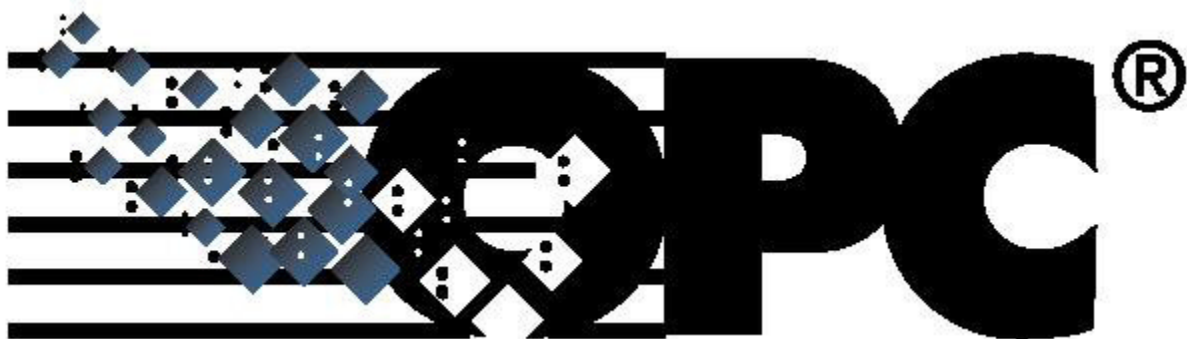


Using OPC DA Data in Status Device Cloud

The OPC Data Access Protocol and Your Status Device Cloud Deployment.



This whitepaper details the process of using OPC DA to connect your devices to your Status Device Cloud deployment.

