

[Tech Note 601](#)

HMI Reports: Creating a Historian (InSQL) Driver Configuration

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Introduction

This *Tech Note* outlines the steps to take to create a Driver connecting to a Wonderware Historian (InSQL).

HMI Reports uses ODBC to connect to any local or remote Historian Runtime database. Therefore, configuring a Historian Driver is a two step process.

1. Create an ODBC Data Source Name (DSN).
2. Configure the Historian Driver in HMI Reports.

An example using Historian data in the Data Definition Configuration is included.

Application Versions

- HMI Reports 3.4 and later
- Wonderware Historian 10.x

Create an ODBC DSN

1. Go to **Start > Control Panel > Administrative Tools > Data Sources (ODBC)**.

In this example we will create a System DSN; however, you can create a User, System or File DSN.

2. Click the **System DSN** tab (Figure 1 below).

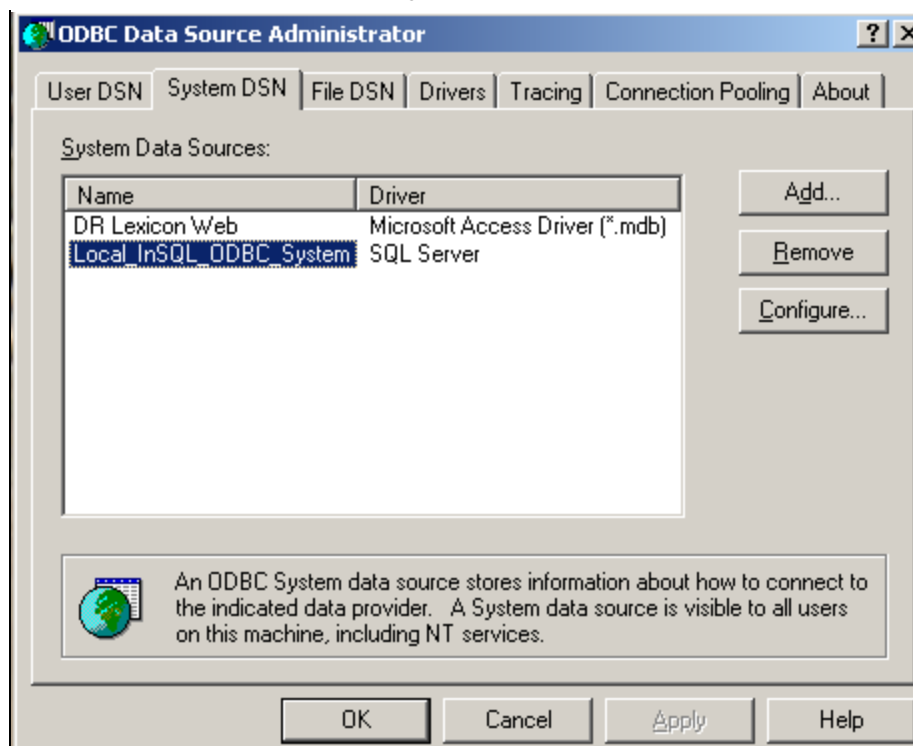


FIGURE 1: ODBC ADMIN > SYSTEM DSN TAB

