

# Take Information beyond Excel

## Overview

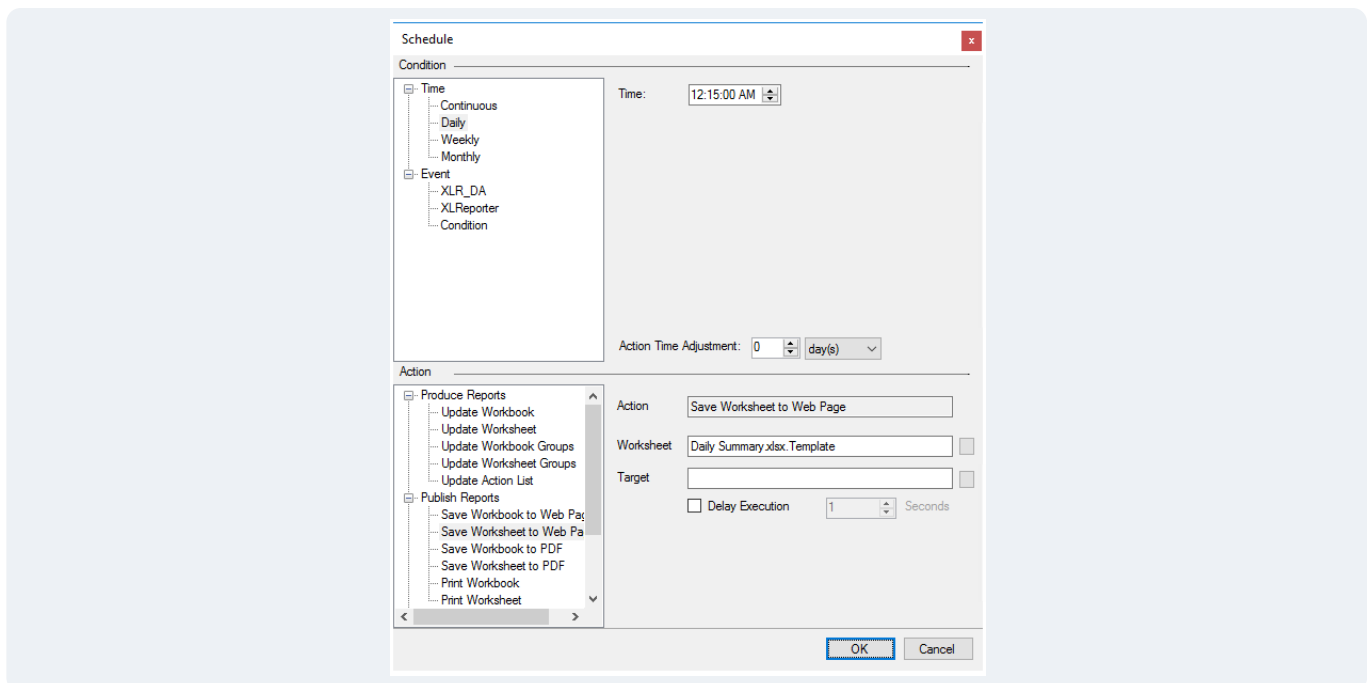
Reports produced by **XLReporter** are stored as Excel workbooks and worksheets. However, there are many times when the entire report or specific information contained within the report needs to be put into a different format or application.

The following roadmap shows all the options **XLReporter** has available to move report information into different formats.

## Publish as a Web Page

Once the report is generated it can be published as a web page (HTML file) so that it can be viewed using a web browser. The entire workbook or a specific worksheet can be published.

This is done in the **Schedule Designer** by adding a new **Action**.



Under **Publish Reports**, the **Save Workbook to Web Page** and **Save Worksheet to Web Page** actions are available.

For the **Save Workbook to Web Page** action, the **Workbook** setting should be set to the name of the template workbook used to generate the report.

