

9. 7. 2023

[https://industrial-training-master.readthedocs.io/en/melodic/\\_source/session1/Create-Catkin-Workspace.html](https://industrial-training-master.readthedocs.io/en/melodic/_source/session1/Create-Catkin-Workspace.html)

/home/ladak/Desktop/ws\_2023

-----  
<https://roboticscasual.com/ros-tutorial-how-to-create-a-moveit-config-for-the-ur5-and-a-gripper/>

```
git clone -b noetic-devel https://github.com/ros-industrial/universal_robot.git
```

fatal: Remote branch noetic-devel not found in upstream origin – **NO NOETIC BRANCH**

=> use original folder universal\_robot

```
wget https://raw.githubusercontent.com/utecrobotics/ur5/master/ur5_description/urdf/ur5_joint_limited_robot.urdf.xacro
```

-----  
**.bashrc:**

```
#export ROS_MASTER_URI=http://192.168.0.10:11311
#export ROS_IP=192.168.0.100
```

```
export ROS_MASTER_URI=http://localhost:11311
export ROS_HOSTNAME=localhost
```

-----  
ladak@ladak-ThinkStation-P330:~/Desktop/ws\_2023/src\$ roslaunch moveit\_setup\_assistant setup\_assistant.launch

```
... logging to /home/ladak/.ros/log/97880b22-1e77-11ee-a428-8f23e8d4e878/roslaunch-ladak-ThinkStation-P330-25435.log
Checking log directory for disk usage. This may take a while.
Press Ctrl-C to interrupt
Done checking log file disk usage. Usage is <1GB.
```

```
started roslaunch server http://localhost:38469/
```

```
SUMMARY
=====
```

```
PARAMETERS
* /rostdistro: noetic
* /rosversion: 1.15.13
```

```
NODES
/
  moveit_setup_assistant (moveit_setup_assistant/moveit_setup_assistant)
```

```
auto-starting new master
process[master]: started with pid [25443]
ROS_MASTER_URI=http://localhost:11311
```

```
...
```

```

/opt/ros/noetic/lib/moveit_setup_assistant/moveit_setup_assistant: error while loading
shared libraries: libmoveit_robot_state_rviz_plugin_core.so.1.1.11: cannot open shared
object file: No such file or directory
=====REQUIRED
process [moveit_setup_assistant-2] has died!
process has died [pid 25456, exit code 127, cmd
/opt/ros/noetic/lib/moveit_setup_assistant/moveit_setup_assistant
__name:=moveit_setup_assistant __log:=/home/ladak/.ros/log/97880b22-1e77-11ee-a428-
8f23e8d4e878/moveit_setup_assistant-2.log].
log file:
/home/ladak/.ros/log/97880b22-1e77-11ee-a428-8f23e8d4e878/moveit_setup_assistant-2*.log
Initiating shutdown!
=====...

```

<https://github.com/ros-planning/moveit/issues/3303>

```
sudo apt install --reinstall "?and(~i,~nros-noetic-moveit-*)"
```

This updated all move\_it packages from 1.1.10 to 1.1.12.

```
-----
--
```

libsrdfdom.so.0.6.4:

```
sudo apt-get install --reinstall ros-noetic-srdfdom
```

```
sudo apt-get install ros-noetic-geometric-shapes
```

```
-----
```

I can run the GUI now!

TODO:

```
    try build NAIL sources (all move_it packages were
reinstalled..)
```

```
-----
```

10. 7. 2023

NAIL sources build OK; only with warnings on ur\_kinematics:

---

```

Warnings    << ur_kinematics:check
/home/ladak/git/nail108-2021/getting_started/logs/ur_kinematics/build.check.017.log
CMake Warning (dev) at CMakeLists.txt:2 (project):
  Policy CMP0048 is not set: project() command manages VERSION variables.
  Run "cmake --help-policy CMP0048" for policy details.  Use the cmake_policy
  command to set the policy and suppress this warning.

