

**Trend IQ TCP
Driver
User Guide**

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Installation

Install `isoftIqTcp-rt.jar` and `isoftIqTcp-wb.jar` on the computer where Niagara N4 Workbench will run. To install, place a copy of the file in the modules directory of your Niagara N4 installation. This is typically `C:\Niagara\Niagara-4.n.nnn\modules`.

Install `isoftIqTcp-rt` and `isoftIqTcp-wb` module on the target station. Using a Niagara N4 workbench where the module has already been installed, connect to the stations platform service. Go to the software manager and install `tcom`.

Apart from installing the `4.n.nnn` version of the Niagara distribution files in the JACE, make sure to install the *isoftIqTcp-rt* and *isoftIqTcp-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 software integration, as described in the rest of this document.

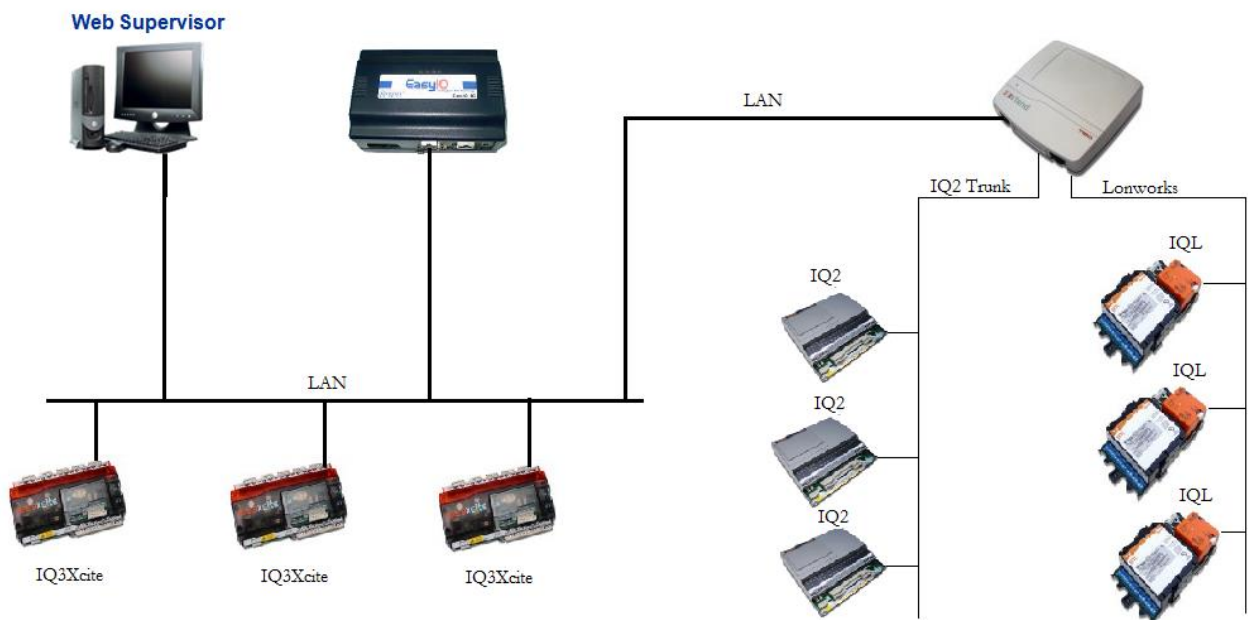
Requirement

Gateway connection "IqTcpGateway" the device requirement as below:

- Trend IQ 3Xtend (3Xtend) - the standard gateway device and can be access to multiple Trend IQ LAN. This will allowed the driver communication pass trough (bridged) to any of the Trend IQ device include IQ2xx, IQ3xx, IQ4xx and IQL device.
- Trend IQ EINC - the standard gateway device and can be access to multiple Trend IQ LAN. This will allowed the driver communication pass through (bridged) to any of the Trend IQ device include IQ2xx, IQ3xx, IQ4xx and IQL device.
- Trend IQ 3 device (IQ3XCITE) – To work with this as this type of device has only one(1) VCNC port device, make sure before the integration there was no other application has connected to this device.

Direct connection “IqTcpNetwork” the device requirement as below:

- Trend IQ 3 device (IQ3XCITE) – To work with this as this type of device has only one(1) VCNC port device, make sure before the integration there was no other application has connected to this device.



Quick Start

This section provides a collection of procedures to use the Niagara N4 Trend TCP drivers to build networks of devices with proxy points and other components. Like other Niagara N4 drivers, you can do most configuration 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 an Iq network, perform the following main tasks:

- Add the IQ network, as needed:
 - [Add an IqTcpNetwork](#)
 - [Add an IqTcpGateway](#)

Add a IqTCPNetwork

To add a IqTCPNetwork in the station

Use the following procedure to add an IqTCPNetwork component under the station’s Drivers Container.

