

## Reporting from Historian

**XLReporter** generates Excel based reports from the Wonderware Historian using historical logged data as well as alarm data.

The purpose of this document is to describe how to setup Wonderware Historian for **XLReporter**.

## 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** performs raw calculations and time weighted calculations. The time weighted calculations would be used when the data is not logged periodically e.g. logging on change.

## Setting up Data Logging

Wonderware Historian is designed to log data to Microsoft SQL Server. When installed, Historian creates the Runtime database in SQL Server for its use.

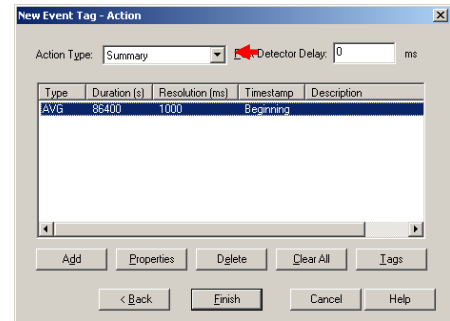
As part of configuring the Historian, you can configure summary calculations that are triggered and stored by the Historian. These calculations can be retrieved by **XLReporter** as part of a report.

Summary calculations are configured in the **System Management Console**. This can be accessed from the Windows **Start** menu in the **Wonderware** program group.

In the **System Management Console**, under **Historian**, expand **Configuration Editor** and **System Configuration**. Right-click **Tag Configuration**, and select **New Event Tag**.

Set the **Detector Type** to **Schedule** and specify the frequency at which to perform the calculations.

Configure the **Action Type** as a **Summary** action, specifying the calculations to perform, the frequency to perform them over and the tags that provide the data to calculate.



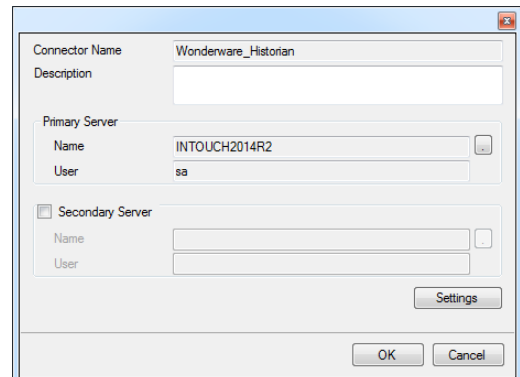
*New Event Tag - Action*

Configured summaries can be accessed in the **System Management Console** under **Tag Configuration, Summaries**.

## Creating a Historical Data Connector

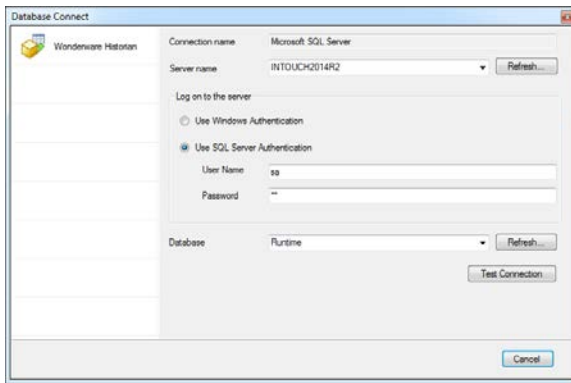
To connect **XLReporter** to Wonderware Historian data you will first need to create a **Connector**. To do this, open **XLReporter's Project Explorer**, and open **Connectors** from the **Data** tab. In **Connectors**, select **Add**.

Under **Wonderware**, select **Wonderware Historian** to retrieve raw, calculated or live data or **Wonderware Historian – Summary Tables** to retrieve data from summary calculations as described in the previous section.



*Wonderware Historian Connector*

Under **Primary Server**, click the browse pushbutton [...].



For **Server name** specify the name of the machine where the Wonderware Historian is running.

For **Log on to the server**, specify the credentials to connect to the server. Specify the **Database** as *Runtime*.

Click **Test Connection** to verify the settings.

**Verify the Historical Data Connector XLReporter** accesses process values stored in the historian using a connector group.

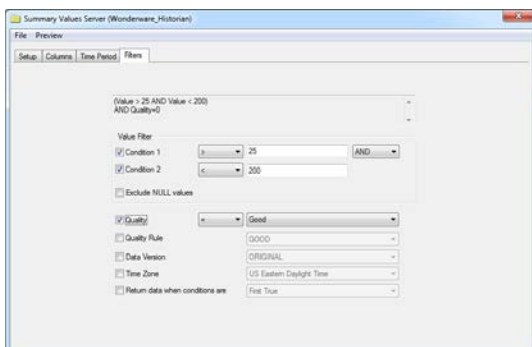
From **XLReporter's Project Explorer**, under the **Tools** tab, select **Diagnostics, Connector Groups**. Select the Wonderware Historian connector and click **Add**.

Select the **Type** of group you wish to create and click **OK**.

On the **Columns** tab, select the tag **Name** and **Calculation** for each tag in the group, if a summary values group is configured.

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.