```

The following variable(s) would be set to empty:

```

CMAKE_PROJECT_VERSION
CMAKE_PROJECT_VERSION_MAJOR
CMAKE_PROJECT_VERSION_MINOR
CMAKE_PROJECT_VERSION_PATCH

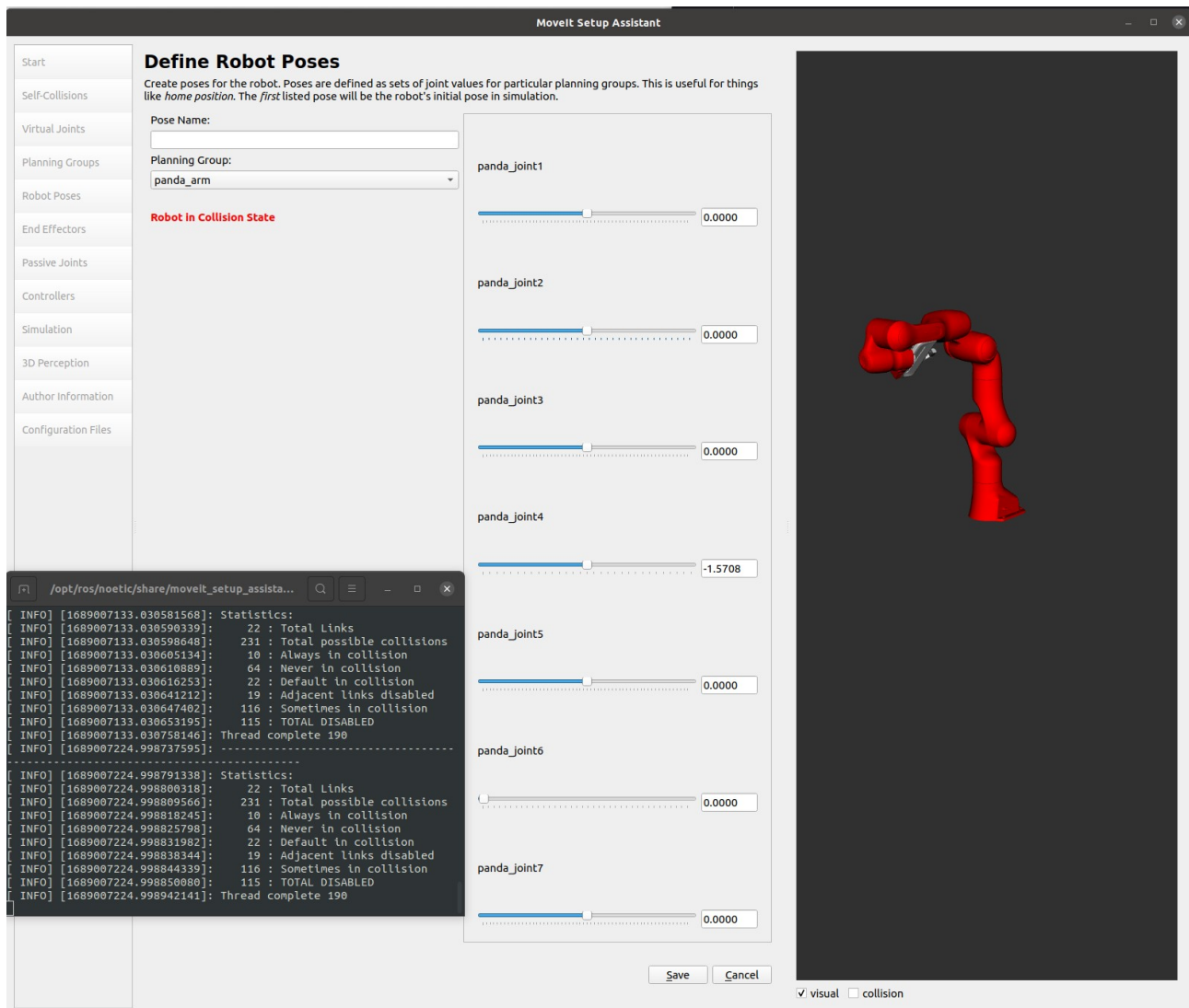
```

This warning is for project developers. Use -Wno-dev to suppress it.

