

Movelt 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)

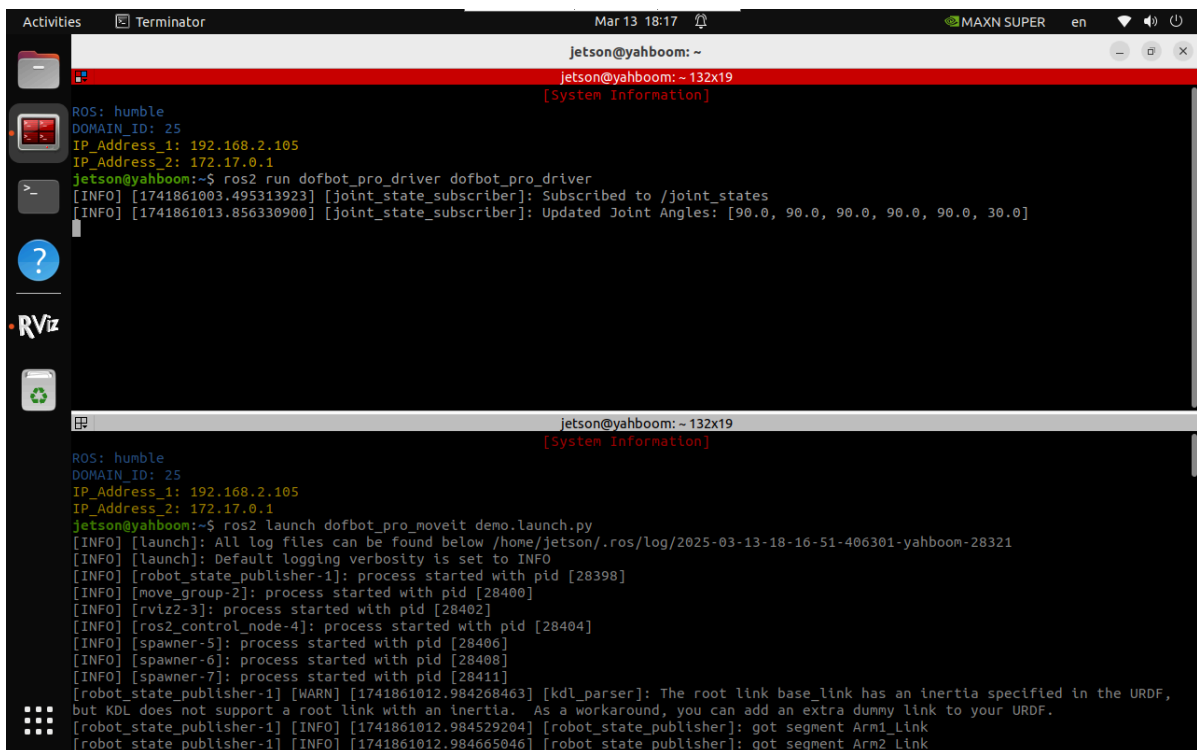
2.1. Start the real machine

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

```
ros2 run dofbot_pro_driver dofbot_pro_driver
```

2.2. Start Movelt2

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



The screenshot shows a terminal window titled "jetson@yahboom: ~" with a red header bar. The terminal output displays system information, ROS2 version (humble), domain ID (25), IP addresses (192.168.2.105 and 172.17.0.1), and the execution of the command `ros2 run dofbot_pro_driver dofbot_pro_driver`. It shows subscription to the `/joint_states` topic and an update of joint angles. Below this, the command `ros2 launch dofbot_pro_moveit demo.launch.py` is executed, showing detailed launch logs including process start times and a warning about a root link inertia specification in the URDF.

```
jetson@yahboom: ~
jetson@yahboom: ~ 132x19
[System Information]
ROS: humble
DOMAIN_ID: 25
IP_Address_1: 192.168.2.105
IP_Address_2: 172.17.0.1
jetson@yahboom:~$ ros2 run dofbot_pro_driver dofbot_pro_driver
[INFO] [1741861003.495313923] [joint_state_subscriber]: Subscribed to /joint_states
[INFO] [1741861013.856330900] [joint_state_subscriber]: Updated Joint Angles: [90.0, 90.0, 90.0, 90.0, 90.0, 30.0]

jetson@yahboom: ~ 132x19
[System Information]
ROS: humble
DOMAIN_ID: 25
IP_Address_1: 192.168.2.105
IP_Address_2: 172.17.0.1
jetson@yahboom:~$ ros2 launch dofbot_pro_moveit demo.launch.py
[INFO] [launch]: All log files can be found below /home/jetson/.ros/log/2025-03-13-18-16-51-406301-yahboom-28321
[INFO] [launch]: Default logging verbosity is set to INFO
[INFO] [robot_state_publisher-1]: process started with pid [28398]
[INFO] [move_group-2]: process started with pid [28400]
[INFO] [rviz2-3]: process started with pid [28402]
[INFO] [ros2_control_node-4]: process started with pid [28404]
[INFO] [spawner-5]: process started with pid [28406]
[INFO] [spawner-6]: process started with pid [28408]
[INFO] [spawner-7]: process started with pid [28411]
[robot_state_publisher-1] [WARN] [1741861012.984268463] [kdl_parser]: The root link base_link has an inertia specified in the URDF,
but KDL does not support a root link with an inertia. As a workaround, you can add an extra dummy link to your URDF.
[robot_state_publisher-1] [INFO] [1741861012.984529204] [robot_state_publisher]: got segment Arm1_Link
[robot_state_publisher-1] [INFO] [1741861012.984665046] [robot_state_publisher]: got segment Arm2_Link
```

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 dofbot_pro_moveit random_move
```

