HMI Reports: Creating a Wonderware OPC Driver for FS Gateway

Introduction

This *Tech Note* describes creating and using the Wonderware OPC Driver to connect to data from AppServer and other Wonderware Products using the FS Gateway OPC Server.

Summary

To enable HMI Reports connectivity to Application Server or other Wonderware products, you must use the Wonderware OPC Driver in order to connect to an FS Gateway OPC Server. The Wonderware OPC Driver is based on OPC technology, and works with the FS Gateway OPC server in order to allow a limited number of concurrent OPC client connections.

Benefits

The Wonderware OPC Driver communicates with the FS Gateway OPC server rather than simply using the regular OPC Driver. This is because FS Gateway allows only 1 simultaneous OPC Client connection, and HMI Reports can establish up to 3 client connections. For example, HMI Designer Studio uses 1 connection for the Tag Browser, 1 connection for the Data Access Client, and 1 connection to get value updates in Logger Studio.

The Wonderware OPC Driver supports OPC 1.0 and OPC 2.0 standards. The driver can be configured to any local or remote OPC server with either a flat or a hierarchical architecture.

Application Versions

- HMI Reports 3.4

- FS Gateway 1.5 SP1

Prerequisite

Before completing the following steps, ensure FS Gateway is set up correctly according to either of the following *Tech Notes*:

- **Tech Note 393 Configuring FS Gateway for Communication Between a DDE Client and an Archestra® Data Source**

- **Tech Note 396 Configuring FS Gateway to Use the InTouch® Data Source**

Workflow for Wonderware OPC Driver and Report Designer Studio

After you add the Wonderware OPC driver to your project, Report Designer Studio establishes 1 client connection for tag browsing only. An OPC Client is *not* loaded for the Report Designer Studio. During the first connection to FS Gateway, the tag browser requests and saves the entire list of items from the OPC server into a text file at: **C:\Program Files\Wonderware\HMI Reports\System**. The name of that file is **<address of your OPC server>.DATA**.

Each time you open the Report Designer Studio, HMI Reports does *not* establish a new connection to OPC server, but provides a browse list from the existing text file. This is done to enable you to edit your project while the Runtime Engine is running, without damaging its client connection.

In order to refresh the list of browsed items from OPC server, you must manually delete or rename the existing browse text file, stop the Runtime Engine and then load Designer Studio again. Studio gets a new browse list of items from the OPC server and creates a new .DATA file.

Recommended Order of Execution

Because of the single OPC client connection limit, you must

- First, configure and verify your connection in the Logger Studio.

- Then, to be sure the connection is dedicated to runtime.

After you set up that connection, the following workflow is recommended:

1. Add the Wonderware OPC driver to your project.

2. Design your project.

3. Save your project and close Report Designer Studio.

4. Start the Runtime engine.

Driver Configuration

Load the Wonderware OPC Driver from the Source Definition window in Report Designer Studio.

