Merging Data Sources in BusinessObjects - Finance

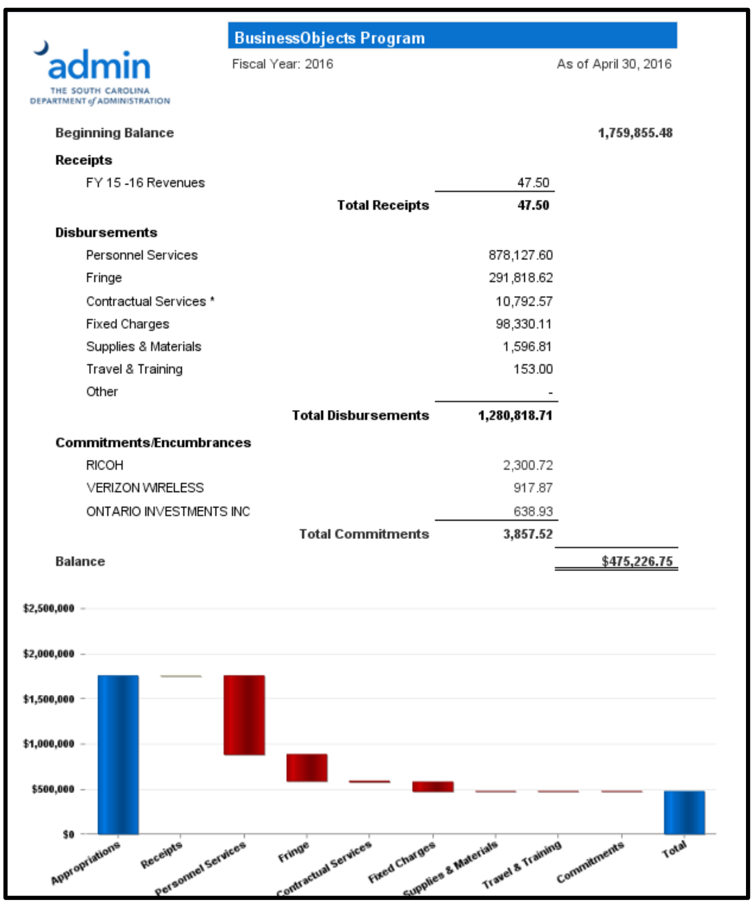
Goal:

We'll be creating a report that merges data from different queries and relates the information from the different queries to the related Funds Centers and Functional Areas to provide a summary and detailed look into a hypothetical program. Most programs/departments/divisions are some combination of FI Account Assignment information like Funds Center, Functional Area, Fund, Grant, State Funded Program, etc. For this example, I'll just be looking at two hypothetical programs that are made of the Funds Center D500BA0000 and Functional Area D500_BA00 (BusinessObjects Program) and D500CE500/D500_CE01 (Reporting Program).

- Budget (FM Budget vs Actual)
- Encumbrances by Vendor (Open Encumbrance Report)
- Revenue (Funds Management Revenue Report)
- Payments by PO (FI Invoices)
- Expenses by Vendor (Funds Manament Expense Report)

To get all of this information by Funds Center/Functional Area, we'll have to add these queries to the report and create merged dimensions.

The finished report will look something like:



BusinessObjects Program

Fiscal Year: 2016 — As of April 30, 2016

Beginning Balance			**1,759,855.48**
Receipts			
FY 15 -16 Revenues		47.50	
	Total Receipts	**47.50**	
Disbursements			
Personnel Services		878,127.60	
Fringe		291,818.62	
Contractual Services *		10,792.57	
Fixed Charges		98,330.11	
Supplies & Materials		1,596.81	
Travel & Training		153.00	
Other		-	
	Total Disbursements	**1,280,818.71**	
Commitments/Encumbrances			
RICOH		2,300.72	
VERIZON WIRELESS		917.87	
ONTARIO INVESTMENTS INC		638.93	
	Total Commitments	**3,857.52**	
Balance			**$475,226.75**

We can then drill into the summary, by including another report that breaks out expenditures by more detailed Commitment Items like:

admin THE SOUTH CAROLINA DEPARTMENT of ADMINISTRATION

BusinessObjects Program

Fiscal Year: 2016 As of April 30, 2016

Expenditure Category		YTD	MTD
Personnel Services			
CLASSIFIED POSITIONS		609,473.81	78,789.18
UNCLASS POSITIONS		255,944.85	42,735.96
TEMPORARY POSITIONS		2,747.5	530.00
TERMINAL LEAVE		1,961.44	-
ONE TIME BONUS-PROV		8,000	-
	Total	878,127.60	122,055.14
Fringe			
RET-SRS		116,523.02	16,416.69
RET-ORP		24,339.7	3,319.05
SOCIAL SEC-ST EMPLY		63,732.23	8,818.45
INS WORKERS COMP		3,629.27	-
INS UNEMPLY COMP		271.23	-
INS HEALTH-ST EMPLY		80,358.05	11,650.56
INS DENTAL- ST EMPLY		1,664.24	228.54
PRE-RET DTH-ST EMP		1,076.04	151.59
PRE-RET DTH BEN-ORP		224.84	30.66
	Total	291,818.62	40,615.54
Contractual Services			
PRINT / BIND / ADV		690.1	-
DP SVCS-OTHER		4,784.48	-
DP SERV-HDWE MAINT		470	-
FREIGHT EXPRESS DELV		128.75	-
TELEPHONE & TELEGRPH		3,909.12	345.84
CELLULAR PHONE SVCS		810.12	106.00
	Total	10,792.57	451.84
Supplies & Materials			
OFFICE SUPPLIES		1,453.82	266.60
PHOTOCOPY SUPPLIES		142.99	-
	Total	1,596.81	266.60
Fixed Charges			
RENT-DATA PROC EQUIP		2,179.98	198.18
RENTAL-CONT RENT PMT		771.81	(62.57)
RENT-ST OWNED R PROP		69,502.32	-
INSURANCE-STATE		2,576.00	-
DUES & MEMBER FEES		23,300.00	-
	Total	98,330.11	135.61
Travel & Training			
IN ST-AUTO MILEAGE		91.80	-
LEASED CAR-ST OWNED		61.20	-
	Total	153.00	-
Grand Total		1,280,818.71	163,524.73

We can then create another report to look at expenditures by Vendor by quickly duplicating the previous report and replacing the Commitment Items dimension with the Vendor dimension.

By Vendor:

admin THE SOUTH CAROLINA DEPARTMENT of ADMINISTRATION

BusinessObjects Program

Fiscal Year: 2016 | As of April 30, 2016

Expenditure Category		YTD	MTD
Personnel Services			
Not assigned		878,127.6	122,055.14
	Total	878,127.60	122,055.14
Fringe			
Not assigned		288,758.35	40,615.54
STATE ACCIDENT FUND		2,789.04	-
COMPTROLLER GENERAL		271.23	-
	Total	291,818.62	40,615.54
Contractual Services			
BCT SOUTH CAROLINA		235.4	-
ADMN DIVISION OF TECHNOLOGY		4,784.48	-
ADMN SURPLUS PROPERTY		62.5	-
ADMN GS STATE FLEET MGT & IMS		66.25	-
SPIRIT COMMUNICATIONS		3,909.12	345.84
VERIZON WIRELESS		810.12	106.00
SC DEPARTMENT OF CORRECTIONS		454.7	-
MANAGEDPRINT INC		470	-
	Total	10,792.57	451.84
Supplies & Materials			
ADMN SURPLUS PROPERTY		150.00	150.00
BANK OF AMERICA-P CARD		1,303.82	116.60
MANAGEDPRINT INC		142.99	-
	Total	1,596.81	266.60
Fixed Charges			
Not assigned		-139.86	(139.86)
ADMIN DIVISION OF GENERAL SERVICES		69,502.32	-
SFAA ADMINISTRATION		2,576.00	-
RICOH		911.67	77.29
ONTARIO INVESTMENTS INC		990.90	-
ONTARIO INVESTMENTS INC		1,189.08	198.18
NASBO		23,300.00	-
	Total	98,330.11	135.61
Travel & Training			
ADMN GS STATE FLEET MGT & IMS		61.20	-
MICHAEL D		91.80	-
	Total	153.00	-
Grand Total		1,280,818.71	163,524.73

And Finally, we can show the program's expenditures by POs:

