

Omron

To Connect Ignition to an Omron Device

1. Go to the **Configure** section of the **Gateway** webpage.
2. Scroll down and select **OPC-UA Server > Devices**.
3. On the **Devices** page, find the blue arrow and click on **Create new Device**.
4. On the **Add Device Step 1: Choose Type** page, select **Omron Driver**, and click **Next**.
5. On the **New Device** page, leave all the default values and type in the following fields:
Name: **Omron**
Hostname: type the IP address, for example 74.125.224.72
Check the box for **Show advanced properties?** to see the additional settings, but you can keep all the defaults.
6. Click **Create New Device**.
The **Devices** page is displayed showing the **Omron** device is successfully created and added to Ignition.
7. On the **Devices** page, click the Tags link next to the newly created device.
The **Manage Tags** page is displayed, allowing you to configure which variables in the device will show up as Tags in Ignition.

On this page

...

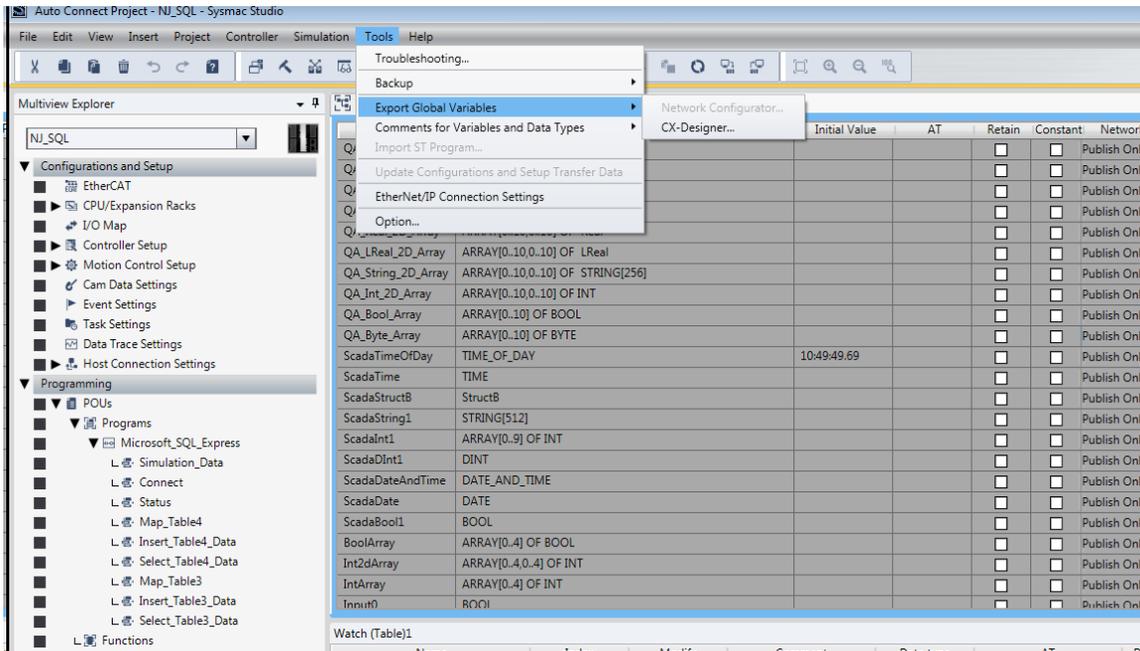
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Device Settings

General	
Name	Device name.
Enabled	Default is set to true.
Main	
Hostname	The hostname or IP address of the device.
Timeout	The request timeout, specified in milliseconds. The default is 2,000.
Concurrency	The number of concurrently issued requests allowed. There is a 1:1 correlation between concurrency and the number of CIP connections used.
Advanced	
Connection Size	The CIP connection size to use. The default (and maximum) is 1,994 bytes.
Slot Number	The slot number in the backplane in which the CPU is located.

Exporting from the Device

To export variables from Sysmac Studio, navigate to the global variables and select **Tools > Export Global Variables > CX-Designer**.



The variables will be saved to the clipboard in tab-separated format. You can now paste the contents into an empty text file for use with importing into the Ignition Gateway.

Managing Tags

In order to browse Tags in the Designer, you must first create a mapping for the device in the Gateway. The **Manage Tags** page can be accessed by navigating to the Omron device and clicking the **Tags** link.

Devices

Name	Type	Description	Enabled	Status		
Omron NJ Driver	Omron NJ Driver		true	Idle	tags	More edit
SLC	Simulators SLC Simulator		true	Connected	delete	delete edit

→ [Create new Device...](#)

Importing Tags

Once on the **Manage Tags** page, you can manually enter the Tags, or import them from a tab-separated file. When importing, first choose a file, then click the **Import** button. The default option when importing is to replace the **Tags** table with Tags from the import. Select the append option to append Tags to the table.