For the **Save Worksheet to Web Page** action, the **Worksheet** setting should be set to the name of the template workbook and worksheet (period separated) used to generate the report.

The **Workbook** and **Worksheet** settings follow the **Report Names** settings in the template.

For both actions, the **Target** setting is available. The following options are supported:

- Blank  
 If left blank, the name of the HTML file is based on the **Report Names** settings of the template. The file is published under a folder for the template within the **Web Folder** defined in the project. This can be modified in the **Project Explorer** under the **Project** tab by selecting **Web Page**.

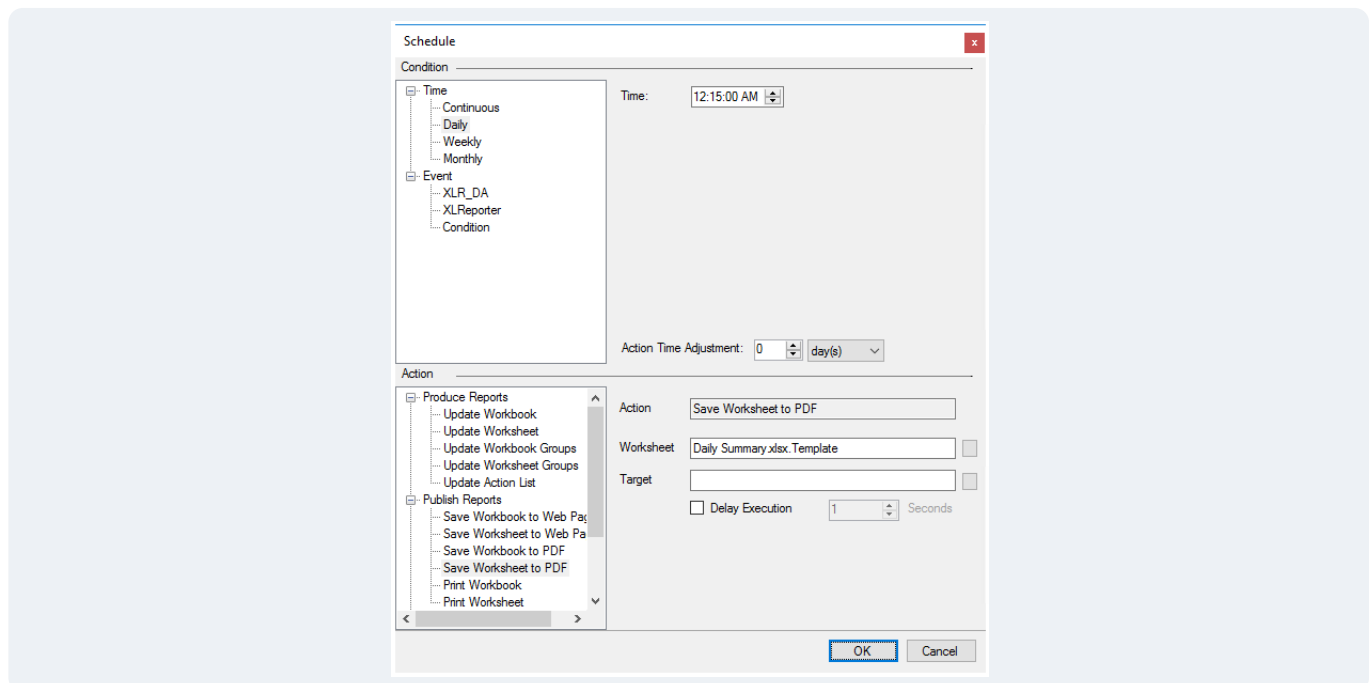
- Path  
A path may be specified which determines where the HTML file is published. The path must end with the directory separator (\), e.g., C:\temp\  
The file name is based on the Report Names set in the template.
- File Name  
A file name may be specified which defines the name of the HTML file published. The file is published under a folder for the template within the **Web Folder** of the project.
- Path and File Name  
A full path and file name may be specified which define both where the file is published and what name it is published as.

