



**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](http://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](http://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.