

SET UP DATA SOURCE USING OPC UA PROTOCOL



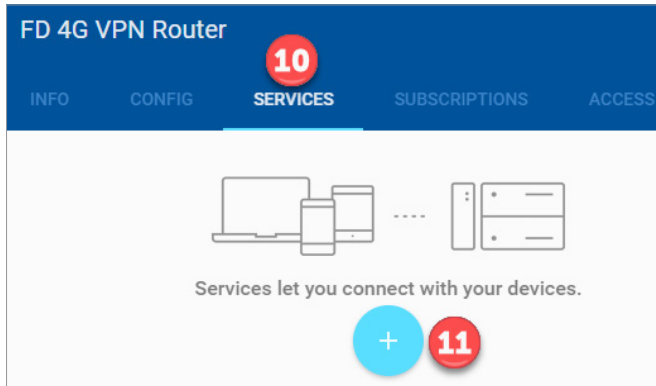
In this Appendix...

Set up data source for a device using OPC UA protocolH-2

Set up data source for a device using OPC UA protocol

Configure the address and protocol for the PLC from which data will be read

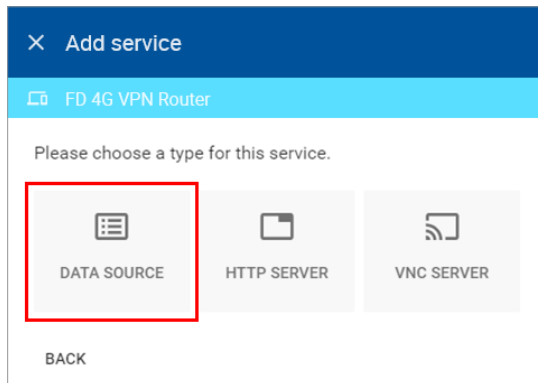
Click on the SERVICES tab (10). Click the +(Add) button (11).



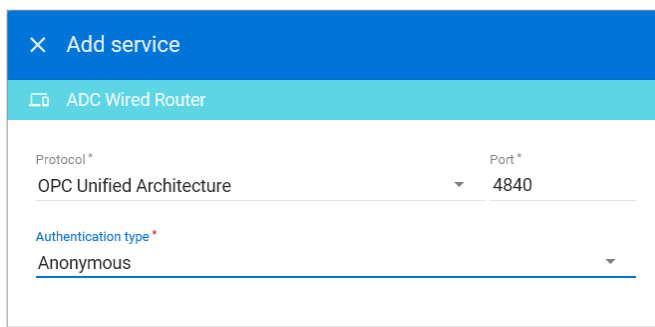
Add a Name and the IP Address of the PLC where the data resides. Click NEXT.

The screenshot shows the 'Add service' dialog box. The title bar is blue with a close button and the text 'Add service'. Below the title bar, there is a light blue header with a back arrow and the text 'FD 4G VPN Router'. The main content area is white and contains the text 'Please specify a target for this service.' followed by two input fields: 'Name' and 'IP address'. The 'IP address' field has a placeholder text 'e.g. 192.168.140.100'. At the bottom right of the dialog box, there is a blue 'NEXT' button.

Select DATA SOURCE.

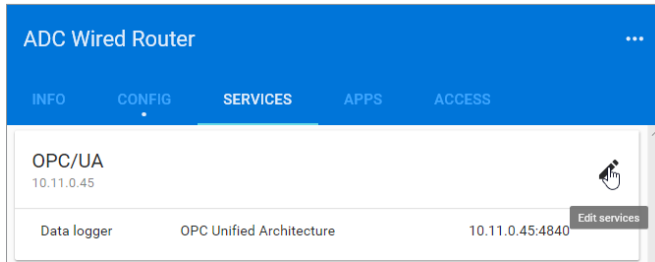


Select the OPC UA protocol and enter the port number of the OPC Server you are using. If your PLC is protected with a password, select “Username and password” as the authentication type and enter the credentials. Then click ADD to continue.

