



## XLReporter for Reporting

One of the best things about generating reports with **XLReporter** is that you can take advantage of all the great features Excel has to offer.

Features like charts, formulas, custom formatting, custom macros and much more can all be included as part of your report solution.

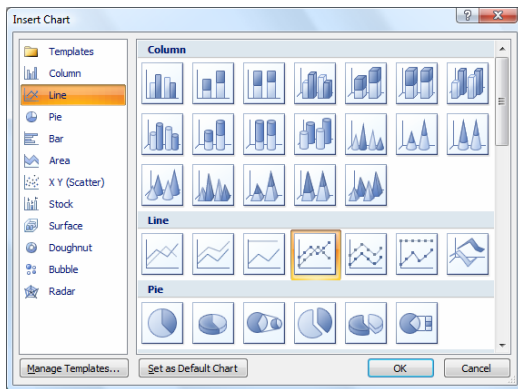
The following highlights a few Excel features that can be used in your reports.

## Charting

Charting is one of the most powerful features of Excel. Any cell or range of cells can be summarized in an embedded chart.

Excel provides a vast number of chart types and options. Any chart you can configure in Excel you can use as part of your report solution.

When configuring a chart for a template with **XLReporter**, you start by selecting the type of chart you want.



*Inserting a Chart with Excel 2007*

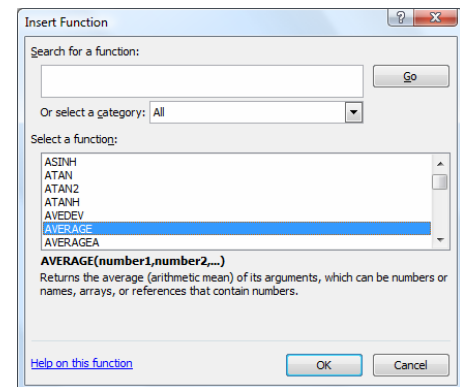
When it comes to specifying the source data for the chart, you have two options. If you know exactly how many rows of data will appear in the report then the series of the chart can be linked directly to the cell range.

However, if you don't know exactly how many rows of data will appear in the report (which is the case with most interactive reports), then chart series is linked to the top row of cells where data will be written. In this case, you will need to add a Chart Range connection using **XLReporter's** Management.

The Chart Range connection is usually invoked after the data has been written to the report so that it can re-calibrate the chart series based on the actual amount of data in the report.

## Formulas and Functions

Another great feature of Excel is the ability to embed formulas into cells to calculate data. In addition, an impressive list of built-in functions is provided that can be used to summarize data.



*Inserting a Function*

Formulas can range from the simple “=B11+C11” that adds 2 cells values together to a complex statement like, “=OFFSET(B11, MATCH(B6, B11:B35, 0),0)” that can be used to get the timestamp of the minimum or maximum value in the report.

Formulas in Excel require cell ranges as input e.g., AVERAGE(B11:B35). When it comes to specifying the cell range for the formulas used in a template, you have two options. If you know the exact cell range of the data in the report, set the cell range for each formula in the template accordingly.

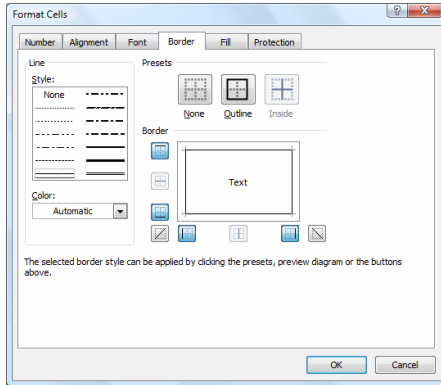
However, if you don't know the exact cell range, then set the range for each formula to only the top row of cells where the data will be written. In this case, you will need to add a Formula Range connection using **XLReporter's** Management. The Formula Range connection will re-calibrate the cell range(s) of each formula based on the actual amount of data in the report.

Some templates require row by row formula calculations. For example, a report containing a daily flow total from each pump station normally contains an additional column containing a formula that shows the total flow (SUM(C5:F5)) which is repeated for each row. Again, if you know how many rows will be in the report, you can copy the formula into every row.

However, if the number of rows of data is unknown, then set the formula on the top of where the data will be written. In this case, you will need to add a Fill Range connection using **XLReporter's** Management. The Fill Range connection will take formula and fill it downwards based on the amount of data written to the report.

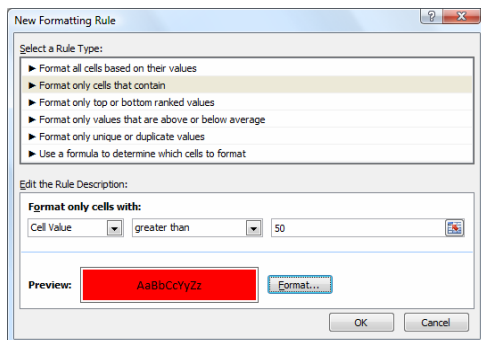
## Cell Formatting

As part of Excel you can customize the formatting of a cell or range of cells. You can apply borders, cell background color, font size and color, number formatting and much more.



