

MoveIt Random Move

1. Usage Environment

Motherboard: Jetson Orin Nano/Nx

ROS2: Humble

2. Driving the Real Machine

Driving the real machine is to convert the joint state information of the robot arm into the control of the real robot arm by subscribing to the `/joint_states` topic of MoveIt2.

Note: Since the real robot arm does not have an obstacle avoidance function, some positions may hit obstacles; so the planned robot arm movements should be as reasonable as possible and avoid obstacles

(It is recommended to use preset positions to drive the real machine demonstration)

2.1. Start the real machine

If you do not drive the real machine, simulate the robot arm movement in MoveIt:

```
ros2 run jetcobot_driver sync_plan
```

2.2. Start MoveIt2

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

```
jetson@yahboom:~/jetcobot_colcon_ws$ source install/setup.bash
jetson@yahboom:~/jetcobot_colcon_ws$ ros2 run jetcobot_driver sync_plan
[INFO] [1746523618.089714205] [mycobot_receiver]: Connected to MyCobot at /dev/ttyUSB0, baud: 1000000
```

```
jetson@yahboom:~$ ros2 launch jetcobot_moveit demo.launch.py
[INFO] [launch]: All log files can be found below /home/jetson/.ros/log/2025-05-06-18-22-35-906299-yahboom-5757
[INFO] [launch]: Default logging verbosity is set to INFO
[INFO] [static_transform_publisher-1]: process started with pid [5758]
[INFO] [robot_state_publisher-2]: process started with pid [5760]
[INFO] [move_group-3]: process started with pid [5762]
[INFO] [rviz2-4]: process started with pid [5764]
[INFO] [ros2_control_node-5]: process started with pid [5766]
[INFO] [spawner-6]: process started with pid [5768]
[INFO] [spawner-7]: process started with pid [5770]
[static_transform_publisher-1] [INFO] [1746526957.078854709] [static_transform_publisher0]: Spinning until stopped - publishing transform
[static_transform_publisher-1] translation: ('0.000000', '0.000000', '0.000000')
[static_transform_publisher-1] rotation: ('0.000000', '0.000000', '0.000000', '1.000000')
[static_transform_publisher-1] from 'world' to 'base_link'
[ros2_control_node-5] [WARN] [1746526957.111454920] [controller_manager]: [Deprecated] Passing the robot description parameter directly to the control_manager n
```

3. Random movement

It is not recommended to drive the real machine in the random movement demonstration case. Some positions may hit obstacles or hit the motherboard!

Start command

The robot needs to be successfully loaded in MoveIt and You can start planning now! appears. Run the following command: The robot will randomly plan an action by itself

```
ros2 run jetcobot_moveit random_move
```

```
jetson@yahboom:~/app_jetcobot$ ros2 run jetcobot_moveit random_move
[INFO] [1746528419.327693068] [random_target_move]: Initializing RandomMoveIt2Control.
[INFO] [1746528421.419569003] [moveit_rdf_loader.rdf_loader]: Loaded robot model in 2.09126 seconds
[INFO] [1746528421.419690831] [moveit_robot_model.robot_model]: Loading robot model 'jetcobot'...
[WARN] [1746528421.419723472] [moveit_robot_model.robot_model]: Skipping virtual joint 'virtual_joint' because its child frame 'base_link' does not match the URDF frame 'dummy'
[INFO] [1746528421.419742416] [moveit_robot_model.robot_model]: No root/virtual joint specified in SRDF. Assuming fixed joint
[WARN] [1746528421.678868130] [moveit_ros.robot_model_loader]: No kinematics plugins defined. Fill and load kinematics.yaml!
[INFO] [1746528421.702354276] [move_group_interface]: Ready to take commands for planning group arm_group.
[INFO] [1746528421.716203839] [move_group_interface]: MoveGroup action client/server ready
[INFO] [1746528421.718016689] [move_group_interface]: Planning request accepted
[INFO] [1746528421.743420584] [move_group_interface]: Planning request complete!
[INFO] [1746528421.743644686] [move_group_interface]: time taken to generate plan: 0.0144571 seconds
[INFO] [1746528421.743719088] [random_target_move]: Init arm succeeded.
[INFO] [1746528421.744922385] [move_group_interface]: Execute request accepted
[INFO] [1746528421.835180790] [move_group_interface]: Execute request success!
[INFO] [1746528421.837351890] [move_group_interface]: MoveGroup action client/server ready
[INFO] [1746528421.839557166] [move_group_interface]: Planning request accepted
[INFO] [1746528421.871221616] [move_group_interface]: Planning request complete!
[INFO] [1746528421.871257297] [move_group_interface]: time taken to generate plan: 0.0181784 seconds
[INFO] [1746528421.871386261] [random_target_move]: Planning succeeded, moving the arm.
[INFO] [1746528421.872036838] [move_group_interface]: Execute request accepted
[INFO] [1746528424.005137778] [move_group_interface]: Execute request success!
```

