

**Configuring
PanelView Plus or FactoryTalk View
to communicate via Ethernet
to a SoftPLC**

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SoftPLC Corporation 25603 Red Brangus Drive, Spicewood, Texas 78669
Telephone: 1-800-SoftPLC (US/Canada) or 512-264-8390

URL: <http://softplc.com>
Email: support@softplc.com

Configuring a PanelView Plus or FactoryTalk View to communicate via Ethernet to a SoftPLC

This application note describes how to configure a Rockwell Automation PanelView Plus or FactoryTalk View SE station (“PanelView”) to communicate to a SoftPLC over Ethernet.

Required/Recommended Equipment:

- SoftPLC - Smart models SMS4-x or NeoPAC models SN2-x, with firmware dated August 1, 2022 or later
- TOPDOC NexGen version 5.0 or later
- SoftPLC/TOPDOC NexGen User Manual – *Found on the USB drive with your TOPDOC NexGen software or at <http://softplc.com/products/controllers/tdng/>*
- FactoryTalk View

Establishing Ethernet Communication between the SoftPLC Gateway and FactoryTalk View

SoftPLC Gateway Ethernet Configuration

Using the instructions in the Quick Start Guide and/or the TOPDOC NexGen/SoftPLC User Manual, configure the IP address of the SoftPLC.

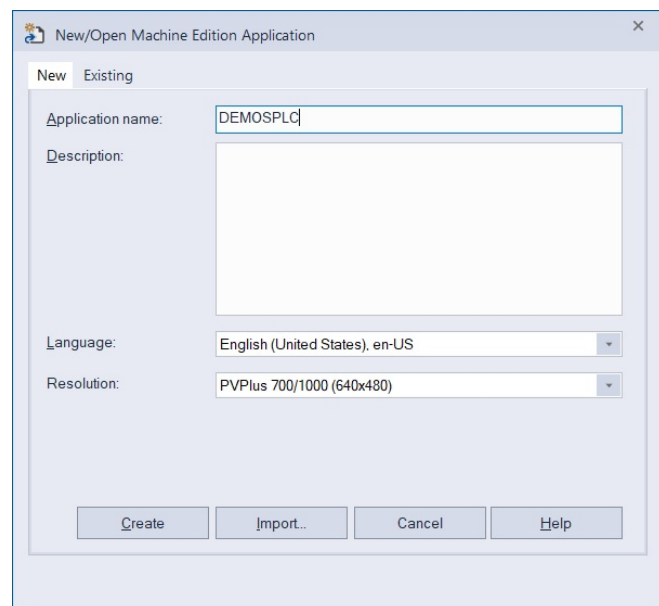
The Ethernet driver used to communicate to FactoryTalkView is the same driver used by TOPDOC NexGen. No other configuration is required on the SoftPLC.

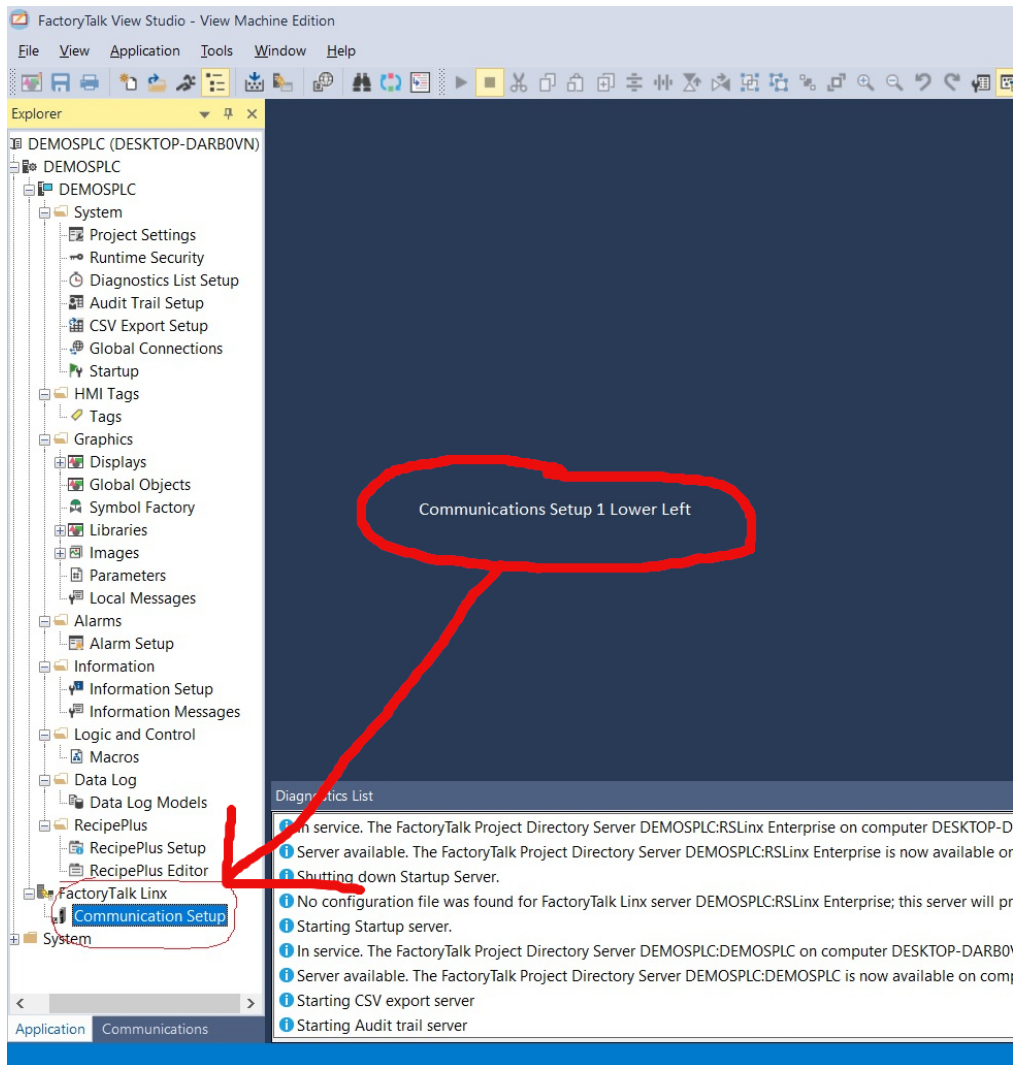
FactoryTalk View Ethernet to SoftPLC Configuration