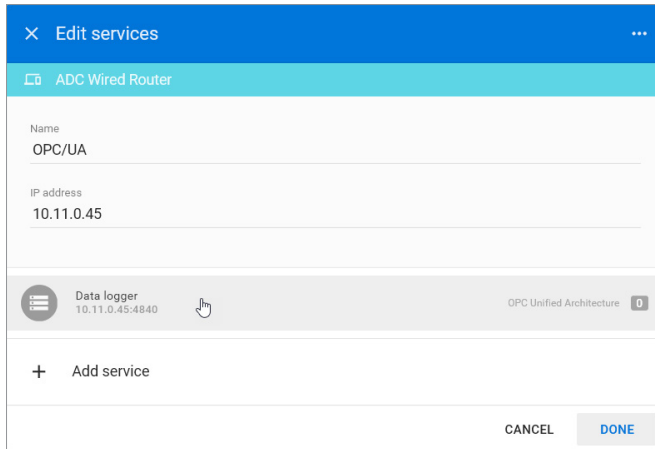


Configure the data tags

To add a data tag, go to the SERVICES tab for the router and click the Edit services (pencil) icon next to the device for which you want to add the data tag.

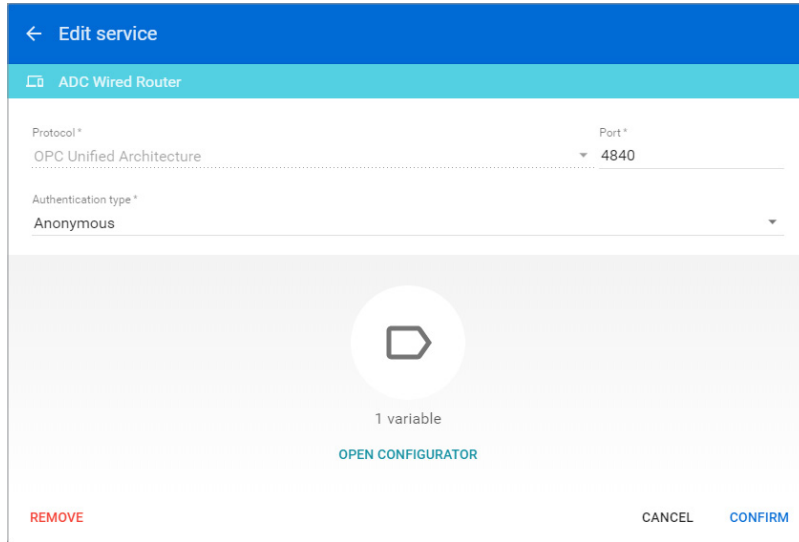


This opens the Edit services dialog. Click the name of the existing device for which you would like to add a data tag.

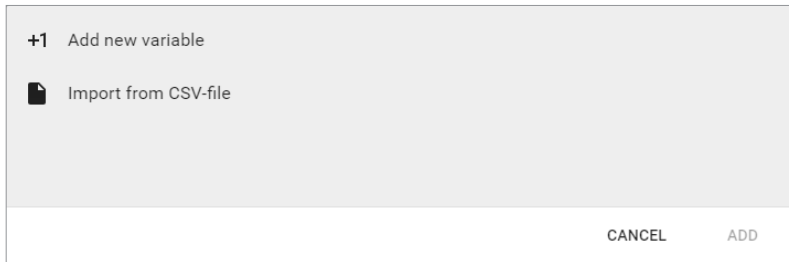


NOTE: It is advisable to enter data tags in small batches, and test the variables periodically to verify the entries. The entries can be tested by clicking “RUN TEST” in the Configurator, or from the Cloud Logging Web App as described in the [Data Logger Test Utility](#) section. Please refresh your browser if the information on screen appears to not be updated properly at any time.

The resulting “Edit service” screen displays the parameters for the data source, plus a count of existing data tags. Click OPEN CONFIGURATOR to add or edit tags.



Data tags can be entered interactively, or a set of tags can be imported from a previously-exported CSV file. Export of sets of data tags is discussed later in the “Export Data Tags” subsection. For this example, select “Add new variable” to manually enter tags.



