

Using XLReporter with WinCC/PCS 7 Alarms

Overview

XLReporter takes alarm values from the SIMATIC WinCC/PCS7 to automatically populate reports periodically, on event or on-demand. The award-winning reporting software turns raw data into industrial metrics which are used for compliance, regulatory, improvements and operations.

Complete reports are distributed automatically by email, FTP, file server and printers. With the Web Portal, reports are viewed or produced on-demand from any device supporting a web browser such as a mobile phone, tablet or desktop.

Alarm data is retrieved by using the WinCC OLE DB provider. This is provided in the WinCC Connectivity Pack or as part of the Open PCS 7 installation.

Prerequisites

Installation

Connectivity Pack

The WinCC Connectivity Pack must be installed on the machine where the server is logging alarms. The license can be verified in the **SIMATIC Automation License Manager** from the **SIMATIC** program group.

If **XLReporter** is not installed on the machine where the server is logging, the WinCC Connectivity Pack **must also** be installed on the machine where **XLReporter** is installed.

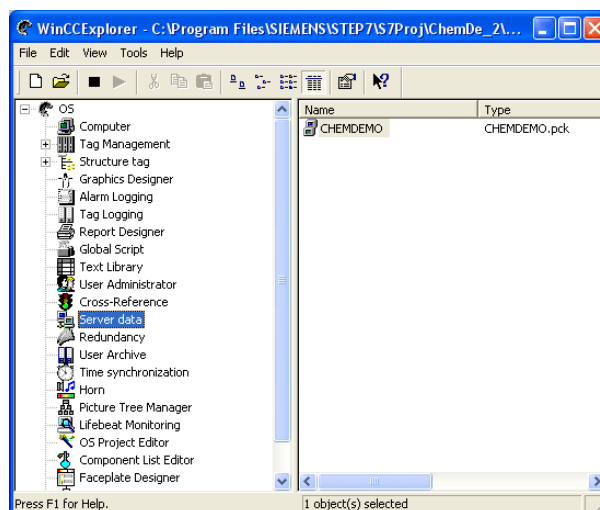
Open PCS 7

If Open PCS 7 is installed, **XLReporter** must be installed on the same machine to retrieve alarm data from any WinCC/PCS 7 station configured within Open PCS 7. The license can be verified in the **SIMATIC Automation License Manager** from the **SIMATIC** program group.

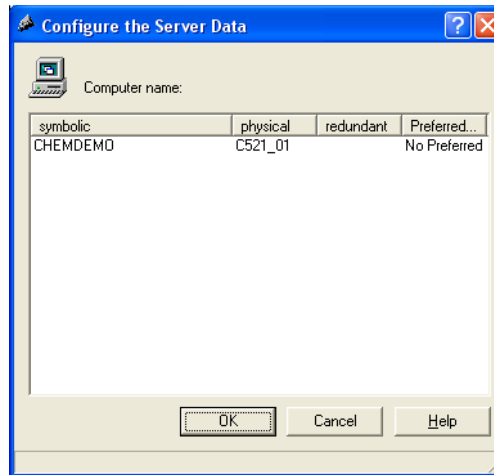
Data Source Name

When retrieving alarm data, the **Data Source Name** is required as part of the setup. This depends on 1) the PC where the alarms are being logged 2) if the connectivity pack or the Open PCS 7 interface is used.

The Data Source Name contains either the computer name (connectivity pack) or a symbolic name (open pcs 7). This is determined by opening the **WinCC Explorer** on the machine where the alarms are being logged.