BusinessObjects Program

Fiscal Year: 2016 As of April 30, 2016

PO Break

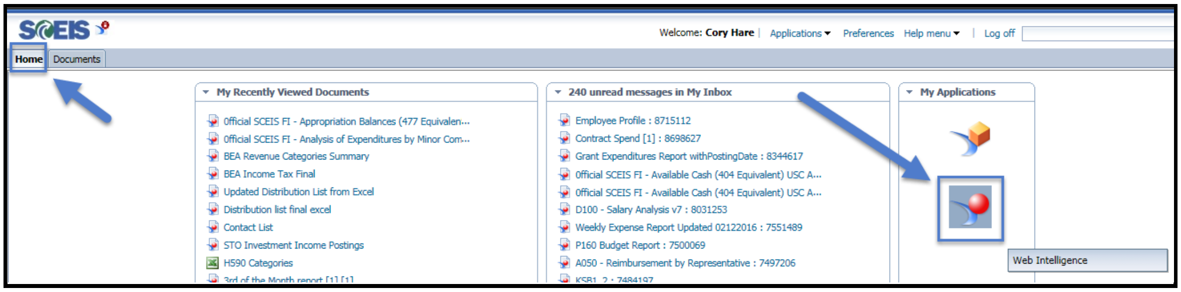
PO	Vendor	YTD Payments	MTD Payments
4600434834	VERIZON WIRELESS	810.12	106.00
4600440872	BCT SOUTH CAROLINA	235.40	-
4600445720	RICOH	911.67	77.29
4600455041	MANAGEDPRINT INC	470.00	-
4600455353	ONTARIO INVESTMENTS INC	990.90	-
4600455353	ONTARIO INVESTMENTS INC	1,189.08	198.18
#	SC DEPARTMENT OF CORRECTIONS	454.70	-
#	MANAGEDPRINT INC	142.99	-
#	ADMIN DIVISION OF GENERAL SERVICES	69,502.32	-
#	ADMN GS STATE FLEET MGT & IMS	127.45	-
#	ADMN DIVISION OF TECHNOLOGY	4,784.48	-
#	COMPTROLLER GENERAL	271.23	-
#	SFAA ADMINISTRATION	2,576.00	-
#	STATE ACCIDENT FUND	2,789.04	-
#	BANK OF AMERICA-P CARD	1,303.82	116.60
#	ADMN SURPLUS PROPERTY	212.50	150.00
#	SPIRIT COMMUNICATIONS	3,909.12	345.84
#	NASBO	23,300.00	-
#	MICHAEL D	91.80	-
	Total	**114,072.62**	**993.91**

Choosing a Data Source

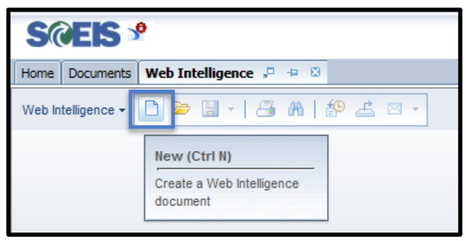
First, we'll need an initial data source to supply our report with data. If we're strictly using SCEIS data, we'll use a BEx query connection.

To begin:

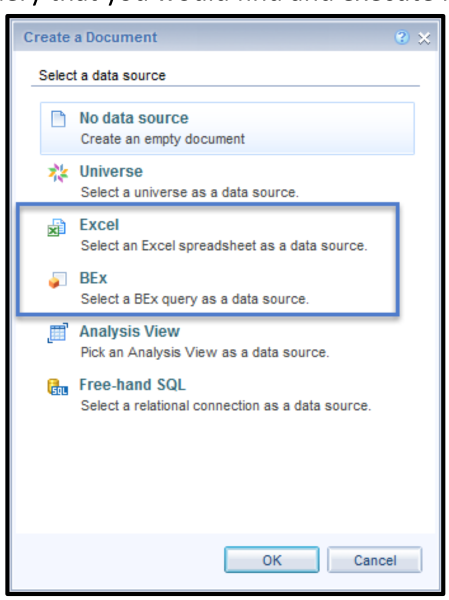
1. Click on the **Web Intelligence** icon:



2. Click on the **New** icon:

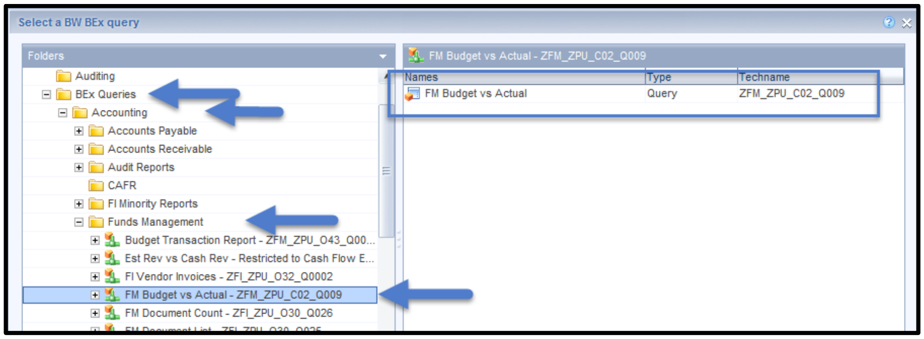


3. You'll then be prompted to choose a data source. For any SCEIS information, choose a BEx query. The BEx query option is a connection directly to same query that you would find and execute in BEx.

