

Description: This Applications Note will guide you through the various ways to debug your BridgeWorX transactions.

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

General Requirement: BridgeWorX version 9.x and Unified Web Interface.

Introduction

There are two ways to debug BridgeWorX transactions.

- a) BridgeWorX Transaction Tracing.
- b) NT Event Logging

Transaction Tracing

Transaction Tracing lets you visualize the exact flow of your transaction, including what path it followed (if there was more than one possible path), and what errors occurred each blocks. There are two levels of tracing: **Task only** or **Task and each Data Mapping step**. The latter covers more detail by tracing each and every read and write that takes place.

Transaction Tracing is turned off by default. To turn on tracing, go into the transaction diagram for the transaction that you want to trace. In the **Properties** dialog of each transaction block (e.g. OPC to OPC, Database to OPC, Conditional Block, etc.) there is a drop-down list at the bottom right that allows you to specify the trace level.

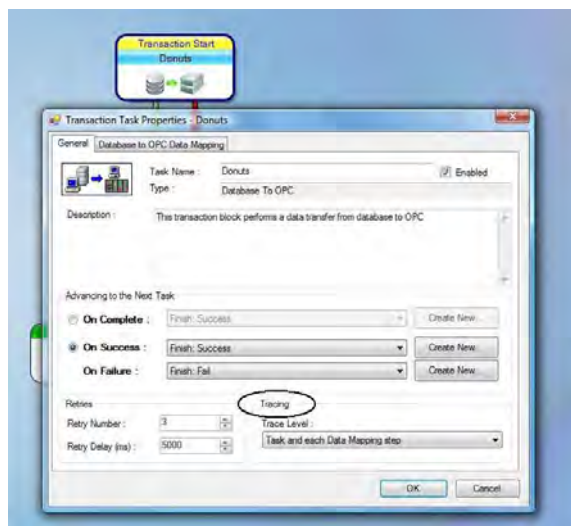


Figure 1 – Enabling tracing at the transaction block level

You also need to enable transaction tracing for the specific transaction from the transactions configuration (Figure 2).

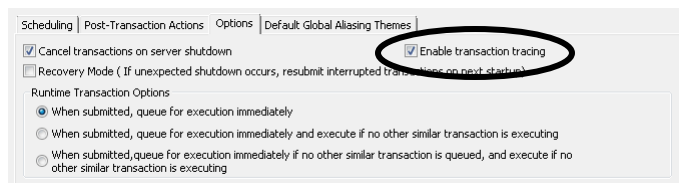


Figure 2 – “Enable transaction” tracing checkbox

Visualizing Trace Information

Once you have enabled tracing in all of the desired blocks, the next time you execute that transaction it will have a trace file associated with it.

Launch the Unified Web Interface by clicking on the Visualize Transactions button in the BridgeWorX Configurator toolbar (Figure 3).

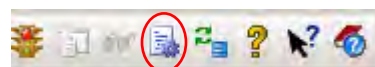


Figure 3 – Visualize Transactions Button

After the Web Interface has finished loading, expand BridgeWorX and click on your transaction folder in the tree. This should open a list of the transactions you’ve executed.

Each individual execution of every transaction is available for to visualize through the Web Interface. However, only those transactions with tracing enabled will actually show logged information. To visualize the tracing information for a particular transaction, simply click on the “success” or “failure” icon on the left.

It will launch another Internet Explorer window with a map of the transaction blocks that your transaction executed.

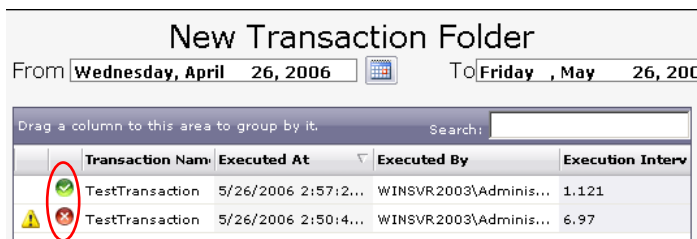


Figure 4 – Launching the tracing information

NOTE: Items in the trace file can be clicked on to reveal the task and data mapping details. Figure 5 shows an example of what happens when you click on a Database to OPC block.

