I/Net Driver User Guide

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1

Installation

Install <u>ifcInet.jar</u> on the computer where Niagara AX Workbench will run. To install, place a copy of the file in the modules directory of your Niagara AX installation. This is typically C:\Niagara\Niagara-3.n.nnn\modules.

Install <u>ifcInet</u> module on the target station. Using a Niagara AX workbench where the module has already been installed, connect to the stations platform service. Go to the software manager and install <u>ifcInet</u>.

Requirement

- Niagara AX workbench 3.6.xx or higher.

    1. Serial communication RS232 Port. (Required "serial" feature in the license).

- Niagara AX platform JACE support:

    1. JACE 2xx.
    2. JACE 4xx.
    3. JACE 5xx.
    4. JACE 6xx.
    5. JACE 7xx.

- CSI I/Net Devices support:

    1. TAC I/Net 7801X
    2. TAC I/Inet 7798

Note : Driver can support 64 TAP address with 16 DCU address with 32 Point numbers of each DCU devices as defined in I/Net

- Maximum Inet Network support:-

  1. Theoretical there is no limitation on maximum Inet Network in the single JACE, however the limitation is always base on JACE resource count. Whenever using the optional RS232 port in the JACE you may require to increase the Inet Network "Inter Message Delay" to solve the issue on the communication problem.

Chapter

2
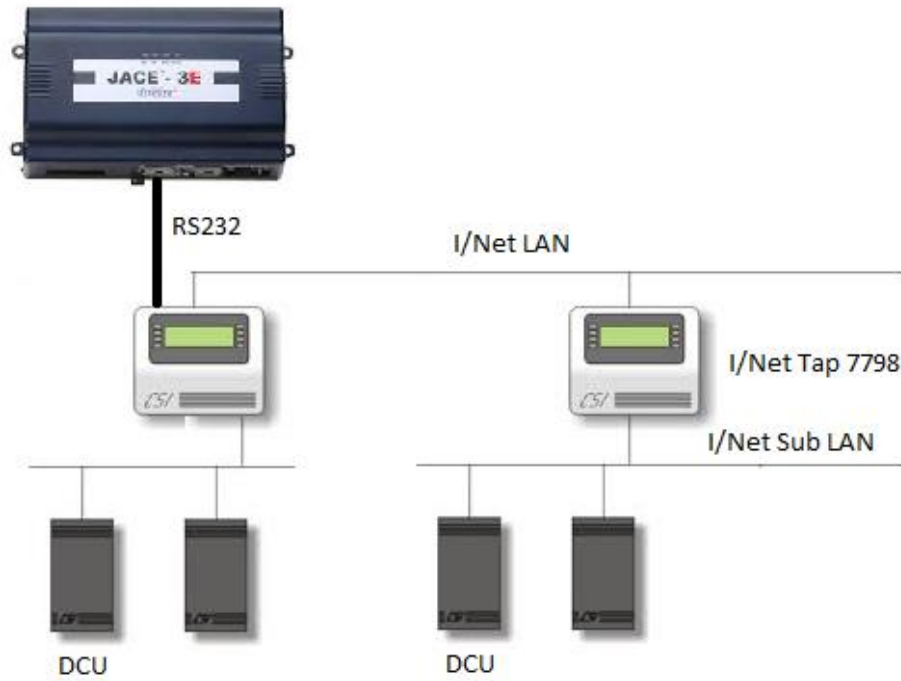
Quick Start

This section provides a collection of procedures to use the Niagara AX CSI I/Net drivers to build networks of devices with proxy points and other components. Like other Niagara AX drivers, you can do most configurations from special "manager" views and property sheets using Workbench.

- For any of the I/Net networks:

  - "Configure the Inet network"
  - "Add Inet devices"
  - "Create Inet proxy points"

Configure Inet Network

To add and configure a Inet network, perform the following main tasks:

- Add the Inet network, as needed:

  - Add a InetNetwork

Add a InetNetwork

To add a InetNetwork in the station

Use the following procedure to add a InetNetwork component under the station's Drivers container.

