Trend IQ 2 Driver User Guide

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Chapter

1

Installation

To use the N4 isoftIq driver, you must have a target host that is licensed for “isoftIq”.

From your PC, use the Niagara Workbench 4.*n.nn* installed with the “installation tool” option (checkbox “This instance of Workbench will be used as an installation tool”). This option installs the needed distribution files (.*dist* files) for commissioning various models of remote JACE platforms. The dist files are located under your Niagara install folder in various revision-named subfolders under the “sw” folder.

When installing Workbench on your PC, you should also select the ***isoftIq*** module.

Apart from installing the 4.*n.nn* version of the Niagara distribution files in the JACE, make sure to install the ***isoftIq-rt and isoftIq-wb*** module too (if not already present, or upgrade if an older revision). For more details, see “About the Commissioning Wizard” in the JACE Niagara N4 Install and Startup Guide.

Following this, the station is now ready for Trend IQ software integration, as described in the rest of this document.

Requirement

- Required JACE the RS232 communication port.
- Information about the IQ1xxx / IQ2xxx controller supervisor port.

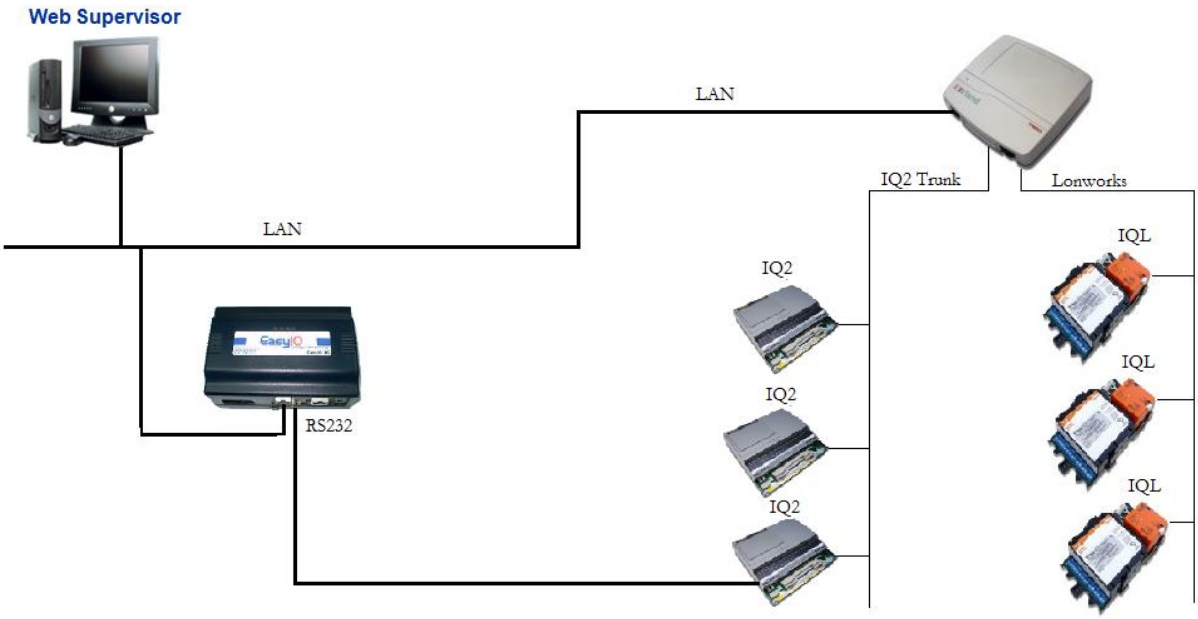
Note : By do the connection to one(1) of the IQ1xxx or IQ2xxx controller the driver will able to communicate to Single or Multi network Trend LAN (Multi LAN) . Make sure the supervisor port has been set otherwise it will not able to communicate with other controller in the Trend Network.

- Niagara N4 platform JACE support:

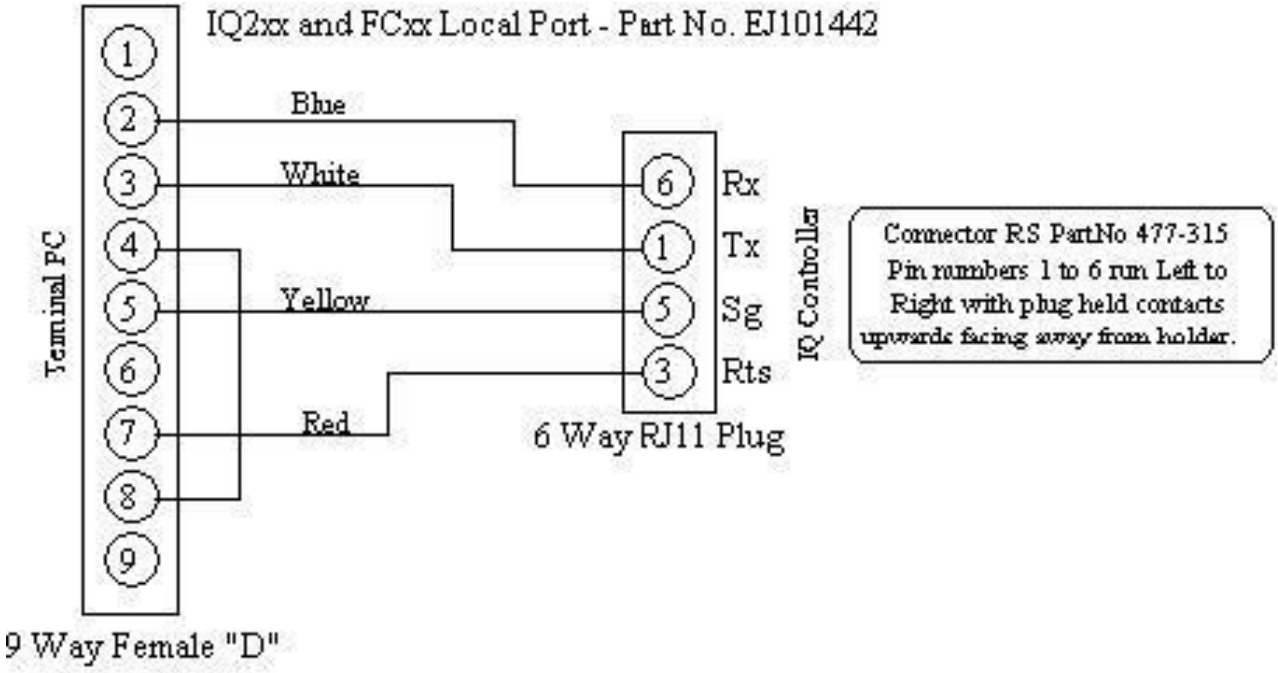
    1. JACE-3E.
    2. JACE 6xx.
    3. JACE 7xx.