# setup\_assistant\_tutorial:

[https://ros-planning.github.io/moveit\\_tutorials/doc/setup\\_assistant/setup\\_assistant\\_tutorial.html](https://ros-planning.github.io/moveit_tutorials/doc/setup_assistant/setup_assistant_tutorial.html)

## Step 5: Add Robot Poses



<https://github.com/ros-planning/moveit/issues/2332>

15. 7. 2023

Universal\_robot:

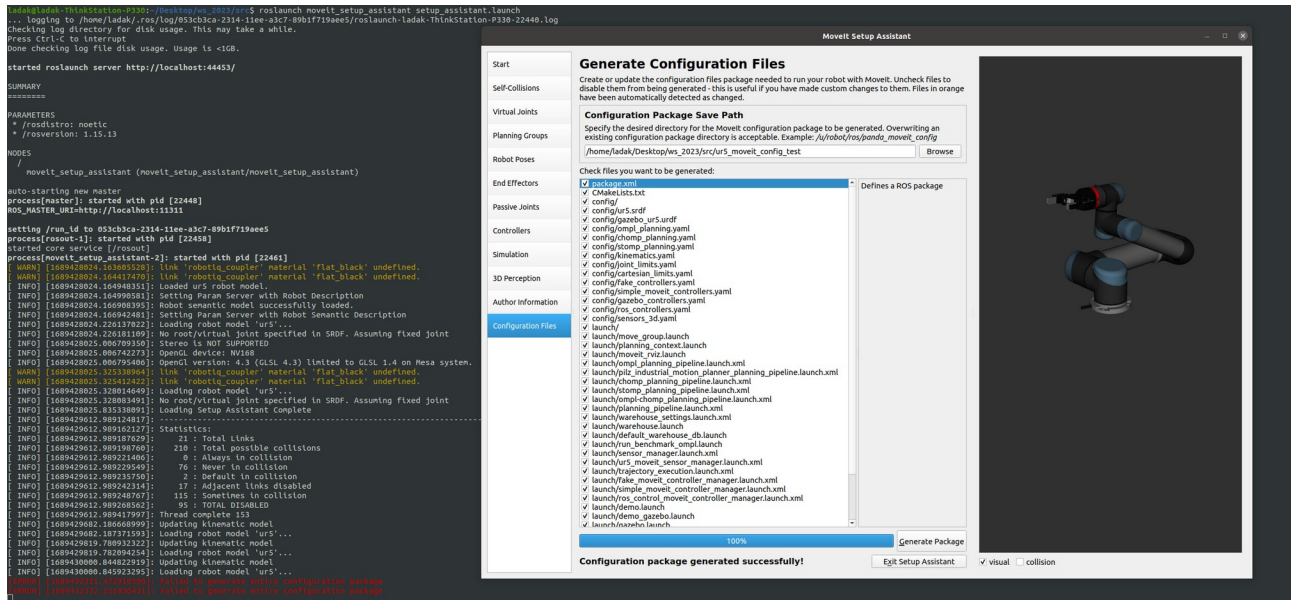
No Noetic branch, installed melodic dev:

git clone -b melodic-devel [https://github.com/ros-industrial/universal\\_robot.git](https://github.com/ros-industrial/universal_robot.git)

Missing URDF files, cloned from kinetic:

ladak@ladak-ThinkStation-P330:~/Desktop/URDF\_KINETIC\$ git clone -b kinetic  
[https://github.com/ros-industrial/universal\\_robot.git](https://github.com/ros-industrial/universal_robot.git)

Config generated with error msg in log (no error in GUI); instructions from  
<https://roboticscasual.com/ros-tutorial-how-to-create-a-moveit-config-for-the-ur5-and-a-gripper/>



[ERROR] [1689432372.251036431]: Failed to generate entire configuration package

roslaunch ur5\_moveit\_config\_test demo\_gazebo.launch:

...

[ERROR] [1689439171.369505782]: Exception while loading planner  
'chomp\_interface/CHOMPPlanner': Failed to load library  
/opt/ros/noetic/lib/libchomp\_planner\_plugin.so. Make sure that you are calling  
the PLUGINLIB\_EXPORT\_CLASS macro in the library code, and that names are  
consistent between this macro and your XML.  
Error string: Could not load library (Poco exception =  
libchomp\_motion\_planner.so.1.1.12: cannot open shared object file: No such file  
or directory)  
Available plugins: chomp\_interface/CHOMPPlanner, ompl\_interface/OMPLPlanner,  
pilz\_industrial\_motion\_planner::CommandPlanner

sudo apt-get install ros-noetic-chomp-motion-planner

[ERROR] [1689439171.618177834]: Failed to initialize planning pipeline 'chomp'.