Note : If the host JACE has multiple RS-232 ports to be used for client (master) access of Inet networks, add one InetNetwork for each physical port. Note that for each InetNetwork, you must Configure the serial port parameters.

To add a InetNetwork in the station:

▪ Double-click the station's **Drivers** container, to bring up the **Driver Manager**.
▪ Click the **New** button to bring up the New network dialog. For more details, see "Driver Manager New and Edit" in the *Drivers Guide*.
▪ Select "Inet Network," number to add: 1 (or more if multiple networks) and click **OK**. This brings up a dialog to name the network(s).
▪ Click **OK** to add the InetNetwork(s) to the station. You should have a InetNetwork named "InetNetwork" (or whatever you named it),under your Drivers folder, initially showing a status of "{fault}" and enabled as "true."

After you Configure the serial port parameters, status should change to "{ok}".

Configure the serial port parameters

In the InetNetwork property sheet for each network, you must set the serial port configuration to match the serial communications parameters used by other I/Net devices on the network.

To set the serial port parameters

To set the serial port parameters for a InetNetwork:

▪ Right-click the InetNetwork and select **Views > Property Sheet**.

The **Property Sheet** appears.

▪ Scroll down and expand the **Serial Port Config** slot.

Set the properties for the JACE serial port used, where defaults are:
- Port Name: none — Enter the JACE port being used, like COM1.
- Baud Rate: Baud9600 — Or choose different from selection list.
- Data Bits: Data Bits8 — Or choose different from selection list.
- Stop Bits: Stop Bit1 — Or choose different from selection list.
- Parity: none — Or choose different from selection list.

- Flow Control Mode: none — Or choose different using checkbox.

  Note : You must determine the setup of the Inet ***network to correctly set the baud rate, data bits, stop bits, parity, and flow control settings.***

- Click the **Save** button.

Add a Inet Devices

After adding a Inet network, you can use the network's default "device manager" view to add the appropriate Inet devices.

Note: *You need the address information for each Inet device you are adding, as well as for later procedures to add proxy points under devices.*

To add a Inet device in the network

Use the following procedure to add the correct type of Inet device in the network. To add a Inet device:

- In the Nav tree or in the Driver Manager view, double-click the client network, to bring up the device manager (Inet Device Manager). All of these device manager views operate in a similar fashion.

Note: *For general device manager information, see the section in the Drivers Guide.*

- Click the **New** button to bring up the **New** device dialog.

- Select for number to add: 1 (or more, if multiple) and click **OK**.
  This brings up a dialog to name the device(s), enter Inet device Link address, Tap Address and DCU address.

  - Any *Inet Device* needs the unique address in use.

- Click **OK** to add the Inet device(s) to the network.
  You should see the device(s) listed in the Inet Device Manager view, showing a status of "{ok}" and enabled as "true."

  If a device shows "down" check the configuration of the network and/or Inet device Link address, Tap Address and DCU address. You can simply double-click a device in the device manager to review settings in an **Edit** dialog, identical to the **New** dialog when you added it.

  After making any address changes, click **Save**, then right-click the device and select **Actions > Ping**.

Create Inet Proxy Point

As with device objects in other drivers, each Inet device has a **Points** extension that serves as the container for proxy points. The default view for any Points extension is the Point Manager (and in this case, the "**Inet Point Manager**"). You use it to add Inet proxy points under any Inet device.