FactoryTalk View (FT) communicates to SoftPLC using the PLC-5 Ethernet protocol. The following images describe and illustrate the steps to configure ethernet communication and map data values.

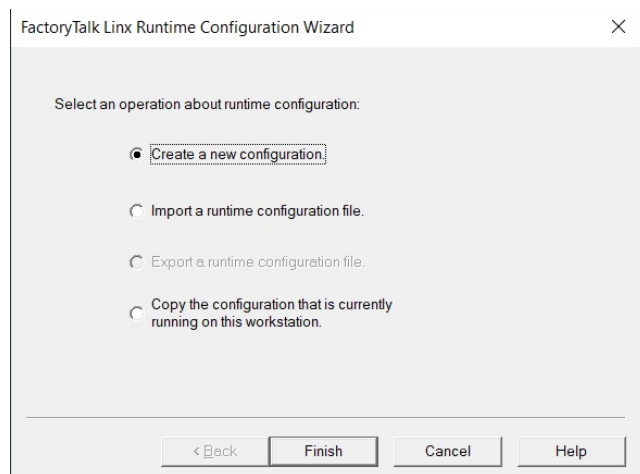
First, in FT, create a new application. In this case, we have used “DEMOSPLC”.

Then, from the FT Explorer tree, select Communication Setup as shown in the next image.

