Produce Multiple Report Sets from a Template

Overview

There are many times when a set of reports are required that only differ by the source tag names. In this scenario it makes no sense to create multiple templates that are identical except for the name. For example, to produce reports for three production lines that are identical except for their tags, one template can be used to serve every line.

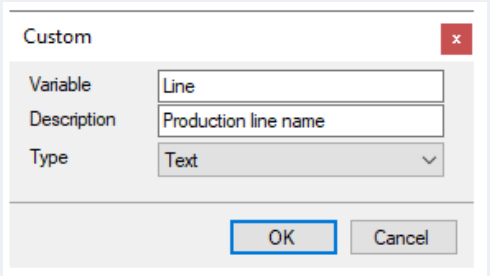
Approach

The approach requires a two-template strategy. One template, the *Report Template*, is used to produce the report for every production line and is designed with using variables in places where specific information about the line is needed. The other template, the *Worker Template*, is driven from the scheduler to set physical values to the variables and initiate the Report Template to produce the reports.

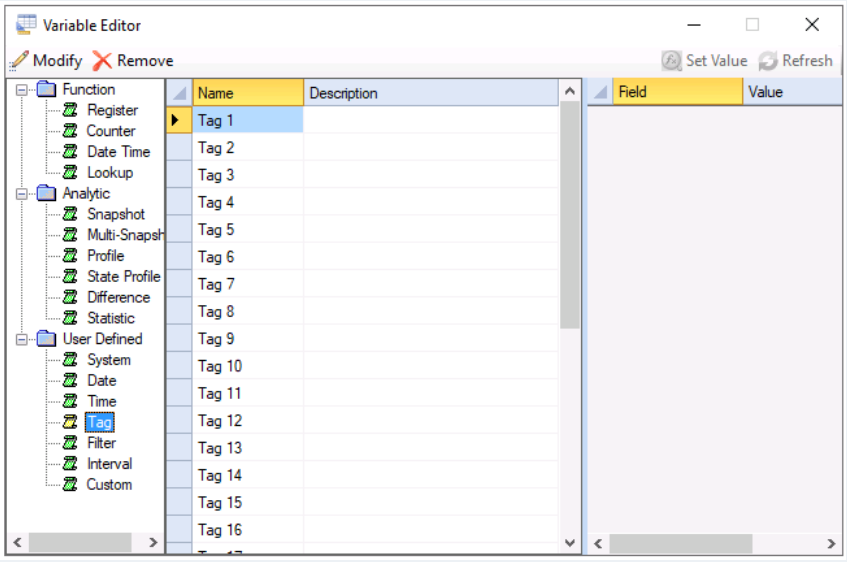
Variables

The first step is to define a variable for the production line name. Variables are defined in the **Variable Editor** which can be accessed from the **Project Explorer**, on the right-side **Tools** menu, in the **Connect** section by selecting **Variables**.

A **User Defined**, **Custom** variable is configured to hold the production line name.



In the above example, *Line* represents a production line name. This example also uses *Tag 1 to Tag 4* represent tag names.



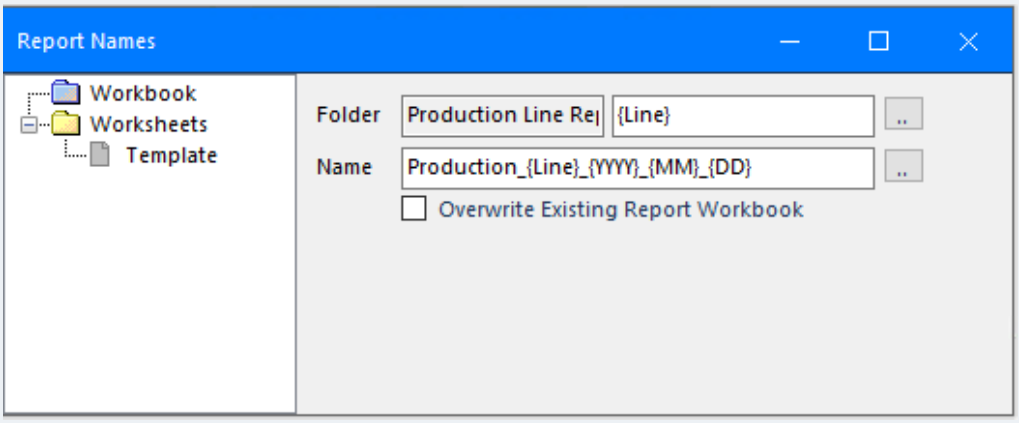
These are defined under **User Defined, Tag**.