Note: *Unlike the point managers in many other drivers, the* **Inet Point Manager** *does offer a "Learn mode" with a* **Discover** *button and pane. Otherwise you can simply use the* **New** *button to create proxy points, referring to the vendor's documentation for the addresses of data items in each Inet device.*
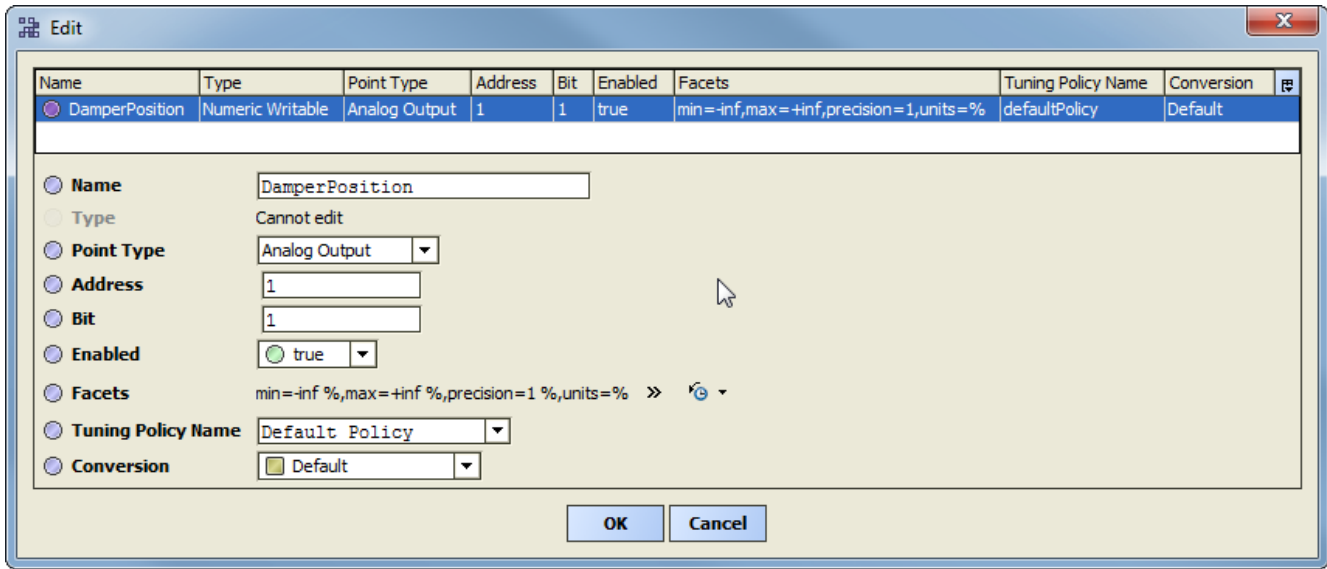
To add Inet proxy points

Once a Inet device is added, you can add proxy points to read and write data. If programming online (and the device shows a status of "{ok}"), you can get statuses and values back immediately, to help determine if point configuration is correct. Use the following procedure:

To create Inet proxy points in a device:

- In the **Device Manager**, in the **Exts** column, double-click the Points icon in the row representing the device you wish to create proxy points.

This brings up the **Inet Point Manager**.

- (Optional) Click the **New Folder** button to create a new points folder to help organize points, and give it a short name, such as "TempNo1", or whatever name works for your application. You can repeat this to make multiple points folders, or simply skip this step to make all proxy points in the root of **Points**. Note that all points' folders have their own **Inet Point Manager** view, just like **Points**. If making points folders, double-click one to move to its location (and see the point manager).

- At the location needed (**Points** root, or a points folder), click the **New** button. The **New** points dialog appears, in which you select a "Point Type," "Number to Add," "Address and Bit".

For more details, see "About Inet proxy points"

- Click **OK** to add the proxy point(s) to the Points extension (or to the current points folder), where each shows as a row in the point manager.

  If parameter correctly, each point should have a status of "{ok}" with a polled value displayed.

  - If a point shows a "{fault}" status, check its ProxyExt "Fault Cause" property value, which typically includes a Inet "exception code" string, such as "Read fault: illegal data address". In such a case, re-check the address in the point against the documented address for the data item.

- Continue to add proxy points as needed under the **Points** extension of each Inet device. As needed, double-click one or more existing points for the **Edit** dialog, similar to the **New** dialog used to create the points. This is commonly done for re-editing items like data addresses, names, or facets.