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Overview

Virtualization of Assets in the Cloud

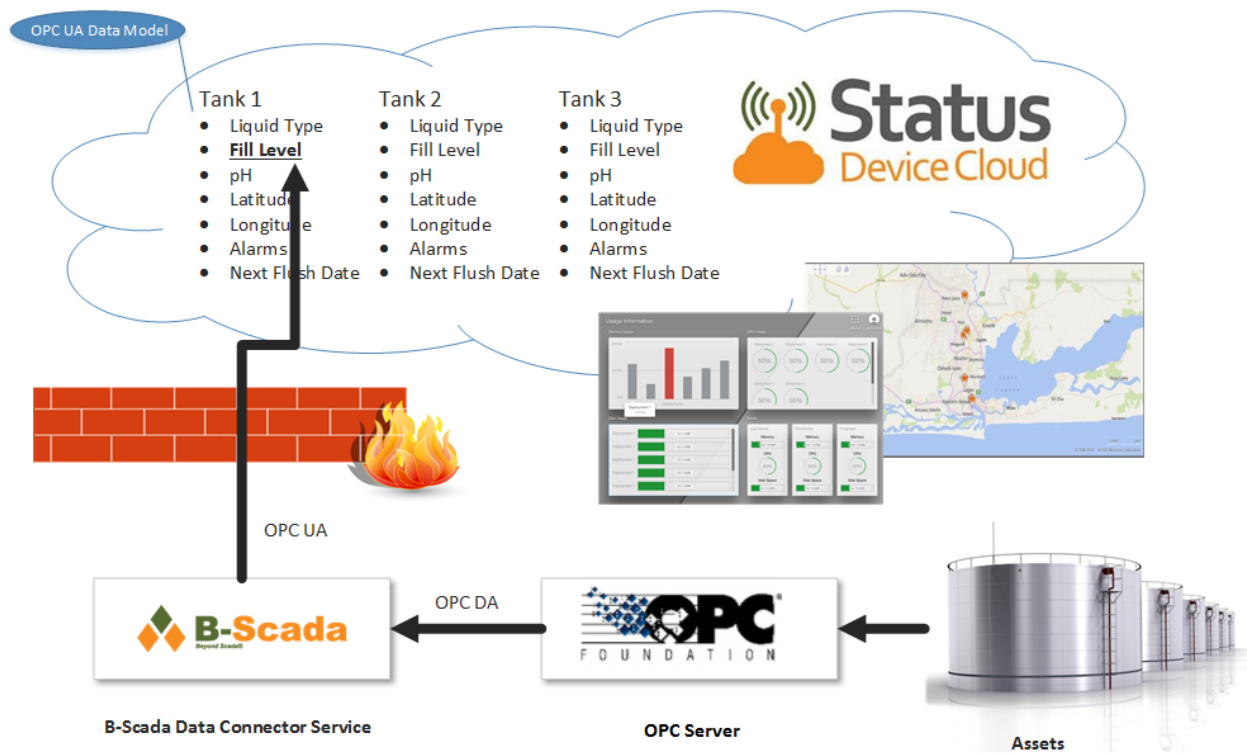


Figure 1 - This diagram provides a visual overview of the process of connecting your OPC DA data source to your Status Device Cloud Data Model

Status Device Cloud can consume data from thousands of possible devices using built-in drivers provided as part of the Data Connector service. One of the common protocols used is OPC DA (Data Access), a group of specifications created by the OPC Foundation to allow devices like PLCs to communicate with other systems.

While Status Device Cloud is built on the more modern OPC UA (Unified Architecture), OPC DA data sources can also be connected via an appropriate OPC server. This paper details the steps involved in the process of connecting your OPC DA-compliant devices to your Status Device Cloud data model.

OPC Core Components

If you plan to use OPC DA to connect your device(s), you must first install the OPC Core Components that were provided as part of your Status Device Cloud account. These components are necessary for your Data Connector service (covered later) to recognize your OPC DA data source and allow you to map it to your data model.

