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Technical Note

EtherNet/IP PanelView Plus or FactoryTalk View SE station to DH+ PLC5 using an AN-X2- AB-DHRIO

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Author: Daniel Roslan

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Asia Pacific

Malaysia Office

Phone: +603.7724.2080

asiapc@prosoft-technology.com

Languages spoken: Chinese, English

China Office

Phone: +86.21.5187.7337

asiapc@prosoft-technology.com

Languages spoken: Chinese, English

Europe, Middle East, Africa

France Office

Phone: +33 (0)5.34.36.87.20

europa@prosoft-technology.com

Languages spoken: French, English

Middle East and Africa

Phone: +971.(0)4.214.6911

mea@prosoft-technology.com

Languages spoken: English, Hindi

North America

Corporate Headquarters

Phone: +1 661.716.5100

support@prosoft-technology.com

Languages spoken: English, Spanish

Latin America

Brazil Office

Phone: +55.11.5083.3776

brasil@prosoft-technology.com

Languages spoken: Portuguese, English

Mexico and Central America Office

Phone: +52.222.3.99.6565

soporte@prosoft-technology.com

Languages spoken: Spanish, English

Regional Office

Phone: +1.281.298.9109

latinam@prosoft-technology.com

Languages spoken: Spanish, English

Document Information

Author	Daniel Roslan
Description	How to use FactoryTalk View to set up an EtherNet/IP PanelView Plus or FactoryTalk View SE station to talk to a DH+ PLC5 through an AN-X2-AB-DHRIO using the DH+ firmware
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ProSoft Technology

9201 Camino Media, Suite 200

Bakersfield, CA 93311

+1 (661) 716-5100

+1 (661) 716-5101 (Fax)

<http://www.prosoft-technology.com>

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Purpose of Tech Note:

This Tech Note has been designed to assist customers who are attempting to connect a Rockwell PanelView Plus or FactoryTalk View SE station using EtherNet/IP to a PLC5 using Data Highway Plus via an AN-X2-AB-DHRIO gateway. This tech note assumes that your PLC5 has already been configured with data you wish to extract or write to, and that you have at least moderate knowledge of how to use Rockwell's FactoryTalk View software.

Required Components:

To complete this tech note you will need at least one of the following:

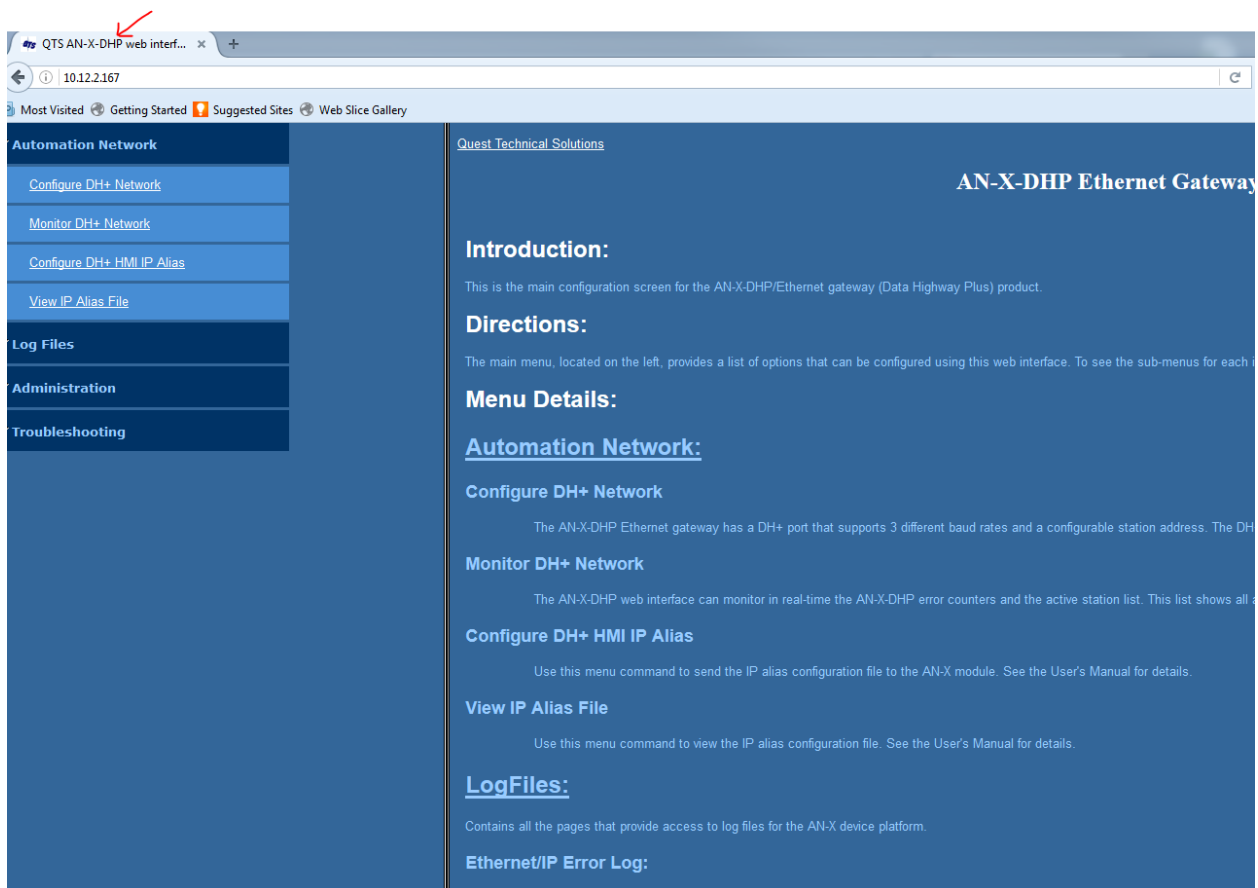
- An AN-X2-AB-DHRIO
- A PanelView Plus or FactoryTalk View SE station with EtherNet/IP capability
- A PLC5
- A cat 5 (or similar Ethernet) cable
- A DH+ cable (Blue Hose)
- FactoryTalk View

Step 1: Setting up the AN-X2-AB-DHRIO

This tech note assumes that you have already configured the IP address for your AN-X2-AB-DHRIO to one you can reach from your PC. If you have not yet configured the IP address please refer to the user manual or watch one of the many AN-X2-AB-DHRIO tutorial videos which discusses how this can be done.