Report Template

This template is a generic version of the report and uses variables rather than a specific production line name and tag names.

Report Names

The configuration of **Report Names** uses the variables.

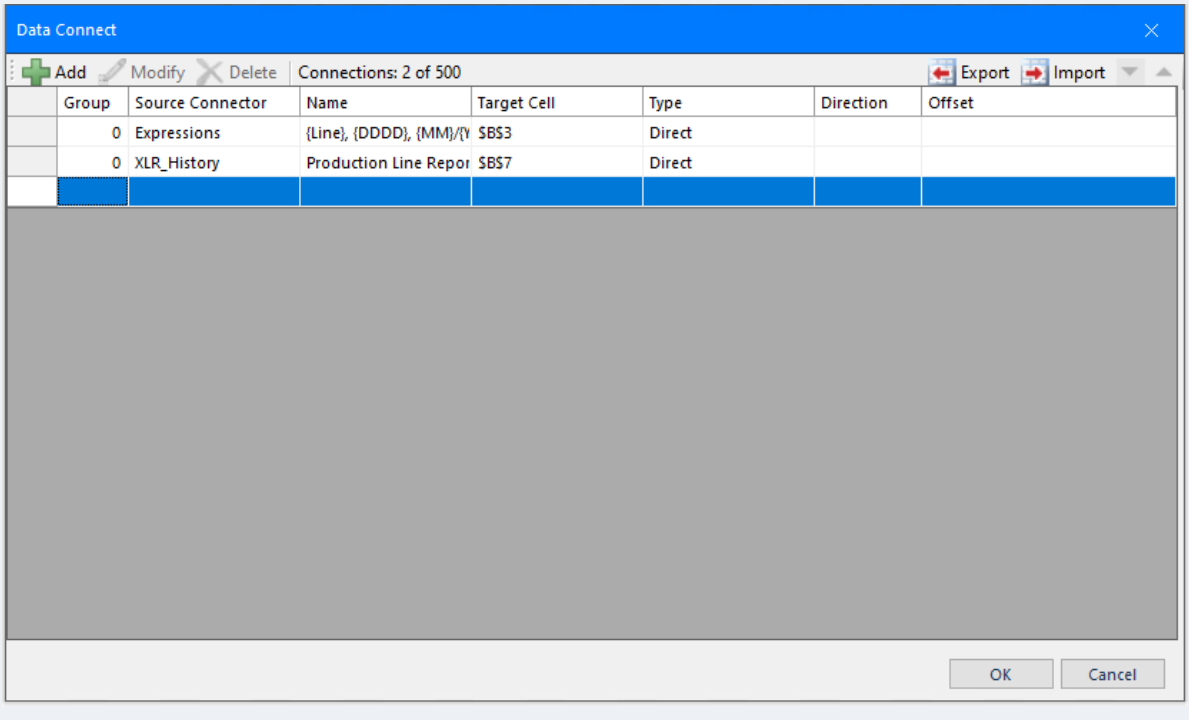


In the above example, *{Line}* is the variable for the production line and is used for:

- The **Folder** where the report will be saved
- As part of the **Name**, together with date variables to indicate the day the report is generated for.

