

Reporting from CitectSCADA

XLReporter generates Excel based reports from Schneider Electric's CitectSCADA from current process data, historical data and alarm archives.

The purpose of this document is to describe how to interface **XLReporter** to the CitectSCADA.

Process Data

In cases when a historian is not used, **XLReporter** can take snapshots of the process data and add it to a new or 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 retrieves process data from CitectSCADA using the OPC Server provided.

Before you Begin

In order for **XLReporter** to communicate with CitectSCADA, 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.

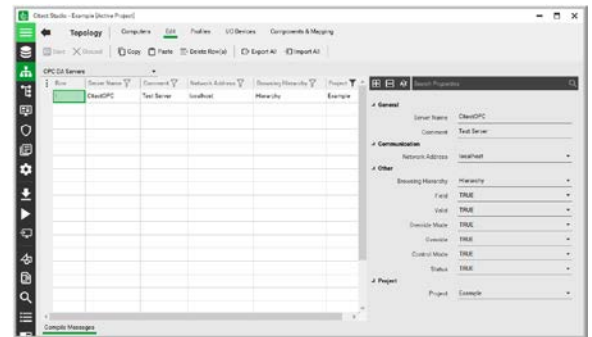
If **XLReporter** is installed on a PC that is remote to CitectSCADA then a number of settings need to be configured on both the server and client machines. This includes having matching Windows user accounts (with matching passwords) on both machines and enabling DCOM on the machine where CitectSCADA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

Enable the OPC Server

By default, the OPC Server is not enabled and the server will need to be added to the project.

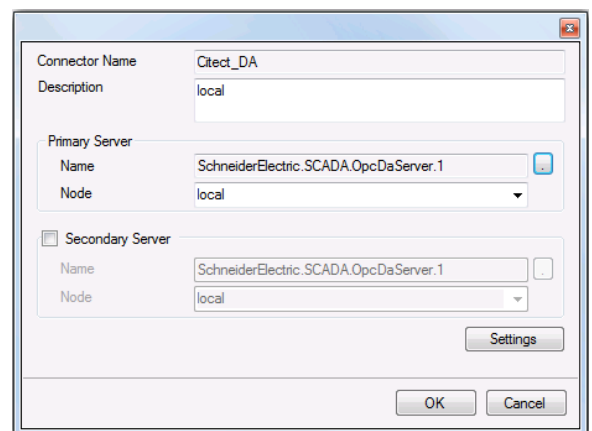
From the **Citect Studio** open the **Topology** option. In the **Topology** page click **Edit** then select **OPC DA Servers** from the dropdown menu.



Citect Studio

Creating a Real Time Data Connector

To connect **XLReporter** to CitectSCADA, you will first need to create a **Connector**. To do this, open **XLReporter's Project Explorer**, and open **Connectors** from the **Data** tab. In **Connectors**, select **Add**, and select **Citect**, **Citect Real-time values**.

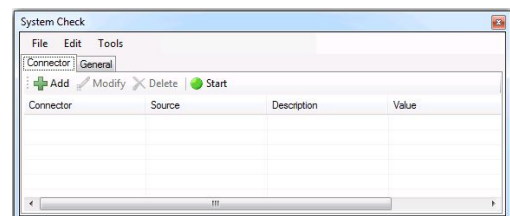


Citect Real Time Connector

Connectors for CitectSCADA require a **Primary Server**. If the Primary Server is on a remote machine, the **Node** must be specified. The **Node** can be selected from the drop down list or manually entered as a machine name or IP address.

Verifying the Data Connector

To verify that the **Data Connector** is functional, open **XLReporter's Project Explorer**. From the **Tools** tab start the **System Check** application and select the **Connector** tab.



System Check

Select **Add**, choose your **Citect Real-Time Connector** from the dropdown list, and click the pushbutton [...] next to **Items** to open the **Tag Browser** window.

Select one or more tags and verify that they update with the current value using **Start** in the **System Check** window.

Historical Data

Creating reports from CitectSCADA Reports is performed by simply selecting the tags, a time frame and interval of interest. e.g., hourly averages of the previous day. In this manner, reports containing raw values, informative metrics such as run times and statistics can be easily produced, automatically.

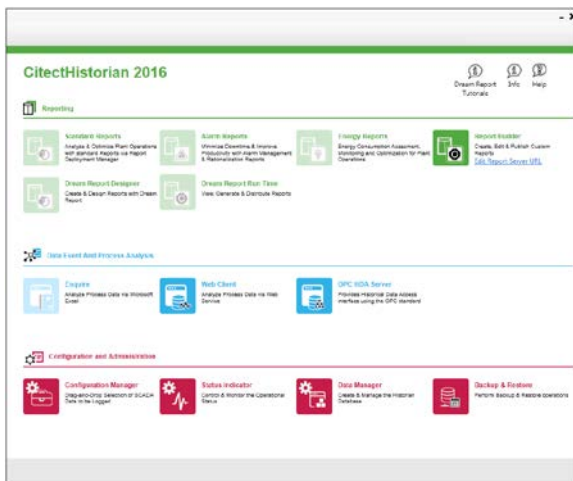
XLReporter can also perform raw and time weighted calculations. The time weighted calculations would be used when data is not logged periodically e.g., logged on change.