3. Click **Add**, then select the **SQL Native Client** as the driver (Figure 2 below).

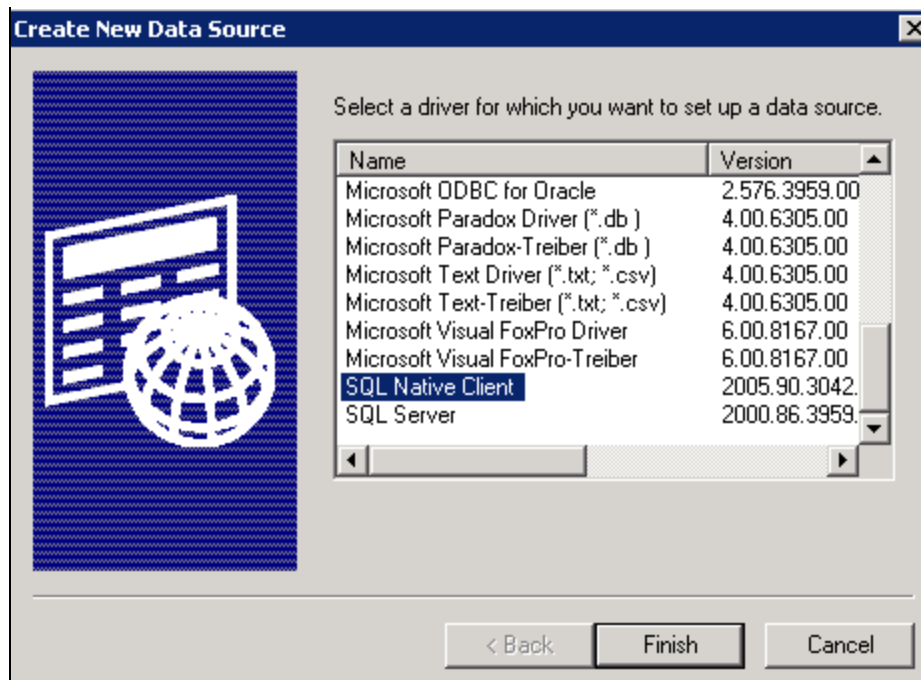


FIGURE 2: SQL NATIVE CLIENT DATA SOURCE

Note: To access Wonderware Historian 10.0, you might have to install the SQL Server 2008 Native Client. This applies if the (remote) Historian 10.0 is installed on top of the MS SQL Server 2008 version, and no SQL Server 2008 client tools are installed on the HMI Reports machine.

To install the SQL Server 10.0 client, run the **sqlncli.msi** setup file, which is available on your MS SQL Server 2008 CD in the **%CD%\Setup\x86** directory. Once finished, configure your ODBC connection to use the **SQL Native Client 10.0**.

4. Name your DSN and select your server. The description is optional (Figure 3 below).

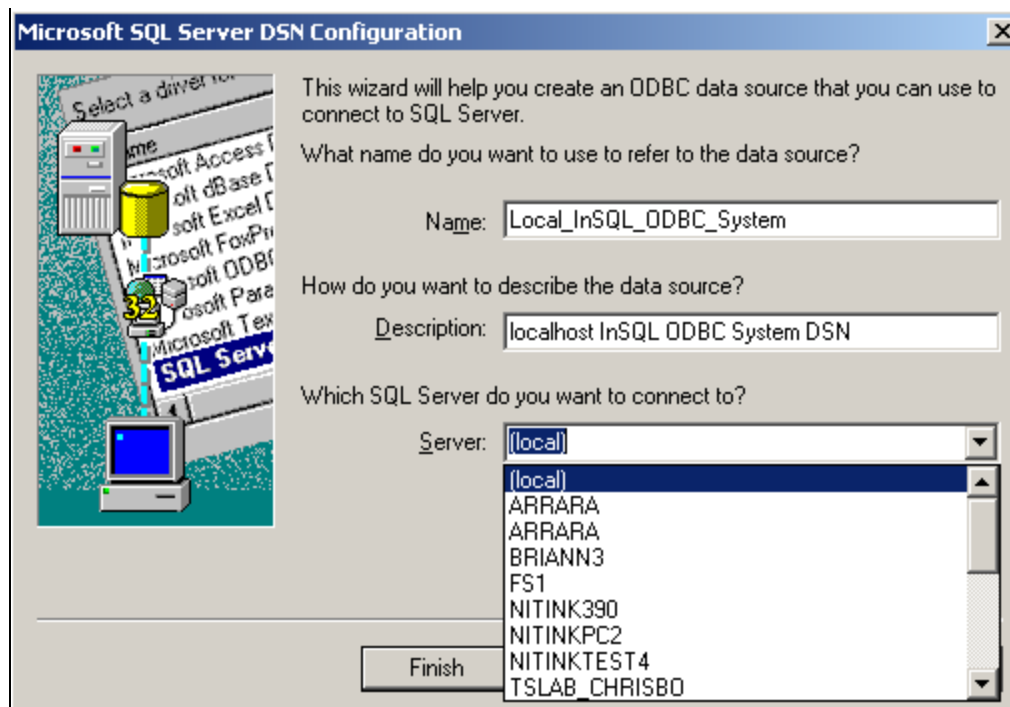


FIGURE 3: NAME AND SELECT SERVER

Note: It is not required that HMI Reports be installed on the Wonderware Historian node. If it is not on the Historian node, you must select the Server name where the Wonderware Historian is running instead of (local).