- Supporting Device:-

    1. IQ 1xxxIQ 2xxx.



JACE to IQ2xxx RS232 cable configuration



Chapter

2

Quick Start

This section provides a collection of procedures to use the Niagara N4 Trend drivers to build networks of devices with proxy points and other components. Like other Niagara N4 drivers, you can do most configurations from special “manager” views and property sheets using Workbench.

- For any of the Trend IQ networks:
  - “Configure the IQ network”
  - “Add IQ devices”
  - “Create IQ proxy points”

Configure Iq Network

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

- Add the IQ network, as needed:
  - Add a IqNetwork

Add a IqNetwork

To add a IqNetwork in the station

Use the following procedure to add a IqNetwork 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 Iqnetworks, add one IqNetwork for each physical port. Note that for each IqNetwork, you must Configure the serial port parameters and transmission mode.

To add a IqNetwork 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 "Iq 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 IqNetwork(s) to the station. You should have a IqNetwork named "IqNetwork" (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 and transmission mode, status should change to "{ok}".

  Configure the serial port parameters and transmission mode

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

  ### To set the serial port parameters

  To set the serial port parameters for a IqNetwork:

- Right-click the IqNetwork 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 plan to being used, like COM1.
- Baud Rate: Baud9600 — the standard IQ device baud rate.
- Data Bits: Data Bits7.
- Stop Bits: Stop Bit1.
- Parity: Odd.
- Flow Control Mode: none.

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

- Click the **Save** button.

Configure the Network Channel parameters.

In the IqNetwork property sheet for each network, you must set the Supervisor port number that has been setup inside the IQ2xxx controller.

To set the Channel parameters

To set the Channel parameters for a IqNetwork:

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

The **Property Sheet** appears.

- Scroll down and expand the **Channel** slot.

Set the properties for the IQ Channel, where defaults are:

- Status – the status of the Supervisor Port.
- Monitor – The ping frequency to check the health for the Supervisor port status.
- Supervisor Port – the Supervisor port ID valid range is 0 to 99 and this ID must be match with the IQ2xxx controller that connected from the JACE.
- Channel Type

1. None – one controller connected only.
2. Single – for only single Trend LAN network.
3. Multi – set to multi if you have more than 1 Trend LAN in the network.

- Max Read Proxy – This setting for the maximum numbers of the IqProxyExt to read in one (1) single polling. Valid range is 1 to 10.

Add a Iq Devices

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

Note: *You need the LAN and OS information for each IQ device you are adding, as well as for later procedures to add proxy points under devices. Have the device vendor's documentation available for reference, in order to map IQ data correctly in Niagara N4.*

To add a Iq device in the network

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

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

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

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

  Depending on the network type, the appropriate device object **Type** will be preselected (either IqDevice).

- Select for number to add: 1 (or more, if multiple) and click **OK**.
  This brings up a dialog to name the device(s), enter Iq LAN and OS address.

  - Any Iq*Device* needs the unique LAN and OS address.

- Click **OK** to add the IQ device(s) to the network.
  You should see the device(s) listed in the Iq 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 the LAN and OS addresses. 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 Iq Proxy Point

As with device objects in other drivers, each IQ 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 “**Iq Point Manager**”). You use it to add Iq proxy points under any Iq device.

Note: *Unlike the point managers in many other drivers, the* **Iq 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 Iq device.*

To add Iq proxy points

Once a Iq 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:

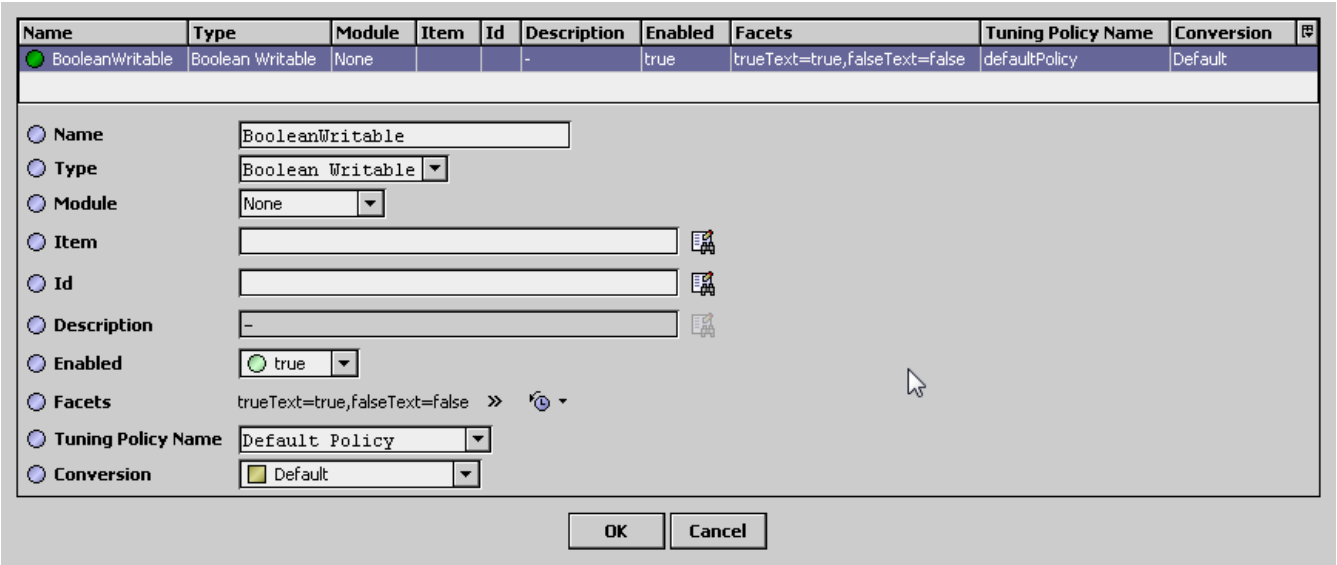
To create Iq proxy points in a device:

- 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 **Iq 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 **Iq 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,” “Module, Item” and “Id”.



