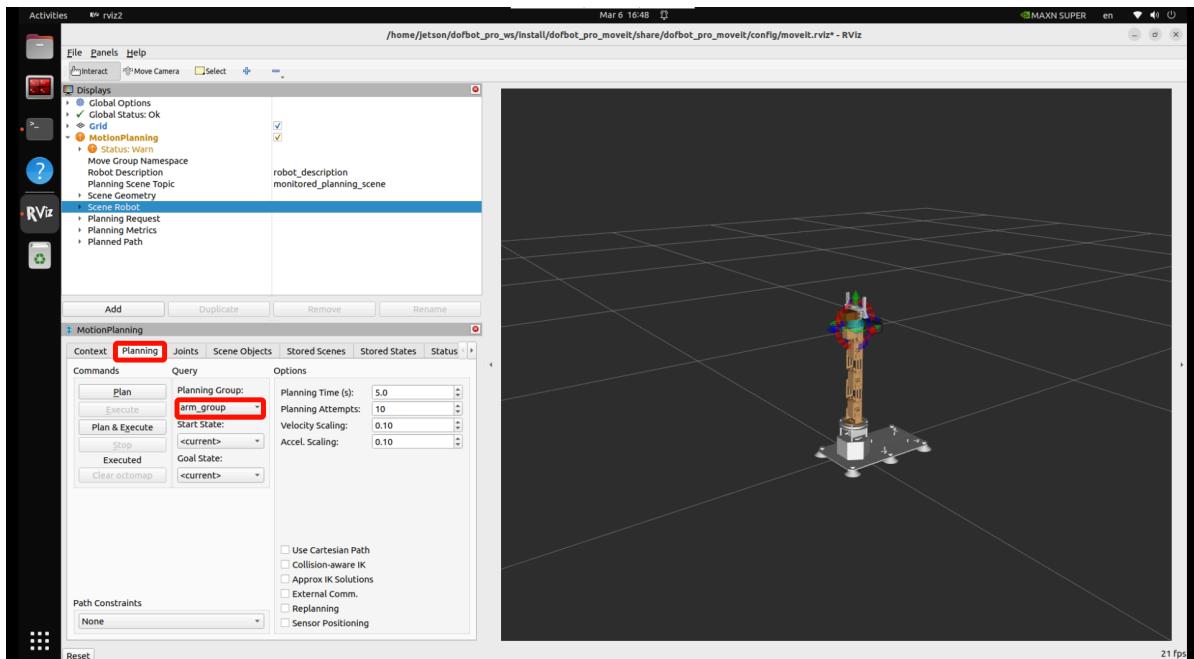
In `MotionPlanning` → `Planning` → `Planning Group`, you can set the planning group: robot arm or gripper.

In `MotionPlanning` → `Planning` → `Start State`, you can set the starting pose of the plan.

In `MotionPlanning` → `Planning` → `Goal State`, you can set the goal pose of the plan.

