
PanelView Plus and Text Historian Guide

Version 12.4

SyTech, Inc.

The Complete Reporting Solution

Information in this document is subject to change without notice. SyTech, Inc. assumes no responsibility for any errors or omissions that may be in this document. No part of this document may be reproduced or transmitted in any form or by any means, electronic or mechanical, for any purpose, without the prior written permission of SyTech, Inc.

Copyright 2000 - 2017, SyTech, Inc. All rights reserved.

XLReporter® is a registered trademark of SyTech, Inc.

PanelView Plus is a registered trademark of Rockwell Software.

Microsoft® is a registered trademark of Microsoft, Inc.

All registered names are the property of their respective owners.



Contents

Reporting from Text Files	4
Overview	4
Data Connector	5
Overview	5
Exercise: Defining a Connector	5
Remote File Transfer	7
Reports	8
Overview	8
Exercise: Interactive Line Charts - Library	8
Produce Reports	9
Exercise: Daily Summary Report - Studio	9
Layout	9
Data Connection	9
Naming Convention	11
Validate the Template	11
Design a Schedule	12
Produce Reports	12
View Reports	12
Exercise: Enhanced Daily Summary Report	13
Header	13
Calculation Summary	13
Chart	13
Produce Reports	14
PanelView Plus	15
Overview	15
FTP Server Setup	15
Setup	15
General Tab	16
Advanced Tab	16
Connections Tab	17

Reporting from Text Files

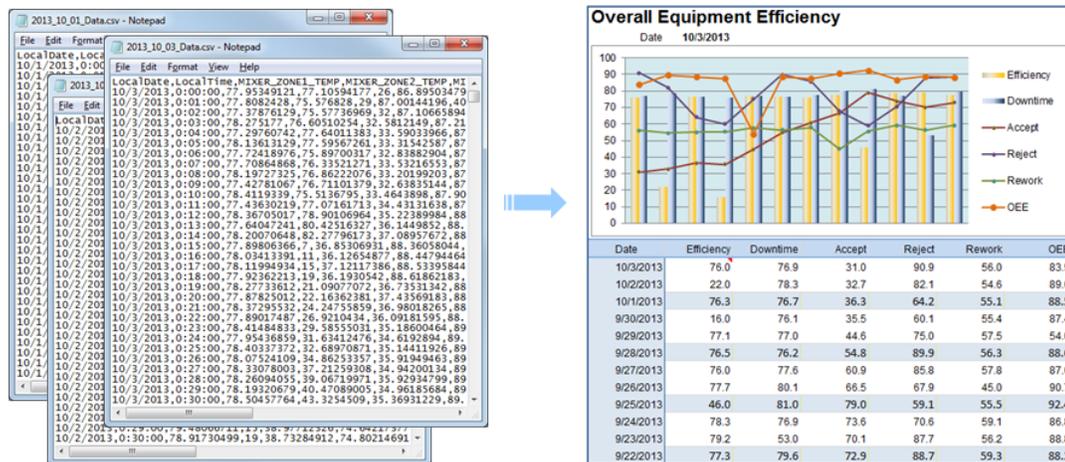
Overview

Text data is common in industry. Laboratory test results, data recorders and graphic terminals are examples of these files produced from Rockwell PanelView Plus, Red Lion controllers, Pro-face touch screens, Yokogawa data loggers and Horner.

The files themselves can be opened in a text editor, but creating a report from the raw data would be manually intensive and time consuming. To make matters worse, most text data loggers create files periodically, so the focus is not on a single file but possibly several hundred files.

XLReporter provides a **Text Historian** (or **PanelView Plus**) connector that stitches the files into a single entity in order to produce reports that go beyond the limits of a single file. When the stitch technology is applied, the user needs no knowledge of how the data is stored, maintained or retrieved. As a consequence, report filtering, sorting and analytic calculations are easily performed.

Report on raw values and produce summary calculations such as the 1 hour averages for a day, or the daily minimum/maximum of the week.



For PanelView Plus users, the logging is performed by the DataStore Plus control. The settings for this control are provided in PanelView Plus chapter in this document.

