



## Reporting Based on Events

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

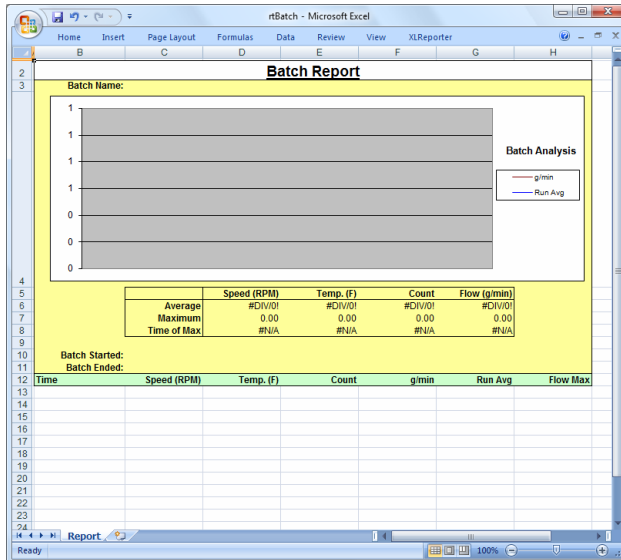
Event reports typically represent reports for a batch cycle or daily alarms and exceptions.

**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 values 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.

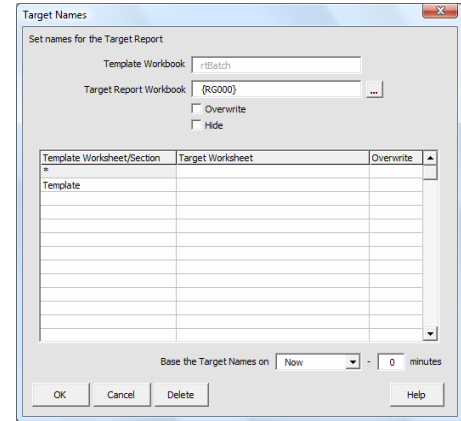


Template Design in Excel

## 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 functions (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.



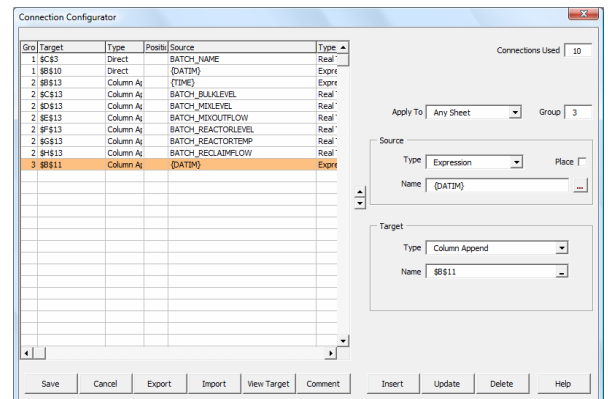
Target Names

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

## Data Connections

For this report, there are 3 sets of connections that need to be made (each in their own group):

- Data to retrieve at the start of the batch.
- Data to retrieve every minute while the batch is running.
- Data to retrieve at the end of the batch.



The Connection Configurator

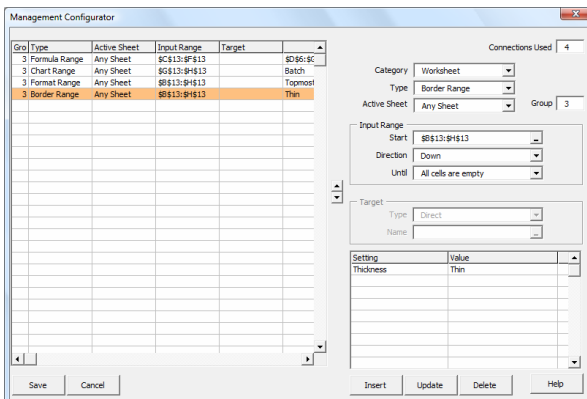
The connections for the start of the batch are configured to group 1. These connections are set up to bring in the start date and time of the batch and the name of the batch.

The connections for real time process values are configured for group 2. Since these connections will be updated repeatedly, all of the connections have been configured as Column Append so that they append downwards until the report is completed.

The connection for the end of the batch is configured for group 3. This connection writes the end date and time of the batch into the report.

## 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

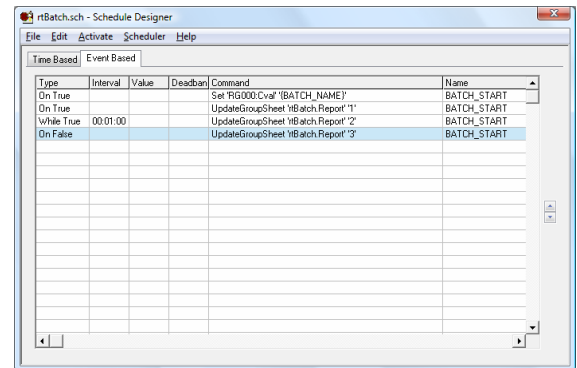
Management connections are used for this purpose.

- **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. All management connections are configured as group 3.

## 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, some information needs to be written to the report. For this, the UpdateGroupSheet command is configured. This command will first create the report naming it after the batch name, and then it will update all the group 1 connections in the report.

Next, the process data needs to be written to the report. To do this, an UpdateGroupSheet command is configured to update all the group 2 connections. This is configured to run every minute while the batch is running (while the value of BATCH\_START remains "True").

Finally, at the end of the batch the time needs to be recorded and the report completed. For that, an UpdateGroupSheet connection is configured to update all the group 3 connections, including the management connections. This is executed when the value of the BATCH\_START tag changes to "False".

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