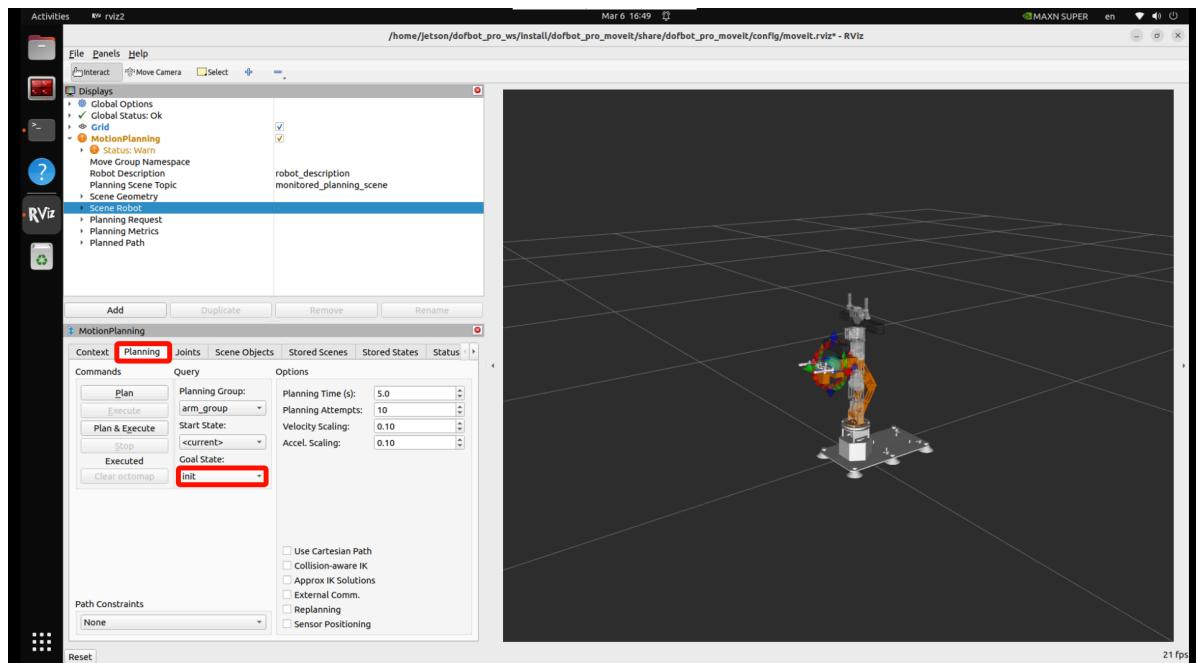
### 4.1. Robotic arm pose

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



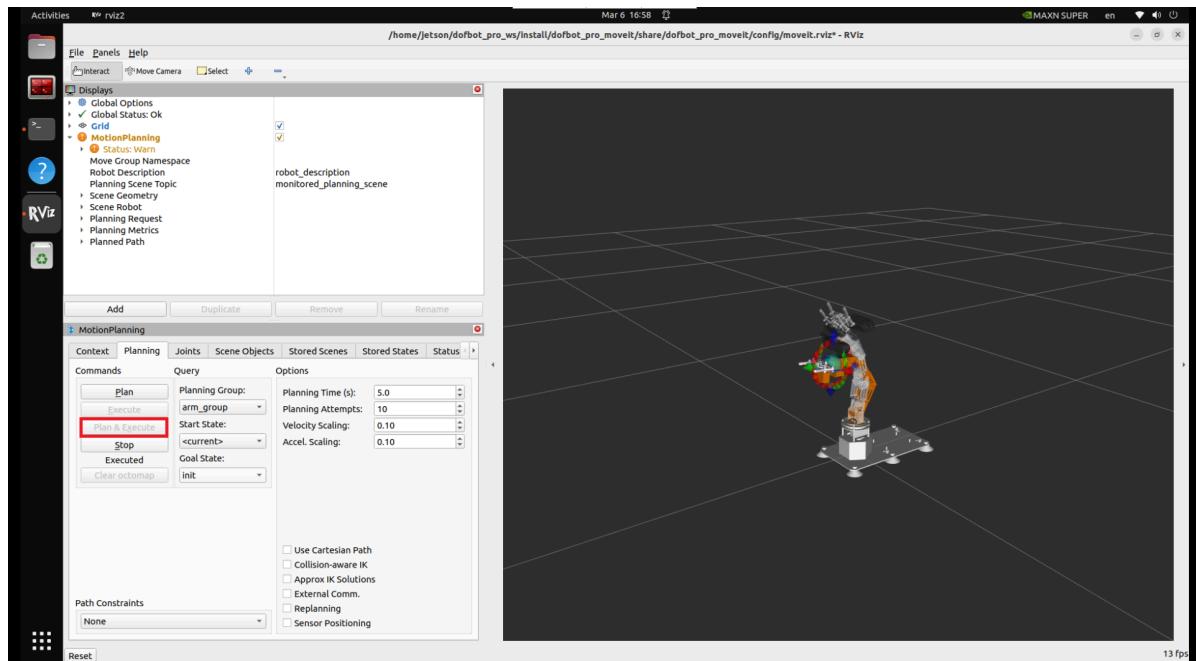
### 4.1.1. Set pose

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



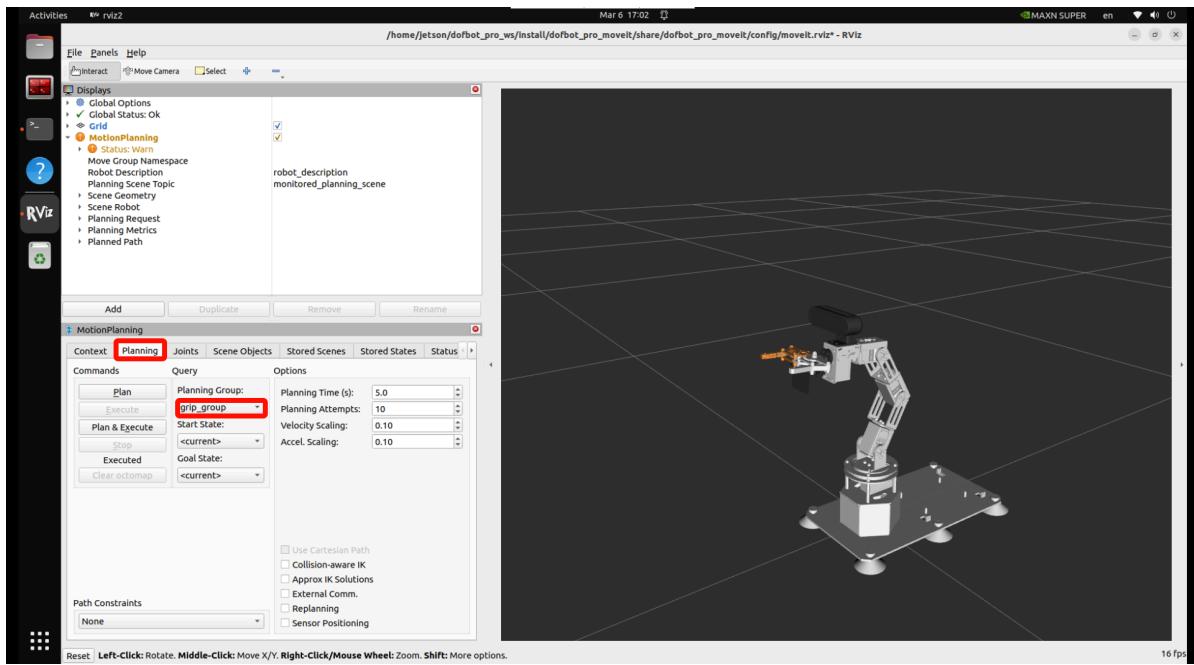
