

Two-Dimensional Report-Daily Update

Overview

When multiple daily readings of a process value are needed in a monthly report, an effective placement strategy is to arrange the data in a two-dimensions. In this document, such an arrangement is discussed where 6 daily readings are arranged in rows of a monthly report. The reports are collated into a yearly workbook. An up-to-date view of the report is made available by updating the report every day.

Objective

Generated: 4/18/2017 23:37 MONTH: April 2017

Date	Filter 1						Highest		Calibration
	Four (4) Hours Readings(NTU)						Turbidity Level		Maintenance
	0:00	4:00	8:00	12:00	16:00	20:00	24 Hrs	at	Remarks
1	0.036	0.035	0.034	0.032	0.036	0.037	0.164	17:26	
2	0.034	0.043	0.033	0.032	0.040	0.039	0.156	14:56	
3	0.034	0.034	0.033	0.119	0.037	0.036	0.148	11:34	
4	0.035	0.033	0.034	0.036	0.035	0.035	0.135	08:47	

Configuration

- Template layout of static information
- Template content using two history groups, one for the 4 hour values and one for the maximum value/time. The output of the first group is *Transposed* and both are placed on the report using the day of the month (*dM*).
- Report naming convention for the yearly workbook and monthly worksheets.
- A schedule to update the content of the report every day

Result

Generated On 1/1/20 0:00 Month Dec-2019

Date	Filter 1						Highest		at
	Four (4) Hours Readings (NTU)						Turbidity Level		
	0:00	4:00	8:00	12:00	16:00	20:00	Max		
1	75	78	52	77	77	78	96	4:49	
2	61	80	82	60	90	67	61	3:42	
3	69	84	72	82	81	78	89	19:27	
4	79	85	81	78	88	78	53	12:44	
5	60	60	56	60	54	60	95	12:25	
6	88	85	85	84	87	80	81	19:30	
7	53	69	34	32	47	39	91	5:35	
8	80	86	88	83	85	84	88	18:02	
9	78	80	40	77	46	76	95	22:57	
10	87	74	65	91	61	79	61	17:42	
11	78	75	82	78	74	85	89	20:11	
12	82	79	76	79	78	76	83	18:20	
13	59	56	60	50	58	60	96	20:14	
14	84	85	85	83	89	82	81	7:16	
15	37	57	66	73	39	58	91	18:16	
16	87	79	94	83	81	80	87	17:30	
17	76	78	77	40	52	78	95	3:56	
18	66	73	87	59	86	74	61	22:58	
19	82	71	77	80	72	78	89	9:53	
20	78	79	77	81	78	89	84	13:28	
21	56	60	57	58	55	45	95	5:24	
22	84	45	86	83	69	82	81	3:43	
23	35	42	34	49	50	59	91	8:53	
24	91	77	84	79	85	78	88	5:09	
25	28	77	77	64	81	79	96	2:54	
26	81	80	61	90	66	72	61	10:48	
27	73	86	76	72	75	75	89	5:41	
28	78	81	11	89	79	85	84	8:36	
29	57	59	58	55	56	59	96	16:31	
30	85	84	87	82	83	87	81	21:00	
31	56	54	46	49	62	54	91	14:22	