Note: Only one IqTCPNetwork is needed, even if the JACE host has two Ethernet ports connected to two different (non-routed) TCP/IP LANs. In this case, the destination IP addresses of child IQ3-Controller will automatically determine the Ethernet port utilized.

To add an IqTCPNetwork 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 Tcp Network,” number to add: 1 and click **OK**. This brings up a dialog to name the network.
- Click **OK** to add the IqTcpNetwork to the station.
- You should have an IqTcpNetwork named “IqTCPNetwork” (or whatever you named it), under your Drivers folder, initially showing a status of “{ok}” and enabled as “true.”

Add a IqTCPGateway

To add a IqTCPGateway in the station

Use the following procedure to add an IqTCPGateway component under the station's Drivers Container.

Note: One or more IqTcpGateways are supported. Often, IQ TCP/serial gateways are on the same LAN as other IQ TCP devices.

To add an IqTCPGateway 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 Tcp Gateway,” number to add: 1 (or more, if multiple) and click **OK**. This brings up a dialog to name the network(s).
- Click **OK** to add the IqTcpGateway(s) to the station. You should have an IqTCPGateway named “IqTCPGateway” (or whatever you named it), under your Drivers folder, initially showing a status of “{ok}” and enabled as “true.”
- Right-click the IqTCPGateway and select **Views > Property Sheet**. The **Property Sheet** appears.
- In the **Ip Address** property, enter the Iq gateway's unique IP address, replacing the “0.0.0.0:10101” (Ip address:VCNC port) default value.
- Click save button.

Add an Iq Devices

After adding an IqTCPNetwork or IqTCPGateway, 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 an IQ device in the network

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

- In the Nav tree or in the Driver Manager view, double-click the client network, to bring up the device manager (Iq TCP Device Manager or Iq TCP Gateway 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 IqTCPDevice, or IqTCPGatewayDevice).

- 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 IQ3-Controller that under IqTCPNetwork needs the unique IP address in use. Also, if it uses a VCNC port besides the valid range is 10000 - 10110, enter it here.
 - Any IQ-Controller 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,” “Id”.

Name	Type	Item	Description	Enabled	Facets	Tuning Policy Name	Conversion
Sensor 1	Numeric Writable	S1(V)	Sensor 1	true	units=null,precision=1,min=-inf,max=+inf	defaultPolicy	Default

<input type="radio"/> Name	Sensor 1
<input type="radio"/> Type	Cannot edit
<input type="radio"/> Item	S1(V)  
<input type="radio"/> Description	Sensor 1  
<input type="radio"/> Enabled	<input checked="" type="checkbox"/> true
<input type="radio"/> Facets	units=null,precision=1,min=-inf,max=+inf >>  
<input type="radio"/> Tuning Policy Name	Default Policy
<input type="radio"/> Conversion	Default

OK Cancel

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 an 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.

