Axis Group Jogging URCap Example

Description

The Axis Group Jogging URCap provides a working example for jogging the axis in a given axis_group-axis pair via control presented in the toolbar.

Build

- The URCap SDK must be installed and available in the build environment

1. `cd axis-group-jogging`

2. `./build.sh`

   Note: By default the build script will attempt to build the URCap then deploy to a local simulator (if available).

Usage

- Note: The Axis Group Jogging URCap does not manage the lifecycle of any world-model or axis-group entities.

1. On the robot, execute a program or script that creates an Axis Group and with 2 Axes

   - The program/script should finish without removing the Axis Group and the Axis.
   - Example script:
     ```
     AXIS_TYPE = 0 # 0:rotary, 1:linear
     AXIS_VELOCITY_LIMIT = d2r(360) # rad/s
     AXIS_ACCELERATION_LIMIT = d2r(3600) # rad/s^2
     AXIS_ENCODER_RESOLUTION = 3600 # counts/rev
     AXIS_FEED_CONSTANT = d2r(360) # rad/rev
     AXIS_GEAR_RATIO = 1.0
     AXIS_ZERO_OFFSET = 0

     reset_world_model()
     axis_group_add("group1", p[0, 0, 0, 0, 0, 0], "world")
     axis_group_add_axis("group1", "axis1", "", p[0, 0, 0, 0, 0, 0],
     AXIS_TYPE, AXIS_VELOCITY_LIMIT, AXIS_ACCELERATION_LIMIT)
     axis_group_add_axis("group1", "axis2", "", p[0, 0, 0, 0, 0, 0],
     AXIS_TYPE, AXIS_VELOCITY_LIMIT, AXIS_ACCELERATION_LIMIT)
     ```

2. After the program has finished executing, open the Axis Jog panel of the toolbar
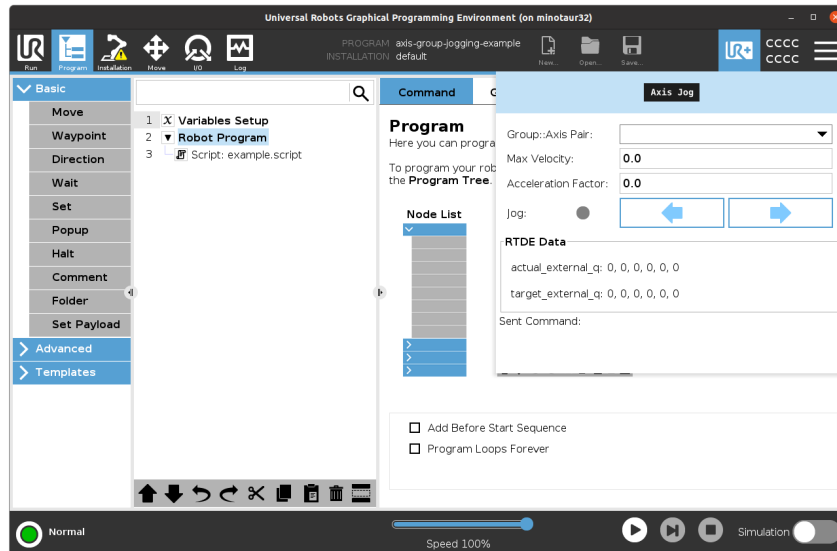
3. Select the desired Axis to jog, and enter the preferred parameters specific to the Axis
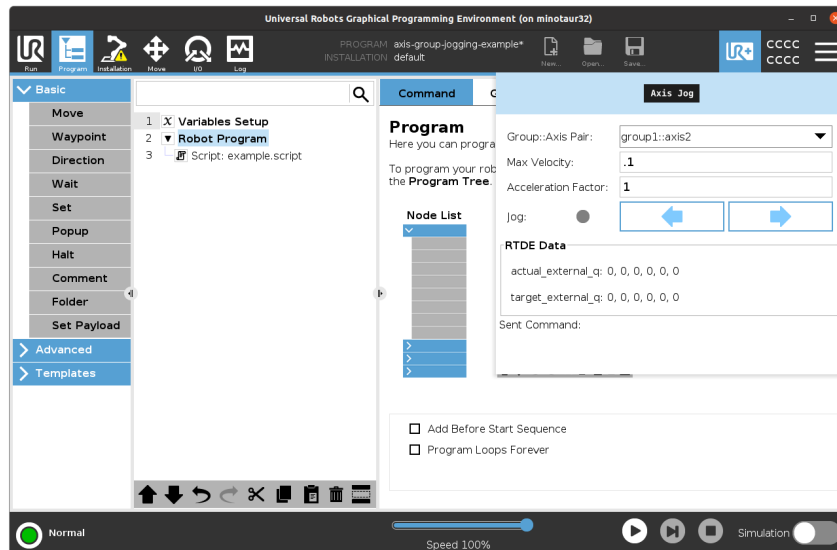