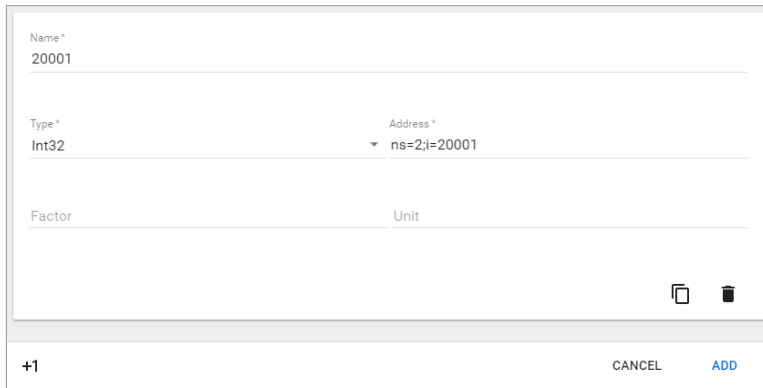
A data entry screen opens, with one new data tag ready to be entered. Set the relevant parameters for the new data tag. The data tag input fields and supported data types are described in the next two tables, respectively. Subsequent figures illustrate the correct syntax for entering OPC UA addresses. Additional data tags can be entered in this round by clicking “+1” in the lower left corner of the screen. When all the desired tags have been entered click ADD.

Data Tag Input Fields	
Field	Description
Name	Give the data tag a logical name.
Select a data type	See next table for the available data types.
Address	See the next subsection, <i>OPC UA Address notation and lookup</i> .
Unit (optional)	Here you can assign a value to a unit, for example, gallons or psi.
Factor (optional)	This allows you to multiply by a value. For example, factor 0.01 divides the data value by 100.

Data Types Supported
Bool
Float32
Float64
Int8
Int16
Int32
Int64
UInt8
UInt16
UInt32
UInt64
String

There are two types of identifiers: string and numeric value. Both require a different data tag address with cloud data logging or notification.

Addressing a data tag when the identifier type is “Numeric” is as follows: ns=(id);i=(identifier). For example, a piece of integer numeric data with a numeric identifier of “20001” would be set up in StrideLinx as shown below.

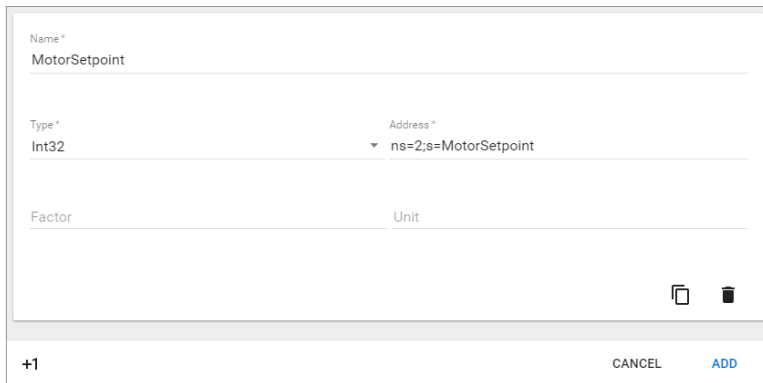


The screenshot shows a configuration form for a data tag. The fields are as follows:

Field	Value
Name*	20001
Type*	Int32
Address*	ns=2;i=20001
Factor	
Unit	

At the bottom of the form, there is a '+1' indicator, a 'CANCEL' button, and an 'ADD' button.

Addressing a data tag when the identifier type is “String” is as follows: ns=(id);s=(identifier). Thus, the same piece of numeric data with a string identifier of “MotorSetpoint” would be set up in StrideLinx as shown below.



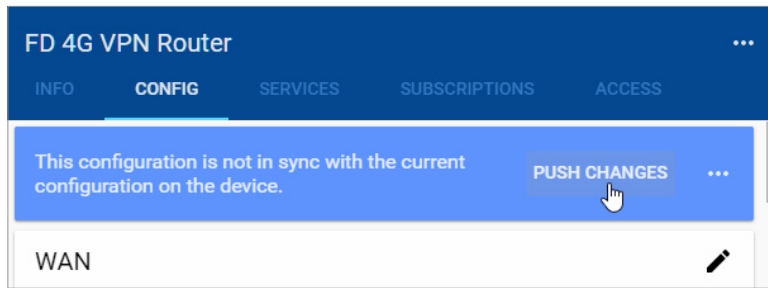
The screenshot shows a configuration form for a data tag. The fields are as follows:

Field	Value
Name*	MotorSetpoint
Type*	Int32
Address*	ns=2;s=MotorSetpoint
Factor	
Unit	

At the bottom of the form, there is a '+1' indicator, a 'CANCEL' button, and an 'ADD' button.