[ERROR] [1689439171.822043667]: Exception while loading planner  
'ompl\_interface/OMPLPlanner': Failed to load library  
/opt/ros/noetic/lib/libmoveit\_ompl\_planner\_plugin.so. Make sure that you are  
calling the PLUGINLIB\_EXPORT\_CLASS macro in the library code, and that names are  
consistent between this macro and your XML. Error string: Could not load library  
(Poco exception = libompl.so.17: cannot open shared object file: No such file or  
directory)  
Available plugins: chomp\_interface/CHOMPPlanner, ompl\_interface/OMPLPlanner,  
pilz\_industrial\_motion\_planner::CommandPlanner

<https://ompl.kavrakilab.org/installation.html>

```
sudo sh -c 'echo "deb http://packages.ros.org/ros/ubuntu `lsb_release -sc`  
main" > /etc/apt/sources.list.d/ros-latest.list'
```

```
wget http://packages.ros.org/ros.key -O - | sudo apt-key add -
```

```
sudo apt-get update
```

```
sudo apt-get install ros-`rosversion`-ompl
```

[ERROR] [1689439171.825692367]: Failed to initialize planning pipeline 'ompl'.

[ERROR] [1689439171.867420686]: Exception while loading planner  
'pilz\_industrial\_motion\_planner::CommandPlanner': Failed to load library  
/opt/ros/noetic/lib//libpilz\_industrial\_motion\_planner.so. Make sure that you  
are calling the PLUGINLIB\_EXPORT\_CLASS macro in the library code, and that names  
are consistent between this macro and your XML. Error string: Could not load  
library (Poco exception = libmoveit\_planning\_interface.so.1.1.10: cannot open  
shared object file: No such file or directory)  
Available plugins: chomp\_interface/CHOMPPlanner, ompl\_interface/OMPLPlanner,  
pilz\_industrial\_motion\_planner::CommandPlanner

[ERROR] [1689439171.868916919]: Failed to initialize planning pipeline  
'pilz\_industrial\_motion\_planner'.

[ERROR] [1689439171.870199450]: Failed to load any planning pipelines.

-----  
All errors resolved - except the last one (libpilz\_industrial\_motion\_planner)

[http://wiki.ros.org/pilz\\_robots/Tutorials/MoveRobotWithPilzCommand\\_planner#Install\\_Pilz\\_industrial\\_motion\\_package](http://wiki.ros.org/pilz_robots/Tutorials/MoveRobotWithPilzCommand_planner#Install_Pilz_industrial_motion_package)

```
sudo apt install ros-noetic-pilz-industrial-motion -OK
```

```
roslaunch prbt_moveit_config moveit_planning_execution.launch  
pipeline:=pilz_command_planner -error
```

```
sudo apt update  
sudo apt install ros-noetic-pilz-industrial-motion
```

This installs the [pilz\\_extensions](#), [pilz\\_msgs](#) and [pilz\\_trajectory\\_generation](#) package, which includes the [pilz\\_command\\_planner](#). To test the successful installation (and your ROS environment) you can run in the terminal:

```
roslaunch prbt_moveit_config moveit_planning_execution.launch pipeline:=pilz_command_planner
```



**Note:** If you use *pilz\_industrial\_motion* 0.4.5 or lower use *pipeline:=command\_planner*



**Note:** If you use the latest branch (noetic-devel) use *pipeline:=pilz\_industrial\_motion\_planner*

23.7.2023

Can't resolve the pilz package;  
other way how to test generated `ur5_moveit_config_test` config:

<https://roboticscasual.com/ros-tutorial-how-to-create-a-moveit-config-for-the-ur5-and-a-gripper/>

- all modifications done in `ur_description` etc.

