

Modifying an existing MoveIt configuration package

In Module 4.3, the MoveIt Setup Assistant was introduced as a tool to setup everything we need to be able to use with MoveIt. We hope you succeeded in generating a MoveIt configuration package and experimented with it.

For this assignment, we want to have a common starting point for all learners, therefore we have created an assignment-specific MoveIt configuration package, it's called `week4_moveit_config`.

You can find this configuration package as part of your week 4 assignment packages, please download it from [the weekly downloads page](#), if you haven't done so.

The goal of this assignment, is to learn how to use and modify an existing MoveIt configuration package.

Week 4 - Assignment 1 --- 3 Points

The goal for this assignment is to add four new Robot Poses to the MoveIt configuration.

You can reach this goal by following the steps below.

Step 1: Launch the `week4_moveit_config` setup assistant:

```
$ roslaunch week4_moveit_config  
setup_assistant.launch
```

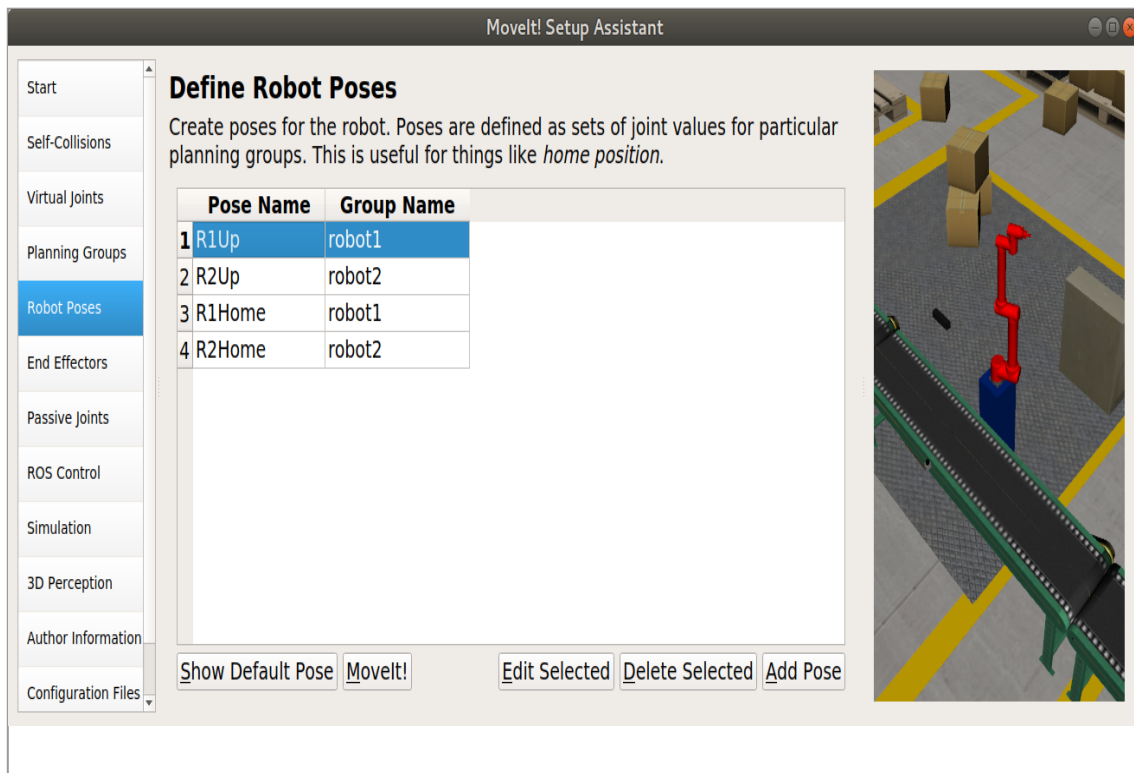
Make sure that: "Edit Existing MoveIt Configuration Package" is selected and that the Configuration Package reads "week4_moveit_config".



Step 2: Click on the "Load Files" button in the setup assistant GUI.

You should be able to see the factory on the right pane, and the elements on Self-Collisions and Planning Groups should be ready.

Step 3: Click on the "Robot Poses" entity on the left navigation pane. You should be able to see 4 Robot Poses there (R1Up, R2Up, R1Home, R2Home).



