



## Reporting from WinCC/PCS 7

**XLReporter** generates Excel based reports from the SIMATIC WinCC/PCS 7 server's real time data, historical archive and alarm archive interface.

The purpose of this document is to describe how to interface **XLReporter** to the WinCC/PCS 7 Server.

## Process Data

Real time process data from WinCC/PCS 7 uses the OPC interface. To retrieve data, the **Tag Browser** can be accessed from the **Connection Configurator**, when creating a report, to assist in browsing all configured tags.

**XLReporter** can take snapshots of the process values and add them to an existing report worksheet, periodically or on event. To prevent excessive build-up of information in a single worksheet, new workbooks and worksheets can be created automatically.

**XLReporter** gets real time data from WinCC/PCS7 through the OPC Server provided.

## Before you Begin

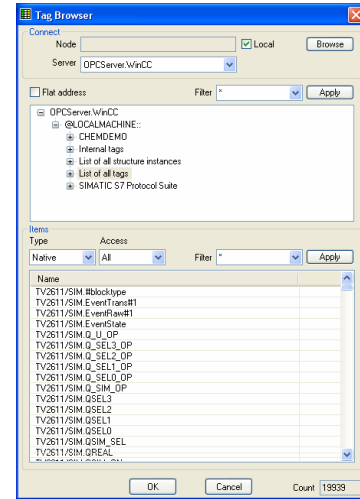
In order for **XLReporter** to communicate with Wincc/PCS7, the machine where **XLReporter** is installed must also have the OPC core components installed. The OPC core components are provided in the tools folder of the **XLReporter** install CD or from [www.OPCFoundation.org](http://www.OPCFoundation.org).

If **XLReporter** is installed on a PC that is remote to WinCC/PCS 7 then a number of settings need to be configured on both the server and client machines. This includes having matching Windows user accounts (with matching passwords) on both machines and enabling DCOM on the machine where WinCC/PCS 7 is installed.

For a detailed explanation of the requirements for remote access, please read the OPC Training Institute document *OPC\_and\_DCOM\_5\_things\_you\_need\_to\_know* that is provided in the Tools folder of the **XLReporter** install CD or from [www.TheReportCompany.com](http://www.TheReportCompany.com).

## Verifying the OPC Server

To verify that the OPC Server is functional, open **XLReporter's Project Explorer**, from the **Tools** menu start the **System Check** application and select the **Real Time** tab. Select the top row under the Tag Name column and click (...) to open the **Tag Browser** window.



Real Time System Check

To connect to WinCC/PCS 7 select the appropriate server based on the table below:

Product	OPC Server Name
WinCC	OPCServer.WinCC (WinCC Single Station, Server and Client)
PCS 7 Operator System (OS)	OPCServer.WinCC (PCS 7 Single Station, Server and Client)
Open PCS 7	PCS7.OPCDAServer (Open PCS 7 Station)

Select one or more tags and verify that they update with the current value.

## Historical Data

With process data stored in a historian, the variety of reports that can be produced by **XLReporter** increases many fold.

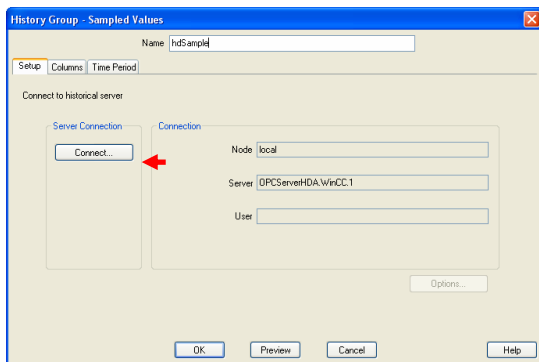
In addition to raw values, informative metrics such as run times and statistics are obtained by simply selecting the tags and time frame of interest. e.g., hourly average, maximum and minimum for each hour of the day.

WinCC/PCS7 provides an OPC-HDA Server interface that clients, such as **XLReporter**, can use to retrieve historical information.

## Retrieving Historical Data

**XLReporter** accesses values from the WinCC/PCS 7 Historian using a history group.

From **XLReporter's Project Explorer**, double click on **History Group** to list the groups that are already configured in the project. Select **New** and select the type of group. *Calculated values* are calculations like average, minimum and maximum, samples values are interpolated values and *raw values* are the actual samples recorded.



History Group Builder

After selecting the group type, the history group must be connected to the server. From the **Setup** tab, click **Connect...** to open the **Servers** window.

In the **Servers** window, specify the **Node** where the WinCC/PCS 7 software is installed. If installed locally, check **Local**. Select the server base on the table below.

Product	OPC HDA Server Name
WinCC	OPCServerHDA.WinCC.1
PCS 7 Operator System (OS)	OPCServerHDA.WinCC.1
Open PCS 7	PCS7.OPCHDAServer.1

In the **History Group** window select the **Columns** tab, and choose the **Name** and **Calculation** for each tag required in the group. The following calculations can be used:

On the **Time Period** tab, select the **Start Time**, **End Time** and **Interval** for the group. By default this is set to one hour intervals over the current day.

