

Description: Guide to bridging many OPC points into a database using BridgeWorX.

OS Requirement: Win XP/Server 2003/ Server 2008/Vista/Windows 7

General Requirement: General knowledge of BridgeWorX and databases. You should already have a BridgeWorX configuration and a table in a database where you would like to bridge your data.

Introduction

BridgeWorX allows you to make connections to and from your OPC Servers, databases, Web services, and other custom applications. One of the most common uses for BridgeWorX is to log OPC data into a database. You can write many OPC points to a database at the same time. This document will show you how to do this with a few simple steps.

Creating Data Connectors

1. Launch the BridgeWorX Configurator by going to Start → All Programs → ICONICS BizViz → BridgeWorX → BridgeWorX Configurator.
2. In the tree control on the left-hand side, expand Data Connectors → OPC Connectors.
3. Right-click on OPC Connectors and select New → Data Connector.
4. Give your data connector a name and a description.
5. Select ONLY READ for the Data Direction.
6. In the Read from OPC tab, select OPC Item Array for the Input Type and click on the “Add” button to input your OPC Points.
7. From the Unified Data Browser, you can multi-select as many points as you want. You can either use the Shift key to select a block of tags, hold down the Ctrl key to select individual tags, or if all of your tags are within the same folder, you can right-click on the folder and select Enter Up. Click “OK” when you have selected all of your tags.

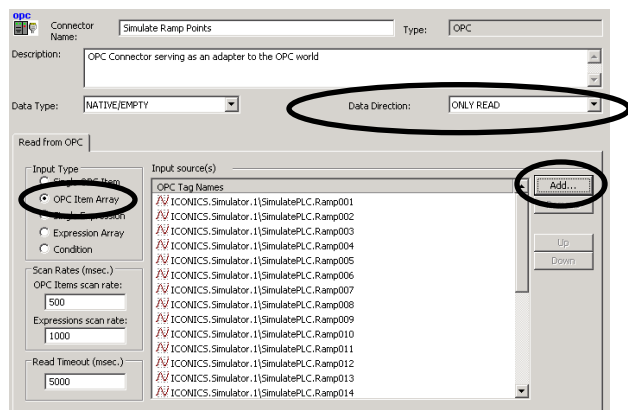


Figure 1 - OPC Connector Configuration

8. Click “Apply” to save the settings for the OPC Connector.
9. In the tree control on the left-hand side, right-click on Database Connectors and select New → Data Connector.
10. Give your data connector a name and a description.
11. Select ONLY WRITE for the Data Direction.
12. In the Database Connection tab, click the Database Login button; the Database Connections Browser should come up.
13. If you have already made a connection to the database you want to use, you can select it; otherwise, you can right-click on the type of database connection you want to make and select Insert New Connection to create a connection to your desired database. Depending on the type of database you would like to connect to, you will get a different dialog box. Please ask your database administrator for assistance if you need help with the database credentials or other information.

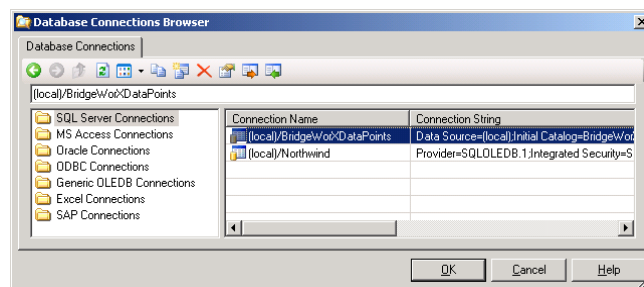


Figure 2 - Database Connections Browser

14. Once you have selected the targeted database, click “OK” to return to the Configurator. You should see the connection string. You can also click on the “Test Connection” button to make sure you can successfully connect to the database. If you know or suspect that your database schema has recently changed, make sure you click on the “Reload Schema” button to update it.