5. Click **Next** and use **SQL Server** authentication. Type the Login ID and Password.

Note: Figure 4 (below) shows the default sa/blank Login ID and Password. It is highly recommended you replace the defaults with "strong" Login ID and Passwords, in collaboration with your system administrator.

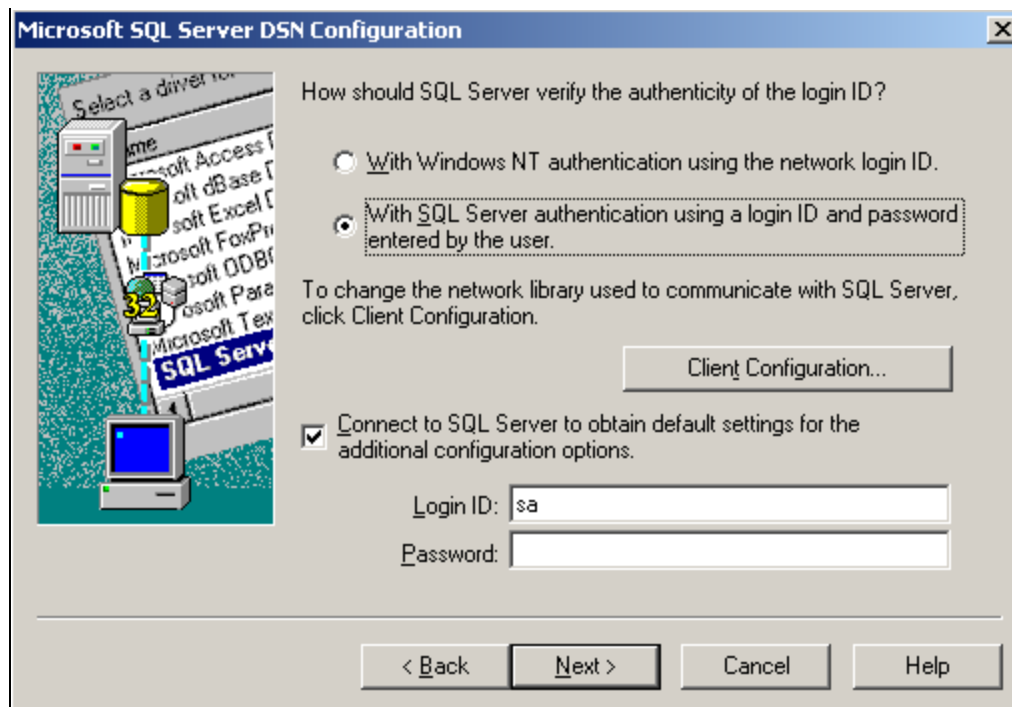


FIGURE 4: SQL SERVER AUTHENTICATION > CONNECT TO SQL SERVER

6. Click **Next**.
7. Click the **Change the default database to** option and select **Runtime** from the dropdown list as shown in Figure 5 (below). If necessary click the ANSI options shown in Figure 5.