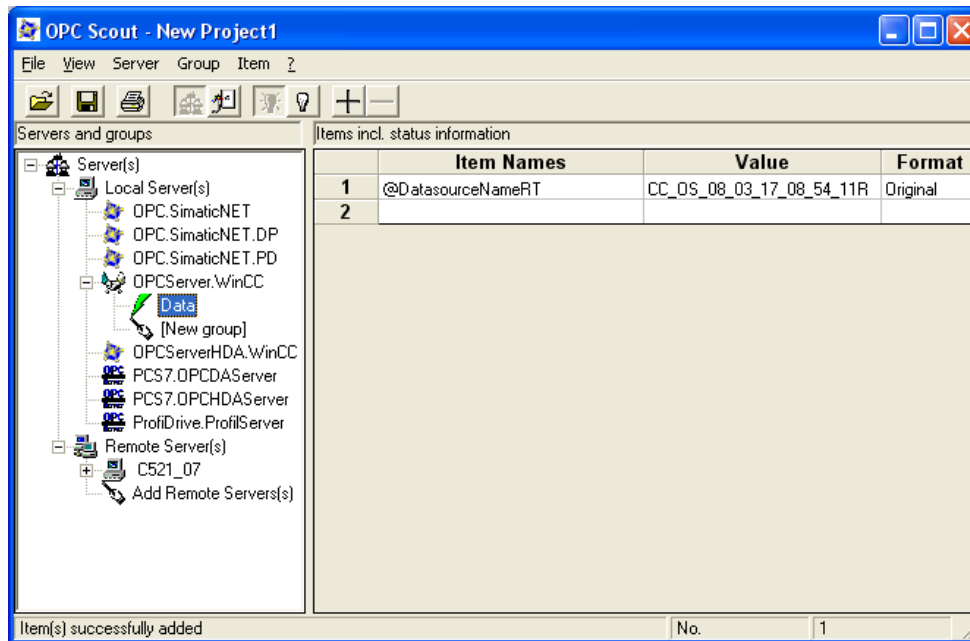
Expand **OS**, select **Server data**, right click and choose **Configure**.



The symbolic column shows the **Symbolic Name** and the physical column shows the **Computer Name**.

Initial Catalog

When retrieving alarm data, the **Initial Catalog** is required as part of the setup. This can be found as the value of stored in the `@DatasourceNameRT` tag.



This value can be read using the OPC Scout application provided by SIMATIC and available from the SIMATIC program group. Expand **Server(s)** and double click either the WinCC OPC Server (OPCServer.WinCC) or the PCS 7 OPC server (PCS7.OPCDAServer).

- Enter a **Group Name**.
- Click **OK**.

The group should now appear as a branch under the OPC server. Double click the group name to open the OPC Navigator. Browse into the **Internal Tags** and select `@DatasourceNameRT` and click **OK**. This should now appear in OPC Scout along with the **Value**.

Since this value is required later, make a copy on the clipboard.

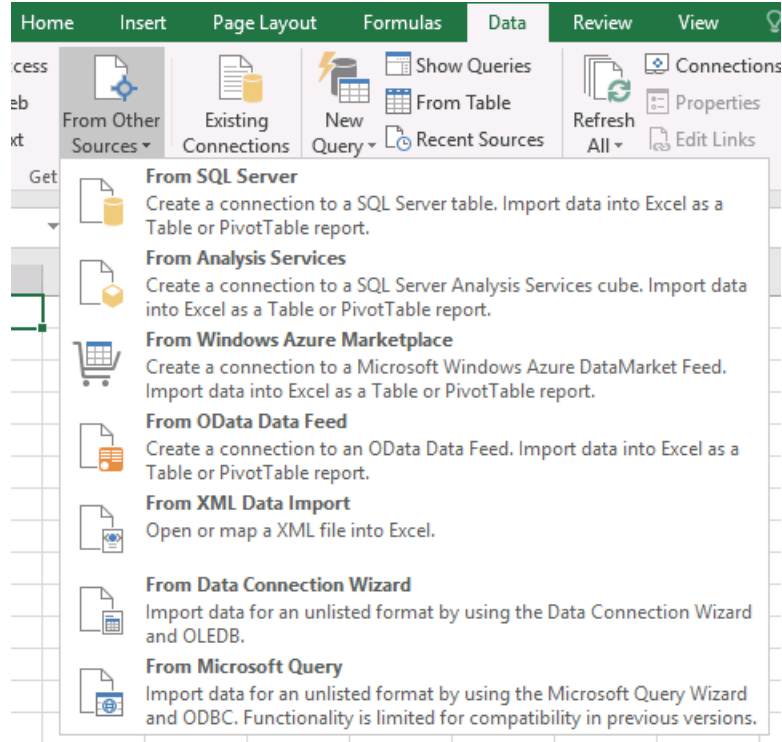
Verify Connectivity

To verify access to the alarm data a connection must be made to the WinCC OLE DB provider and a query run. There are many applications that can test this. The following describes using Microsoft Excel.