Chapter

3

I/Net View

- Inet Device Manager
- Inet Point Manager

Inet Device Manager

The Inet Device Manager is the default view when you double-click on a Inet Network in the Nav tree. This manager view provides a quick and easy way to display.

The Inet Device Manager is the default view for any Inet Network container. The Inet Device Manager is a table-based view, where each row represents a unique device. When building a network in the station, you use this view to create, edit, and delete device-level components. Below is an example Inet Device Manager view.
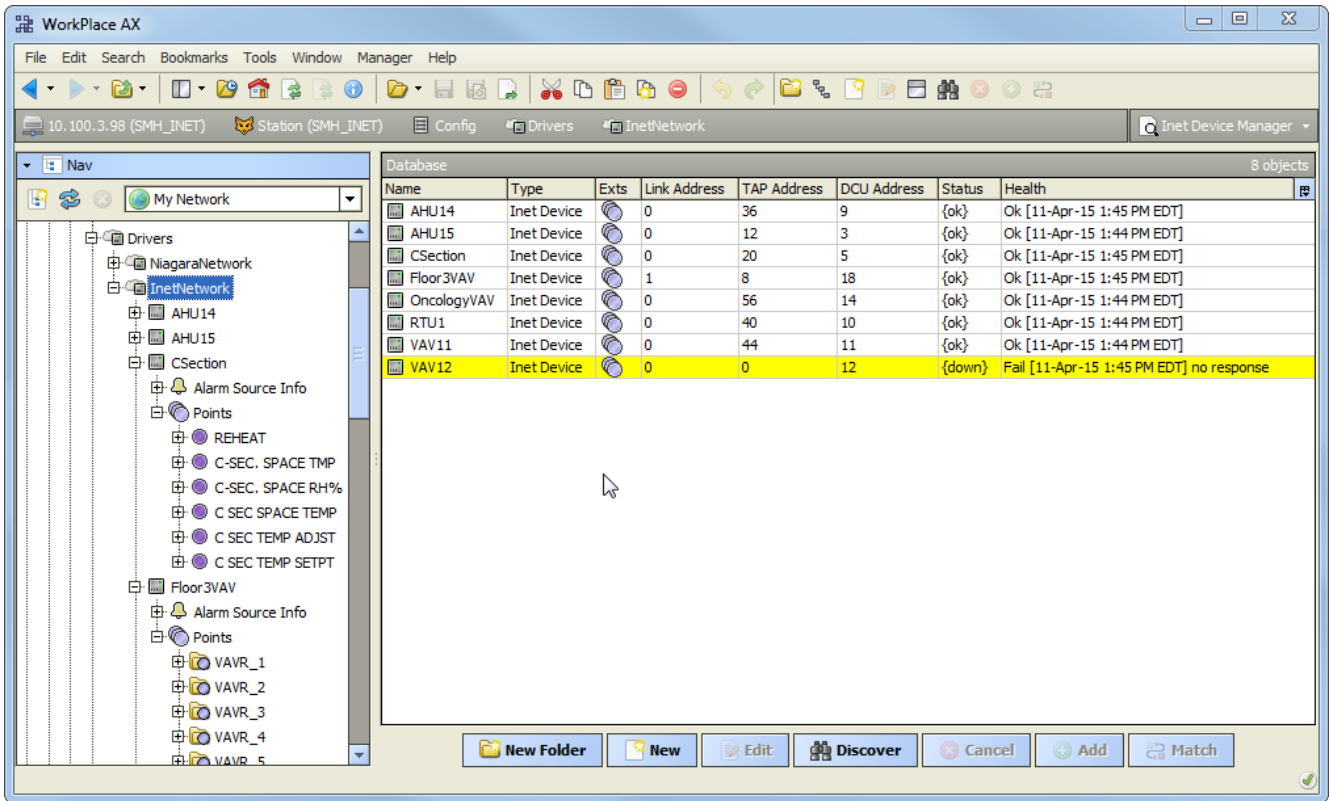
The view above shows a typical Inet Device Manager view.