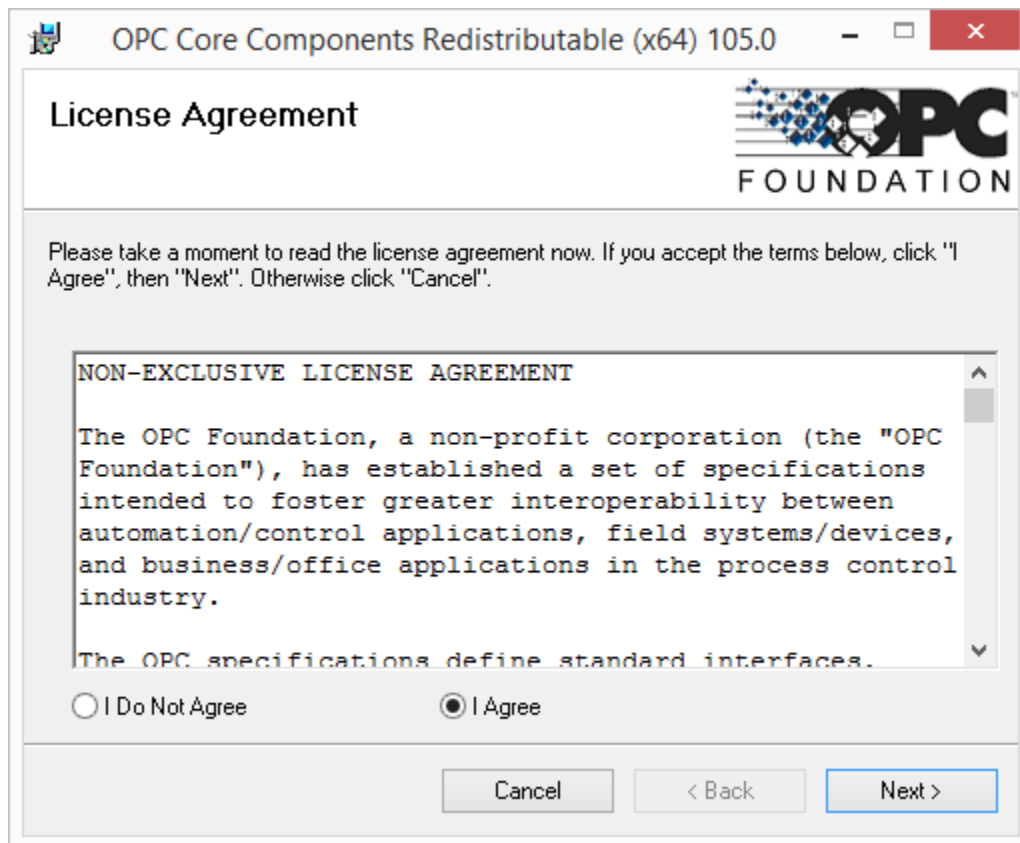


Figure 2 - Install the OPC Core Components on the same computer where you will install your local Data Connector service

Once the OPC Core Components are installed, your Data Connector service should recognize your OPC DA data source, and allow you to create data mappings between it and the properties in your data model.

The Data Connector

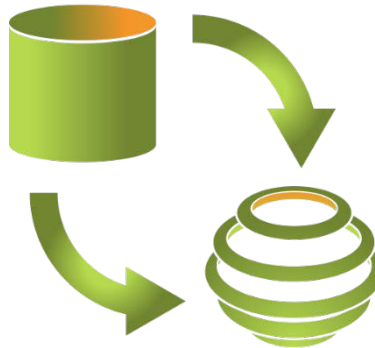


Figure 3 - Data Connector Icon

When your Status Device Cloud account was created, you were provided with a URL for a cloud-based Data Connector you could use to map your device data to your Status Device Cloud data model. This works fine for web-friendly data sources, however OPC DA is not a web-friendly protocol, and you will have to install the Data Connector service locally on your own PC to send your data to the cloud in a web-friendly format.

Referring to [Figure 1](#) above, you can see that your assets are connected by OPC server to a local instance of the Data Connector Service. The Data Connector service then communicates your data via OPC UA to your data model in the cloud.

Be sure that the Data Connector application is installed on the same PC on which you installed the [OPC Core Components](#), and you are ready to start creating your data mappings.

After the application is installed, you can access the Data Connector by selecting the 'Advanced' checkbox on the Status Device Cloud Application Launcher:

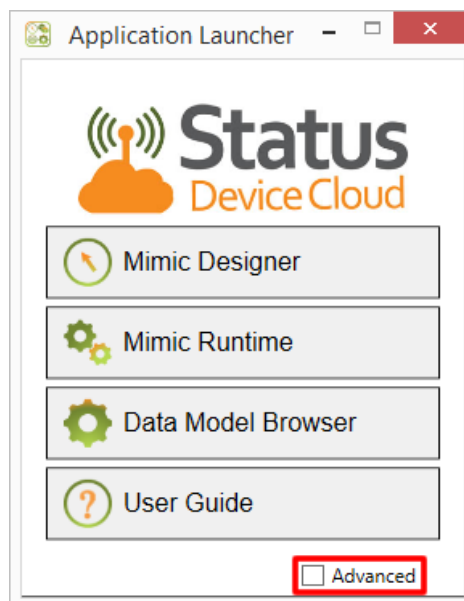


Figure 4 - Show additional applications by selecting the 'Advanced' checkbox in the application launcher

The Data Connector Application can be found by expanding the 'Live Data' tab.

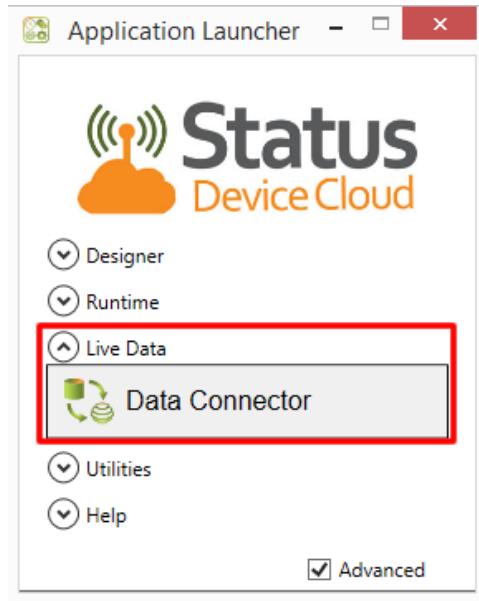


Figure 5 - The Data Connector application is listed under 'Live Data'

Clicking on the Data Connector button will launch the application.

