

Reporting on the “Previous Day”- Historian

Overview

Many times, the date of a report is not sufficient to identify the content of the report. For example, daily calculations made in the PLC may not get recorded to the historian until the day after.

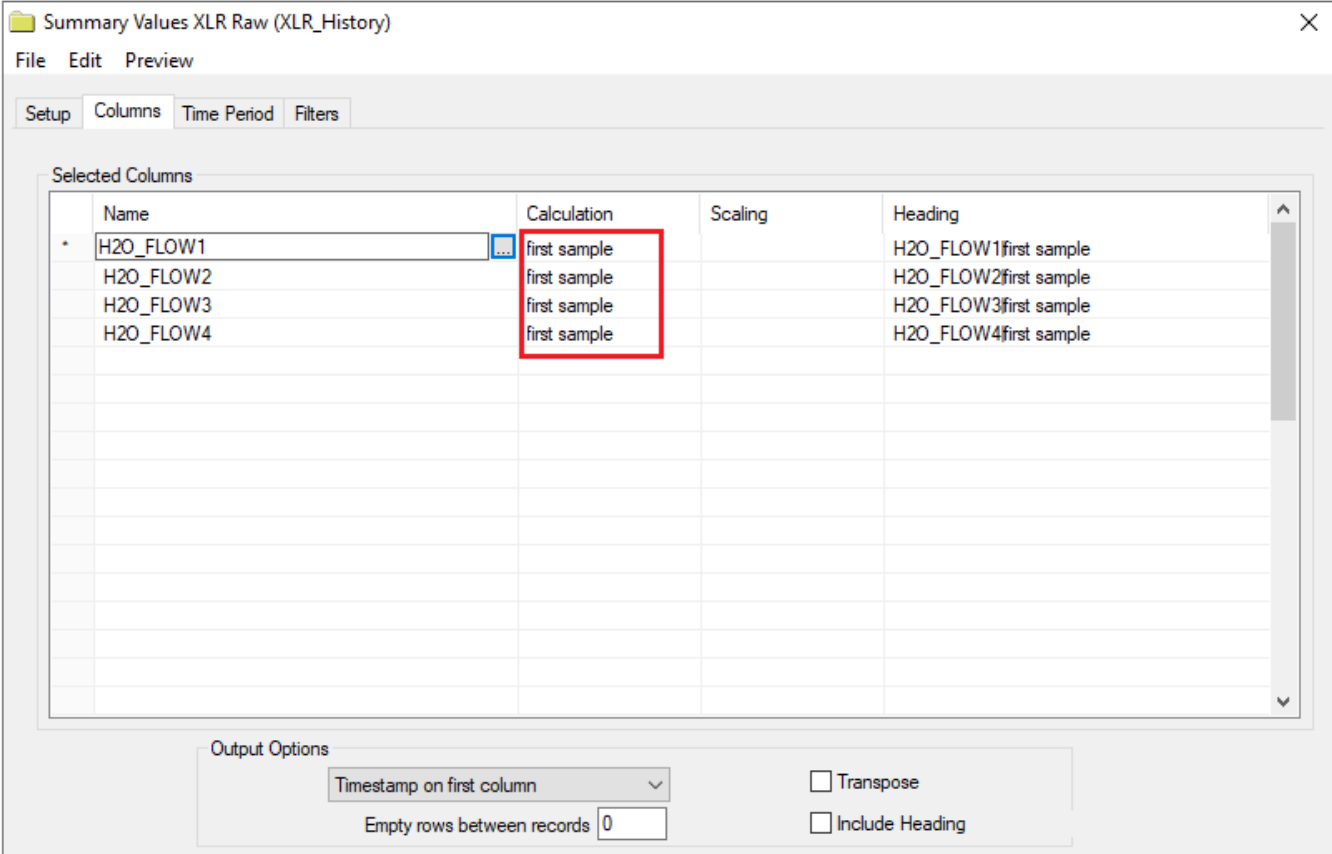
This presents a reporting challenge because the information in a report for a particular date would need the information queried from the historian for the previous day since this is when the sample is actually logged to the historian.

This document explains how to overcome the challenge. By example, it shows how to produce a monthly report containing daily flow totals where the totals have been recorded the “day after”.

