

Creating Excel Link reports with efficient design

To make it easier to accommodate future changes to Controller Excel Link functions and also to ensure that reports are designed with optimum performance in mind, we recommend you adhere to the following guidelines when designing your Excel Link reports.

Multiple sheets and performance

This does not apply to the Report Generator.

One important rule to remember when creating Excel Link reports with multiple sheets is that the sheets will calculate in alphabetical order based on their names. For example, if you have a report with sheets named "A", "B", "C", "D" etc., the sheet "D" can have formulas pointing to sheet "A" but not the other way around. This is because the Microsoft Excel Dependency Tree calculates the sheets in strictly alphabetical order and performance is compromised when an individual sheet needs to be calculated more than once. For example, if sheet "A" were to have formulas pointing to sheet "D", Excel would begin by calculating sheet "A" then "B" and so on. When the calculation reaches sheet "D" Excel would need to return and recalculate part of sheet "A", then go back and complete "D".

To achieve optimum performance in an Excel Link report, a strict logical alphabetical ordering of sheets must be adhered to. You should Insert all Cognos functions on the same sheet and name this sheet so it will be the first to be calculated. For example, you can call it "a.datasheet". The subsequent sheets containing references to "a.datasheet" could be named "b.report", "c.report" etc.

Another recommendation is to begin sheet names with letters and not numbers. Never use preceding zero's in sheet names since Excel's calculation order can be erratic as a result: "001, 002,....021, etc"

Efficient future proof design

This does not apply to the Report Generator.

Cognos Controller is continuously evolving. As a result changes are sometimes made to reporting functions. A reporting function may have new parameters added or removed. Ensure your Excel Link reports can be easily upgraded in the future by applying these suggestions.

Usually, a change to a reporting function (Controller upgrade) is handled by activating and running the utility "convert workbook" on the Controller menu in

Excel. However, Excel Link reports can be designed in an infinite number of ways which makes a fail proof automatic upgrade very complicated.

To ensure a successful automatic update of Excel Link reports in the future, they have to meet certain criteria:

- Insert all Controller functions in a sheet with the name "datasheet" in it, for example "a.datasheet".
- You must only have one controller function in a cell, but...
- You may have more than one datasheet.
(Having more than one Controller function in a cell does mostly work, but reduces the chances of a successful upgrade should the function(s) change.
- Adhere to the calculation order of worksheets as described earlier.

ERO – Enhanced Reporting Optimisation (Bulk Insert Technology)

This applies to both the Report Generator and the Excel Link

Large Report Generator and Excel Link reports may take a long time to process. To shorten the processing time for large reports, that is, reports containing a large number of cc.getVal functions, using ERO may help to reduce the processing time.

Previously used terms such as “advanced Excel Link Settings”, “Bulk Insert Functionality” and Optimise2 have all been replaced with term “Enhanced Reporting Optimisation”.

Please note that ERO is not activated by default when you first install Controller. This means that in order to switch on ERO, additional configuration is required. Contact your IT person for help or refer to the document “Cognos 8 Controller, Installation and Configuration Guide” (currently page 72). This document can also be found on the customer Services area on the Cognos web.

After ERO is installed you must follow the steps below for each report where the use of ERO is required:

1. Select cell A1 on the first sheet of the workbook.
2. Go to the menu Insert / Name / Define
3. Type in the name Optimise2 and click Add and then OK.
4. Save the report

When you next run or refresh the report, ERO is used.

It is not possible to define clear rules for when ERO can be used with success, but ERO is likely only to improve performance of reports with a very large number of cc.fgetVal functions. It’s a question of trial and error.

Note: For ERO to function the Application server and Database server must be in the same domain.

Design Considerations for the Report Writer

Dynamic reports

Dynamic reports, i.e. reports containing self-expanding rows and/or columns, can easily become too large and performance may suffer as a result.

Complex Database queries increase the time it takes to run a report. For example, a cell that only requires actuality, period, company and account will receive its value faster than a cell that in addition requires closing version, contribution version, and counter-company.

