

Using XLReporter with Text Historian

Overview

This connector is used to get historical data from one or more text files stored in a common folder. The connector “stitches” a set of text files together so they can be treated as a single entity and consequently provide similar behavior to a historian.

The naming convention for the file name has to reflect the content of the file, e.g., if file contains records time stamped for 1st, Oct 2020 then a file name *01_10_2020* or *Packing_2020_10_1* or similar would be suitable.

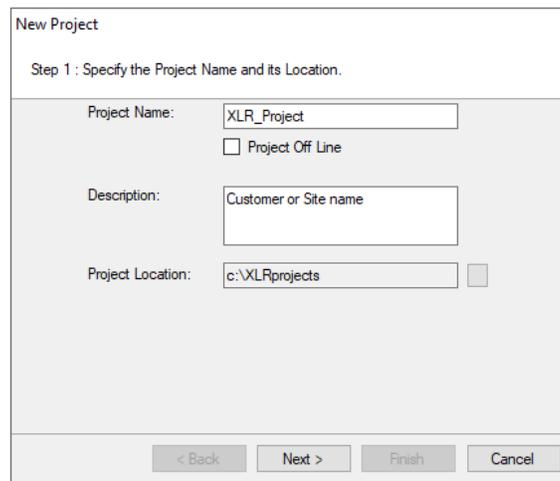
This connector only supports text files that are encoded as *ANSI* (also referred to an *UTF-8*), *UTF-8 with BOM* (Byte Order Mark) or *UNICODE little endian*.

Create a Project

From the **XLReporter Project Explorer** select **File, New** to start the **Project Wizard**. This will give step-by-step instructions on creating a project.

Step 1

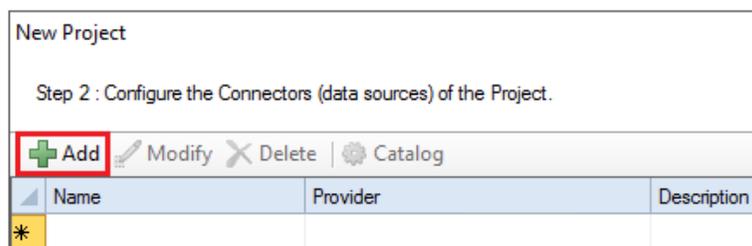
- Enter a **Project Name** and **Description** (optional).



The screenshot shows a dialog box titled "New Project" with the subtitle "Step 1 : Specify the Project Name and its Location." It contains three input fields: "Project Name" with the value "XLR_Project", "Description" with the value "Customer or Site name", and "Project Location" with the value "c:\XLRprojects". There is a checkbox labeled "Project Off Line" which is unchecked. At the bottom, there are four buttons: "< Back", "Next >", "Finish", and "Cancel".

Step 2

- Configure the data connector, click **Add**.



The screenshot shows a dialog box titled "New Project" with the subtitle "Step 2 : Configure the Connectors (data sources) of the Project." It features a toolbar with icons for "+ Add", "Modify", "Delete", and "Catalog". Below the toolbar is a table with three columns: "Name", "Provider", and "Description". The first row of the table is highlighted in yellow and contains an asterisk (*) in the "Name" column.

Name	Provider	Description
*		

Select **Text File, Text Historian (time series)**.

Connector

The connector supports direct access to the files or transfer them automatically from a remote location e.g., Operator Panel by checking **Enable File Transfer**. For details more information, see the **File Transfer** section below.

When the **Folder** containing the files is selected, the **File Name Format** is determined from the most recent file in the folder, displayed as the **Base File**. In addition, the **File Content** settings are automatically filled out (if possible). If the **File Name Format** is not determined correctly, it can be changed manually and clicking the **Refresh** button re-establishes the **Base File** and **File Content** settings.

Click **View** to view the **Base File**. If the file does not appear or is shown incorrectly, this could mean that the file is not adhering to a Text File standard i.e., first row contains headings, and each subsequent row of data. This situation can be “repaired” using the **Settings** option (see the **File Settings** section below).

The **Date Column** and **Time Column** lists contain all the columns that were found from the **Base File** and an attempt is made to select the most suitable columns. This can be changed if needed.