These actions can be scheduled any time after the report is generated. For example, if the report is generated every day at 12:15 AM, the HTML publishing can also be scheduled at 12:15 AM as well just as long as the HTML publish action is listed beneath the generate report action in the **Schedule Designer**.

## Publish as a Secure PDF

Once the report is generated it can be published as a secure PDF file. The entire workbook or a specific worksheet can be published.

This is done in the **Schedule Designer** by adding a new **Action**.



Under **Publish Reports**, the **Save Workbook to PDF** and **Save Worksheet to PDF** actions are available.

For the **Save Workbook to PDF** action, the **Workbook** setting should be set to the name of the template workbook used to generate the report.

For the **Save Worksheet to PDF** action, the **Worksheet** setting should be set to the name of the template workbook and worksheet (period separated) used to generate the report.

The **Workbook** and **Worksheet** settings follow the **Report Names** settings in the template.

For both actions, the **Target** setting is available. The following options are supported:

- Blank  
If left blank, the name of the PDF file is based on the **Report Names** settings of the template. The file is published under a folder for the template within the **PDF Folder** defined in the project. This can be modified in the **Project Explorer** under the **Project** tab by selecting **PDF**.

- Path  
A path may be specified which determines where the PDF file is published. The path must end with the directory separator (\), e.g., C:\temp\  
The file name is based on the Report Names set in the template.
- File Name  
A file name may be specified which defines the name of the PDF file published. The file is published under a folder for the template within the **PDF Folder** of the project.
- Path and File Name  
A full path and file name may be specified which define both where the file is published and what name it is published as.

These actions can be scheduled any time after the report is generated. For example, if the report is generated every day at 12:15 AM, the PDF publishing can also be scheduled at 12:15 AM as well just as long as the PDF publish action is listed beneath the generate report action in the **Schedule Designer**.

## Security Settings

When a PDF file is published, it can adhere to specific security settings. These can be set in the **Project Explorer**, under the **Project** tab by selecting **PDF**.

The screenshot shows the 'Settings' dialog box with the 'Security' tab selected. The 'Folder' field contains 'c:\XLRprojects\XLRproject\_HistoryDemo\PDF'. The 'PDF Access Protection' checkbox is checked. Below it are 'Access Code' and 'Permission Code' input fields. The 'Encryption' section has '40 Bit' selected with a radio button. The 'Permission' section has five checkboxes checked: 'Allow Print', 'Allow Document Changes', 'Allow Copying/Extraction', 'Allow Annotation', and 'Embed Fonts'. 'OK' and 'Cancel' buttons are at the bottom.

By checking **PDF Access Protection**, passwords, **Encryption** and **Permissions** can be enabled and disabled. These settings are applied to any PDF file published after they are saved.

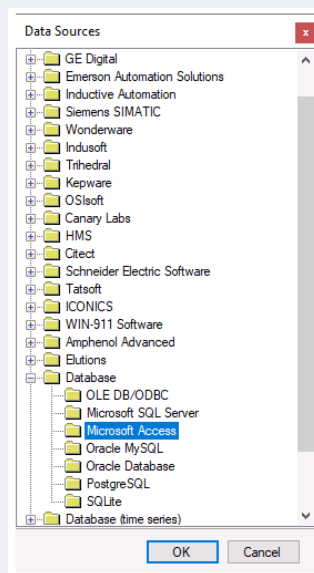
## Export to a Relational Database

Information in a report can be written to a table in a relational database. This can be quite useful because not only can process data brought into the report be exported but also calculated summaries using Excel formulas.