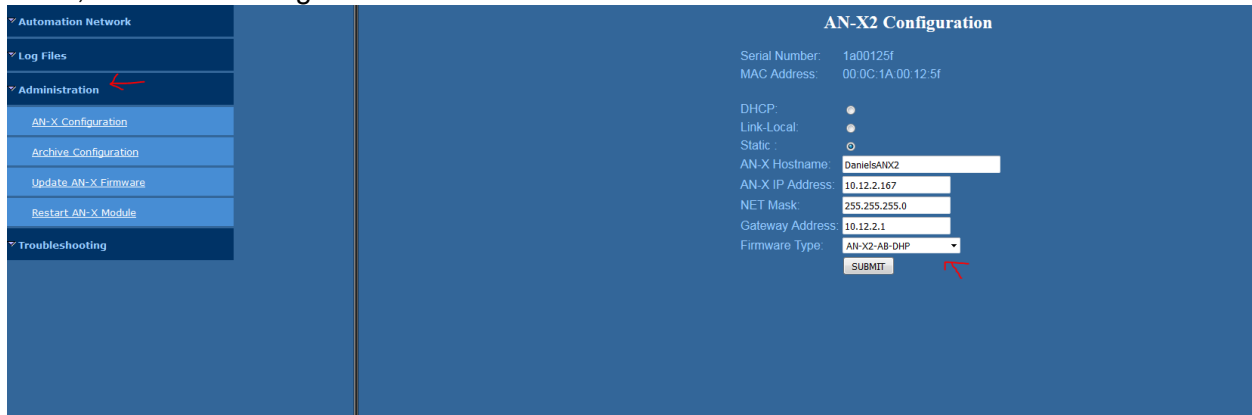
Enter the IP Address of your AN-X2-AB-DHRIO into your preferred web browser. If your AN-X2-AB-DHRIO is already in DH+ mode, you will see AN-X-DHP on the browser tab, as well as an Automation Network which, when expanded, will appear as below.

If you are in AN-X-DHP mode but do not see *Configure DH+ HMI IP Alias* and *View IP Alias File*, you have an older revision of the DH+ firmware. Please contact ProSoft Technical Support for directions on upgrading your firmware.



If you determine you are indeed already in DH+ mode, you can skip to page 6.

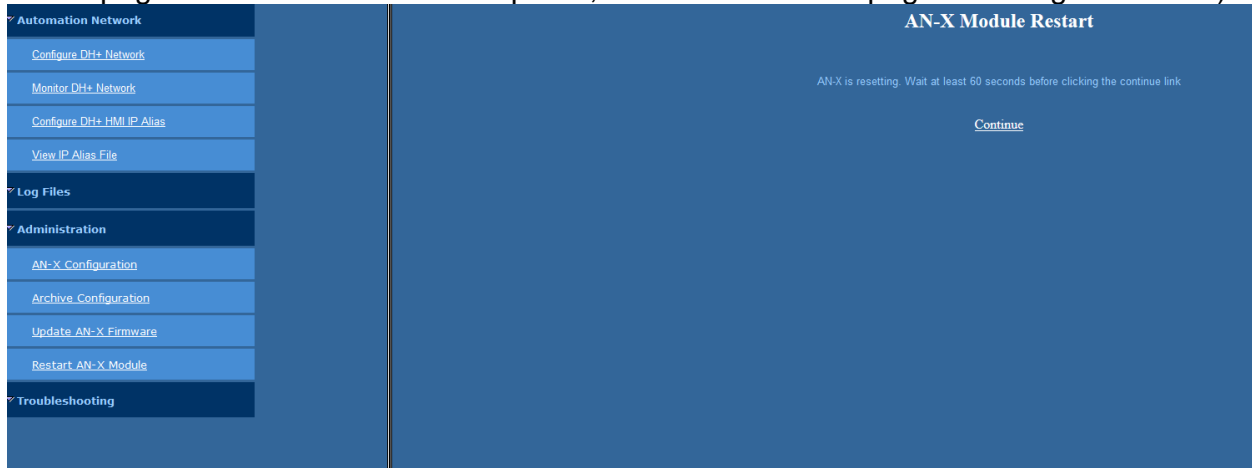
In the event you are not in DHP mode you can activate this mode by expanding the administration tab, clicking on AN-X Configuration, selecting AN-X2-AB-DHP from the drop down, and then clicking submit.



A module reboot will be required after performing this action which usually takes about a minute to complete.



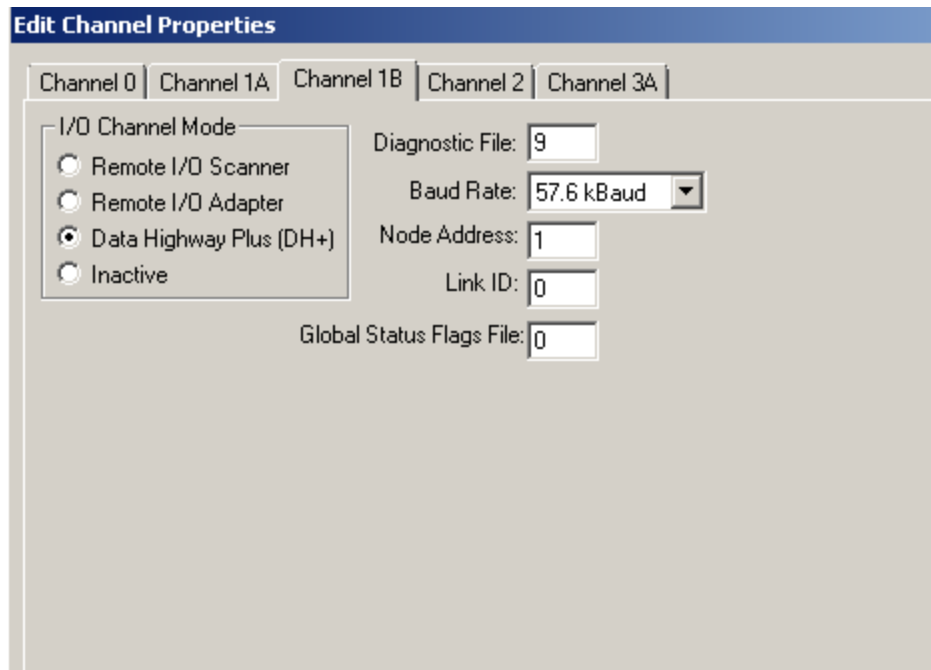
After the module has finished rebooting be certain to flush your browser's cache. (Ctrl-F5 will reload pages in Firefox or Internet Explorer, Shift-F5 will reload pages in Google Chrome.)



Once you are in DH+ mode, expand the Automation Network section and click on Configure DH+ Network, then choose the baud rate settings for your network and a Station number which is not already in use on your network and click submit.