1. Open HMI Reports Studio, then HMI Report Designer Studio.

2. Click Logger > Driver Configuration from the main menu.

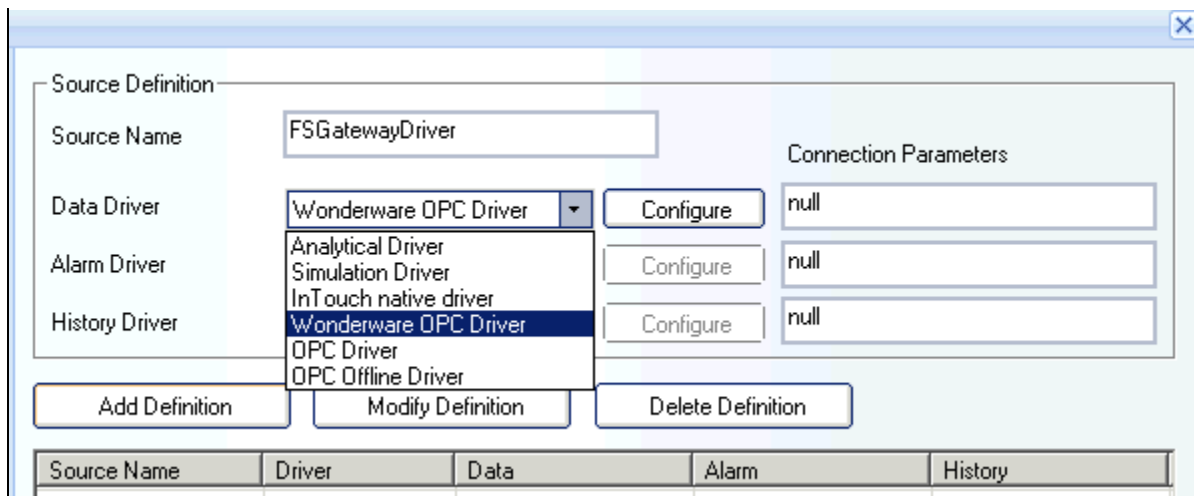3. Select **Wonderware OPC Driver** from **Data Driver** list.

Figure 1:

4. Click the **Configure** button to the right of the Data Driver field. The **Select OPC Server** dialog box appears (Figure 2 below).
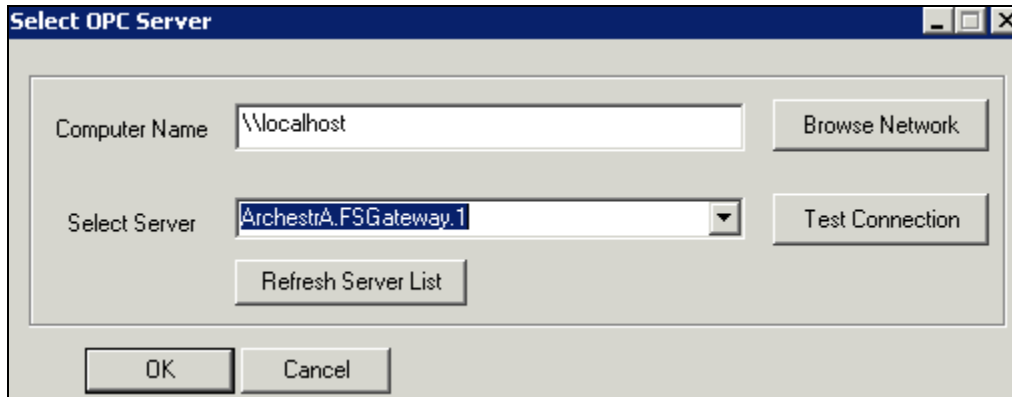

Figure 2:

1. In the **Select OPC Server** dialog box:
    1. Edit the Computer Name with the node name where the FS Gateway Server is running. By default it contains **\\localhost**. If the FSGateway Server is on a different computer, click **Browse Network** button and select the computer name from the network list.

    2. Select the OPC Server to which you want to communicate from the **Select Server** list.

    3. Refresh the server list from the specified computer by clicking the **Refresh Server List** button.

    4. Click **Test Connection** button verify communication between the HMI Reports OPC client your selected OPC Server.

Note: During the HMI Reports installation, an additional OPC component called **OPC Core Component Redistributable 2.20** from the OPC Foundation iis installed. Use it to repair or possible problems in OPC server registrations and repair Windows OPC component installation.

Group Definition

You must create a **Group Definition** in order to configure specific items/tags for logging in the HMI Reports database.

In HMI Reports, items are your tags. Pick the tags that have the data you want for reporting.

