



## Reporting from DeltaV

**XLReporter** generates Excel based reports from Emerson Process DeltaV from real time data, historical archives as well as alarm and batch history.

The purpose of this document is to describe how to interface **XLReporter** to DeltaV. This document covers any initialization steps to DeltaV and troubleshooting using tools provided by DeltaV.

## Before you Begin

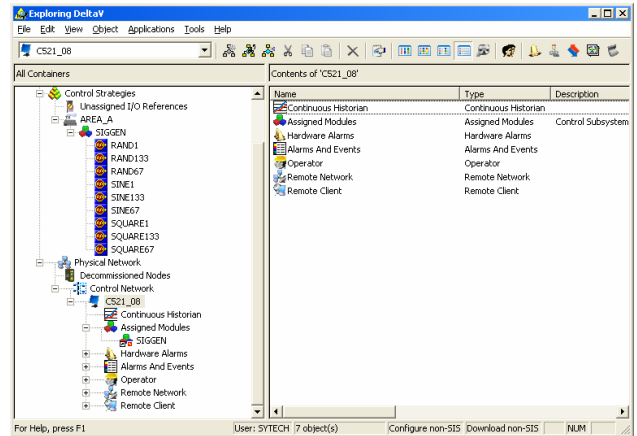
In order for **XLReporter** to communicate with DeltaV, the machine where **XLReporter** is installed must also have the OPC core components installed. The OPC core components are provided in the tools folder of the **XLReporter** install CD or from [www.OPCFoundation.org](http://www.OPCFoundation.org).

If **XLReporter** is installed on a PC that is remote to DeltaV 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 DeltaV 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).

## Configuring DeltaV

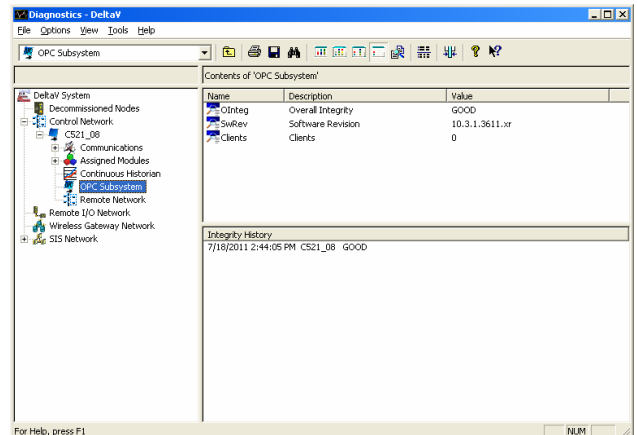
While there is no additional configuration for **XLReporter** to connect to DeltaV, there are a few settings that can be verified from within DeltaV. These settings can be viewed and modified in the **DeltaV Explorer**, which is accessible from the **DeltaV** program group, under the Engineering folder.



DeltaV Explorer

First, check that the Continuous Historian is enabled. This can be done by right clicking the **Continuous Historian** icon in the left pane, listed below the server name. Select **Properties** and make sure that **Enabled** is checked.

Next, check the OPC installation by selecting **Application, Diagnostics** from the menu which will open the Diagnostics window. Expand the tree below the server name, in the left pane, and select **OPC Subsystem**.



Diagnostics

Several variables appear in the upper right pane, one being **OInteg**, which is the overall integrity of the OPC server. This should have a value of *GOOD*.

## Real Time Data

There are two methods of communication with the Real-time server of DeltaV: OPC and FIX interface. OPC is the preferred method and works on each DeltaV station type, but may require an additional license.

The *Application Station* always has OPC enabled, while a *ProPlus Station* may require a license.

The second method, the FIX interface, is not supported on the *Application Station* and only supported on the *ProPlus Station*. DeltaV has dropped support for the FIX interface after version 10.3.

## Accessing Remote Data

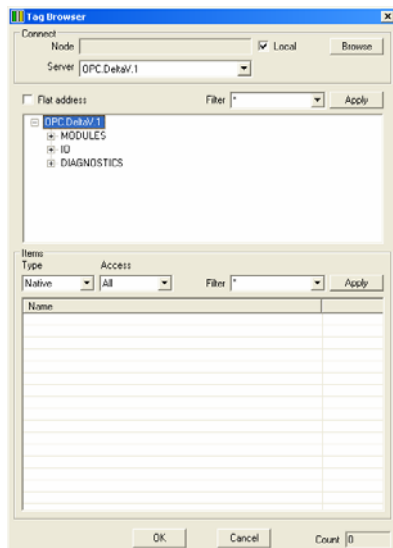
Real Time and historical data can be accessed remotely through OPC in DeltaV. In order to access, the DeltaV Remote program needs to be installed on the remote (client) machine. Additionally, the DeltaV account on the server must be identically named to the accessing account on the client.

When browsing for Real Time tags using the **Tag Browser**, and accessing remote data, check **Local**, even though you are connecting to another computer. The remote server name is established during the DeltaV remote installation.