Data Connections

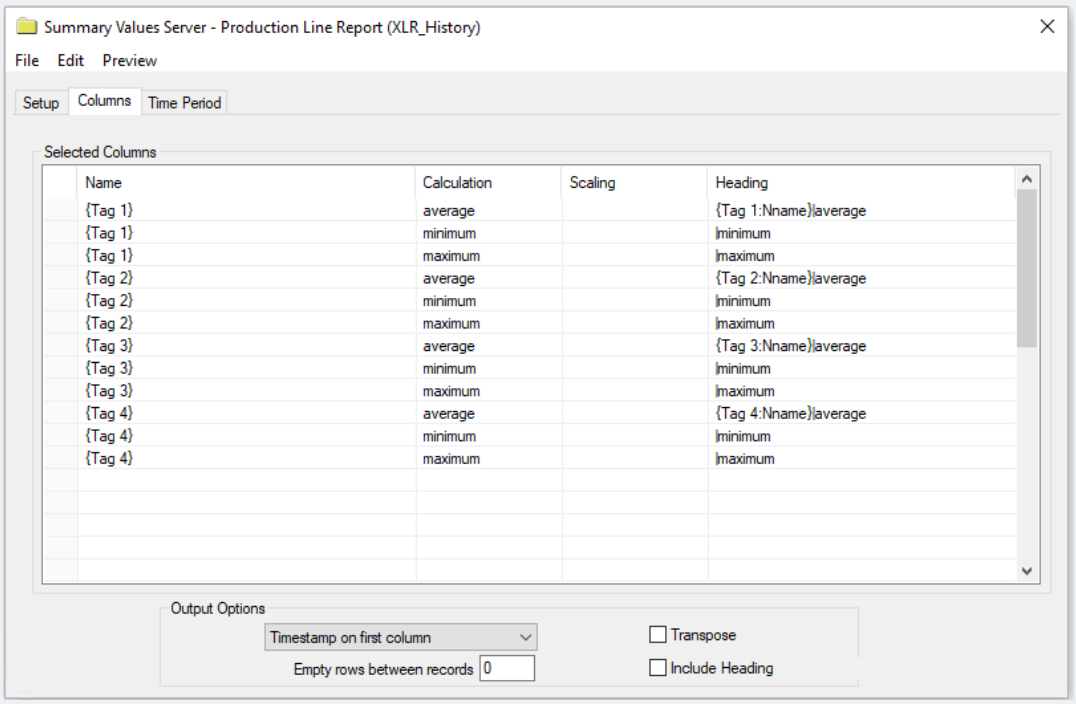
The template data connections use variables.



In the above example, a variable is used in an **Expression** connection to provide a title at cell *B3*. There are also variables used in the data group connector.

Data Group

Using variables in a data group opens the possibility of re-using the group over different sets of tags, i.e., different process equipment.