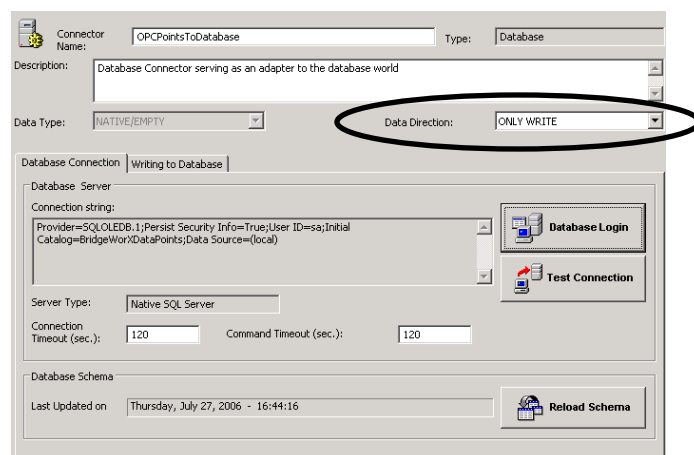


Figure 3 - Database Connector Configuration

15. Select the Writing to Database tab.

16. Choose Inserting record(s) into a table as your Operation Type.
17. Click on the “Browse”  button in the Operation Details section to bring up the Single Table Selection window. Select the table where you would like to store your OPC data and click on “OK”.
18. Click on “Apply” to save the configuration.

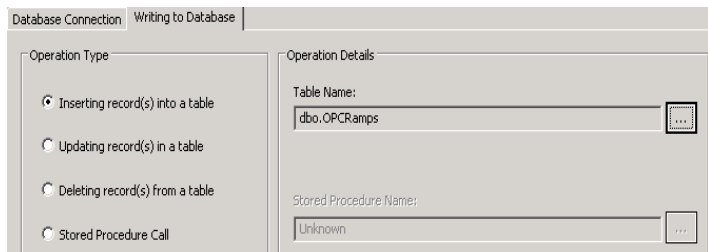


Figure 4 - Database Connector Configuration: Writing to Database

Creating a Transaction Diagram

1. In the tree control on the left-hand side, expand Transaction Tools → Transaction Diagrams.
2. You can create a new diagram folder by right-clicking on Transaction Diagrams and selecting New → Diagram Folder, or you can use an existing one.
3. Right-click on the desired diagram folder and select New → Transaction Diagram.
4. Give the diagram a name and an optional description.
5. Click on the “Run Diagram Designer...” button to bring up the Transaction Diagram Designer.
6. In the Diagram Tasks list on the right-hand side, drag and drop “OPC to Database”  task into your designer working space.
7. Double-click on the task to bring up the Transaction Task Properties window.
8. Give the task a name and an optional description.

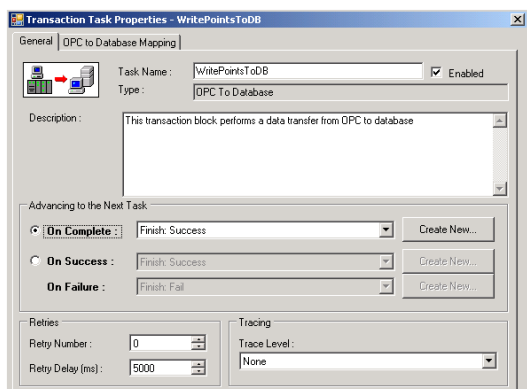


Figure 5 - General Transaction Task Properties

9. Click on the OPC to Database Mapping tab.
10. In the Destination Database Connector, select the database connector that you made in the previous section.
11. Select your first Data Source and click on the “Browse”  button to bring up the Data Source Browser.

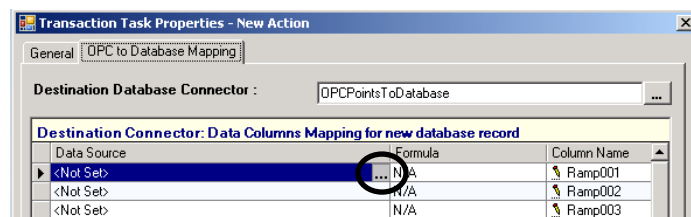


Figure 6 - OPC to Database Mapping

12. In the OPC Elements Tab, expand the OPC Connector that you just created in the previous section. All of your data points that you have added to that Connector should appear.
13. Double-click on the Connector name itself to add all of the data points listed in the connector.
14. Click on the “Bind Current Selection” button.
15. You should now be returned to the Transaction Task Properties dialog and all of your Data Sources should be filled in the same order as the tags were added.