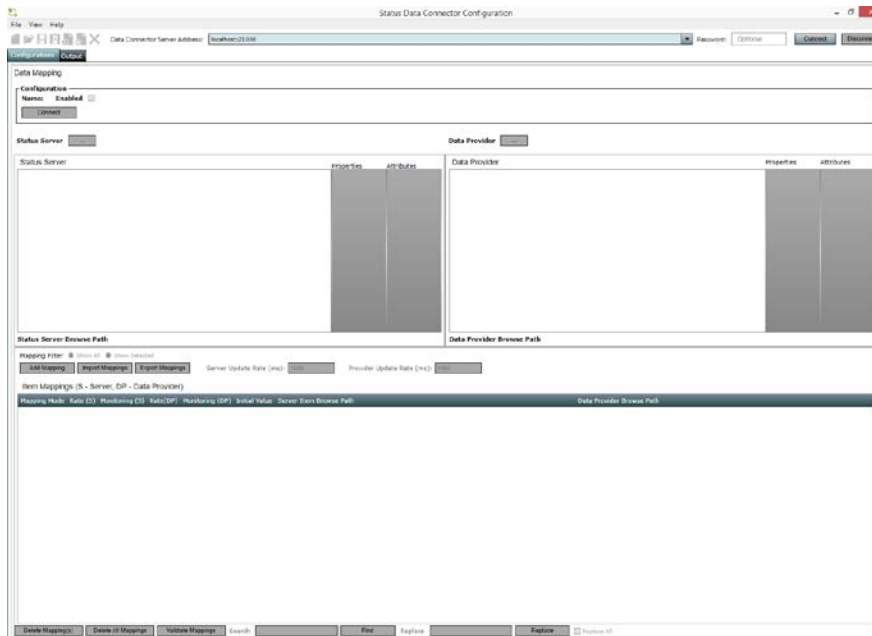


Figure 6 - The Status Data Connector GUI

Mapping Your Device Data to Your Data Model

Data mapping is covered in much greater detail in [Part 12 of the Status Enterprise User Guide](#), as well as in the 'Working with Live Data' section of training videos at www.scadauniversity.com. For this paper, we'll show enough of the process to at least confirm that you have correctly installed the OPC Core Components and Data Connector service, and are ready to bring live data into your data model.

Step 1 – Connect to the Data Connector Server

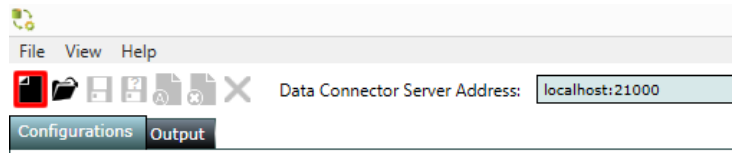
Enter the correct server address in the bar at the top of the Data Connector GUI. This is the location of the PC where the Data Connector Service is installed. If you are using the same PC that will be running the service, the default value of 'localhost:21000' will usually work.



After entering or confirming the address, click 'Connect'

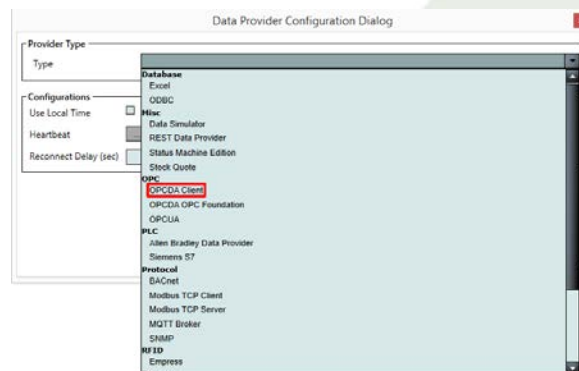
Step 2 – Create a New Mapping Configuration

Select the 'Add New' icon to create a new Mapping Configuration. Give the Mapping Configuration a name in the dialog window that appears.