Data Connector

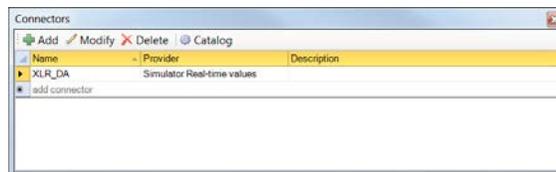
Overview

The **Text Historian** (or **PanelView Plus**) connectors interface to files that are stored in a folder. The first row of the file is used by the connector to produce a tag list which can be used in a tag browser.

The files can be placed in the folder manually, by third parties or by the connector. In the case when the connector is used, the files are obtained from a FTP Server or a Local Network drive and placed in the folder automatically.

Exercise: Defining a Connector

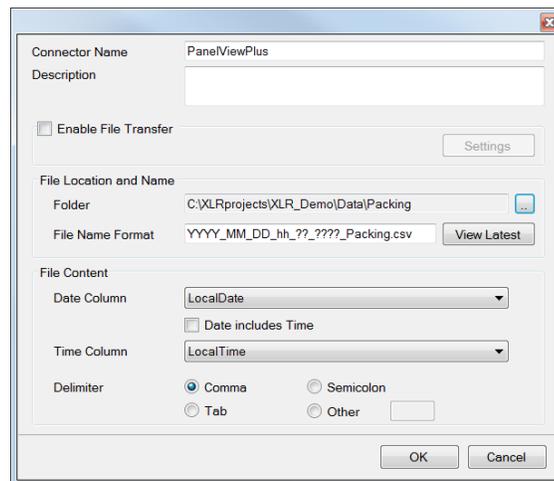
The first step to reporting from text files is defining a connector. From the **Project Explorer**, select the **Data** tab and then **Connectors**.



Click **Add** to add to display the list of connectors supported. Select either **Text File**, **Text Historian (time series)** or **Rockwell Automation, PanelView Plus Historical values**.

This exercise uses data recorded by a PanelView Plus (or similar). It is provided in the demo project in *C:\XLRprojects\XLR_Demo\Data\Packing*.

Expand **Rockwell Automation** and select **PanelView Plus Historical values**.



Under **File Location and Name** select browse pushbutton [...] and browse the **Folder** where the files will be located (samples can be found in *C:\XLRprojects\XLR_Demo\Data\Packing*). When the selection is made, the connector will determine the **File Name Format** of the files in this folder and determine the **Date/Time** columns and file **Separator** from the content of the latest file.

Selecting **View Latest** shows the content of the latest file in the folder.

View File - 2015_10_21_00_00_0000_Packing.csv

LocalDate	LocalTime	::(Line1)Count	::(Line2)Count	::(Line3)Count	::(Line4)Count	::(Line1)Usage
10/21/2015	0:00:00	58	56	49	82	56.64474487
10/21/2015	0:00:30	80	71	80	82	45
10/21/2015	0:01:00	64	59	49	82	55.65922928
10/21/2015	0:01:30	79	74	80	82	50
10/21/2015	0:02:00	70	60	48	82	55.98694229
10/21/2015	0:02:30	78	75	79	82	55
10/21/2015	0:03:00	76	63	48	81	56.69266891
10/21/2015	0:03:30	78	76	79	81	55.63834763
10/21/2015	0:04:00	76	65	49	81	55.72931671
10/21/2015	0:04:30	78	76	79	81	54.65454483
10/21/2015	0:05:00	77	66	48	81	56.09782791
10/21/2015	0:05:30	79	75	79	81	59.65454483
10/21/2015	0:06:00	78	67	49	81	56.62716293
10/21/2015	0:06:30	80	74	79	81	60.02249527
10/21/2015	0:07:00	77	68	48	81	55.6519165
10/21/2015	0:07:30	79	76	80	81	35
10/21/2015	0:08:00	76	69	47	81	56.47534943
10/21/2015	0:08:30	78	76	80	81	40
10/21/2015	0:09:00	76	71	47	81	56.26977158
10/21/2015	0:09:30	78	77	80	81	45
10/21/2015	0:10:00	77	74	48	80	55.89889934

Close the display and click **OK** to return to the **Connectors** dialog that shows the new connector.

Connectors

Name	Provider	Description
PanelViewPlus	PanelView Plus Historical values (native)	
XLR_DA	Simulstor Real-time values	
* add connector		

Highlight the connector and select **Catalog**.

