Niagara AX Allen Bradley (Cspv4) Driver User Guide

# Alen Bradley (Cspv4) Driver User Guide

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# Chapter

# Installation

From your PC, use the Niagara Workbench 3.*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 *ifcCspv4* module.

Apart from installing the 3.*n.nn* version of the Niagara distribution files in the JACE, make sure to install the *ifiCspv4* module too (if not already present, or upgrade if an older revision). For more details, see "About the Commissioning Wizard" in the JACE Niagara AX Install and Startup Guide.

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

## Requirement

- Niagara Ax workbench 3.4.xx or higher.
  - 1. TCP port
- Niagara Ax platform JACE support:
  - 1. JACE 2xx.
  - 2. JACE 4xx.
  - 3. JACE 5xx.
  - 4. JACE 6xx.
  - 5. JACE 7xx.
- Allen Bradley Devices support:
  - 1. Control Logix 5x
  - 2. MicroLogix 5x

Note: The device must running with the legacy Cspv4 protocol. The latest protocol such a CIP protocol not support on this driver.



# **Quick Start**

This section provides a collection of procedures to use the Niagara AX Allen Bradley (Cspv4) 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 Allen Bradley networks:
  - "Configure the Csp network"
  - "Add Csp devices"
  - "Create Csp proxy points"

#### **Configure Csp Network**

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

- Add the Csp network, as needed:
  - Add a CspNetwork

#### Add a CspNetwork

#### To add a CspNetwork in the station

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

*Note:* Only one CspNetwork 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 CspDevices will automatically determine the Ethernet port utilized.

To add a CspNetwork 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 "Csp Network," number to add: 1 and click **OK**. This brings up a dialog to name the network.
- Click **OK** to add the CspNetwork to the station.
- You should have a CspNetwork named "CspNetwork" (or whatever you named it), under your Drivers folder, initially showing a status of "{ok}" and enabled as "true."
- Right-click the CspNetwork and select Views > Property Sheet. The Property Sheet appears.
  See "Review network-level CspNetwork configuration".

#### Add a Csp Devices

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

#### To add a Csp device in the network

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

• In the Nav tree or in the Driver Manager view, double-click the client network, to bring up the device manager Csp Device Manager.

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.
- Select for number to add: 1 (or more, if multiple) and click **OK**. This brings up a dialog to name the device(s), enter Csp device Ip address and port (by default the port is 2222
- Click **OK** to add the client device(s) to the network.
  You should see the device(s) listed in the Csp 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 device IP 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 Csp Proxy Point**

As with device objects in other drivers, each Csp 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 "**Csp Point Manager**"). You use it to add Csp proxy points under any Csp device.

**Note:** Unlike the point managers in many other drivers, the **Csp Point Manager** does not 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 Csp device.

#### To add Csp proxy points

Once a Csp 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 Csp proxy points in a device:

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

This brings up the Csp 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 Csp 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," "Tag Name"

Name	Туре	Tag Name	Bit Number	Enabled	Facets	Tuning Policy Name	Conversion	₽
O Numeric Point	Numeric Point	F8:32		true	units=null,precision=1,min=-inf,max=+inf	defaultPolicy	Default	
🔘 Name	Nume	ric Point						
🔘 Туре	○ Type Numeric Point ▼							
🔘 Tag Name	F8:3	F8:32						
🔘 Bit Number	Canno	Cannot edit						
O Enabled O true 🔽								
○ Facets units=null,precision=1,min=-inf,max=+inf » ७ ▼								
◯ Tuning Policy Name Default Policy ▼								
Conversion	<b>1</b>	Default						
OK Cancel								

For more details, see "About Csp 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 Csp "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 Csp 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

### **Csp View**

- Csp Device Manager
- Csp Point Manager

#### **Csp Device Manager**

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

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



The view above shows a typical Csp Device Manager view.

The "New Folder", "New", and "Edit" buttons are not unique to the Csp Device Manager, and are explained in the "Niagara AX User's Guide" in the "Driver Architecture" section.

