

Performance Improvement Measures in BPC Admin and Office Client



Applies to:

SAP Business Process and Consolidation for Net Weaver 7.0. For more information, visit the [Enterprise Performance Management homepage](#).

Summary

This article covers the main aspects that should be considered to improve the performance while working in the Admin and Office client of SAP Business Planning and Consolidation and describes an approach for managing Admin and Office client of SAP BPC.

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Introduction:

This document describes performance improvement measures that could be taken while working on admin and office client of SAP BPC 7.0. When implementing BPC for Reporting or Input schedule, performance to be taken as primary concern. In order to maximize the customer or user experience it is important to have a better performance in the Input schedules and Reports. Performance improvement can be done starting from design of Application and goes till the creation of Reports and Input Schedules.

The goal is to provide the basic guideline for practices that appear to work well at customer implementation. Each project should discuss Performance tuning measures during the design phase or Blue print phase.

Performance tuning in BPC Admin client:

Performance tuning measures that can be done while working in BPC Admin client during the design phase which could vastly improve the performance. The measures like Application design are of great importance which is based on project or customer needs.

Application Design:

Performance degrades rapidly in a large application if the application has more numbers of dimensions. Every Report/Input schedule has to expand with so many numbers of dimensions in the page key range. It degrades the performance of templates. For example,

If there are two applications

1. POC_APP1
2. POC_APP2

We are splitting above two applications logically into five applications based on number of records in the application or with lesser number of dimensions for each application.

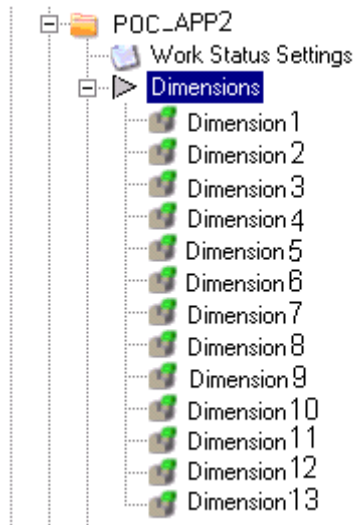
1. POC_APP3
2. POC_APP4
3. POC_APP5
4. POC_APP6
5. POC_APP7

Now the templates performance increases since it has lesser number dimension in each application. So each report/input schedule expands with lesser dimension in the page key range.

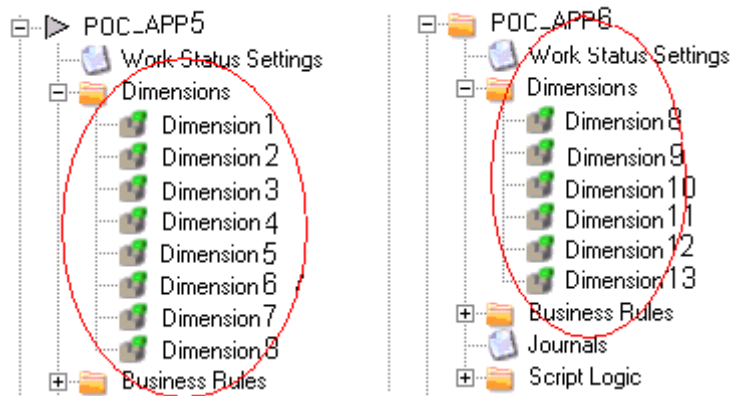
Splitting of Application can be done based on

Number of Records in a particular cube (Application) is huge, then we can split them into two Application, For example here POC_APP1 Application which has more number of records (transaction data), which is now split into POC_APP3, POC_APP4 will perform better.

If there is more number of dimensions in a particular cube (Application), then that application can be split to improve the performance. For example here POC_APP2 has 13 Dimensions which will affect the performance in Reports and Input Schedule.



So this Application could be split into two applications POC_APP5 and POC_APP6 with less number of dimensions to expand. In turn would improve the performance of Input schedule and Reports.



