

How to Teleop Turtlebot with Android Device

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Requirements:

- Android Device 2.3.3 and up
- A router or the ability to create wireless hotspots with the Android device
- Working Turtlebot (Ours is running ROS Hydro)
- ROS Robot Remocon (Hydro) – Android App
 - o https://play.google.com/store/apps/details?id=com.github.rosjava.android_remoco ns.robot_remocon&hl=en

Tutorial:

- 1) Set up the wireless router or create a wireless hotspot with the Android device.
 - a. If you are using a wireless router, connect the Android device and Turtlebot laptop to that network.
 - b. If you are using an Android device, connect the Turtlebot laptop to the hotspot network.
- 2) Download the ROS Robot Remocon app from the Google Play Store and install it.
- 3) On the Turtlebot laptop, check the IP address in the terminal using

```
$ ifconfig
```

- 4) Check if the ROS_HOSTNAME variable on the Turtlebot is set to this IP address.

```
$ echo $ROS_HOSTNAME
```

- 5) If the IP addresses match, skip to step 6. If not, continue to step 5.
- 6) Change the \$ROS_HOSTNAME of the Turtlebot by entering in the command without the brackets < >:

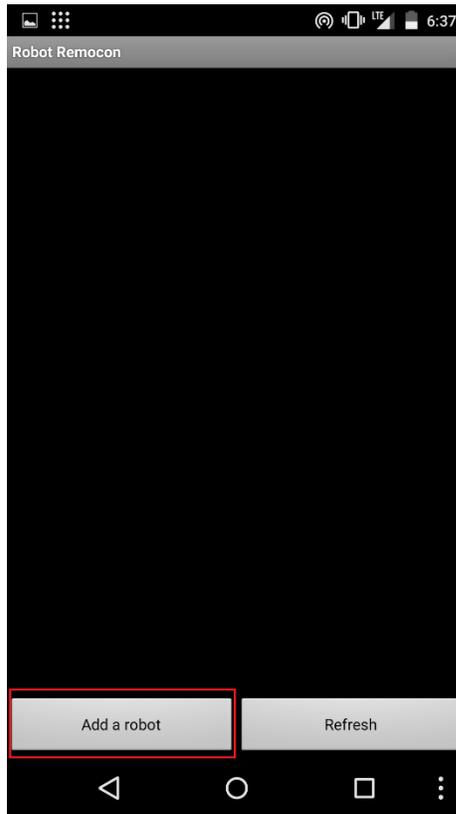
```
$ echo export ROS_HOSTNAME=<IP_OF_WORKSTATION> >> ~/.bashrc
```

```
$ source ~/.bashrc
```

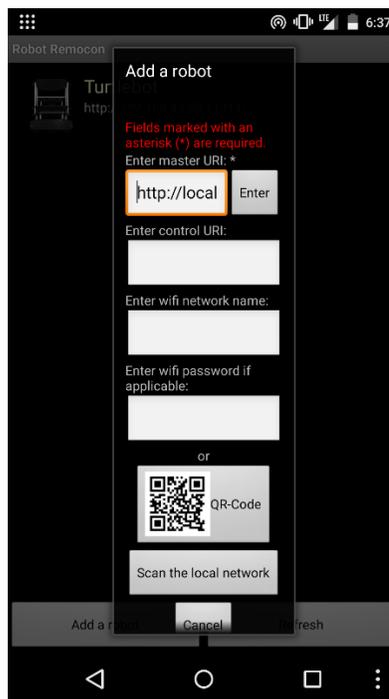
- 7) On the Turtlebot, run the following command and wait for all the windows to finish loading.

```
$ rocon_launch turtlebot_bringup bringup.concert
```

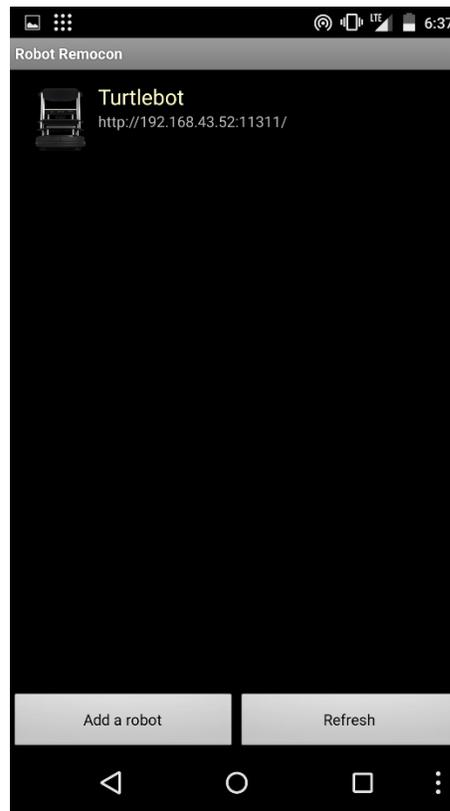
- 8) Once all the terminal windows have finished loading, open the ROS Robot Remoconn app and you should see a blank screen with two buttons. Click the “Add a robot” button.



- 9) On the next screen, enter the IP of the Turtlebot. Leave all the other fields blank.



10) If all the steps are performed correctly, the Turtlebot should show up.



11) Select the Turtlebot on that screen and a bunch of icons should pop up in the next screen.



- 12) Click on the icon that says “Teleop” and you should be able to move the Turtlebot around using your Android device.
- 13) Feel free to test out some of the other icons from that menu. If you leave the Turtlebot on too long without running you might need to restart bringup.concert and reconnect.