1

Controller aborts trajectory goal with GOAL_TOLERANCE_VIOLATION after execution

controller executeTrajectory goal_constraints

asked Oct 23 '17

updated Oct 23 '17

I am simulating denso arm in Gazebo 2 on Indigo.

`denso_control.yaml`

```
vs087:
  joint_state_controller:
    type: joint_state_controller/JointStateController
    publish_rate: 125

  arm_controller:
    type: "position_controllers/JointTrajectoryController"
    joints:
      - joint_1
      - joint_2
      - joint_3
      - joint_4
      - joint_5
      - joint_6

    constraints:
      goal_time: 0.6
      stopped_velocity_tolerance: 0.05
      joint_1: {trajectory: 0.1, goal: 0.1}
      joint_2: {trajectory: 0.1, goal: 0.1}
      joint_3: {trajectory: 0.1, goal: 0.1}
      joint_4: {trajectory: 0.1, goal: 0.1}
      joint_5: {trajectory: 0.1, goal: 0.1}
      joint_6: {trajectory: 0.1, goal: 0.1}
    stop_trajectory_duration: 0.5
    state_publish_rate:  125
    action_monitor_rate: 10
```

I am setting the following parameters while initializing my move_group:

```
group.set_planner_id("RRTConnectkConfigDefault")
group.set_goal_tolerance(0.1)
group.set_num_planning_attempts(10)
group.set_planning_time(5.0)
group.set_max_velocity_scaling_factor(1.0)
group.set_max_acceleration_scaling_factor(1.0)
```

After executing a reachable target (whether named or pose target), the controller throws an error:

```
[ WARN] [1508768453.519348029, 51.904000000]: Dropping first 1 trajectory point(s) out of 1
0, as they occur before the current time.
First valid point will be reached in 0.208s.
[ WARN] [1508768455.123441445, 53.504000000]: Controller vs087/arm_controller failed with e
rror code GOAL_TOLERANCE_VIOLATED
[ WARN] [1508768455.123507438, 53.504000000]: Controller handle vs087/arm_controller report
s status ABORTED
```

This is the output of `rostopic echo /vs087/arm_controller/state` which seems to be within the set goal tolerance (even though joint 2 has much higher error than the others, which is always the case)

```
error:
  positions: [-1.760044554544038e-09, -0.001160522929334995, -9.655529709107213e-10, 1.208886324377545e-09, 3.4927438719023485e-10, 3.33908012351003e-10]
  velocities: [-1.7600773791239206e-06, -1.1605230596161191, -9.655595170077191e-07, 1.209310674844269e-06, 3.492708007257761e-07, 3.342539573532484e-07]
```

Sometimes I also get an error:

```
Controller is taking too long to execute trajectory (the expected upper bound for the trajectory execution was 1.2 seconds). Stopping trajectory.
```

I am able to plan and execute in RViz most of times. What am I missing here? I think I have set the nexessary parameters according to previous similar issues.

I am able to plan and execute in RViz most of the times for random positions

Comments

Just noticed velocity error for joint 2 is always quite high
ipa-hsd (Oct 23 '17)

I'm facing the same problem. I noticed one thing though. On the topic `/<robot_namespace>/arm_controller/follow_joint_trajectory/goal` the values of `path_tolerance` , `goal_tolerance` and `goal_time_tolerance` are empty and not set by the server. Can you please check and confirm?
cgnarendiran (Jan 27 '18)

What did you do @cgnarendiran ? I think I have exactly the same error.
Deastan (Jul 8 '19)

add a comment

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answered Oct 26 '17

I upgraded to ros-kinetic (and Gazebo 7) and everything works fine now. Could not figure out what the issue was.

Comments

link

I think the issue is related to using `position_controllers` . If you have the same environment and switch to `effort_controllers` (also change the transmission-related args) it would work fine, given you have adequate controller gains.
abouseif (Oct 20 '19)

add a comment

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