## Use Moveit for motion planning in Rviz

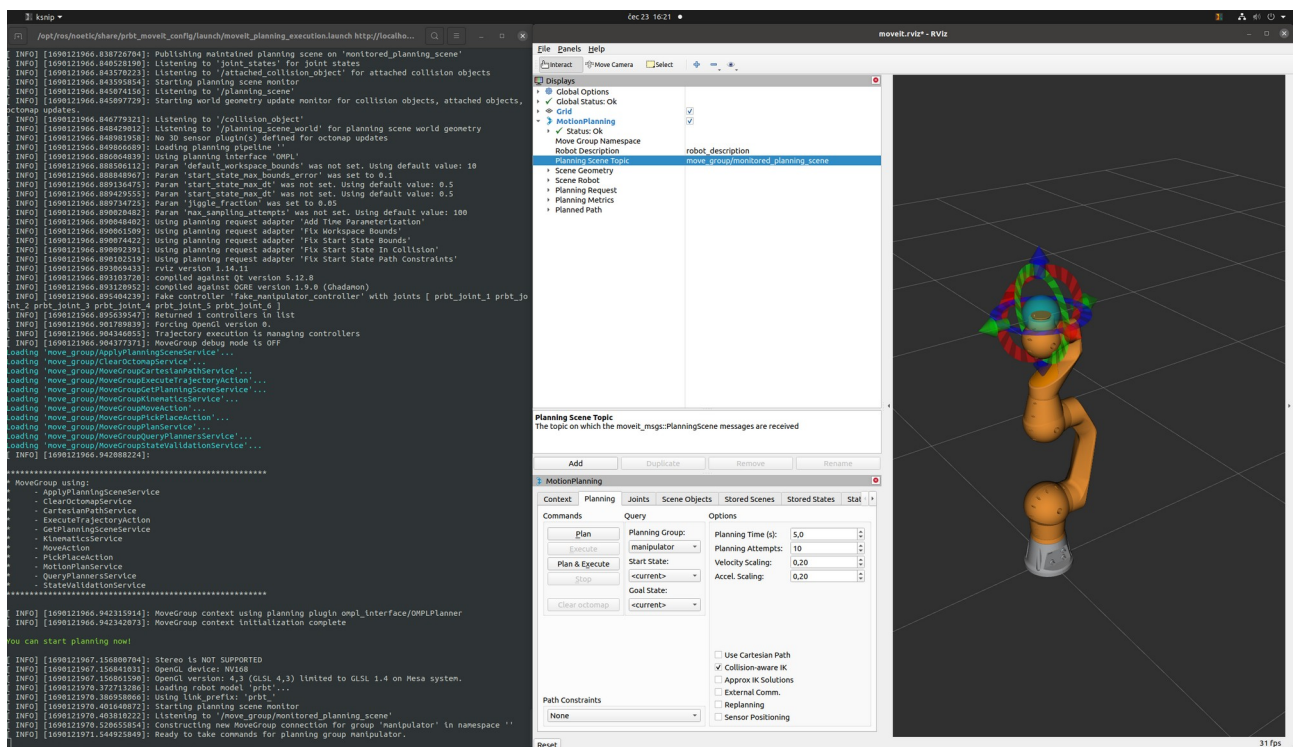
`roslaunch ur5_moveit_config_test demo_gazebo.launch`

- same pilz error

[http://wiki.ros.org/pilz\\_robots/Tutorials/ModelYourApplicationWithPRBT](http://wiki.ros.org/pilz_robots/Tutorials/ModelYourApplicationWithPRBT)

`sudo apt install ros-noetic-pilz-robots`

`roslaunch prbt_moveit_config moveit_planning_execution.launch`





```
roslaunch ur5_moveit_config_test demo_gazebo.launch
```

Same error – because newer version is installed...

```
[ERROR] [1690122540.160497307]: Exception while loading planner
'pilz_industrial_motion_planner::CommandPlanner': Failed to load library
/opt/ros/noetic/lib//libpilz_industrial_motion_planner.so. Make sure that you are calling the
PLUGINLIB_EXPORT_CLASS macro in the library code, and that names are consistent between
this macro and your XML. Error string: Could not load library (Poco exception =
libmoveit_planning_interface.so.1.1.10: cannot open shared object file: No such file or
directory)
```

Available plugins: chomp\_interface/CHOMPPlanner, ompl\_interface/OMPLPlanner,  
pilz\_industrial\_motion\_planner::CommandPlanner

```
[ERROR] [1690122540.160543318]: Failed to initialize planning pipeline
'pilz_industrial_motion_planner'.
```

# This didn't work:

```
# git clone git@github.com:ros-planning/moveit\_visual\_tools.git
```

```
# rosdep install --from-paths src --ignore-src --rosdistro noetic
```

<https://github.com/ros-planning/moveit/issues/3303>

“Same issue as above: you updated (from the ROS testing repo) while a rebuild was in progress.”