Data Group

Calculation

For a monthly report of daily “totalizer” values, the most efficient **Data Group** configuration starts with selecting the appropriate summary calculation.



| Name | Calculation | Scaling | Heading |
|-----------|--------------|---------|-----------------------|
| H2O_FLOW1 | first sample | | H2O_FLOW1first sample |
| H2O_FLOW2 | first sample | | H2O_FLOW2first sample |
| H2O_FLOW3 | first sample | | H2O_FLOW3first sample |
| H2O_FLOW4 | first sample | | H2O_FLOW4first sample |

Output Options

Timestamp on first column: [dropdown]

Empty rows between records: [input: 0]

Transpose

Include Heading

If the totalizer values are logged at the beginning of each day, use the **Calculation** *first sample*. Otherwise select the calculation based on the tag configuration.

Time Period

The first value required for this monthly report is logged on the 2nd of the *current* month, and represents the total for the 1st. The last value required for the report is logged on the 1st of the *following* month and represents the last day of the *current* month.

The screenshot shows the 'Summary Values XLR Raw (XLR_History)' application window with the 'Time Period' tab selected. The configuration is as follows:

- Period:**
 - Type: Offset
 - Duration: 1 month
 - Start At:
 - Day: 2
 - Time: 00:00:00
 - Offset: 1 hour
- Interval:**
 - Count: 60
 - All:
 - Every: 1 day
 - Limit: None
 - 1 minutes
- Bounds to include:** None
- Endpoints to include:** Start Time
- Time Ordering:** Ascending

Therefore the simplest approach for the **Time Period** of the group is:

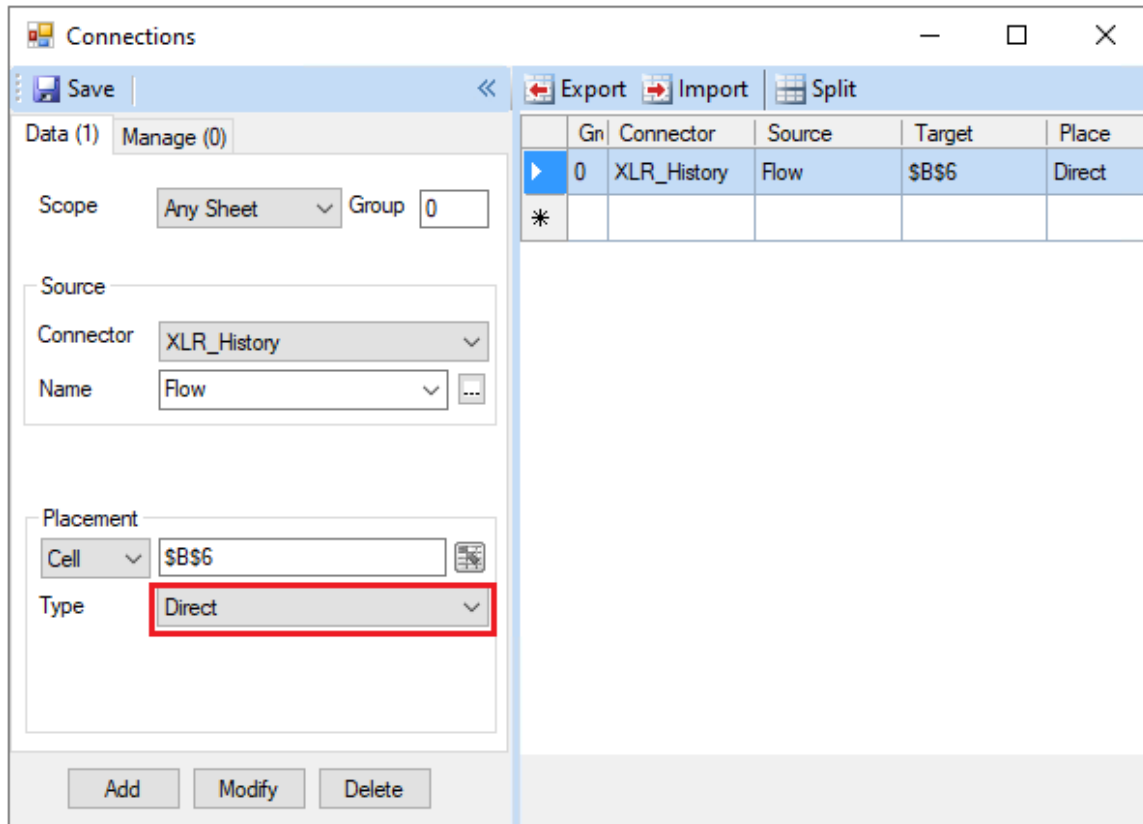
- **Type** as *Offset*.
- **Duration** as *1 month*.
- **Start At** *Day 2*.
- **Interval** *Every 1 day*.