Catalog

Connector: PanelViewPlus

Catalog Name: PanelViewPlus

Name	Type	Description
::(Line1)Count		
::(Line2)Count		
::(Line3)Count		
::(Line4)Count		
::(Line1)Usage		
::(Line2)Usage		
::(Line3)Usage		
::(Line4)Usage		
::(Line1)BeltSpeed		
::(Line2)BeltSpeed		
::(Line3)BeltSpeed		
::(Line4)BeltSpeed		
::(Line1)TableSpeed		
::(Line2)TableSpeed		
::(Line3)TableSpeed		

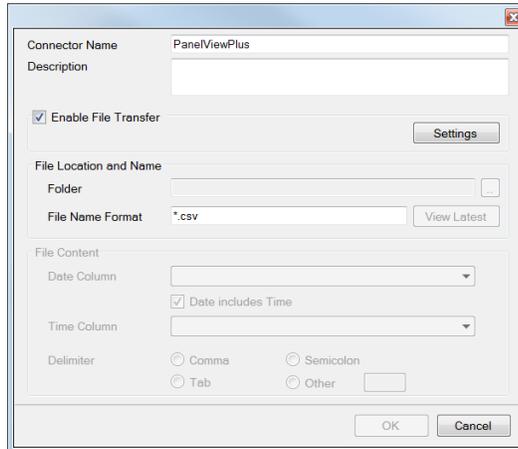
OK Cancel

The display shows a catalog of the tags that were determined from the first row of the file content when **View Latest** was selected. The list can be edited, for example **Descriptions** can be added so that the end user can easily identify the tag when it is used in a tag browser.

Remote File Transfer

When the files are on a remote device and cannot be accessed directly, the connector can be scheduled to transfer them automatically to a local folder. In the above example this was not necessary since the files were already in a local folder.

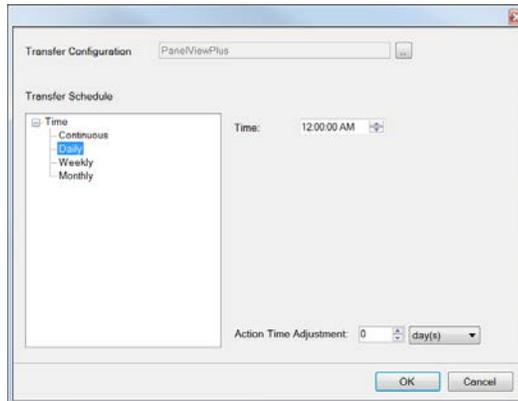
To setup file transfer, check **Enable File Transfer**.



The screenshot shows a dialog box titled "PanelViewPlus" with the following fields and options:

- Connector Name: PanelViewPlus
- Description: (empty text box)
- Enable File Transfer (with a "Settings" button to its right)
- File Location and Name:
 - Folder: (empty text box with a browse button)
 - File Name Format: *.csv (with a "View Latest" button)
- File Content:
 - Date Column: (dropdown menu)
 - Date includes Time
 - Time Column: (dropdown menu)
 - Delimiter: Comma, Semicolon, Tab, Other (with a text box)
- Buttons: OK, Cancel

Click **Settings**.



The screenshot shows the "Transfer Configuration" dialog box for "PanelViewPlus" with the following settings:

- Transfer Configuration: PanelViewPlus
- Transfer Schedule:
 - Time: 12:00:00 AM
 - Time Adjustment: 0 day(s)
- Transfer Schedule options (under "Time"):
 - Continuous
 - Daily
 - Weekly
 - Monthly
- Buttons: OK, Cancel

The **Transfer Configuration** (see **FTP** in the **User Guide**) is to setup the details of the remote location and transfer method and the **Transfer Schedule** (see **Scheduler** in the **User Guide**) is to specify when the transfer should take place.

Reports

Overview

Templates are the basis of reports. There are two ways to build a template, either the **Template Library** or the **Template Studio**. In this chapter an overview of each of the method is provided and in later chapters each method is illustrated with exercises.

For more information on the **Template Studio** and **Library** refer to the **Getting Results** and **User** guides.

Exercise: Interactive Line Charts - Library

This exercise uses the Template Library to show you how to produce an interactive report where the user can select the tag names and time period.



From the **Home** tab of the **Project Explorer** select **Template Library** to open the library wizard.