## 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 the pushbutton named (...) to open the **Tag Browser** window.

To connect to DeltaV the **Server** should be set to *OPC.DeltaV.1*. Select one or more tags and click **OK** to return to the **System Check**. Now select **Read** to verify that the tags update with the current value.



*Tag Browser*

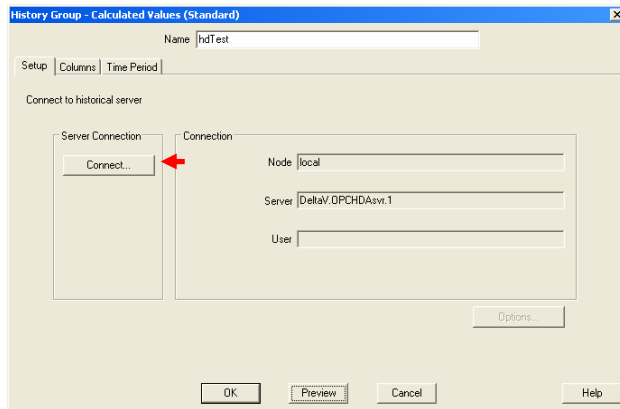
## Historical Data

History Groups are the interface for extracting information from the DeltaV OPC-HDA Server. History Groups can be defined for raw values and calculations and are configured with time duration over which the history data is retrieved. In addition, DeltaV offers batch and journal information to be accessed, via a relational database. This can be done similarly through the Database Group Builder.

## Retrieving Historical Data

**XLReporter** accesses values stored in the DeltaV Historian by using a history group.

From **XLReporter's Project Explorer**, double click on **History Group** to list the groups 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 Historian. From the **Setup** tab, click **Connect...** to open the OPC-HDA Servers window.

In the **Servers** window, specify the **Node** where DeltaV is installed, or if **XLReporter** is installed on the same machine as DeltaV, check the **Local** checkbox. From the list of **Servers**, select *DeltaV.OPCHDAsvr.1* and click **OK**.

From the **History Group** window select the **Columns** tab, and choose the **Name** and **Calculation** for each tag required in the group.

From the **History Group** window, select the **Time Period** tab and 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	Date	MIXER_ZONE1_TEMP	MIXER_ZONE2_TEMP	MIXER_SPEED	MIXER_RAMPPRESSURE
Setting	3/30/2012	3/30/2012	71.3938171386719	77.1789534250895	33.1370187441508	64.6267203648885
Report Date	3/30/2012	3/30/2012 1:00:00 AM	78.1625200907389	49.0242124239604	36.6801055444946	73.138713114421
		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	88.9127839408331
		3/30/2012 4:00:00 AM	78.505402407227	65.9929971377055	54.0780683517456	90.664428553467
		3/30/2012 5:00:00 AM	72.0215874989828	63.6706168492635	53.4231769325985	86.9440397989356
		3/30/2012 6:00:00 AM	65.389522524902	53.5336532274882	59.6284706751506	79.0512536366781
		3/30/2012 7:00:00 AM	71.5103736605876	74.3869140625	59.4726551055908	69.7432478586833
		3/30/2012 8:00:00 AM	78.2382620493571	60.0908380508423	60.3853614171346	62.2715770085653
		3/30/2012 9:00:00 AM	61.3350624084473	61.3104316393534	71.1325841721588	59.246310043335
		3/30/2012 10:00:00 AM	70.8315608978271	56.1890864372253	77.1162390391032	61.7242600123088
		3/30/2012 11:00:00 AM	77.7188284556071	56.4964746157328	77.6274737040202	68.8398073832194
		3/30/2012 12:00:00 PM	72.8585931142171	62.9040375709534	73.2186347961426	78.1072875978563
		3/30/2012 1:00:00 PM	60.1481925964356	60.257654900415	69.4468227556511	86.2893030802409
		3/30/2012 2:00:00 PM	71.179417292277	76.4206963843278	70.5296145121256	90.5276397705079
		3/30/2012 3:00:00 PM	77.8320638020833	76.4182764689128	68.1329851786296	89.3417254130046
		3/30/2012 4:00:00 PM	67.2665041605631	68.3305636723836	65.6417427698771	83.1458344777425

Preview

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

## Alarm and Batch Data

Data from the DeltaV alarming and batching 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 or batch data select **Standard Query**.

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

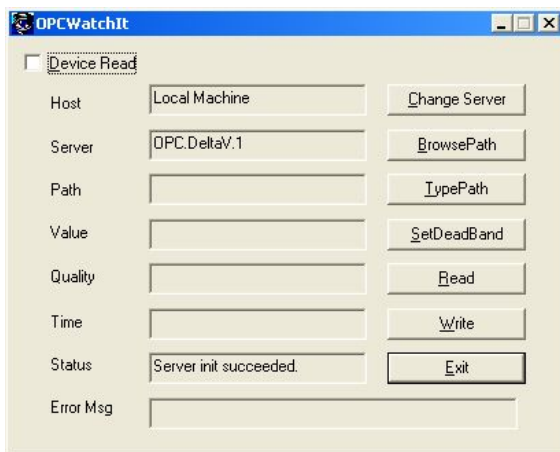
For **Provider**, select **Microsoft SQL Server**. For **Server**, select the appropriate SQL Server instance. Note that DeltaV has set up two SQL Server instances, *DELTA\_V\_ADV\_CNTRL* and *DELTA\_V\_CHRONICLE*.

