

# Basic setup for the Robotiq Gripper control with ROS

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## 1 Robotiq ROS-I Repository

As with anything that needs to be build in ROS, I took the I cloned the git robotiq repository from here. However, subsequent to cloning, I had issues with building (i.e. run `catkin_make`) as the robotiq repo is for ROS Jade whereas we are running Kinetic. These were resolved via conversations with the developer and just putzing around based on errors. The conversation and fixes are discussed here. My kinetic-devel branch is available here.

## 2 Setting up UR5 to communicate with an Ubuntu machine via ROS

The Robotiq Gripper setup is not well documented. Or, rather, I should say that the documentation required som significant hunting. Helpful resources in getting this to work specifically can be found here(the pdf was found via some hunting around on Robotiq's DoF community).

First, open a new terminal and start *roscore*. Then, open another terminal and run the following commands to find out the port on which the controller is connected, and to change the access permissions on the USB port. And then start the driver's node. The last step assumes you have already sourced `setup.bash` from the `devel` directory of the workspace to which the repository was cloned.

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```
$ source kineticDevelWS/devel/setup.bash
$ dmesg | grep tty
$ sudo chmod a+wr /dev/ttyACM0sudo
$ rosrn robotiq\_c\_model\_control CModelRtuNode.py /dev/ttyACM0
```

---

The driver listens for messages on “CModelRobotOutput” using the “SModel\_robot\_output” msg type. The messages are interpreted and commands are sent to the Gripper accordingly. A simple controller node is provided which can be run in another terminal, using the command:

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```
$ rosrn robotiq\_c\_model\_control CModelSimpleController.py
```

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They are definitely a tad buggy in that the `/dev/ttyACM0` does not show up sometimes. I will have to examine that some more and update this document once I have it all figure out.

### 3 Wrist Camera introduction

The gripper is mounted on the Robotiq wrsit cam and was detectable on Ubuntu under `dev`; this implies that you can stream the data. ROS provides many packages that can access and publish the data. Based on Pete's advice, I installed the binaries for `usb_cam` via apt for ROS kinetic: `sudo apt-get install ros-kinetic-usb_cam`. Then, you should be able to launch a node for the cam by: `roslaunch usb_cam usb_camtest.launch /dev/ttyACM0`.

### 4 Useful things to read

[1] [2] Robotiq blog on ROS gripper