



Reporting Based on Events

Generating reports based on events in the real time server is a challenge to most reporting software packages.

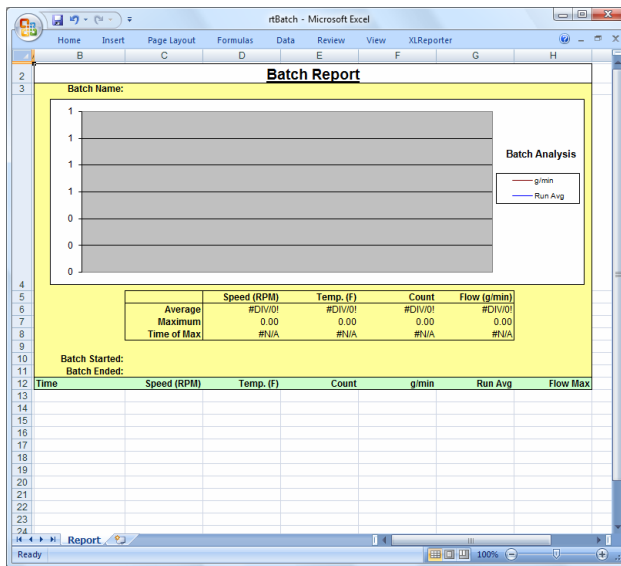
Event reports typically represent reports for a batch cycle or daily alarms and exceptions.

XLReporter's scheduler can monitor, in the background, event tags in the real time server and take appropriate action when the event occurs.

We will illustrate the concept of event reporting using an example. Suppose we need to create a report for each batch of an operation, with each report named after the batch it represents. The report needs to show one minute process samples recorded in the historian while the batch is in progress, together with the time the batch started and stopped.

Template Design

The template for this report is set up in Excel. As part of the template design summary formulas are configured and a chart is added.

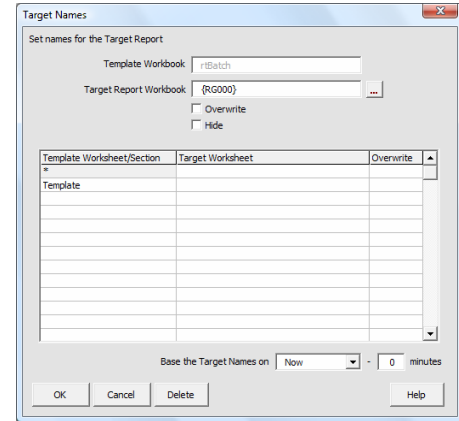


Template Design in Excel

Naming Convention

When the batch is in progress, the batch name is held inside a process tag which we need to use as the report name. To achieve this, a schedule is used which will cause the batch name in the process tag to be stored in the **XLReporter's** register function (RG000).

Later in this document we describe how the schedule is configured. For the time being, let us continue with the template design by using the Target Names menu option to set the Target Report Workbook to {RG000}. RG000 is the register function and the { } denote that the value of that register will be used.

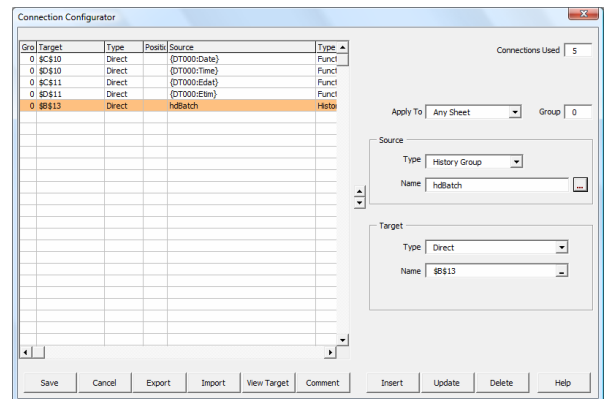


Target Names

No new worksheets are needed, therefore there are no Target Worksheets set for this template.

Data Connections

For the template there are 5 connections configured.