Dimension Formula:

In Reports, retrieving members that contain dimension formula will reduce the performance of reports. So it is better go with script logic than putting dimension formula in the member sheet of BPC Admin. For Example, the below dimension formula effect can be achieved using a script written in default logic.

The screenshot shows a BPC Admin member sheet for the dimension 'MP031_DELMP'. The table has columns for ACCOUNTTY, BUDGETGRO, FORMULA, INPUTMEMB, INPUT_INDICAT, and IS_INPUT. Row 712 contains the dimension formula: [ACCT].[MP003]+[ACCT].[MP0010].

	H	I	J	K	L	M
1	ACCOUNTTY	BUDGETGRO	FORMULA	INPUTMEMB	INPUT_INDICAT	IS_INPUT
703	MP_PARM					
704	MP_PARM					
705	MP_PARM					
706	MP_PARM					
707	MP_PARM					
708	MP_PARM					
709	MP_PARM					
710	MP_PARM					
711	MP_PARM					
712	MP_PARM		[ACCT].[MP003]+[ACCT].[MP0010]			
713	MP_PARM					
714	MP_PARM					
715	MP_PARM					
716						
717						
718						
719						

Script Logic to achieve same result,

```

Script Logic- [DEFAULT.LGF]
*WHEN ACCT
*IS MP003
*REC(EXPRESSION=%VALUE%+ [ACCT].[MP0010],ACCT=MP002)
*ENDWHEN
*WHEN ACCT
*IS MP0010
*REC(EXPRESSION=%VALUE%+ [ACCT].[MP003],ACCT=MP002)
*ENDWHEN
*COMMIT

```

So for every send operation, this logic will be called and the result is stored in corresponding account. This will have a better performance than the Dimension formula. It gives the same result as the Dimension formula written in the Account (ACCT) dimension member sheet.

Performance tuning in BPC Office client:

Performance tuning measures that can be done while working in BPC Office client during the creation of Reports/Input Schedule which could vastly improve the performance by the measures given below.

Comment Formulas:

Do not use lot of Comment Formulas, which will slow down the Report performance. Usually the use of EVCOM functions slows down the report performance. It is better to create a separate report for comments (for text data) alone.

EVDRE: Refresh by sheet option:

In Workbook Options, When EVDRE: Refresh by sheet option is enabled; Input Schedule/Reports performance improves because it refreshes the sheet only if it goes to that particular sheet. Other sheets are not refreshed this will considerably reduce time for opening a particular workbook.

Current Workbook Options

Select options for the current workbook.

Workbook Type and Refresh Options

Type: Report

Refresh options:

- Refresh workbook on worksheet update
- Refresh workbook on workbook open
- Refresh after data send
- Expand on workbook open
- Expand on CurrentView change
- EVDRE: Refresh by sheet

Allow users to change options

Maximum Expansion Limit

Set the maximum column and row expansion limits for EvEXP, EvENE, EvNXP functions:

Columns (1-255): 100

Rows (1-65535): 1000

Drill Down Options

- Expand by overwriting rows
- Expand by inserting new rows

Read Options for Comment

- Within Cell
- As Excel Popup

Worksheet Password

Set Worksheet Password...

Override Current View

Select the source range on the worksheet (2 columns and 2+ rows), then click Add.

Range: [] Add

Save the active session CV with this workbook.

Remove

Lock Status

Workbook is not locked.

EVDRE Specific Options/ Formatting

Following are the standard to be followed when creating Input schedules/reports.

1. Please refrain from applying formatting through EVDRE functionality unless absolutely necessary. This will mean that all formatting can be employed using native excel functionality using format options or conditional formatting etc. This is done to improve performance while retrieving data from database.
2. Adjust the size of the cell using native excel. Adjusting the size has to be done on the basis of size of the master data. This will act as a substitute for using AUTOFIT COL in OPTIONS Range.

