Gazebo Tutorial

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This tutorial describes how to use Sawyer with Gazebo the standard Physics Simulator for ROS.

Gazebo Logo

Please visit the Gazebo Tutorials homepage for more information about the Physics simulator

Contents

Installation/Prerequisites

- Make sure you have followed the Workstation Setup tutorial before beginning this section. Sawyer Gazebo is **only** available for **Ubuntu 16.04, ROS Kinetic, and Gazebo 7**.
- Ensure the following software packages are installed:

◉ ○ ROS Kinetic

```
$ sudo apt-get install gazebo7 ros-kinetic-qt-build ros-kinetic-gazebo-ros-control ros-kinetic-gazebo-ros-pkgs ros-kinetic-ros-control ros-kinetic-control-to
```

Sawyer Simulator Installation

◉ ○ ROS Kinetic

- From your catkin workspace where the SDK resides, use wstool to install and update:

Install sawyer_simulator

```
$ mkdir -p ~/ros_ws/src
$ cd ~/ros_ws/src
$ git clone https://github.com/RethinkRobotics/sawyer_simulator.git
$ cd ~/ros_ws/src
$ wstool init .
$ wstool merge sawyer_simulator/sawyer_simulator.rosinstall
$ wstool update
```

IMPORTANT: Make sure all simulator repositories update to their proper branch.

Build Source

```
$ source /opt/ros/kinetic/setup.bash
$ cd ~/ros_ws
$ catkin_make
```

Simulation

- The intera.sh shell has a special hook of *sim* for Simulation. Run the Intera shell script with sim specified:

```
$ ./intera.sh sim
```

- Start simulation with controllers:

```
$ roslaunch sawyer_gazebo sawyer_world.launch
```

Smoke Test

Check if the simulator was installed and launched successfully by typing the following commands:

```
$ rosnode list
```

This should list the nodes as here.

```
$ rostopic list
```

This should list the topics as here.

```
$ rostopic echo /robot/state
```

By default, the following messages should be displayed at 100 HZ.

```
enabled: False
stopped: False
error: False
estop_button: 0
estop_source: 0
---
```

Run SDK Examples

- Start Joint Torque Springs example:

```
$ ./intera.sh sim
$ roslaunch sawyer_gazebo sawyer_world.launch
*in a new terminal*
$ ./intera.sh sim
$ rosrun intera_examples joint_torque_springs.py
```

- Or, Start Simulated Pick and Place example:

```
$ ./intera.sh sim
$ roslaunch sawyer_sim_examples sawyer_pick_and_place_demo.launch
```

For additional information on the interfaces that are implemented with this release, visit the Simulator API page.

Troubleshooting

- **Please refer to the troubleshooting page Gazebo Troubleshooting**