Step 4: Add four new poses (two for each robot) with the following names and joint values:

robot1 group:

R1PreGrasp:

```
        <joint name="robot1_elbow_joint"
value="1.57" />
        <joint name="robot1_shoulder_lift_joint"
value="-1.57" />
        <joint name="robot1_shoulder_pan_joint"
value="0.4143" />
        <joint name="robot1_wrist_1_joint"
value="-1.57" />
        <joint name="robot1_wrist_2_joint"
value="-1.57" />
        <joint name="robot1_wrist_3_joint" value="0"
/>
```

R1Place:

```
        <joint name="robot1_elbow_joint"
value="1.57" />
        <joint name="robot1_shoulder_lift_joint"
value="-1.57" />
        <joint name="robot1_shoulder_pan_joint"
value="2.87" />
        <joint name="robot1_wrist_1_joint"
value="-1.57" />
        <joint name="robot1_wrist_2_joint"
value="-1.57" />
        <joint name="robot1_wrist_3_joint" value="0"
/>
```

robot2 group:

R2PreGrasp:

```
<joint name="robot2_elbow_joint"
value="1.3809" />
<joint name="robot2_shoulder_lift_joint"
value="-0.8976" />
<joint name="robot2_shoulder_pan_joint"
value="0.7" />
<joint name="robot2_wrist_1_joint"
value="-2.0023" />
<joint name="robot2_wrist_2_joint"
value="-1.6225" />
<joint name="robot2_wrist_3_joint" value="0"
/>
```

R2Place:

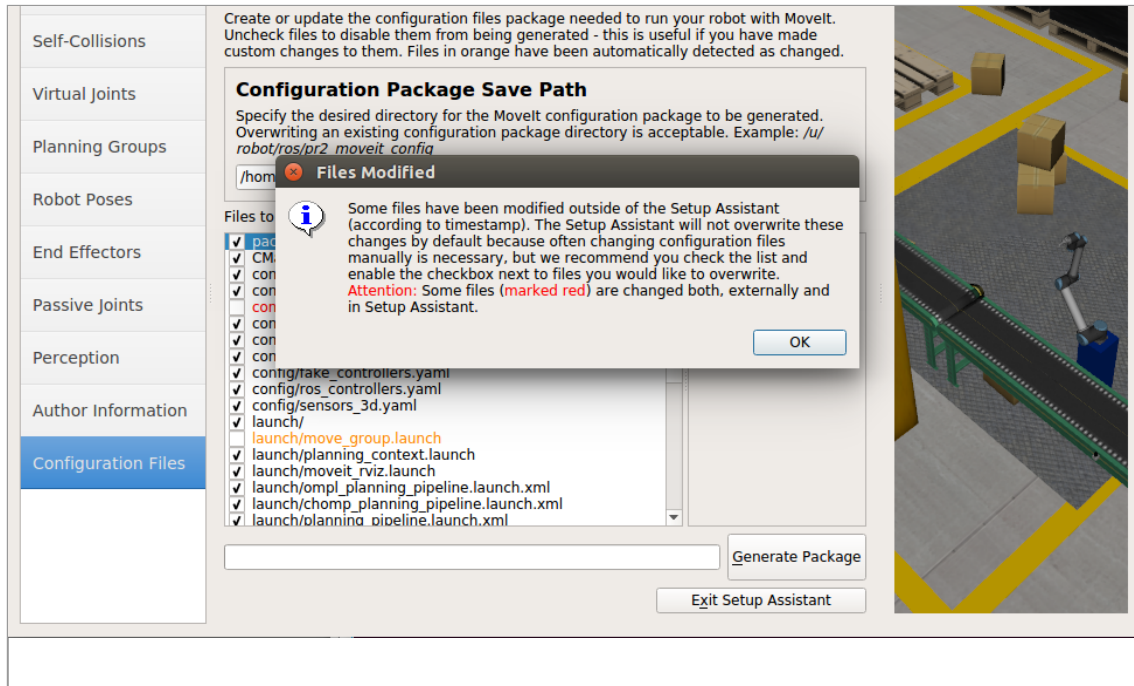
```
<joint name="robot2_elbow_joint"
value="1.3364" />
<joint name="robot2_shoulder_lift_joint"
value="-1.3017" />
<joint name="robot2_shoulder_pan_joint"
value="2.6902" />
<joint name="robot2_wrist_1_joint"
value="-1.6489" />
<joint name="robot2_wrist_2_joint"
value="-1.6225" />
<joint name="robot2_wrist_3_joint" value="0"
/>
```

To test that the poses are correctly created, change the visualization on the right pane to show both robots and click on "MoveIt"

You should see the robot moving to all the poses in the list.

Step 5: Click on the "Author Information" entity and update it with your own information.

