Tips to optimize performance in IFS Business Reporter

IFS

Content

Overall report rendering time in IFS Business Reporter consists of the time taken to validate the report design, prepare the request to the server, fetch data from the server, and finally render the results.

If the report is executed from the IFS Business Reporter client, you can find the report rendering time under the Debug tab in the Document Actions pane.
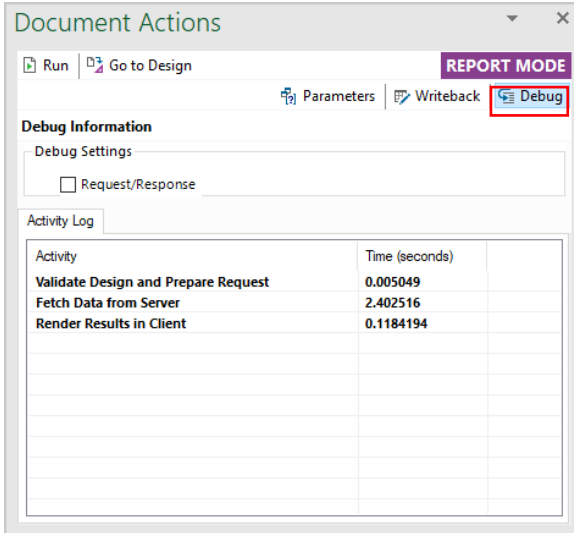
If the report is ordered via the built-in BR execution server, you can find the report rendering time by navigating to the Execution Log for built-in BR Execution Server page in IFS Aurena.

Throughout this document, the performance of IFS Business Reporter is assessed by the report rendering time.

1. Improve Excel calculation performance

When more time is spent on Excel calculations, it will in return increase the report rendering time in IFS Business Reporter. Therefore, try to remove duplicated, repeated, and unnecessary Excel calculations from your report design.

Further, it was found that the number of cell references included in a formula, has an impact on Excel calculation performance. Thus, try to achieve the expected result with fewer cell references. Refer to the below example for further understanding.

In this example, the SUMIF function is used to obtain the sum of the quantity of each customer by referring to Customer ID (A2 cell) which is the criteria of the formula. The range to apply the criteria is given as Customer_Details.

Scenario 1 – Contains many cell references in the formula

The Name Range, Customer_Details is formed by selecting A2 as the first cell and D2 as the last cell of the range (A2:D2)

The outcome of the report is given below

Scenario 2- Contains fewer cell references in the formula

The Name Range, Customer_Details is formed only by selecting the A2 cell.

The outcome of the report is given below

	A	B	C	D	E	F	G
1	Customer ID	Name	Email	Address	Quantity	Total quantity for each customer	
2	1	Customer 1	customer1@custorg.com	Address Line of customer1	13	24	
3	1	Customer 1	customer1@custorg.com	Address Line of customer1	11	24	
4	2	Customer 2	customer2@custorg.com	Address Line of customer2	12	21	
5	2	Customer 2	customer2@custorg.com	Address Line of customer2	9	21	
6	3	Customer 3	customer3@custorg.com	Address Line of customer3	17	29	
7	3	Customer 3	customer3@custorg.com	Address Line of customer3	12	29	
8	4	Customer 4	customer4@custorg.com	Address Line of customer4	11	23	
9	4	Customer 4	customer4@custorg.com	Address Line of customer4	12	23	
10	5	Customer 5	customer5@custorg.com	Address Line of customer5	13	28	
11	5	Customer 5	customer5@custorg.com	Address Line of customer5	15	28	
12							

As you can see, in scenario 1 Customer_Details Name Range contains many cell references whereas in scenario 2 Customer_Details Name Range contains fewer cell references. However, in both, the scenario's outcome of the report is the same. In conclusion, we can say that even with fewer cell references it is possible to achieve the expected outcome.

Therefore, ensuring to use of fewer cell references in formulas, will significantly improve the performance of Excel calculations.

2. Apply Name Ranges

Certain formulas contain ranges and table arrays. Instead of selecting entire columns/rows or a set of cells, as references to these ranges or table arrays, define a Name Range and apply it as an alternative.