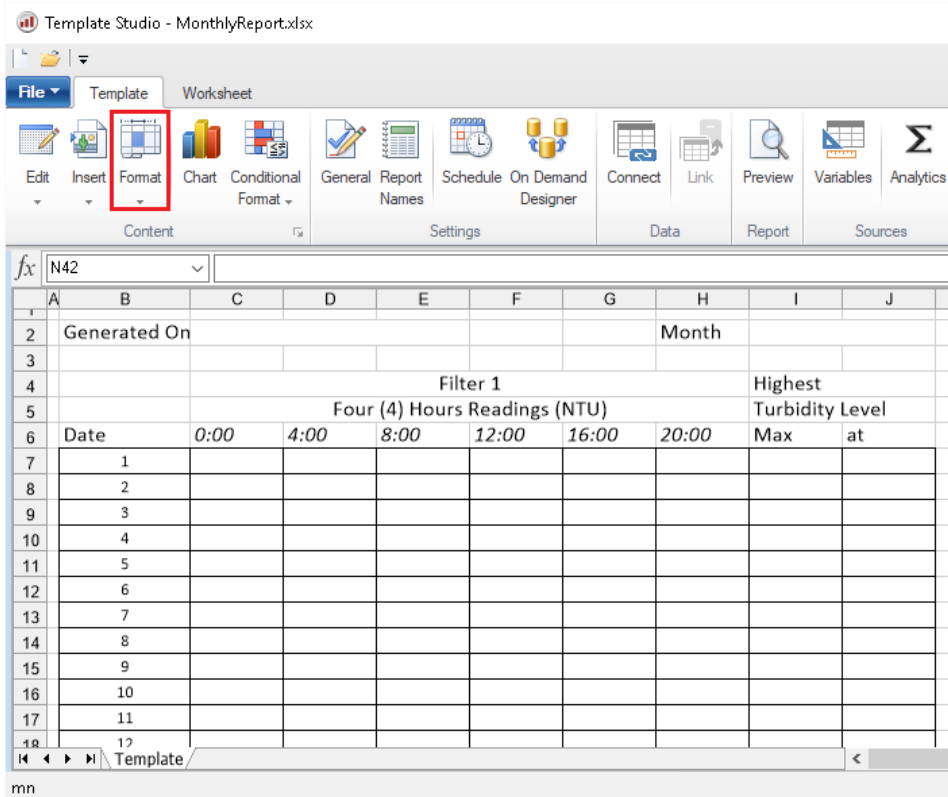
Template Layout

To create a new template, select **Template, New** (Excel) or **File, New** (XLReporter Design Studio).

- Enter a **Name** for the report template



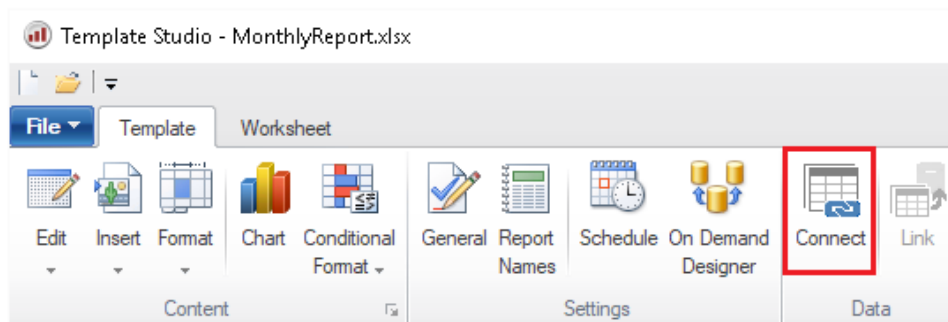
Using the design tools of either the XLReporter **Design Studio** or Excel to layout the template



Template Content

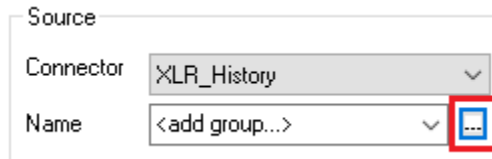
Data connections provide content to the report.

From the ribbon select **Data Connect**



Define History Groups

From the **Connections** display

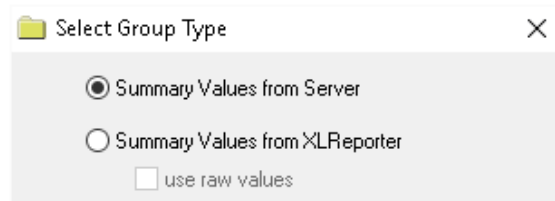


Source

Connector XLR_History

Name <add group...> ...