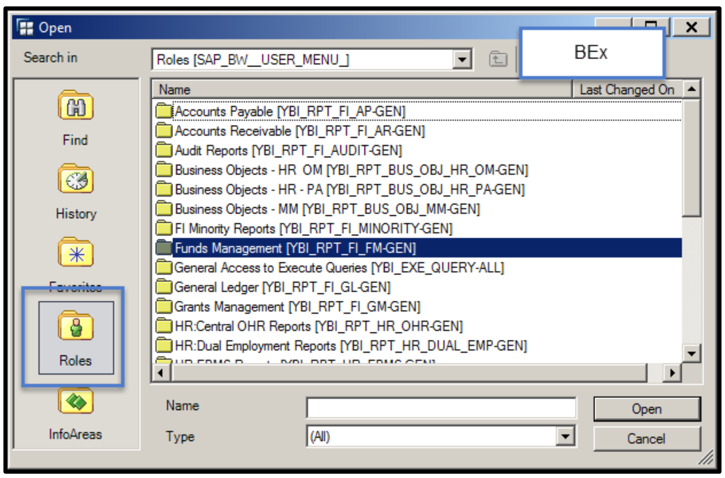


Note: Non-SCEIS information can be loaded by putting the data into an Excel file, loading it into BusinessObjects and choosing that file as a data source.

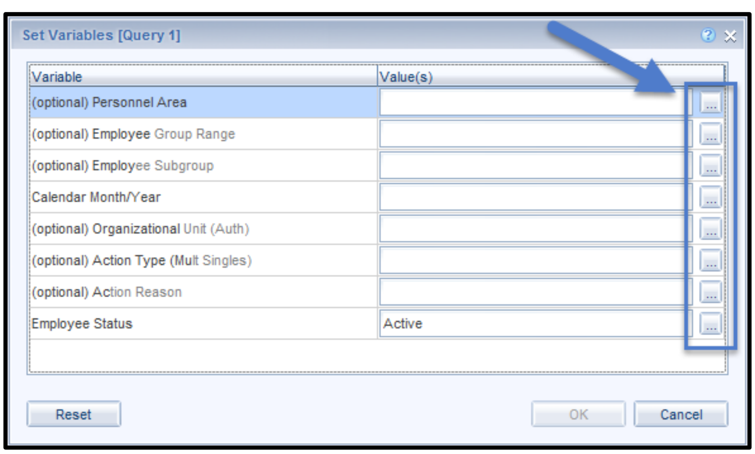
4. Look for the FM Budget vs Actual query in the in the folder **BEx Queries\Accounting\Funds Management**.



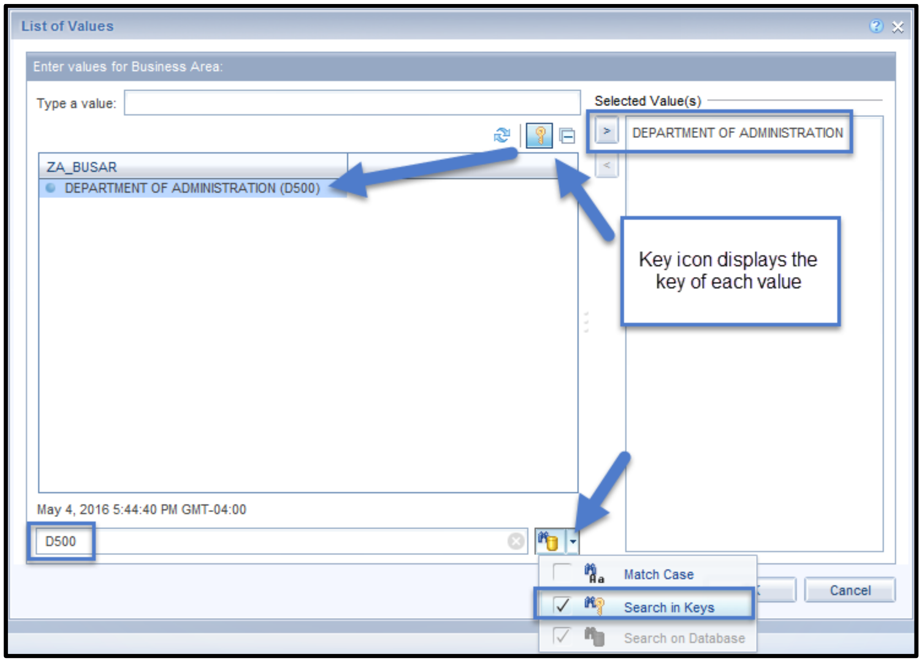
Note: The queries in Business Objects will be found in the same roles folders that they would be found in BEx.