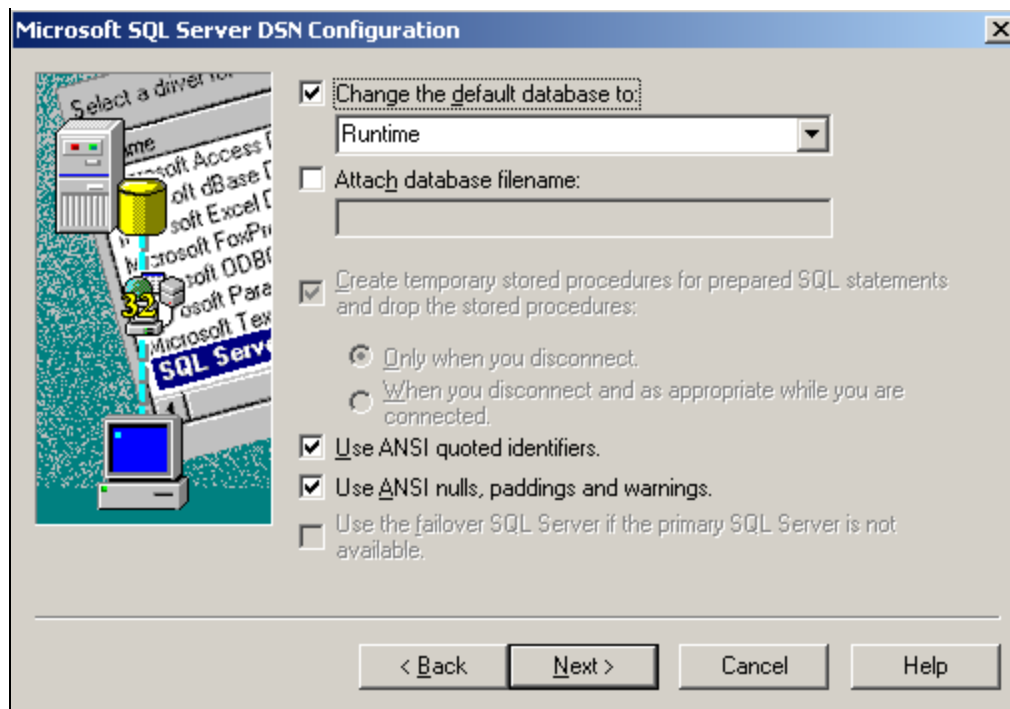


FIGURE 5: CHANGE THE DEFAULT DATABASE TO RUNTIME

8. Click **Next**, then **Finish**.

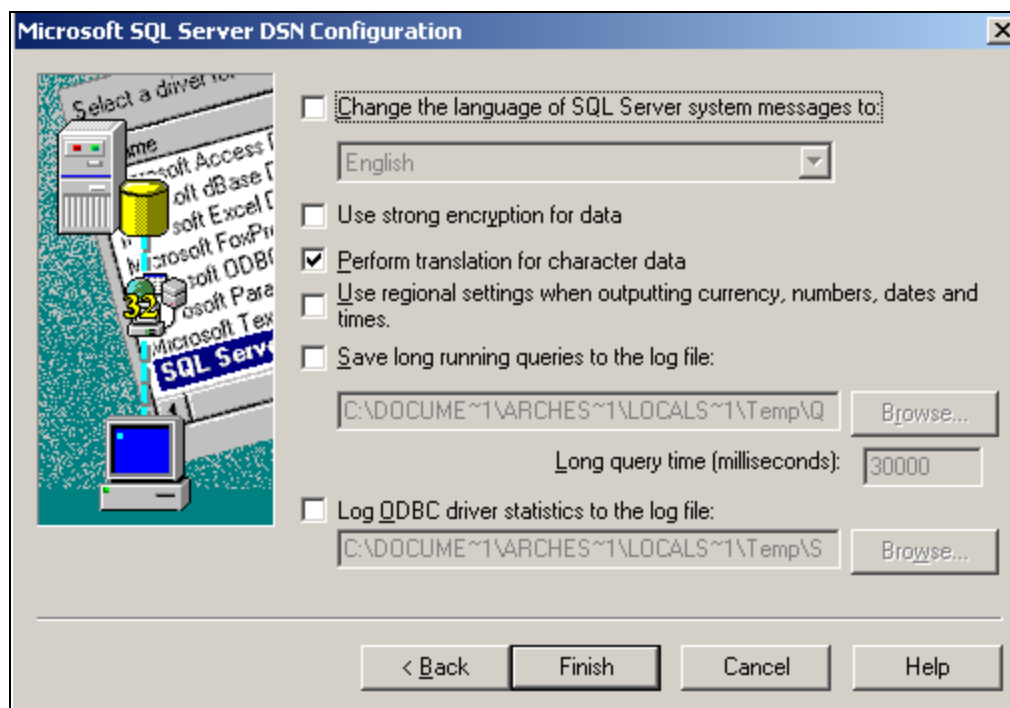


FIGURE 6: CLICK FINISH

9. Click **Test Data Source** to make sure its been configured correctly (Figure 7 below).

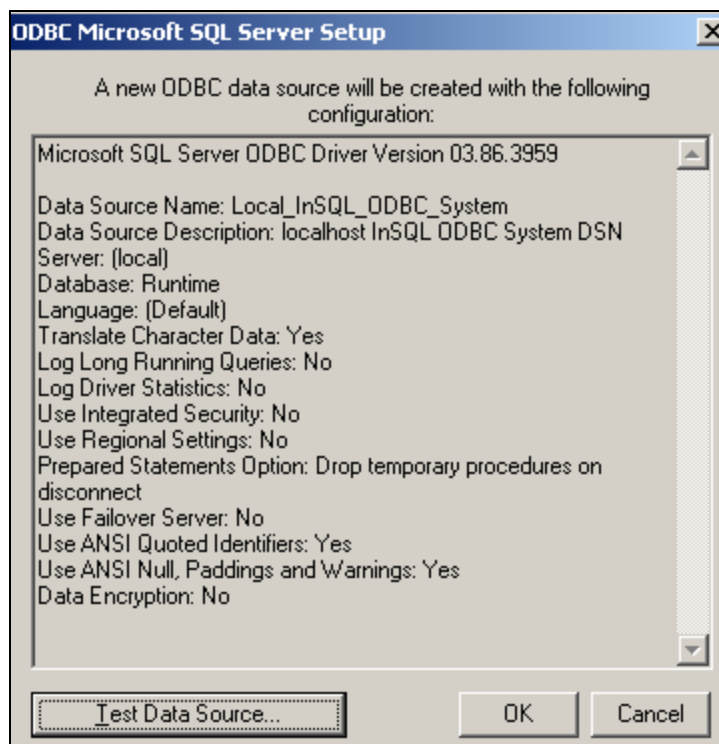


FIGURE 7: TEST THE DATA SOURCE