The "New Folder", "New", and "Edit" buttons are not unique to the Inet Device Manager, and are explained in the "Niagara AX User's Guide" in the "Driver Architecture" section. The "Match" button is not used for the Inet driver.

You can now add the devices to the station database by clicking the "Add" button. This will pop up the "Add" dialog box:
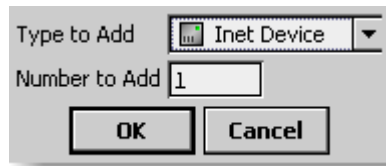
The "Add" dialog box affords you the opportunity to tweak the display name, enabled state, and/or address of each of the selected devices. Click the "OK" button to add the devices to the database, or click "Cancel" to bail out.

The "Discover" button implements functionality that is unique and tailored to discovering Inet devices. By clicking the "Discover" button, the "learn" mode of the manager is invoked (the panes will be split, and a "discovery" table will be displayed in the top pane) .
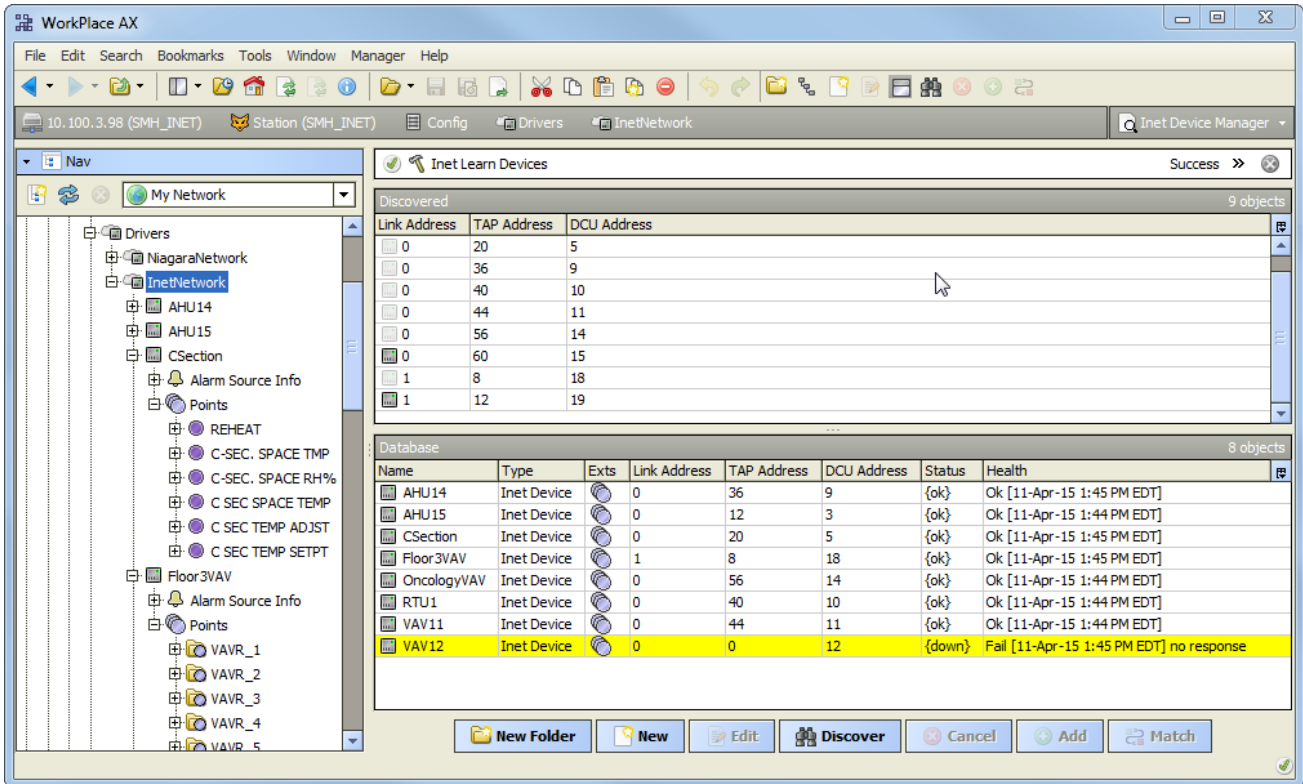
Single or multiple Inet devices can be added as device by selecting the discovered row(s) in the top pane, and clicking add. Doing so will cause the "Add" dialog box to appear:
Once the device(s) are satisfactorily edited, click "OK" to create the device corresponding to the device property.