### 4.1.2. Plan and execute pose

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



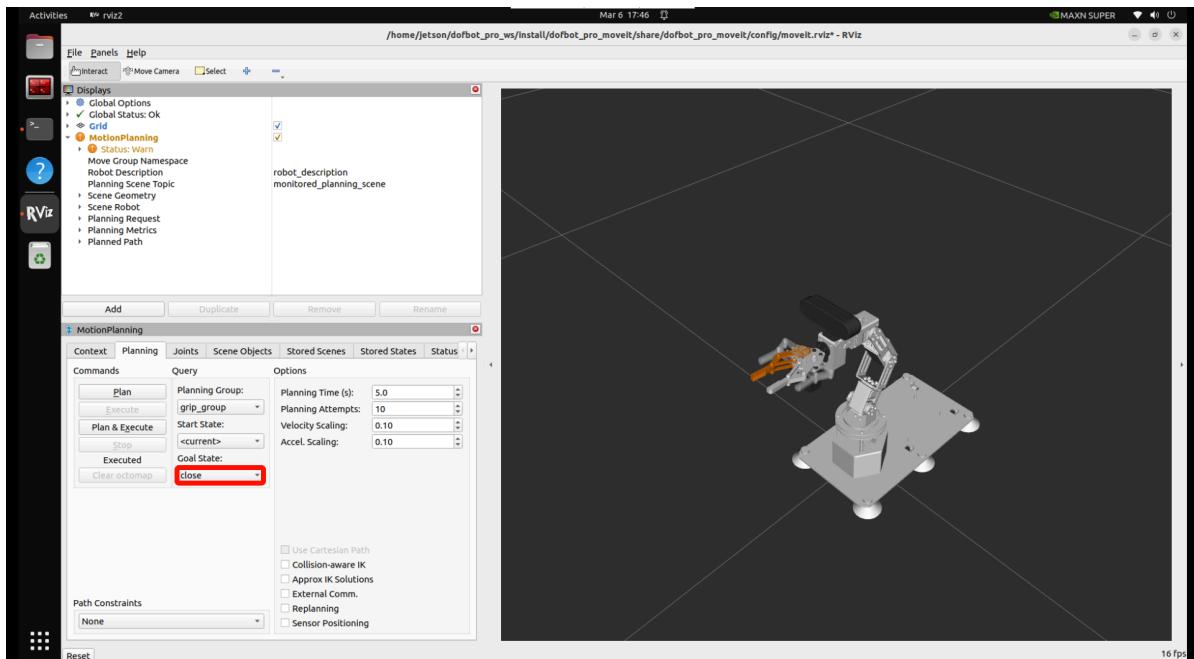
## 4.2. Gripper position

In `MotionPlanning` → `Planning` → `Planning Group`, set the planning group: grip\_group.