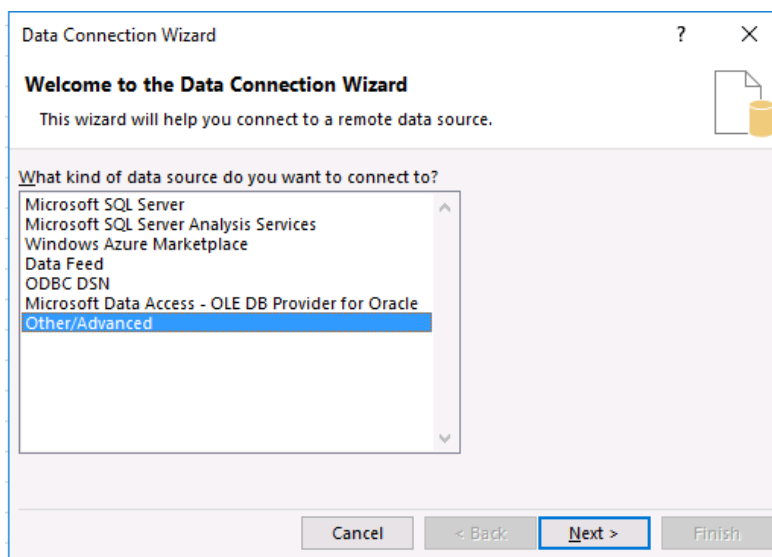
Microsoft Excel

Note the WinCC OLE DB provider is a 32 bit driver so in order to verify with Excel, Excel must be 32 bit.

- Open Microsoft Excel.

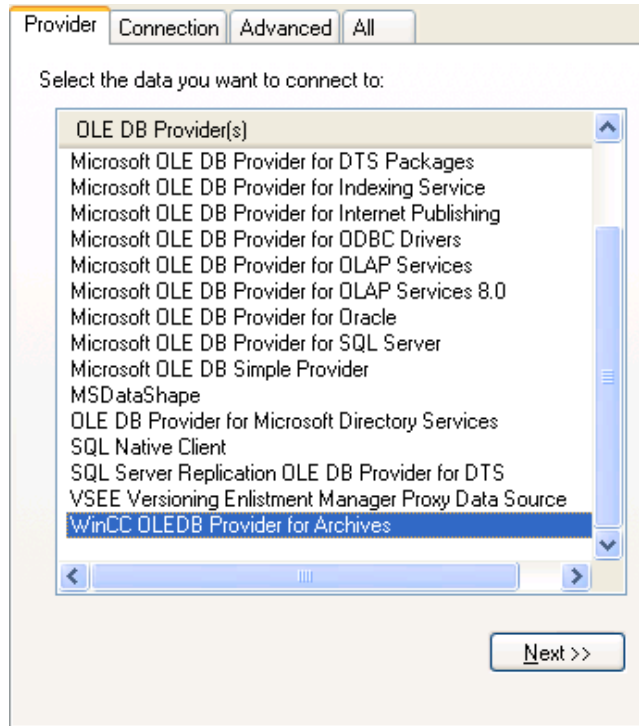


- Under the **Data** tab, in the **Get External Data** section, click **From Other Sources** and select **From Data Connection Wizard**.