- Set the **Source Connector** to the historian connector defined previously in the project.
- Click the browse button [...] to create the two history groups that will retrieve the data for the report.
- For the **Group Type** select **Summary Values**



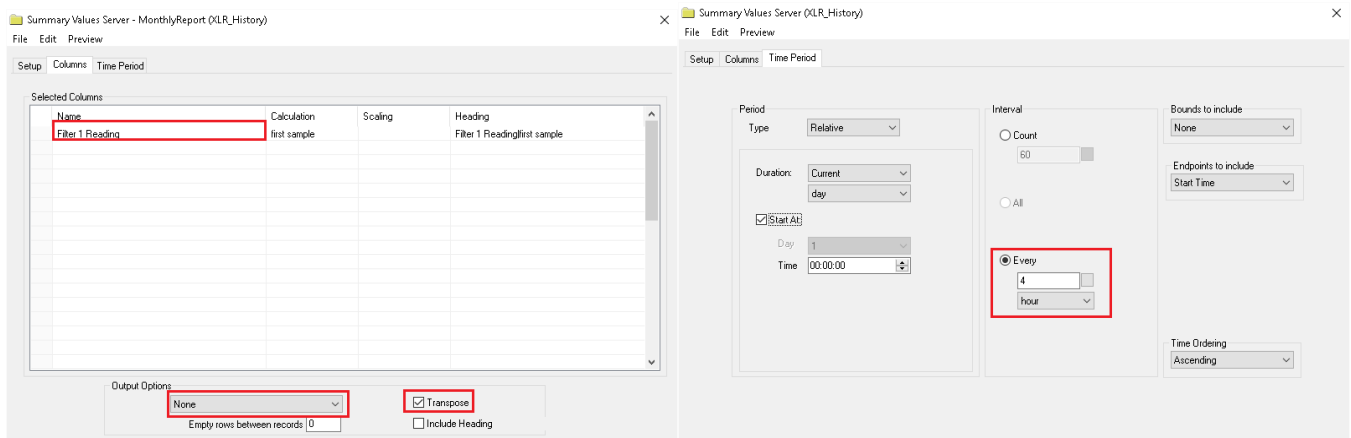
Select Group Type

Summary Values from Server

Summary Values from XLRReporter

use raw values

4hr History Group



Summary Values Server - MonthlyReport (XLR_History)

File Edit Preview

Setup Columns Time Period

Selected Columns

Name	Calculation	Scaling	Heading
Filter 1 Reading	first sample		Filter 1 Reading first sample

Output Options

None Transpose

Empty rows between records 0 Include Heading

Summary Values Server (XLR_History)

File Edit Preview

Setup Columns Time Period

Period Type Relative

Duration: Current day

Start At

Day 1

Time 00:00:00

Interval

Count 60

All

Every

4 hour

Bounds to include None

Endpoints to include Start Time

Time Ordering Ascending

Column Tab

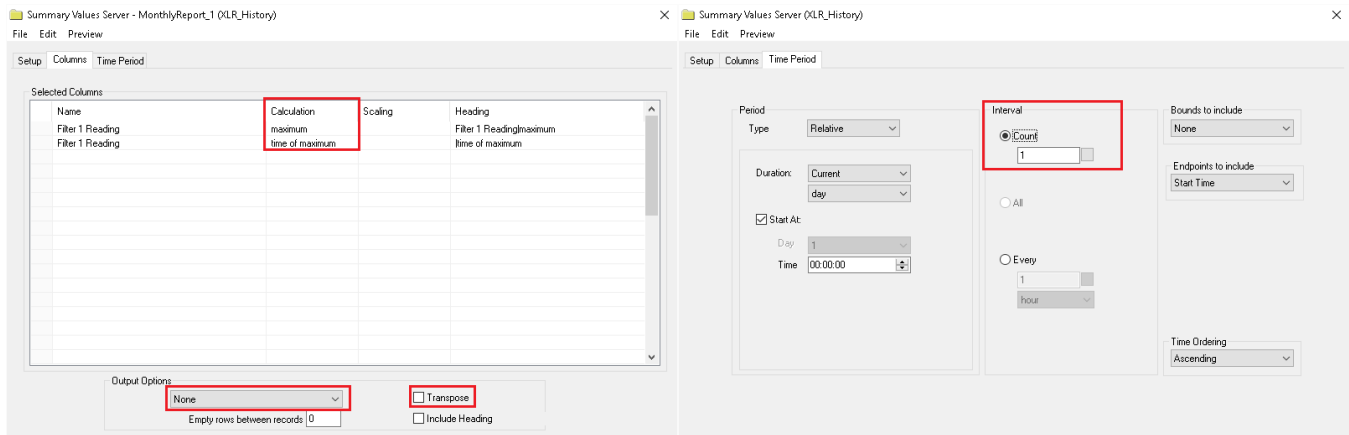
- Select the tag and set the calculation to *first sample*
- Set **Output Option** to *None*
- Check *Transpose*