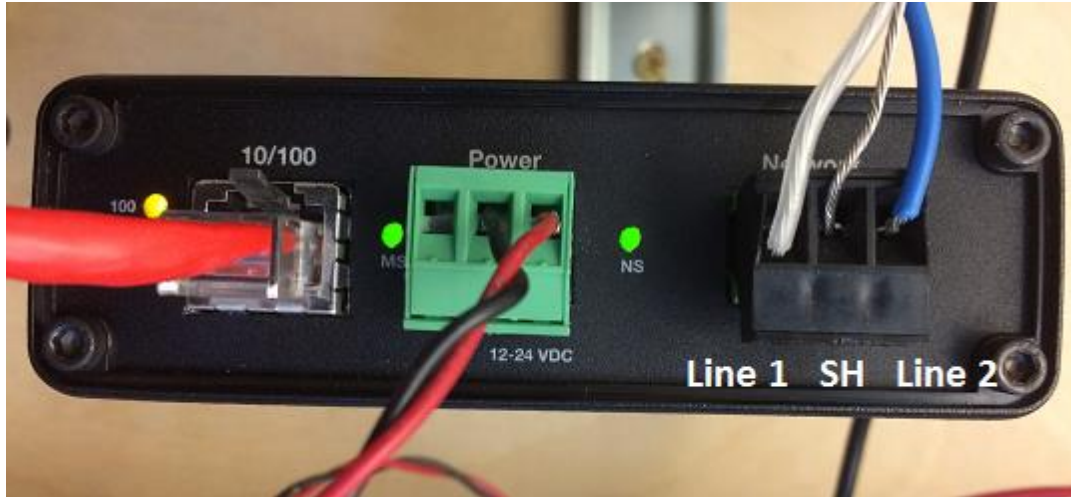


Below are the settings as viewed in the PLC5 on Channel 1B which we will be using.



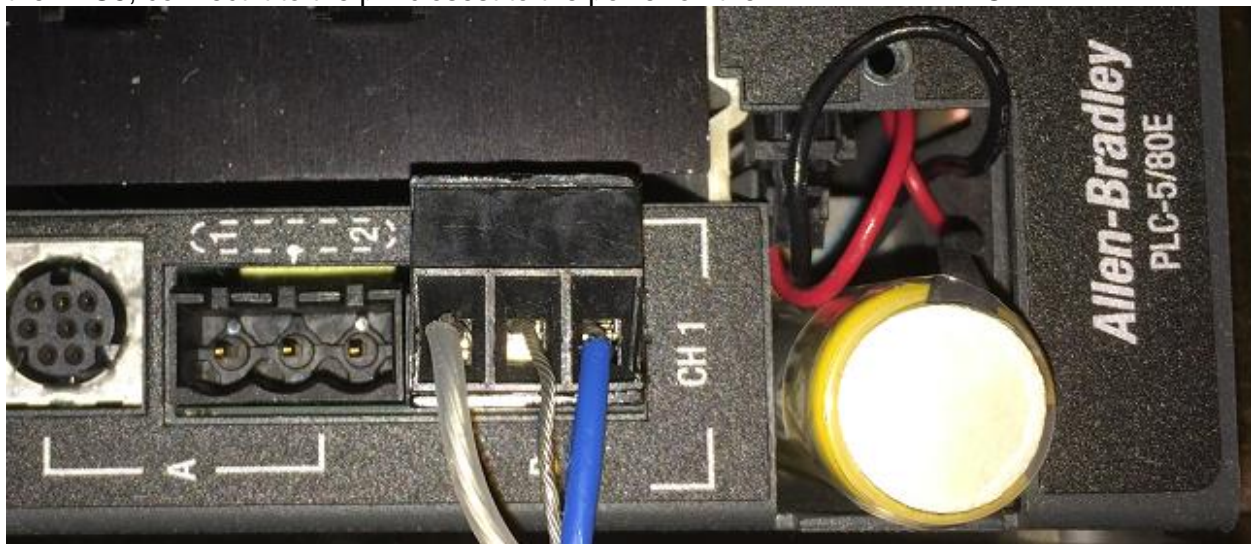
In this example the PLC5 was using 57k and Station 1, and there was nothing else on the network so we chose 57k and Station 2.

Next, wire the AN-X2-AB-DHRIO into your DH+ network (or directly to the PLC5 if that is the only device on the network, as was the case in this example). Your wiring should look similar to this.



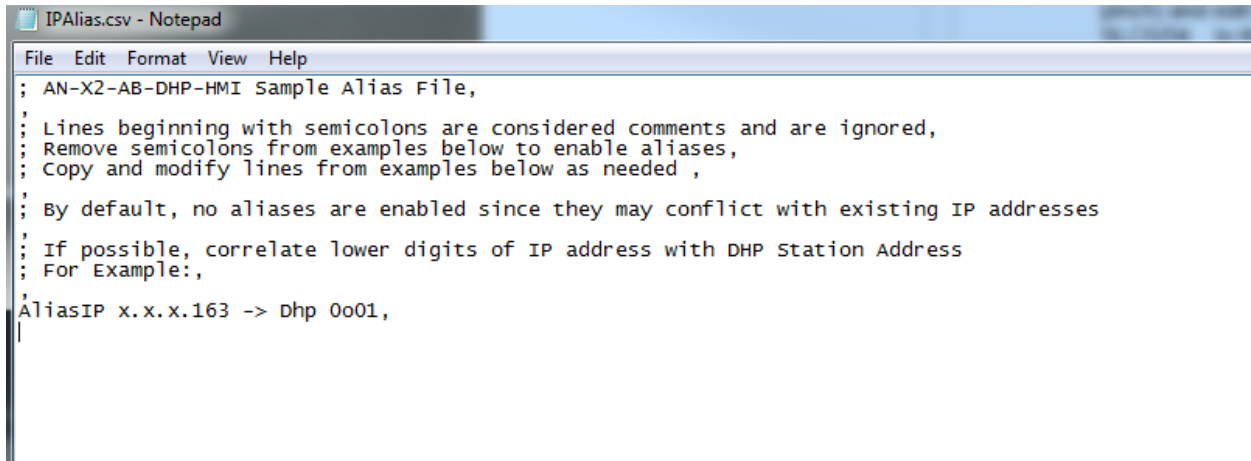
If we are the end of the network, make sure to add proper termination to the wiring (For networks running at 57k6 or 115k2 baud it is necessary to have 150 ohm resistors on each end of the network, for 230k4 use 82 ohm resistors).

The picture above matches the PLC5 wiring below, that is, if the clear wire is on the top pin for the PLC5, connect it to the pin closest to the power on the AN-X2-AB-DHRIO.

