



## Retrieving Historical Data

In many applications it is desirable to log process data to a historian e.g., OPC-HDA, and then produce reports based on this data. In this way, the data logging and the reporting are not coupled, allowing a greater level of flexibility in the type of reports that can be produced.

Once that data is logged, the question becomes, how do you get it out of the historian and into a report?

**XLReporter** provides a History Group Builder where you can specify all the settings necessary to retrieve data from a historian.

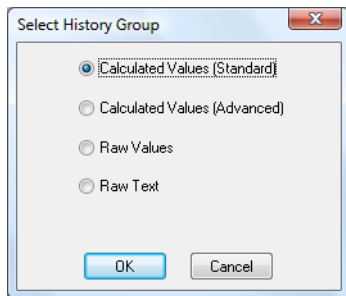
The History Group Builder is accessible from both the Project Explorer and from the **XLReporter** menu option in Excel.

The following highlights the key features of the history group and the steps needed for configuration.

## Selecting the History Group Type

The first step in configuring a history group is determining what type of historical data you want to retrieve. While this may vary slightly based on your specific server, the typical choices are:

- **Calculated Values (Standard)**  
Standard calculations that are either based on raw data or performed on the server.
- **Calculated Values (Advanced)**  
Advanced calculations performed on the client side by **XLReporter**. These calculations are based on interpolated samples.
- **Raw Values**  
Raw values collected by the historian.
- **Raw Text**  
Raw textual values collected by the historian.



History Group Type

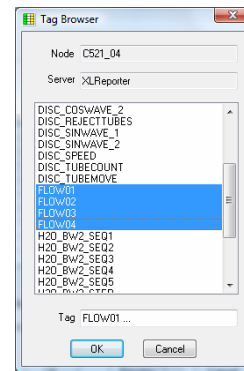
## Connecting to the Server

When you first open the History Group Builder, you may need to connect to your historian server or specify settings for your server. This is done under the Setup tab of the builder. If your server requires, enter this information, and then connect.

## Specifying the Data

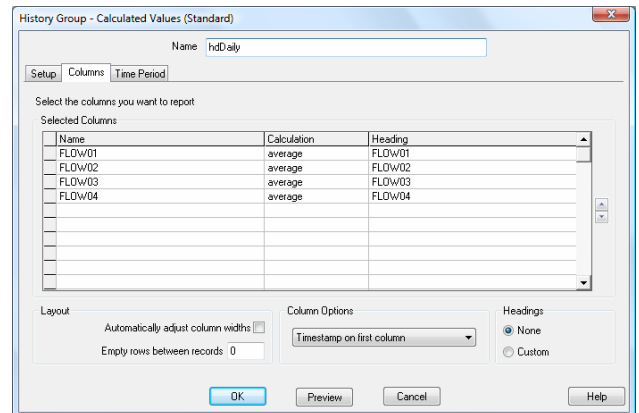
Under the Columns tab, you specify the historical tags you want this history group to represent. Up to 40 tags can be specified in a single history group.

A built-in tag browser is provided to assist you in selecting the tags you want.



Historical Tag Browser

For each tag selected, there may be other settings you need before the data retrieval. For instance, calculated values (both standard and advanced), require the calculation type each tag selected.



Columns Tab

## Setting the Time Period

Under the Time Period tab, you specify the time frame of the data that this history group represents.

History Group - Calculated Values (Standard)

Name: hdDaily

Setup | Columns | Time Period

Specify the reporting period.

Time Period

Start Time: Today, Time 00:00:00

Offset: 1 day(s)

End Time: Today, Time 00:00:00

Offset: 0 day(s)

Interval

For the Time Period

Number of samples: 60

All samples

Sample values every: 1 hour(s)

Time Ordering: Ascending

Bounds to include: None

Endpoints to include: Start Time

OK Preview Cancel Help

Time Period Tab

The Start Time and End Time settings determine the ends of your data. Both have the following options:

- **Now**  
The Start or End time will be based on the current time +/- the offset specified.
- **Today**  
The Start or End time will be based on the current date +/- the offset at the time specified.
- **Specific**  
The Start or End time will be based on the values specified.
- **Variable**  
The Start or End time will be based on **XLReporter** variables.
- **Cell**  
The Start or End time will be based on cell values in the report.

Once the Start Time and End Time are specified, you need to specify the Interval for the time period. The Interval determines how the time period is divided. There can be up to 3 choices for this setting, they are:

- **Number of samples**  
The time period is divided by the specified number of samples.
- **All samples (raw values)**  
Every sample over the total time period is returned.
- **Sample values every**  
The total time period is divided into intervals based on the minutes, hours or days specified.

## Testing a History Group

A preview button has been provided to test the configuration of the group before it is used in a report.

When clicked, a window pops up showing you the results of the historical data.

Preview

Date	FLOW01	FLOW02	FLOW03	FLOW04
10/29/2007	91.5	45.75	68.625	76
10/29/2007 1:00:00...	88.5	135.75	82.125	89.0666666666667
10/29/2007 2:00:00...	88.55	44.25	98.6625	102.133333333333
10/29/2007 3:00:00...	88.6	134.25	109.125	81.4666666666667
10/29/2007 4:00:00...	88.65	45.775	67.95	85.3333333333333
10/29/2007 5:00:00...	88.7	132.75	94.4975	98.4
10/29/2007 6:00:00...	88.75	47.3	101.025	90
10/29/2007 7:00:00...	88.8	131.25	102.375	81.6
10/29/2007 8:00:00...	88.85	48.825	70.3125	94.6666666666667
10/29/2007 9:00:00...	88.9	129.75	86.85	96.5333333333333
10/29/2007 10:00:00...	88.95	50.35	103.3075	77.8666666666667
10/29/2007 11:00:00...	89	128.25	95.625	90.9333333333333
10/29/2007 12:00:00...	89.05	51.875	72.675	104
10/29/2007 1:00:00...	89.1	126.75	89.2125	77.2
10/29/2007 2:00:00...	89.15	53.4	105.75	87.2
10/29/2007 3:00:00...	89.2	125.25	98.675	100.266666666667
10/29/2007 4:00:00...	89.25	54.925	78.0375	85.7333333333333
10/29/2007 5:00:00...	89.3	123.75	91.575	83.4666666666667
10/29/2007 6:00:00...	89.35	56.45	108.1125	96.5333333333333

Close Rows: 24

History Group Preview

## Connecting to your Report

With a history group defined, it can now be used inside a report template using the Data Connection menu option in Excel.

The Source Name should contain a history group name.

Connection Configurator

Grp	Target	Type	Positi	Source	Type
0	\$B\$9	Direct		hdDaily	History

Connections Used: 1

Apply To: Any Sheet Group: 0

Source: Type: History Group Name: hdDaily

Target: Type: Direct Name: \$B\$9

Save Cancel Export Import View Target Comment Insert Update Delete Help

The Connection Configurator

The cell reference you specify as the Target Name represents the top, left corner of the data table that is returned from the history group.

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