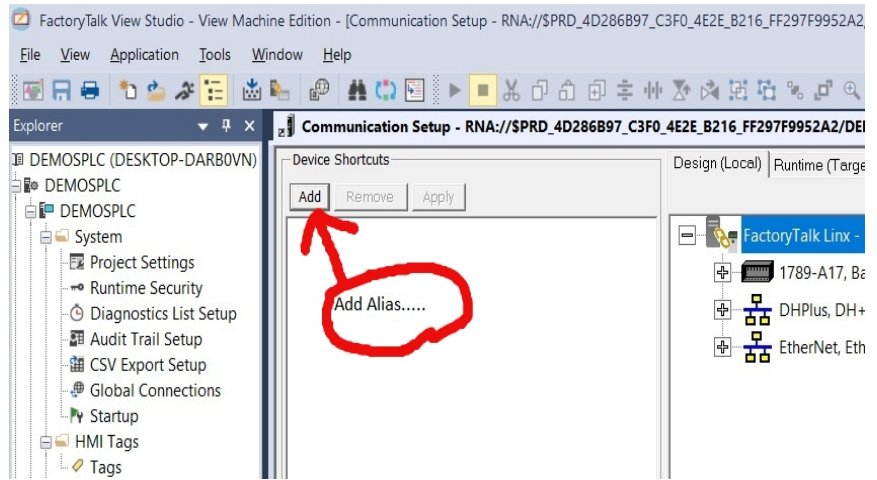




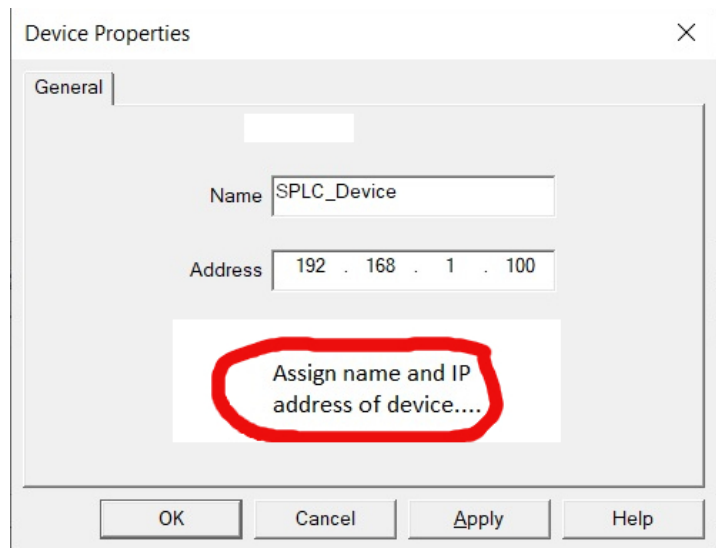
This will load the FT Linx Runtime Configuration Wizard. Select to “Create a new configuration”.



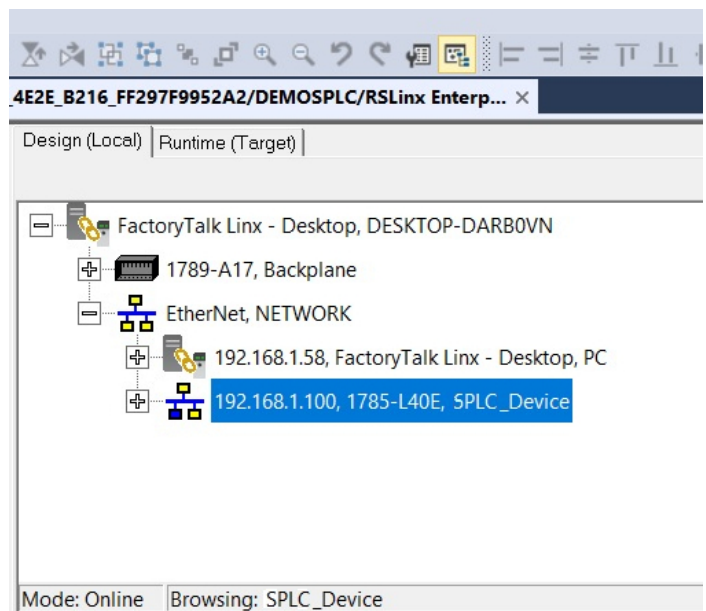
Now, click on Add in the Device Shortcuts to create an Alias for your connection.