Specify the **User name**, **Password** and **Database** and click **OK**. The Tables for the database appear. From here, a query can be constructed.

## Troubleshooting – Real Time Data

If you are experiencing issues connecting to the DeltaV OPC Server or accessing real time values, DeltaV has provided **OPCWatchIT.exe**, as a diagnostic tool.

To run, from the command line (Start, Run), enter *opcwatchit* and select **OK**.



*OPC WatchIT Window*

In the **OPCWatchIT** window, verify **Server** is set to *OPC.DeltaV.1*. If it is not, click **Change Server** to select it.

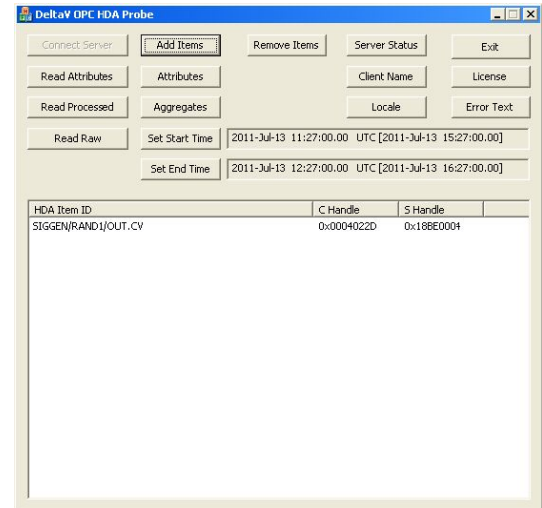
To choose tags, click **BrowsePath**. This opens the **Browse Attributes** window showing a tree view of all tags configured. Select a tag and click **OK**.

Click **Read** to display real time value of the selected tag.

## Troubleshooting – Historical Data

If you are experiencing issues connecting to the DeltaV OPC-HDA Server or retrieving Historical data, DeltaV has provided **HDAprobe.exe** as a diagnostic tool.

To run, use Windows Explorer, browse to *C:\DeltaV\bin* and double-click **HDAprobe.exe**.



*DeltaV OPC HDA Probe*

In the **DeltaV OPC HDA Probe** window, click **Connect Server** and select *DeltaV.OPCHDA.svr.1*.

Click **Add Items**. This opens the **Add HDA Items** window. Click **Browse** to open the **OPC HDA Browse** window.

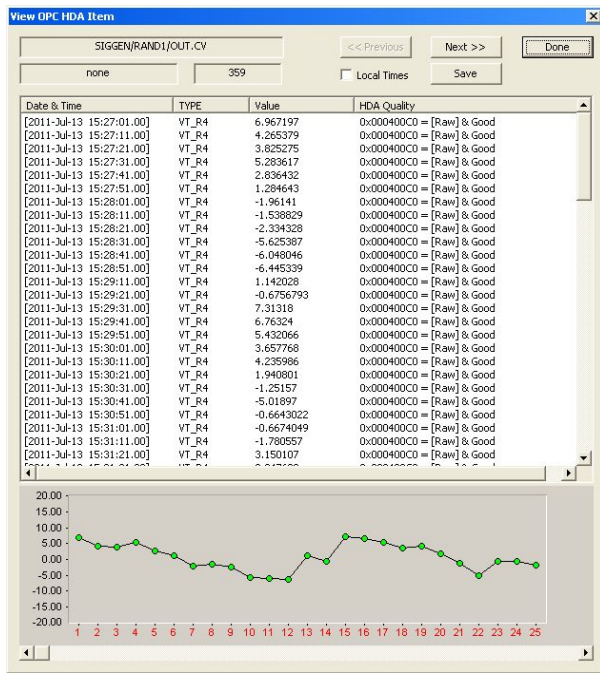
Click **New Browser** to view a list of tags. Select a tag and click **OK**. That tag is now listed in the **Add HDA Items** window. Click **Add** to add the tag and **Done** to return to the main **DeltaV OPC HDA Probe** window.

Select the tag and click **Read Raw** to read the raw values recorded for the selected tag. This opens the **HDA Read Raw** window.

Click **Set Start Time** and **Set End Time** to specify the time frame. By default time is in UTC (universal time). Check **local** to convert to local time.

Click **Read Raw**. If this is successful, **HR** displays *Success*.

To view the raw values, click **View Values**.



*View OPC HDA Items*

This opens the View OPC HDA Item window that displays the historical data for the tag selected as well as a graph. Click **Done** to close.

To retrieve processed values (e.g., averages, maximums, minimums, etc.) follow the steps above but click **Read Processed** rather than **Read Raw**.