



BridgeWorX™

Product Brief for BridgeWorX V9.2

April 2010



Looking for a data integration and interface management product that requires no programming, automatically collects all pertinent information from the source and target systems and exchanges data to and from the device to the enterprise? Look no further than BridgeWorX™. This user friendly, easy to configure, transaction based product can bridge a variety of data sources, including OPC, most databases such as Microsoft® SQL Server®, Microsoft Access, Oracle, SAP and other ODBC compliant databases, Web services, and more!

Powerful Microsoft .NET Technology

BridgeWorX is designed from the ground up, based on Microsoft .NET technologies, and is written in the Microsoft C# (C-Sharp), VB.NET and ADO.NET programming languages. Connecting to source and target systems is fast, efficient and easy to configure. ICONICS brings you the most advanced data integration and interface management tool available today, taking maximum advantage of Microsoft's most powerful technologies. BridgeWorX uses Microsoft .NET technology to move data from source to target systems.

The Ideal Data Integration for Manufacturing

BridgeWorX can move data from any database platform to another, and transform data between the manufacturing floor, MES systems and ERP applications by leveraging open standard OPC- and ODBC-compliant data sources.

Features	Benefits
Connect to any Data Source	Connect to a wide variety of data sources, including: OPC DA, OPC HDA, A&E, OPC DA XML, OPC UA, SQL, Oracle, ODBC, Web Services and SAP.
Generate SQL Queries without Writing a Line of Code	Connect to SQL sources to get your data without any SQL knowledge, using the Query Wizard.
Move Data Throughout Your Enterprise using the Graphical Workflow Configuration Wizard	BridgeWorX' easy-to-navigate, graphical workflow configuration wizard allows users to more easily configure data movements to and from individual data sources.
Web-based Configuration	Workbench32 allows for easy web-based configuration.
Receive Warnings from Failed Transactions	Receive an email when a transaction fails. This is the ideal way of monitoring your transaction status.
Real-Time Scheduling on a Variety of Triggering Options	Trigger transactions based on periodic, file-based, expression-based or alarm value status or real-time OPC events, database changes or NT events.
Visualize Transactions	Get a complete visual overview of all the steps and actions of the transaction.
Enhance Project with SAP Connection	Retrieve any needed data from any business area via the world's most implemented ERP system.

Open Database Connectivity

Powerful Microsoft .NET technology allows the data mining of virtually any corporate database. BridgeWorX can integrate information from different data sources and move data to different target systems. Data sources such as Microsoft SQL Server, Microsoft Access, ODBC, OLEDB, MSDE, Oracle, AspenTech, OSI PI, OPC HDA (Historical Data Access), OPC A&E (Alarm and Events) and OPC real-time information can all be accessed and moved. BridgeWorX uses Web services technology to data mine other Web services over the Internet or intranets.

BridgeWorX Architecture

In BridgeWorX, the data transaction architecture consists globally of 3 steps.

Scheduling Trigger
Transaction Diagram
Post Transaction Actions

In the following sections, the architecture will be further explained.

Advanced Scheduling/Triggers

The BridgeWorX data transaction will be started manually or by a trigger. This trigger will start one or more data transactions. The powerful Unified Data Manager allows for the simultaneous execution of transactions.

These transactions can be triggered on the following criteria:

Manually based on direct operator commands – trigger transactions from the Unified Web Interface or from the BridgeWorX Configurator.

Periodically based on time and/or date – triggers of this type will start the transaction based on a date & time and/or recurring interval.

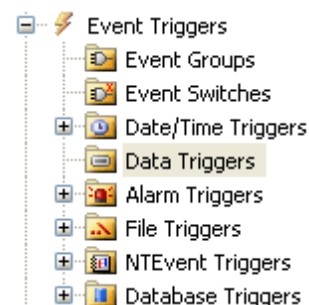
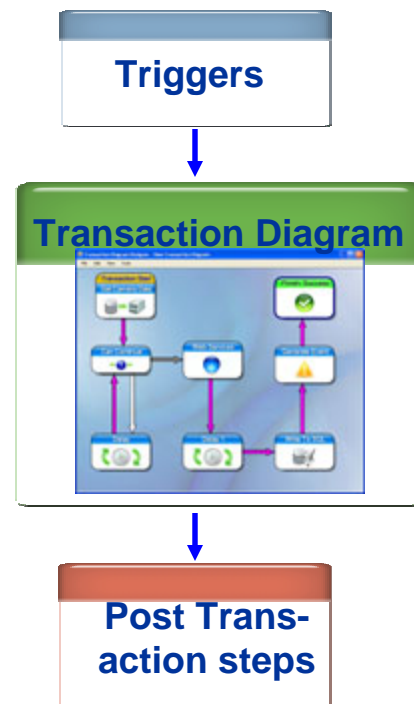
Based on alarms or events – trigger transactions when any specified alarm occurs, based on the OPC A&E standard.