You can now add the devices to the station database by clicking the "Add" button. This will pop up the "Add" dialog box:

Name	Туре	Ip Address	Port	Enabled	Ę
🖬 CspDevice	Csp Device	###.###.###.###	2222	true	
🔘 Name	CspDevi	.ce			
○ Type Csp Device ▼					
O Ip Address	5 ###.###	.###.###			] 🖪
🔘 Port	2222				
🔘 Enabled	🔘 true	<b>•</b>	~		
		OK Cancel	]		

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

#### **Csp Point Manager**

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

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

Below is an example Csp Point Manager view.

File Edit Search Bookmarks Tools Window	Manager Help						
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🕀 🖳 octopus.qimr.edu.au (QIMR)	C7ACogen TUN_CHWP_SPD	Numeric Point	0.00 {ok}	F8:0	c	defaultPolicy	
🕀 🔜 remotemacc7.linksysnet.com	C7ACogen PT_POOL_SPPLY	Numeric Point	223.88 {ok}	F8:1	c	defaultPolicy	
🗈 🔜 remotemacc7.linsysnet.com	C7ACogen CWP5_SPD	Numeric Point	50.34 {ok}	F8:2	c	defaultPolicy	-
E 🖳 10.168.224.84 (C7A_CogenPLC_Macquarie_Uni)	C7ACogen CWP7_SPD	Numeric Point	50.59 {ok}	F8:3	c	defaultPolicy	E
Platform	C7ACogen CHWP3_SPD	Numeric Point	0.00 {ok}	F8:4	c	defaultPolicy	
E Station (C7A_CogenPLC_Macquarie_Uni)	C7ACogen CHWP4_SPD	Numeric Point	61.14 {ok}	F8:5	c	defaultPolicy	
E E Contig	C7ACogen TT_CHW_TANK_1	Numeric Point	5.04 °C {ok}	F8:6	c	defaultPolicy	
	C7ACogen TT_CHW_TANK_2	Numeric Point	5.31 ºC {ok}	F8:7	c	defaultPolicy	
Drivers	C7ACogen TT_CHW_TANK_3	Numeric Point	6.12 °C {ok}	F8:8		defaultPolicy	
Er ~ Inagaranecwork	C7ACogen TT_CHW_TANK_4	Numeric Point	35.00 °C {ok}	F8:9	20	defaultPolicy	
E C C C C C C C C C C C C C C C C C C C	C7ACogen TT_CHW_TANK_5	Numeric Point	4.80 °C {ok}	F8:10	, , , , , , , , , , , , , , , , , , ,	defaultPolicy	
Alarm Source Info	C7ACogen TT_CHW_TANK_6	Numeric Point	10.38 °C {ok}	F8:11	c	defaultPolicy	
E Points	C7ACogen TT_CHW_TANK_7	Numeric Point	5.99 °C {ok}	F8:12	c	defaultPolicy	
E Bit Registers (B3)	C7ACogen TT_CHW_TANK_8	Numeric Point	3.99 °C {ok}	F8:13	c	defaultPolicy	
🕀 🔂 Analogue Inputs (F8)	C7ACogen TT_CHW_TANK_9	Numeric Point	4.76 °C {ok}	F8:14	c	defaultPolicy	
🗉 🔂 Digital Outputs (B53)	C7ACogen TT_CHW_TANK_10	Numeric Point	5.32 °C {ok}	F8:15	c	defaultPolicy	
🕀 🔂 Digital Inputs (B52)	C7ACogen TT_CHW_TANK_11	Numeric Point	5.27 °C {ok}	F8:16	c	defaultPolicy	
🗉 🔂 Analogue Outputs (F8)	C7ACogen TT_CHW_TANK_12	Numeric Point	6.00 °C {ok}	F8:17	c	defaultPolicy	
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The "New Folder", "New", and "Edit" buttons are not unique to the Csp Device Manager, and are explained in the "Niagara AX User's Guide" in the "Driver Architecture" section.



## Licensing

Allen Bradley (Cspv4) driver License is running independently from the Tridium license, it has no restriction to run to any of the existing license vendor.

The Allen Bradley (Cspv4) license provide 2 hour demo license without the unlock code. After the demo license expired the Allen Bradley (Cspv4) Driver communication will stop automatically and will show fault in the Csp Network level. "ifcCspv4 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 host ID, and to unlock the driver simply place the unlock code that provide by authorize vendor at the ClipsalNetwork 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 station.

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▼ 🖄 Nav 🛛	Platform 😔 License	×
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