CitectSCADA Reports stores its collection to a Microsoft SQL Server Database. Consequently, **XLReporter** can create reports from this data both locally and remotely.

Setting up the Historian Database

In order to get CitectSCADA Reports to log historical data, the Historian database must be set up in SQL Server.

From the Citect program group, open the **Citect Historian** program and select **Configuration Manager**.



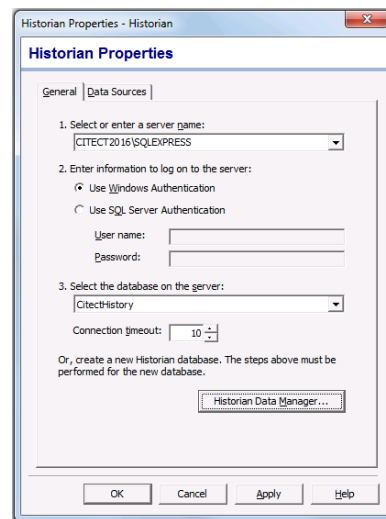
Citect Historian

In the **Historian Configuration Manager** right click **Historian Server** and assign the **New Server**.



Register Historian Server Wizard

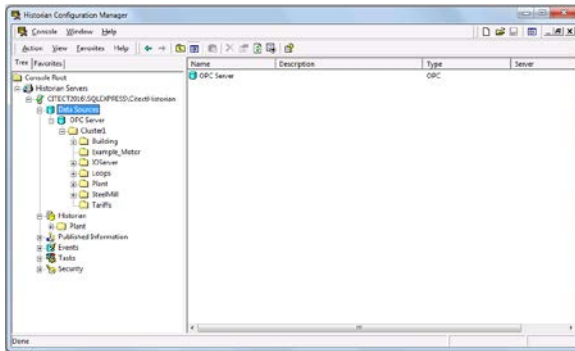
To verify the connection right click **Historian** and verify the **General** properties.



Historian Properties

Setting up Data Logging

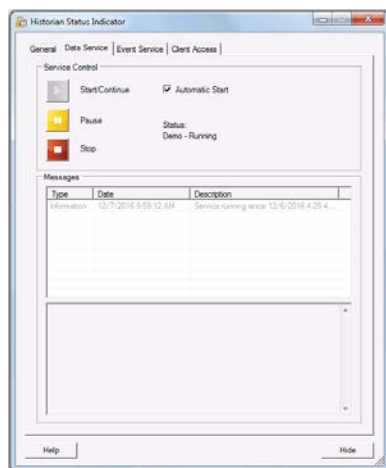
Data logging is configured in the **Historian Configuration Manager**. Add the **Data Sources** and then add the Tags to the Historian.



Server Manager

Starting the Data Logger

CitectSCADA Reports provides a **Historian Service** to manage the logging and retrieval of Historian data. In the **Historian Configuration Manager**, right click **Historian** then select **Status Indicator**.

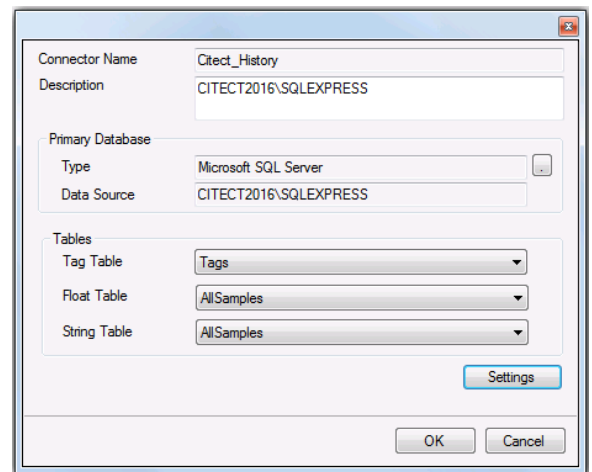


Service Manager

The service must be running for data to be logged to the SQL Server database. The Service can be configured to automatically start when the PC is powered up.

Creating a Historical Data Connector

To connect XLReporter to a CitectSCADA database, you will first need to create a **Connector**. To do this, open **XLReporter's Project Explorer**, and open **Connectors** from the **Data** tab. In **Connectors**, select **Add**, and select **Citect**, **Citect Historical** values.