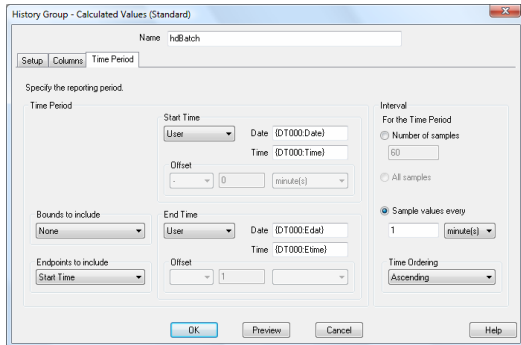


The Connection Configurator

The first 4 connections are function connections retrieving the start date, start time, end date and end time from one of **XLReporter's** date time functions (DT000). This function will be set from the schedule at the start and end of the batch.

The remaining connection is a history group connection to retrieve the process samples.

In the history group, under the Columns tab all the tags required from the historian are selected. Each is set to retrieve the first sample value.

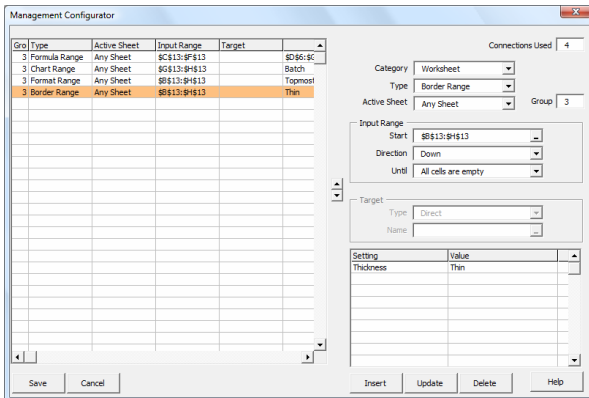


History Group Builder – Time Period Tab

Under the Time Period tab, the Start Time and End Time are set using the date time function DT000. The interval is set to 1 minute to retrieve the 1 minute samples.

Data Management

Since each batch will run for a different amount of time, there is no way of knowing in advance how many rows of data will be in the final report. Because of this, certain Excel objects, such as the chart, must be re-calibrated when the report is complete so that they reflect the data.



The Management Configurator

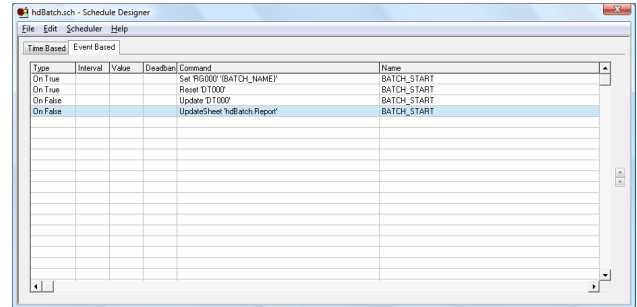
Management connections are used for this purpose.

- **Formula Range**
This will adjust the summary formulas configured.
- **Chart Range**
This will re-calibrate each chart series.
- **Format Range**
This will take the cell formatting applied to the top row of the data and apply that formatting downwards
- **Border Range**
This will make the report look complete

In the template, management connections are associated with the top row of the data area. Once the data area is known, all the management connections are adjusted accordingly.

Report Schedule

The schedule for this report is completely event based.



The Schedule Designer

The first command is configured to capture the name of the batch and set it to RG000. This is executed when the batch starts as indicated by the value of the BATCH_START tag changes to “True”.

Also, when the batch starts, the date and time needs to be captured into the start date and start time fields of DT000 so it can be displayed in the report and used in the history group. This is done with the Reset command.

When the batch is completed (the BATCH_START tag changes to “False”), the date and time need to be captured into the end date and end time fields of DT000. This is done with the Update command.

Finally, the report can be generated. The UpdateSheet command creates the report naming it after the batch name and retrieves the 1 minute samples recorded in the historian during the batch cycle (as captured in DT000).

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