The details of OPC and database reads or writes are listed here, making these details valuable for debugging communications issues.



Figure 5 – Transaction Trace Details

NT Event Logging

This debugging method is generally used for success / fail situations and customized status notifications.

BridgeWorX generates its own set of NT Events by default, to keep the user informed of things such as:

- Starting \ Stopping the BridgeWorX Service
- Starting a transaction
- Completing a transaction
- Post-Transaction Action status
- Archiving status

To be able to view these events, you first need to make sure they are enabled under License Monitor.

Start -> Programs -> ICONICS BizViz -> Tools -> License Monitor / Events tab. Scroll down the list to the entry that says **BridgeWorX Service**. Check the BridgeWorX Service Box if it is not already checked to enable event logging. Enter a desired number for NT Event severity level. The default level is 500.

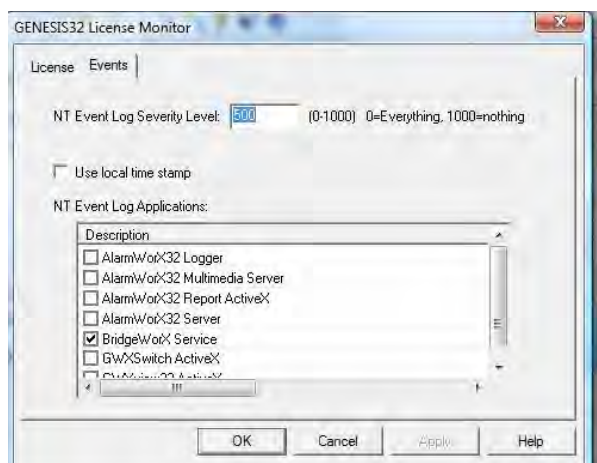


Figure 6 – License Monitor / NT Event Logging

NT Event View – (Windows XP and Server 2003)

To view these events, simply open your **Event Viewer** from your **Administrative Tools** menu (under the Control Panel).

BridgeWorX events will be logged to the **Application** section with a Source of “ICONICS Event”.

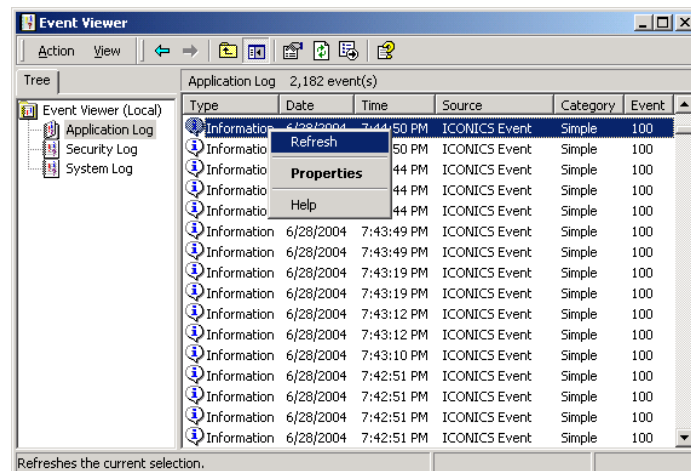


Figure 7 – Refreshing the Event Viewer

Note: The Event Viewer does not refresh automatically, so if you keep it open while running BridgeWorX transactions, you should periodically refresh it by right-clicking on the list of events and selecting **Refresh**.

If you double-click on an event in the list, it will bring up some additional information about that event.