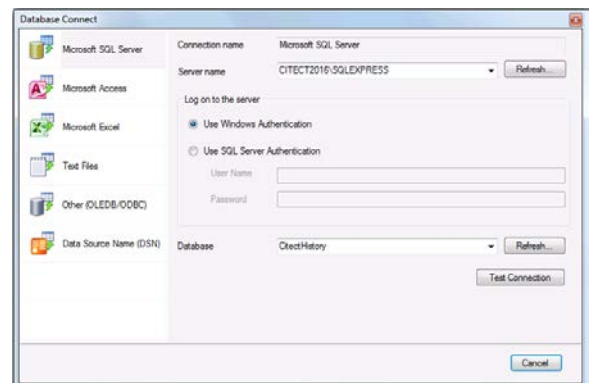


Connector

Connectors for CitectSCADA require a **Primary Database**. Configure the connection to this database using the browser button ([...]) next to **Type**.

In **Database Connect**, select **Microsoft SQL Server**.

For **Server name**, select the location where the SQL Server database resides.



Database Connect

In the **Log on to the server** box, specify the credentials to connect to the server. In the **Database** dropdown, select the database you set up previously in **Historian Maintenance**.

Click **Test Connection**, and then click **OK** to return to the connector settings.

Verifying the Historical Connector

Verify the historical connector by creating a **Connector Group**. Connector groups are accessed by opening **Project Explorer, Tools, Connector Groups**.

In **Connector Groups**, select your CitectSCADA historical connector, and then select **Add**. Select a **Type** and click **OK**.

On the **Columns** tab of the group, select the tag **Name** and **Calculation** for each tag in the group.

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 top of the history group display can be pressed to preview the result of the current configuration.

Date	FLOW01	FLOW02	FLOW03	FLOW04
10/1/2013 1:00:00 AM	66.2536656697591	53.1530425289608	34.9891117477417	60.13441855112791
10/1/2013 2:00:00 AM	78.7583703368968	66.8680634489596	33.7002769562678	59.7737679799398
10/1/2013 3:00:00 AM	71.6823314666748	54.3723221460978	31.9870504519076	64.7202777893066
10/1/2013 4:00:00 AM	66.1845688038737	57.8811047954016	35.0855181884766	73.2772684733073
10/1/2013 5:00:00 AM	78.0985364278158	75.0615464528402	37.535504884257	82.4242506771647
10/1/2013 6:00:00 AM	72.5651168823242	61.0782748825219	48.5499558989334	88.9774213155111
10/1/2013 7:00:00 AM	76.1162572224935	63.2840409914853	52.1044570287069	90.6483974456787
10/1/2013 8:00:00 AM	60.9478285234782	77.509205794598	51.897953414917	86.8526187896728
10/1/2013 9:00:00 AM	77.3452785148891	50.0980437031735	62.6886134516388	76.9161791856484
10/1/2013 10:00:00 AM	70.5410724638993	69.8882724761963	67.167685508728	69.612035368873
10/1/2013 11:00:00 AM	64.5620135486047	61.0963741938273	68.3750368116286	62.1898630142212
10/1/2013 12:00:00 PM	66.6623281789613	59.008094932662	71.7531196954288	59.242839541626
10/1/2013 1:00:00 PM	77.966978018544	60.444863387544	76.011826420308	61.7999187587987
10/1/2013 2:00:00 PM	66.6281160532633	48.4779631932577	76.7051423380708	68.963861378395
10/1/2013 3:00:00 PM	59.6342877795852	56.9765511830648	55.9388724238078	78.2438307444255

Preview

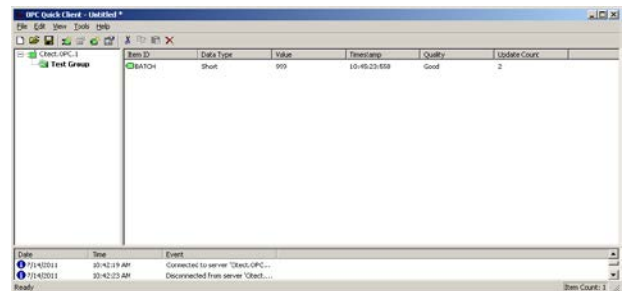
Preview displays the data exactly the same way it will be written into the report. Notice that the data is displayed in a wide format even though it is in a narrow format in the database.

Troubleshooting

If you are experiencing issues connecting to or retrieving data from Citect with **XLReporter**, a generic OPC test client is provided to test the Citect OPC Server.

This client is available from the **Tools** folder of the **XLReporter** installation disk and can be downloaded from www.SyTech.com.

To open, double-click **SampleClientDA.exe**. This opens the **OPC Quick Client** window.



OPC Quick Client

To connect to an OPC server, select **Edit, New Server Connection** to open the **Server Properties** window. Select **Citect.OPC** and click **OK**.

Once the connection is made, select **Edit, New Group**. Specify **Name** and click **OK**.

Click on the group name created, and select **Edit, New Item**. This opens the **Add Items** window. Browse for tags and double click any to select. Once tag selection is complete click **OK** to return to the **OPC Quick Client** window.

All of the selected tags appear along with their real time values, type, quality, and timestamp.

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

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