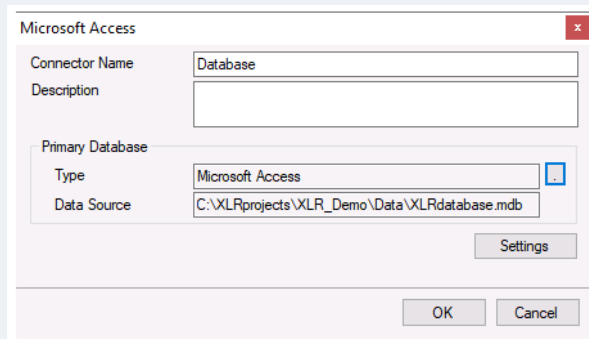
### Database Data Connector

In order to export data to a database a database data connector must be defined in the project. This is done from the **Project Explorer** under the **Data** tab by selecting **Connectors**.

New connectors are configured by clicking the **Add** button.



Under **Database** select a database type and click **OK** to define.

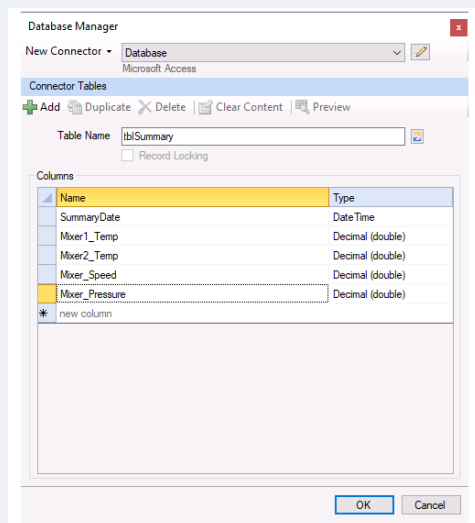


To define the specific database to use, click the browse pushbutton [...], select the Database type on the left and specify the specific database on the right.

## Set up/Identify a Database Table

If the database defined in the connector does not have the table set up to export data to, you can either use the tools provided by the database manufacturer (e.g., the Microsoft SQL Server Management Studio or MySQL Workbench) or you can use the **Database Manager** provided by **XLReporter**.

The **Database Manager** is opened from the **Project Explorer**, under the **Tools** tab by clicking **Manager** in the **Database** section.



To start, at the top select the database connector defined.

To add a new table, click the **Add** button and specify a **Table Name**.

Under the **Columns** section add each column required by specifying the **Name** and the **Type** of data to log to that column.

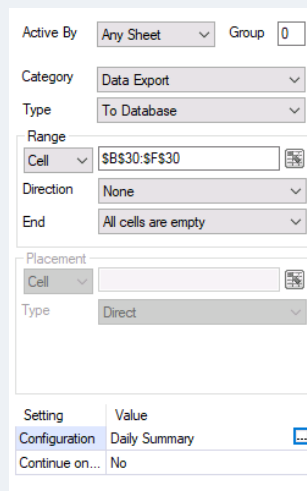
Click **OK** to create the table.

## Configure Data Management

As part of any template data management can be configured which is executed after data connections are executed to bring data into the report.

Data Management is configured in the template by selecting **Data, Connect** in the **Template Design Studio** (or from the **XLReporter** menu in Excel). Once opened, select the **Manage** tab.

To export values from the worksheet to a database table, set the **Category** to *Data Export* and the **Type** to *To Database*.

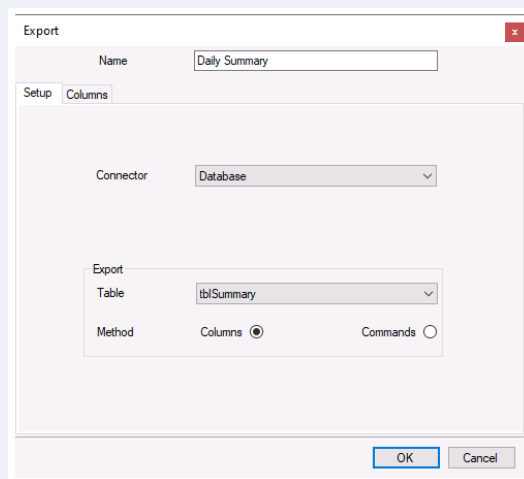


The screenshot shows a configuration dialog box with the following settings:

- Active By: Any Sheet (dropdown), Group: 0
- Category: Data Export (dropdown)
- Type: To Database (dropdown)
- Range: Cell (dropdown), \$B\$30:\$F\$30 (text field)
- Direction: None (dropdown)
- End: All cells are empty (dropdown)
- Placement: Cell (dropdown), (empty text field)
- Type: Direct (dropdown)
- Setting | Value table:
  - Configuration | Daily Summary (with browse button [...])
  - Continue on... | No

One or more rows of data in the report can be exported as rows in the database table. The number of rows exported is determined based on the **Range** settings. The **Range** can be fixed or can be determined at runtime based on the **Direction** and **End** settings.

The **Configuration** setting defines the entire configuration for the export. To define, click the browse button [...] under the **Value** column.

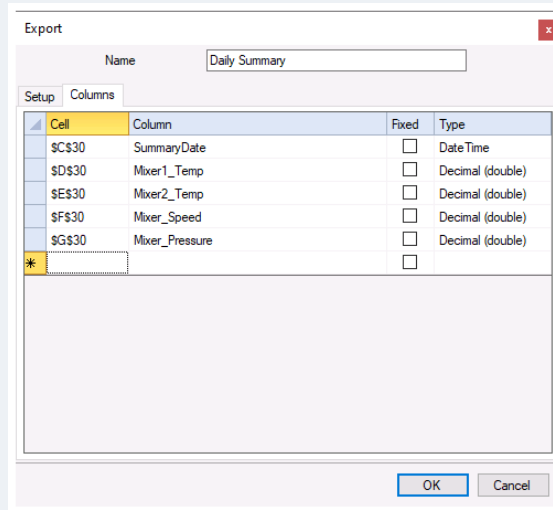


The screenshot shows an 'Export' dialog box with the following settings:

- Name: Daily Summary (text field)
- Connector: Database (dropdown)
- Export Table: tblSummary (dropdown)
- Method: Columns (radio button selected), Commands (radio button)
- Buttons: OK, Cancel

Specify the **Connector** to the database and choose the Table to export to.

There are two **Methods** to export data, either based on **Columns** or **Commands**. The **Commands** method is intended for advanced users who have a good working knowledge of SQL. The **Columns** method is used to assign columns from the selected table to cells on the worksheet.



If the **Range** encompasses multiple rows, the **Cell** assigned to the **Column** is the top cell which will be used for the first row of data.

For example, if the **Range** is 24 rows and the **Cell** assigned to the **Column** is \$B\$4 then 24 rows of data are exported to the database table. The first row exports the data from \$B\$4, the second from \$B\$5, and so on until the last row from \$B\$29.

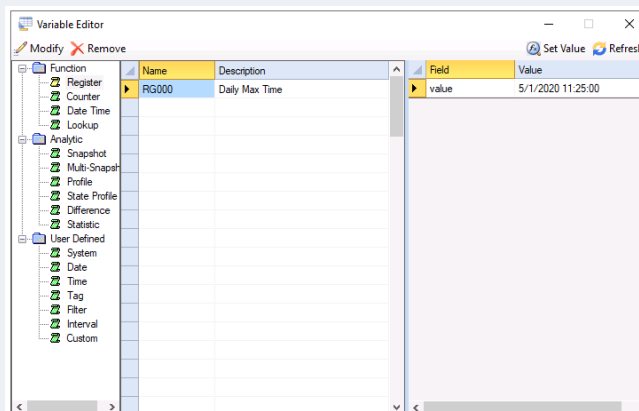
## Write Values to XLReporter Variables

**XLReporter** provides **Variables** that can be used to hold values that can be used throughout the product. For example, a report may be generated to show the maximum temperature of an oven over the day along with the timestamp it occurred. That timestamp can then be written to a Variable and then used in another history data group to report on other process values at the time the maximum occurred.