Select a Template

- From **History**, **Trend Charts** select the **Line Charts** template
- Click **Next**

Specify the Template Name

- Enter the **Name** *txtLineCharts*
- Select the **Connector** that represents the data source
- Click **Next**

Customize the Content of the Template

- Enter a **Title** for the report
- Click **Finish**

The template is ready.

Produce Reports

From the **Home** tab of the **Project Explorer** select **Interactive, On-Demand Reports**.

- Select the template from the Template Pane

This exposes the user settings for this template

- Enter a time period (if you are using the samples provided then use *1 to 23 Oct 2015*)
- Enter a selection of tags by using the brows[...] pushbutton
- Click Refresh

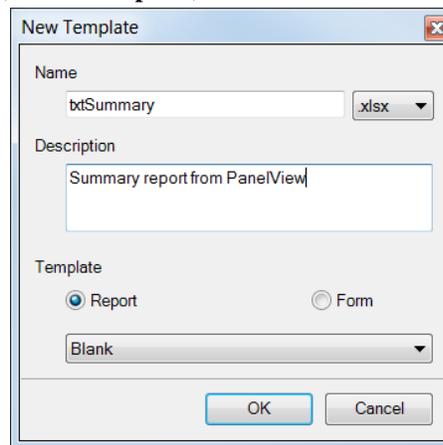
The report shows the trend charts with values on the *Data* sheet. Use the **Save**, **Print** or **Email** options to publish the report.

Exercise: Daily Summary Report - Studio

This exercise shows you how to produce a daily summary report of hourly averages data. The daily reports are stored in a monthly workbook.

From the **Home** tab of the **Project Explorer** select **Template Studio** to open Excel.

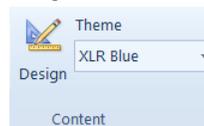
From the **XLReporter** ribbon, select **Template, New**.



- Set **Name** to *txtSummary*
- Under **Template**, select **Report**
- Click **OK**

Layout

Layout in the template will be performed using a theme. Select a **Theme** from the list.



Data Connection

Data connections represent the data sources for the template. From the ribbon, click **Data Connect** to open the **Connection** dialog (this dialog can be re-positioned by holding the mouse on the title bar and dragging).

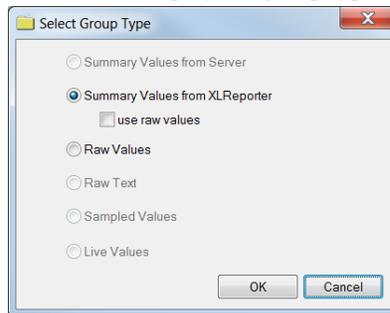
The display contains a grid showing all the connections of the template (which should be empty at this stage). When an entry in the grid is highlighted, its settings are shown in the left pane. The **Add**, **Modify** and **Delete** pushbuttons are used to add/modify/delete the settings to the grid.

There are two steps in adding a data connection. The first step is to define a data group which represents the data source the second step is to locate the data group on the template.

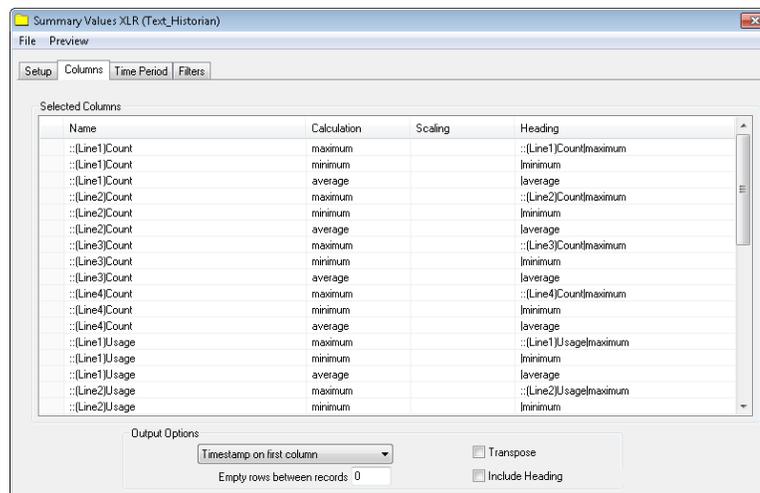
Define a Data Group

Under **Source**

- Select a real time **Connector**
- Set **Name** to <add group ...>
- Click the browse [...] pushbutton to display the group types for the connector.



Select *Summary Values from XLReporter* and click **OK**.