Step 3 – Select Your Data Provider Type

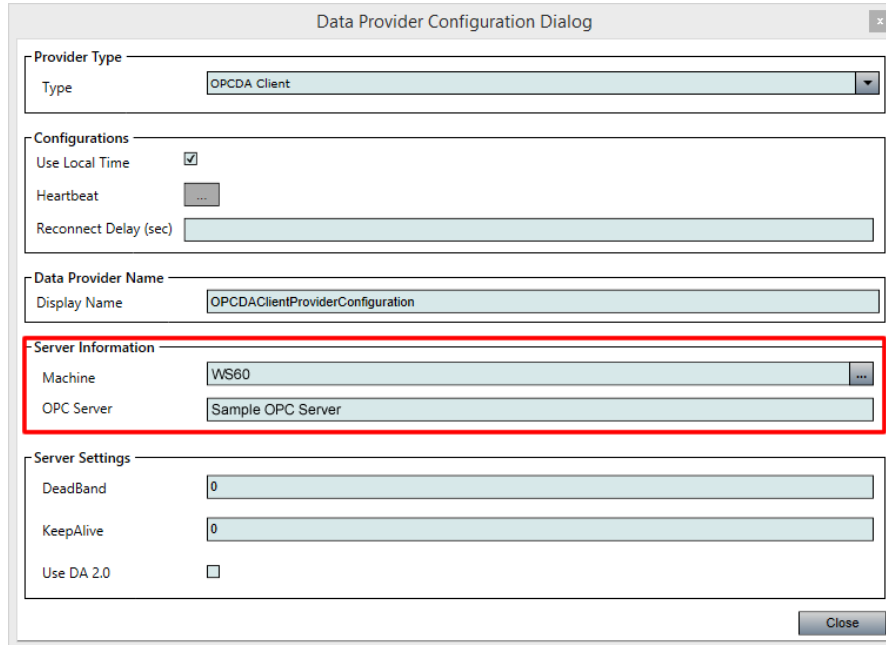
Select 'OPCDA Client' as the Type in the 'Data Provider Configuration Dialog' window that appears. The OPCDA provider is located under the 'OPC' heading in the drop-down menu.



Step 4 – Select Your OPC Server

Configure the ‘Server Information’ section by selecting your OPC server under ‘Machine’. The Data Connector can browse both your local machine and any other networked machines.

Note: If you are unable to locate your OPC server, check to make sure the [OPC Core Components](#) are installed correctly.



The screenshot shows the 'Data Provider Configuration Dialog' with the following fields:

- Provider Type:** Type: OPCDA Client
- Configurations:** Use Local Time (checked), Heartbeat (button), Reconnect Delay (sec) (text input)
- Data Provider Name:** Display Name: OPCDAClientProviderConfiguration
- Server Information (highlighted):** Machine: WS60, OPC Server: Sample OPC Server
- Server Settings:** DeadBand (text input: 0), KeepAlive (text input: 0), Use DA 2.0 (checkbox)

Additional server settings can be configured here as well.

Step 5 – Confirm and Connect

Click ‘Connect’ after confirming all settings are correct. The ‘Data Provider’ listed should be the OPCDA Client you just selected. The ‘Status Server’ should be pointed to the address of your hosted Status Server – which was provided at the time your Status Device Cloud account was created.