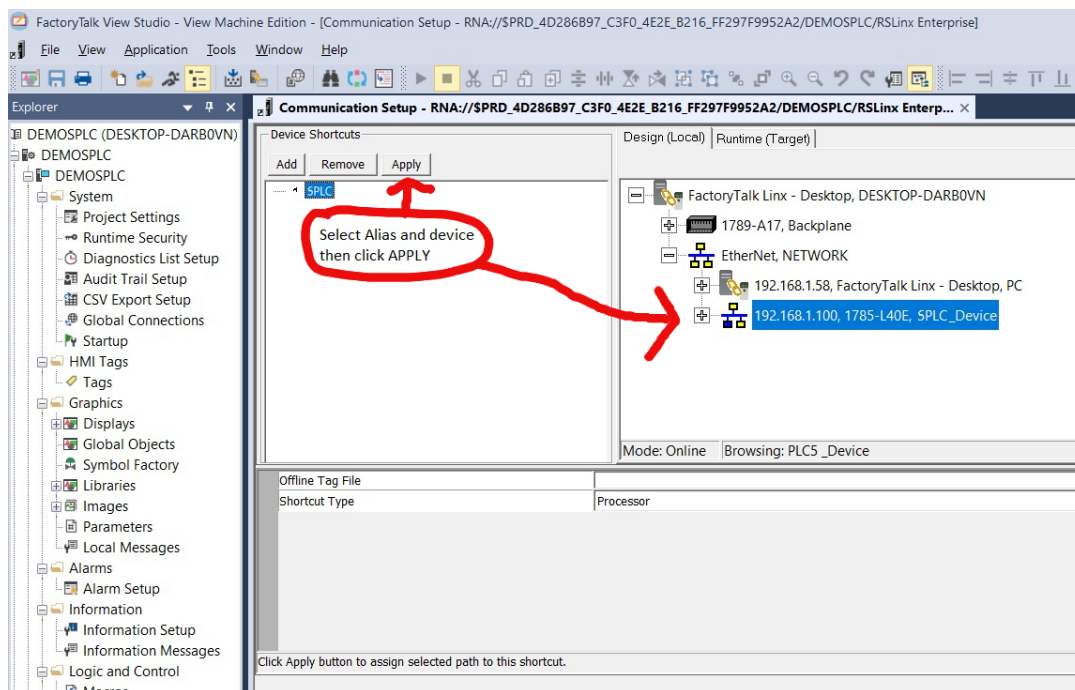
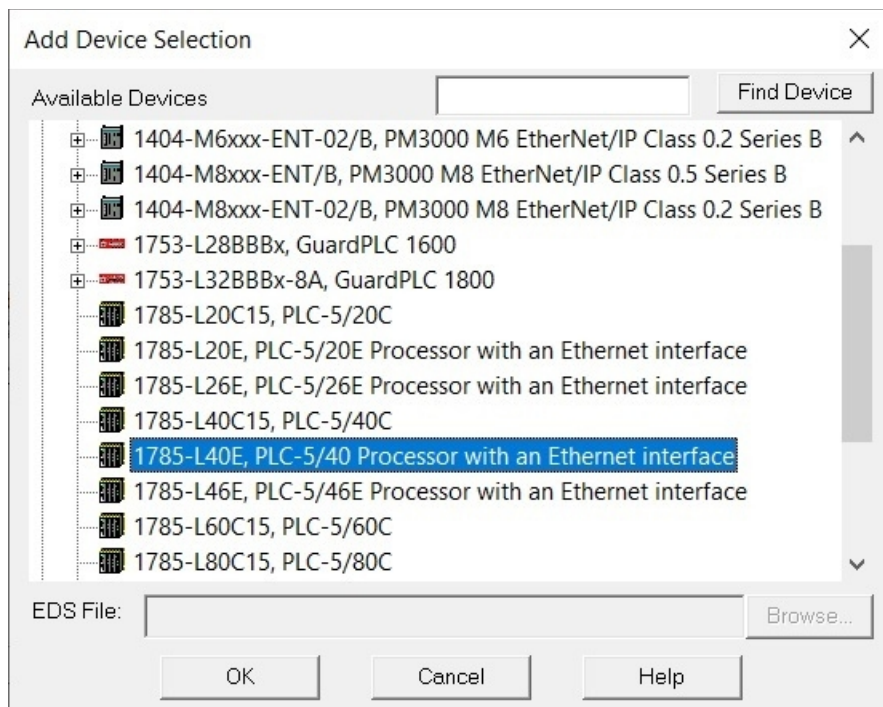
Enter the name (alias) and the IP address of the SoftPLC, then click on OK.



Next, right click on the Ethernet Driver in the Linx window, and then select to "Add a device".