Manage Tags

Import a List of Tags.

No file chosen

Tags

<input type="checkbox"/> Name	DataType	Chars	Elements	R/W
<input type="checkbox"/> ex. Facility.Amps.Amp1	UINT_BCD			RW

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Manage Tags

Import a List of Tags.

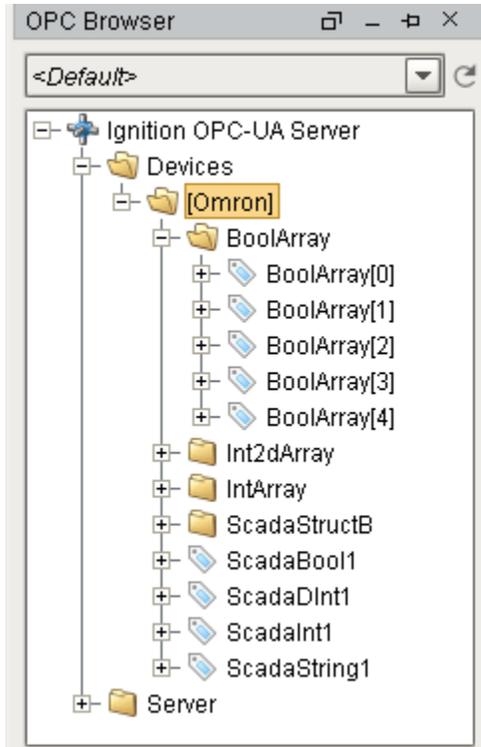
No file chosen

Tags

<input type="checkbox"/> Name	DataType	Chars	Elements	R/W
<input type="checkbox"/> ScadaString1	STRING	512		RW
<input type="checkbox"/> ScadaDInt1	DINT			RW
<input type="checkbox"/> Int2dArray	INT		0..4,0..4	RW
<input type="checkbox"/> IntArray	INT		0..4	RW
<input type="checkbox"/> BoolArray	BOOL		0..4	RW

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Once you save any changes made to the Tag mapping, you can view the Tags in the Designer OPC Browser.



Addressing

In the **Tags** table of the **Manage Tags** page, we have four columns of configuration per Tag:

- **Name** - The corresponding address of the variable found in the Omron device. Struct members are separated with periods.
- **Datatype** - The datatype of the variable found in the Omron device.
- **Chars** - The maximum number of characters that a String Tag will contain.
- **Elements** - Denotes whether the Tag is considered a scalar or array. See below for more detail on specifying the number of elements to read from the device.
- **R/W** - Specifies read / write access permissions on the Tag.

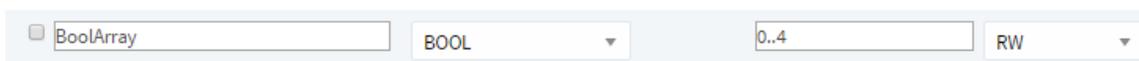
Scalars

Leaving the **Elements** column blank will result in a scalar Tag. When reading from the device, only one element will be requested.



Arrays

Specify the number of elements in an array in the form of **0..N**. The initial index 0 is always included, so an array mapped with 0..4 elements is a 5 element array.



i The number range specified in the Elements field can deviate from the range specified in the device's program. Thus, if an array was configured with a range of 0 - 4, but the mapping on the Ignition Gateway is set to 3 - 7, then the resulting items would be offset as follows:

PLC Program	Tag in Ignition
0	BoolArray_3_
1	BoolArray_4_
2	BoolArray_5_
3	BoolArray_6_
4	BoolArray_7_

This is because the driver always assumes that the lowest configured element on the mapping page matches up with the lowest element in the PLC program. As seen above, this can cause some confusion if the mapping on the Ignition Gateway is configured with a different range.

For this reason, it is **highly recommended** to configure the Elements field on the Ignition Gateway to match the range used in the PLC program.

Note, that this also applies to **Multidimensional Arrays**.

Multidimensional Arrays

Multidimensional arrays are specified in the same way as arrays with each group of indices separated by a comma.

Int2dArray INT 0..4,0..4 RW

Optional Format

Array elements may also be specified with a single number equaling the total number of elements.

Int2dArray INT 5, 5 RW

Strings

The number of characters for String variables is specified in the **Chars** field.

ScadaString1 STRING 512 RW

String arrays are mapped using both the **Chars** and **Elements** fields.

StringArray STRING 512 0..4 RW