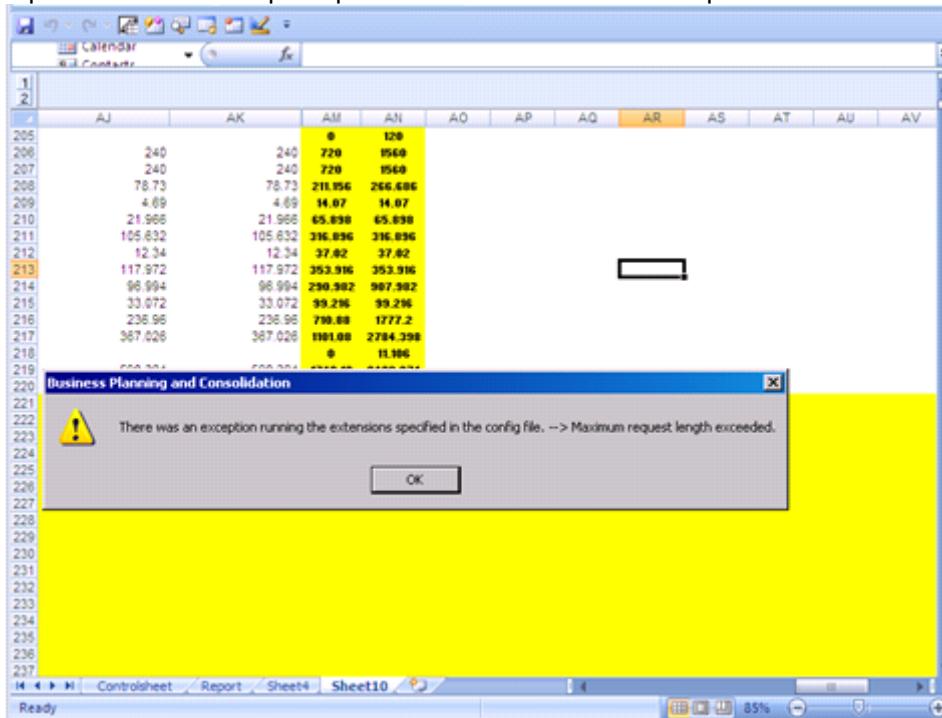
For Example, Instead of using format range below, we could remove the first four line items from Format range and Apply the Heading formatting directly through native excel. So the same formatting is copied from first cell after expansion.

CRITERIA	EVALUATE IN	FORMAT	USE	PARAMETERS	APPLY TO
DEFAULT		12,345.00			DATA
DEFAULT			PATTERN		KEY
DEFAULT	ROW				HEADING
DEFAULT	COL				HEADING
INPUT		AA	FONT,PATTERN,BORDER,I		DATA
CATEGORY.ID=ACTUAL		AA	ALL		DATA
CATEGORY.ID=BUDGET		AA	ALL		DATA

Account	Allocation	ACTUAL APR 2009	ACTUAL MAY 2009	ACTUAL JUN 2009
Account 1				\$ -
Account 2				
Account 3				
Account 4				
Account 5				
Account 6				
Total		\$ -	\$ -	\$ -
Account 1				
Account 2				
Account 3				
Account 4				
Account 5				
Account 6				

Size of Input Schedule\ Reports:

In Reports/Input Schedule, if we want to save it to the server, in some cases the size of Input schedule/Report might be large, so we will not be able to save it in server and get an error message as below. In that case save the file without expanding the sheets because the file size will be lesser before expansion. Whenever the user opens the Input Schedule/Report it will expand automatically if expand on workbook open option is enabled in Workbook Options.



EVDRE and EVGTS function:

In some cases where different member should be used for retrieving data in a report, so in the same report EVGTS and EVDRE could be used instead of two EVDRE's.