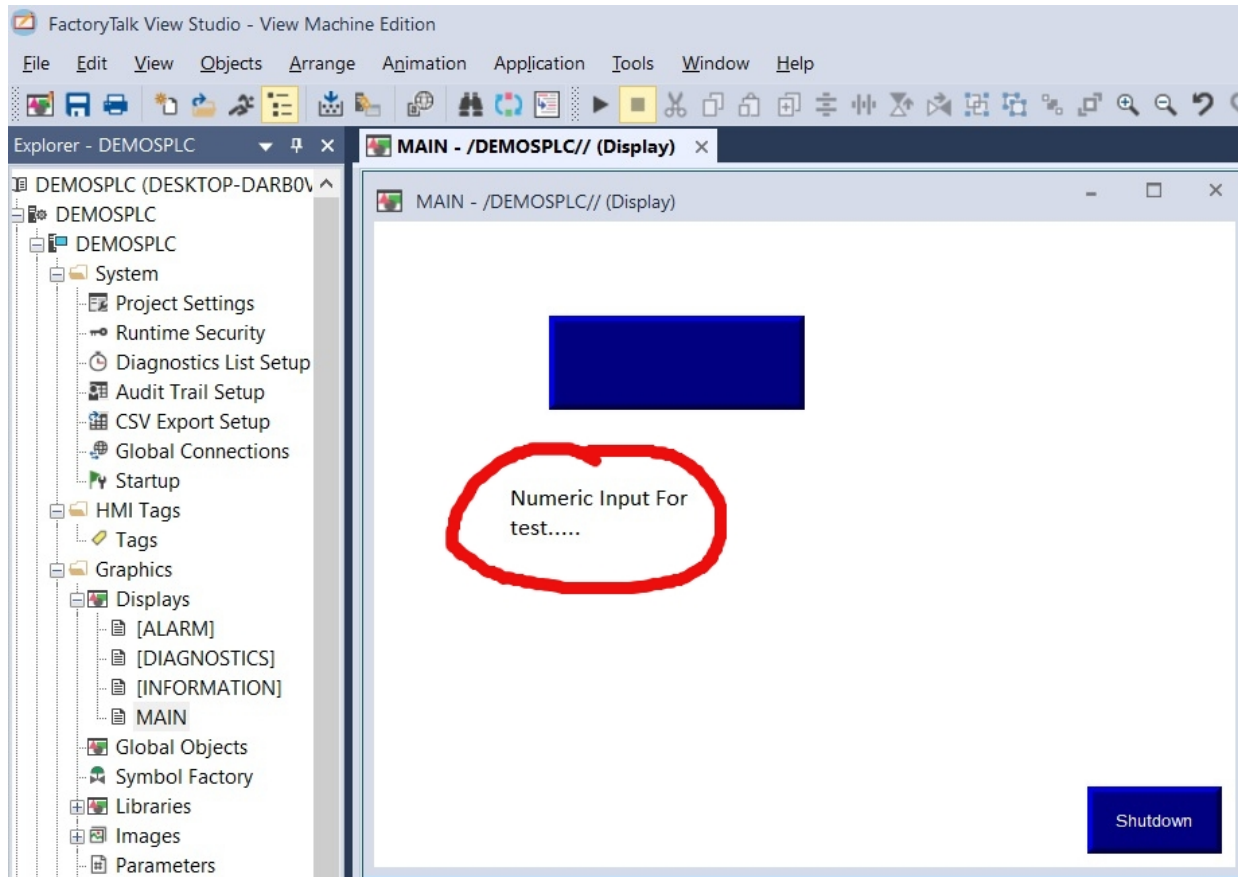
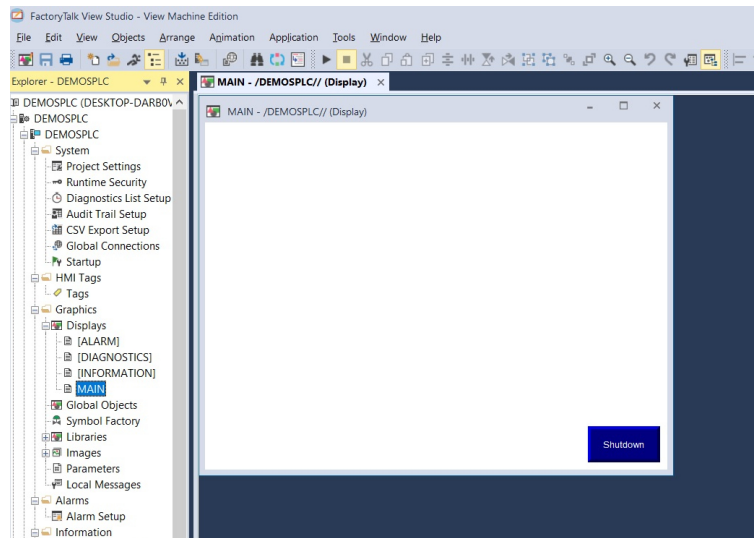
Select the 1785-L40E. The SoftPLC appears to FT Linx as this PLC-5 processor!



With the Device and Network selected, use “Apply” to connect them. Click OK, and then select Yes when asked to Save the changes to the shortcut (alias).