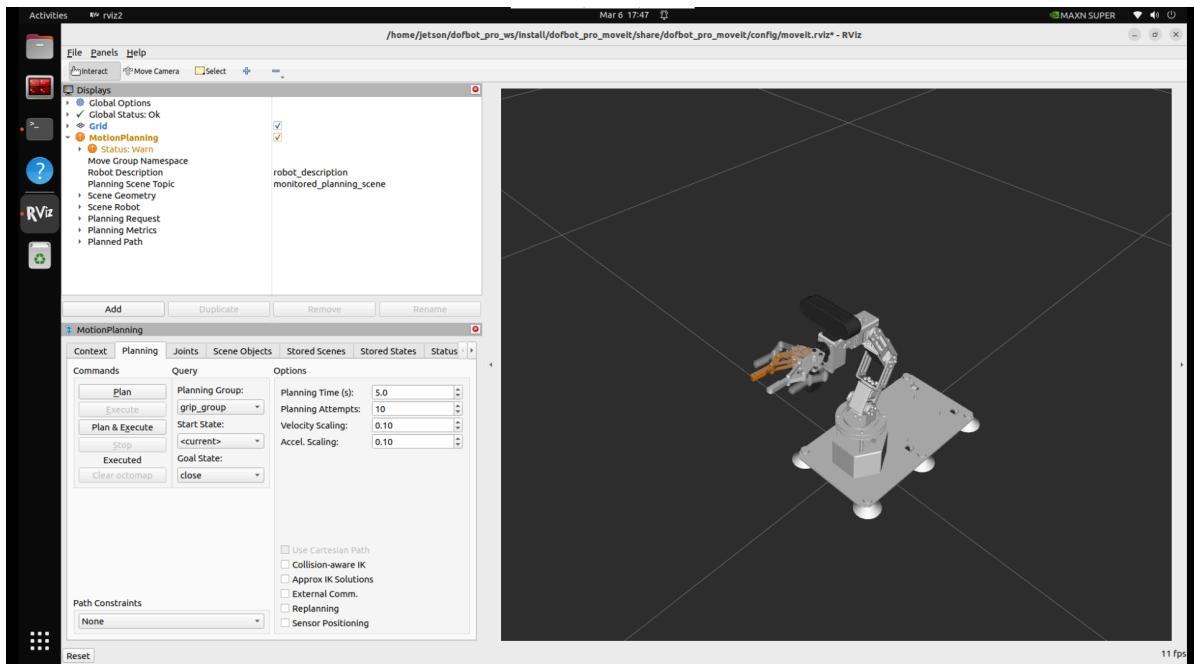
#### 4.2.1. Set the pose

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



#### 4.2.2. Plan and execute pose

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



## 4.3. 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).