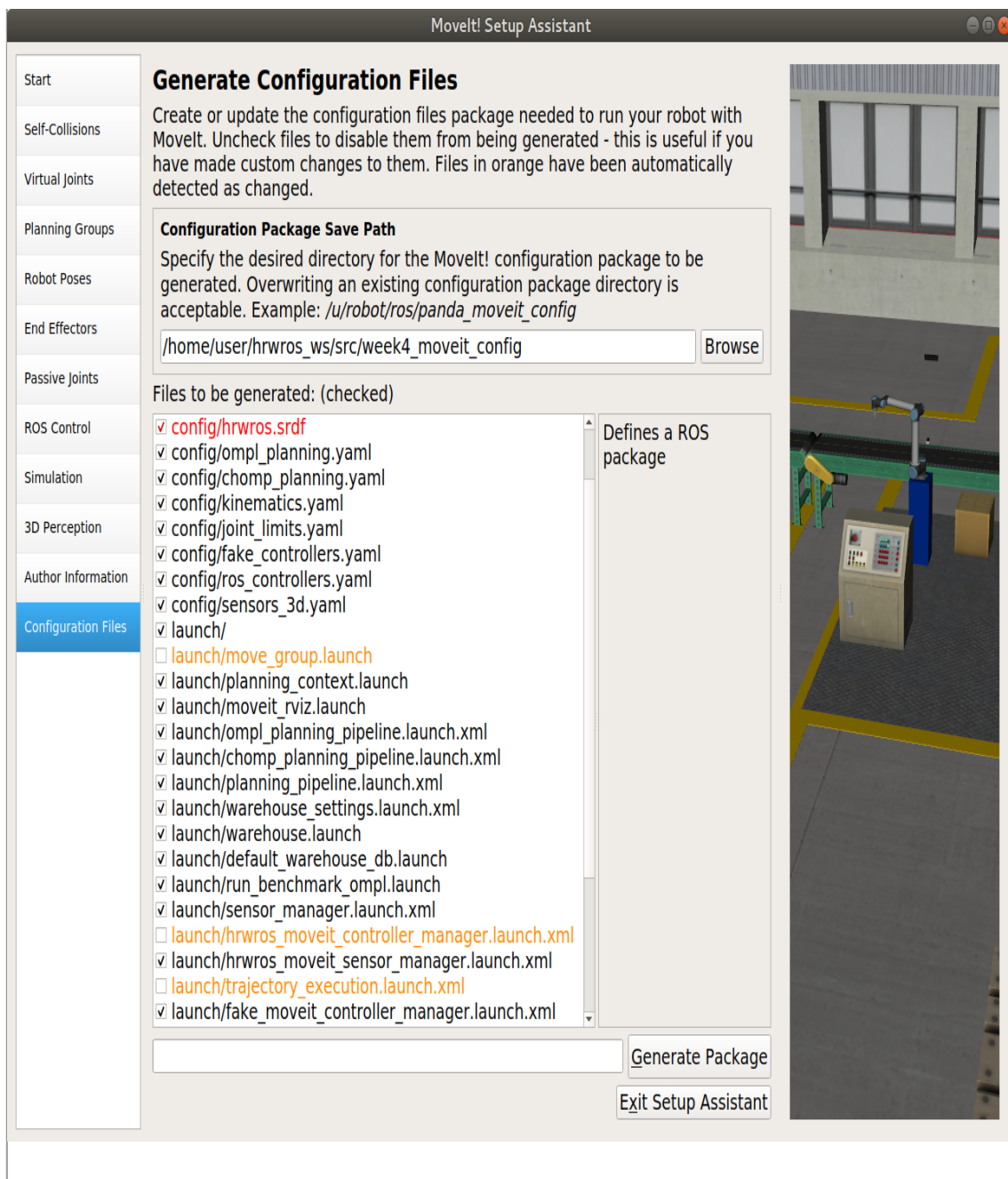
Step 6: Click on the "Configuration Files" entity, you will get a pop-up window warning message about some files being modified outside the Setup Assistant, as shown in the screenshot below, Just click OK:



Step 7: Ensure that you have the correct items marked/unmarked on the "Files to be generated panel"

1. The config/hrwros.srdf file **should** have a "check" mark against it.
2. The launch/move_group.launch file **should NOT** have a check mark against it.
3. The launch/hrwros_moveit_controller_manager.launch.xml **should NOT** have a check mark against it.
4. The launch/trajectory_execution.launch.xml **should NOT** have a check mark against it.

The above four points can be verified against the screenshot below:



Step 8: Click on "Generate Package", confirm that No end effectors have been added, and then confirm that you want to overwrite this existing package.

This completes the first assignment of this week, You can now exit the setup assistant!

As with previous weeks, you only need to upload your files after completing all 3 assignments of this week.

Important Note:

If you accidentally modify the package by using different settings for the check-marks (Step 7), you will get errors in the next assignments as some important files have been modified. In that case the best solution would be to remove the entire package, download / extract it again, and repeat all the steps.