On the **Columns** tab

- Under **Name**, click the browse (...) pushbutton
- Select one or more tags
- Then select one or more calculations

On the **Time Period** tab the default settings are for a **Period** of a day with an **Interval** of an hour (which are the settings for this exercise)

- Validate the group by clicking **Preview**
- Enter a time period (if you are using the samples provided then use *1 to 23 Oct 2015*)
- Click **Refresh** to preview the output of the group

Date	Line1Count	Line2Count	minimum	average	maximum		
10/01/15	81	16	48.531466440735	52	7	42.233333330377	50
10/01/15 1:00:00 AM	81	16	60.131466449814	52	7	46.233333330375	51
10/01/15 2:00:00 AM	81	16	74.508333229568	52	7	60.000000000000	44
10/01/15 3:00:00 AM	80	16	74.216666734973	51	7	67.533333342574	40
10/01/15 4:00:00 AM	81	16	47.1790000022335	53	7	46.4000000014726	43
10/01/15 5:00:00 AM	80	16	70.4274666795221	51	7	61.83666666232945	54
10/01/15 6:00:00 AM	80	16	74.400333330357	52	7	66.0063333303483	57
10/01/15 7:00:00 AM	80	76	77.4314666666405	80	11	67.40000000040513	60
10/01/15 8:00:00 AM	81	16	66.819466669722	51	7	62.7290000094219	66
10/01/15 9:00:00 AM	79	77	76.250000002556	50	7	71.790000001166	70
10/01/15 10:00:00 AM	81	16	70.1249999885977	52	7	65.958333342319	71
10/01/15 11:00:00 AM	81	16	62.938333481172	52	7	61.288333342319	68
10/01/15 12:00:00 PM	81	16	70.050000154379	52	7	76.233333320573	66
10/01/15 1:00:00 PM	80	77	78.333333329666	53	7	53.458333349933	68
10/01/15 2:00:00 PM	81	16	66.008333332089	52	7	62.638333336779	68
10/01/15 3:00:00 PM	81	16	60.1066666534308	52	7	55.5916666660154	60
10/01/15 4:00:00 PM	79	76	77.666666668413	53	7	74.5583333291511	59
10/01/15 5:00:00 PM	80	16	75.3200000087817	52	7	61.416666813204	70
10/01/15 6:00:00 PM	81	16	62.233333348324	53	7	66.986666710570	77
10/01/15 7:00:00 PM	81	16	66.116666722292	51	13	72.349999999441	78
10/01/15 8:00:00 PM	80	16	74.41146667572	51	73	77.100000000000	81
10/01/15 9:00:00 PM	80	16	70.841666705323	53	7	62.133333347455	53
10/01/15 10:00:00 PM	81	16	67.5333333284279	52	7	50.3499999996054	60
10/01/15 11:00:00 PM	80	77	75.816666667969	52	7	67.1583333332296	80

- Close the preview display
- Click **File, Save** and use the Name *txtSummary*

Place the Data Group

The second step is to specify the placement of the data group on the template.

Under Placement

- Set the **Cell** to *\$B\$7*
- Set **Type** to *Direct*
- Click **Add** to add the configuration to the grid

Notice that the layout for the data group is automatically added to the template, using the active theme.

- Use Excel to modify the layout such as column widths and custom formatting.

Naming Convention

Naming convention is required to reflect that daily reports are stored in monthly workbook.

Select **Report Names** to open the **Report Names** dialog.

Template	Folder	Report	Over
WORKBOOK			
txtSummary		txtSummary_(MMM){YYYY}	No
WORKSHEET			
*		[DD]	No

Under **WORKBOOK**, select the row and click **Modify** to open the **Name** browser

- For **Name**, click browse [...] and specify *txtSummary* followed by the *Month and Year*

Under **WORKSHEET** select the row containing **Template** and click **Modify**

- For **Name**, click browse [...] push button and specify *Day*

Validate the Template

To validate the template, select **Report Preview** to open the **On-Demand Reports** dialog.

- Enter a time period (if you are using the samples provided then use *1 to 23 Oct 2015*)
- Click **Refresh**
- Notice the tab on worksheet reflecting the current day of the month
- Close the dialog and return to Excel

Design a Schedule

The template will be scheduled so that the report it produces contains values every hour.

Select **Schedule** to open the **Schedule Designer** (there may be other schedules displayed from other exercises).