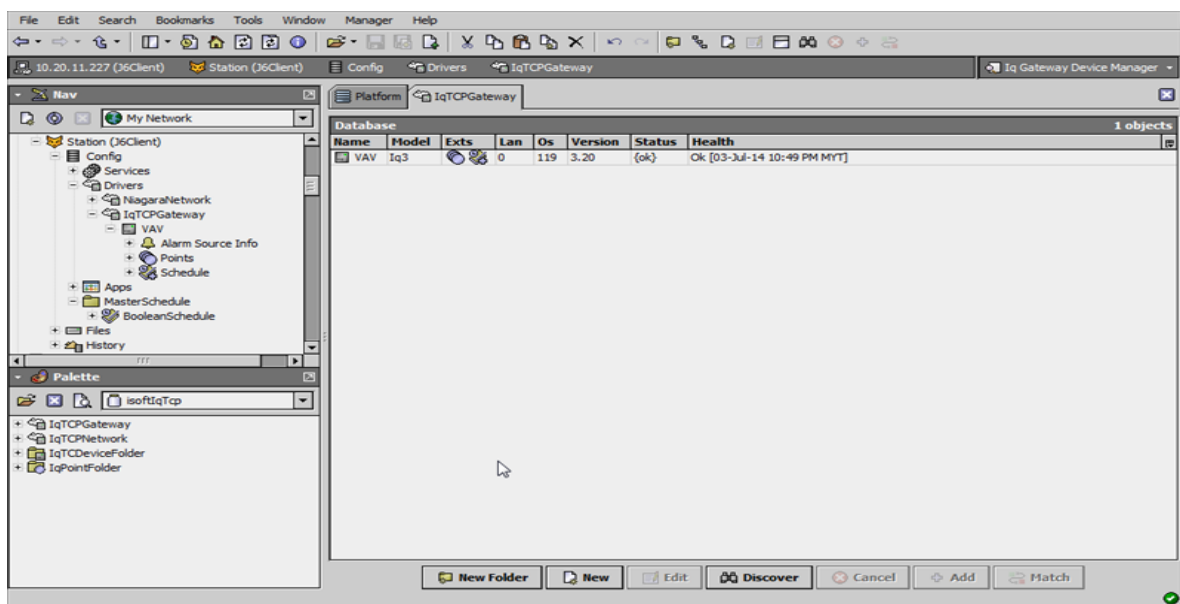
IQ View

- [Iq Device Manager](#)
- [Iq Point Manager](#)
- [Iq Schedule Manager](#)

Iq Device Manager

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

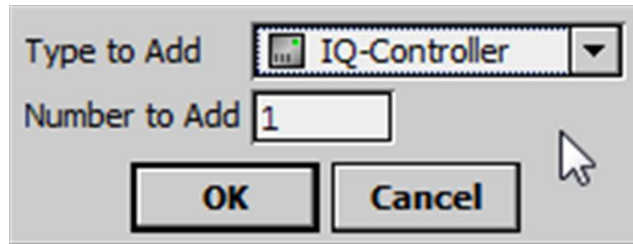
The Iq Device Manager is the default view for any Iq Network container. The Iq Device Manager is a table-based view, where each row represents a unique device. When building a network in the station, you use this view to create, edit, and delete device-level components. Below is an example Iq Device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



The view above shows a typical Iq Tcp 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:

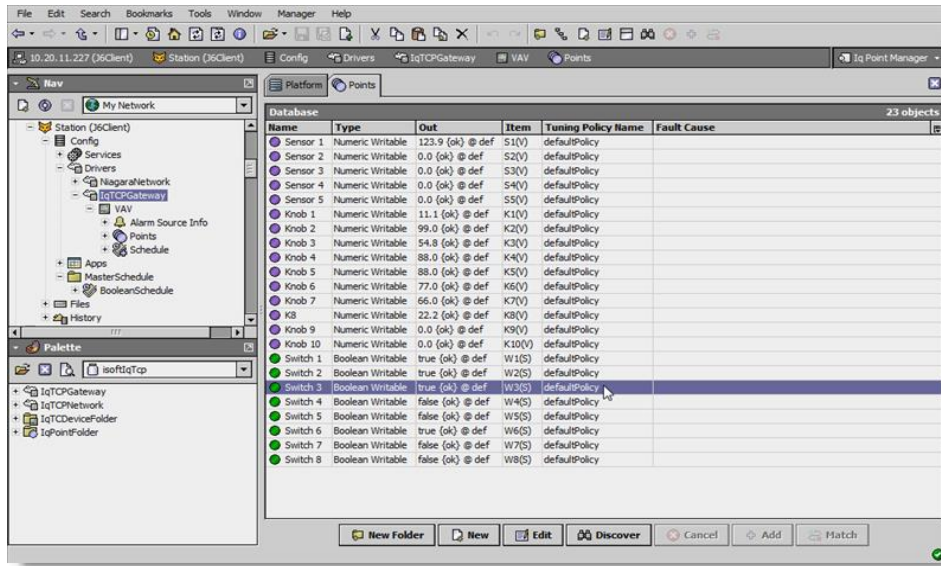


The “Add” dialog box affords you the opportunity to tweak the display name, enabled state, and/or address of each of the selected devices. Click the “OK” button to add the devices to the database or click “Cancel” to bail out.