The **Preview** pushbutton at the bottom of the history group display can be pressed to preview the result of the current configuration.

Parameter	Value	MIXER_ZONE1_TEMP	MIXER_ZONE2_TEMP	MIXER_SPEED	MIXER_RAMPPRESSURE
Report Date	3/30/2012	71.3938171386719	77.1789534250895	33.1370187441508	64.6267203648885
	3/30/2012 1:00:00 AM	78.162520907389	49.0242124239604	36.6801065444946	73.1387713114421
	3/30/2012 2:00:00 AM	63.6886056264242	53.4560168584188	38.8911759694417	82.3010019938151
	3/30/2012 3:00:00 AM	74.5661202748617	76.0964968363444	50.6953378041585	88.9127838408331
	3/30/2012 4:00:00 AM	78.5054092407227	65.992971377055	54.0780683517456	90.6644298553467
	3/30/2012 5:00:00 AM	72.0215874989828	63.6706168492635	53.4231768925985	86.9440397898356
	3/30/2012 6:00:00 AM	65.389529524902	53.5336532274882	59.6284706751506	79.0512536366781
	3/30/2012 7:00:00 AM	71.5103735605876	74.3869140625	59.4726551055908	69.7432478588833
	3/30/2012 8:00:00 AM	78.2362620493571	60.0908380508423	60.3853614171346	62.2715770085653
	3/30/2012 9:00:00 AM	61.3350624084473	61.3104316393534	71.1325941721598	59.246310043335
	3/30/2012 10:00:00 AM	61.3350624084473	61.3104316393534	71.1325941721598	59.246310043335
	3/30/2012 11:00:00 AM	77.7188284556071	56.4964746157328	77.6274737040202	68.838077832194
	3/30/2012 12:00:00 PM	72.8585931142171	62.9040375709534	73.2186347961426	78.1072875978563
	3/30/2012 1:00:00 PM	60.1481925964356	60.267654800415	69.4468827565511	86.2893038002409
	3/30/2012 2:00:00 PM	71.179417292277	76.4206968943278	70.5296145121256	90.5276397705078
	3/30/2012 3:00:00 PM	77.8320638020833	76.4182764699128	68.1329851786296	89.3417254130046
	3/30/2012 4:00:00 PM	67.2655041605631	68.330563723836	65.6417427690771	83.1458034477425

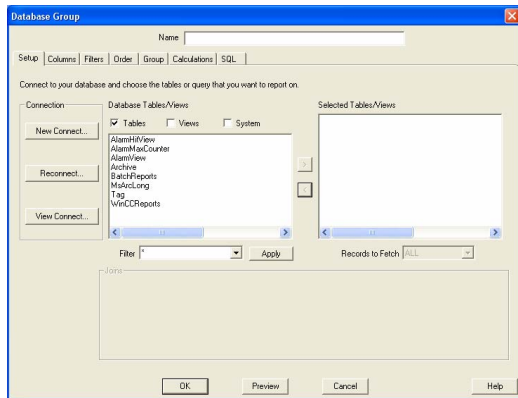
Preview

**Preview** displays the data exactly the same way it will be displayed in a report.

## Alarm Data

Data from the WinCC/PCS 7 alarm archives can be accessed through the **Database Group** interface provided by **XLReporter**.

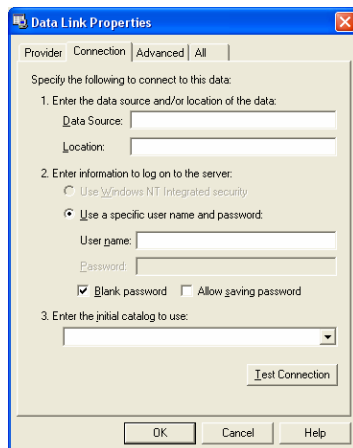
To create a database group, open **XLReporter's Project Explorer**, and double click on **Database Group**. Select **New** and select the type of group. When retrieving alarm data select **Standard Query**.



Database Group

The **Setup** tab is where you define the connection to the alarm database. Click **New Connect** to launch the **Connection** window.

To the right of **Provider**, click the browse button (...). This launches the **Data Link Properties**.



Data Link Properties

Under the **Provider** tab, select *WinCC OLEDB Provider for Archives*.

Under the **Connection** tab, specify the **Data Source**, and **Initial Catalog** to use.

The **Data Source** depends on what type of software application that is installed. Use the table below to determine:

Connection	Node	Data Source Name
Connectivity Pack	Local	.\WinCC
Connectivity Pack	Remote	<i>ComputerName</i> \WinCC
Open PCS 7	Remote	<i>SymbolicComputerName</i> ::\WinCC

*ComputerName* is the physical computer name where the alarms database is installed and *SymbolicComputerName* is the symbolic name configured within PCS 7 or WinCC for the (redundant) Servers where the alarm database is residing.