For more details, see “About Iq 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 Iq “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 Iq 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

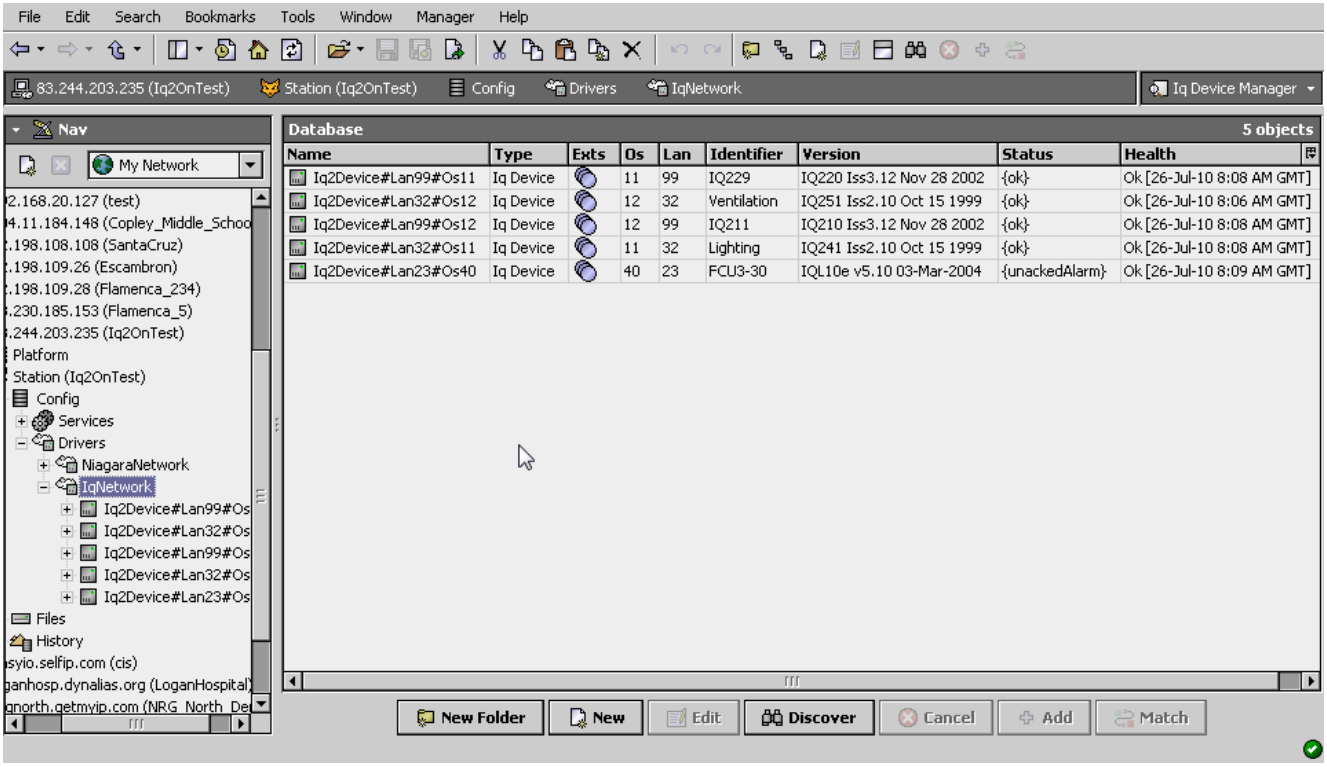
Iq View

- Iq Device Manager
- Iq Point Manager

Iq Device Manager

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

The Iq Device Manager is the default view for any Iq Network container. The Iq 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 Iq Device Manager view.



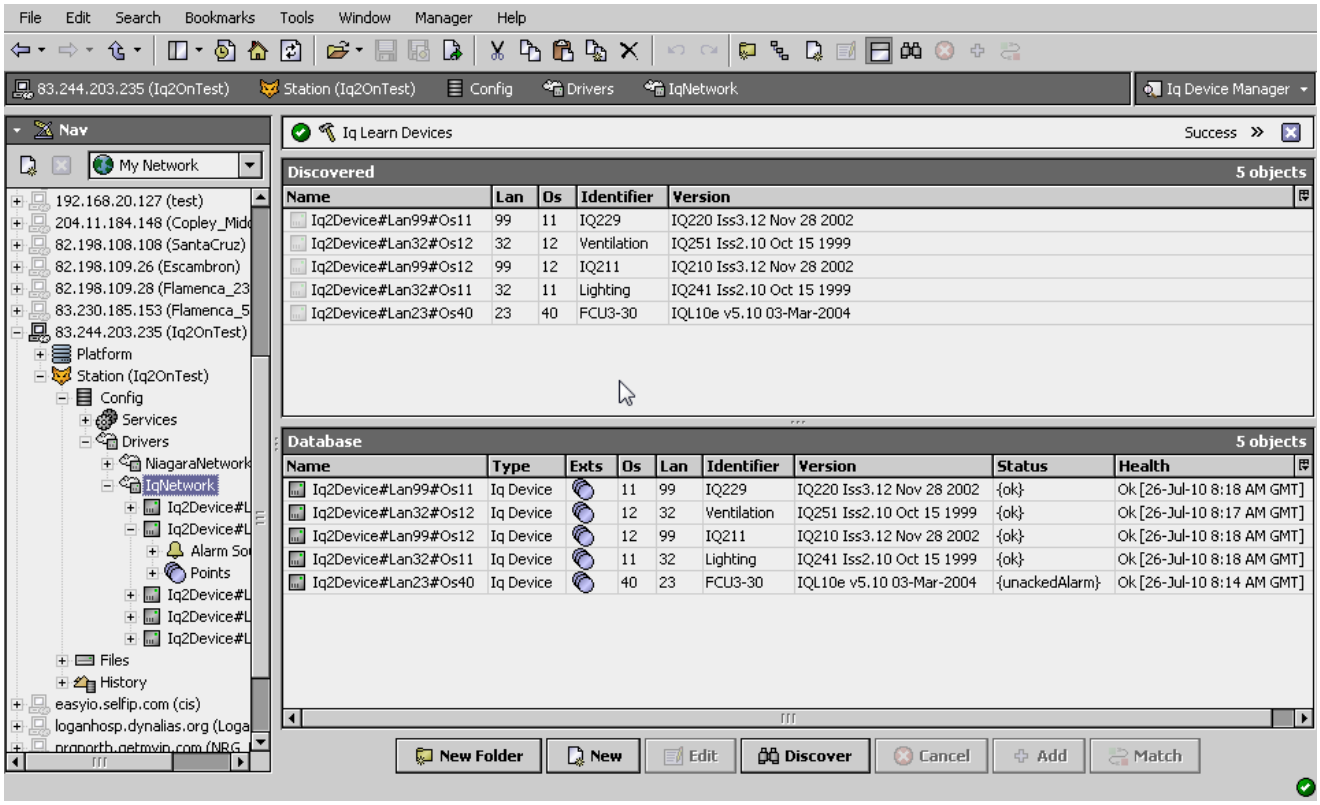
The view above shows a typical Iq Device Manager view.

