

Reporting from Text Files

Overview

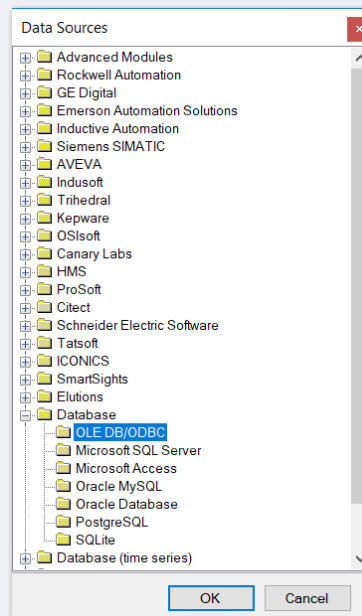
Many devices store data in text file format like CSV. Often times new files are created either periodically or when a new batch or cycle is started.

The following describes how different types of text files can be used by **XLReporter** as data sources for reports.

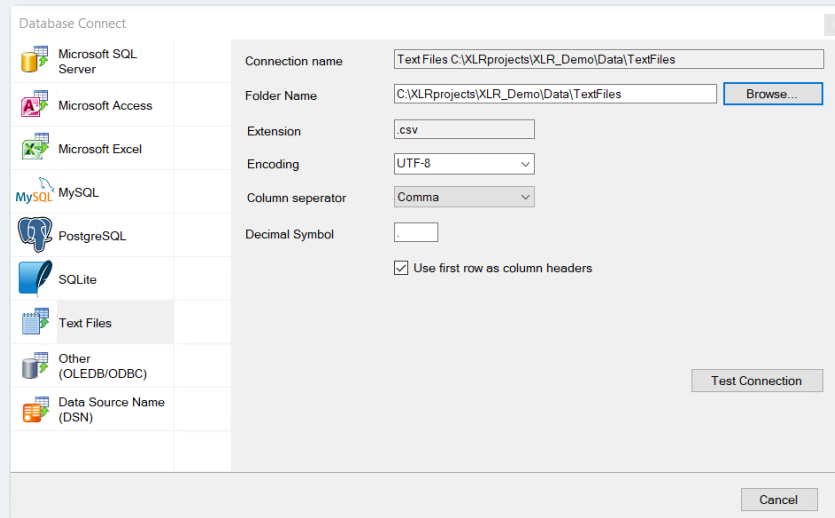
Fixed Text Files

A fixed text file is a file with a fixed name.

Data Connector



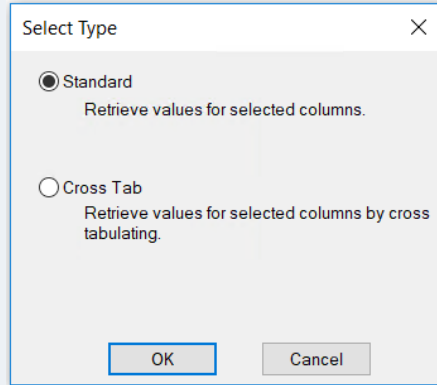
The **Database** data connector must be configured to report on data from a fixed text file.