Highlight an empty row and click **Add**.

Under **Condition**

- Select *Daily*
- Set **Time** to *00:15:00 AM*
- Set **Action Time Adjustment** to *1 day(s)*

It is good practice to generate historical reports after the reporting period (15 minutes in this case) so the adjusting the time to the previous day is required.

Under **Action**

- Select Produce Reports, Update Worksheet
- Use the browser and select *txtSummary.xlsx.Template*
- Click **OK**

Produce Reports

To simulate the production of a report from the template, highlight the schedule line and click **Test**.

- Enter a time period to simulate the scheduler (if you are using the samples provided then use *1 to 23 Oct 2015 00:00:15*). Note that the dates you enter will produce the report for the previous day e.g.,, entering *2 Oct* produces the report for the *1 Oct* (see the Scheduler setting)
- Click **Start** to simulate daily updates.
- When the updating is complete, close the display and then select **File, Exit** to close the **Schedule Designer**

View Reports

To view the reports created, select **Report, Open**

- Click the report *txtSummary_Oct2015* to view its content. Notice a new worksheet for each day

Note that when a report opened using **XLReporter** ribbon, it opens *Read-Only*.

Date	(Line1)Count	(Line2)Count	(Line3)Count	(Line4)Count								
	maximum	minimum	average	maximum	minimum	average	maximum	minimum	average			
00	81.00	16.00	69.59	82.00	7.00	62.26	51.00	29.00	39.77	63.00	59.00	60.48
100	81.00	16.00	60.19	82.00	7.00	66.23	51.00	32.00	42.57	71.00	63.00	66.52
200	81.00	16.00	74.51	82.00	7.00	69.10	44.00	30.00	35.49	80.00	71.00	75.52
300	80.00	16.00	74.22	81.00	7.00	67.58	40.00	32.00	36.32	88.00	80.00	84.32
400	81.00	16.00	67.18	83.00	7.00	68.69	43.00	33.00	36.93	81.00	88.00	89.90
500	80.00	16.00	70.48	81.00	7.00	61.57	54.00	33.00	41.50	81.00	89.00	90.28
600	80.00	16.00	74.68	82.00	7.00	69.01	57.00	30.00	44.52	89.00	81.00	85.25
700	80.00	16.00	77.49	80.00	11.00	67.40	60.00	34.00	46.57	81.00	72.00	76.72
800	81.00	16.00	66.02	81.00	7.00	68.73	66.00	32.00	48.89	72.00	64.00	67.60
900	79.00	16.00	78.25	82.00	7.00	71.70	70.00	32.00	52.49	64.00	59.00	61.90
1000	81.00	16.00	70.12	82.00	7.00	65.96	71.00	36.00	53.88	60.00	59.00	59.28
1100	81.00	16.00	63.96	82.00	7.00	61.28	68.00	30.00	51.03	67.00	60.00	63.13
1200	81.00	16.00	70.05	82.00	7.00	76.23	66.00	30.00	48.72	76.00	67.00	71.10
1300	80.00	16.00	78.38	83.00	7.00	53.86	68.00	32.00	49.93	85.00	76.00	80.37
1400	81.00	16.00	69.01	82.00	7.00	63.66	63.00	32.00	49.44	90.00	85.00	87.80
1500	81.00	16.00	60.17	82.00	7.00	53.59	60.00	39.00	49.51	81.00	90.00	90.63
1600	79.00	16.00	77.67	83.00	7.00	74.56	59.00	40.00	50.12	90.00	85.00	88.20
1700	80.00	16.00	75.33	82.00	7.00	61.42	70.00	38.00	52.26	85.00	77.00	81.03
1800	81.00	16.00	63.28	83.00	7.00	66.07	77.00	37.00	56.84	76.00	67.00	71.73
1900	81.00	16.00	66.12	81.00	33.00	70.25	78.00	37.00	57.37	67.00	81.00	63.62
2000	80.00	16.00	74.44	81.00	73.00	77.10	81.00	37.00	60.11	61.00	59.00	59.40
2100	80.00	16.00	75.84	83.00	7.00	62.13	83.00	8.00	47.96	63.00	59.00	60.70
2200	81.00	16.00	67.53	82.00	7.00	50.35	60.00	30.00	46.98	71.00	63.00	66.97
2300	80.00	16.00	78.82	82.00	7.00	67.16	60.00	35.00	48.49	81.00	71.00	76.03

Close **Excel**.