There are different **Variable** types available based on the type of data to store. The most general **Variable** is a **Register** which can be used to hold any type of data from numbers to text to timestamps. There are 100 **Register Variables** available in the project.

## Variable Setup

Variables are set up in the project in the **Project Explorer** under the **Data** tab by clicking **Variables**.



The available **Variable** types are listed on the left. To add a variable, select the next available empty row in the middle and click **Modify**.

Register

Name: RG000

Description: Daily Max Time

Type: General

OK Cancel

Here the **Name** can be customized, and the **Description** set.

Once a **Variable** is configured, when selected the current value(s) are shown on the right. To change the value, click **Set Value** and specify.

## Configure Data Management

As part of any template data management can be configured which is executed after data connections are executed to bring data into the report.

Data Management is configured in the template by selecting **Data, Connect** in the **Template Design Studio** (or from the **XLReporter** menu in Excel). Once opened, select the **Manage** tab.

To export values from the worksheet to **XLReporter Variables**, set the **Category** to *Data Export* and the **Type** to *To Variables*.

Active By: Any Sheet Group: 0

Category: Data Export

Type: To Variables

Apply To: Cell SAS1

Direction: None

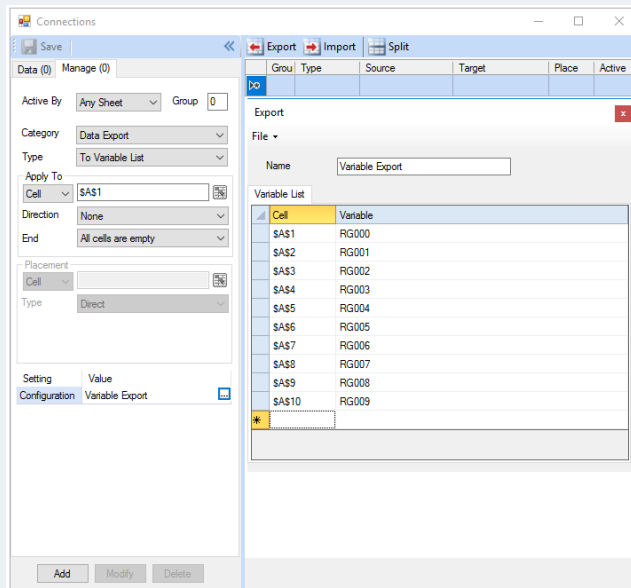
End: All cells are empty

Placement: Cell

Type: Direct

| Setting    | Value  |
|------------|--------|
| Input Cell | \$B\$6 |
| Variable   | RG000  |
| Input Cell |        |
| Variable   |        |
| Input Cell |        |
| Variable   |        |
| Input Cell |        |
| Variable   |        |

Up to four variables can be set with cell values with a single connection by specifying an **Input Cell** where the data is on the worksheet and the **Variable** to set it to. If more than four variables are required, instead utilize the **Data Export, To Variable List** management function.



## Write Values to the Process

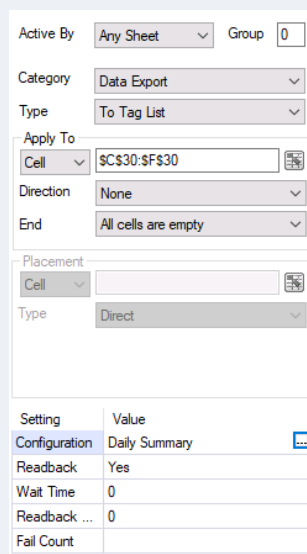
**XLReporter** has the ability to write values back to the process like to a PLC or HMI/SCADA system. This can be used as a handshake mechanism to alert the process that the report is complete or as a way of writing out analytical information like the overall equipment efficiency of a piece of machinery so it can be displayed on an HMI display to alert operators on current performance.