Configure the Item Group

1. Open the **Logger Studio**.

2. Right-click and select Add Item Group.

3. Type a Group Name.

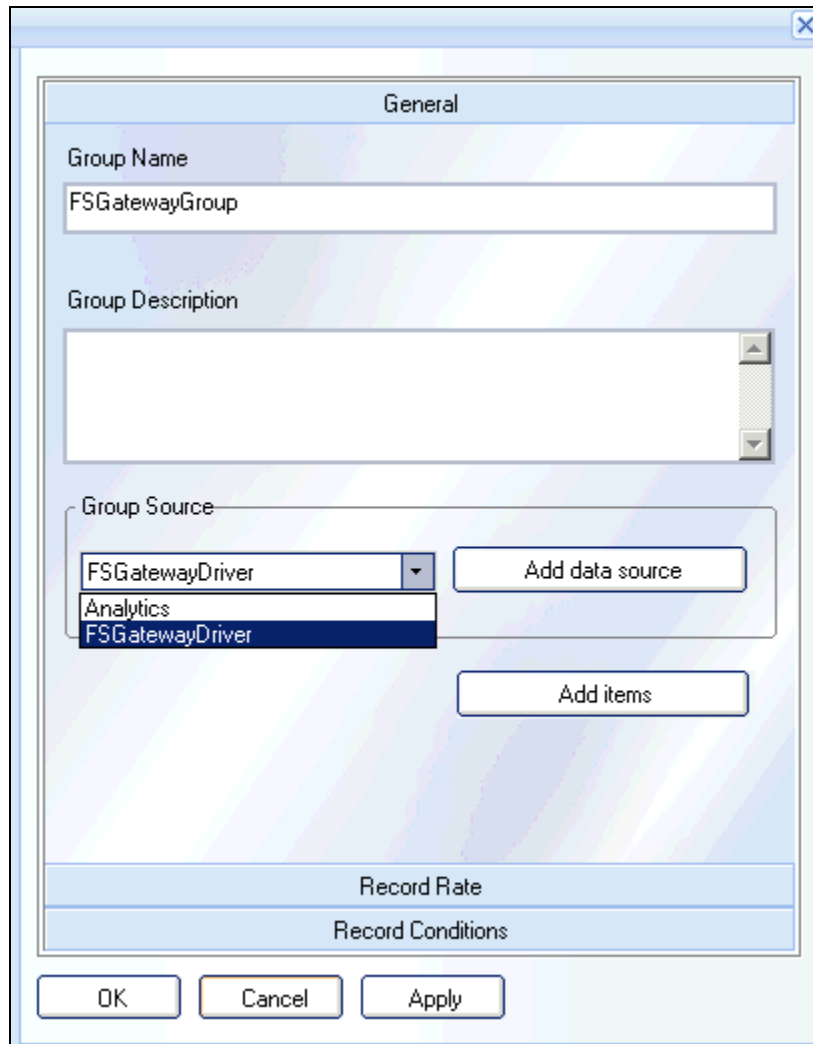4. Select a Data Source from the **Group Source** list. This list is populated with your Driver Definitions.