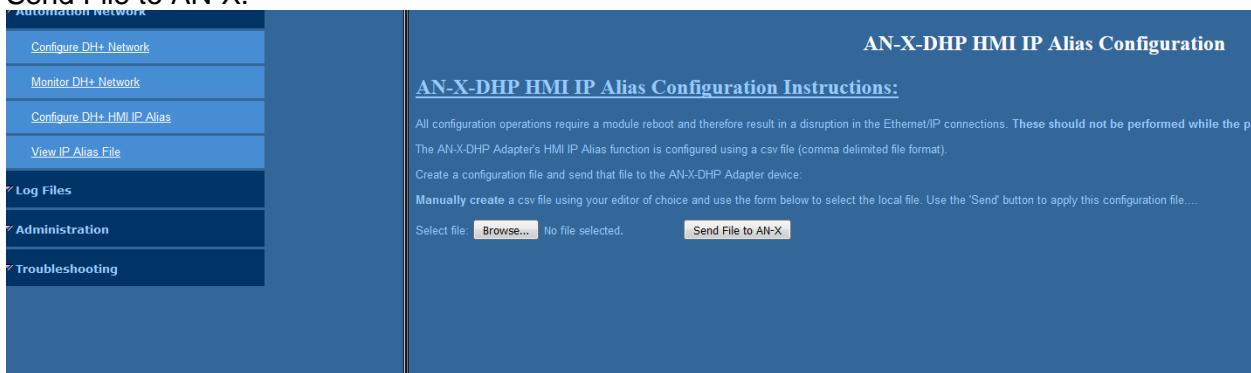


Now let's create/edit the IP Alias File for the AN-X2-AB-DHRIO. If you click on View IP Alias File under Automation Network you can view (but not edit) the current IP Alias file the AN-X2-AB-DHRIO is using. Every line that begins with a semi colon (;) is only a comment and is not being executed. Copy and paste whatever field you have here into a text editor (notepad will suffice in a pinch) and edit the IP and station to match an unused IP on your network and the station of the PLC5. In this case 10.12.2.163 was available and, again, my PLC5 was station 1. Note, you must keep the x.x.x at the beginning. (The ANX will automatically replace x.x.x with its first 3 IP octets.) You are only defining the fourth and final octet. This Alias IP is associated with the PLC5 DH+ station ID.

```
AliasIP x.x.x.163 -> Dhp 0o01
```



Save the file as IPAlias.csv, then use Configure DH+ HMI IP Alias to browse to the file and click Send File to AN-X.



Note that you will need to reboot the AN-X2-AB-DHRIO for the change to take effect:

IPAlias.csv (460 bytes, text/csv) saved.
Updating files
File transfer done...

```
; AN-X2-AB-DHP-HMI Sample Alias File,
;
; Lines beginning with semicolons are considered comments and are ignored,
; Remove semicolons from examples below to enable aliases,
; Copy and modify lines from examples below as needed ,
;
; By default, no aliases are enabled since they may conflict with existing IP addresses
;
; If possible, correlate lower digits of IP address with DHP Station Address
; For Example:,
AliasIP x.x.x.163 -> Dhp 0o01,
```

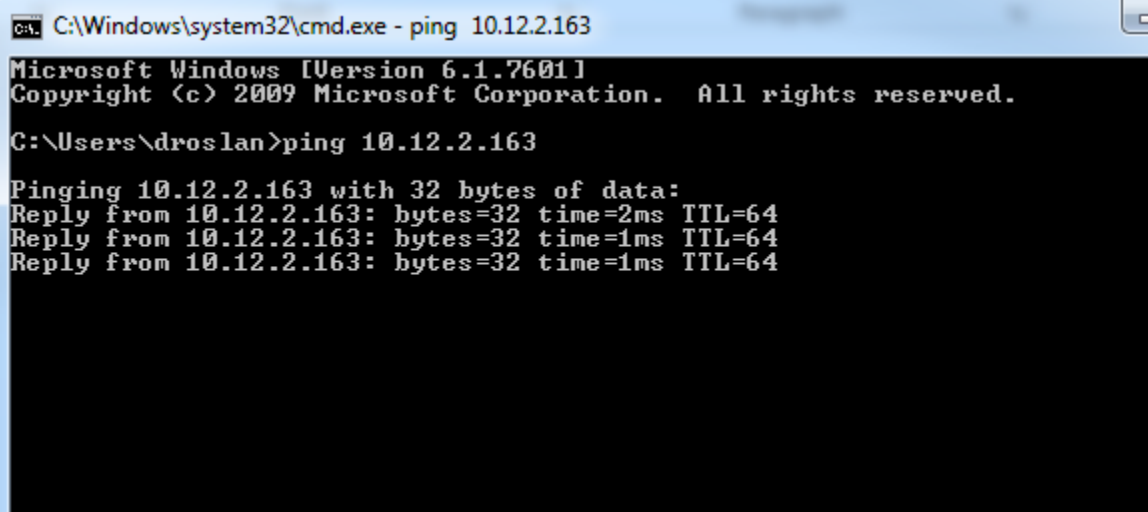
Changes to the IP Alias configuration will only take effect after a reset of the AN-X device.

Click this [reboot](#) link to reset or this [link](#) to go to main page.

If you click View IP Alias File you should now see your new file:

<ul style="list-style-type: none"> <li style="background-color: #003366; color: white; padding: 5px; margin-bottom: 5px;">Automation Network <li style="background-color: #0066b3; color: white; padding: 5px; margin-bottom: 5px;"> Configure DH+ Network <li style="background-color: #0066b3; color: white; padding: 5px; margin-bottom: 5px;"> Monitor DH+ Network <li style="background-color: #0066b3; color: white; padding: 5px; margin-bottom: 5px;"> Configure DH+ HMI IP Alias <li style="background-color: #0066b3; color: white; padding: 5px; margin-bottom: 5px;"> View IP Alias File <li style="background-color: #003366; color: white; padding: 5px; margin-bottom: 5px;">Log Files <li style="background-color: #003366; color: white; padding: 5px; margin-bottom: 5px;">Administration <li style="background-color: #003366; color: white; padding: 5px;">Troubleshooting 	<p>File: /mnt/mmc/IPAlias.csv Length: 460 bytes [Select new file]</p> <pre style="border: 1px solid #ccc; padding: 5px;">; AN-X2-AB-DHP-HMI Sample Alias File, ; ; Lines beginning with semicolons are considered comments and are ignored, ; Remove semicolons from examples below to enable aliases, ; Copy and modify lines from examples below as needed , ; ; By default, no aliases are enabled since they may conflict with existing IP addresses ; ; If possible, correlate lower digits of IP address with <u>DHP</u> Station Address ; For Example:, AliasIP <u>x.x.x.163</u> -> <u>Dhp</u> 0o01,</pre>
--	--