Example: [Refer below snapshot]

Data corresponding to (Account 1) is obtained with members

Application: POC_APP

Member 1: MP000021

Member 2: PARTNER_NONE

Member 3: COUNTRY_NONE

Data corresponding to Account 2, Account 3, Account 4, Account 5, and Account 6 is obtained with members:

Application: POC_APP

Member 1: MP000022

Member 2: PARTNER_ALL

Member 3: COUNTRY_ALL

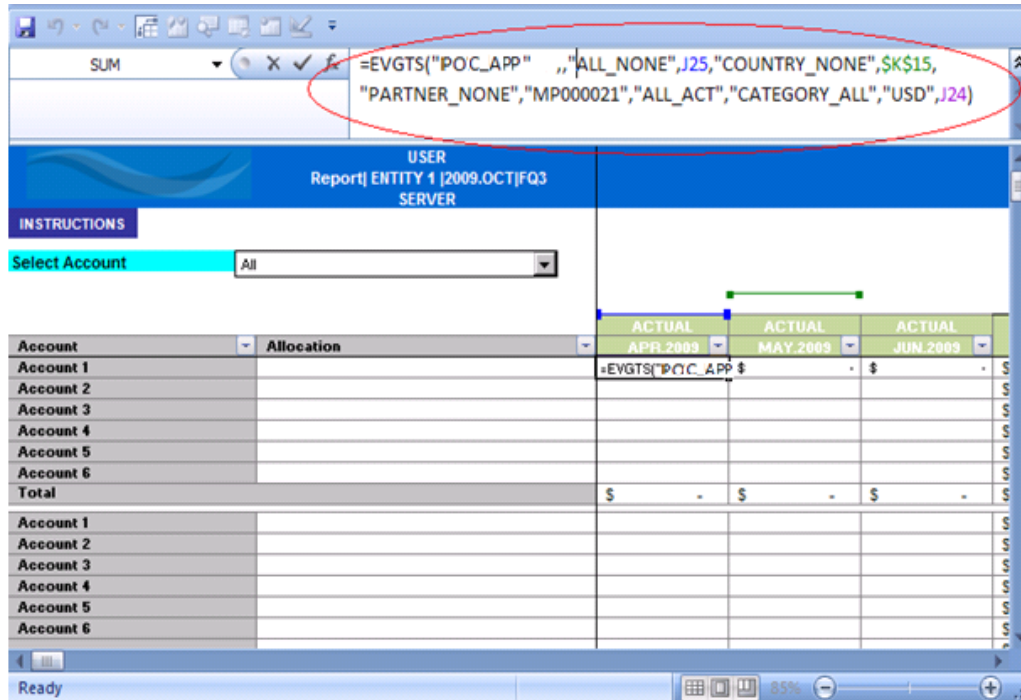
So in this case, Instead of using two EVDRE'S or single EVDRE with three dimensions in (row)expansion range (which will reduce performance), it is possible to use EVGTS function to retrieve data for (Account 1) and use normal EVDRE to retrieve data for rest of the Accounts(Account 2,3,4,5,6).

The same scenario also suits, if we have to retrieve data for Account 1 from a different application say Travel and other accounts (Account 2, 3, 4, 5, 6) from Manpower application. In this case instead of two EVDRE's for two different applications, it is better to use EVGTS for Account 1 and normal EVDRE for rest of the accounts.

Here instead of using two EVDRE which will affect the performance of template, we could use EVGTS along with an EVDRE to retrieve data. Account 1 has to be obtained with a different set of members. So we use EVGTS function while other line items are obtained from normal EVDRE function.

In Rows and Columns expansion, you can keep the EVGTS formula only in the first cell, Expansion of the report will take care of the other cells. If the rows and columns are static, then you need to define EVGTS for all the cells.

Below snapshot shows the usage of EVDRE and EVGTS in the same sheet to retrieve accounts in a report,



Multiple Expansion Vs Multiple EVDRE's:

Multiple Expansions will have a better performance than multiple EVDRE's. Instead of creating separate EVDRE for each category, it is better to use multiple expansions, which will produce the same result as multiple EVDRE's.