IQ Point Manager

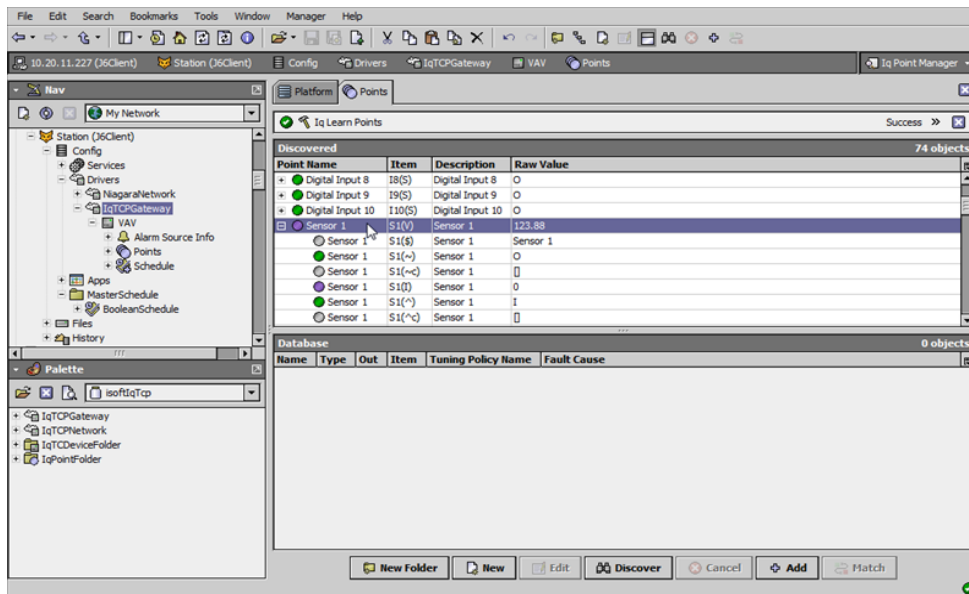
The Iq Point Manager is the default view when you double-click on a “points” folder (a IqPointDeviceExt type folder) under a IQ3-Controller, IQ-Controller in the Nav tree. This manager view provides a quick and easy way to display and learn Iq points in a Iq device.

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.

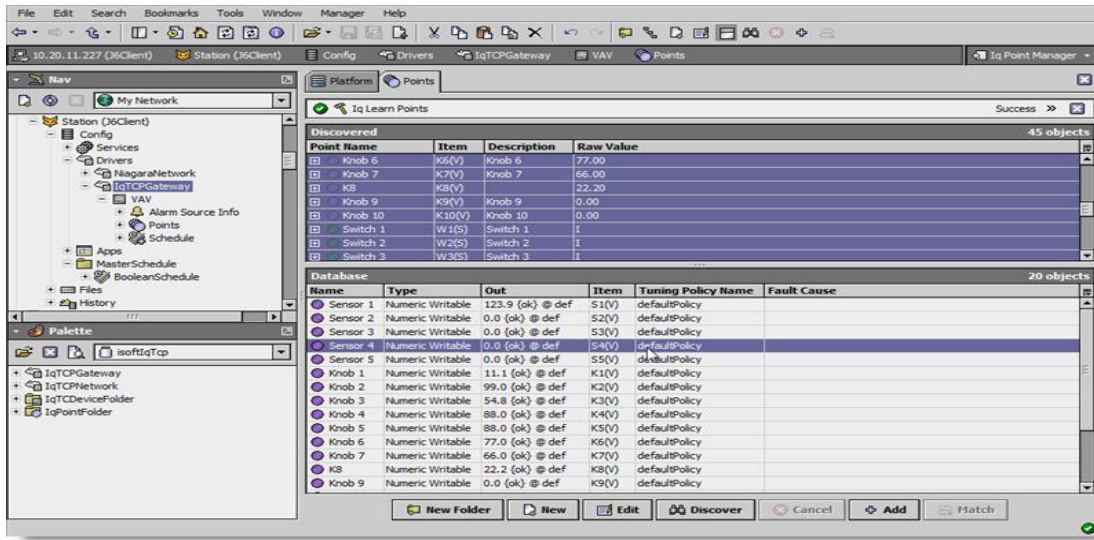


The “New Folder”, “New”, and “Edit” buttons are not unique to the Iq Device Manager, and are explained in the “Niagara N4 User’s Guide” in the “Driver Architecture” section. The “Match” button is not used for the Trend IQ driver.

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).



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:

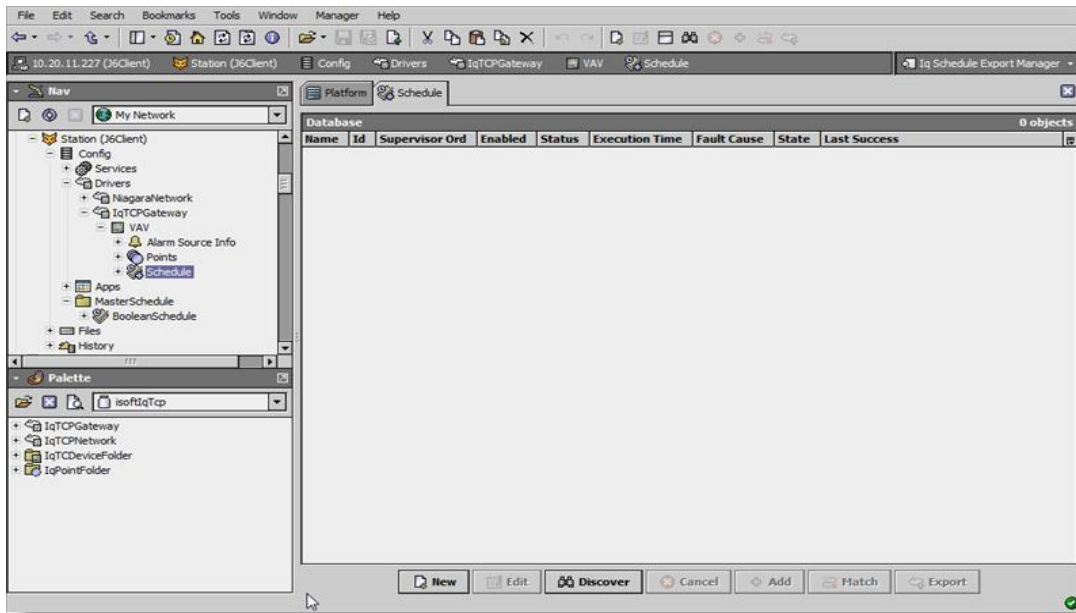


Single or multiple points can be added as control points with IqProxyExt extensions by selecting the discovered row(s) in the top pane, and clicking add. Doing so will cause the “Add” dialog box to appear: Once the point(s) are satisfactorily edited, click “OK” to create the proxy points corresponding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

IQ Schedule Export Manager

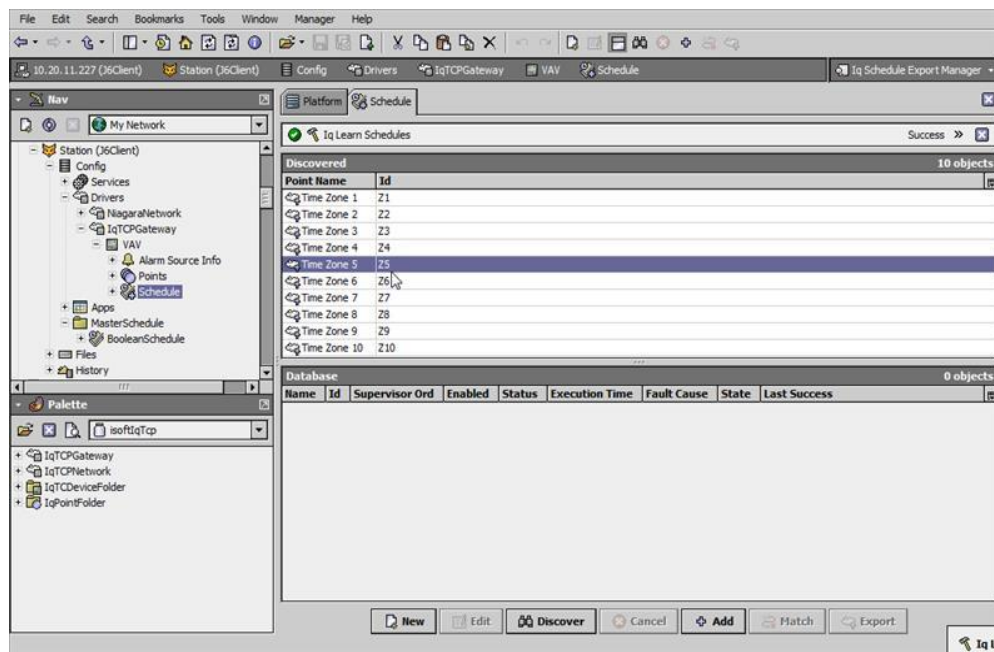
The Iq Schedule Export Manager is the selected view from the device schedule device extension “View Iq Schedule Export Manager” on a “schedule” folder (a IqScheduleDeviceExt type folder) under a IQ3-Controller or IQ-Controller in the Nav tree. This manager view provides a quick and easy way to display and learn Iq schedule in an IQ-Controller.

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

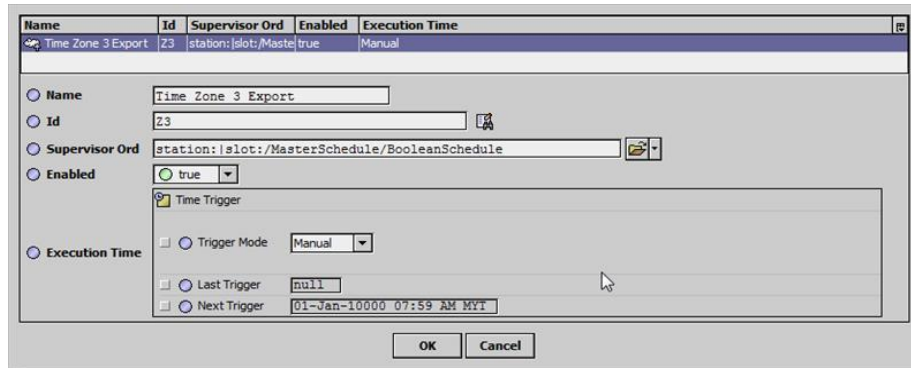


The “New”, and “Edit” buttons are not unique to the Iq Device Manager, and are explained in the “Niagara N4 User’s Guide” in the “Driver Architecture” section. The “Match” button is not used for the Trend IQ driver.