## Configure Data Management

As part of any template data management can be configured which is executed after data connections are executed to bring data into the report.

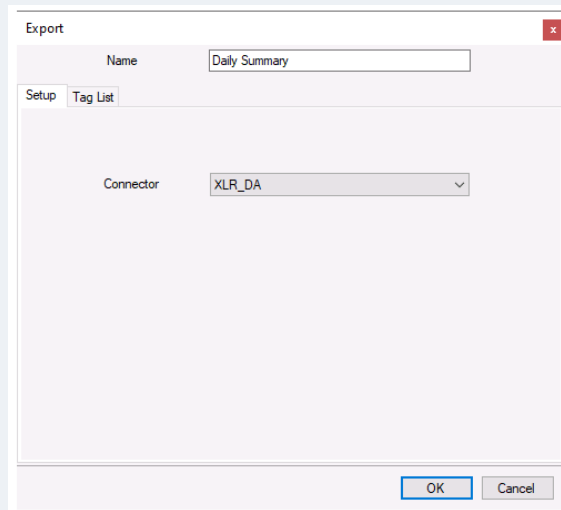
Data Management is configured in the template by selecting **Data, Connect** in the **Template Design Studio** (or from the **XLReporter** menu in Excel). Once opened, select the **Manage** tab.

To export values from the worksheet to tags in the process, set the **Category** to *Data Export* and the **Type** to *To Tag List*.

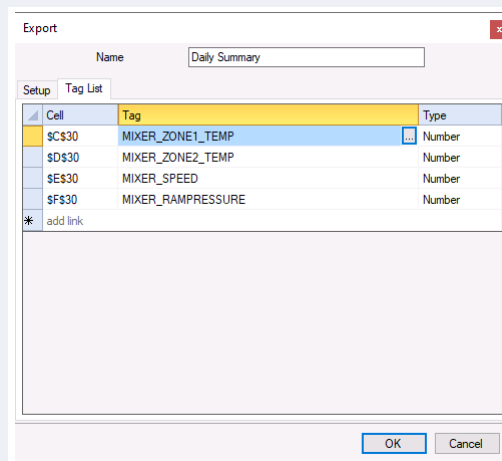


The **Configuration** setting defines the entire configuration for the export. To define, click the browse button [...] under the **Value** column.





Specify the **Connector** to the real time process.



Under the **Tag List** tab specify each **Tag** to write to along with the **Cell** to get the value from.

## Text File

A range on a report worksheet or the entire worksheet itself can be exported as a text file. This can be very useful in applications where the data in the report needs to be fed to another application like ones that can do high level analysis.

## Configure Data Management

As part of any template data management can be configured which is executed after data connections are executed to bring data into the report.

Data Management is configured in the template by selecting **Data, Connect** in the **Template Design Studio** (or from the **XLReporter** menu in Excel). Once opened, select the **Manage** tab.

To export values from the worksheet to a text file, set the **Category** to *Data Export*. There are two options available for **Type**: *Range to Text* to export a range from the worksheet to a text file and *Worksheet to Text* to export an entire worksheet to a text file.

|           |                       |       |   |
|-----------|-----------------------|-------|---|
| Active By | Any Sheet             | Group | 0 |
| Category  | Data Export           |       |   |
| Type      | Range to Text         |       |   |
| Range     |                       |       |   |
| Cell      | B\$6:F\$6             |       |   |
| Direction | Down                  |       |   |
| End       | All cells are empty   |       |   |
| Placement |                       |       |   |
| Cell      |                       |       |   |
| Type      | Direct                |       |   |
| Setting   |                       | Value |   |
| Format    | CSV (Comma delimited) |       |   |
| Directory | \\FileServer\TextData |       |   |
| File      | dailyvalues.csv       |       |   |
| Overwrite | Yes                   |       |   |

For *Range to Text* the **Range** settings define the range of cells to export to the text file. This can either be a fixed range or can be determined during runtime based on the **Direction** and **End** settings.

