



i.LON® SmartServer

Programming Tools Quick Start Guide

Welcome to the i.LON SmartServer Programming Tools. You can use these tools to create Freely Programmable Modules (FPMs). FPMs are custom C or C++ applications and drivers that you develop to customize the functionality of the SmartServer. You can use FPM applications to supplement the built-in applications on the SmartServer and provide solutions for a number of custom application requirements, including energy optimization, data analysis, lighting control, and room control. You can then use your FPM drivers to send data from the SmartServer's RS-232 or RS-485 ports to an FPM application or a built-in application on the SmartServer (for example, a Scheduler or a Data Logger). This guide provides a quick overview of how to install your SmartServer. See the *i.LON SmartServer User's Guide* and the *i.LON SmartServer Freely Programmable Modules User's Guide* for more information.

Step 1: Install the i.LON SmartServer Programming Tools

1. Before installing, check www.echelon.com/ilon for the latest SmartServer service pack and updates. See the installation instructions included with the service pack or update for more information.
2. Insert the i.LON SmartServer Programming Tools DVD into your computer. If the installation program fails to start, navigate to your DVD-ROM drive and run `setup.exe`.
3. Click **Install Products**, click **Echelon i.LON SmartServer Programming Tools**, and then follow the instructions in the Setup Wizard.
4. The following programs are installed on your computer:
 - **i.LON SmartServer Programming Tools**. A custom Eclipse Development Kit that includes FPM template files, the FPM library, a tool for creating the C structures of user-defined network variable types (UNVTs), special Eclipse plug-ins to support FPM development, a C++ compiler, and a CYGWIN environment.
 - **i.LON SmartServer LONWORKS® Interface Developer**. A command line application that converts a Neuron® C model file (.nc extension) to a device interface (XIF) file. This tool lets you deploy FPM applications that have static interfaces on your SmartServer.
 - **i.LON License Generator**. A tool for creating licenses that help protect your FPM application from piracy or unauthorized use.

Step 2: Create an FPM Application

1. Use the NodeBuilder Resource Editor to create a user-defined functional profile (UFPT) for your FPM. If the NodeBuilder Resource Editor is not installed on your computer, you can install NodeBuilder Resource Editor 3.15 from the i.LON SmartServer Programming Tools DVD. If you are implementing an FPM based on a standard profile, you can create a user profile that inherits from the standard profile.
2. Copy the device resource files (.typ, .fmt, .fpt, .enu extensions) to the `/lonworks/types/user/<YourCompany>` folder on the SmartServer flash disk.
3. Reboot your SmartServer.
4. Use a text editor such as Notepad to create a Neuron C model file (.nc extension) that defines your device interface. Use the i.LON SmartServer LONWORKS Interface Developer to convert your Neuron C model file to a XIF file. Copy the XIF file to the `/lonworks/import/<YourCompany>` folder on the SmartServer flash disk.

Step 2: Continued

5. Start the i.LON SmartServer Programming Tool. To do this, click **Start**, point to **Programs**, point to **Echelon i.LON SmartServer Programming Tools**, and then click **i.LON SmartServer Programming Tools**.
6. Use the i.LON SmartServer Programming tool to create a new FPM project.
7. Write and build your FPM application in C or C++ with the i.LON SmartServer Programming tool.

See the [FPM QuickStart Exercise in Chapter 1 of the i.LON SmartServer Freely Programmable Modules User's Guide](#) for details on these steps.

To deploy FPMs on your SmartServer, your SmartServer must have a programming license installed on it. If you do not have a SmartServer Model 7210xR-409 or 7210xR-410, on which the programming license is pre-installed, you can order it (Echelon Model 72161) from www.echelon.com/ilon/activate.

Step 3: Deploy the FPM Application

1. Use the i.LON SmartServer Programming Tool to upload the FPM to your SmartServer and reboot the SmartServer.
2. Add a new internal device to a LONWORKS channel on the SmartServer that uses the static XIF file that you created for the FPM application in step 2.
3. Test the FPM application with the **View – Data Points** Web page.

See the [FPM QuickStart Exercise in Chapter 1 of the i.LON SmartServer Freely Programmable Modules User's Guide](#) for details on these steps.