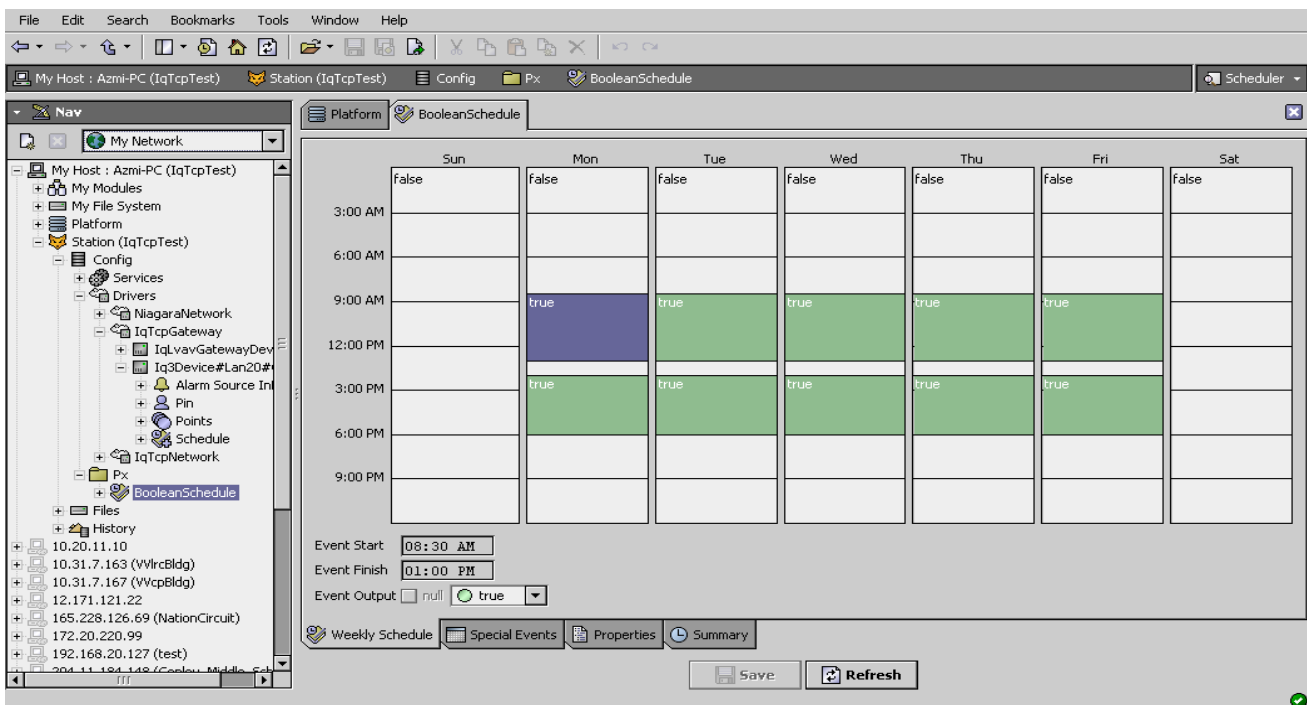
The “Discover” button implements functionality that is unique and tailored to discovering Iq devices. By clicking the “Discover” button, the “learn” mode of the manager is invoked (the panes will be split, and a “discovery” table will be displayed in the top pane).



Single or multiple schedules can be added 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 schedule corresponding to the schedule property.