Based on real-time OPC tags and expressions or calculations – trigger transactions based on data expressions or real-time OPC values.

Based on NT Events – trigger transactions based on the desired Windows NT Event.

File System changes – trigger transactions when a file or folder created, changed, or removed or when some other property of a folder or file is changed.

Based on database value – trigger transactions based on the result of a SQL query or database change.

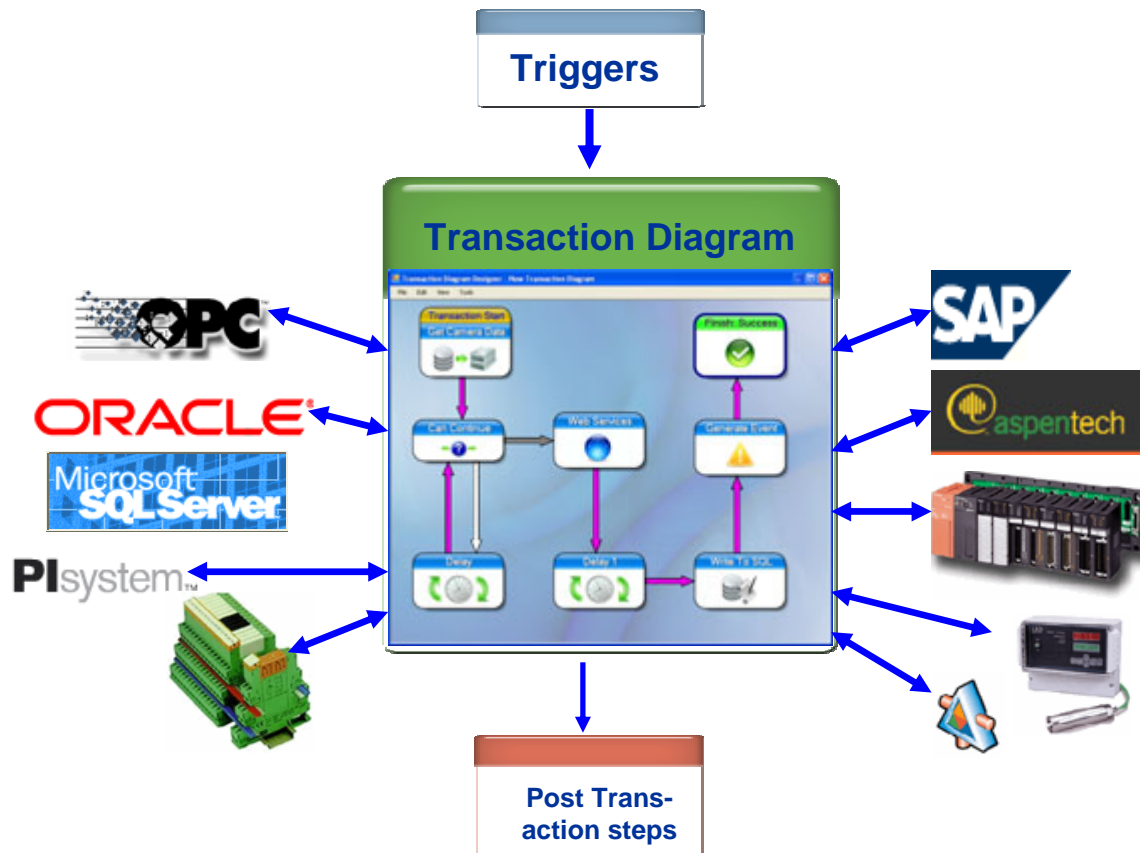


Event Switches – specify which trigger in an array of options should be active at any one time. The active trigger can be selected via an OPC value.

Event Groups – combine triggers together and in effect create another trigger that will only start a transaction when all trigger conditions are true.

Transaction Diagram

In this section, we'll discuss the transaction diagram itself. This is the core of the application. The data flow and logic are defined in this diagram. The first part of this paragraph will describe which data sources you can use in your diagram. The second part will describe how easy it is to create a diagram and what types of transaction workflow building blocks are available.



