NPS ROS Center

NPS Robot Operating Systems (ROS)

General notes

- For third party stack installations, remember to update the ROS_PACKAGE_PATH environment variable to include the path to the new stack.

Peripherals installation

Linux joystick **joy**

- ros-<distribution>-joystick-drivers

Nintendo Wiimote (**wiimote_node**)

Pioneer P3-DX (Mobile Robots)

Installation

- Follow instructions [here](#)
- Install ros-<distribution>-joystick-drivers prior to installing p2os to ensure joystick options is enabled.
- Need to change default serial port (in robot_params.h) and probably want to increase maximum speed.

Quickstart

1. Open NEW Terminal
   a. Start up the Master node by typing: $ roscore
2. In NEW terminal window:
   a. Start up the p2os dashboard (which has the software motor enable switch)
   b. Enter into the command line: $ roslaunch p2os_dashboard p2os_dashboard
3. In NEW terminal window:
   a. Start up the p2os driver (which contains the main interface software)
   b. In p2os/p2os_launch/, type: $ roslaunch p2os_driver.launch
4. In NEW terminal window:
   a. Start up the tele-operation node
   b. In p2os/p2os_launch/, type: $ roslaunch teleop_keyboard.launch
5. You should now be able to use keyboard inputs to move the robot

Hokuyo URG laser line scanner

- ROS reference for using the Hokuyo node

Quick start

1. Plug in the USB cable and make sure the Hokuyo unit is attached to power (5V)
2. Follow the instructions on the ROS site (link above) to ensure USB port is read/writable
3. Start up roscore
4. Start the hokuyo node, either by
   a. Launch file: in p2os/p2os_launch: $ roslaunch hokuyo.launch
   b. By running the node directly: $ rosrun hokuyo_node hokuyo_node
5. You can visualize the output by using rviz
   a. Type: $ rosrun rviz rviz -d `rospack find hokuyo_node`/hokuyo_test.vcg

Nintendo Wii Remote

- ROS reference for installing the wiimote package
- ROS reference for using the wiimote node
- ROS reference for using the wiimote node to control a (simulated) turtle (you probably want this)

Quick start

1. After successful installation (per notes above), start the Master node
   a. Type: $ roscore
2. Start the wiimote node
3. To run the simulated turtle to drive with the wii
turtle

a. In learning_wiimote/, type: $ roslaunch learning_wiimote turtle_wii.launch

**Hummingbird and Pelican quadrotors (Ascending Technologies)**

**Argonaut UAVs**