4. Jog the given Axis by holding down either the `<-` or `->` button

   - The grey indicator icon will change to green and the `Sent Command` field will update to indicate the command that has been sent to the robot via the Primary Interface
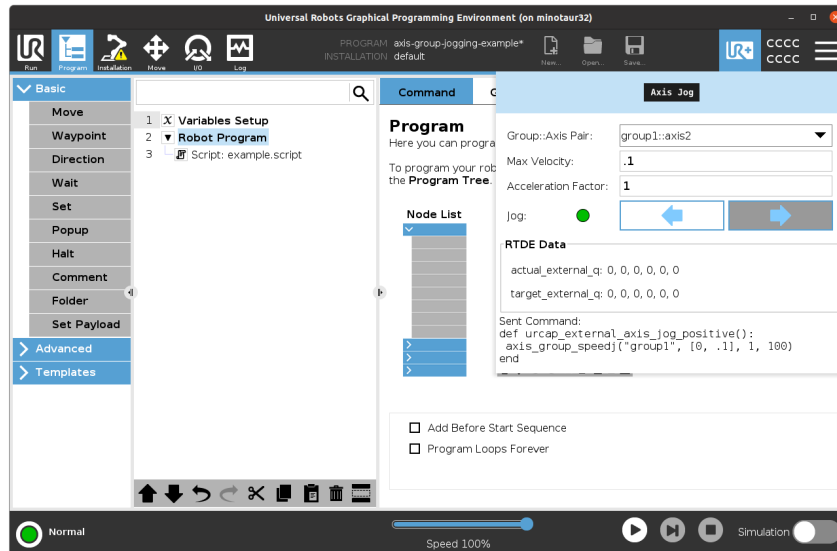
5. Halt jogging by releasing the held-down button
   - The green indicator icon will change to grey and the `Sent Command` field will update to indicate the command that has been sent to the robot via the Primary Interface
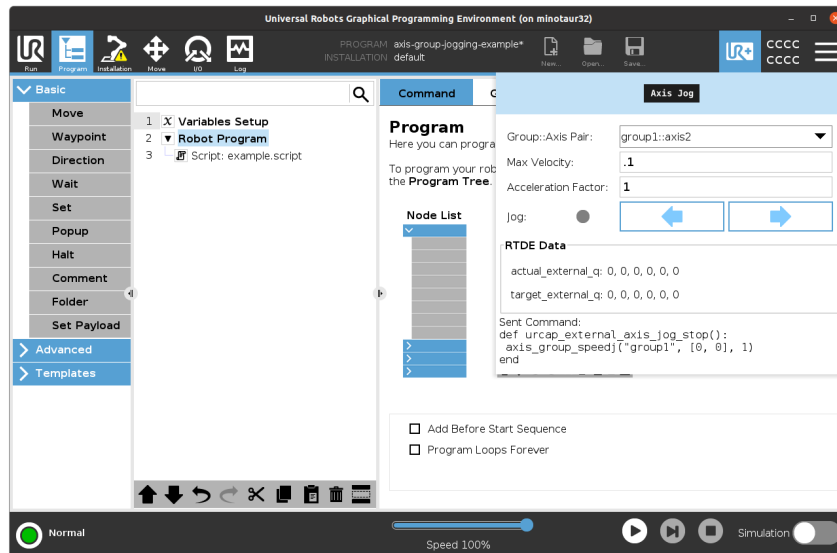
- Notes:
  1. While the toolbar is open, the `actual_external_q` and `target_external_q` fields will reflect the RTDE registers of the same names

2. If operating without external axis hardware (e.g. Ethercat URCap and servo), only the `target_external_q` value will change