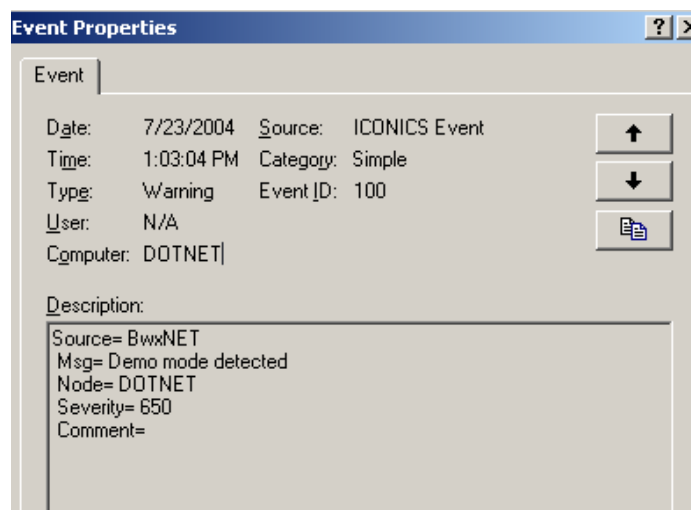


Figure 8 – BridgeWorX event with license mode detection

NT Event View – (Windows Vista, Server 2008 and Windows 7)

To view these events, open your **Event Viewer** from your **Administrative Tools** menu.
Expand Event Viewer (local) , Windows Logs and click on Application.

Details tab can provide the more information on a certain event.

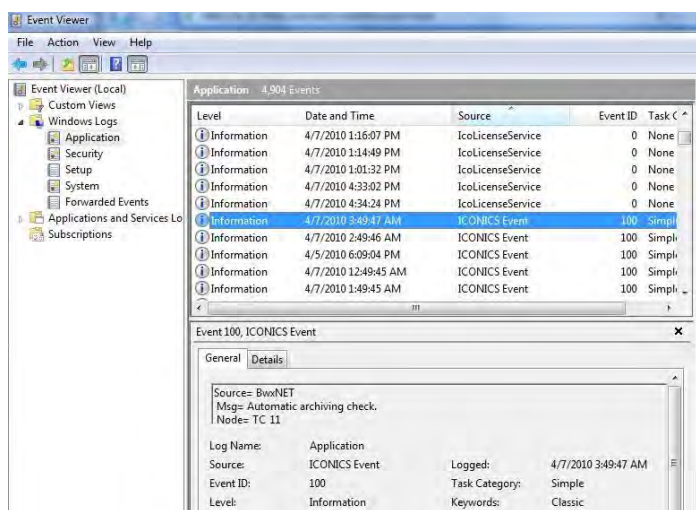


Figure 9 –Event Viewer for Windows Vista/ Server 2008 /Windows 7.

Whenever you run a transaction, at least two events will be logged to the Event Viewer: one to say that the transaction has been added for processing, and one to say if the transaction completed successfully. If your transaction was successful, you will see an event that has a message of “Completed Transaction: [Trans_Name] (ExecutedByUser)” and a Comment of “Last Error Code is (bwxErrNone)”. An example of an error code is “bwxErrProcessing”. To get more in-depth information about what went wrong in your transaction, you should use the Transaction Tracing debugging method which was described at the beginning of this document.

Custom NT Events

BridgeWorX allows users to customize their transactions so that they output NT Event messages at certain points during the transaction. There is a special transaction block just for this purpose, and it is called the *Event Generation* block. This block can be added anywhere inside the flow of your transaction diagram, and you can think of it as a “println()” statement in the middle of a complicated chunk of code (your transaction).

The Event Generation block allows you to customize the message that will be sent to your Event Viewer, and also allows you to use a number of predefined “shortcuts” to insert specific text about your transaction. Here is a list of those shortcuts:

- /T – current transaction name
- /B – name of block in which last error occurred
- /E – last error description
- /L – name of the last executed block
- /C – current block name
- /D – description of current block

Feel free to use the Event Generation block as a way to output status messages to your Event Viewer. It can come in especially handy if there are long delays between blocks and you are wondering where in the transaction your BridgeWorX Service is now.