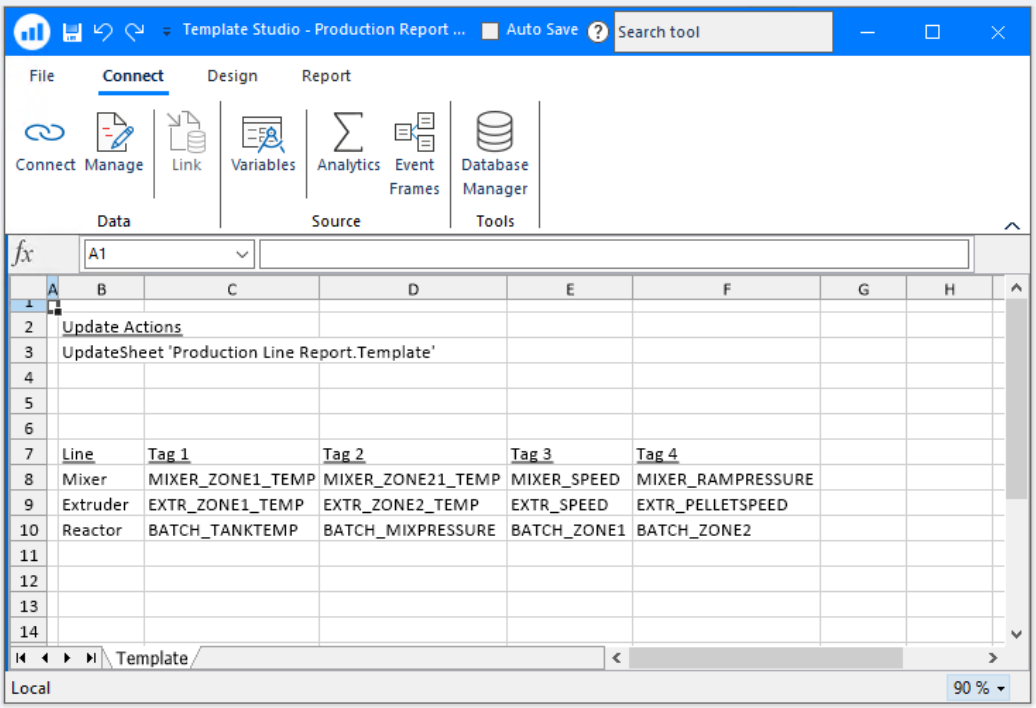


In the above example, variable names are used for the tag **Name**s and also the **Heading**.

Worker Template

The worker template is used to drive the reports from the report template. The template consists of the schedule actions that are required to produce the report and the physical tag name to variable relationship.

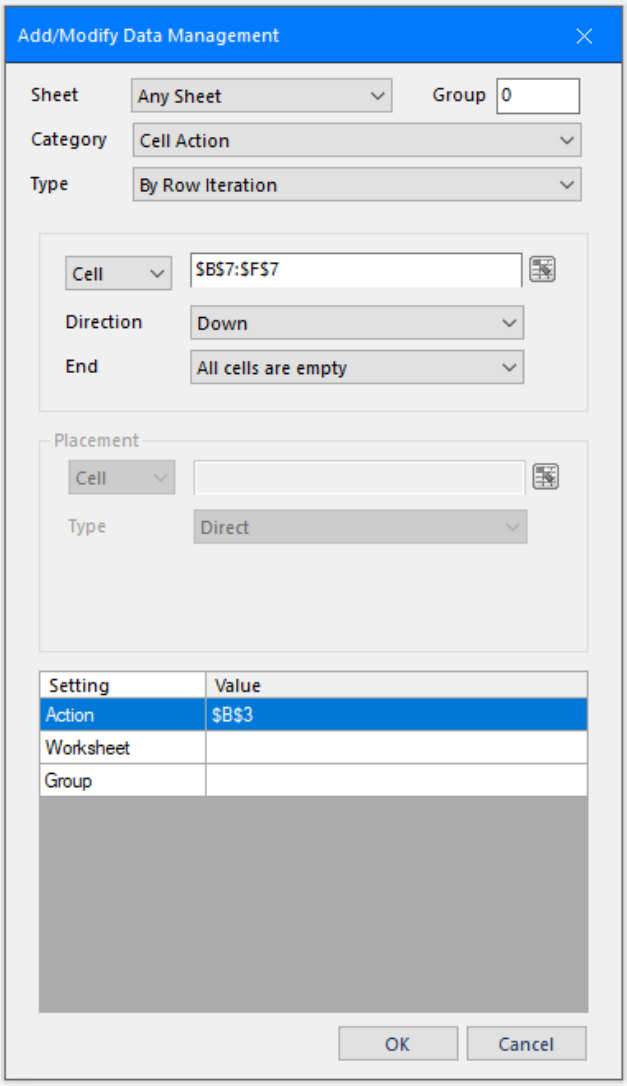
Note that the headings of the table correspond to the variables required by the report template and that each row represents a set of physical values that are assigned to the variable.



In the example above, the schedule action is in cell B3, the variable names are in row 7 and the physical value for the variables are in rows 8 to 10. The management connection in the next section processes all this information to produce the reports.

Management Connection

A **Cell Action, By Row Iteration** management function performs the schedule actions iteratively over each row in the range.



For this example, when the Scheduler initiates the worker template, the physical values starting at row *8* are assigned to the variables and the action starting in cell *B3* is processed. The net result is the schedule action runs 3 times, one for each set of variables.

Schedule

The worker template is executed by the scheduler which in turn processes the report template.