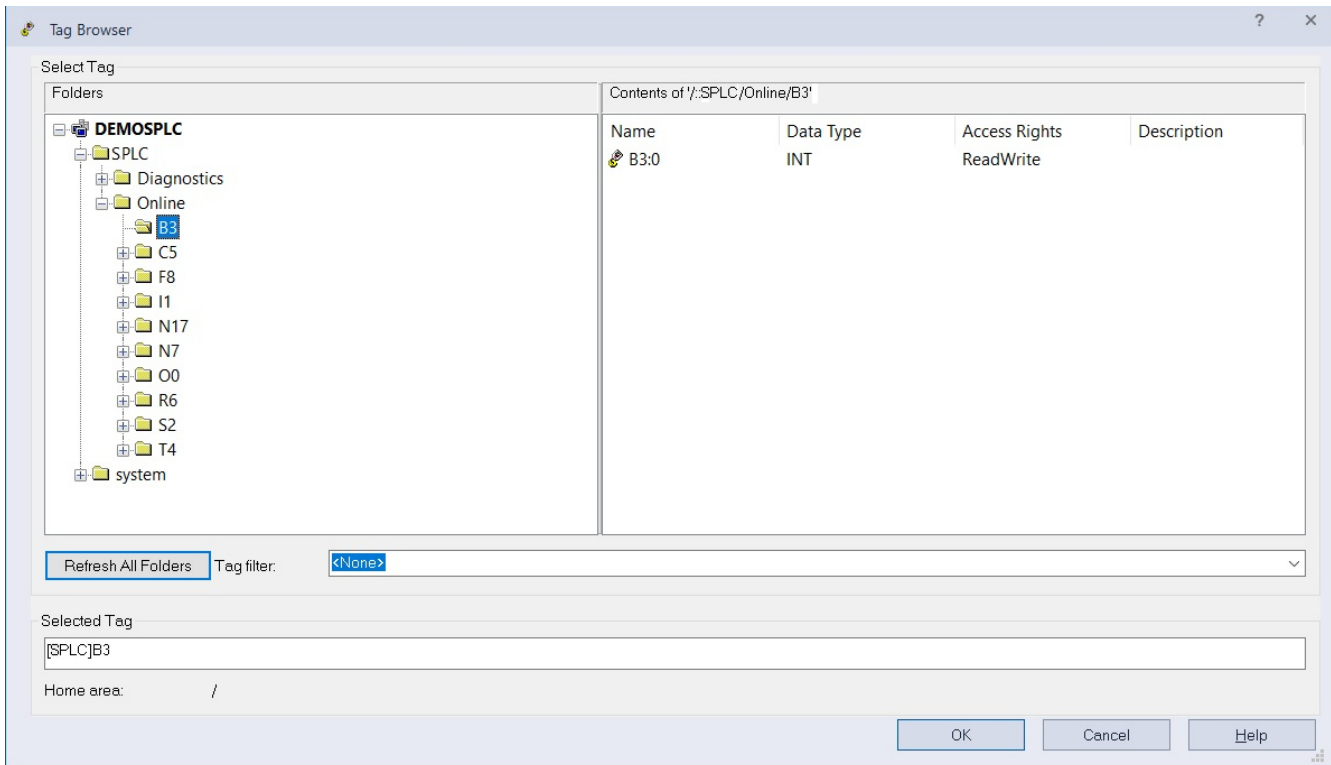
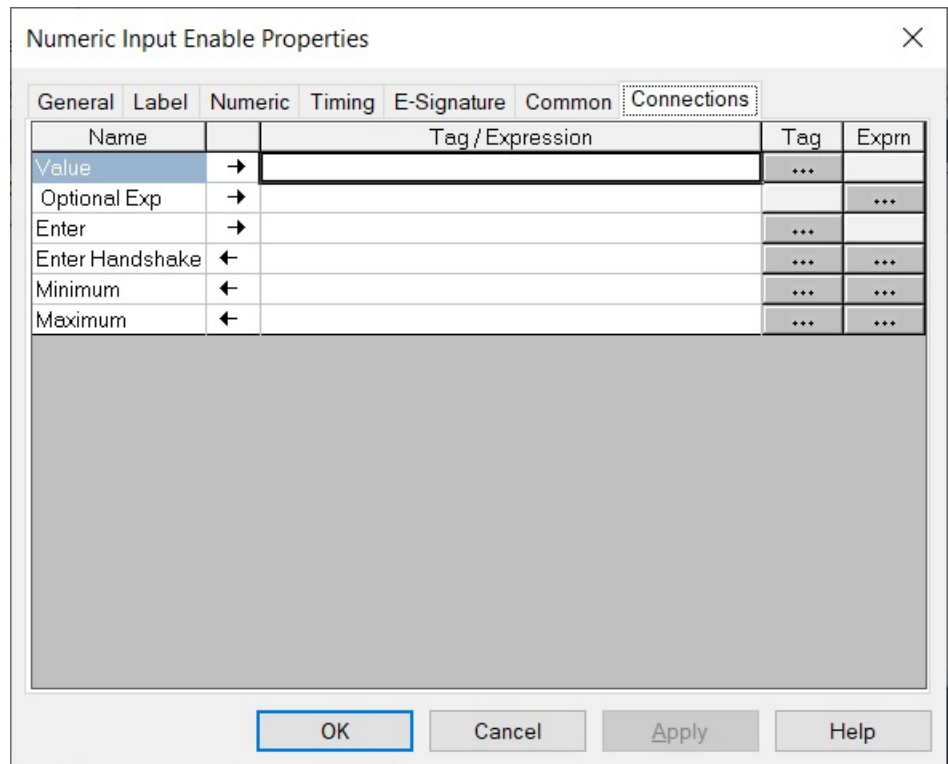
Next, you can create a PV application, and connect the SoftPLC data values.

In this example, we are creating a simple application to write an integer value to the SoftPLC.