This configuration compensates for the fact that the definition of the month in the data set is *Offset 1 day* from the calendar month.

Template Design

Data Connection

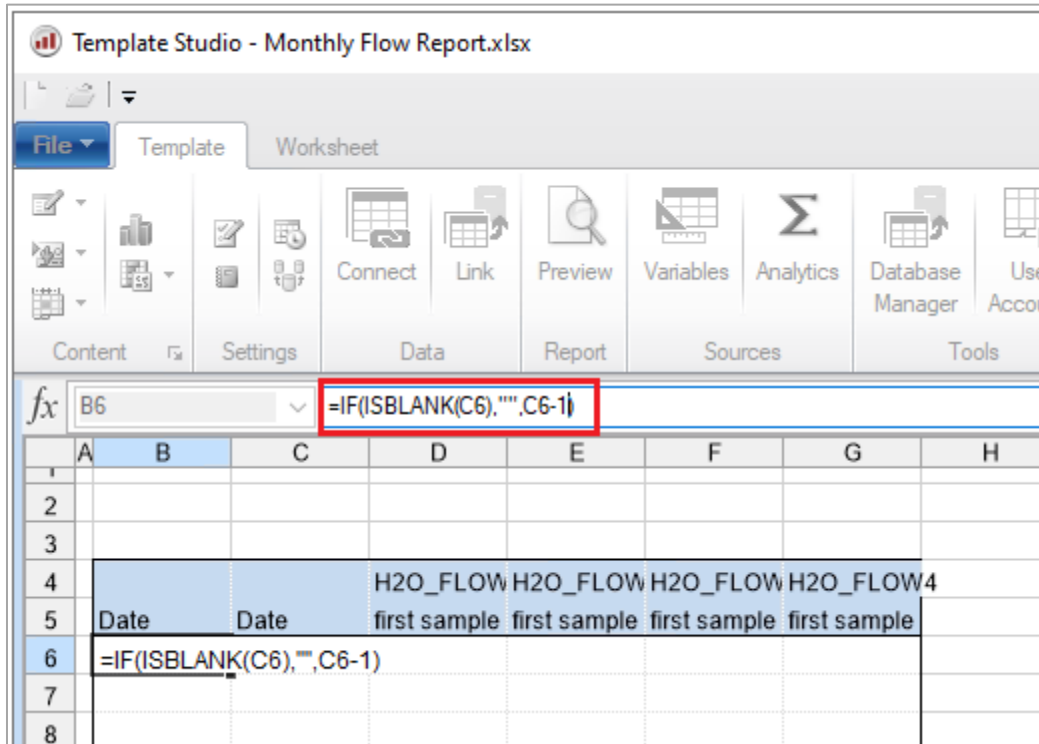
The **Data Connection** in the template should be set with the **Placement Type Direct**.



Because the **Data Group** is configured to return a table representing the entire **Time Period** of the report, the connection does not need to move down or across the worksheet as the report is updated.

Timestamps

If a timestamp is returned by the **Data Group**, it will display the date the data was logged, not the date it represents. To resolve this, add an additional column to the worksheet with the following formula:



In this example, the timestamp is returned by the Data Group in the C column. The B column uses a formula to display a value 1 less than the C column. This only happens if the C column contains a value.

In Excel date/time values are always stored as a number of days since January 1st, 1900. So, to subtract a day from a date/time, use `-1`.

The C column can then be hidden so only the "correct" timestamp is displayed.

Schedule

A report should be scheduled at a point in time when all of the data required is available in the historian. In this case, that is the 1st day of the “next” month. The schedule is configured as:

The screenshot shows the 'Schedule' configuration dialog box. The 'Condition' section is configured as follows:

- Time: Monthly
- Months: <every month>
- Day(s): 1
- On: First, Friday
- Time: 12:15:00 AM
- Action Time Adjustment: 1 day(s)

The 'Action' section is configured as follows:

- Action: Update Worksheet
- Worksheet: Monthly Flow Report.xlsx.Template

Buttons: OK, Cancel

- **Condition** as *Time, Monthly*.
- **Day** as *1*.
- **Time** as *12:15:00 AM*.
- **Action Time Adjustment** as *1 Day*.

This configuration generates the report for the previous month on the first of the month because it is scheduled on the 1st **Day** of the month with an **Action Time Adjustment** of 1 day (1/1/2020 *minus* 1 day is 12/31/2019).