The “New Folder”, “New”, and “Edit” buttons are not unique to the Iq Device Manager, and are explained in the “Niagara N4 User’s Guide” in the “Driver Architecture” section. The “Match” button is not used for the Trend IQ 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.

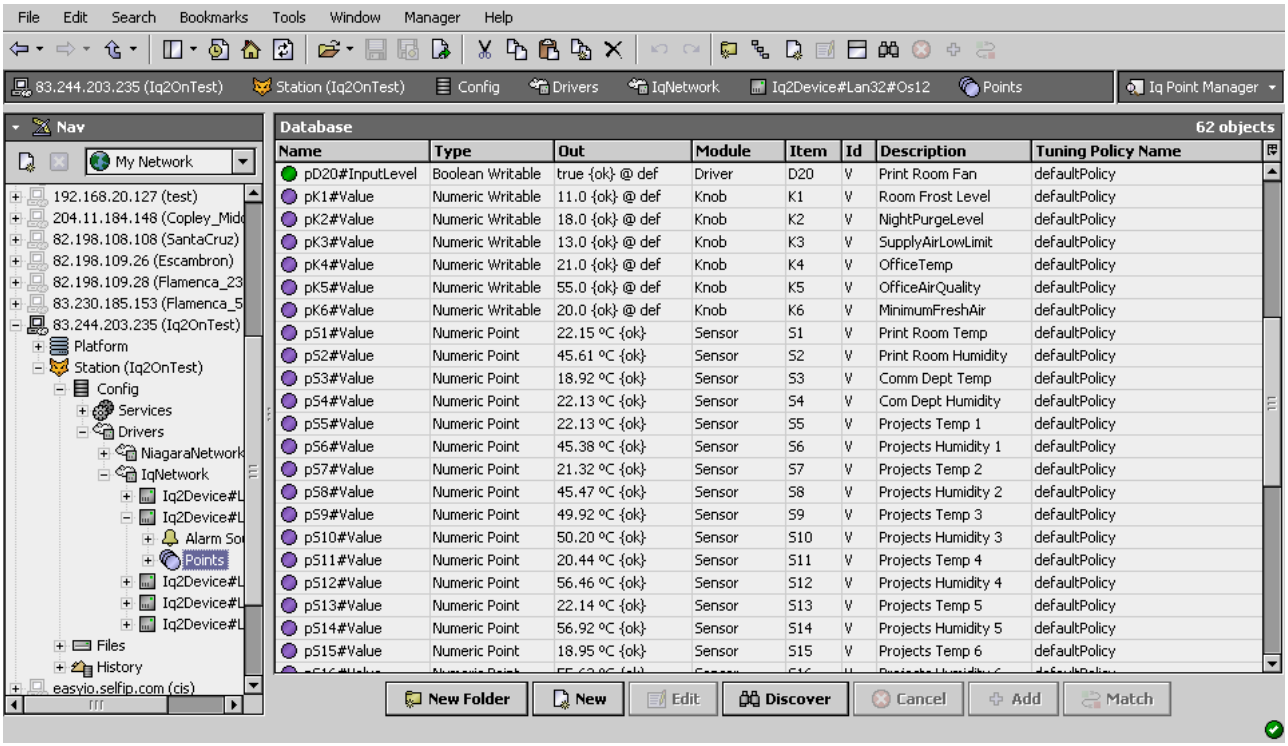
The “Discover” button implements functionality that is unique and tailored to discovering Iq devices. By clicking the “Discover” button, the “learn” mode of the manager is invoked (the panes will be split, and a “discovery” table will be displayed in the top pane) .



Iq Point Manager

The Iq Point Manager is the default view when you double-click on a “points” folder (a IqPointDeviceExt type folder) under a IqDevice in the Nav tree. This manager view provides a quick and easy way to display and learn Iq points in a Iq device.

The Iq Point Manager is the default view for any IqPointDeviceExt container. The Iq Point Manager is a table-based view, where each row represents a unique IQ Id within a device. Below is an example Iq Point Manager view.



The “New Folder”, “New”, and “Edit” buttons are not unique to the Iq Device Manager, and are explained in the “Niagara N4 User’s Guide” in the “Driver Architecture” section. The “Match” button is not used for the Trend IQ driver.