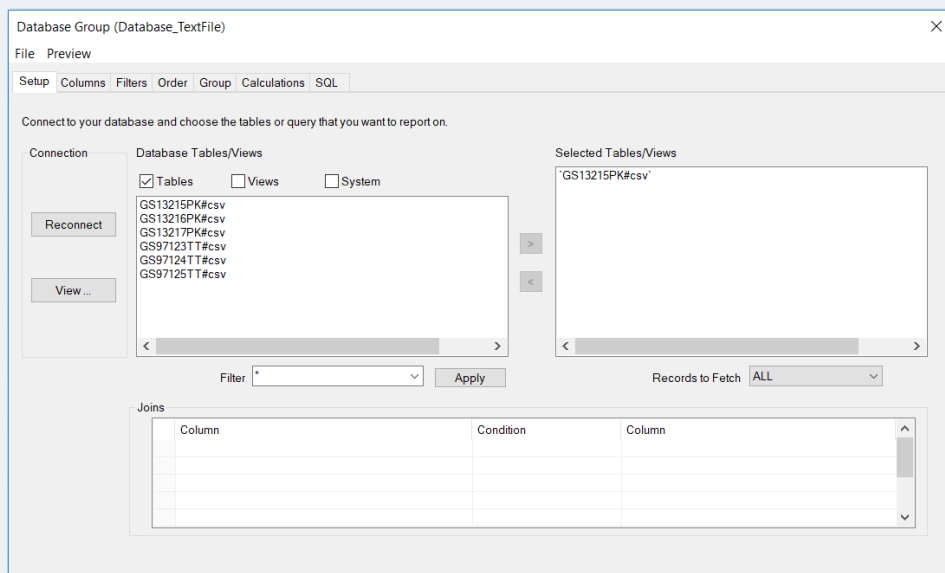
When browsing for the Type, select **Text File** on the left and then fill in the information to select the fixed file from the **Folder** on the system.

Data Group

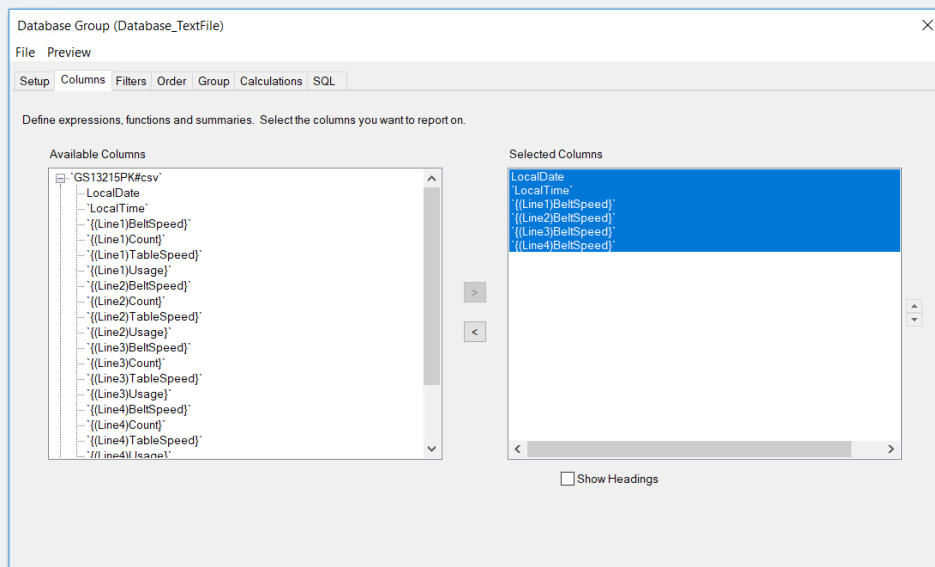
To retrieve data from the connector configured, a Database Data Group must be configured.



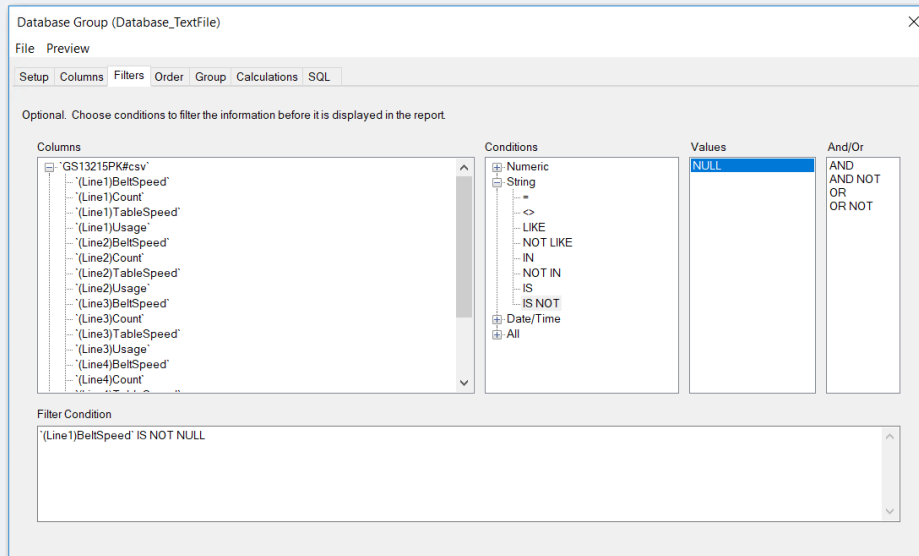
A **Standard** group type should be selected.