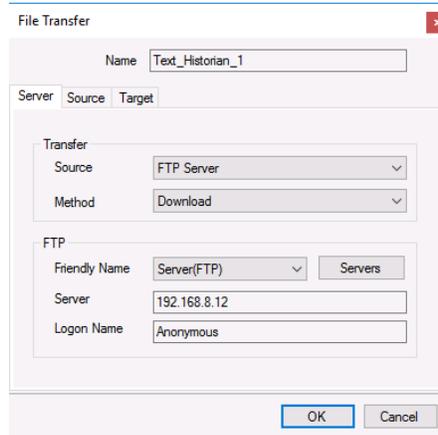
File Transfer

If the text files are in a remote location e.g., Operator Terminal or Data Logger, they can be scheduled to be transferred to the local machine.

Check **Enable File Transfer** and click **Settings** button to open the **File Transfer Settings**.

Transfer Configuration

The **Transfer Configuration** is set to the name of the connector. Click the browse button [...].

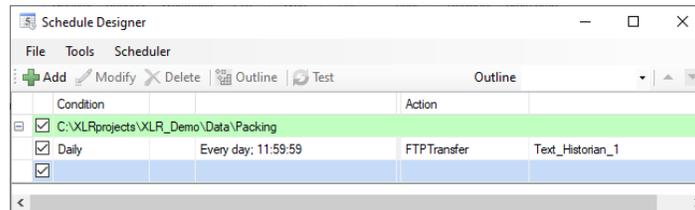


The screenshot shows a dialog box titled "File Transfer" with a close button (X) in the top right corner. The "Name" field contains "Text_Historian_1". Below this are three tabs: "Server", "Source", and "Target", with "Source" selected. The "Transfer" section contains two dropdown menus: "Source" set to "FTP Server" and "Method" set to "Download". The "FTP" section contains three fields: "Friendly Name" with a dropdown set to "Server(FTP)" and a "Servers" button to its right; "Server" with the value "192.168.8.12"; and "Logon Name" with the value "Anonymous". At the bottom are "OK" and "Cancel" buttons.

For details on **File Transfer**, see the product documentation on how to **Transfer Reports to an FTP Server**.

Transfer Schedule

Clicking **OK** for the **File Transfer** setting creates a new line into the schedule. This can be viewed and modified from the **Schedule Designer**.

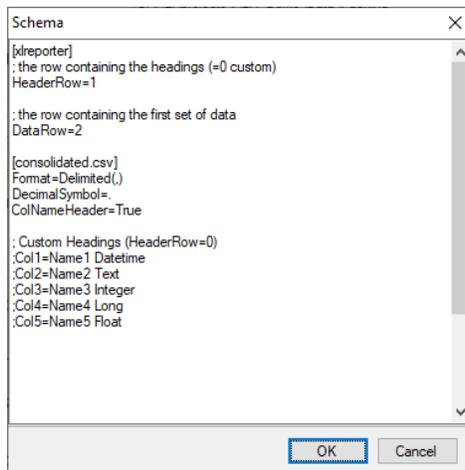


The screenshot shows the "Schedule Designer" window with a menu bar (File, Tools, Scheduler) and a toolbar (Add, Modify, Delete, Outline, Test). The main area is a table with columns for Condition, Action, and Outline. The table contains one row with a green background, representing a task configuration.

Condition	Action	Outline
<input checked="" type="checkbox"/> C:\XLRprojects\XLR_Demo\Data\Packing	FTPTransfer	Text_Historian_1

File Settings

When the text file content is non-standard the **Settings** option in **File Location and Name** can be used for a certain level of customization.



There are two sections in this display, one section is [xlreporter] and the other is [consolidated.csv].

A row starting with semi-colon (;) is treated as a comment.

[xlreporter]

Usually, the first row of the file contains the headings and the remaining rows the data. If this is not the case, then set **Header Row** and **Data Row** accordingly.

