NXT Setup (Windows)

Summary

In order to control the motors attached to the NXT brick, RWTH Mindstorms Toolbox communicates with a program than runs on the NXT. In order to use the RWTH Toolbox, this program has to first be loaded on to the NXT. This document contains instructions for doing that, as well as for upgrading the firmware on the NXT brick.

A. Driver installation
B. MotorControl.rxe installation
C. Firmware upgrade

Required equipment

1) Lego Mindstorms NXT 2.0 brick
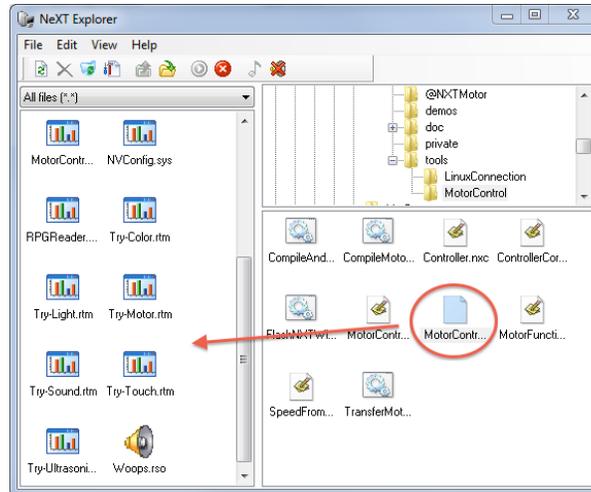2) RWTH Mindstorms for MATLAB Toolbox

Part A: Driver installation

In order for your computer to communicate at all with the NXT, you will first need Lego's "Fantom" driver.

1. Go to http://mindstorms.lego.com/support/updates#Driver
2. Download the "Fantom" USB driver. (Click the blue "Fantom Driver" button, then click the "Downloads" tab, and finally click the "PC" button) Do not download "Driver 1.02".
3. Extract the downloaded zip file and run setup.exe.
4. Follow the on screen instructions to complete the installation.

MotorControl.rxe installation

1. Download NeXTExplorer from http://bricxcc.sourceforge.net/utilities.html.
2. Extract the downloaded zip file.
3. Connect the NXT with the USB cable and turn it on.
4. Run NeXTExplorer.exe. When prompted for a port, select "usb."
5. If MotorControl##.rxe is not already in the list of files on the NXT (shown in the left panel), navigate to the RWTHMindstormsNXT/tools/MotorControl folder (in the right panel) and drag MotorControl##.rxe from the right panel to the left.
    a. The RWTH Toolbox can be downloaded from http://www.mindstorms.rwth-aachen.de/trac/wiki/Download.
    b. Download the most recent stable version and extract the zip file.

6. MotorControl22.rxe should now appear in the list of files on the NXT
7. Close NeXTExplorer.

Part C: Firmware upgrade

Lego periodically releases firmware updates for the NXT. As these fix bugs and make improvements to the software, it's recommended to keep up to date with the most recent version.

1. Download NeXTTool from http://bricxcc.sourceforge.net/utilities.html.
2. Extract the downloaded zip file.
3. Go to http://mindstorms.lego.com/en-us/support/files/Driver.aspx#Firmware.
4. Download the most recent firmware version. (Click the blue button with the most recent version, click the "Downloads" tab, and finally click the "Download" button).
5. Extract the downloaded zip file. You should have a file called "LEGO MINDSTORMS NXT FIRMWARE V#.##.rfw.
6. Unlike NeXTExplorer, NeXTTool is a command line utility. Open the command prompt, and change to the directory containing NeXTTool.exe and your firmware file.
7. Run the command:

```
.\NeXTTool.exe /COM=usb —firmware="LEGO MINDSTORMS NXT FIRMWARE
V#.##.rfw"
```

8. Wait for the download to complete.

NXT Setup (Mac)

Summary

In order to control the motors attached to the NXT brick, RWTH Mindstorms Toolbox communicates with a program than runs on the NXT. In order to use the RWTH Toolbox, this program has to first be loaded on to the NXT. This document contains instructions for doing that, as well as for upgrading the firmware on the NXT brick.

A. Driver installation
B. MotorControl.rxe installation
C. Firmware upgrade

Required equipment

1) Lego Mindstorms NXT 2.0 brick
2) RWTH Mindstorms for MATLAB Toolbox

Part A: Driver installation

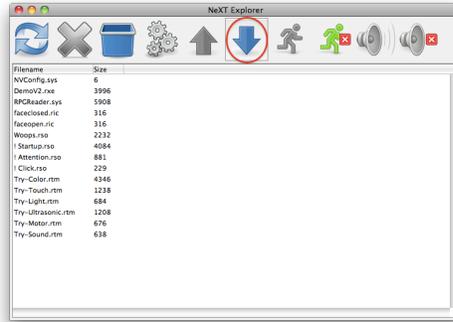In order for your computer to communicate at all with the NXT, you will first need Lego's "Fantom" driver.

1. Go to http://mindstorms.lego.com/support/updates#Driver
2. Download the "Fantom" USB driver. (Click the blue "Fantom Driver" button, then click the "Downloads" tab, and finally click the "MAC" button) Do not download "Driver 1.02".
3. Extract the downloaded .zip file and run legodriver.pkg.
4. Follow the on screen instructions to complete the installation.

Part B: MotorControl.rxe installation

1. Download NeXT Tools for Mac from http://bricxcc.sourceforge.net/utilities.html.
2. Extract the downloaded zip file.
3. Connect the NXT with the USB cable and turn it on.
4. Run NeXT Tools.app. When prompted for a port, select "usb."
5. At the NeXT Tools main menu, select NXT Explorer.

6. If MotorControl22.rxe is not already in the list of files on the NXT, select "Download selected files to the NXT."

7. Select MotorControl22.rxe from the RWTHMindstormsNXT/tools/MotorControl folder.
   a. The RWTH Toolbox can be downloaded from http://www.mindstorms.rwth-aachen.de/trac/wiki/Download.
   b. Download the most recent stable version and extract the zip file.
8. MotorControl22.rxe should now appear in the list of files shown in the NXT Explorer window.
9. Close the NXT Explorer window, click Close Communication in the NeXT Tools main menu, and close NeXT Tools.

Part C: Firmware upgrade

Lego periodically releases firmware updates for the NXT. As these fix bugs and make improvements to the software, it's recommended to keep up to date with the most recent version.

1. Go to http://mindstorms.lego.com/en-us/support/files/Driver.aspx#Firmware.
2. Download the most recent firmware version. (Click the blue button with the most recent version, click the "Downloads" tab, and finally click the "Download" button).
3. Extract the downloaded .zip file. You should have a file called "LEGO MINDSTORMS NXT FIRMWARE V#.##.rfw".
4. Run NeXT Tools.app. When prompted for a port, select "usb."
5. At the NeXT Tools main menu, select "Download Firmware".

6. Select the downloaded .rfw file from the dialog and wait for installation to complete.

NXT Setup (Mac)