10. When the test completes successfully, click **OK** to close the dialog.

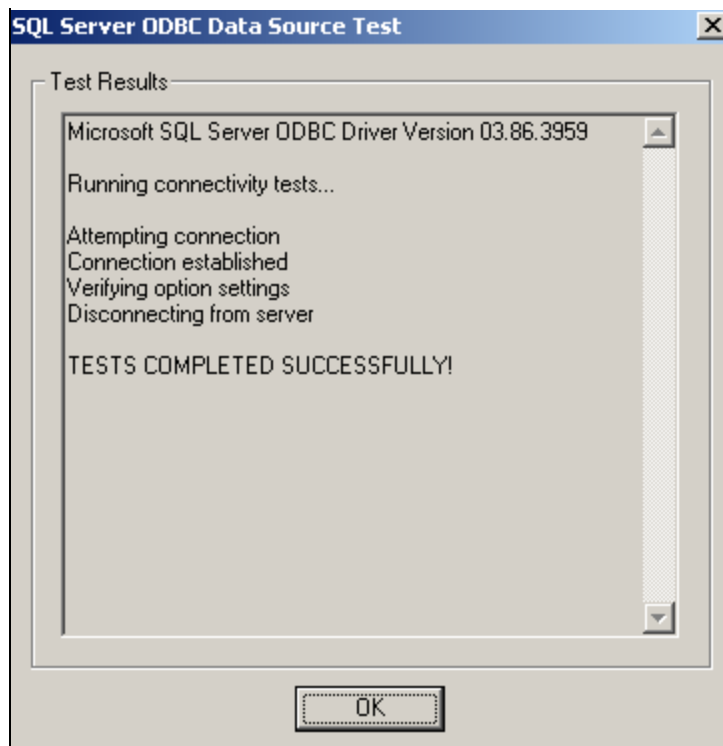


FIGURE 8: TESTS COMPLETED SUCCESSFULLY!

If the test completes unsuccessfully, repeat the previous steps and check for correctness.

Configure the Historian Driver in HMI Reports

Now that you've created a DSN, you can configure the Historian Driver in HMI Reports.