Inet Point Manager

The Inet Point Manager is the default view when you double-click on a "points" folder (a InetPointDeviceExt type folder) under a InetDevice in the Nav tree. This manager view provides a quick and easy way to display and learn Inet points in a Inet device.

The Inet Point Manager is the default view for any InetPointDeviceExt container. The Inet Point Manager is a table-based view, where each row represents a unique Inet address within a device.

Below is an example Inet Point Manager view.
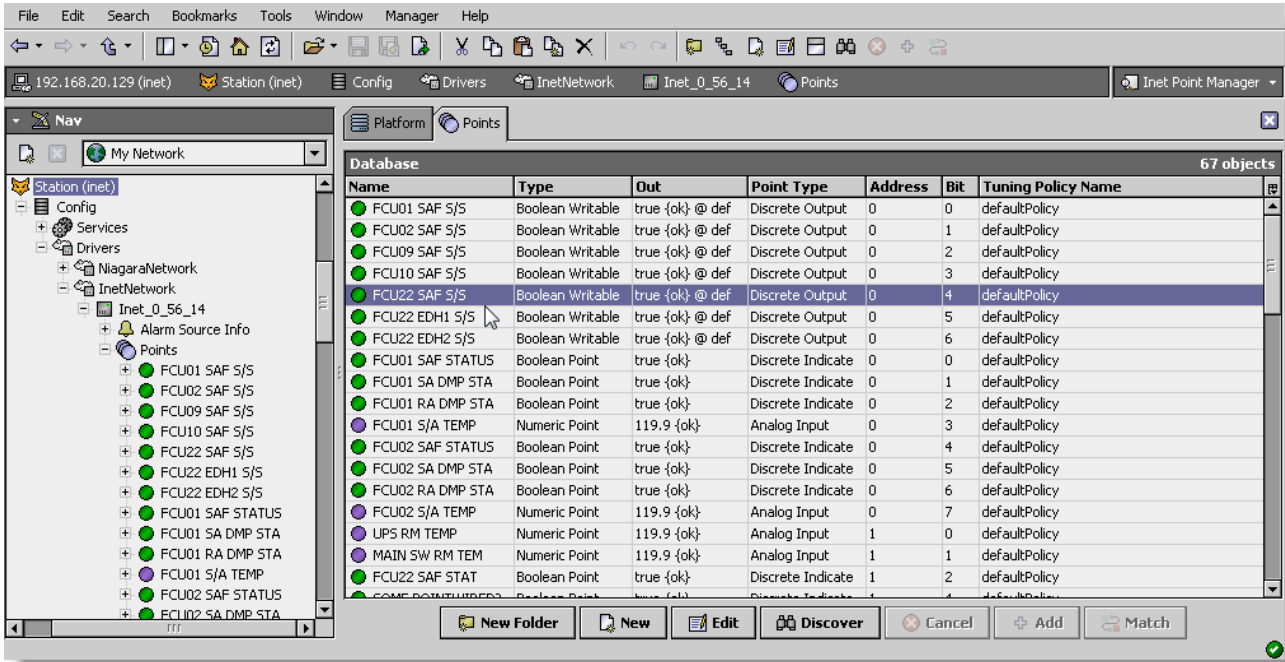
The "New Folder", "New", and "Edit" buttons are not unique to the Inet Device Manager, and are explained in the "Niagara AX User's Guide" in the "Driver Architecture" section. The "Match" button is not used for the Inet driver.