Under **Setup**, the **Selected Table** should be the fixed file name containing the data to report from.



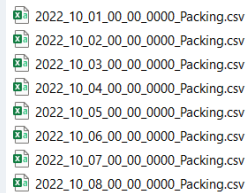
Under **Columns**, select each column from the file to report on.



Under **Filters**, set up filters to restrict the data returned from the file if desired.

Time Series Text Files

Time series text files are a set of text files where each file represents a period of time with the name of the file indicating the start or end date and time for the data it contains.

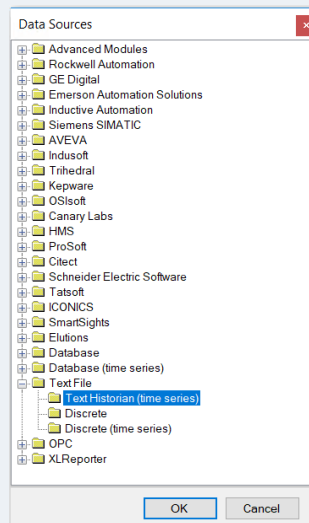


Consider the set of files above. The name of each file indicates the year, month, day, hour, minute and second for the start of the file. It is assumed that all data logged starting on *October 1st, 2022 at 00:00:00* is logged into this file until the next file is detected, which in this case is the one for *October 2nd, 2022 at 00:00:00*.

In this example, since we have no file after *October 8th, 2022*, we assume any value on or after *October 8th* is logged in this file.

XLReporter can stitch multiple files together in a single request to return the data like a historian would.

Data Connector



The data connector for time series text files is the **Text Historian (time series)**.

The screenshot shows the 'Text Historian (time series)' configuration window. It has a title bar with a close button. The window is divided into several sections: 'Connector Name' with a text field containing 'Text_Historian_1' and an empty 'Description' field; an 'Enable File Transfer' checkbox which is unchecked, with a 'Settings' button to its right; 'File Location and Name' section containing a 'Folder' field with 'C:\XLRprojects\XLR_Demo\Data\Packing', a 'File Name Format' field with 'YYYY_MM_DD_??_??_????_Packing.csv', and a 'Base File' field with '2022_10_21_00_00_0000_Packing.csv'. There are 'Refresh' and 'View' buttons next to the format and base file fields, and a 'Settings' button below. The 'File Content' section has a 'Date Column' dropdown set to 'LocalDate', an unchecked 'Date includes Time' checkbox, a 'Time Column' dropdown set to 'LocalTime', a 'Separator' section with radio buttons for 'Comma' (selected), 'Semicolon', 'Tab', and 'Other', and a 'Decimal Symbol' field containing a period. There are 'Settings', 'OK', and 'Cancel' buttons at the bottom.

If the text files need to be transferred from an FTP server or remote directory, the **File Transfer** can be enabled. Otherwise, if the file location is local, this can all be specified in the **File Location and Name** section.

The **File Name Format** should denote the parts of the date and time found within the files names in the system.