Exercise: Enhanced Daily Summary Report

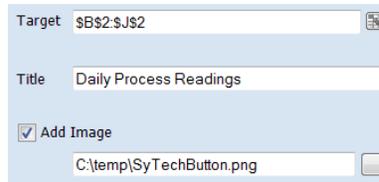
This exercise will continue from the previous exercise to demonstrate how to add a header, summary calculations and a chart using **Content** wizard.

From the **Project Explorer** double click the template *txtSummary* in the left pane to open the template in the **Template Studio**. This will open Excel with the template pre-loaded. Alternatively, open Excel and use **File Open** from the **XLReporter** ribbon.

Header

From the ribbon, select the **Content, Design**.

Select **Insert Header** 



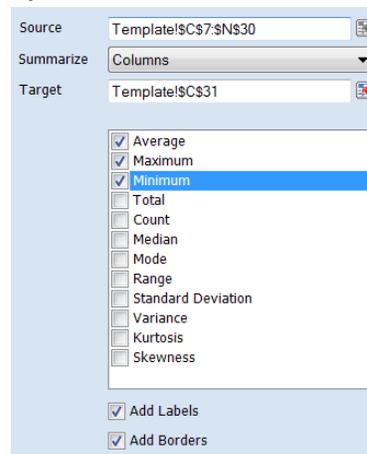
The dialog box for inserting a header. It has three main sections: 'Target' with a text box containing '\$B\$2:\$J\$2' and a selection icon; 'Title' with a text box containing 'Daily Process Readings'; and 'Add Image' with a checked checkbox and a text box containing 'C:\temp\SyTechButton.png' and a selection icon.

- Set the cursor in **Target** and select the cells starting at *\$B\$2* to the cell where the title should end (e.g., *\$J\$2*).
- Enter a **Title**
- Select an optional company logo or image
- Click **Insert**

Calculation Summary

From the ribbon, select the **Content, Design**.

Select **Insert Calculation Summary** 



The dialog box for inserting a calculation summary. It has three main sections: 'Source' with a text box containing 'Template!\$C\$7:\$N\$30' and a selection icon; 'Summarize' with a dropdown menu set to 'Columns'; and 'Target' with a text box containing 'Template!\$C\$31' and a selection icon. Below these is a list of calculation options with checkboxes: Average (checked), Maximum (checked), Minimum (checked and highlighted), Total, Count, Median, Mode, Range, Standard Deviation, Variance, Kurtosis, and Skewness. At the bottom are two checked checkboxes: 'Add Labels' and 'Add Borders'.

- Set the cursor in **Source** and select the cells starting at *\$C\$7* to the cell in the lower right of the table (e.g., *\$J\$29*).
- Set **Target** to *Template!\$C\$31*
- Check one or more calculations
- Click **Insert**

Chart

Expand the height of row 4 to 200 pixels

From the ribbon, select the **Content, Chart**. With **Line Chart** selected, Under **Chart Values**

- Set **Vert. (Y)** to *Template!\$C\$5:\$E\$30*
- Set **Hori. (X)** to *Template!\$B\$5:\$B\$30*
- Check **Header Rows** to 2
- Click **Insert**

PanelView Plus

Overview

XLReporter generates Excel based reports from the log files created by Rockwell Automation® PanelView Plus terminals using DataStore Plus.

The DataStore Plus ActiveX control is used for logging data to log files. The log files on the terminal can be accessed using a flash drive, directly across the local network or by FTP. Using FTP, a layer of security may be added to prevent unauthorized access.

XLReporter uses these methods to copy the log files to a secondary location on the local system. By using network access, this can be done automatically, on time or event. The advantage of copying the files automatically to the connector is that they are archived before the data is overwritten by the device.

XLReporter's PanelView Plus Data Connector makes the log files appear as a single data entity like a database, so reports are not limited to the content of a single file. In addition, the connector maintains a list of tag names so that any tag selection can be done using a tag browser. Database features such as filtering and sorting are supported together with analytic calculations such as the average for each hour of a day.

FTP Server Setup

If you wish **XLReporter** to retrieve data automatically using FTP, the FTP server must be enabled on the PanelView Plus. This is done from the **Windows Control Panel** by opening **Services**. If the FTP Server button is not green, it is not running. Click the button to turn it green and start the FTP server.