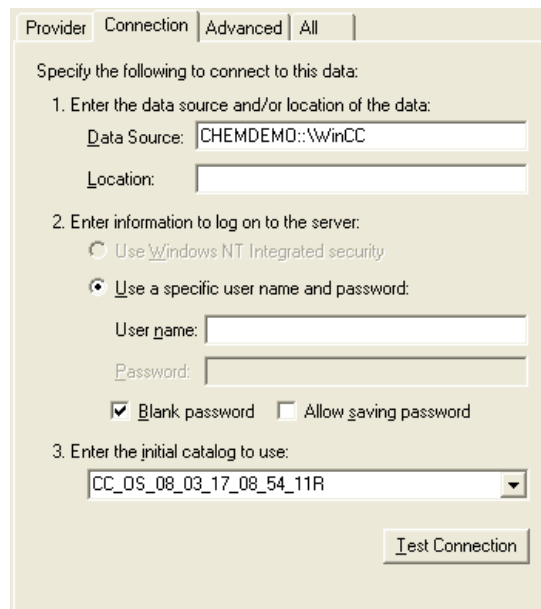


In the **Data Connection Wizard** select Other/Advanced and click **Next**.

In **Data Link Properties**,



- Under the **Provider** tab select *WinCC OLEDB Provider for Archives*.
- Click **Next**.

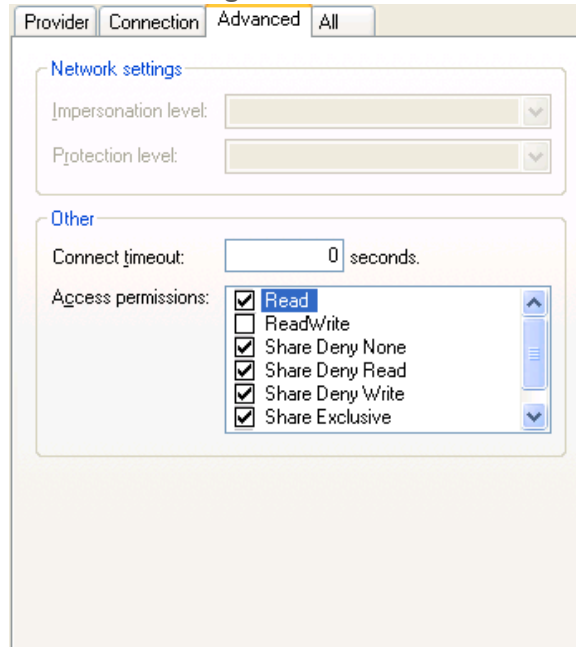


- Under the **Connection** tab, specify the **Data Source**.
It is essential that the **Data Source** is set correctly based on Interface and location of the Alarm server relative to XLReporter:

Interface	Alarm Server	Data Source
Connectivity Pack	Local	.\WinCC
Connectivity Pack	Remote	Computer Name\WinCC
Open PCS 7	Local or Remote	Symbolic Computer Name:.\WinCC

The example above demonstrates a connection with the Open PCS 7 interface.

- Enter the **Initial Catalog** , see the Initial Catalog section.



- Under the **Advanced** tab, uncheck the **ReadWrite** checkbox.
- Click **OK**.

If the message appears “Test connection failed because of an error setting the window handle property...” click **Yes** to continue. Accept any other error or warning that may appear.

In **Data Connection Wizard**,

- From the list of tables select *AlarmView*.
- Click **Next**.
- Set a **File Name**.
- Check **Save password in file**.
- Click **Finish**.

In **Import Data** leave the defaults and click the **Properties** button.

In **Connection Properties**, under the **Definition** tab,

- Check **Save Password**.
- Change **Command type** to *SQL*.
- Set **Command text** to:
`ALARMVIEW:SELECT * FROM AlgViewENU WHERE DateTime >= 'Yesterday' AND DateTime <= 'Today'
ORDER BY DateTime ASC`

Where *Yesterday* and *Today* are timestamps for yesterday and today in the format *YYYY-MM-DD HH:mm:ss*. For example, if testing on January 2nd, 2020, the query would be:

`ALARMVIEW:SELECT * FROM AlgViewENU WHERE DateTime >= '2020-01-01 00:00:00' AND DateTime <= '2020-01-02 00:00:00' ORDER BY DateTime ASC`

- Click **OK**.
- Click **Yes** to any warning message that appears.
- Click **OK** back in the **Import Data** window.