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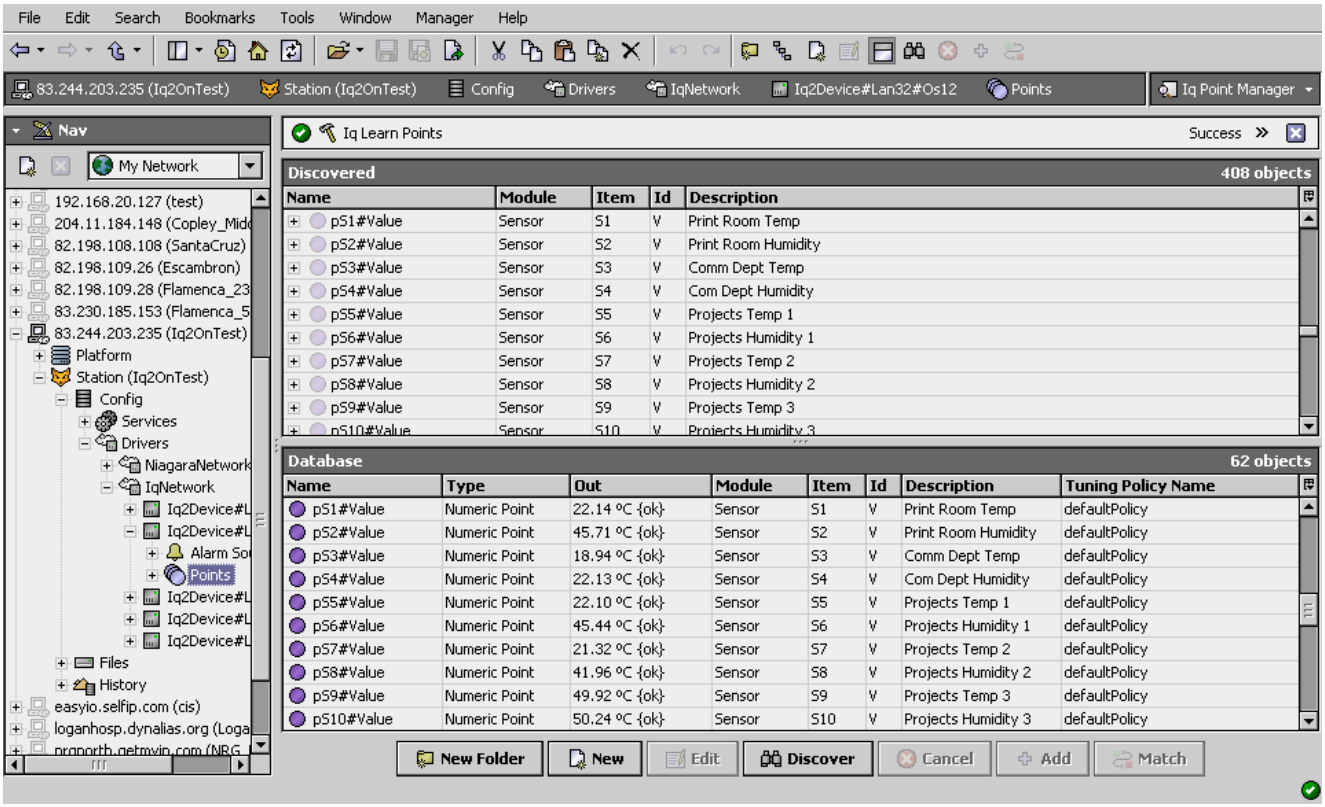
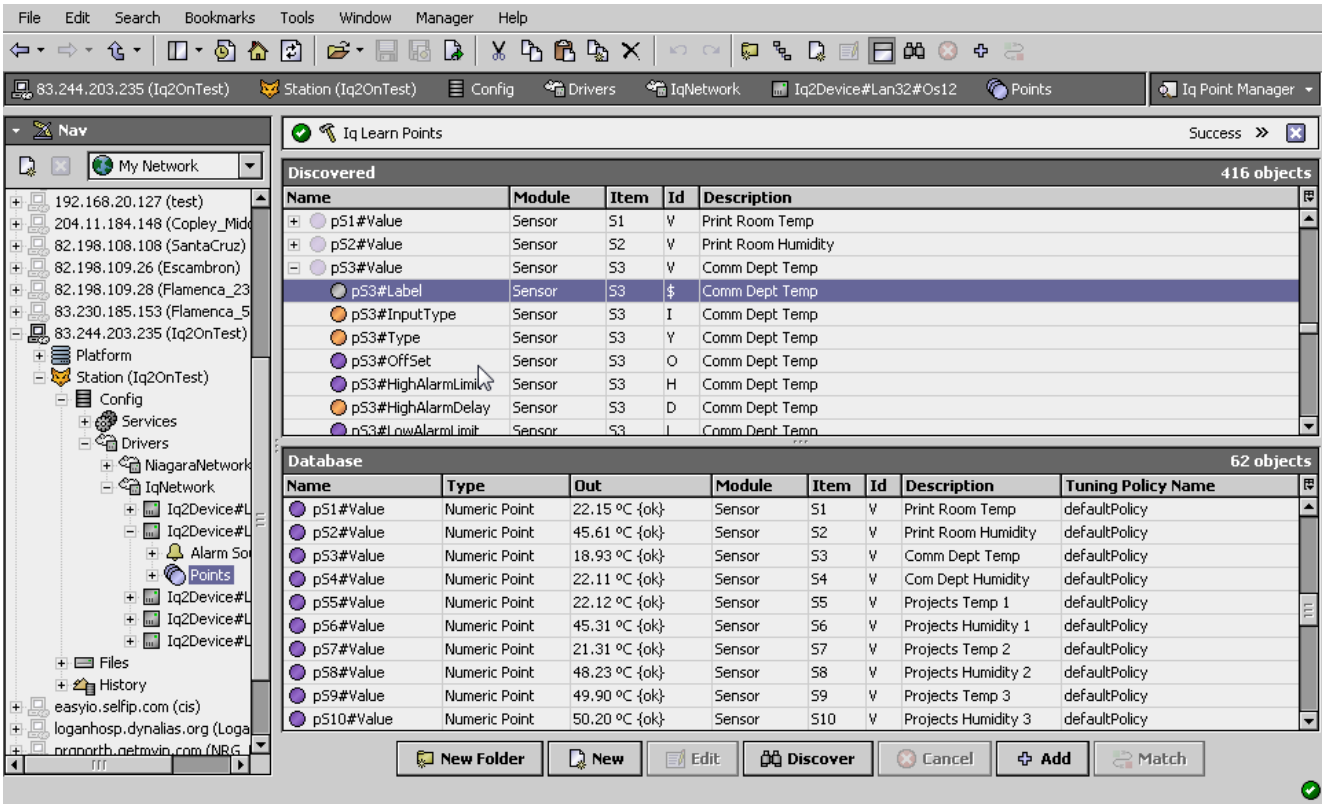


Note that the first (default) attribute of each channel is listed, with a “+” mark in front of the attribute number if there are additional attributes in that block. To access the additional attributes, click on the “+” sign to expand:

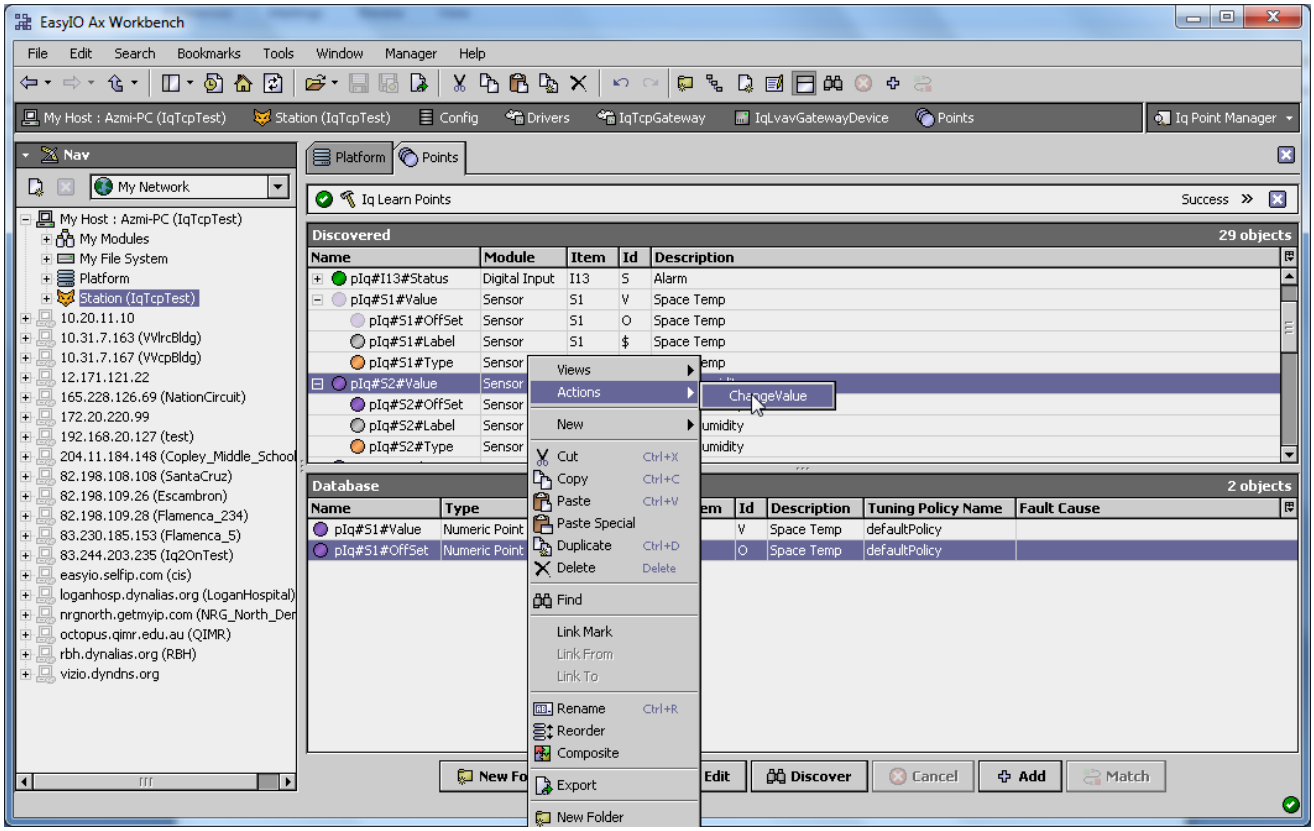


Single or multiple points can be added as control points with IqProxyExt extensions by selecting the discovered row(s) in the top pane, and clicking add. Doing so will cause the “Add” dialog box to appear: Once the point(s) are satisfactorily edited, click “OK” to create the proxy points corresponding to the point property.

Iq Proxy Ext Special Consideration

Whenever a Iq proxy Ext is added or configured to have an point property value and the base Type is none writable Point as shown below, there is additional special behavior attached to the point:

In this case, the additional behavior is the addition of a command attach for “ChangeValue” to the point.


EasyIO Ax Workbench
File Edit Search Bookmarks Tools Window Manager Help
My Host : Azmi-PC (IqTcpTest)
Station (IqTcpTest)
Config
Drivers
IqTcpGateway
IqLvavGatewayDevice
Points
Iq Point Manager
Nav
My Network
My Host : Azmi-PC (IqTcpTest)
My Modules
My File System
Platform
Station (IqTcpTest)
10.20.11.10
10.31.7.163 (VVlrcBldg)
10.31.7.167 (VVcpBldg)
12.171.121.22
165.228.126.69 (NationCircuit)
172.20.220.99
192.168.20.127 (test)
204.11.184.148 (Copley_Middle_School
82.198.108.108 (SantaCruz)
82.198.109.26 (Escambron)
82.198.109.28 (Flamenca_234)
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easyio.selfip.com (cis)
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octopus.qimr.edu.au (QIMR)
rbh.dynalias.org (RBH)
vizio.dyndns.org
Platform
Points
Iq Learn Points
Success
Discovered
29 objects
Name
Module
Item
Id
Description
pIq#I13#Status
Digital Input
I13
S
Alarm
pIq#S1#Value
Sensor
S1
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Space Temp
pIq#S1#Label
Sensor
S1
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Space Temp
pIq#S1#Type
Sensor
pIq#S2#Value
Sensor
pIq#S2#OffSet
Sensor
pIq#S2#Label
Sensor
pIq#S2#Type
Sensor
Views
Actions
New
Cut Ctrl+X
Copy Ctrl+C
Paste Ctrl+V
Paste Special
Duplicate Ctrl+D
Delete Delete
Find
Link Mark
Link From
Link To
Rename Ctrl+R
Reorder
Composite
Export
New Folder
ChangeValue
Database
2 objects
Name
Type
Id
Description
Tuning Policy Name
Fault Cause
pIq#S1#Value
Numeric Point
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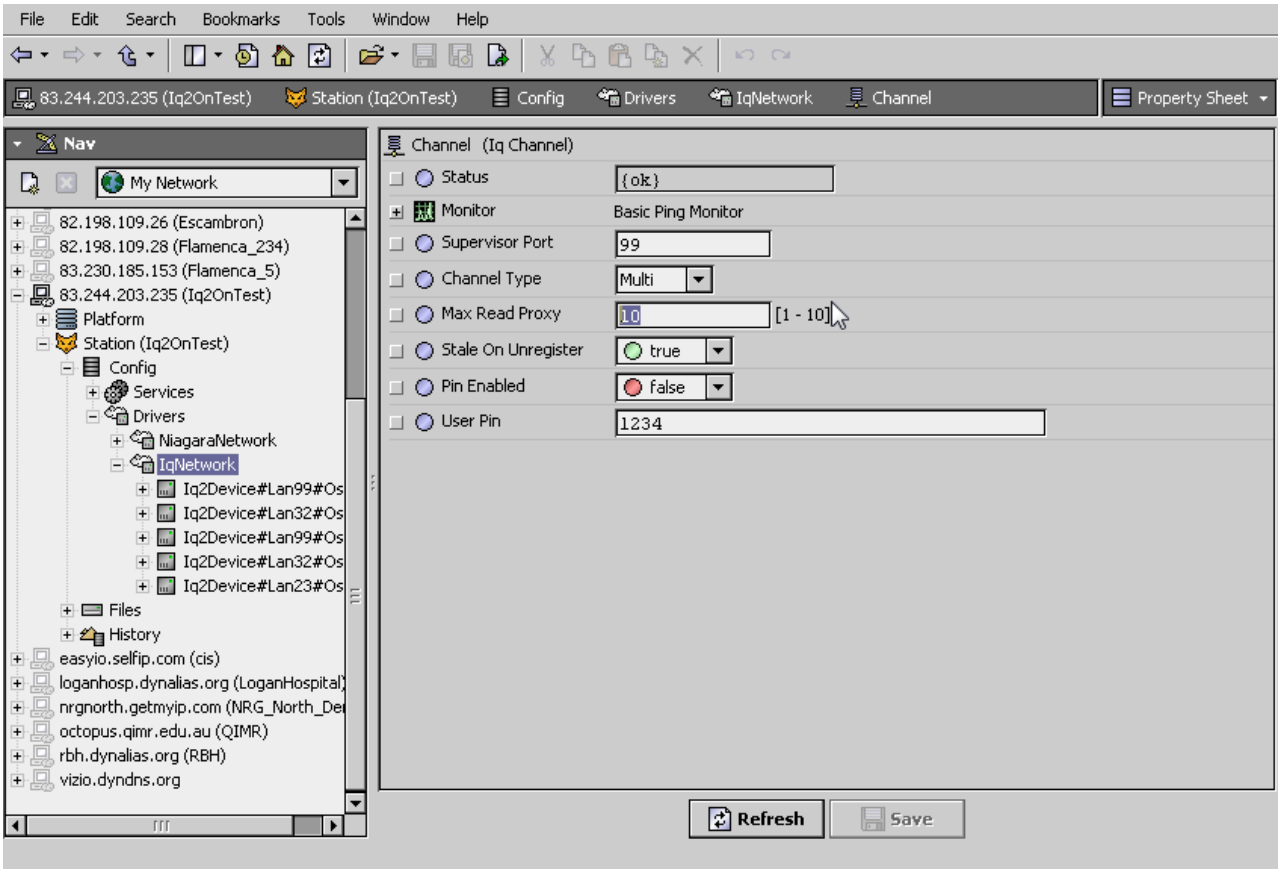
defaultPolicy
pIq#S1#OffSet
Numeric Point
O
Space Temp
defaultPolicy
New Fo
Edit
Discover
Cancel
Add
Match