The FTP Server settings are configured from the **Windows Control Panel** by opening **Server Config**. Under the **FTP Server** tab are all the available FTP Server settings.

The **Default Directory** and **Base Directory** determine the root folder of the FTP server. To set this to the root folder of the system, configure both settings to \.

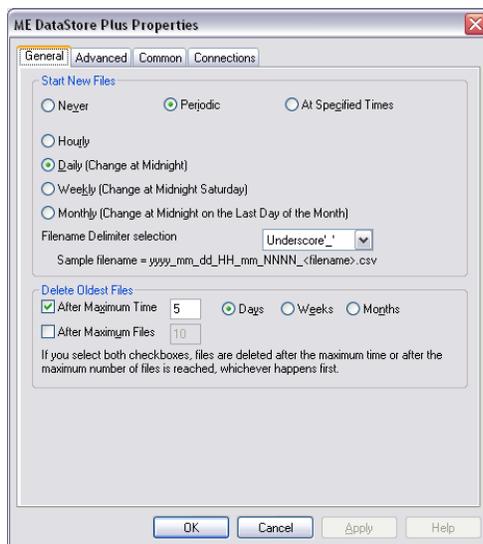
To allow anonymous access, check all the **Allow Anonymous** options for the FTP Server.

Setup

The DataStore Plus ActiveX control is used to collect data in comma separated values files (CSV files). It is configured in the FactoryTalk View Studio-Machine Edition by placing the control on a screen that cannot be closed by a user.

General Tab

This tab determines when the files are created.

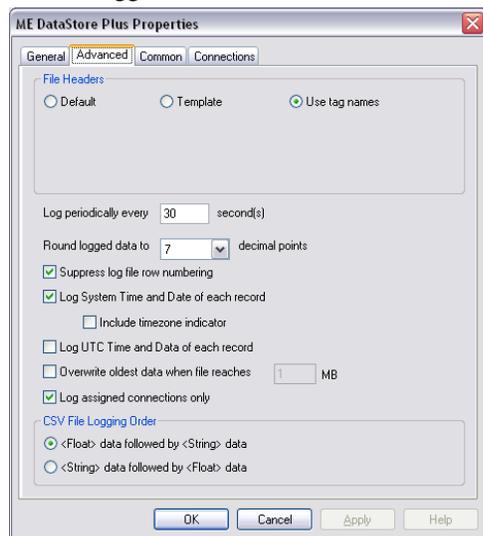


XLReporter recommends,

- Start New Files either Periodic (Hourly or Daily) or At Specific Times.
- Delete Oldest Files value longer than the transfer rate scheduled for the Connector.

Advanced Tab

This tab determines when the data is logged.

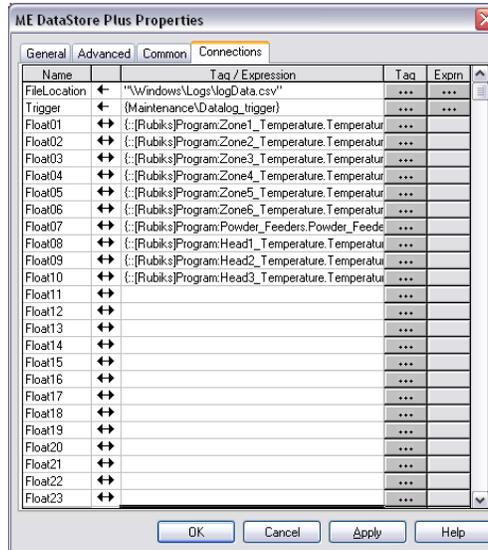


XLReporter recommends,

- For File Headers select Use tag names.
- Suppress log file row numbering.
- Log System Time and Date for each record.
- Log assigned connections only.

Connections Tab

This tab determines what data is logged and where the files are saved.



The **FileLocation** setting determines both where the csv files are located as well as the fixed text portion of the naming convention. It is important that this location is configured to a folder that is accessible either from the local network or via FTP in order for **XLReporter** to have access to these files.

The **Trigger** setting is typically set to a tag that determines if data should be logged. Only when the value of the tag is non-zero will data be logged to the CSV file. Use this setting if logging needs to be performed for cycles such as the production of a batch or a machine cycle.