If there are issues or no data is returned, contact Siemens technical support to troubleshoot and correct.

Create a Project

From the **XLReporter Project Explorer** select **File, New** to start the **Project Wizard**. This will give step-by-step instructions on creating a project

Step 1

- Enter a **Project Name** and **Description** (optional).

The screenshot shows the 'New Project' dialog box with the following fields and options:

- Project Name:** XLR_Project
- Project Off Line
- Description:** Customer or Site name
- Project Location:** c:\XLRprojects

Navigation buttons at the bottom: < Back, Next >, Finish, Cancel.

Step 2

- Configure the data connector, click **Add**.

The screenshot shows the 'New Project' dialog box with the following elements:

- Step 2 : Configure the Connectors (data sources) of the Project.**
- Buttons: + Add, Modify, X Delete, Catalog
- Table with columns: Name, Provider, Description
- Table content: * (in Name column)

Select **Siemens SIMATIC, WinCC/PCS7 Alarms**.

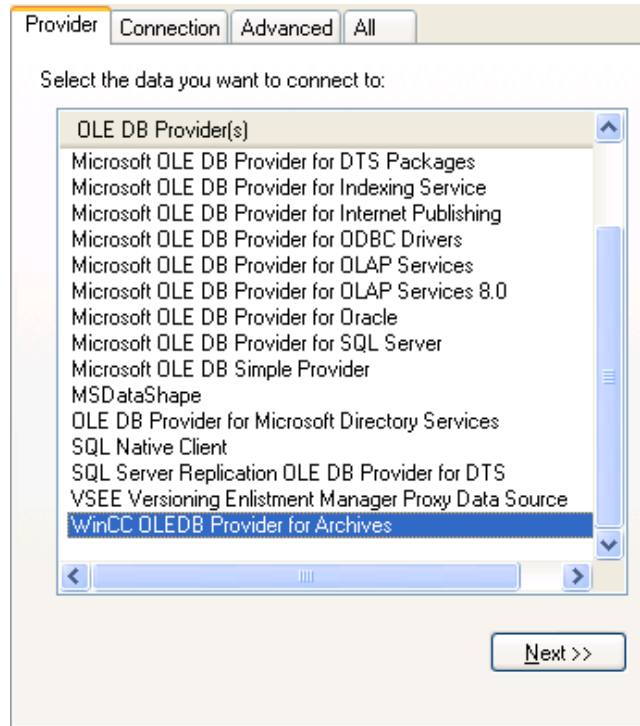
The connector requires a **Primary Database**. Click the browse pushbutton ([...]) for **Name**.

The screenshot shows the 'Database Connect' dialog box with the following elements:

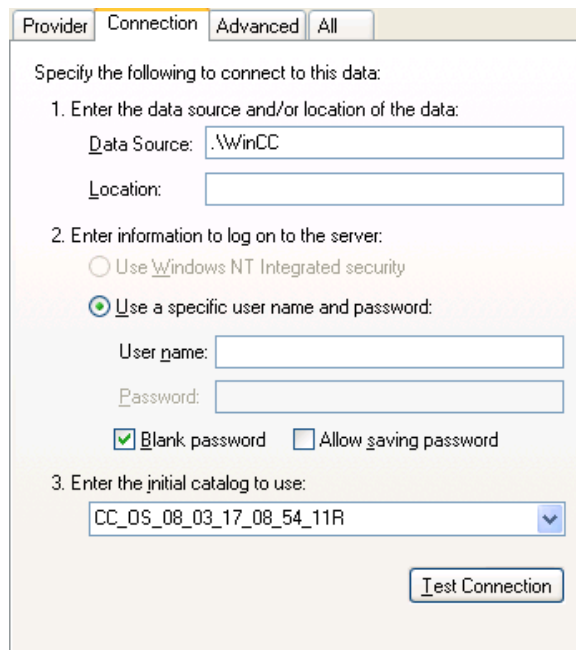
- Left pane: List of database providers including Microsoft SQL Server, Microsoft Access, Microsoft Excel, MySQL, Text Files, Other (OLEDB/ODBC) (highlighted), and Data Source Name (DSN).
- Right pane: Fields for Connection name (Other (OLEDB/ODBC)), Provider, and Connection String.
- Buttons: Build..., Test Connection, Cancel.

