



BridgeWorX64 Quick Start



APPLICATION NOTE

June 2017

Description: This applications note is intended to give users a quick start on configuring and running transactions using BridgeWorX64.

General Requirement: Basic knowledge of GraphWorX64 is required to demonstrate triggering a transaction from GraphWorX64.

Introduction

In this Quick Start you will learn some of the basics of BridgeWorX64 by walking through the configuration of a simple transaction.

BridgeWorX can be found inside of Workbench under Bridging.

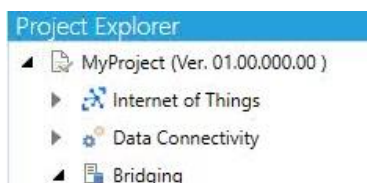


Figure 1 - Bridging

It will contain two main sections: Transactions (where you can configure Priority, Retry Delay, Timeouts, etc.) and Templates (where you can configure a diagram of your desired scenario).

BridgeWorX64 transactions can contain these types of activities:

- Start, End
- Readers
- Writers
- Manipulators
- Conditions

Figure 2 shows the different activities we will use in this application note.

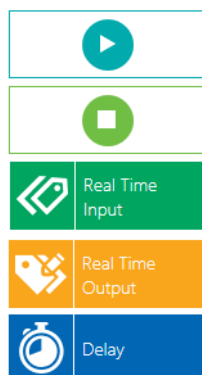


Figure 2 – Used Activities

The application note will give you an example of how to retrieve an OPC value and move it to another OPC tag. After 10 seconds the OPC tag will be set to 0 again.

Setting up BridgeWorX

Creating a Transaction

1. Under Bridging right click on **Transactions** and then on **Add Configuration**.
2. Name your configuration "NorthwindTest" and check the box for **Active Configuration**. Click **Apply**.
3. Right click on NorthwindTest and select **Add Transaction**. Name this transaction, "SIMtoOPC".
4. Check the **The transaction is enabled** box.
5. Click on the **+** icon next to Selected Template towards the bottom of the page. This will create a new template named "Diagram(1)". We will rename it later on.
6. Open the template designer by clicking on the  icon to the left of the **+** icon.

Designing a Template

In Template Diagram tab, we can easily select activities and by dragging and dropping them to create a diagram.

1. Rename our Template Name on the top bar to "Test Diagram."
2. If the Activities Library is not visible, click on the **Toggle Activities Library** icon in the grid, as pictured in Figure 3. This should open the Activity Library on the left.

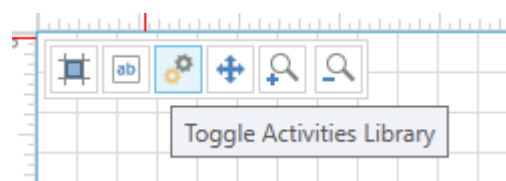


Figure 3 – Toggle Activities Library

3. The first two Activities in the will indicate start and end of our diagram.

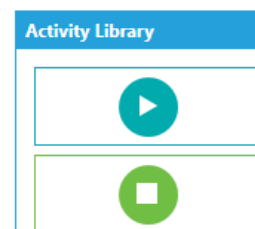


Figure 4 – Start, End Activity



BridgeWorX64 Quick Start



APPLICATION NOTE

June 2017

4. Drag the **Start** activity onto the diagram, then a **Real Time Input** activity. The Start activity should automatically connect to the Real Time Input activity.
5. Make sure the Real Time Input activity is selected. You should see its details to the right of your diagram. Name your Activity "Read OPC".
6. Scroll down to the Data Sources panel. Click to add a tag, and then browse for My Computer → Data Connectivity → OPC Data Access → Simulations → Double → Sine.
7. Now, add a **Real Time Output** activity to the diagram. This will take the value from the previous activity and write it to another data source. Name it "R/W stream"
8. Again scroll down to the Data Sources dialog and click select add new item, and browse for a point. Browse for My Computer → Data Connectivity → OPC Data Access → Simulations → Double → Static.
To the right of our newly mapped tag, click in the Output Expression cell, then on the Σ icon, to open the expression editor. Clear out the existing expression, then on the left side double click on **Previous Activity Output**. Change "Col[0]" to "Col[1]". This means we are copying the first row, second column of the dataset from our previous activity. Click **OK** to the expression editor.

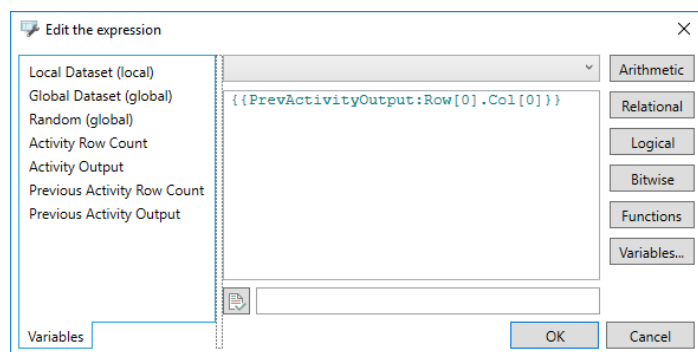


Figure 5 – Edit the expression

NOTE: You may wonder why are we taking Col[1] instead of Col[0]. Every Input activity in BridgeWorX64 returns a dataset, including the Real Time Input block. This is true even when the input block only has one tag. The first column (Col[0]) is the point name, and the second column (Col[1]) is the point value. You can see the column definitions for an input block by selecting that block and looking at the Data Schema section. You'll see for the Read OPC block that column 0 is PointName and column 1 is Value.

9. Add a Delay action to your diagram. Name it, "Delay 10s", and change the delay to 10,000 milliseconds.
10. Next, add another **Real Time Output Activity**, and name it "Write 0". In its Data Sources field, add the same simulator tag as the last output activity (@sim64:Double.Static("Static1").Value). In Output Expression put, "x=0".
11. To finish, add the **End Activity** to the diagram.
12. To finish our scenario, we would put an **End Activity** on our screen. Our diagram should look like Figure 6.

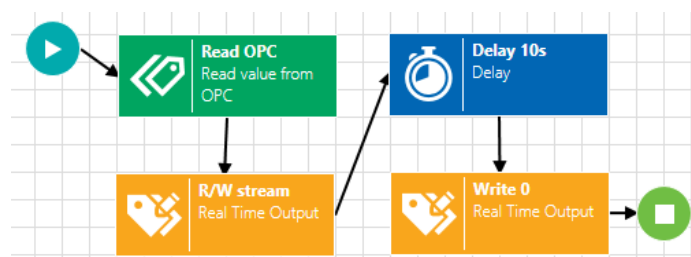


Figure 6 – Final Diagram

13. **Apply** your changes to the diagram and the transaction.

Starting Transactions from GraphWorX64

14. Open GraphWorX64.
Add these three points into your display, and add these text labels next to them:

Point	Label
@sim64:Double.Sine(Period[sec], Min,Max,Phase[deg]).Value	SQL Value
@sim64:Double.Static("Static1").Value	Simulated Value
bwx:SIMtoOPC/@@Execute	Start Transaction

NOTE: You should be able to browse for the last tag under My Computer → Bridging → SIMtoOPC → @@Execute.

15. Make sure that **DataEntry** is set to **True** for the @@Execute point.
16. Go into Runtime.
17. Set the Start Transaction point to 1. You should see the SQL value be copied into the simulated value, then 10 seconds later it should return to zero