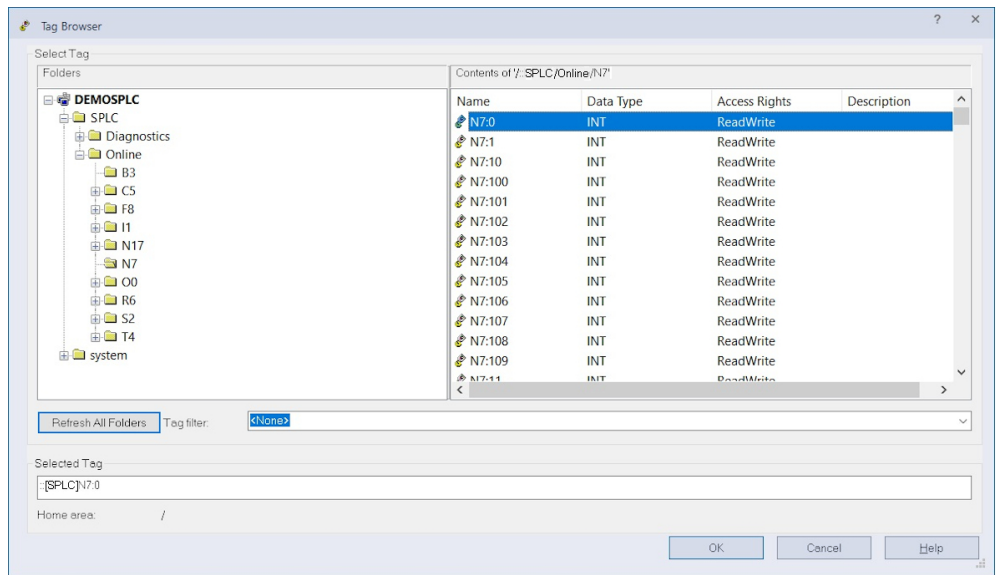


After entering the numeric input object, configure it with the data table value in the Properties window.

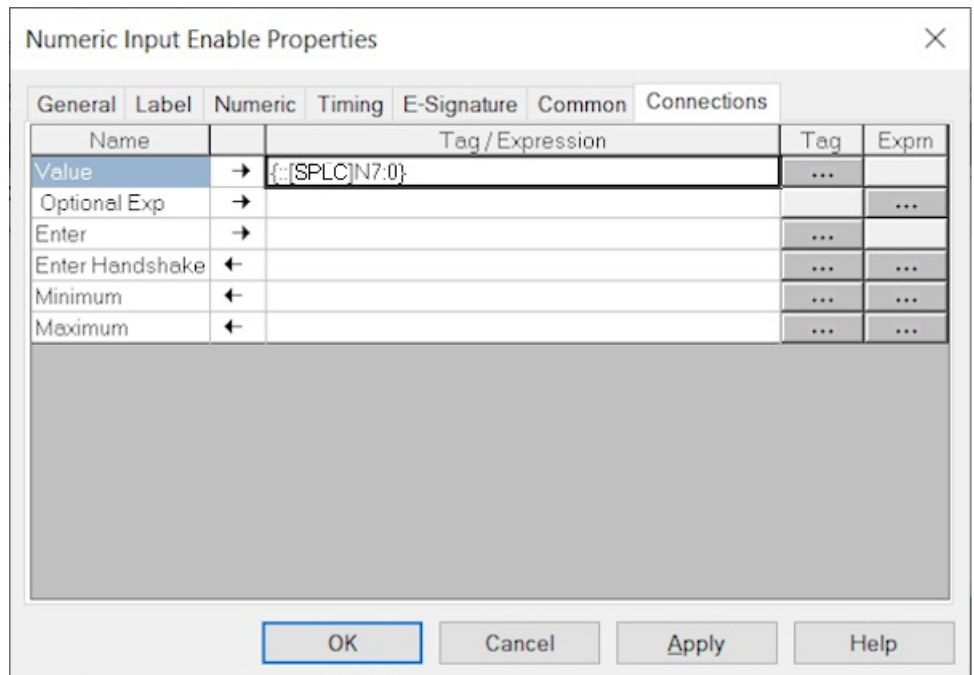
The Tag Browser will display the available data table files in the device.

