OPC Setup

Reporting from OPC

XLReporter generates Excel based reports from OPC DA, HDA, UA and AE servers to retrieve real time, historical and alarm data.

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

Process Data

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 OPC DA and OPC UA servers.

Before you Begin

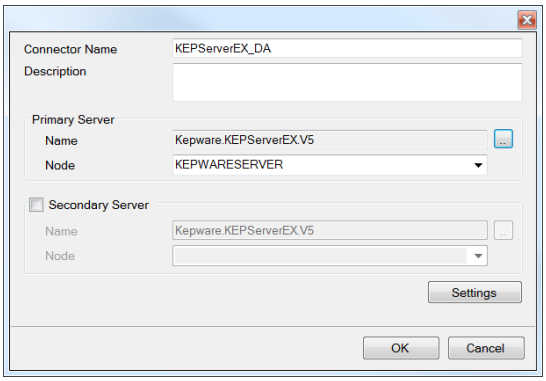
In order for **XLReporter** to communicate with OPC servers, the machine where **XLReporter** is installed must also have the OPC core components installed. The OPC core components are provided in the tools folder of the **XLReporter** install CD or from www.OPCFoundation.org.

If **XLReporter** is installed on a PC that is remote to the OPC DA server 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 the server 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.

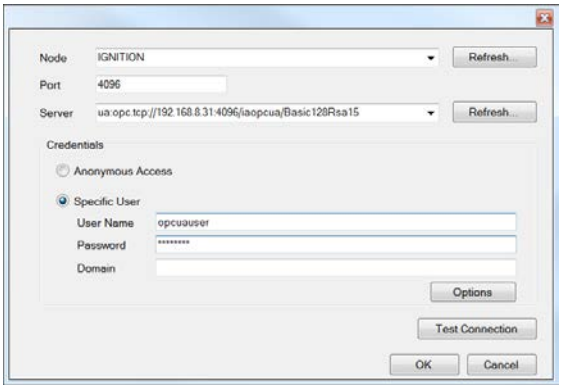
Creating a Real Time Data Connector

To connect **XLReporter** to real time values from OPC, 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 **OPC** then either **OPC DA Real-time values** or **OPC UA Real-time values.**



Connectors for OPC DA 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.

Connectors for OPC UA require a **Primary Server**. Click the browse button […] to define the server.



If the OPC UA server is running on a remote machine, set **Node** to the name of that machine.

Typically information about the **Port** number to use can be found in the OPC UA server settings.

The **Server** dropdown displays all the available servers based on the **Node** and **Port**.

If the **Server** supports **Anonymous Access**, leave that selected, otherwise select **Specific User** and enter the credentials.

Click **Test Connection** to ensure connectivity. This may require an exchange of certificates between the client and the server. If prompted to exchange, click **Yes**. This action requires Windows administrator rights.

Verifying the Real Time 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.

Select **Add,** choose your OPC 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

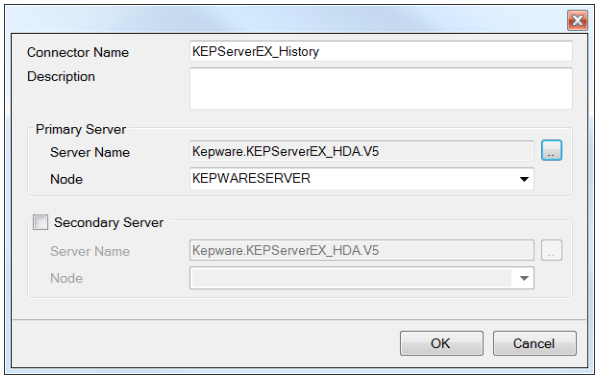
With process data stored in a historian, the variety of reports that can be produced by **XLReporter** increases many fold.

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.

XLReporter gets historical data from OPC HDA servers.

Creating a Historical Data Connector

From **XLReporter's Project Explorer**, open the **Data** tab, select **Connectors**, and then **Add**. Choose **OPC**, then **OPC HDA Historical Values**.



Connectors for OPC HDA servers 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.

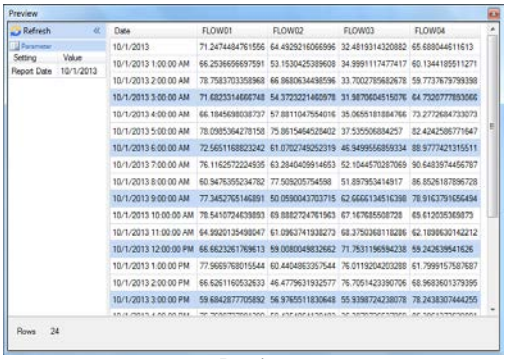
Verifying the Historical Data Connector

Create a **Connector Group** to verify that data can be retrieved from the connector. **Connector Groups** are designed in **Project Explorer, Tools, Connector Groups**. Select your OPC HDA connector, and then select **Add.** Select the **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 upper-left of the history group display can be pressed to preview the result of the current configuration.



Preview

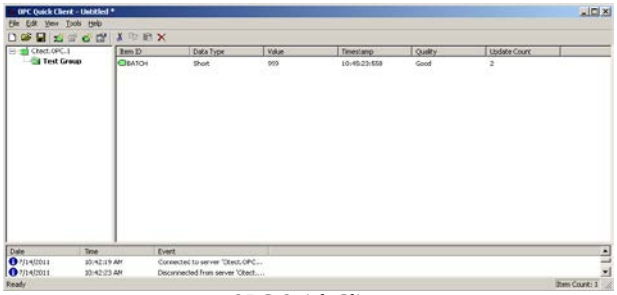
Preview displays the data exactly the same way it will be written into the report

Troubleshooting – Real Time Data

If you are experiencing issues connecting to or retrieving data from OPC DA servers with **XLReporter**, a generic OPC test client is provided to test any OPC DA 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 your OPC DA server 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 OPC DA server, since now two OPC clients have demonstrated issues.

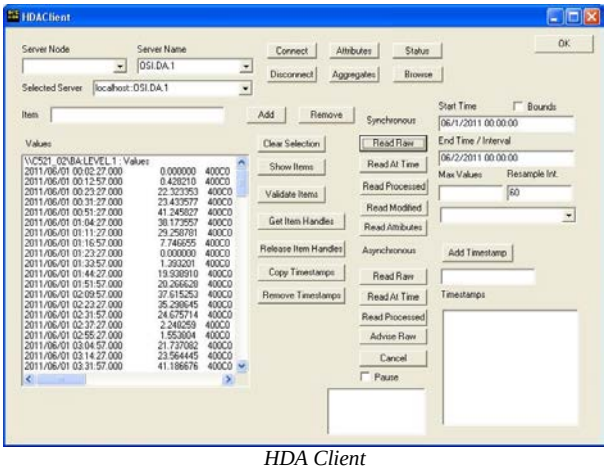
At this point, contact the manufacturer of the OPC DA server for support.

Troubleshooting – Historical Data

If you are experiencing issues connecting to or retrieving data from an OPC HDA server with **XLReporter**, a generic OPC HDA test client is provided to test it.

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 **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 OPC HDA server, since now two OPC HDA clients have demonstrated issues.

At this point, contact the manufacturer of the OPC HDA server for support.