FIGURE 3: SELECT THE DATA SOURCE

5. Click the **Add Items** button. The **Select Data Items** window appears (Figure 4 below).

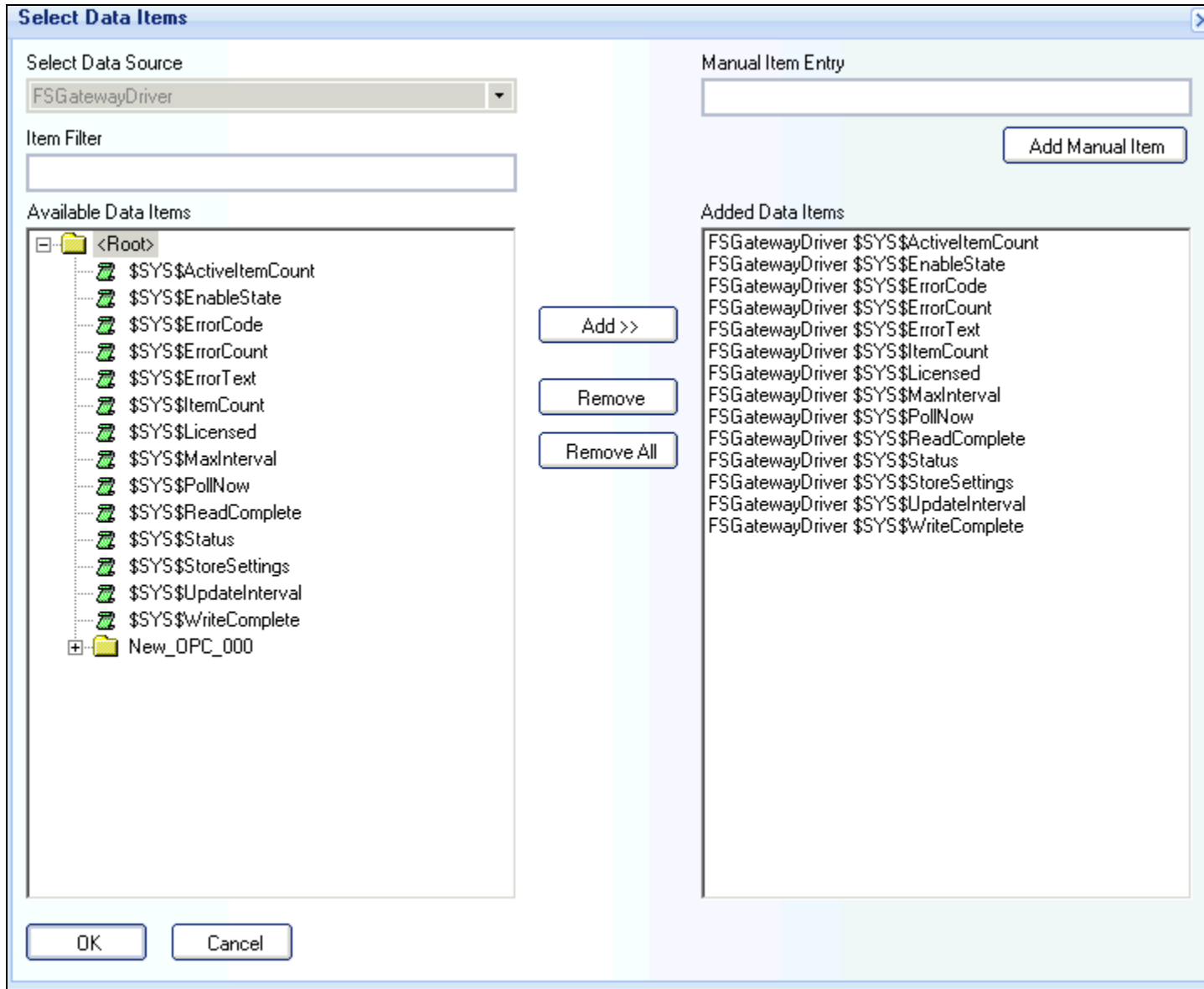6. Select your items from the **Available Data Items** panel.