You can simply create a Name Range under the Formulas tab in Excel.
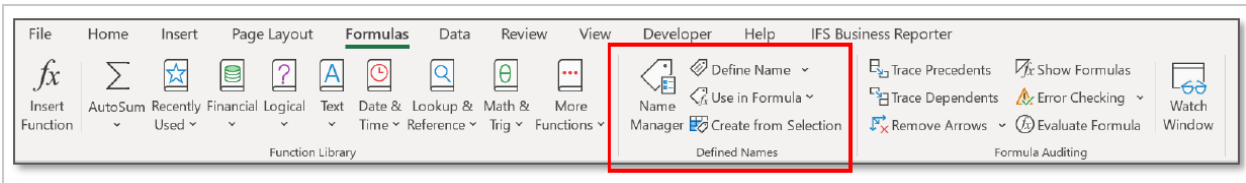
In the given example, a Name Range is applied to the table array of the formula.
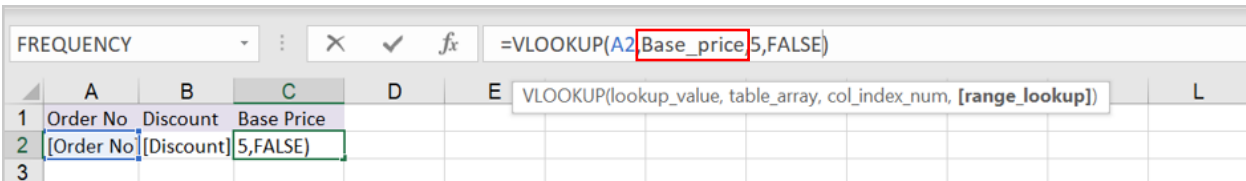
You can apply Name Ranges to repeating items of IFS Business Reporter as well. Refer to the below example, to see how it is done.

In this example, a simple design row is created to get the balances of the accounts. When defining the Name Range, only select the repeating items as the referenced cells. Here, cells A9 and B9 are selected as the first and the last referenced cells of the range.
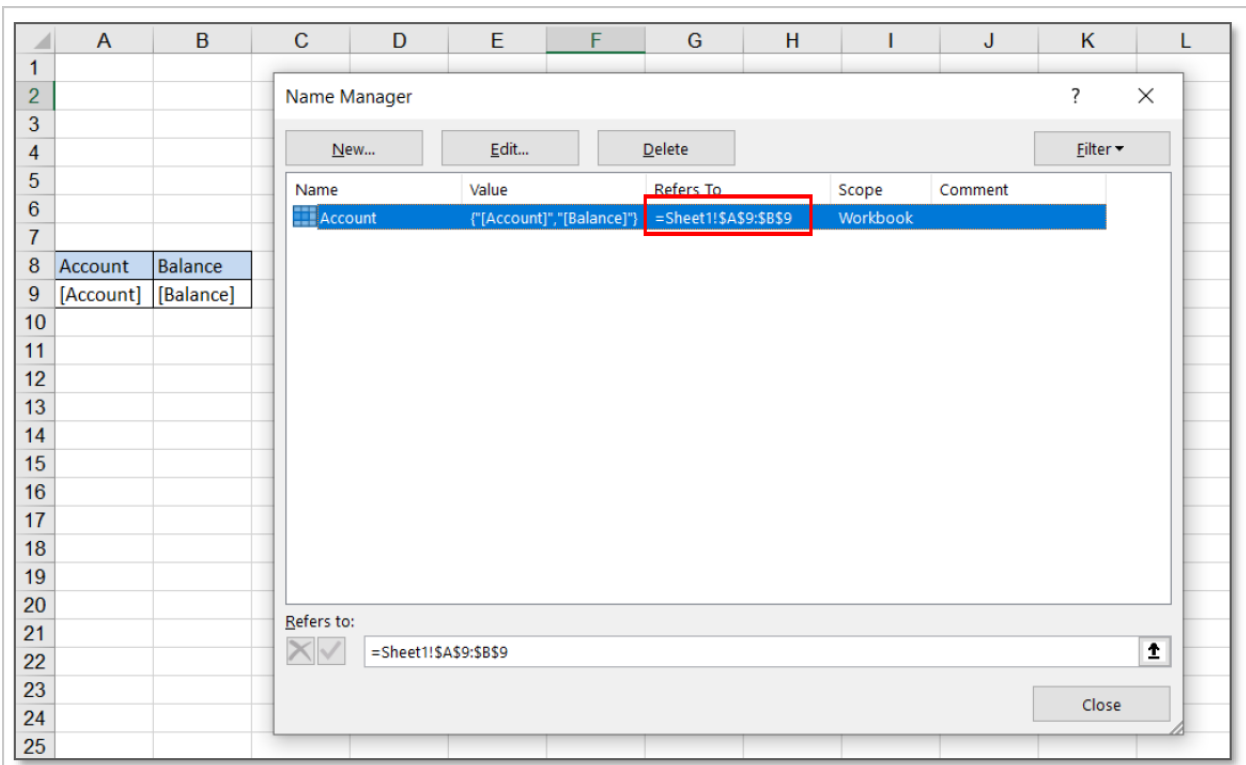
Once the report is executed, the specified range will expand to the last row with data. IFS Business Reporter repeater expansion logic is designed in such a way. As you can see, the above-defined Name Range has expanded from cell A9 to cell B30.