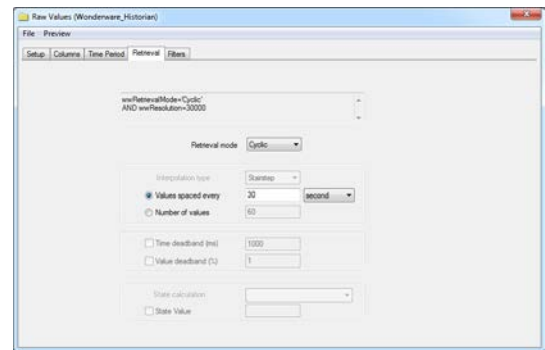
For a **Summary Values from Server** group, the **Filters** tab is provided.



*Group Builder – Filters Tab*

Here you can specify criteria to restrict the data returned. Note, these filters apply to the calculated values, not to the raw data for the calculation.

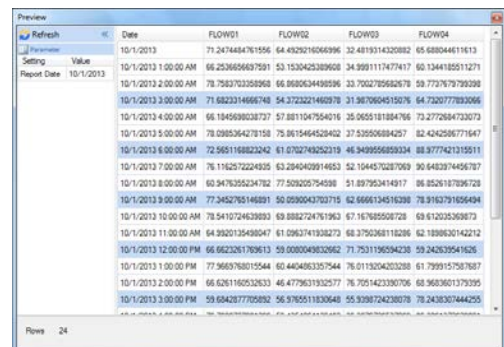
For a **Raw Values** group, the **Retrieval** tab is provided.



*Group Builder – Retrieval Tab*

Here, you can specify exactly how much data to retrieve. Based on the **Retrieval mode** set, different options become enabled.

The **Preview** pushbutton at the bottom 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.

## Alarm Data

The classic event subsystem in Wonderware Historian can be set up to detect and store non-critical alarms in a database which **XLReporter** can retrieve data from for a report.

## Setting up Alarm Logging

In the **System Management Console**, under **Historian**, expand **Configuration Editor** and **System Configuration**. Right-click **Tag Configuration**, and select **New Event Tag**.

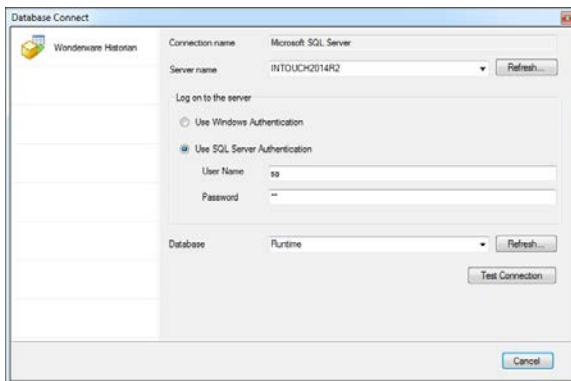
Set the **Detector Type** to **Analog Specific Value** or **Discrete Specific Value** and specify the criteria for the alarm.

Configure the **Action Type** as **None** and finish the configuration.

## Creating an Alarms Connector

To connect **XLReporter** to Wonderware Historian alarm data 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 **Wonderware, Wonderware Historian Alarms**.

Under **Primary Database**, for **Type**, click the browse pushbutton [...] to define a connection to the alarm database.



For **Server name** specify the name of the machine where the Wonderware Historian is running.

For **Log on to the server**, specify the credentials to connect to the server. Specify the **Database** as *Runtime* or *A2ALMDB* depending on your version of Wonderware Historian.

Click **Test Connection** to verify the settings.

## Verify the Alarm Data Connector

**XLReporter** accesses alarm data stored in the database using a connector group.

From **XLReporter's Project Explorer**, under the **Tools** tab, select **Diagnostics, Connector Groups**. Select the InTouch alarm connector and click **Add**.

On the **Setup** tab, under **Database**, set **Table/View** to *v\_AlarmHistory* to retrieve alarm data. Set **Date Column** to *EventStamp*.

On the **Columns** tab, select the **Columns** for the alarm data you wish to retrieve.

On the **Time Period** tab, select the **Start Time, End Time** and **Interval** for the group. By default this is set to the first 60 values over the current day.

On the **Filters** tab, specify filtering to limit the type or amount of alarms returned. You can filter based on any available column in *v\_AlarmHistory*. This includes filtering on alarm type, tag name, etc.

The **Preview** menu can be selected to preview the result of the current configuration.

## Troubleshooting

If you are experiencing issues connecting to the Wonderware Historian or retrieving data with **XLReporter**, you can use **SQL Server Management Studio** to validate the setup. This can be installed as part of Microsoft SQL Server.

To open, from the **Microsoft SQL Server** program group, select **SQL Server Management Studio**. This opens the Login window.

Connect to the SQL Server instance where Wonderware Historian is logging. Once connected, locate the **Runtime** database, right-click and select **New Query**.

To see the query submitted to the Historian from the history group, open the connector group and click Preview. If an error has occurred, the query will be displayed.

To copy the query, click the message to open a second window containing the query. On the keyboard, press **CTRL + C** to copy the query onto the clipboard. Then use **CTRL + V** to paste the query into the **SQL Server Management Studio** window.

Once the query is entered, **click Execute** to execute the query. If successful, the results appear beneath the query. Otherwise, an error message appears indicating what went wrong.

If the issue cannot be resolved based on the error message, contact Wonderware technical support.