**sudo apt upgrade and reinstalling moveit again helped with the pilz error;**

**however, there was another error and no robot arm was visible in rViz and gazebo:**

Error [parser.cc:488] parse as old deprecated model file failed.

Error Code 4 Msg: Required attribute[filename] in element[plugin] is not specified in SDF.

Error Code 8 Msg: Error reading element <plugin>

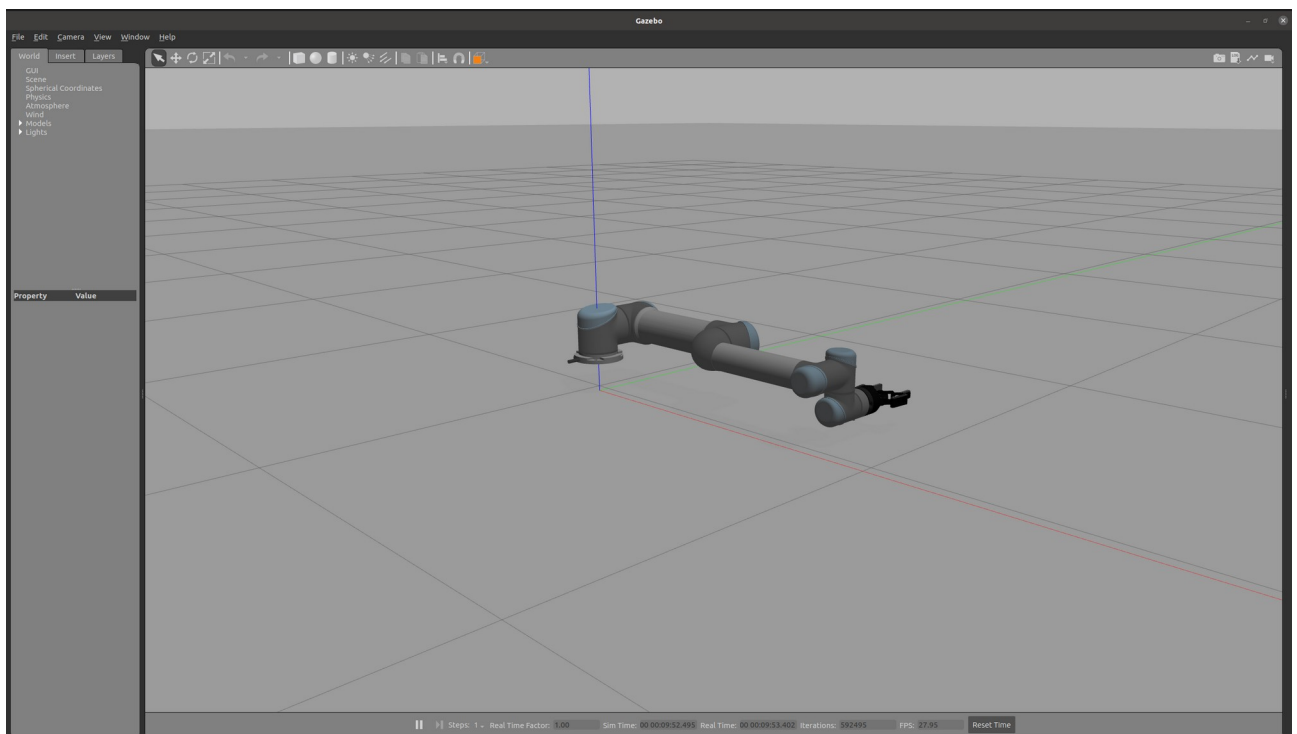
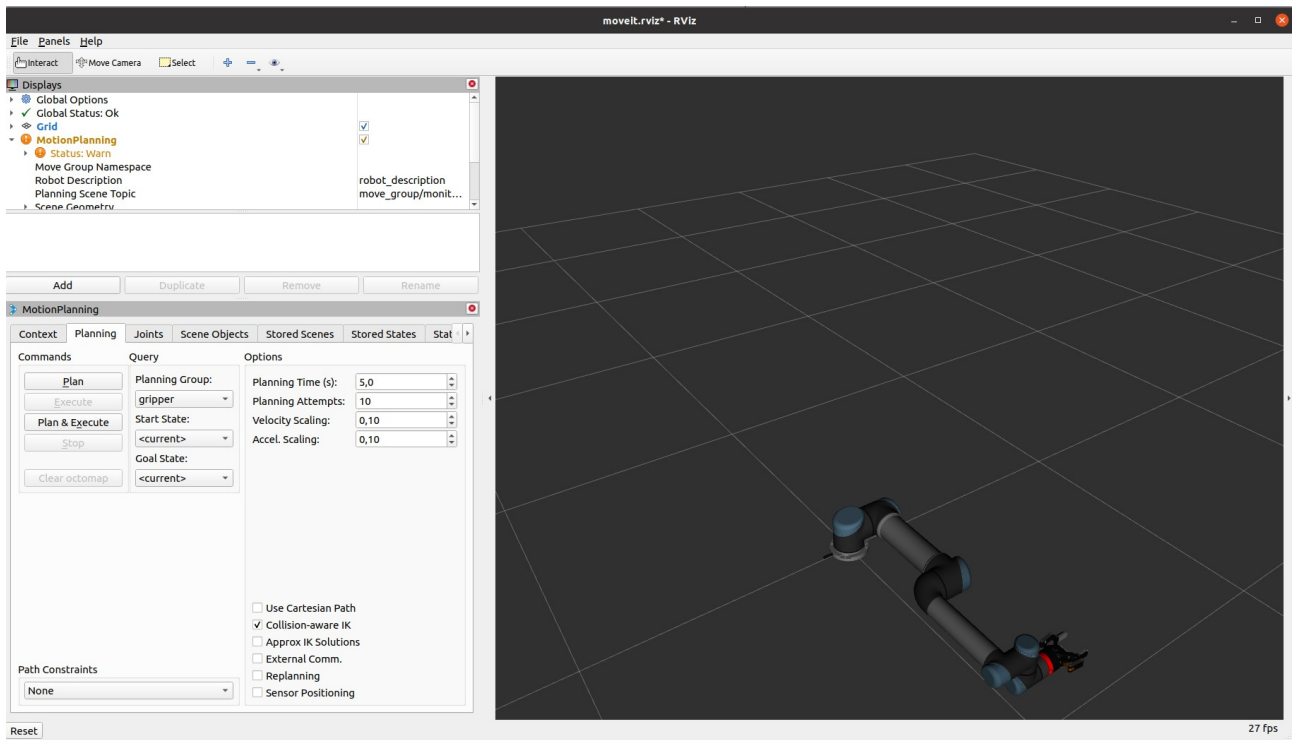
Error Code 8 Msg: Error reading element <model>