Time Tab

- set **Interval** to **4 hour**

Use the **Preview** to verify the group and save

Maximum Value/Time History Group



Column Tab

- Select the tag and set the calculation *Maximum*
- Select the tag and set the calculation *Time of Maximum*.
- Set **Output Options** to *None*

Time Tab

- Set the **Interval** to 1

Use the **Preview** to verify the group and save

Define History Group Placement

Open the **Connections** display. This display is used to specify the relationship between the history group and its placement on the template.

Since the requirement is to update the report every day, the output if the group will be placed into the report using the *Day of the Month (dM)* as an offset.

4hr History Group

- Under **Source**, set the **Name** to the history group name
- Under **Placement**

The screenshot shows the Placement configuration dialog box. It has the following fields: Cell (dropdown set to '\$C\$7'), Type (dropdown set to 'Offset'), Direction (dropdown set to 'Down'), and Offset (text box set to 'dM'). There are 'Add', 'Modify', and 'Delete' buttons at the bottom.

- Click **Add**

Maximum Value/Time History Group

- Under **Source**, set the **Name** to the history group name
- Under **Placement**

Placement

Cell: \$I\$7

Type: Offset

Direction: Down

Offset: dM

Buttons: Add, Modify, Delete

- Click **Add**

Expressions connections are added to provide the date when the report is generated

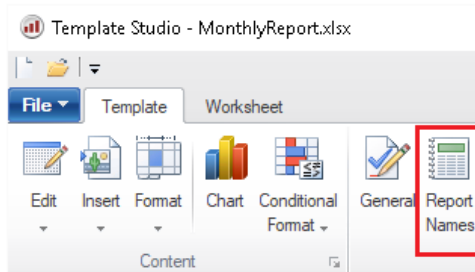
Gr	Connector	Source	Target	Place
0	XLR_History	MonthlyReport	\$C\$7	Offset
0	XLR_History	MonthlyReport_1	\$I\$7	Offset
0	Expressions	{\$DATIM}	\$C\$2	Direct
0	Expressions	{MMM}-{YYYY}	\$I\$2	Direct

- Under **Source**, select **Expressions**
- Set the **Placement**
- Click **Add**

Save the settings and close **Connections** display.

Report Names

From the **Design Studio** ribbon, select **Report Names** to open the Report Names dialog



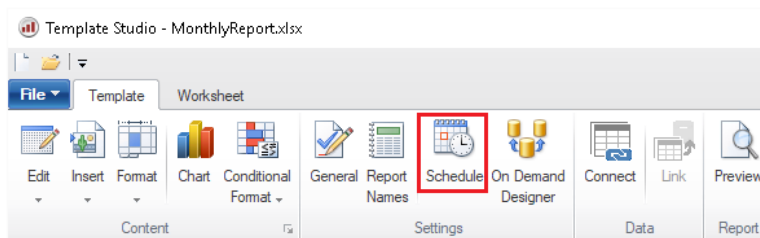
From the **Report Names** display

Template	Folder	Report	Over
WORKBOOK			
MonthlyReport		MonthlyReport{YYYY}	No
WORKSHEET			
*			
Template		{MMM}	No

