Setting up the C Development Tool for myRIO on your laptop computer

Find the instructions for installing the virtual machine containing the C Development Tool on your laptop here. Complete steps 1.–7. only. Then, complete the steps below to test the connection of your laptop to the target myRIO.

Your laptop must be connected through a USB cable to the myRIO target computer. Each time you connect, a myRIO USB Monitor dialog box will appear indicating myRIO IP Address: 172.22.11.2. Always select Do Nothing.

Part 1. Connect to the myRIO target

Complete the following steps to establish a connection between Eclipse and the myRIO target:

1. Run Eclipse. In the Remote Systems pane, right-click the target and select Connect from the shortcut menu to display the Enter Password dialog box.
2. Enter the user ID: (admin) and password: (leave blank) and click OK.
3. Click OK in the Info dialog box.
4. If the Keyboard Interactive authentication dialog box appears, leave the password blank, and click OK. As shown below, green arrow appears on the target icon when the myRIO is connected.

In Parts 2 and 3 you will run and debug a project. Here, the lab0 project is used as example. Later, we will modify this project. For now, the lab0 project has only one function: to print “Hello World!” on the Eclipse console and on the LCD screen of the target computer.

Part 2. Running the lab0 project

Eclipse uses a “Run Configuration” to specify how the project will be deployed and run on the myRIO. Run Configurations for ME 477 projects were as part of your virtual machine.

Complete the following steps to run the myHelloWorld example project.

1. In Eclipse, switch to the C/C++ perspective.
2. You can view and edit the C source code by double clicking on the lab0 project in the left pane, and then double clicking on main.c
3. In the Project Explorer pane, right-click the lab0 project, and select Build Project from the shortcut menu to build the project. Any build errors will be noted in the Problems pane.
4. Right-click the lab0 project and select Run As→Run Configurations to display the Run Configurations dialog box.
5. Select the lab0 project in the left pane. Be sure that the Connection: box is set to 172.22.11.2.
6. Click Run. The project runs on the myRIO target.
   You can find the result in the Console pane, and on the myRIO target LCD screen.
Part 3. Debugging the lab0 project

Similarly, Eclipse uses a “Debug Configuration” to specify how the program will be debugged on the myRIO. Once the Debug Configuration for a project is set up, debugging the program requires just a single click.

Complete the following steps to set up the Debug Configuration for the myHelloWorld project. Step 5. includes building, deploying, and debugging the project:

1. In Eclipse, switch to the C/C++ perspective.

2. In the Project Explorer pane, right-click the lab0 project and select Debug As → Debug Configurations to display the Debug Configurations dialog box.

3. Select the lab0 project in the left pane.

4. Click Debug. The project runs on the myRIO target within the debugger. Some warnings may appear in the Console pane. Under normal circumstances, these warnings are not a problem. You can find the debug tools on the toolbar of Eclipse. There will be more about this in the first laboratory exercise.

5. For now, try setting a breakpoint at the printf() statement by double-clicking in the margin at left of that statement. A blue dot with a small checkmark 🔄 should appear in the margin. The blue dot indicates that the breakpoint is enabled, and the checkmark indicates that the breakpoint is installed.

   If you resume (green arrow in Eclipse tool bar) from the beginning of the program, execution should pause at the breakpoint.