RealMan Robotic Arm rm_gazebo User Manual V1.0

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Revision History:

No.	Date	Comment
V1.0	11/27/2023	Draft

Wonderful Life Needs Robotic Arms

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Content

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1. rm_gazebo Package Description

rm_gazebo is mainly used for realizing the simulation function of robot arm Moveit2 planning. We build a virtual robotic arm in the simulation environment of Gazebo, and then control the virtual robot arm in Gazebo through Moveit2. This package is introduced in detail in the following aspects.

1.　Package use.
2.　Package architecture description.

Through the introduction of this part, it can help you:

1.　Understand the package use.
2.　Familiar with the file structure and function of the package.

Source code address: https://github.com/RealManRobot/ros2_rm_robot.git。

# 2. rm_gazebo Package Running

2.1 Control of the simulation robotic arm

After the installation of the environment and the package, we can run the rm_gazebo package.

Use the following command to launch the Gazebo virtual space and the virtual robotic arm.

```
rm@rm-desktop:~$ ros2 launch rm_gazebo gazebo_65_demo.launch.py
```
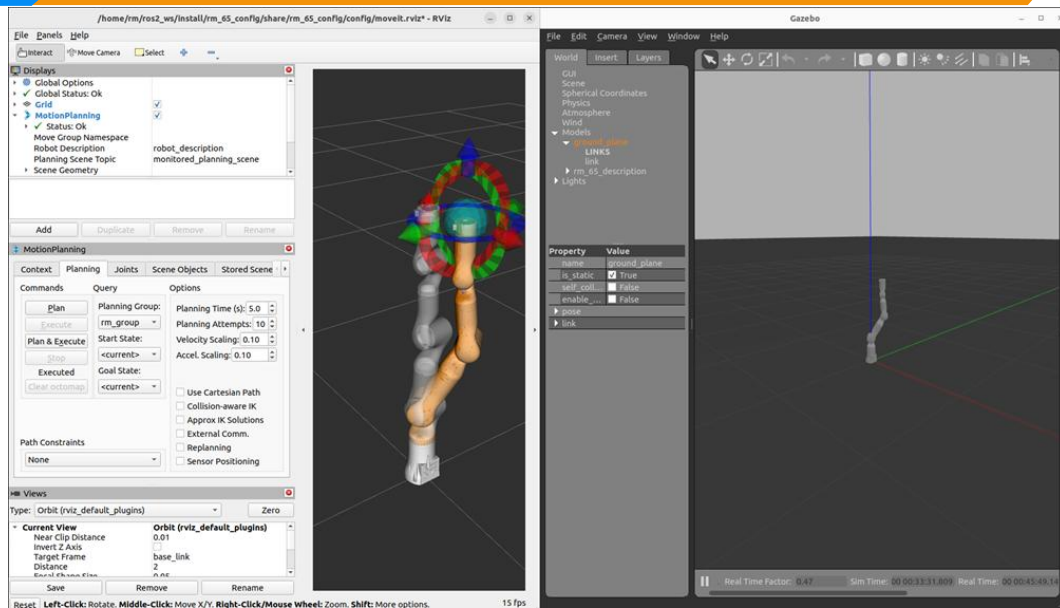
The interface displays as follows after successful running.
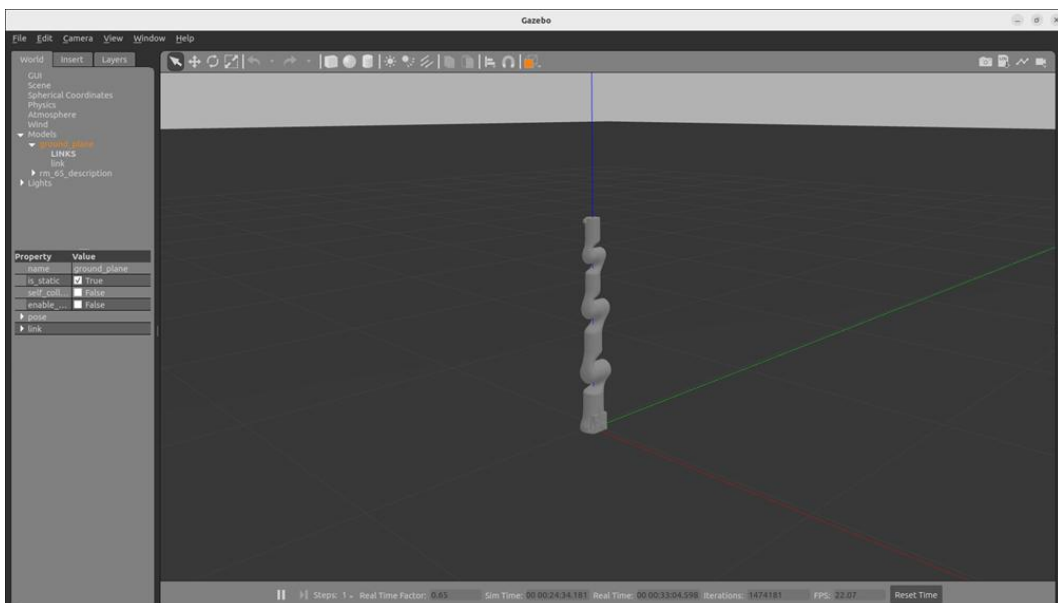
Then, we use the following command to launch moveit2 to control the simulation robot arm in Gazebo.

```
rm@rm-desktop:~$ ros2 launch rm_65_config gazebo_moveit_demo.launch.py
```

After the control interface of rviz2 pops up, you can perform the simulation control of moveit2 and Gazebo.

3. rm_gazebo Package Architecture Description

3.1 Overview of package files

The current rm_gazebo package is composed of the following files.

```
├── CMakeLists.txt                    # compilation rule file
├── config
│   ├── gazebo_63_description.urdf.xacro      #63gazebo model description file
│   ├── gazebo_65_description.urdf.xacro      #65gazebo model description file
│   ├── gazebo_75_description.urdf.xacro      #75gazebo model description file
│   └── gazebo_eco65_description.urdf.xacro   #eco65gazebo model description file
├── include
│   └── rm_gazebo
├── launch
│   ├── gazebo_63_demo.launch.py      # 63gazebo launch file
│   ├── gazebo_65_demo.launch.py      # 65gazebo launch file
│   ├── gazebo_75_demo.launch.py      # 75gazebo launch file
│   └── gazebo_eco65_demo.launch.py   # eco65gazebo launch file
├── package.xml
└── src
```