

The NeedlePenetrationRobot scripts need the following modules running beforehand:

- ROS2 Humble
- cisst-saw/sawGalilController

1. Sourcing and building ROS2

- 1.1. In terminal CLI, source ROS2:
 - ◆ `source /opt/ros/humble/setup.bash`
- 1.2. Navigate to ros2_ws directory from home directory
 - ◆ `cd robot_ws`
- 1.3. Build ROS packages
 - ◆ `colcon build`
- 1.4. Source workspace (build files in ~/ros2_ws/install)
 - ◆ `source install/setup.bash`

2. Running sawGalilController

- 2.1. Navigate to the json configuration file directory
 - ◆ `cd ros2_ws/cisst-saw/sawGalilController/core/share/test/`
- 2.2. Start galil_controller and attached json config file. You should see a GUI appear. No need to interact with it.
 - ◆ `galil_controller -j NPR4.json`
- 2.3. Verify correction ros topics are being published. We should see relevant CRTK rostopics: `measured_cp`, `measured_js`, `move_cp`, `move_js`, etc. See CRTK library documentation for more info.
 - ◆ `ros2 topic list`

3. Run the main robot controller GUI script

- 3.1. Repeat step 1 (Sourcing and building ROS2) in a new terminal window.
- 3.2. Run GUI and control script. You should see a GUI appear with controls for the robot.
 - ◆ `ros2 run needlePenetrationRobot needle_penetration_robot`