The "Discover" button implements functionality that is unique and tailored to discovering Inet devices points. By clicking the "Discover" button, the "learn" mode of the manager is invoked (the panes will be split, and a "discovery" table will be displayed in the top pane) .
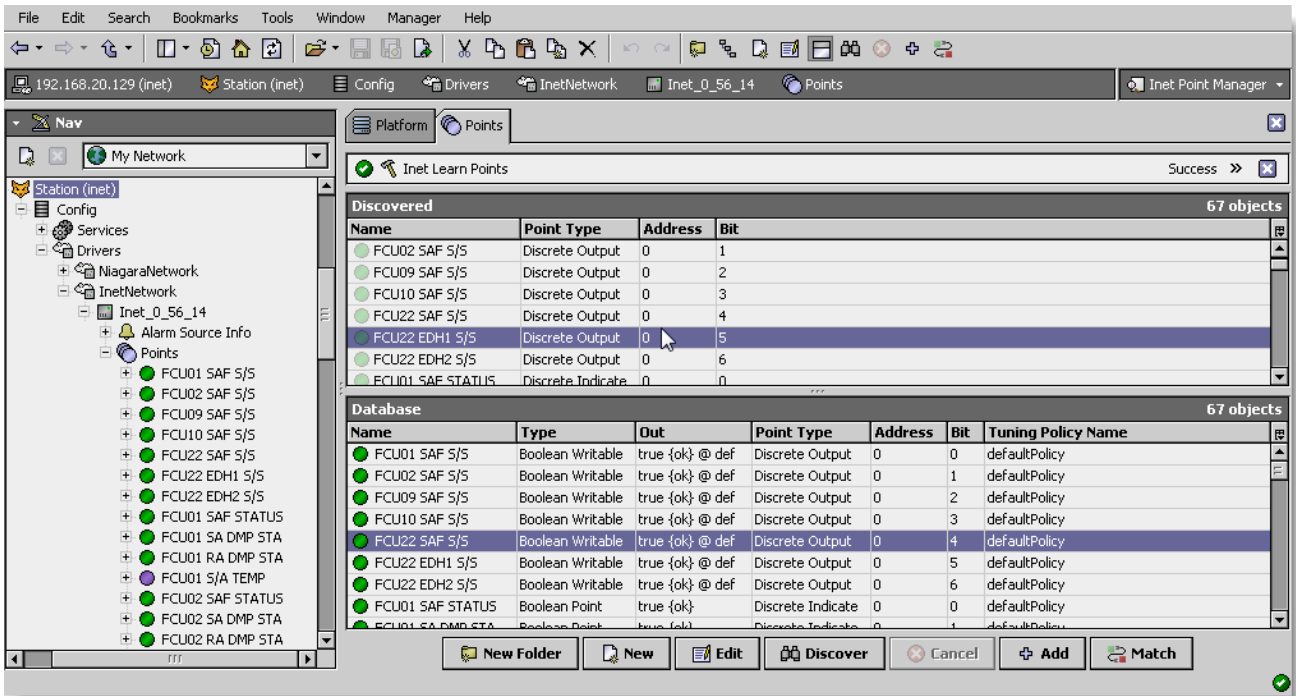
Single or multiple points can be added as control points with InetProxyExt extensions by selecting the discovered row(s) in the top pane, and clicking add. Doing so will cause the "Add" dialog box to appear: Once the point(s) are satisfactorily edited, click "OK" to create the proxy points corresponding to the point property.

Inet Proxy Ext Special Consideration

Whenever a Inet proxy Ext is added or configured to have an point property value and the base Type is Writable Point as shown below, there is additional special behavior need to take note:

Some of the command point required to use override(priority 1-10) to change the value, as below when the "set" action is execute the output will not change unless user use override(priority 1-10) to change the value.

