ME 477 — Winter 2024
Setting up the C Development Tool for myRIO on your laptop computer

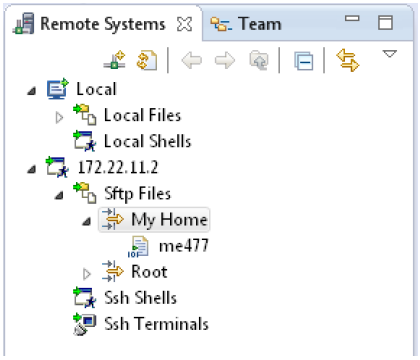
Find the instructions for installing the virtual machine containing the C Development Tool on you laptop here. Complete steps 1.–7. only. Then, complete the steps below to test the connection of your laptop to the target myRIO.

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 my RIO target LDC 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.
6. Exit Eclipse. Power down Windows. Quit VirtualBox.