3. Use the Non-BR Sheet option when there are no IFS Business Reporter design elements in a worksheet

When you enable the Non-BR Sheet option to a worksheet, that particular worksheet will not be considered during the report execution. As a result, you can reduce the time taken to render the results of a report.
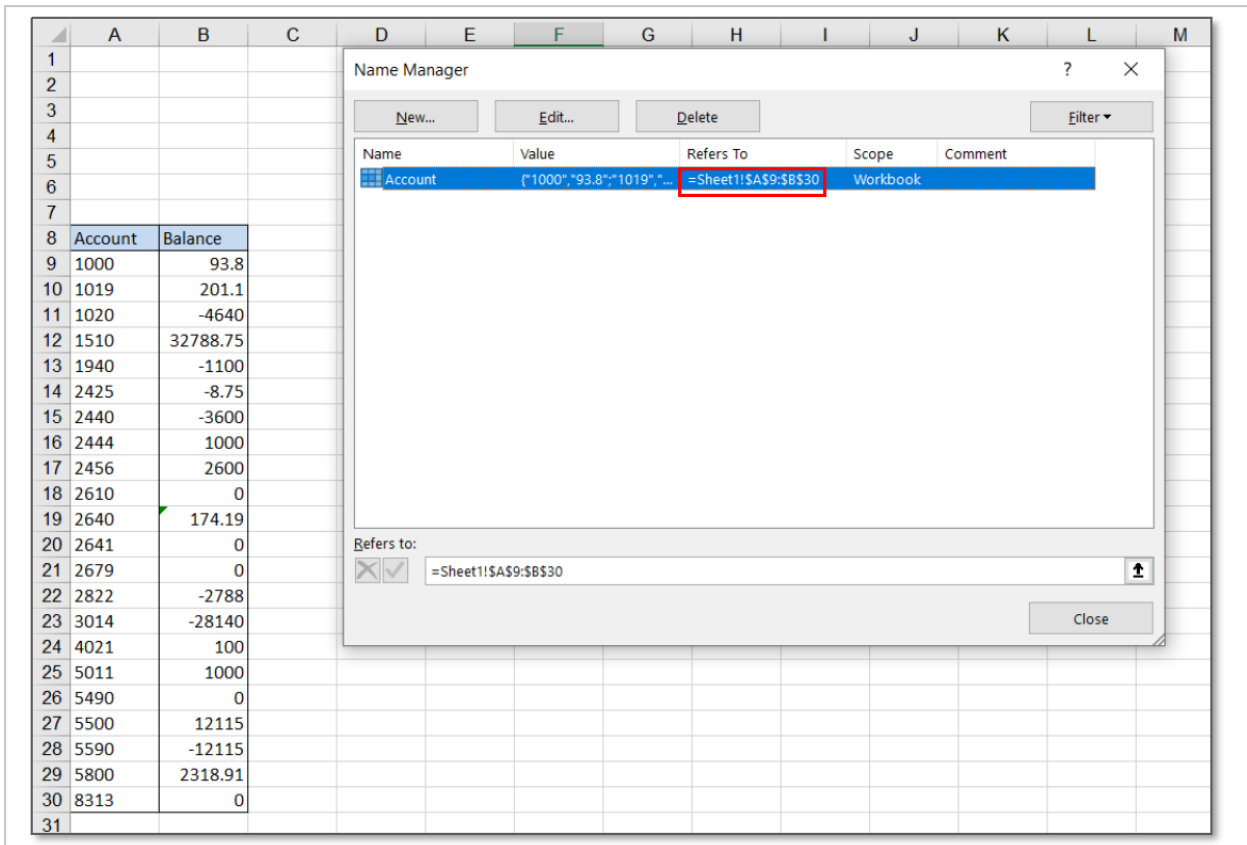
Please note that enabling this option will not have an impact on the outcome of the report but ensure that you do not have any Business Reporter design elements in the worksheet marked as a Non-BR Sheet.