Although not required, you can validate that the alias file took by pinging the IP address from a command prompt:



```
C:\Windows\system32\cmd.exe - ping 10.12.2.163
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

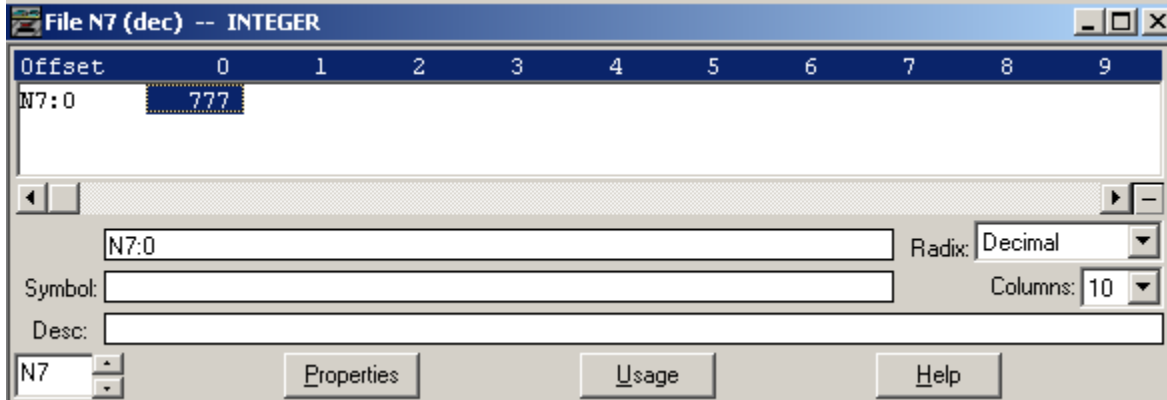
C:\Users\droslan>ping 10.12.2.163

Pinging 10.12.2.163 with 32 bytes of data:
Reply from 10.12.2.163: bytes=32 time=2ms TTL=64
Reply from 10.12.2.163: bytes=32 time=1ms TTL=64
Reply from 10.12.2.163: bytes=32 time=1ms TTL=64
```

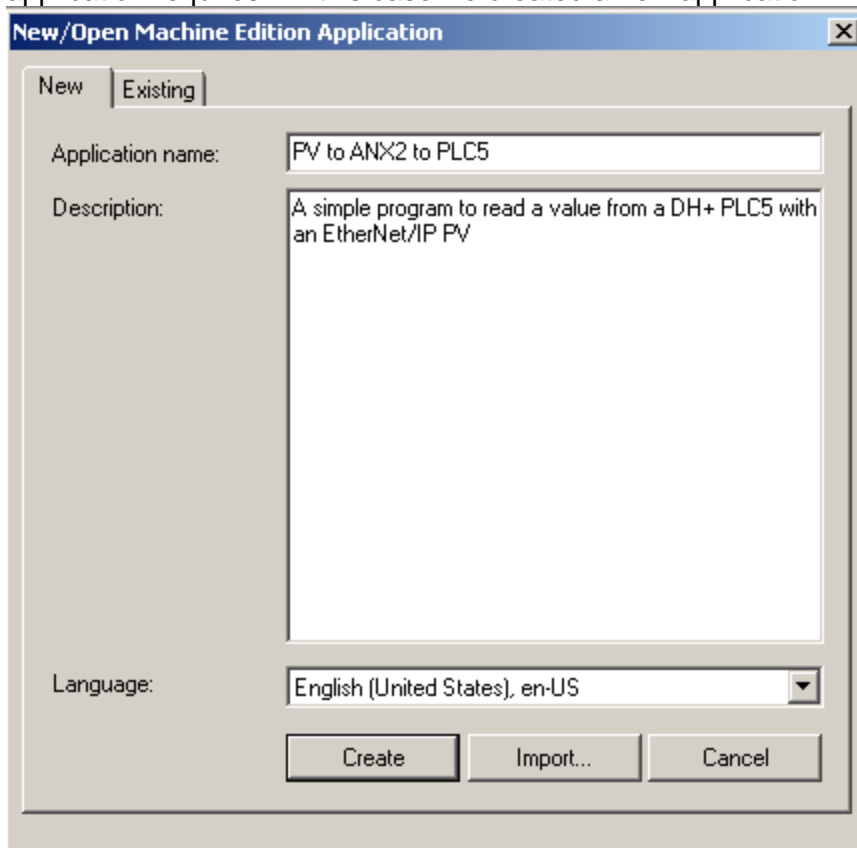
Your AN-X2-AB-DHRIO should now be configured and ready for your PanelView Plus or FT View station.

Step 2: Setting up the PanelView Plus or FT View SE station

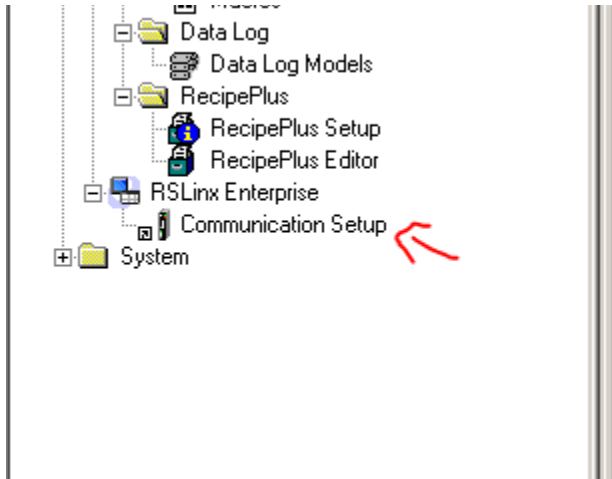
For the sake of this example we are simply going to try to read N7:0 from our PLC, within which we have placed the number 777.



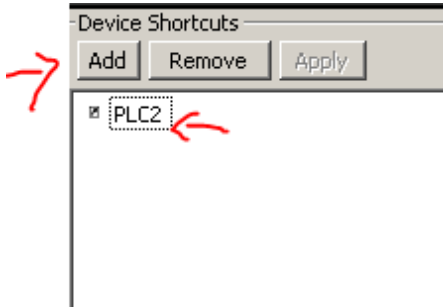
Load FactoryTalk View and either open your existing project, or create a new one, as your application requires. In this case we created a new application:



Now let's set up the communication by double clicking on the communication set up under RSLinx Enterprise:

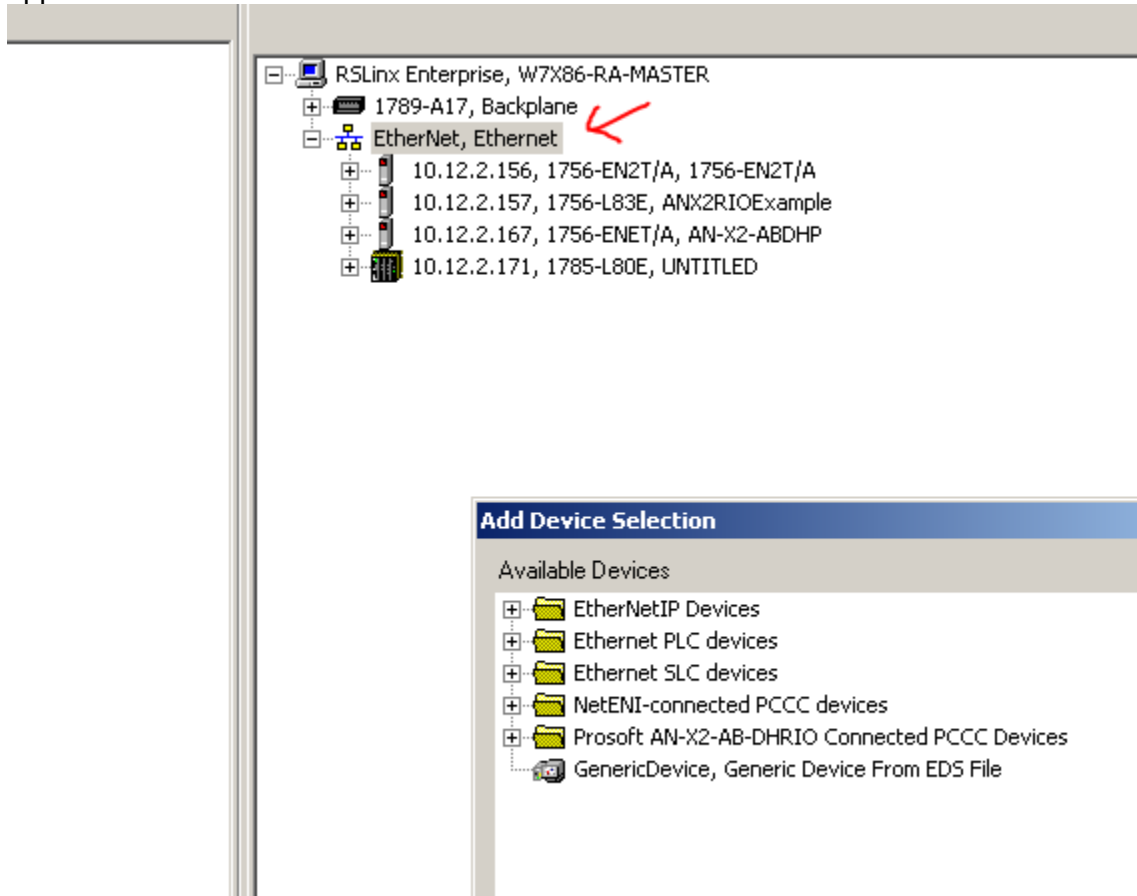


Add a shortcut for the AN-X2 and name it anything you'd like:

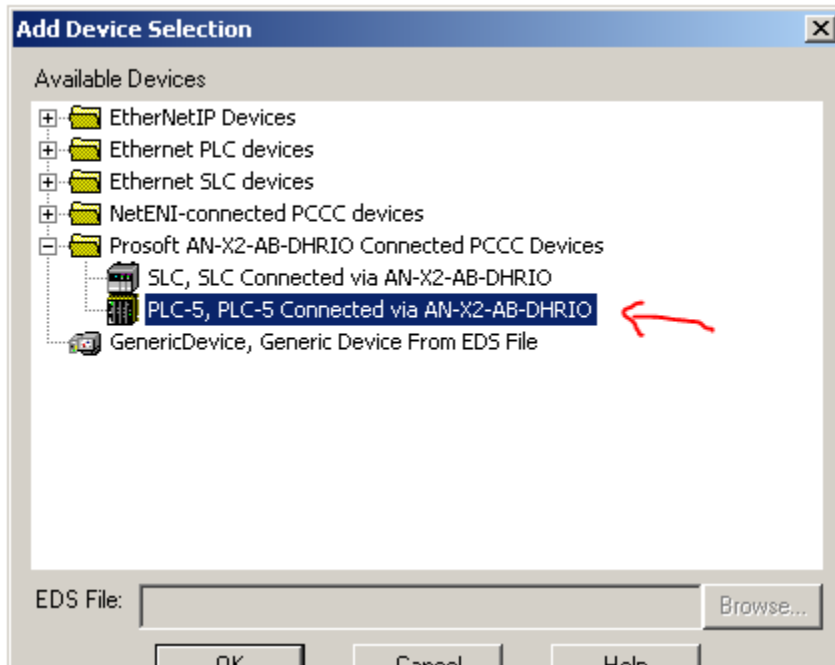


We chose to name it PLC2 for the example.

Now right click EtherNet, Ethernet and choose add device. An add device selection box should appear:

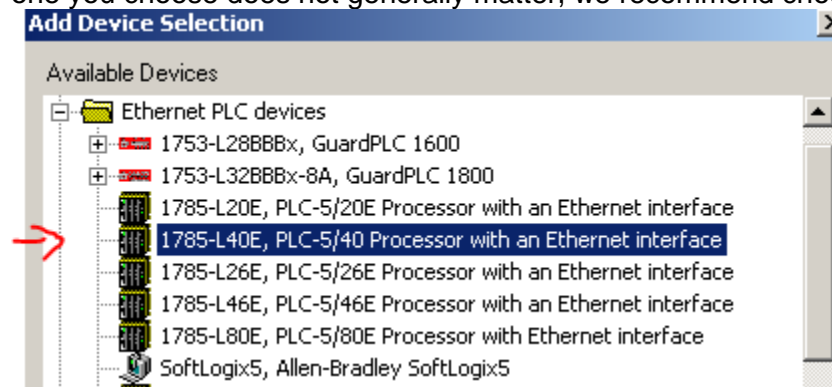


Depending on the revision of FactoryTalk View you have, you may have an option specifically for talking through an AN-X2-AB-DHRIO:

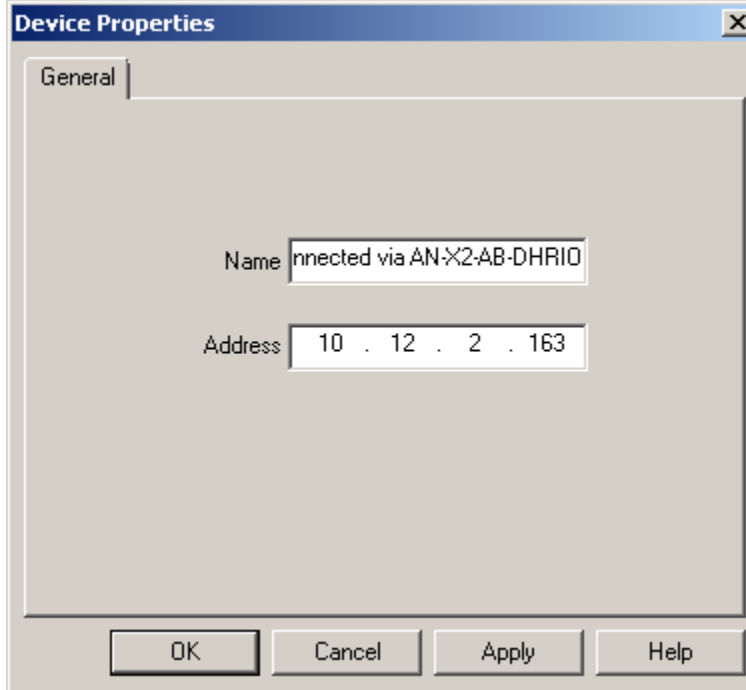


If so, and if your PanelView firmware is v8.1 or higher, you may use this. (Note, this selection is for use with the DH+ firmware ONLY and cannot be used with the RIO HMI firmware.)

