Data Mining – Real-time Indirect Addressing Using DataWorX32 Alias

APPLICATIONS NOTE

October 2013

Description: Guide to dynamically change a data mining tag in GraphWorX32 runtime without Scripting
OS Requirement: Win XP Pro, Server 2003, Vista, Windows7
General Requirement: Basic understanding of alias in OPC servers; advanced skills in using the Data Mining OPC server; basic knowledge with GraphWorX32 and DataWorX32

Introduction

The ICONICS Data Mining OPC server allows you to read and write data to a database as if you are handling OPC data. One of the advanced features of this OPC server are the @@ tags. These special tags can perform additional requests to the database.

In this application note, our goal is to use the @@Column tag in conjunction with the DataWorX32 OPC server to allow for dynamic data source creation in GraphWorX32 runtime.

As you may remember from one of our other application note entitled *Data Mining – Dynamic Queries*, the @@Column tag comes with two parameters: the Column name, and the value of a parameter set in your data source. This application note also went through the steps required to change the value of the parameter dynamically through scripting, which in turn changes the value of the tag. The end goal of this application note is the same; however, it will do this without scripting. Instead, we will utilize DataWorX32 alias.

Database Connection

Before you being this task, you must probably configure a data source. For this example, we will use the well known Northwind Access database.

1. Open the Data Mining Configurator by going to Start → Programs → ICONICS Tools → Data Mining Configurator.
2. Make a connection to the Northwind access database if there isn't already one. If you are using the default sample configuration database, you can use the AccessConnection.

   NOTE: If you want to make your own connection, you can find the Northwind Database in C:\Documents and Settings\All Users \ICONICS\Examples32 directory.

3. Create a data source that points to the Products table. If you do not know how to do this, you can use the default sample configuration database' DataSource4 under the AccessConnection as an example.
4. Create a Parameter under this data source and point it to the ProductID. This is the parameter we will try to dynamically change using a DataWorX32 Alias.
5. When you are done with the configuration, make sure you click on Apply to save it. Also make sure that the configuration database is Active.
6. Figure 1 shows the configuration of the data source you should create.

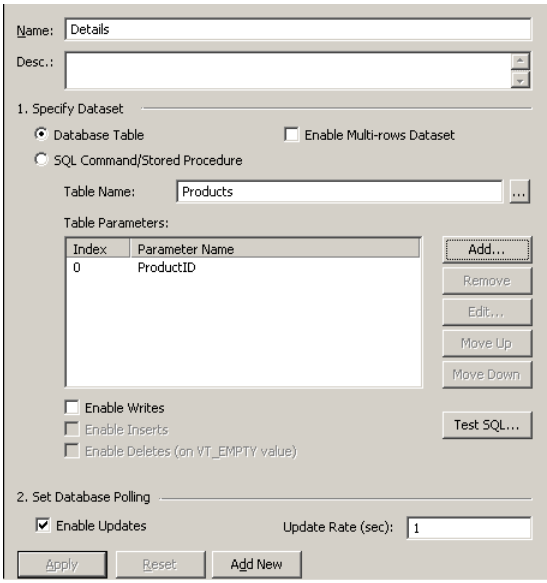

Figure 1 - Data Source Configuration

GraphWorX32 Visualization

Before we create the DataWorX32 alias, let us make sure that this tag works inside GraphWorX32.

1. Start GraphWorX32 by going to Start → Programs → ICONICS GENESIS32 → GraphWorX32 → GraphWorX32 and add a process point to the display.
2. In the Unified Data Browser, select the Details' @@Column tag.

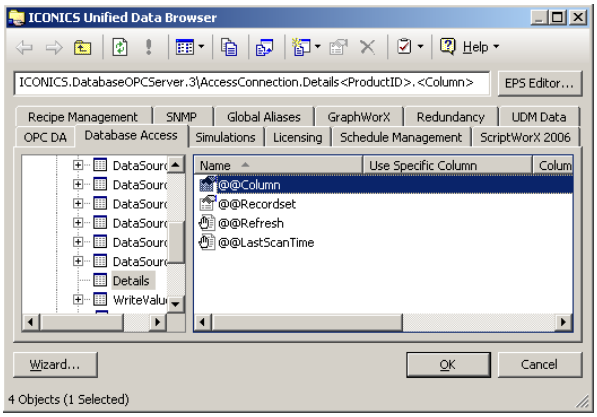

Figure 2 - Selecting the @@Column Tag

3. Notice that it asks for the ProductID, which is the parameter we inserted, and the Column name.
4. Change the ProductID to 39 and the column to ProductName. The display data type for your tag should be String. Your tag path should look similar to the one below:

   ICONICS.DatabaseOPCServer.3\AccessConnection.Details<**39**>.<**ProductName**>

5. When you go into runtime, your tag should read "Chartreuse verte". If you do not get this as a value, you should revisit the above steps or troubleshoot the Data Mining OPC server before you continue.
6. You may also add as many tags pointing to different columns and ProductID in the table.

DataWorX32 Configuration

Now, we are ready to configure an alias inside DataWorX32 to help us dynamically change the ProductID.

1. Start the DataWorX32 configurator by going to Start → Programs → ICONICS GENESIS32 → .DataWorX32 → DataWorX32.
2. Once you open the configurator, right-click on Address Space and select New → Folder
3. Name the folder DBMining.
4. Right-click on the newly created folder and select New → Register
5. Name this Register BarcodeReader.
6. On the Input tab, Select None, and check to give it an initial value of 1.
7. Right-click on the DBMining folder again, and select New → Alias
8. Name this Alias ProductID. On the Input tab, select Register and browse for the BarcodeReader register you just created.

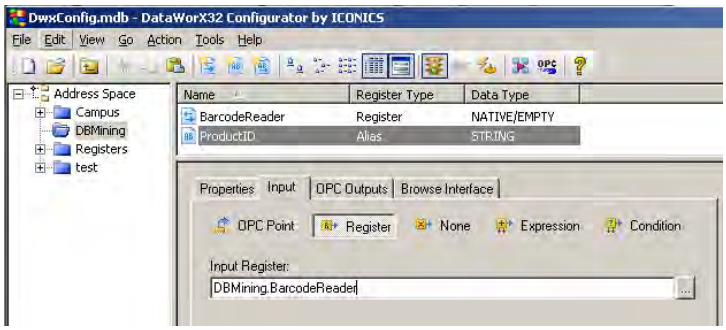

Figure 3 - DataWorX32 Configuration

9. Make sure this configuration database is active, if it is, make sure you click on the update runtime button. You can close the configurator now.

Tying It in GraphWorX32

Now that everything is configured, we just need to slightly change the tag in our GraphWorX32 display we used before to see the effects.

1. Open the GraphWorX32 display you created in the previous section.
2. Edit the tag so that the data source starts with DataWorX32 and goes to the DatabaseOPC server. Then, in place where you have the ProductID, put in the alias in double brackets. The tag below contains the proper syntax with the changed parts highlighted.

   ICONICS.DataWorX32.8\ICONICS.DatabaseOPCServer.3\AccessConnection.Details<[[DBMining.ProductID]]>.<ProductName>

3. Now, add a tag on the display that can write to the BarcodeReader tag.
4. Go into runtime and see that the tag shows the value "chai" since the default value for the Barcode is 1.
5. Change the register and see that the Data Mining tag also changes its value.