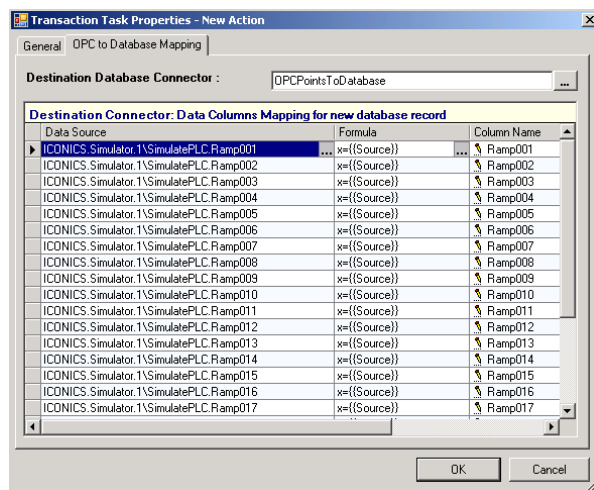


Figure 7 - OPC to Database Mapping with Data

NOTE: The number of columns in your database must be greater than or equal to the number of tags that you are trying to write to the database. Each tag will be one column, and each time you run the transaction, it will insert a new row.

16. Click on “OK” to save and exit the properties window.
17. Click on File → Validate to make sure there are no errors in the transaction.
18. Go to File → Save Diagram to save the transaction.
19. Close the Transaction Diagram Designer by going to File → Exit.

Creating and Running a Transaction

1. In the tree control on the left-hand side, expand Configurations → your configuration.
2. You can create a new configuration folder by right-clicking on the configuration and select New → Transaction folder, or you can use an already existing one.
3. Right-click on the Transaction folder and select New → Transaction.
4. Give the Transaction a name and an optional description.
5. Check the Enable checkbox.
6. Select the transaction diagram that you just made in the previous section.
7. Click on “Apply” to save the transaction.

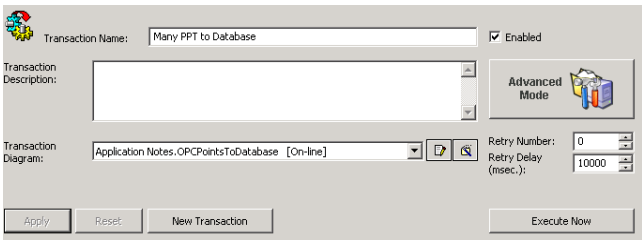


Figure 8 - Configuring a Transaction

8. Start the BridgeWorX service by clicking on the “Start/Stop Transaction Service” button.
9. You should see the traffic light turn green when the service has started.
10. Click on the “Execute Now” button to run the transaction.
11. You should get a confirmation saying that the transaction has been successfully submitted for execution.

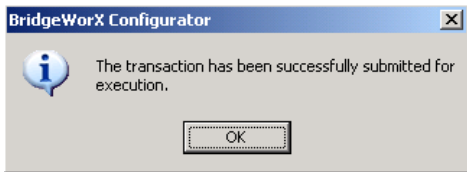


Figure 9 - Confirmation Message

12. Click “OK” to the message. You should now be able to look at your database for results.

Viewing the Results

Assuming you were writing to a SQL Server database, you can use the following steps to view the results. Otherwise, please contact your database system administrator for assistance.

1. Launch the Microsoft SQL Server Management Studio by going to Start → Programs → Microsoft SQL Server →

- SQL Server Management Studio. Connect to your local SQL Server by clicking on the Connect button.
2. Once you are connected, expand (local) → Databases → your database → Tables in the left-hand pane.
3. You should see your targeted table in the right-hand pane now.
4. Right-click on the table and select Open Table.
5. A window will open; you should now be able to see all of your bridged OPC values in each column of your table, with one row per each transaction you executed.

TC_11.BWX_Ramps - dbo.OPCRamps					
	Ramp001	Ramp002	Ramp003	Ramp004	Ramp005
	23	33	43	53	63
	56	66	76	86	96

Figure 10 - Viewing Results with SQL Server Management Studio