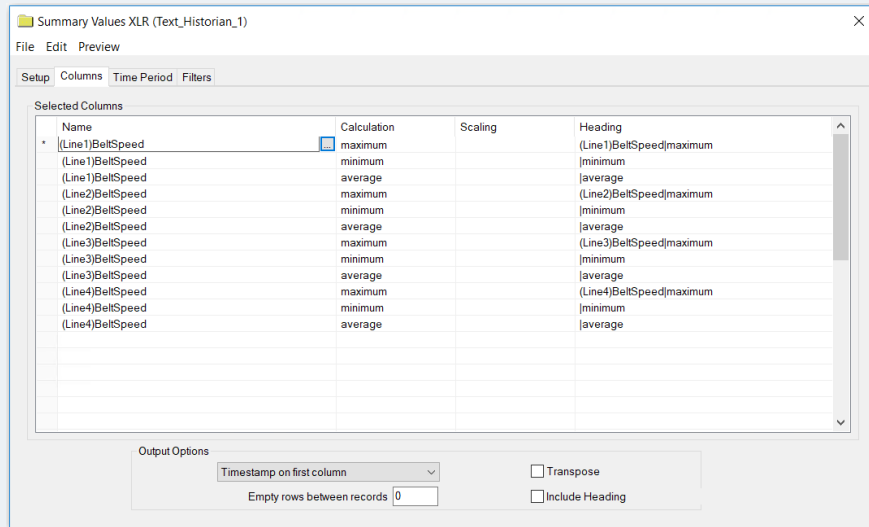
The **Settings** option is available if the text files do not follow the normal convention of a CSV file with the top row being headers and each row underneath as data.

The **File Content** section defines the column(s) used to determine the timestamp of every record as well as how the columns are delimited in the files.

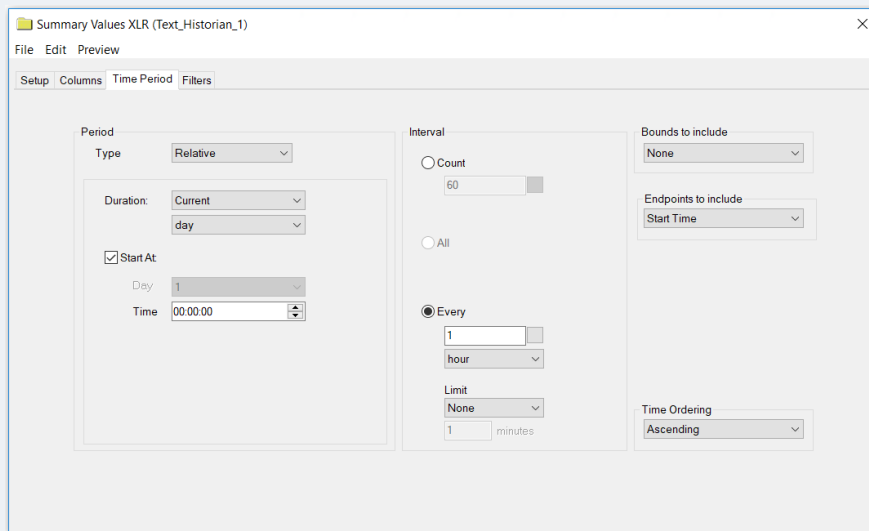
Data Group

The screenshot shows the 'Select Group Type' dialog box. It has a title bar with a close button. The dialog contains several radio button options: 'Summary Values from Server', 'Summary Values from XLReporter' (which is selected), 'Raw Values', 'Raw Text', 'Sampled Values', 'Live Values', and 'Custom Values'. Below these is an unchecked checkbox labeled 'use raw values'. At the bottom, there is a 'Base on' dropdown menu currently showing '<blank>'. There are 'OK' and 'Cancel' buttons at the bottom right.

To retrieve data from this connector, a History Data Group can be configured. This can be used to retrieve either raw data or calculated data over a period of time that may span multiple files.



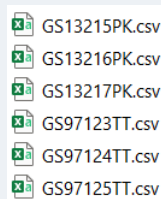
The **Columns** tab contains all the columns you wish to report on from the text files. Under **Column**, the browse button presents every available column in the files.



The **Time Period** tab defines the overall time period over which to retrieve data. If the group type is *Summary Values from XLRReporter*, the **Interval** settings define the interval over which each calculation is performed for each selected column.