FIGURE 4: SELECT DATA ITEMS WINDOW

7. Click **OK** to save and close.

Create a Sample Report

1. Open **Report Designer Studio** in HMI Reports Studio.

2. Right-click **Report_0** and click **New Report**.

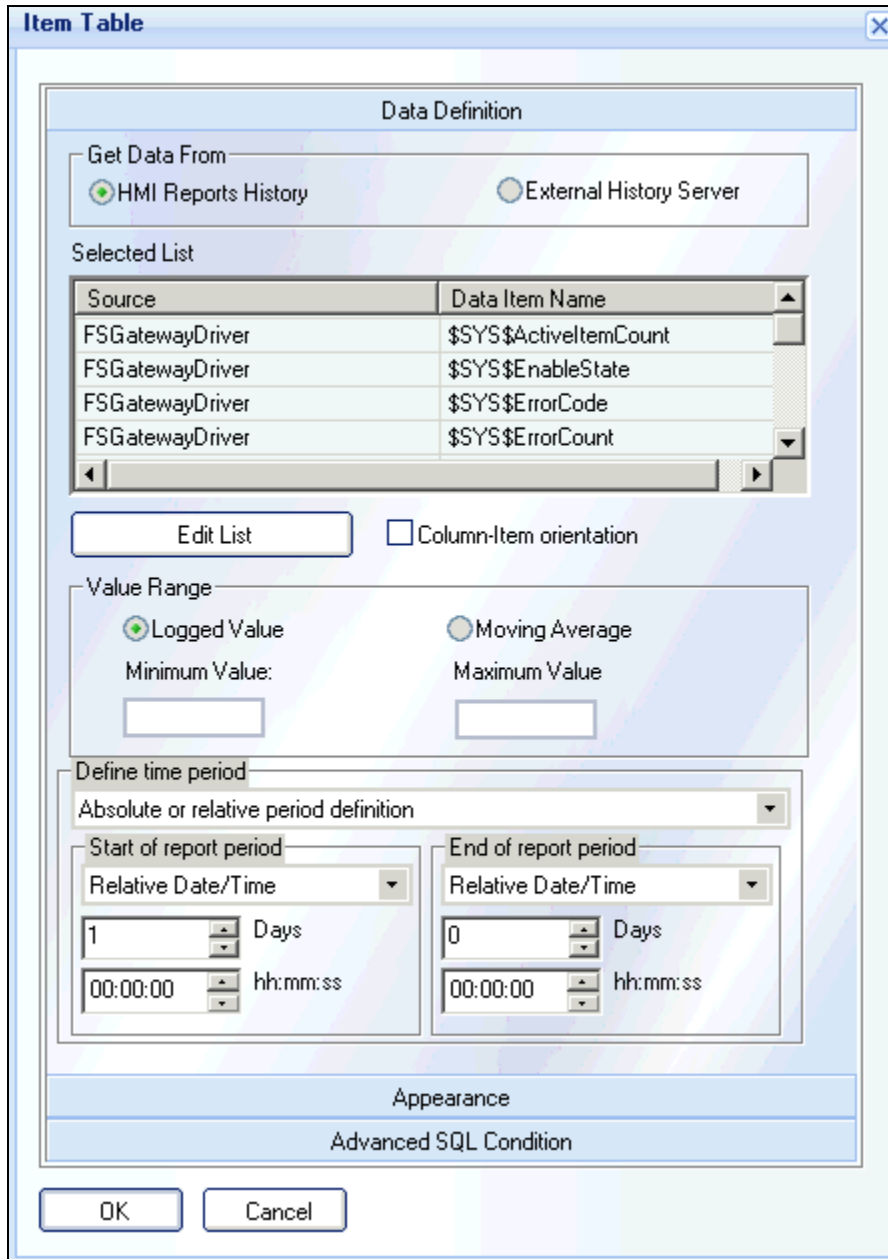3. Add an **Item Table** to the canvas. The **Item Table** window appears (Figure 5 below).