For example, consider the following text file:

```
Date: June 8, 2021
Station: Plant 7
Operator: Jim

LocalDate,LocalTime,Flow,Pressure,Torque,Level,Rate,State,Speed,Temp
6/8/2021,0:00:00,2021,6,8,0,0,0,10,20
6/8/2021,0:01:00,2021,6,8,0,1,0,20,30
6/8/2021,0:02:00,2021,6,8,0,2,0,30,40
6/8/2021,0:03:00,2021,6,8,0,3,0,40,50
6/8/2021,0:04:00,2021,6,8,0,4,0,50,60
6/8/2021,0:05:00,2021,6,8,0,5,0,60,70
6/8/2021,0:06:00,2021,6,8,0,6,0,70,80
6/8/2021,0:07:00,2021,6,8,0,7,0,80,90
6/8/2021,0:08:00,2021,6,8,0,8,0,90,100
6/8/2021,0:09:00,2021,6,8,0,9,0,100,110
6/8/2021,0:10:00,2021,6,8,0,10,0,110,120
6/8/2021,0:11:00,2021,6,8,0,11,0,120,130
6/8/2021,0:12:00,2021,6,8,0,12,0,130,140
6/8/2021,0:13:00,2021,6,8,0,13,0,140,150
```

The following would need to be specified:

HeaderRow=5

DataRow=6

If the text file does not contain headers, set **HeaderRow** to 0 and, under the **[consolidated.csv]** section, set **ColNameHeader** to *False*. Since there are no headers, you must add each header manually. See **Custom Column Names** below for details.

[consolidated.csv]

The settings in this section follow those for the **Text File Driver from Microsoft** so a detailed description of each can be found on the internet.

Below are some common settings:

Custom Column Names

If the text file(s) does not contain headers or the headers that are included are not usable/descriptive, then custom column names can be used.

Add the following **for every column** in the file:

Colx= Name Type

- *x* is 1 based
- *Name* is the custom name of the column
- *Type* is the column data type e.g., Text

For example, if the file contains a *Timestamp*, *Speed*, *Pressure*, *Temperature* and *Name*, the following would be set:

Col1=DateAndTime DateTime

Col2='Mixer Speed' Double

Col3='Mixer Pressure' Double

Col4=Temperature Double

Col5='Operator Name' Text

Enclose column names containing a space with double quotes.

Custom Date Format

If the format of the date values in the file is not the same as that of the operating system, then the format must be explicitly stated as follows:

DateTimeFormat=Format

Format is a valid *Date* or *Date and Time* format.

For example, if the date format in the text file is in universal format 2010-01-01 but the operating system is not, then the following would be set:

DateTimeFormat=yyyy-MM-dd

Note that this format also applies to columns that just contain time. In those cases, the time format should also be added to the setting. For example:

DateTimeFormat=yyyy-MM-dd hh:nn:ss

Notice that minute is denoted as *nn*.

Max Scan Rows

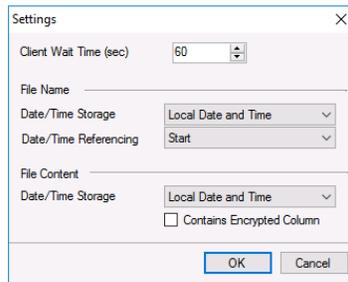
When determining the column type for each column, the first 25 rows are scanned by default. In some cases, the first 25 rows may not accurately represent what the column type should be. If this is the case, the number of rows to scan must be explicitly stated as follows:

MaxScanRows=X

When set to 0, the whole file is scanned.

Connector Settings

The bottom **Settings** button gives access to settings that define how the name and file content are interpreted at runtime.



If queries timeout, increase the **Client Wait Time**.

File Name

The File Name settings define how the values date and time keywords defined for the **File Name Format** behave.

If the date/time elements in the file names represent date/time in UTC format, set **Date/Time Storage** to *UTC Date and Time*, otherwise select *Local Date and Time*.

If the records in the files start at the date/time found in the file name, set **Date/Time Referencing** to *Start*, otherwise if the records in the end at the date/time found in the file name set *End*.

File Content

If the Date Column (and Time Column if specified) in the text files are stored in UTC format, set Date/Time Storage to UTC Date and Time, otherwise select Local Date and Time.

Some text files contain one or more columns of encrypted data to validate the file. Good examples of this are Alarm and Audit Log text files produced by Rockwell Software's FactoryTalk View ME application.

If the text files contain one or more of these encrypted columns the **Contains Encrypted Column** option must be checked.

Verify the Data Connector

XLReporter retrieves data from the **Data Connector** using a **History Group**.

From the **XLReporter Project Explorer** select, **Tools, Connector Groups**

Select the *Text Historian (time series)* connector and then select **Add**.

- Set the **Type** *Raw Values* and click **OK**.

On the **Columns** tab of the group, select the tag **Name(s)**.

Select **Preview**, pick a *Start* date and click **Refresh**.