Discrete Text Files

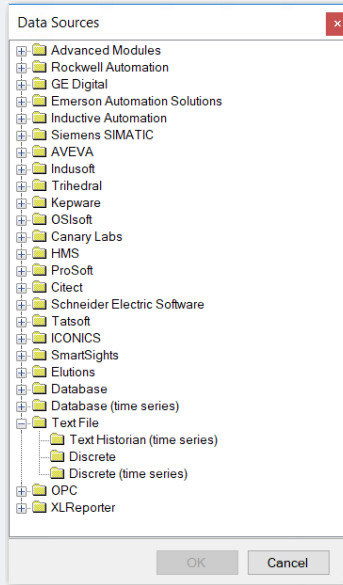
Discrete text files are a set of text files where each file contains data logged for a specific discrete process like a batch or cycle.



In the example files above, each file contains data logged over a specific batch, with the name of the file indicating the name of the batch.

Unlike time series text files, XLRReporter can only operate on one file at a time, these do not get stitched together.

Data Connector(s)



The data connector for discrete text files can either be **Discrete** or **Discrete (time series)**. If the reports from these files only need to display raw data, select **Discrete**. If the reports need to display calculated values over the duration of the file (e.g., 5-minute averages over the batch), select **Discrete (time series)**.

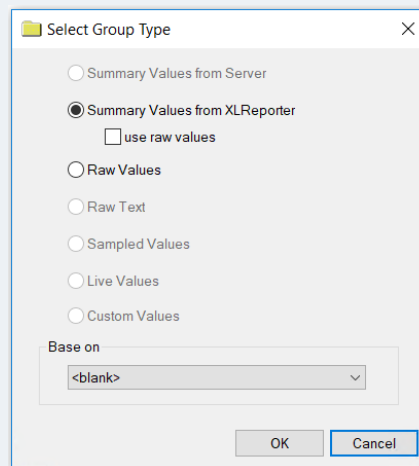
A screenshot of the 'Discrete (time series)' configuration dialog box. It has several sections: 'Connector Name' with the value 'Text_File_TimeSeries_1'; 'Description' (empty); 'Enable File Transfer' (unchecked); 'Source' section with 'Folder' set to 'C:\XLRprojects\XLR_Demo\Data\TextFiles', 'Filter' set to '*.csv', and 'File' set to 'Variable' with the value '{File Name}'; 'File Content' section with 'Encoding' set to 'ANSI', 'Separator' set to 'Comma', and 'Decimal Symbol' set to '.'; and 'Date and Time Columns' section with 'Date Column' set to 'LocalDate', 'Date includes Time' (unchecked), and 'Time Column' set to 'LocalTime'. 'OK' and 'Cancel' buttons are at the bottom.

If the text files need to be transferred from an FTP server or remote directory, the **File Transfer** can be enabled. Otherwise, if the file location is local, this can all be specified in the **Source** section.

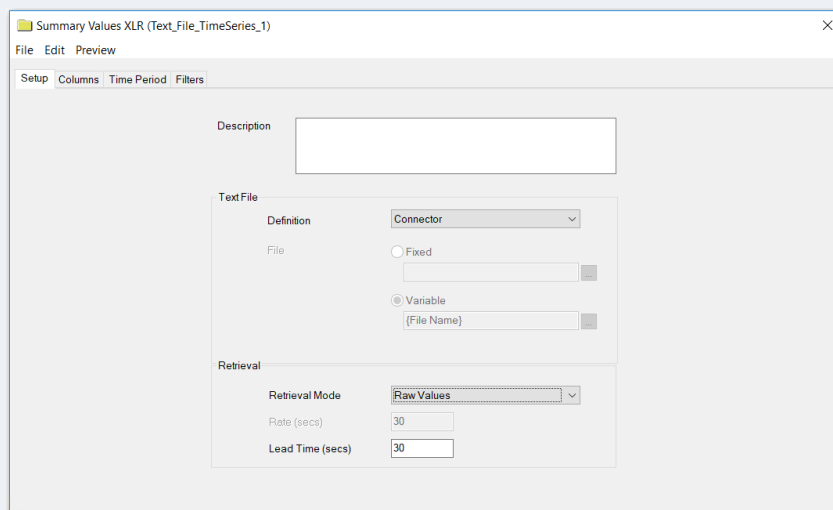
After the **Folder** and **Filter** are defined, the **File** can either be *Fixed* or a *Variable*. Most of the time, *Variable* makes the most sense. This variable can be set either from the scheduler or on demand by the user.