Connect to Any Data Source

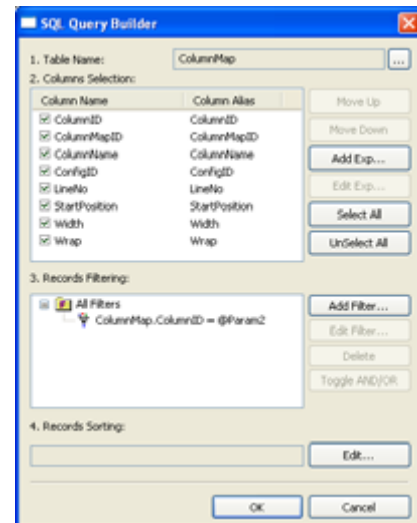
This revolutionary data integration and interface management product connects with any data source, such as Microsoft SQL Server, Microsoft Access, Oracle, SAP, Web services, and any customer database using powerful data integration technology. Move information from real-time OPC data sources as well as historical data sources. BridgeWorX integrates with OPC, most databases, and others such as:

Most SCADA, and DCS Systems
Maintenance Systems
MES, ERP and Plant Historians
LAB Information Systems
Custom Corporate Databases

Connect to Databases

In V9.2 it is extremely easy to get the data out of a database using the SQL Query Builder. This wizard will get required data for your project in three steps, without requiring any SQL query language knowledge.

You can even parameterize your queries to make the data even more dynamic. Parameter values can come from OPC tags, manual operator entry or dynamic global variables.



Connect to SAP

The ICONICS SAP Connector is an add-on to BridgeWorX. This connector enhances the functionality of BridgeWorX to read data from and write to SAP R/3 and SAP BW. The connector is certified by SAP to retrieve data via the SAP RFC interface. The ICONICS SAP Connector uses a BAPI search wizard to select the BAPI function and an input parameter to set the parameters. Parameters can be dynamic as well, so the data returned from SAP is then dynamically manipulated in the transaction diagram.

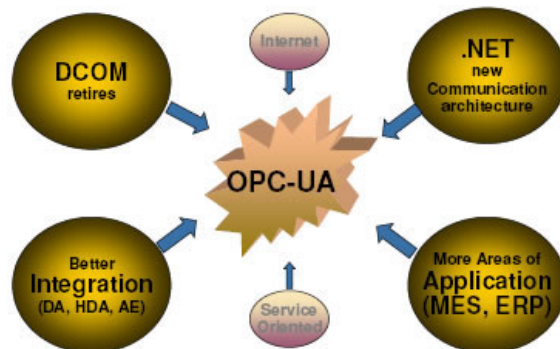
Connect to OPC

All ICONICS product are OPC to the Core. The latest OPC standards are implemented in all the ICONICS products.

BridgeWorX supports the following OPC standards:

- OPC DA 1.0, 2.0, 3.0
- OPC XML DA
- OPC A&E
- OPC UA

OPC UA is the newest OPC standard and it is supported in version 9.



Connect to Web Services

BridgeWorX uses Microsoft's newest Web Services technology to deliver Web-based information to any Internet Browser. BridgeWorX can connect to any Web Services-enabled database to integrate real-time and corporate business data to meet the most demanding data integration needs. Use this new technique to get data from the Internet and/or your corporate intranet and trigger other processes. The intuitive Web Services Wizard is automatically kicked off whenever you add a Web Services block to your transaction diagram.



Connect to SNMP

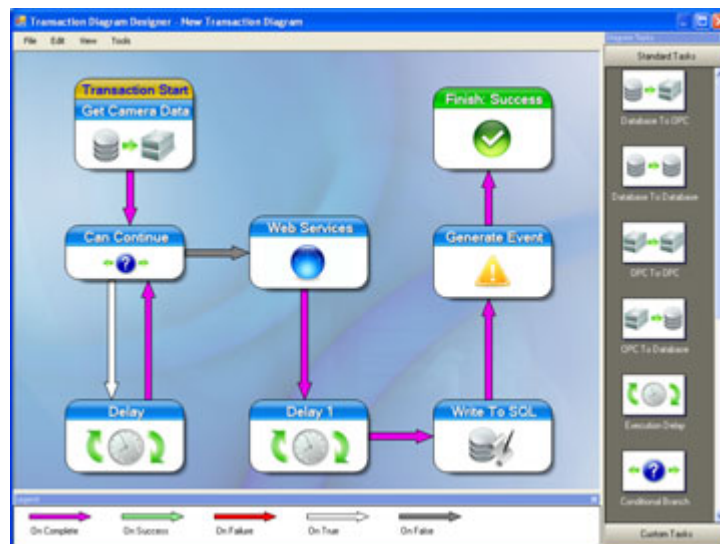
BridgeWorX V9.2 comes standard with the ICONICS SNMP Configurator. This tool makes it possible to get data from SNMP sources (e.g. routers/printers/switches). This data can be used in a BridgeWorX transaction diagram. For example, one application could be to calculate the throughput of your switches every five minutes and save them into a database.

User-Friendly Workflow Based Configuration

BridgeWorX has a very distinctive visual transaction data-mapping configuration wizard, which enables the users to easily configure data movements to and from real time OPC manufacturing devices to corporate information systems. BridgeWorX comes standard with the following transactions blocks:

OPC to Database	Database to Database
OPC to OPC	Database to OPC
Web Service Block	Event Generation Block
SQL Command Block	Execution Delay Block
Conditional Branch Block	File Transfer Block
.NET Custom Task	Status Block (success/failure)

The Transaction Diagram Designer looks like the figure here below. Building a new transaction diagram requires no programming knowledge; everything you see can be accomplished by drag and drop, point and click, and customization wizards.