1. Open HMI Reports Studio and select **Logger/Driver Configuration** from the main menu.

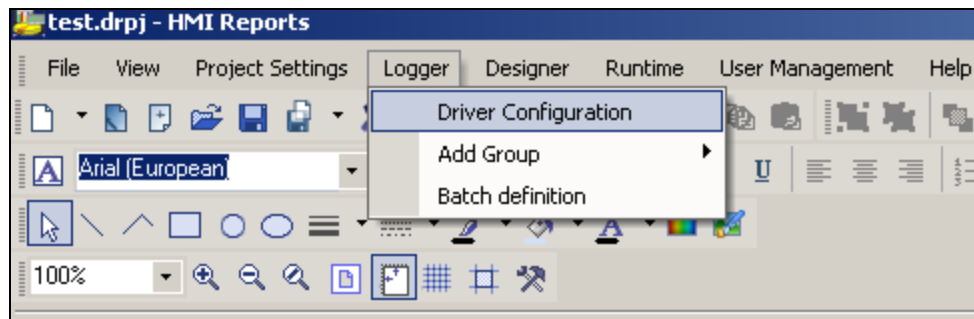


FIGURE 9: HMI REPORTS LOGGER/DRIVER CONFIGURATION

To create a Historian (InSQL) Driver use the **History Driver** dropdown list (Figure 9 below) and select **ODBC History Access**.

2. Click the **Configure** button next to the History Driver field. The Database Definition panel opens.

Source Definition

Source Name

Data Driver

Alarm Driver

History Driver

Connection Parameters

Simulation Driver
ODBC History Access
 OPC Driver

Source Name	Driver	Data	Alarm	History
InTouchTest	InTouch native drive	<input checked="" type="checkbox"/> ww=C:\Apps\InTou	<input type="checkbox"/> null	<input type="checkbox"/> null
Analytics	Analytical Driver	<input checked="" type="checkbox"/> null	<input checked="" type="checkbox"/> null	<input checked="" type="checkbox"/> null

FIGURE 10: HISTORY DRIVER CONFIGURE

3. Select the DSN created earlier from the **DSN File** list and enter the **User Name** and **Password** (SQL).

The screenshot shows a dialog box titled "InSQL Driver Configuration" with a close button in the top right corner. The dialog is divided into several sections:

- Database Definition:** Contains a "DSN File" dropdown menu with a list of options: "dBASE Files", "DR Lexicon Web", "Excel Files", "Local InSQL ODBC System" (highlighted in blue), "MS Access Database", and "ODS_DreamReport_DB". To the right is a "Select database type" section with a dropdown menu set to "Column-Item structure". A "Connect" button is located below these options.
- Alarm History Data:** A section with a large empty text box labeled "Table Name For Alarm History". Below it are six dropdown menus labeled "Table Field For Alarm ID", "Table Field For Alarm Text", "Table Field For Alarm Priority", "Table Field For Start Time", "Table Field For Ack Time", and "Table Field For End Time".
- Item History Data:** A section with a large empty text box labeled "Tables For Item History". Below it are four dropdown menus labeled "Table Field For Item Names", "Table Field For Item Values", "Table Field For Date", and "Table Field For Time". There is also a checkbox labeled "Use text file to save item list".
- Timestamp properties:** A section with a "Date format" dropdown menu, a checkbox labeled "Date only", and a checkbox labeled "Database uses UTC time format".

At the bottom of the dialog are "Done" and "Cancel" buttons.

FIGURE 11: DSN FILE SELECTION

4. In the **Select database type** section, select **InSQL database** using the dropdown list (Figure 12 below).

Database Definition

DSN File: Local_InSQL_ODBC_System

User Name: sa

Password: *****

Select database type

- Column-Item structure
- Internal database
- Column-Item structure
- AnyDB structure
- InSQL database
- PcVue HDS database

Alarm History Data

Table Name For Alarm History

Table Field For Alarm ID

Table Field For Alarm Text

Table Field For Alarm Priority

Table Field For Start Time

Table Field For Ack Time

Table Field For End Time

Item History Data

Tables For Item History

Table Field For Item Names

Table Field For Item Values

Table Field For Date

Table Field For Time

Use text file to save item list

Timestamp properties

Date format

Date only

Database uses UTC time format

Done Cancel

FIGURE 12: SELECT DATABASE TYPE > INSQL DATABASE

- Click the **Connect** button to make sure the connection is successful. The **Alarm History Data** and **Item History Data** fields are populated automatically.