The settings at the bottom determine what text file **Format** to save as, where to store the file, what the name of the file is and what to do if the file already exists.

## XML File

A range on a report worksheet can be exported as an XML file. This can be very useful in applications where the data in the report needs to be fed to another application that requires data in XML format and provides the schema of the XML file.

### Define a Schema

In order for **XLReporter** to export report data to an XML file an XML schema file must be defined. This can be done with a simple application like Notepad. There are many examples of XML schemas available on the internet.

### Configure Data Management

As part of any template data management can be configured which is executed after data connections are executed to bring data into the report.

Data Management is configured in the template by selecting **Data, Connect** in the **Template Design Studio** (or from the **XLReporter** menu in Excel). Once opened, select the **Manage** tab.

To export values from the worksheet to a text file, set the **Category** to *Data Export* and **Type** to *Range to XML (Schema)*.

|           |                       |       |   |
|-----------|-----------------------|-------|---|
| Active By | Any Sheet             | Group | 0 |
| Category  | Data Export           |       |   |
| Type      | Range to XML (Schema) |       |   |
| Range     |                       |       |   |
| Cell      | \$B\$6:\$F\$6         |       |   |
| Direction | Down                  |       |   |
| End       | All cells are empty   |       |   |
| Placement |                       |       |   |
| Cell      |                       |       |   |
| Type      | Direct                |       |   |
| Setting   |                       | Value |   |
| Schema    | dailyvalues           |       |   |
| Directory | \\FileServer\XMLData  |       |   |
| File      | dailyvalues.xml       |       |   |
| Table     | DATA                  |       |   |
| Mode      | Overwrite             |       |   |

The **Range** settings define the range of cells to export to the XML file. This can either be a fixed range or can be determined during runtime based on the **Direction** and **End** settings.

The settings at the bottom determine the **Schema** file for the XML file, where to store the file, what the name of the file is, the Table within the **Schema** to use for the data what to do if the file already exists.

## An Excel Workbook

A range on a report worksheet or the entire worksheet itself can be exported to any other Excel workbook on the local machine or across the network. This can be very useful if there are existing Excel workbooks already used by people in the organization who want to add some of the report information to other stuff they have or as a way of exporting summary information from one report to another.

## Configure Data Management

As part of any template data management can be configured which is executed after data connections are executed to bring data into the report.

Data Management is configured in the template by selecting **Data, Connect** in the **Template Design Studio** (or from the **XLReporter** menu in Excel). Once opened, select the **Manage** tab.

To export values from the worksheet to another workbook, set the **Category** to *Data Export*. There are two options available for **Type**: *Range to Workbook* to export a range from the worksheet and *Sheet to Workbook* to export an entire worksheet.

|              |                        |       |   |
|--------------|------------------------|-------|---|
| Active By    | Any Sheet              | Group | 0 |
| Category     | Data Export            |       |   |
| Type         | Range To Workbook      |       |   |
| Range        |                        |       |   |
| Cell         | \$B\$6:\$F\$6          |       |   |
| Direction    | Down                   |       |   |
| End          | All cells are empty    |       |   |
| Placement    |                        |       |   |
| Cell         |                        |       |   |
| Type         | Direct                 |       |   |
| Setting      |                        | Value |   |
| Directory    | \\FileServer\ExcelData |       |   |
| Workbook ... | ReportSummary.xlsx     |       |   |
| Target Sheet | Data                   |       |   |
| Target Cell  | \$A\$1                 |       |   |
| Paste        | All                    |       |   |

For *Range to Worksheet* the **Range** settings define the range of cells to export. This can either be a fixed range or can be determined during runtime based on the **Direction** and **End** settings.

The settings at the bottom determine where the workbook is to export the data to. For *Range to Workbook* the other settings determine where in the workbook to export the data to. For *Sheet to Workbook* the other settings determine what to name the exported worksheet in the workbook and what to do if the worksheet already exists.