

Dynamixel_Workbench

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1 Introduction

The dynamixel workbench package can be used to control dynamixel motors and it is a metapackage that contains 3 other packages: dynamixel_workbench_controllers, dynamixel_workbench_operators, dynamixel_workbench_toolbox. Tests were done in the dynamixel_ws ROS workspace/folder with the intent to set up and tune the PID for the AX-12A dynamixel motors and to control the motors with topics instead of services but not much success was achieved probably due to incompatibility between the motors and the library.

2 Links

- [https://emanual.robotis.com/docs/en/software/dynamixel/dynamixel_workbench/\(dynamixel_workbench_tutorial\)](https://emanual.robotis.com/docs/en/software/dynamixel/dynamixel_workbench/(dynamixel_workbench_tutorial))
- [https://emanual.robotis.com/docs/en/software/dynamixel/dynamixel_wizard2/\(dynamixel_wizard_2.0\)](https://emanual.robotis.com/docs/en/software/dynamixel/dynamixel_wizard2/(dynamixel_wizard_2.0))
- https://github.com/vncprado/lab_motors_control

3 Dynamixel Info

All the following information can be found in the Dynamixel Wizard 2.0 (the link is in the links section) :

- IDs = 11 and 12
- protocol = 1.0
- usb_port= usually /dev/ttyUSB0
- baud_rate = 1000000
- model = 12

4 Failure to use topics

The Dynamixel_workspace tutorial(that can be found at the Links section) offers the possibility to use the /dynamixel_workbench/joint_states topic however it requires a trajectory that can be calculated using the MoveIt ROS software but it was decided not to use it because of bad previous experiences.

5 Summary

First install the dynamixel workbench library for ROS through apt-get(change noetic for your ROS version) :

```
sudo apt-get install ros-noetic-dynamixel-workbench
```

Then you can follow the tutorials at the dynamixel_worbench website link that can be found at the links section. Keep in mind that you might have to change the ID and the baud rate at the launch file. There are two ways to do this:

- You can go directly at the library folder and then change it

```
roscd dynamixel_workbench_controllers
```

When inside the controllers folder the baud rate can be changed at the launch/dynamixel_controllers.launch file and the IDs can be changed at the config/basic.yaml file. You can change the following line at the launch file to suport any other config files you want to use:

```
<param name="dynamixel_info" value="$(find  
dynamixel_workbench_controllers)/config/basic.yaml"/>
```

- The other (and better) option is to create you own ros workspace and copy the launch and config files into it, you can check my example at the repository link. Keep in mind that you will have to change " find dynamixel_workbench_controllers " to " find your_package_name". You still have to make the changes listed at the previous item.