FIGURE 5: ADD ITEM TABLE TO THE REPORT CANVAS

4. Select the **Edit List** button to open the **Select Data Items** window.
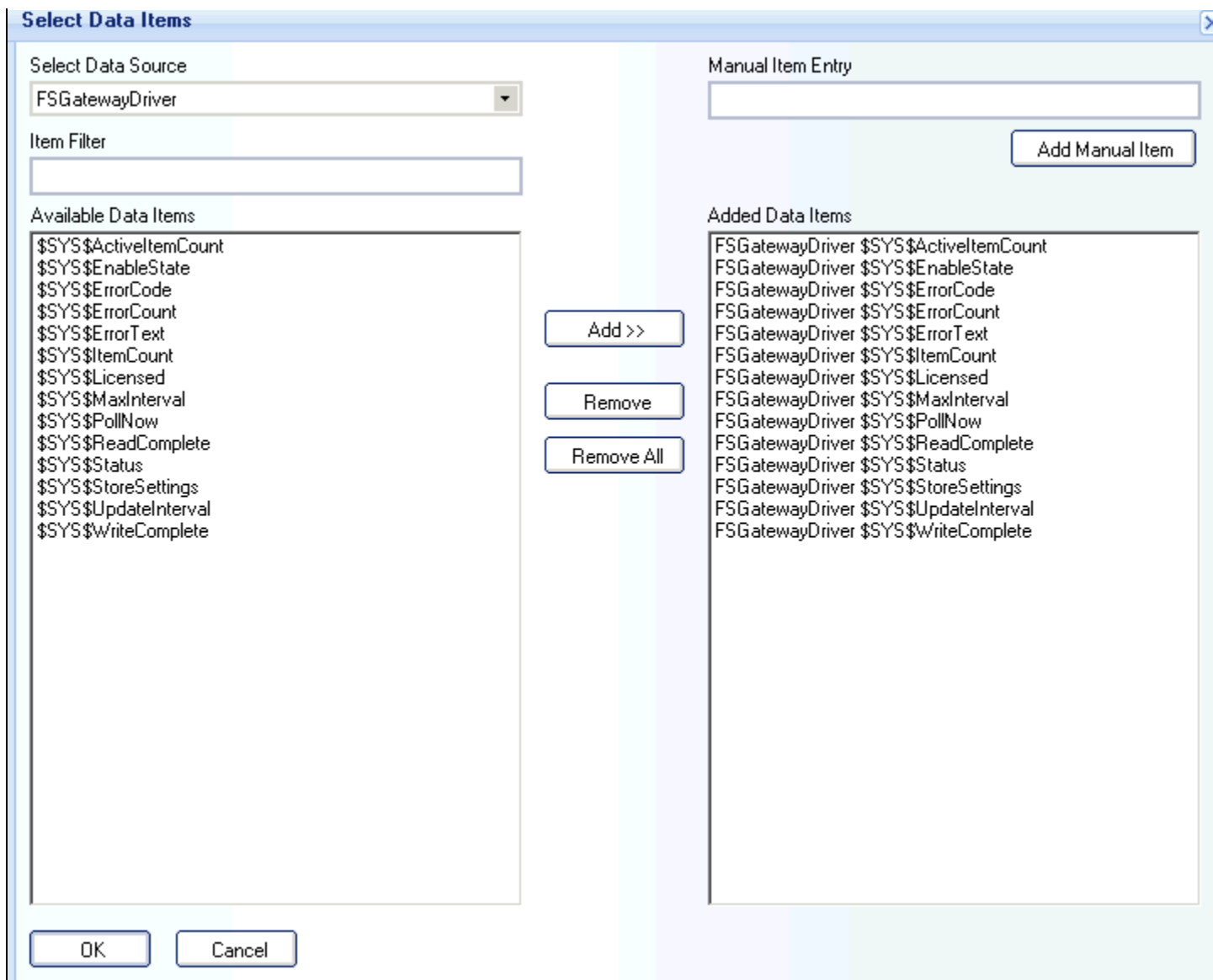
5. Select your items and click **OK**.

FIGURE 6: SELECT DATA ITEMS FOR REPORTING

6. Save the project and load it in Runtime. Figure 7 (below) shows a sample report.

Item name	Value	Timestamp	Source
SYSErrorCount	0.00	9/2/2009 10:20:33 PM	FSGatewayDriver
SYSReadComplete	1.00	9/2/2009 10:20:33 PM	FSGatewayDriver
SYSErrorCode	0.00	9/2/2009 10:20:33 PM	FSGatewayDriver
SYSMaxInterval	0.00	9/2/2009 10:20:33 PM	FSGatewayDriver
SYSLicensed	1.00	9/2/2009 10:20:33 PM	FSGatewayDriver
SYSUpdateInterval	1000.00	9/2/2009 10:20:33 PM	FSGatewayDriver
SYSPollNow	0.00	9/2/2009 10:20:33 PM	FSGatewayDriver
SYSItemCount	14.00	9/2/2009 10:20:33 PM	FSGatewayDriver
SYSWriteComplete	1.00	9/2/2009 10:20:33 PM	FSGatewayDriver

FIGURE 7: SAMPLE REPORT FROM SELECTED ITEMS

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For technical support questions, send an e-mail to **support@wonderware.com**.

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