A report that has expandable rows will run slower than a report with expandable columns.

The processing time for an expandable report is split approximately 25%-75%: It takes around 25% of total processing time to collect all data from the Controller database and 75% to handle individual cells in Excel. Each cell in Excel needs filling with data and will probably have formatting applied to it too. For that reason do not include more data on a report than is needed for the output and Keep it simple.

DARA method

Consider using the top half of the worksheet purely as a depository for raw data – we call this the Data Area. The second half of the worksheet will then be used as the presentation area, i.e. the area from where you print – we call this the Report Area. The design method of using Data Area combined with a separate Report Area we call the DARA method.

How:

Place the *Report Area* below and to the right of the *Data area*. Each cell in the report Area contains a reference to one or more cells in the Data Area.

Using this design method makes the report more flexible with regards to formatting and complexity of formulae. In addition, changing row or column definitions following structural changes in Controller does not result in direct "damage" to the Report Area.

Note that the DARA method does not apply to dynamic reports (self-expanding).

Known performance degrader

If your report includes one or more cc.fGetVal functions where Company and Group Perspective are the same and if the report also includes one or more cc.fGetVal functions where Contribution Version is different from BASE, then there is risk for degradation in performance.

Tips and tricks, Excel Link reports

Issue: How to avoid a second export of data from the Excel Link overwriting the values of the first export.

Description:

When using the Excel-Link and the cc.fExpVal function to input values to Controller the Export Data function on menu **Controller/Reports**, clears any existing values by default. That is, all REPO values stored on an account included in the export is cleared before storing new values. Of course only values for the same actuality, period, company and account are affected.

Example:

First export:

Actuality: AC
Period: 0612
Company: trader
Account: 1100
Dim1: prod1
Dim2: area1
Amount: 225

Stored in DB: prod1: 225, area1: 225

Second export:

Actuality: AC
Period: 0612
Company: trader
Account: 1100
Dim1: prod2
Dim2: area1
Amount: 171

Stored in DB: prod1: 0, prod2: 171, area1: 171

The amount of 225 stored on prod1 after the first export, is cleared and replaced by the amount of 171 on prod2.

Solution:

The steps below describe a process whereby no data is cleared from an account by default when selecting **Controller/Reports/Export Data** in Excel. Reasons for not wanting the default clearing may be that more than one person provides data for an account, or that data is added in small bits at various points in time.

Steps to carry out in Cognos Controller:

1. From the **Transfer** menu select **External Data/Define Import Specifications - Data**
2. Select the specification **#FEXPVAL**
3. Click the **Save As** button and name it as **FEXPVAL_USER**
4. Go to the tab **General** and the section named **Options**

5. Place a tick in **Allow Separate Counter Companies** and **Allow Separate Dimensions**.

6. Save the specification, close the window

Steps to carry out in each Excel workbook:

7. Open your Excel workbook

8. Go to the first sheet and place the cursor in cell A1

9. From the **Insert** menu select **Name/Define**

10. For *names in workbook*: type in **CC_SPEC**

11. For *Refers to*: delete `=sheet1!A1` and type in **FEXPVAL_USER**

12. Press the OK button to save.

Issue:

The graph in an Excel-Link report is not refreshed when pressing <F9> (refresh).

Description:

This is a known bug in Windows XP.

Solution:

Press <F10> to refresh the graph. <F10> refreshes the current worksheet as opposed to <F9> which refreshes the whole workbook.

Issue:

When trying to run a Report Writer report you receive the message: "The user [*user ID*] is already updating this report"

Description:

Report Writer reports can, in addition to being run from the Full Controller Windows Client, also be run from the Controller Excel Client. However, when you choose to run the report from the Controller Excel Client, you prevent anyone else from running the same report. This happens because the Excel client places the report in layout mode in order to run it. Once the report is in layout mode no other users will have access rights to that specific report.

Solution:

Run your Report Writer reports from the Full Controller Windows Client on menu: Reports/Run.