Formatting Cells

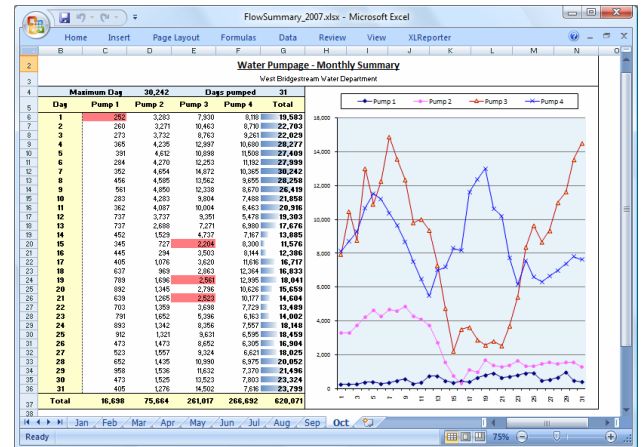
As part of the formatting settings, you can also apply conditional formatting to a range of cells. Conditional formatting allows you to specify up to 3 conditions by which, when the value of a cell meets that condition, the customized formatting specified applies to it.



Conditional Formatting

For example, you can apply a conditional format to a range of cells so that if any value in the range of the cells exceeds 50, the background color of that cell changes to red. This can be very useful in highlighting anomalies in a report.

As part of conditional formatting in Excel 2007 and above, Excel has provided data bars, color scales and icon sets. These can be used to view relationships in the data for analysis purposes.



A Report with Data Bars

When it comes to applying custom formatting in the template, you have two options. If you know exactly how much data will appear in the report, set the formatting of those cells in the template accordingly.

However, if you don't know exactly how much data will appear in the report, you should set the custom formatting to only the top row of where data will be written. In this case, you will need to add a Format Range connection using **XLReporter's** Management. The Format Range connection will take the custom formatting you applied (including any conditional formatting) to the top row of data and apply it to all other rows of data in the report.

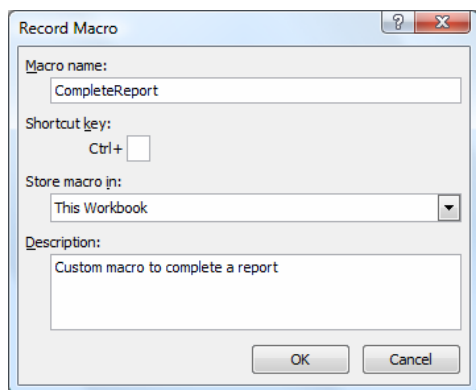
In addition, if you would like to place a border around the data of the report, this can be configured as well. Again, if the amount of data is known, you can apply the border to the cells.

However, if the amount of data is unknown, configure a Border Range connection using **XLReporter's** Management. The Border Range connection will put a border of specified thickness around the range of data written to the report.

## Custom Macros

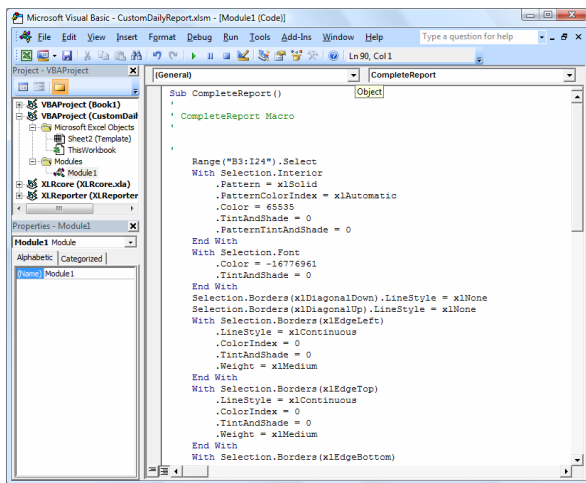
As part of an Excel workbook, you can configure a custom macro to accomplish a set of repeatable activities. A macro recorder has been provided that you can switch on, perform what you need to and switch off. The macro recorder translates your actions in Excel into Visual Basic code which you can then edit accordingly.

When using Excel 2007 and above, macros cannot be stored in an .xlsx file. Use the .xlsm file extension which is the macro enabled workbook.



Macro Recorder

If you are familiar with Visual Basic, you can write your own macros directly in Excel's Visual Basic Editor. (Hint: if you are using macros in an automated report, be sure to provide error trapping that avoids messages being displayed that need to be acknowledged.)

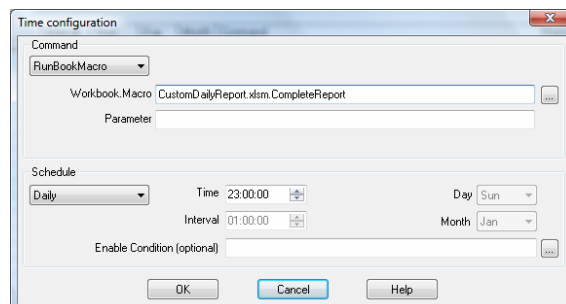


Visual Basic Editor

Only when the requirement is very specialized will a macro be needed.

When it comes to running a custom macro, **XLReporter** provides two methods. The first is by configuring a Custom Workbook Macro connection in the template. As part of the connection you specify the macro name and up to 3 optional parameters. When macro will be executed when the report is updated.

Alternatively, you can configure a RunBookMacro command from **XLReporter's** scheduler. For the command you specify the template workbook, macro name and up to 3 optional parameters. The macro will run whenever the command is executed.



Configuring the RunBookMacro command

If you have a suite of macros that can be used in multiple reports, you can store them all in an Excel add-in and run any one of them using the Custom Addin Macro connection in the Management Configurator. As part of the connection you specify the addin name containing the macro, the specific macro name and up to 3 optional parameters.

If you wish, you can integrate custom macros into **XLReporter**. By doing this, each macro is listed as its own management routine in the Management Configurator and can be configured just like any other management connection.

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