You can find the Non-BR sheet option under Report Sheet Options
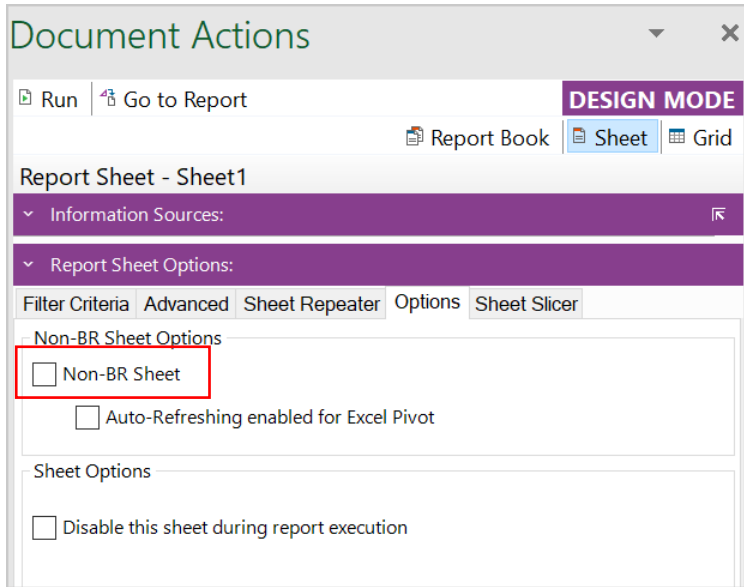
4. Non-BR Sheet option with Pivot tables

If there is a pivot table in the report design inserted in a separate worksheet without any IFS Business Reporter design elements, ensure not to mark that worksheet as a Non-BR Sheet. This is an exceptional case when using the Non-BR sheet option. If the Non-BR sheet option is applied to a worksheet with a pivot table, it will take more time to render results.

> **Note:** Investigations are planned to be conducted on this area in the future. As of now it is recommended to leave the worksheet as it is without marking the sheet as a Non-BR sheet.

5. Conditional formats and data validation

It was found that the use of conditional formats and data validation will degrade the performance of Excel. Therefore, it is wise to apply these features moderately and only when it is essential. This would minimize the negative impact on the performance of IFS Business Reporter as well.

6. Inner repeaters

The concept of inner repeater is recommended instead of using a lot of individual design rows/columns. However, it is worth noting that when more inner repeaters are defined in a design row/column, it might negatively impact the rendering performance. This might not always be the case as the rendering performance depends on the data retrieved by IFS Business Reporter. Therefore, be mindful when defining inner repeaters.

7. Number of times a repeater gets repeated

If a repeater gets repeated a significant number of times, then there is a chance for the report rendering time to increase. Refer to the below example for further understanding.

Scenario 1- Repeater gets repeated fewer times

In this scenario, a design row is defined with two repeaters.

	A	B	C	D
1	Customer ID	Order No	Quantity	
2	[Customer Id]			
3		[Order No]	[Quantity]	
4				

As per the dataset, there are 5 customers therefore, the first repeater will get repeated 5 times. For each customer there are 20,000 orders, thus the total number of transactions will be 100,000.

Scenario 2- Repeater gets repeated many times

Just like in the first scenario, a design row is defined with two repeaters in this scenario.

	A	B	C	D
1	Order No	Line No	Quantity	
2	[Order No]			
3		[Line No]	[Quantity]	
4				

As per the dataset, there are 20,000 orders, accordingly, the first repeater will get repeated 20,000 times. For each order there are 5 lines thus, the total number of transactions will be 100,000.

If we compare the two scenarios, both scenarios have a design row with two repeaters and the total number of transactions is 100,000. However, in the first scenario, the first repeater gets repeated 5 times whereas, in the second scenario, the first repeater gets repeated 20,000 times.
Since the number of times the first repeater gets repeated is fewer in the first scenario, the time spent on rendering results will be lower in contrast to the second scenario. Thus, it should be noted that the number of times a repeater gets repeated has an impact on the rendering performance.