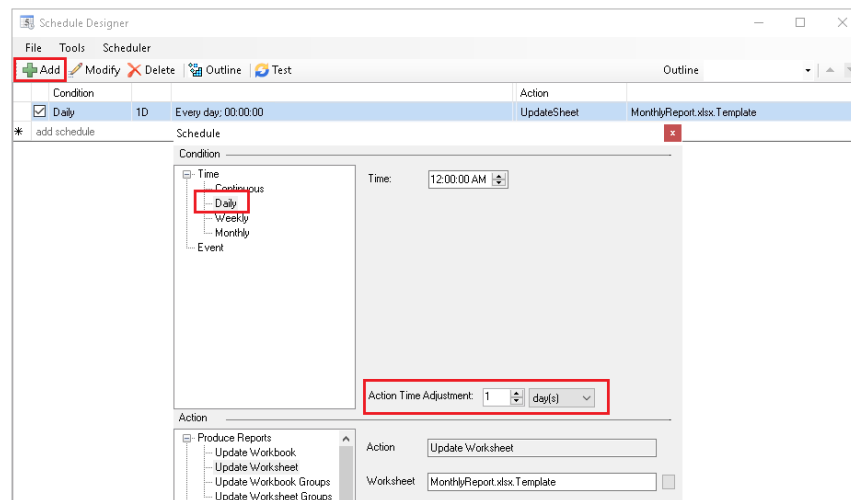
- Set the Workbook to include the *Year* and the Worksheet to *Month*

Schedule

From the **Design Studio** ribbon, select **Schedule** to open the **Schedule Designer**.



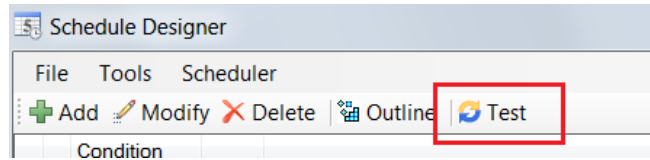
From the **Schedule Designer**, select an empty row and click **Add**



- Set the **Time** to *Daily 12:00:00*
- Set the **Action Time Adjustment** to *1 day(s)*
- Set **Action** to **Update Worksheet**
- Set the **Worksheet**

Click **OK**

To run a quick test, select **Test** and enter an appropriate time period where data has been recorded.



Close the **Schedule Designer**.

Open the **Workbook Reports** viewer from the **XLReporter Project Explorer** to view reports.

The image shows the 'XLReporter Project Explorer' interface. The 'Workbook Reports' icon in the toolbar is highlighted with a red box. Below it, the 'Workbook Report Viewer - MonthlyReport2019.xlsx' window is open, displaying a data table. The table has columns for 'Date', '0:00', '4:00', '8:00', '12:00', '16:00', '20:00', 'Max', and 'at'. The data represents 'Filter 1' readings for 'Highest Turbidity Level' over a period of 31 days in December 2019.

Date	0:00	4:00	8:00	12:00	16:00	20:00	Max	at
1	75	78	52	77	77	78	96	4:49
2	61	80	82	60	90	67	61	3:42
3	69	84	72	82	81	78	89	19:27
4	79	85	81	78	88	78	53	12:44
5	60	60	56	60	54	60	95	12:25
6	88	85	85	84	87	80	81	19:30
7	53	69	34	32	47	39	91	5:35
8	80	86	88	83	85	84	88	18:02
9	78	80	40	77	46	76	95	22:57
10	87	74	65	91	61	79	61	17:42
11	78	75	82	78	74	85	89	20:11
12	82	79	76	79	78	76	83	18:20
13	59	56	60	50	58	60	96	20:14
14	84	85	85	83	89	82	81	7:16
15	37	57	66	73	39	58	91	18:16
16	87	79	94	83	81	80	87	17:30
17	76	78	77	40	52	78	95	3:56
18	66	73	87	59	86	74	61	22:58
19	82	71	77	80	72	78	89	9:53
20	78	79	77	81	78	89	84	13:28
21	56	60	57	58	55	45	95	5:24
22	84	45	86	83	69	82	81	3:43
23	35	42	34	49	50	59	91	8:53
24	91	77	84	79	85	78	88	5:09
25	28	77	77	64	81	79	96	2:54
26	81	80	61	90	66	72	61	10:48
27	73	86	76	72	75	75	89	5:41
28	78	81	11	89	79	85	84	8:36
29	57	59	58	55	56	59	96	16:31
30	85	84	87	82	83	87	81	21:00
31	56	54	46	49	62	54	91	14:22