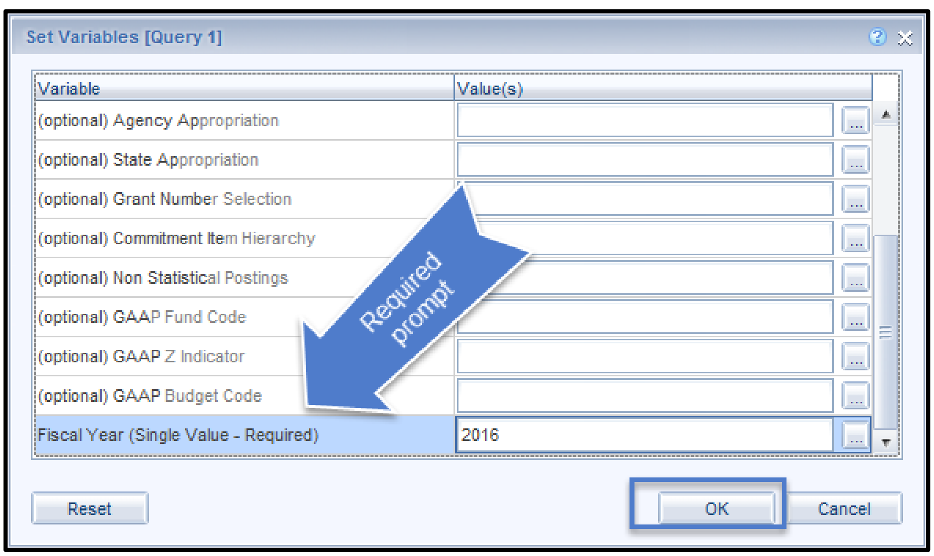
5. Before the query panel will appear, you'll need to pre-run the query. You **cannot** type directly into the blank fields, but if you click on the "**…**" icon, a box will appear where you can search for and choose from a list of values to input into the prompt box.



Note: The default search is to set for the **name** of the object being put into the field (for example, “General Fund” rather than “1001000” or “Department of Administration” rather than the **key**, “D500”. To search for the key, ensure that **Search in keys** is checked next to the **binoculars** icon. You can then select the item and move it over to the **Selected Values(s)** area by double-clicking or using the right-arrow. Then select **OK** to input the value into the prompt. Like:



Once you’ve input all items (make sure all the required fields have values), you can then click **OK** and the query panel will appear.

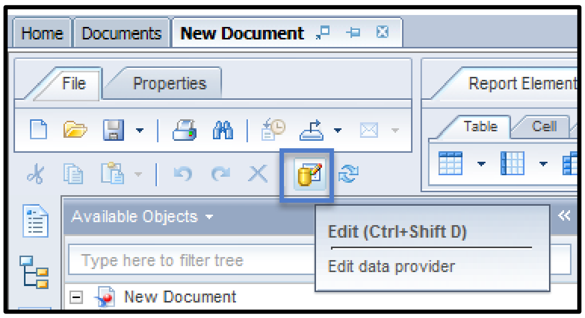


Query Panel:

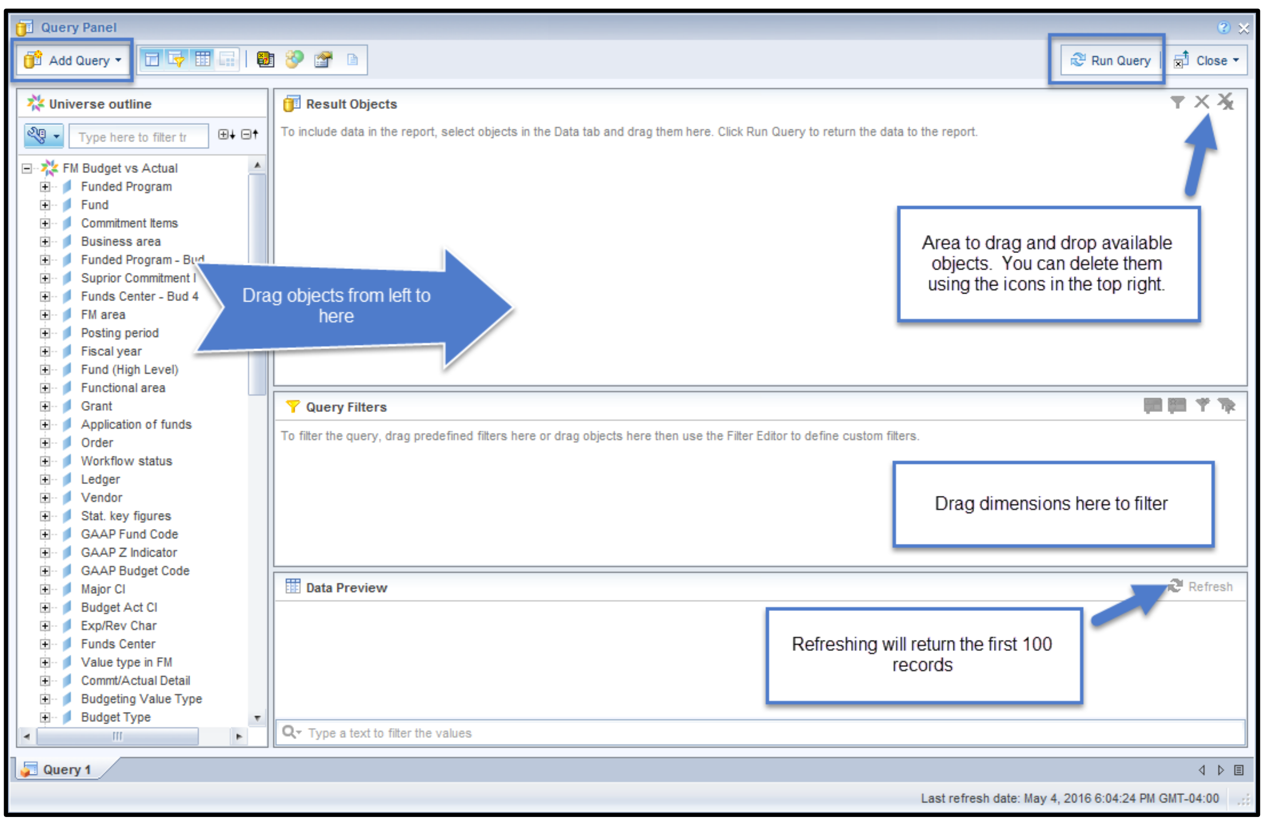
The query panel is where you will choose the list of items (objects) that you want to include in your report. In addition to choosing the items you want to include; in the query panel, you can also:

- Add other queries
- Filter the report
- Preview the data (the first 100 records are retrieved)

To include other items after the initial run, or to do any of the things above, you can get back to the query panel by clicking on the **Edit Data Provider** icon above the **Available Objects** area in the top-left area in the design mode of the report.



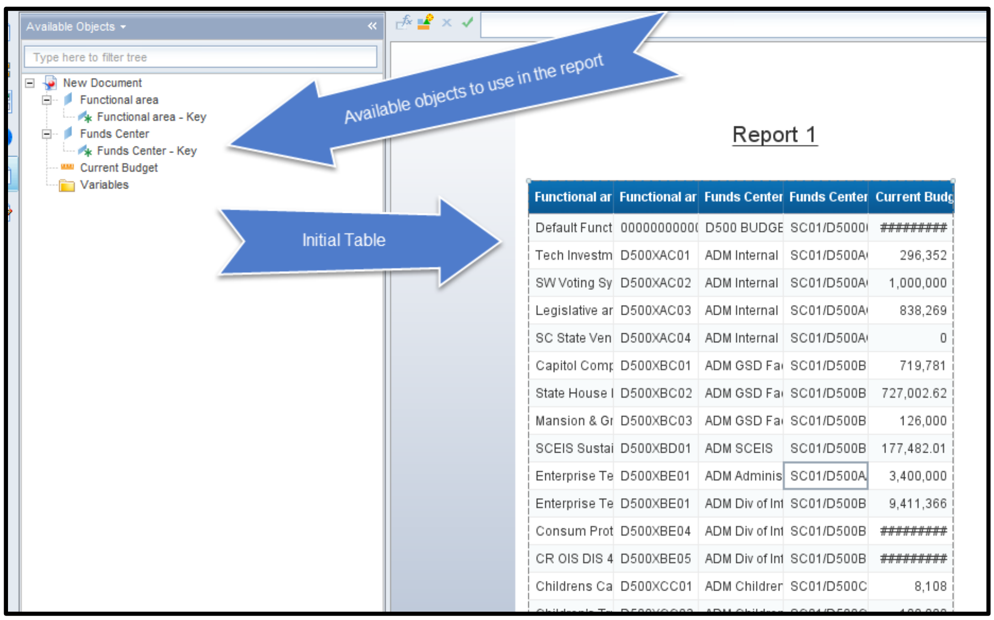
After the prompt values have been input and the query has run, you will see this:



6. Drag objects from the outline area to the **Result Objects** area. You can delete unwanted items using the delete icons in the top right area. The objects needed for the report will be the key detail and the dimension for:

Funds Center (Key and Dimension)	Current Budget
Functional Area (Key and Dimension)	**Any other objects you'd like to put in your report**
Commitment Item (Key and Dimension)	

7. Once you run the query, you will have a table of data to use in your report (showing current budget by Functional Area and Funds Center):