Error Code 8 Msg: Error reading element <sdf>

-----

So I tried run the command with ur5\_gripper\_moveit\_config (instead of the genrated package) and it somehow works – arm is visible (but there is many errors...):

```
roslaunch ur5_gripper_moveit_config demo_gazebo.launch
```





## TODO:

- do I need the move\_it\_visual\_tools package? It was added to resolve the pilz version error...
- resolve launch errors
- try the generated config: `roslaunch ur5_moveit_config_test demo_gazebo.launch`
- generate the correct custom config

---

1. 8. 2023

## Real robot UR5:

To run the robot arm follow the below steps:

- Power on the robot arm
- Run the below command on the DELL computer
  - `roslaunch ur_robot_driver ur5_bringup.launch robot_ip:=192.168.0.104`
- kinematics\_config:=\$(rospack find ur\_calibration)/etc/ur5\_calibration.yaml**
- Run the **ROS.urp** file on the robot teach pendant
- Run the below command on the DELL computer but wait for each to finish
  - `roslaunch ur5_moveit_config ur5_moveit_planning_execution.launch limited:=true`
- Run this command on the DELL computer to move the arm
  - `roslaunch robot_arm_sequence robot_arm_sequence.py`

## Move\_it\_assistant:

- needs proper config package -can't be combined:

`roslaunch ur5_gripper_moveit_config demo_gazebo.launch`

+ `roslaunch ur5_moveit_config ur5_moveit_planning_execution.launch limited:=true`

---

<https://roboticscasual.com/ros-tutorial-how-to-create-a-moveit-config-for-the-ur5-and-a-gripper/#quickstart-moveit-config>

- there is few errors but I can now manually move the arm in rViz:

`roslaunch ur5_gripper_moveit_config demo_gazebo.launch`