If you have an older FactoryTalk View revision which does not include a ProSoft option or if your PanelView firmware is under v8.1, choose Ethernet PLC devices and choose one (although the one you choose does not generally matter, we recommend choosing the 1785-L40E):

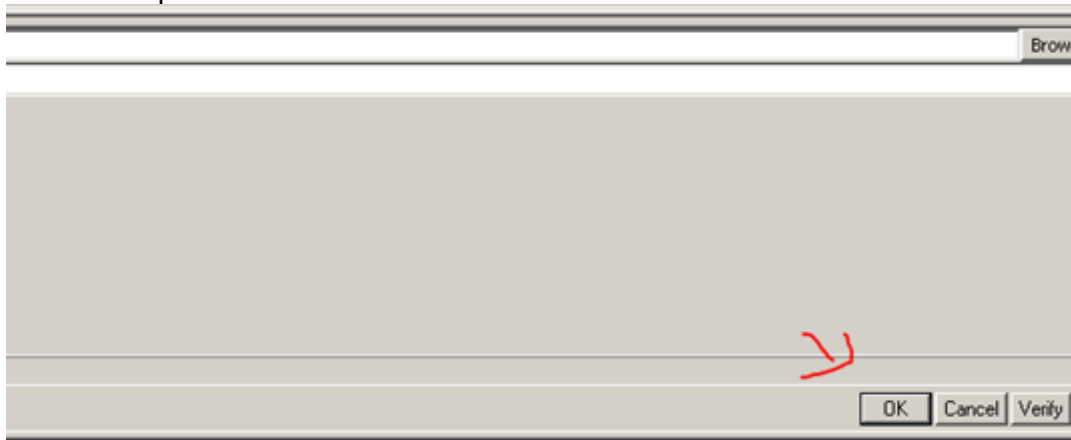


Regardless of which you choose, make sure you set the IP to the **Alias IP** from your Alias File:



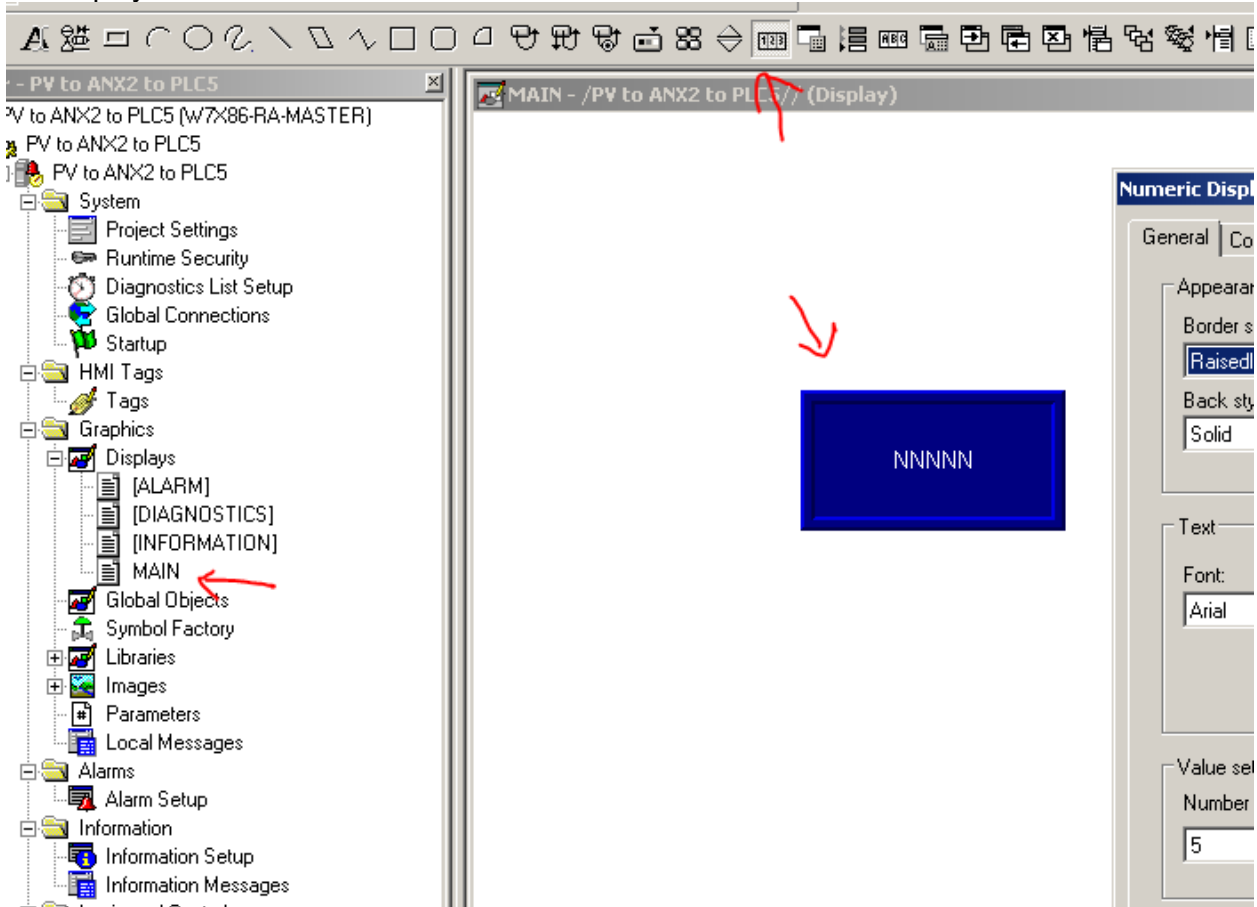
In our case that was 10.12.2.163. (The AN-X2-AB-DHRIO is 10.12.2.167).

Select the newly created device, then click Apply under Device Shortcuts to connect the short cut with the AN-X2. Then copy from design to run time. Make absolutely sure to hit okay on the bottom right of the FactoryTalk View screens for your changes to take effect before moving onto the next step:

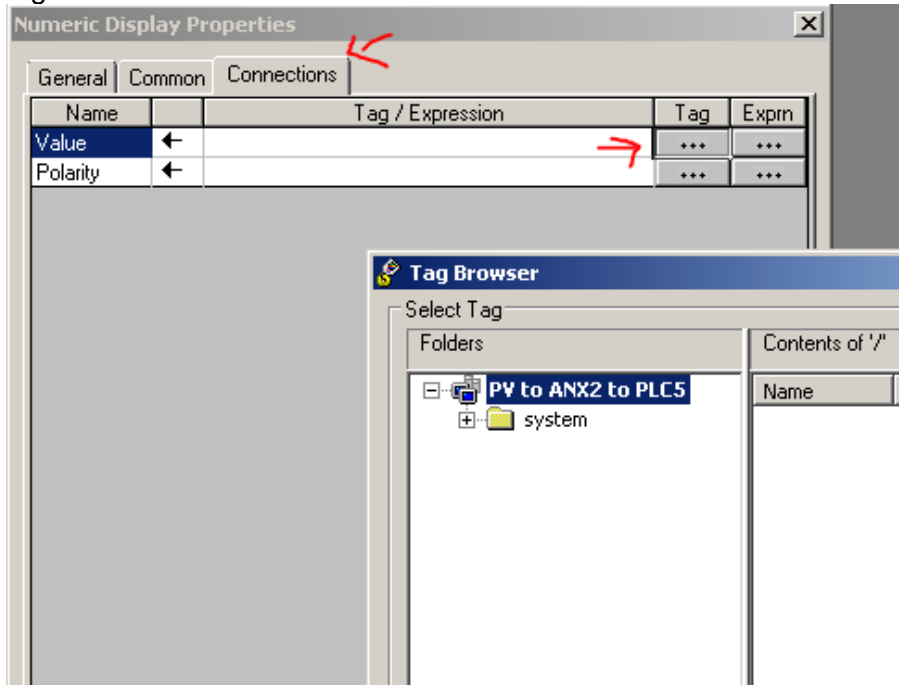


When you do the window should close.