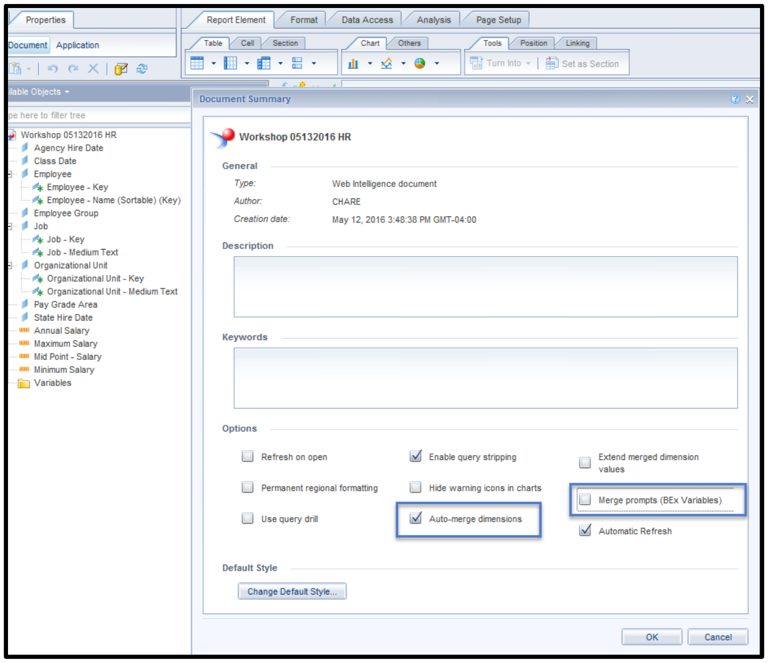


Adding Additional Queries:

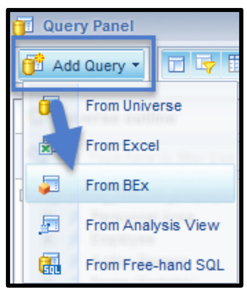
Now that we have an initial query and table in the report, we can now add the other queries. But before we do, let's check a setting that will make a multi-query report easier to work with.

8. Change the Document properties and uncheck **Merge prompts (BEx Variables).**
   a) In the **Properties** tab at the top-left of the report
   b) Go to **Document**
   c) Uncheck the **Merge prompts (BEx Variables)** setting.

Note: Unchecking the Merge prompts option will allow us to refresh multiples queries at once by setting the prompts individually. This means that we can set query parameters separately from one another.



9. To Add additional Queries:
   a) Open the **Query Panel** using the **Edit Query Panel** button.
   b) When the **Query Panel** opens, choose **Add Query** and **From BEx**



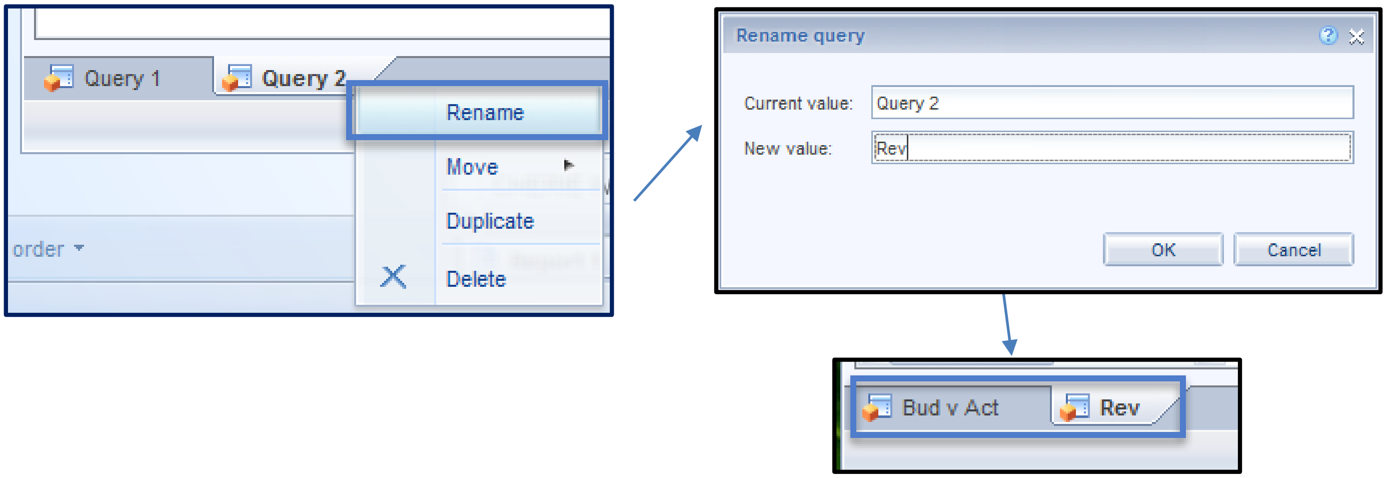
   c) Find the Funds Management Revenue Report in the **BEx Queries\Accounting\Funds Management** folder and add these objects:

Funds Center (Key and Dimension)	FY Total
Functional Area (Key and Dimension)	**Any other objects you'd like to put in your report**
Commitment Item (Key and Dimension)	

Note: You can include the keys for any objects needed or any other objects you wish to include in report. In this example, I'll just be including the dimensions of each object above.