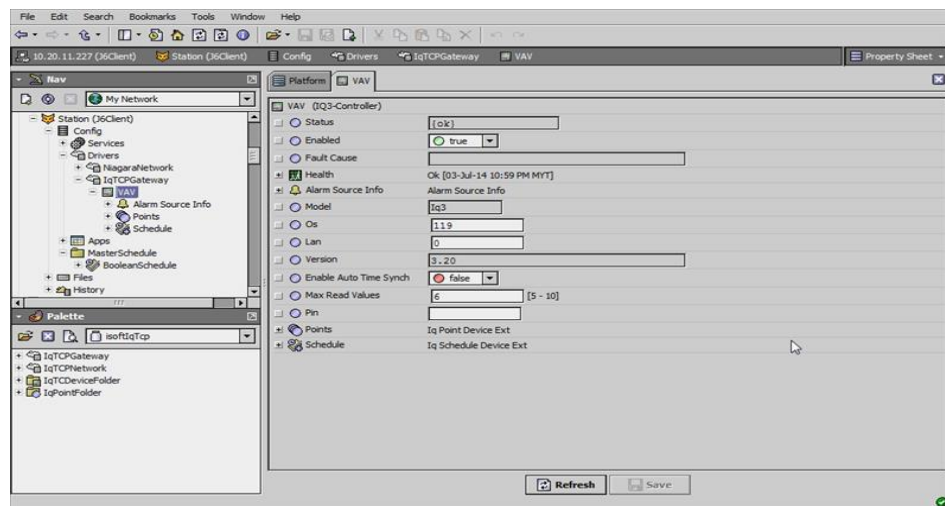
All the IQ schedule must have the Supervisor “Boolean Schedule” type attach as the IQ Schedule is a slave schedule. To change the Iq Schedule simply change the Supervisor Boolean Schedule.



Driver Tuning Performance

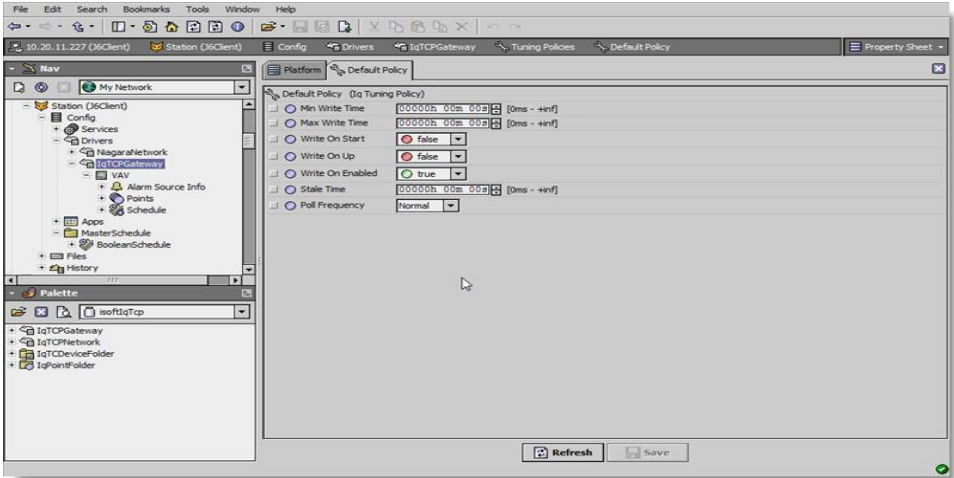
By selecting the IQ-Controller or IQ3-Controller properties sheet their few properties required to setup.

- Max Read Values – specifies the global minimum 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 IqTCPNetwork's or IqTCPGateway 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.