- Select **Other (OLEDB/ODBC)**.
- Click **Build**.

In **Data Link Properties**,



- Under the **Provider** tab select *WinCC OLEDB Provider for Archives*.
- Click **Next**.

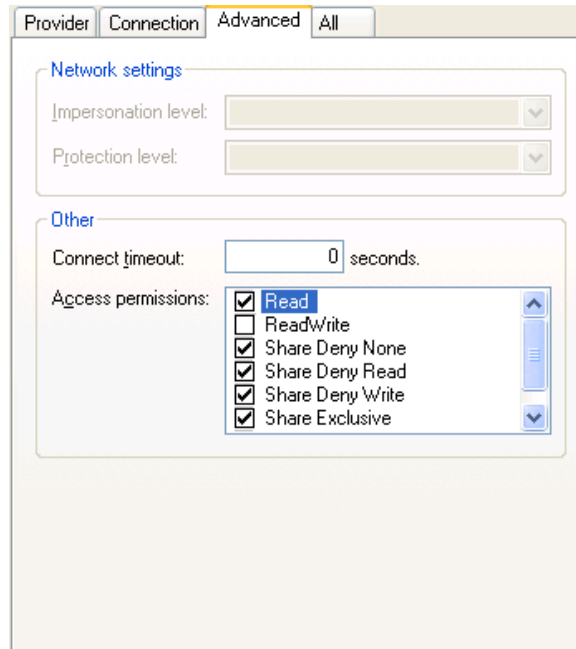


- Under the **Connection** tab, specify the **Data Source**. It is important that **Data Source** is set correctly based on the **Interface** as described below:

Interface	Node	Data Source
Connectivity Pack	Local	.\WinCC
Connectivity Pack	Remote	Computer Name\WinCC
Open PCS 7	Local	Symbolic Computer Name::\WinCC

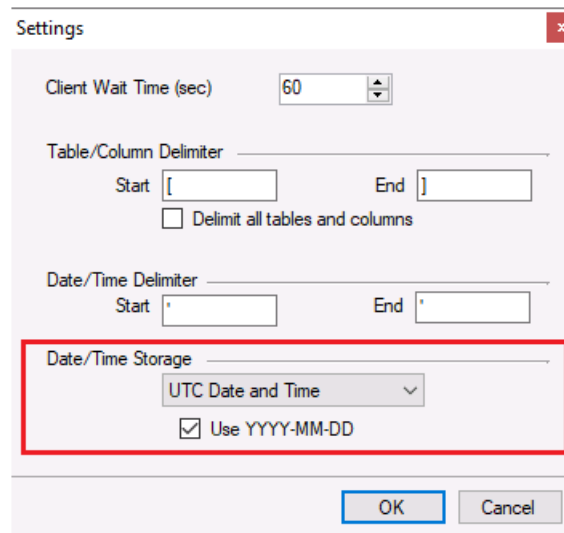
The example above demonstrates a connection with the Open PCS 7 interface.

- Enter the **Initial Catalog** as the name of the WinCC/PCS 7 project name (see the Project Name section above for details).



- Under the Advanced tab, uncheck the **ReadWrite** checkbox.
- Click **OK** twice to return to the connector settings.

Click the **Settings** button.



Under **Date/Time Storage**,

- From the drop down list, make sure **UTC Date and Time** is selected.
- Check **Use YYYY-MM-DD**.
- Click **OK**.

Verify Data Communication

XLReporter retrieves data from the **Data Connector** using a **History Group**.

From the **XLReporter Project Explorer** select, **Tools, Connector Groups**. Select your *WinCC/PCS7 alarm* connector and then select **Add**.

- Set the **Type** *Raw Values* and click **OK**.

On the **Columns** tab of the group, select the tag **Name(s)**.

Select **Preview**, pick a *Start* date and click **Refresh**.