Chapter 4

Driver Tuning Performance

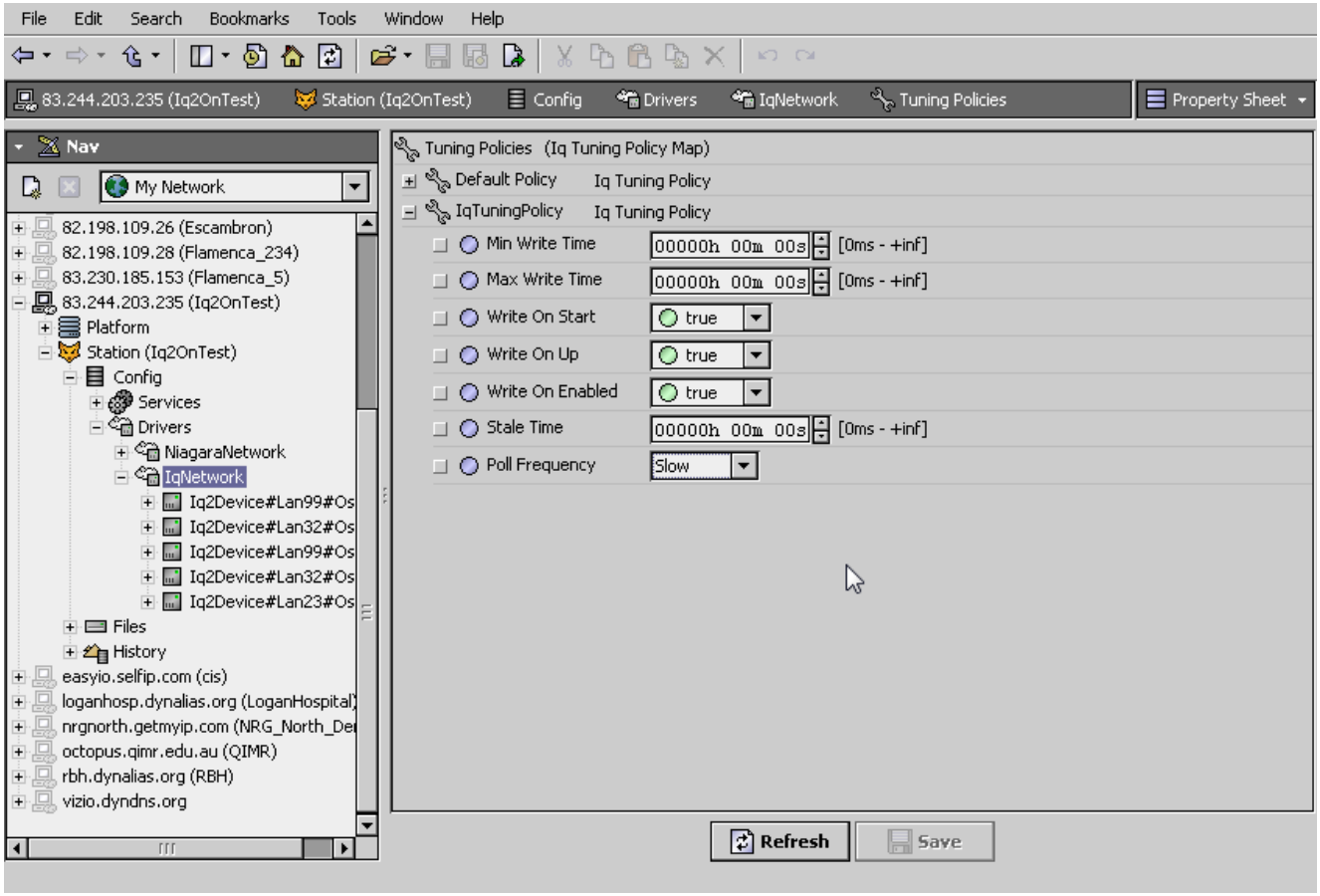
By selecting the IqNetwork properties sheet their few properties required to setup.

- Channel > Max Read Values – specifies the global maximum number of IqProxyExt to ask for in one message to send.



- Typically, you create *multiple* tuning policies in the IqNetwork. This allows you to reference *different* tuning policies from Iq proxy Ext points under *different* networks (often with vastly different performance capabilities).