Database Definition

DSN File: Local_InSQL_ODBC_System

User Name: sa

Password: *****

Select database type: InSQL database

Connected to the database successfully!

Connect

Alarm History Data

Table Name For Alarm History

- aaAreaData
- aaAreaXML
- aaAttributeData
- aaAttributeDataPending
- aaHistClientReport
- aaHistClientReportsFolder
- aaHistClientReportSite
- aaObjectData
- aaObjectDataPending

Table Field For Alarm ID

Table Field For Alarm Text

Table Field For Alarm Priority

Table Field For Start Time

Table Field For Ack Time

Table Field For End Time

Item History Data

Tables For Item History

- aaAreaData
- aaAreaXML
- aaAttributeData
- aaAttributeDataPending
- aaHistClientReport
- aaHistClientReportsFolder
- aaHistClientReportSite
- aaObjectData
- aaObjectDataPending

Table Field For Item Names

Table Field For Item Values

Table Field For Date

Table Field For Time

Use text file to save item list

Timestamp properties

Date format

Date only

Database uses UTC time format

Done Cancel

FIGURE 13: ALARM AND ITEM HISTORY DATA FOR INSQL DATABASE CONNECTION

6. Type a **Source Name** in the Source Definition area (any name).

Source Definition

Source Name:

Connection Parameters

Data Driver:

Alarm Driver:

History Driver:

Source Name	Add Definition	Data	Alarm	History
InTouchTest	InTouch native drive	<input checked="" type="checkbox"/> ww=C:\Apps\InTou	<input type="checkbox"/> null	<input type="checkbox"/> null
Analytics	Analytical Driver	<input checked="" type="checkbox"/> null	<input checked="" type="checkbox"/> null	<input checked="" type="checkbox"/> null

FIGURE 14: ASSIGN SOURCE NAME TO SOURCE DEFINITION

7. Click the **Add Definition** button. The new Definition appears in the **Source Name** column (Figure 15 below).

Source Definition

Source Name:

Data Driver:

Alarm Driver:

History Driver:

Source Name	Driver	Data	Alarm	History
InTouchTest	InTouch native drive	<input checked="" type="checkbox"/> ww=C:\Apps\InTou	<input type="checkbox"/> null	<input type="checkbox"/> null
Analytics	Analytical Driver	<input checked="" type="checkbox"/> null	<input checked="" type="checkbox"/> null	<input checked="" type="checkbox"/> null
Historian	ODBC History Acces	<input type="checkbox"/> null	<input type="checkbox"/> null	<input checked="" type="checkbox"/> odbc_cfg_0002.xml

FIGURE 15: ADD DEFINITION

Note: Be sure to click the **Add Definition** button after configuring your Source Definition or the definition will not be saved.

Now you are ready to connect to Historian (InSQL) Data for use in your reports.

Historian Driver Data Definition Configuration

Here is a simple example using a Historian Driver in your Data Definition Configuration.

1. In the Report Designer Studio, create a Report and add the **Item Table** graphical element to the page.
2. Double-click on the table and select **External History Server** in the **Get Data From** section (Figure 16 below).

Item Table

Data Definition

Get Data From

HMI Reports History External History Server

Selected List

Source	Data Item Name
Historian	Tank1001Filling
Historian	Tank1001Level
Historian	Tank1001Volume
Historian	Tank1002Filling

Edit List Column-Item orientation

Value Range

Logged Value Moving Average

Minimum Value: Maximum Value:

Define time period

Absolute or relative period definition

Start of report period

Relative Date/Time

0 Days

00:30:00 hh:mm:ss

End of report period

Relative Date/Time

0 Days

00:00:00 hh:mm:ss

Appearance

Advanced SQL Condition

OK Cancel

FIGURE 16: EXTERNAL HISTORY SERVER DATA DEFINITION

- Click the **Edit List** button. The Select Data Items window appears (Figure 17 below).
 - Select Data Source from the drop down list which will contain all History Drivers you've configured (configured above).
 - Select specific items from the Available Data Items and click the Add/Remove buttons to complete your desired Added Data Items list for this specific instance of the item table. Select Ok then Save your report.