1					
2					
	A	B	C	D	E
1	EVDRE:OK				
2					
3	RANGE	VALUE			
4	PageKeyRange	Sheet1!\$L\$3:\$L\$11			
5	ColKeyRange	Sheet1!\$L\$13:\$M\$14,Sheet1!\$N\$13:\$O\$14,Sheet1!\$P\$13:\$Q\$14,Sheet1!\$R\$13:\$S\$14			
6	RowKeyRange	Sheet1!\$H\$17:\$I\$18			
7	CellKeyRange				
8	GetOnlyRange				
9	FormatRange	Sheet1!\$A\$45:\$F\$59			
10	OptionRange	Sheet1!\$A\$26:\$B\$41			
11	SortRange				
12					
13					
14					
15	PARAMETER	EXPANSION 1	EXPANSION 2	EXPANSION 3	EXPANSION 4
16	ExpandIn	COL	COL	ROW	ROW
17	Dimension	TIME	CATEGORY	P_ACCT	ENTITY
18	MemberSet	2009.APR 2009.JUL 2009.OCT 2009.JAN	ACTUAL PLAN_VER_1 PLAN_VER_2 PLAN_VER_3	SELF	SELF
19	BeforeRange				
20	AfterRange				

Reduce the number of Dimension in the Expansion as much as possible. There can be a trade-off between number of dimensions and number of EVDRE's in a sheet. If the number of dimension in expansion reduces, when we use more than one EVDRE, it will give better performance.

If we use multiple dimensions in Row Key Range and Col Key Range Performance degrades rapidly in a large application, when you have more than 1x2 dimensions in rows x columns. Reports with two dimensions in both the row and column become very slow. As a result, BPC users may experience poor performance. Therefore, it is a good idea to reduce the number of row and column dimensions using multiple EVDRE

functions. However, if you are not able to decrease the number of column or row dimensions, it is better to use EVGTS instead of EVDRE.

If the column expansion or row expansion is static, we can use EVTIM function for Time dimension. It will improve the performance of template because we can remove column from expansion so refresh is enough to get the values.

EVTIM function:

Use EVTIM for comparable time periods. A lot of reports compare data from different periods with each other in the columns. To prevent a lot of maintenance, it is easy to create reports for comparable periods depending on the time you have in the Current View for your current reporting period. To do this, enter the EVCVW function for the Time dimension in the column that retrieves the current period. For the other columns you enter an EVTIM function at the top of the column. This function generates a valid time ID based on another ID and you can specify an "offset." So by using the EVCVW function as the basis and entering the offset on "-1" you can retrieve the current month and the previous month.

We can remove the column expansion by giving NOEXPAND option in member set when we use EVTIM function. So if we use EVTIM function instead of normal expansion of time dimension in column, there will be improvement in the performance of template since we are not expanding column every time we open this Input Schedule\Report.

The screenshot shows a report template in SAP BPC Office Client. The formula bar at the top displays the function `=EVTIM("POC_APP",J13,1)`. The report grid shows a table with columns for time periods and rows for various dimensions. The function is applied to the time dimension, generating comparable periods.

Dimension	Value	Value	Value
App	POC_APP	Planning	
CATEGORY	CATEGORY_ALL	CATEGORY ALL	
ENTITY	ENTITY 1	ENTITY 1	
ROLE	A		
MP_TYPE	MANPOWER_ALL	ALL MANPOWER	
MEASURES	PERIODIC	Periodic	
ACCT	ACCT_NONE	None	
REV_TYPE	ALL_REV	All Revenue types	
CURRENCY	USD	American Dollar	
TIME	2009.Q1	2009.Q1	
	2008.APR	=EVTIM("POC_APP",J13,1)	2008.JUN
	ACTUAL	ACTUAL	ACTUAL
	2008.APR	2008.MAY	2008.JUN
	ACTUAL	ACTUAL	ACTUAL
Account 1			
Account 2			

Conclusion:

Performance should always be tested carefully depending on the requirement of the project. Based on the understanding the performance improvement measures that are done in Reports/Input schedules. These measures like splitting application, reducing usage of dimension formula, reducing usage of format range will improve the performance. To prevent possible performance issues, you have to investigate while data is retrieved in which way before you can really change the report/input schedule.

Related Content

<http://www.sdn.sap.com/irj/scn/index?rid=/library/uuid/2006e603-ac28-2a10-e589-db05ca5210b7>

<http://forums.sdn.sap.com/forum.jspa?forumID=412andstart=0>

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