The **Initial Catalog** is manually entered and specific to the installation. This value is stored in the *@DataSourceNameRT* tag on the server where the alarm database resides. This tag can be viewed in the **System Check** of the **Project Explorer** so it can be noted and entered into the initial catalog field.

In the **Advanced** Tab, verify that the **ReadWrite** checkbox is unchecked.

Once these parameters are configured, the alarm database is now accessible. It contains two tables which are relevant for processing alarm data:

- **AlarmView** - The AlarmView table returns individual alarm records from the database.
- **AlarmHitView** - The AlarmHitView table returns alarm summary information.

Under the **Columns** tab, select any of the available Columns from the alarm database.

Under the **Filters** tab, specify filtering to limit the type or amount of alarms returned. You can filter based on any available column in the selected table/view. This includes filtering on time period, alarm type, tag name, etc.

Under the **Order** tab, specify the ordering of the returned alarm data.

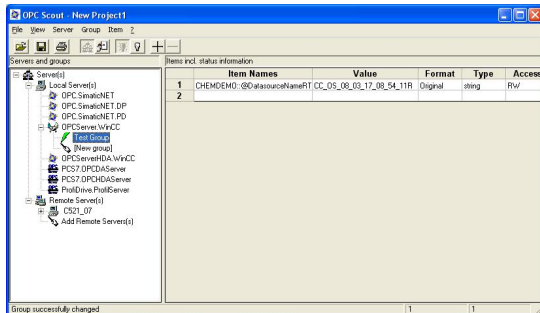
**Preview** at the bottom of the database group display can be used to preview the result of the current configuration.

## Troubleshooting – Real Time Data

If you are experiencing issues connecting to or retrieving data from WinCC/PCS7 with **XLReporter**, you can use OPC Scout provided by Siemens to test the OPC server.

**OPC Scout** is opened from the **Simatic** program group under **Simatic Net, OPC Scout**.

Once opened, connect to the PCS7 or WinCC OPC Server listed by double clicking on it. If the connection is successful, a new window prompts to create a new group. Enter **Group Name** and click **OK**.



OPC Scout

To add tags to this group, double-click group or select **Item, Add Item**. This opens the OPC Navigator window.

Select tags by moving them from the left pane to right pane by clicking the right arrow [→]. After selection is complete, click **OK**.

All of the selected tags appear along with their values, and other information.

If at any point you experience an issue with this client, it is an indication that there is something wrong with the WinCC/PCS7 server, since now two OPC clients have demonstrated issues.

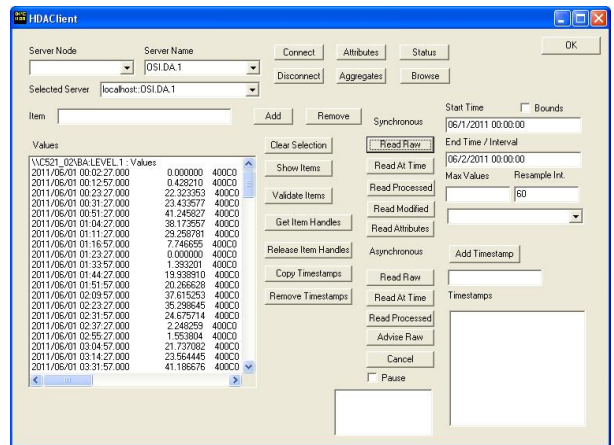
At this point, contact Siemens technical support to troubleshoot and correct these issues.

## Troubleshooting – Historical Data

If you are experiencing issues connecting to or retrieving data from WinCC/PCS7 historian with **XLReporter**, a generic OPC-HDA test client is provided to test the WinCC/PCS7 OPC-HDA Server.

This client is available from the Tools folder of the **XLReporter** installation disk and can be downloaded from [www.TheReportCompany.com](http://www.TheReportCompany.com).

To open, double-click **SampleClientHDA.exe**. This opens the **HDA Client** window.



HDA Client

To connect to an OPC-HDA server and retrieve historical tag values, select the **Server Name** and click **Connect**. Click **Browse** to open the **Browse Dialog** window.

Choose the desired tags from the window and click **Add** after each selection. When complete, click **Done** to return to the **HDA Client** window.

Click **Show Items** to display the selected tags in the left pane window. Select each tag and click **Validate Items** then **Get Item Handles**.

Enter the **Start Time** and **End Time**. Note this is in UTC(Universal Time Clock) as well as the **Resample Interval**.

To read raw values, click **Read Raw**. The data appears in the left window.

To read processed data, click **Aggregates**, select the appropriate aggregate (e.g., maximum, minimum, etc.) and click **Read Processed**. The data appears in the left window.

If at any point you experience an issue with this client, it is an indication that there is something wrong with the WinCC/PCS7 OPC-HDA server, since now two OPC-HDA clients have demonstrated issues.

At this point, contact Siemens technical support to troubleshoot and correct these issues.