Chapter

4
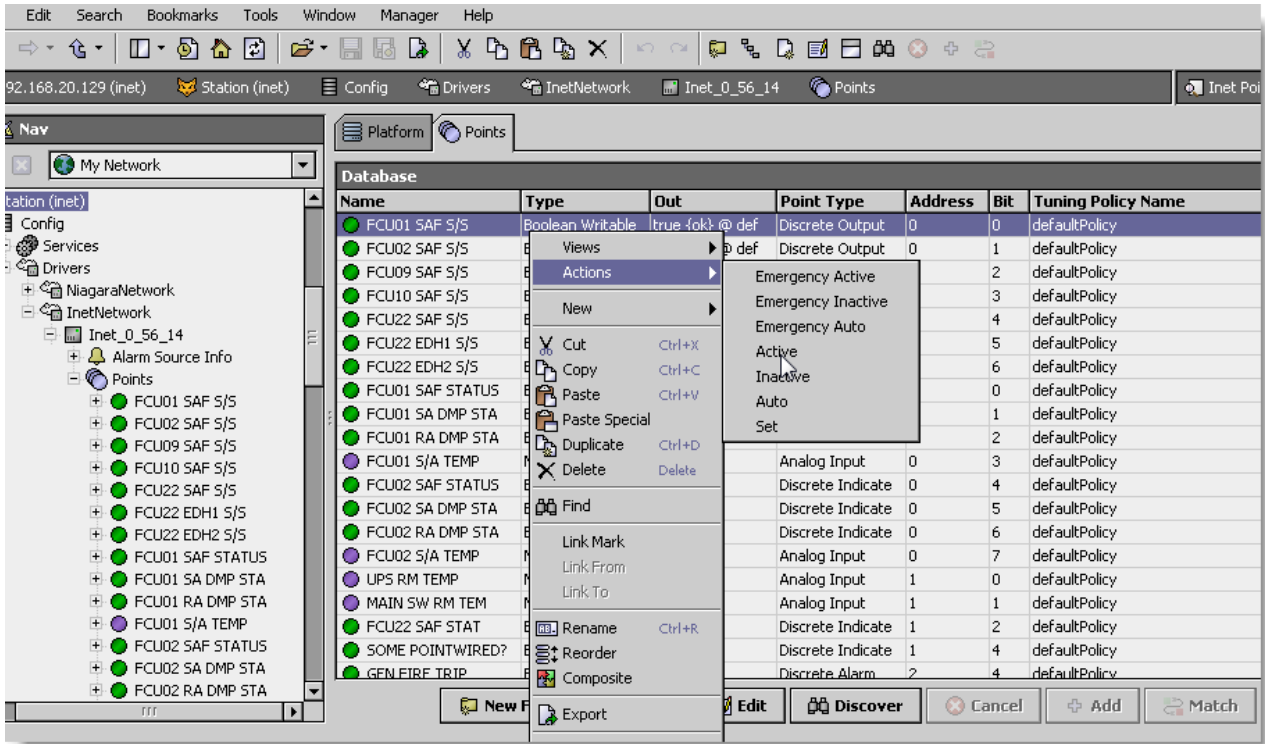
Licensing

I/Net driver License is running independently, the license will not from issue by Tridium, it has no restriction to run to any of the existing license vendor.

The I/Net license provide 2 hour demo license without the unlock code. After the demo license expired the I/Net Driver communication will stop automatically and will show fault in the Inet Network level. "ifcInet license expired". To extend the demo period user required to restart the station or reboot the JACE station. The licensing count is per-JACE and will allow having multiple networks in single JACE's license.

To request the license please submit the JACE/Web Supervisor host ID, to unlock the driver simply go to the license property, and select at the word "License" right mouse click action and invoke command "License Update", the dialog "License Update" will appear. Place the unlock code at the "Unlock Code" property. Please take note the license only provide by authorize vendor. If the unlock code is successful enter the property "Mode" will automatically change to "registered" and user is required to reboot the JACE to applied the change.