- You can use the Item Filter to efficiently locate your data items.

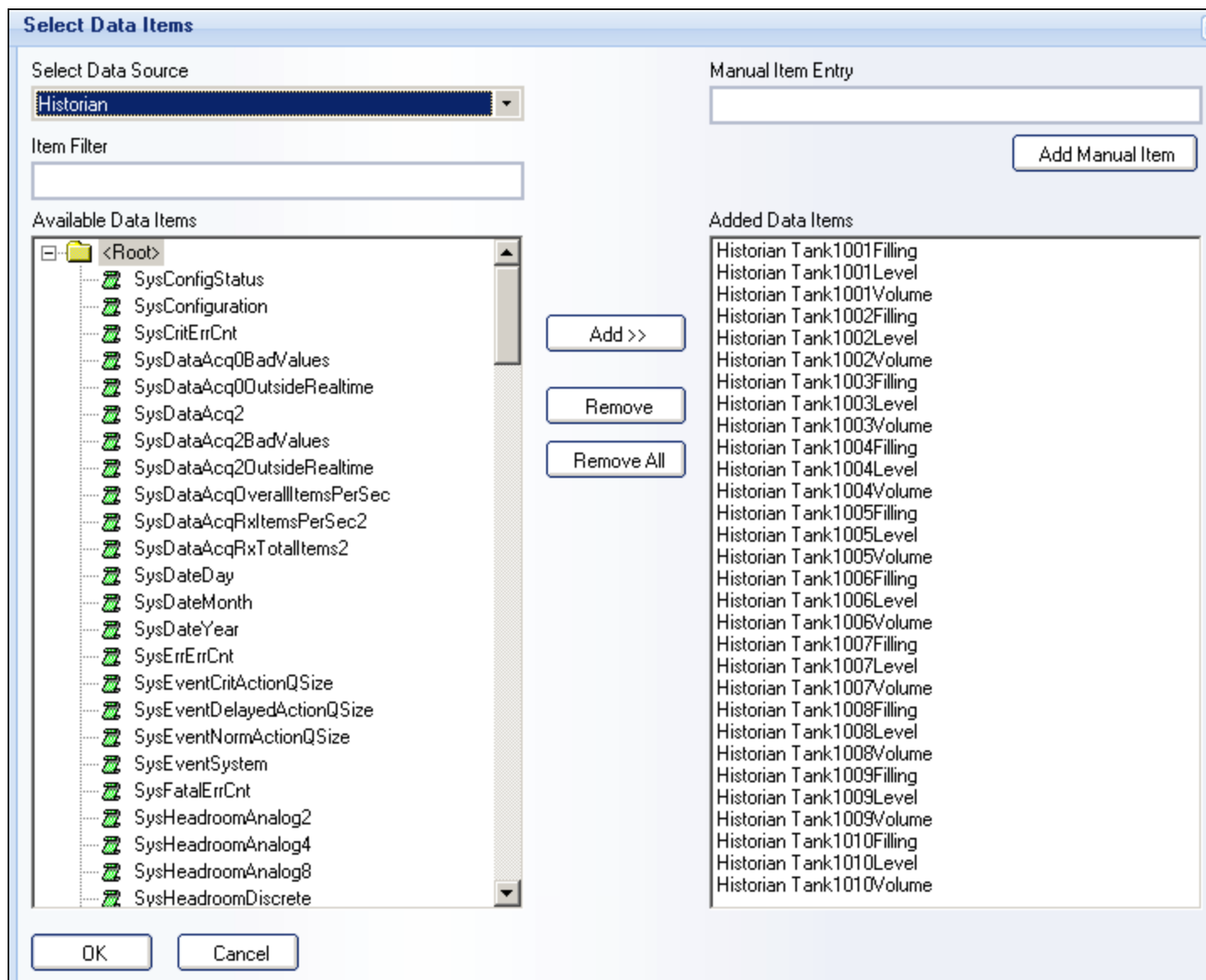


FIGURE 17: SELECT DATA ITEMS WINDOW

Note: Although the Item table is used as an example, you can use Historical Data in all types of graphical elements.

Now you're ready to open HMI Reports Runtime, load your Project and generate your report.

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