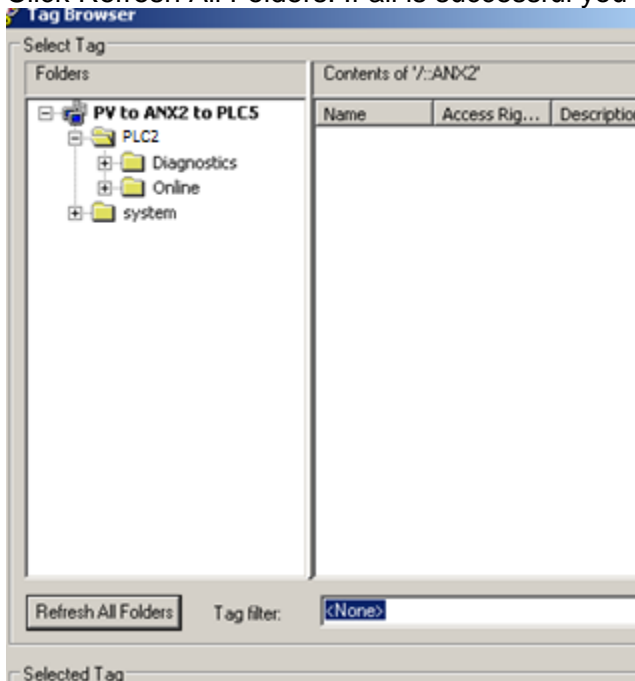
For the sake of this simple example we are then going to expand displays under graphics, double click on Main, select the Numeric Display button, and draw a small numeric display on the display we've created.



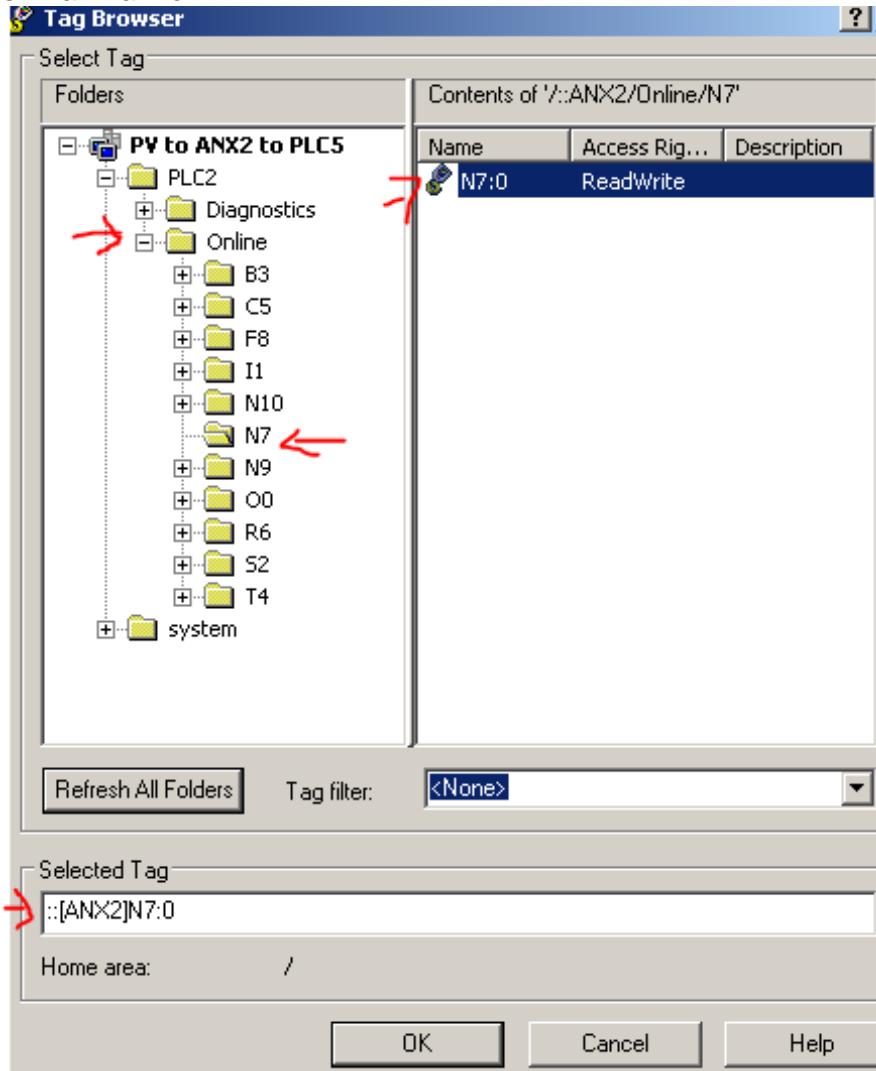
Click the numeric display and move to connections tab. Click the tag button to browse for the tag.



Click Refresh All Folders. If all is successful you should see the Diagnostics and Online tags:



Again our goal for this example is the N7:0 tag, but select whichever tag you actually want in a similar manner:



Finally we hit okay a few times and run the test display and...



The 777 populated the display!

Asia Pacific

Malaysia Office

Phone: +603.7724.2080

asiapc@prosoft-technology.com

Languages spoken: Chinese, English

China Office

Phone: +86.21.5187.7337

asiapc@prosoft-technology.com

Languages spoken: Chinese, English

Europe

France Office

Phone: +33 (0)5.34.36.87.20

support.emea@prosoft-technology.com

Languages spoken: French, English

Middle East and Africa

Phone: +971.(0)4.214.6911

mea@prosoft-technology.com

Languages spoken: English, Hindi

North America

California and Wisconsin Offices

Phone: +1 661.716.5100

support@prosoft-technology.com

Languages spoken: English, Spanish

Latin America

Brazil Office

Phone: +55.11.5083.3776

brasil@prosoft-technology.com

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Mexico and Central America Office

Phone: +52.222.3.99.6565

soporte@prosoft-technology.com

Languages spoken: Spanish, English

Regional Office

Phone: +1.281.298.9109

latinam@prosoft-technology.com

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