Note: *You can add a tuning policy in the IqNetwork's property sheet by simply right-clicking an existing policy, then choosing* **Duplicate** *in the shortcut menu.* **Name** *it as desired, and then edit its properties as needed.*



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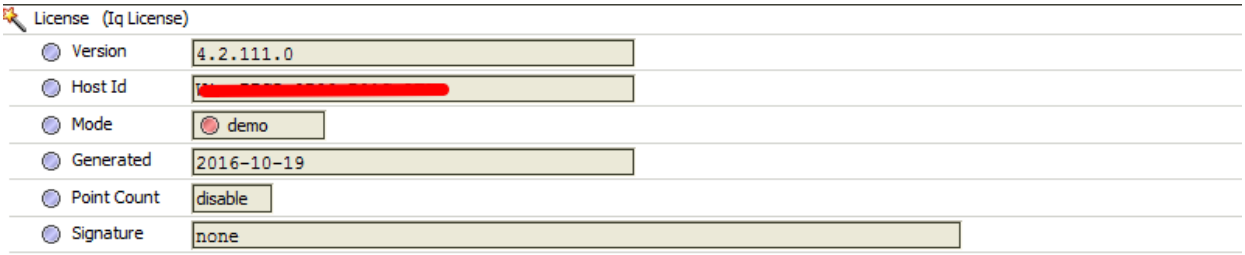
Chapter 5

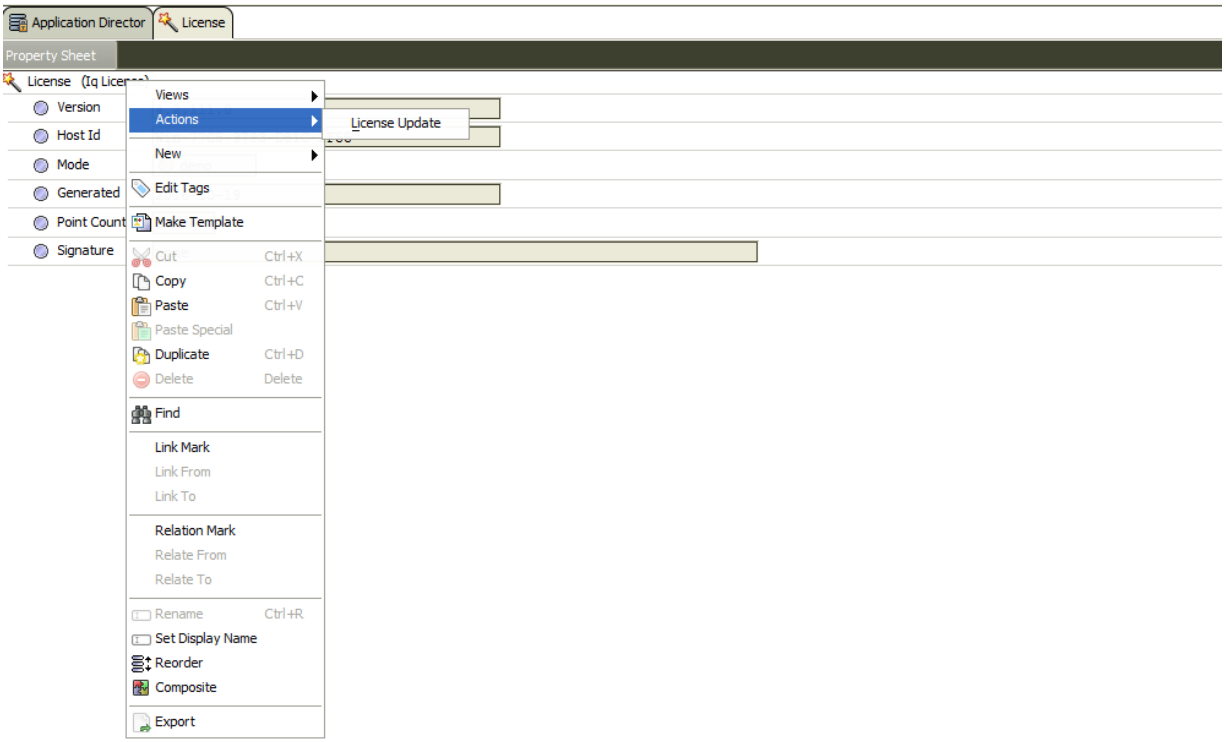
Licensing

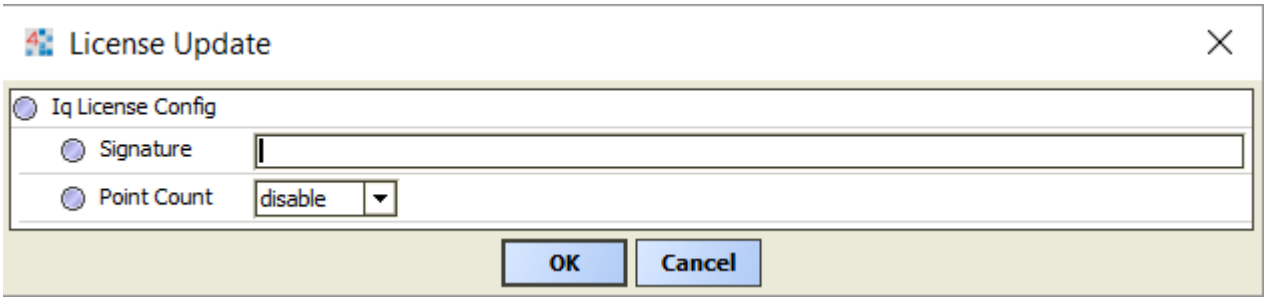
IQ driver License is running independently from the Tridium license, it has no restriction to run to any of the existing license vendor.

The IQ license provide 2 hour demo license without the unlock code. After the demo license expired the IQ Driver communication will stop automatically and will show fault in the Iq Network level. “isoftIq license expired”. To extend the demo period user required to restart the station or reboot the JACE.

To request the license please submit the JACE host ID, and to unlock the driver simply place the unlock code that provide by authorize vendor at the IqNetwork license property “Unlock Code”. If the unlock code is successful enter the license will automatically change to “registered” and user is not required to reboot the JACE.


License (Iq License)
Version
4.2.111.0
Host Id
Mode
demo
Generated
2016-10-19
Point Count
disable
Signature
none


Application Director
License
Property Sheet
License (Iq License)
Version
Host Id
Mode
Generated
Point Count
Signature
Views
Actions
New
Edit Tags
Make Template
Cut Ctrl+X
Copy Ctrl+C
Paste Ctrl+V
Paste Special
Duplicate Ctrl+D
Delete Delete
Find
Link Mark
Link From
Link To
Relation Mark
Relate From
Relate To
Rename Ctrl+R
Set Display Name
Reorder
Composite
Export
License Update


License Update
Iq License Config
Signature
Point Count
disable
OK
Cancel