For **Discrete (time series)** the column(s) for the date and time must also be specified for the connector.

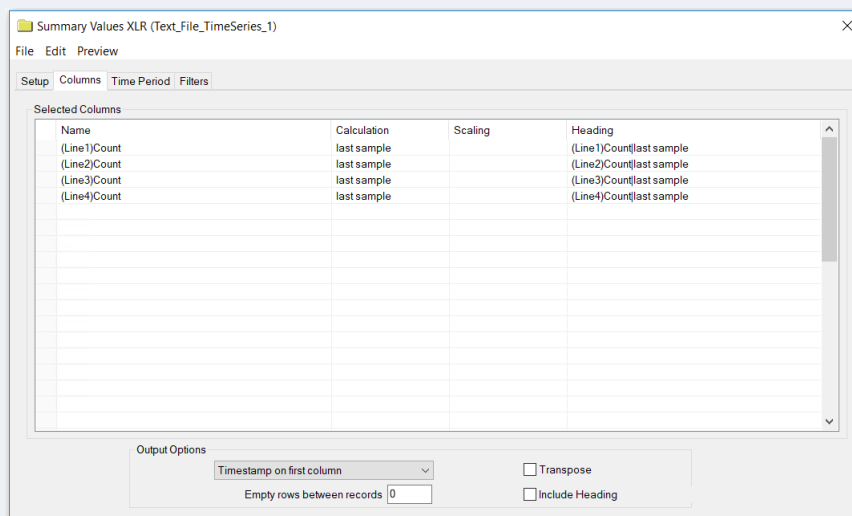
Data Group



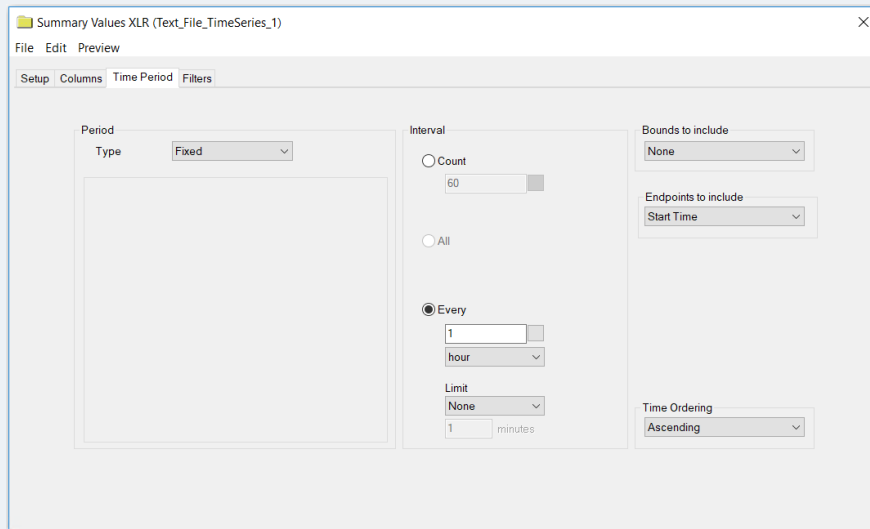
To retrieve data from this connector, a History Data Group can be configured. For **Discrete** connectors, this can only retrieve raw data. For **Discrete (time series)**, this can be used to retrieve either raw data or calculated data over the duration of the file.



The **Setup** tab can be used to override the connector setting that defines how the file is specified for the group. This allows 1 connector to be used in multiple ways if needed. Typically, this is left to use the same settings as the connector.



The **Columns** tab contains all the columns you wish to report on from the text file. Under **Column**, the browse button presents every available column in the file.



The **Time Period** tab is only available for the Discrete (time series) connector. The overall time period is always defined as the duration of the file. If the group type is *Summary Values from XLReporter*, the **Interval** settings define the interval over which each calculation is performed for each selected column.