BridgeWorX' unique data-mapping configuration capabilities coupled with no requirement for coding result in quicker implementation cycles for data transfer and interface management. The costs associated with time consuming custom programming and extensive training no longer exist. It also eliminates the need for individual specialists for each of the participating systems. BridgeWorX will definitely result in quicker ROI!

One feature that is unique to BridgeWorX is the concept of actions after a transaction has been processed. Each transaction reaches one of three (3) states at the end of a transaction and a set of actions can be associated with each state. The states are:

On Success – will be executed if the data transaction operation finishes successfully.

With this feature you can for example notify the system administrator that the transaction failed and he should look at his database.

The Standard and Enterprise versions of BridgeWorX also come with a Unified Web Interface, which uses the BridgeWorX Web Service to interact with and visualize data on any Web-enabled browser. Users can visualize, execute and configure transactions without requiring any client software to be installed. The Unified Web Interface is now an optional add-on for Lite users as well, so everyone can take advantage of this functionality. In particular the Unified Web Interface is invaluable for debugging transactions with the way it visualizes transaction tracing information.



Scaleable Architecture

BridgeWorX is completely based on Microsoft.NET and is designed to scale from the simplest to the most demanding data movements between source and target systems. Create and deploy a few transactions that run simultaneously on a single CPU server, or deploy your applications for an entire enterprise running on multiprocessor servers.

Totally Complete and Integrated Solution

BridgeWorX is tailored to fit your overall system design and requirements and can be integrated with ICONICS HMI SCADA products or any other third-party HMI, SCADA, Control, MES or Visual Basic application. Numerous features in BridgeWorX integrate seamlessly with any IT infrastructure. Benefit from event logging, native performance monitoring with easy-to-use tools for analysis, debugging and performance optimization.

Time-Saving Configuration Capabilities

Transactions can be quickly configured using an intuitive data-mapping configuration wizard, featuring powerful reusable transactions, post-transaction actions, scheduling actions and user/role management.

Build Tracking Systems Using BizViz and GENESIS32

Easily build batch reporting systems and process tracking and tracing systems using the products from the GENESIS32 and BizViz suites. Since you can move data from any source to any destination, based on specific events at the automation or database layers, you can capture the pertinent data to build your own tracking system. Please contact an ICONICS representative to learn more about how these types of systems can be designed and implemented.

Store and Forward Technology

BridgeWorX is best optimized with the GENESIS32 product suite. Consolidate information from multiple TrendWorX stations that are remotely located. The GENESIS32 product suite can provide the Fault Tolerant Architecture to ensure historical and alarm data is always recorded accurately and continuously. BridgeWorX extends these Store and Forward capabilities by providing the ability to quickly and easily distribute data to multiple databases and replicate data from remote facilities triggered either manually, based on time, alarms, events, calculations, database values or other criteria.

Fits Applications of Any Size

BridgeWorX is available in three different versions:

1. **BridgeWorX Lite** is well-suited for stand-alone applications, requires fewer resources and is the least expensive product. Supports 5 active transactions and 25 configured transactions.
2. **BridgeWorX Standard** is ideally suited for mid-tier, site-wide applications requiring a powerful Web interface and remote connectivity. Supports 15 active transactions and 25 configured transactions.
3. **BridgeWorX Enterprise** is designed for corporate-wide data bridging. Create, schedule, direct and Web-enable an unlimited number of active transactions. Can be configured for 1, 2, or multiple CPU machines.

Hardware Requirements

BridgeWorX – Lite Hardware Requirements

Microsoft Windows 2000 Workstation or Server, Windows XP Professional, or Windows Server 2003
MSDE or Microsoft SQL Server 2000, or SQL Server Express or Microsoft SQL Server 2005
Pentium 4, 1.2GHz or greater
512 MB of RAM

BridgeWorX – Standard Hardware Requirements

Microsoft Windows 2000 Workstation or Server, Windows XP Professional, or Windows Server 2003
MSDE or Microsoft SQL Server 2000, or SQL Server Express or Microsoft SQL Server 2005
Microsoft Internet Explorer 6.0
Pentium 4 CPU, 2.0 GHz or greater
1 GB of RAM

BridgeWorX – Enterprise Hardware Requirements

Microsoft Windows 2000 Workstation or Server, Windows XP Professional, or Windows Server 2003
MSDE or Microsoft SQL Server 2000, or SQL Server Express or Microsoft SQL Server 2005
Microsoft Internet Explorer 6.0
Pentium 4, 3.0 GHz or greater
2 GB of RAM



Visualize Your Enterprise™

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