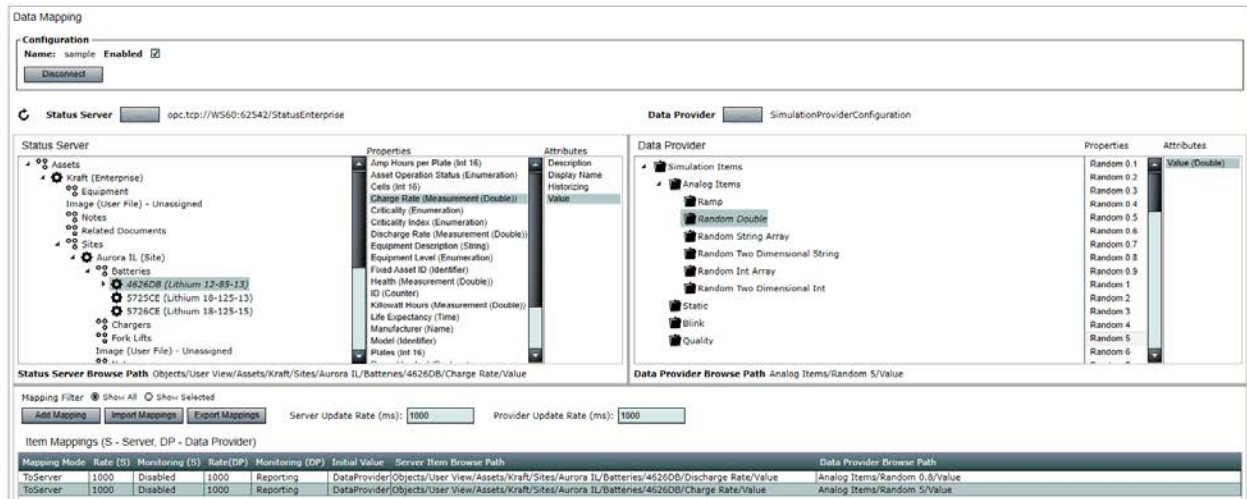


The screenshot shows the 'Data Mapping' configuration window with the following details:

- Configuration:** Name: New, Enabled (checked), **Connect** (button)
- Status Server:** opc.tcp://WS60:62542/StatusEnterprise
- Data Provider:** OPCDAClientProviderConfiguration

Step 6 – Create Your Data Mappings

Map the addresses or tags from your data source to properties in your data model. For your data model to receive real-time value updates, you must define which properties in your model are associated with which memory addresses in your controller (Example below shows simulated data from the Data Simulator provider).



Mapping Mode	Rate (S)	Monitoring (S)	Rate(DP)	Monitoring (DP)	Initial Value	Server Item Browse Path	Data Provider Browse Path
ToServer	1000	Disabled	1000	Reporting		DataProvider/Objects/User View/Assets/Kraft/Sites/Aurora IL/Batteries/4626DB/Discharge Rate/Value	Analog Items/Random 0.5/Value
ToServer	1000	Disabled	1000	Reporting		DataProvider/Objects/User View/Assets/Kraft/Sites/Aurora IL/Batteries/4626DB/Charge Rate/Value	Analog Items/Random 5/Value

Note: To create data mappings, you must have both a valid data source and an existing data model with assets and properties to which data points can be mapped.

More detailed information on the specifics of data mapping can be found in [Status Enterprise User Guide Part 12 – Data Connector Service](#). Data mapping is also discussed in the training videos at www.scadauniversity.com under the section 'Working with Live Data'.

Additional Information

More information – including training videos, product documentation, case studies, and more – can be found at www.scadauniversity.com.

Learn more about the Data Connector in [Status Enterprise User Guide Part 12 – Data Connector Service](#).

Learn more about creating your data model in [Status Enterprise User Guide Part 2 – Data Model Designer](#).

B-Scada provides software and hardware solutions for the monitoring and analysis of real time data in the SCADA (Supervisory Control and Data Acquisition), IoT (Internet of Things) and smart city domains. B-Scada systems are sold worldwide in various verticals including: building automation, transportation, smart grid, manufacturing, agriculture and commerce. B-Scada solutions are deployed onsite and as cloud-hosted solutions in a SaaS (Software as a Service) model. Learn more at <http://scada.com>.

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