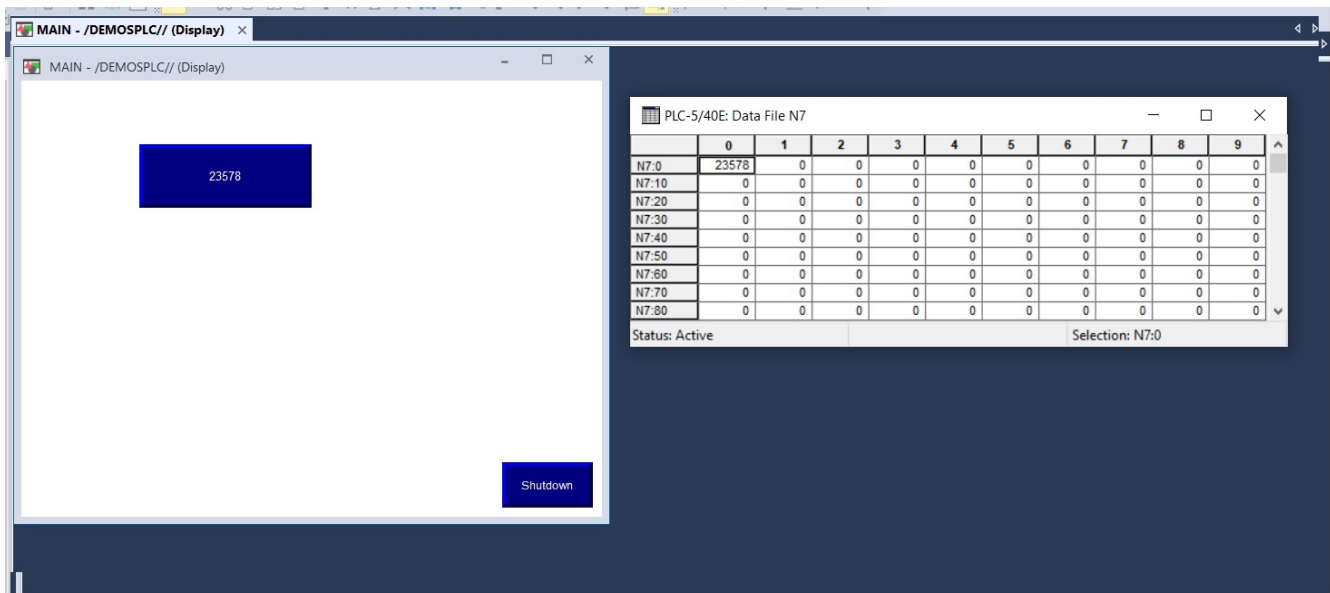


For this example, select file N7, and then N7:0 for the specific integer.



When you click on OK, the properties window will update with the Alias and tag.





The above image shows the running PV application and the same value in the RS-Linx data table monitor.

FactoryTalk View Application Considerations

If you have an existing FactoryTalk View application that was designed for a PLC-5 or SLC-500, you should be able to use the existing tag database for all mapped values for the following data types:

- I (PLC-5 octal input words/bits)
- O (PLC-5 octal output words/bits)
- N (integer)
- F (float)
- T (timer words/bits)
- C (counter words/bits)
- R (control words/bits)
- PD (PID words/bits)
- ST (string)
- B (bit/binary)

Other data types (eg: A, G, M) are not supported and will need to be changed to conform with one of the above types.

SoftPLC RIO/DH+ Gateway Applications

If your SoftPLC is to be used as a Gateway between PanelView and Allen-Bradley PLC's over a Remote I/O (RIO) or Data Highway Plus (DH+) network, you will need to perform additional configuration of the SoftPLC. The SoftPLC also needs to be factory-equipped with a "blue hose" interface (Catalog Number SPO-BH).

Configuring RIO Communications Between a SoftPLC and A-B PLC/SLC's

For this use-case, you will need to configure SoftPLC as a Remote I/O Adapter (Slave). This driver is already installed in the SoftPLC, but you will need to configure the data mapping and enable the driver. The user documentation for this driver is at <http://www.softplc.com/usermanuals/rioslave/>

Configuring Communication Between a SoftPLC and an A-B DH+

For this use-case, you will need to configure SoftPLC to communicate on Data Highway Plus. DH+ communications are implemented via an O•N•E driver that is part of the SoftPLC firmware. The user documentation to configure O•N•E communications and the Smart DH+ driver is in Chapter 5 of the User Manual.

Once the O•N•E channel(s) have been created and configured, Message (MSG) instruction programming is used to transfer the desired data over the DH+. The MSG logic can reside in the SoftPLC or the A-B PLC's.

SoftPLC provides a template application for this use-case if you want the SoftPLC to initiate the read and write MSG logic. Contact support@softplc.com for details.

SoftPLC supports the following MSG types:

- PLC-5 INT16 WRITE
- PLC-5 TYPED WRITE
- PLC-5 TYPED READ
- PLC-3 INT16 WRITE
- PLC-3 INT16 READ
- PLC-2 INT16 WRITE
- PLC-2 INT16 READ

If data not supported by these MSG commands is required in the HMI application, the A-B PLC will need to move the data to supported data table files or initiate the data transfers to/from the SoftPLC. For example, SLC-5/04 input or output values (I.xx or O.xx) could be moved to an integer file (Nxx) and the SoftPLC could read/write them using a PLC-5 Typed Write/Read MSG OR the SLC-5/04 could use a PLC-5 Write/Read MSG to the SoftPLC data table.