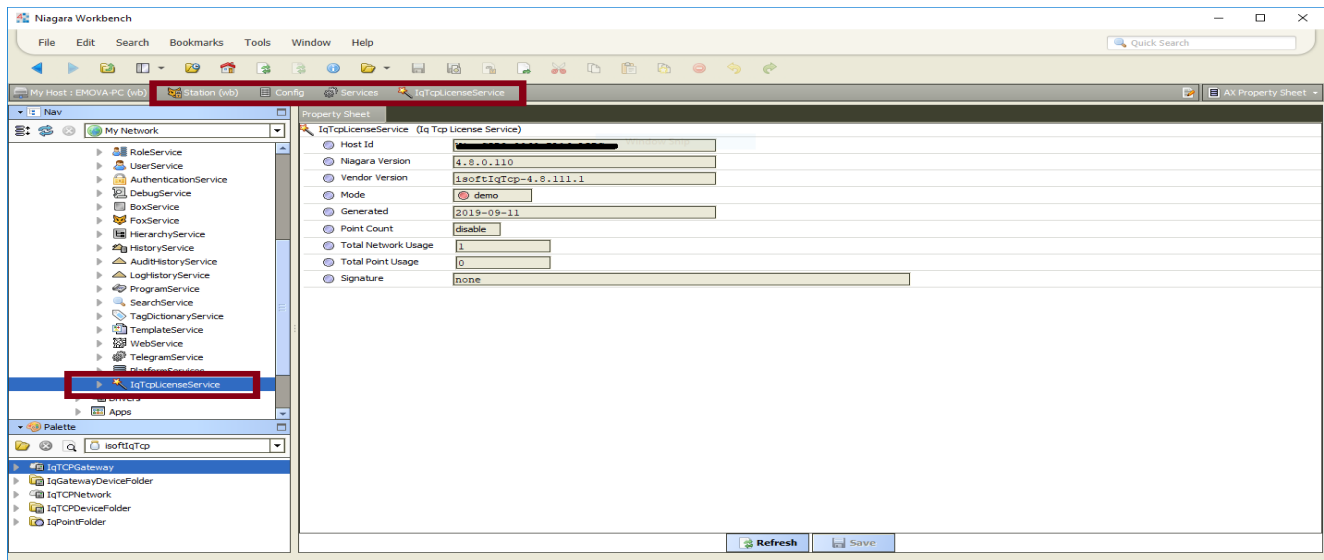


Licensing

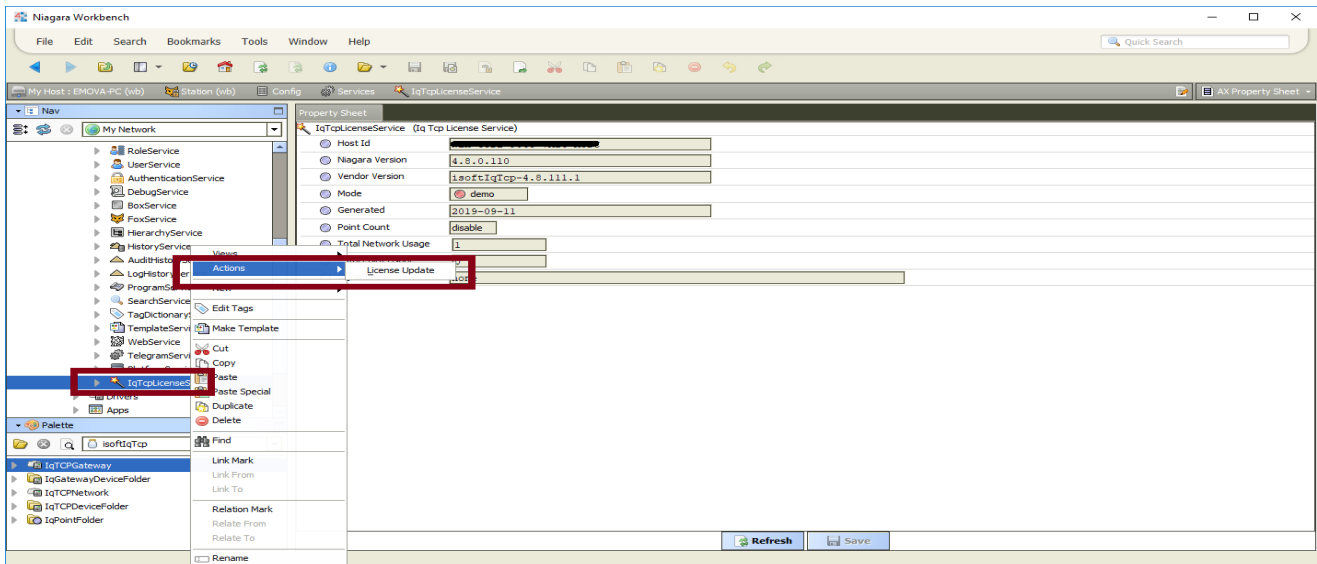
Trend driver License is running independently from the Tridium license, it has no restriction to run to any of the existing license vendor.

The Trend license provide 2-hour demo license without the signature code. After the demo license expired the Trend Driver communication will stop automatically and will show fatal fault at the Iq Network level. "isoftIqTcp license expired". To extend the demo period user required to restart the station.

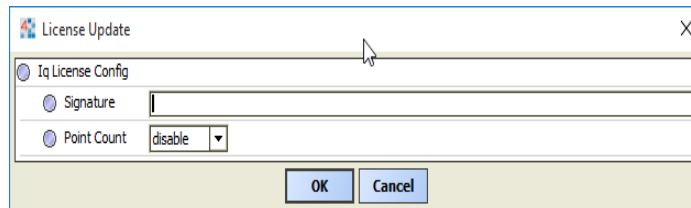
To request a license, please submit the Host ID of JACE/Web Supervisor, to unlock the driver go to the service container, "IqTcpLicenseService". Please note the license only provide by authorize vendor.



To unlock the license right click mouse button on "IqTcpLicenseService", action and invoke command "License Update", the dialog "License Update" will appear as below. Place the Signature code in the "Signature" and select Point Count (if applicable) property value.



Place the signature code at the “signature” property and “Point Count” (if valid). If the signature code is successfully entering the “Mode” property will automatically change to “registered” finally user is required to reboot JACE to apply the change.



END**