The following subsection, “OPC UA Address notation and lookup,” presents the recommended method to determine the correct address and syntax for your data tag. After all data is entered, click ADD to continue.

Once you have added all the data tags you want to log, you will be prompted to push the configuration to the router.



The data tag entries should now be verified using the procedure described in the “Test Utility” subsection of Chapter 4.



NOTE: Additional data tag parameters related specifically to data logging (i.e., sampling interval, data retention policy, and logging only when changed) can be set from the Cloud Logging web app discussed in Chapter 4.

The Cloud Logging web app can now be used to set up data dashboards and to adjust additional data tag parameters related specifically to data logging, and the Cloud Notify web app can be used to set up alarm notifications.

Export data tags

Data tag configurations can be exported in CSV format. The CSV file is downloaded to your local PC, and can later be imported to set up another StrideLinx router.

Select data tags to be exported by clicking the icon for each data tag, or select all data tags at once from the More Options (•••) menu in the upper right corner of the screen. The selected data tags can then be deleted, duplicated, or exported from the pop up menu at the bottom of the screen.

OPC UA address notation and lookup

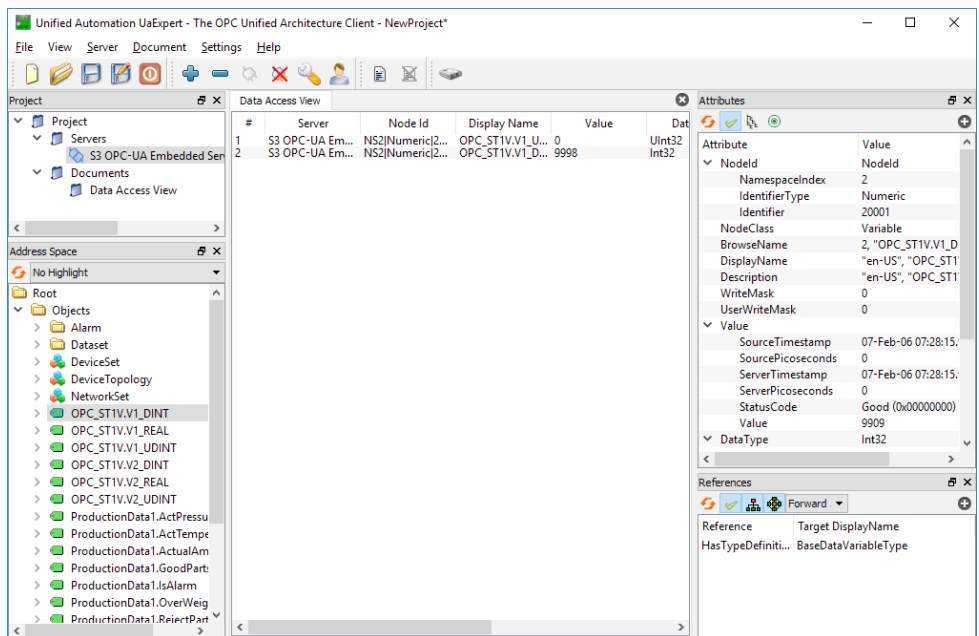
We recommend the UaExpert client software (available from United Automation) to search for tags.

After installing and opening the UaExpert software, complete the following actions to set up a connection with the OPC UA server:

1. Click the right mouse button on “Servers” at the top left.
2. Click “Add Server”.
3. Click “Advanced”.
4. Enter the IP-address and the port of the server and click “Ok”.

After the connection is made with the server, complete the following actions:

5. Find the tag in the “address space” in the bottom left.
6. Select the tag so its details are shown in the attribute window.



The namespace and identifier are the important attributes here. In this example, the namespace and identifier are “2” and “20001”, respectively.

Thus, in this example the addressing of the data tag would look like this: ns=2;i=20001.

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