This Query will provide us with the revenue for our programs.

Note: It's a best practice to rename the queries as you add them. This will come in handy when we're trying to determine which objects come from which query. It'll also be easier to determine which date parameters to run each query for. For *this example, I suggest naming the queries based on their function in the report. To do this, simply right-click on the tab of the query name and choose rename, like:*



10. Repeat this step for the other queries:
    a) Funds Management Expense Report (**BEx Queries\Accounting\Funds Management**)

Objects:

Funds Center (Key and Dimension)	FY Total
Functional Area (Key and Dimension)	**Any other objects you'd like to put in your report**
Commitment Item (Key and Dimension)	Posting Period?
Vendor (Key and Dimension)	

b) Open Encumbrance – by Function Area, Fund, Cost Cent (**BEx Queries\Accounting\Materials Management\Procurement Reports**)

Objects:

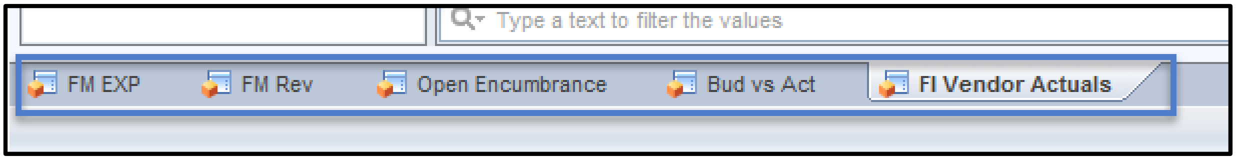
Funds Center (Key and Dimension)	Remaining Balance
Functional Area (Key and Dimension)	**Any other objects you'd like to put in your report**
Vendor (Key and Dimension)	

c) FI Vendor Invoices (**BEx Queries\Accounting\Funds Managment**)

Objects:

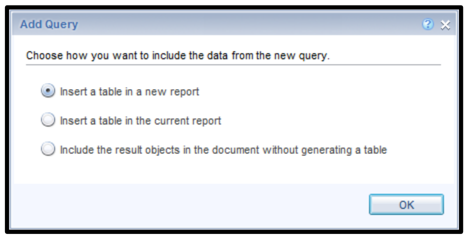
Funds Center (Key and Dimension)	Remaining Balance
Functional Area (Key and Dimension)	**Any other objects you'd like to put in your report**
Vendor (Key and Dimension)	
Purch Order (if appl)	

We now have all the objects that we'll need to use in our report. Once you rename each query in the Query Panel, the bottom of the Query Panel should look like:

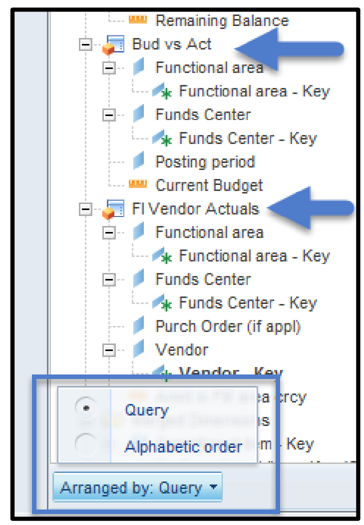


11. You can then refresh all the queries at once. Ensure that each required prompt has a value.

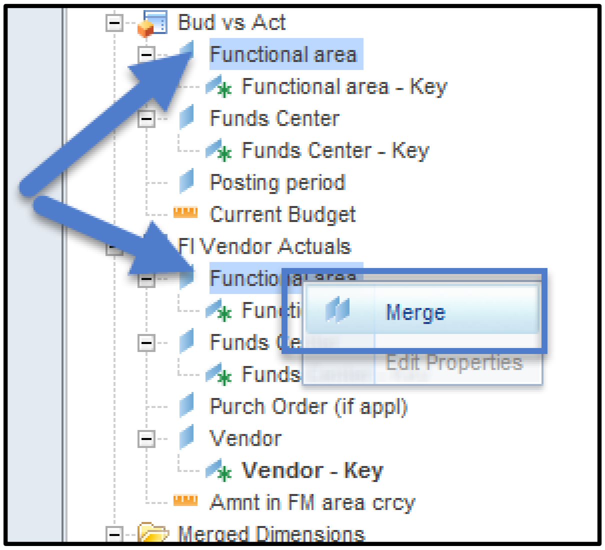
12. Once the report finishes running, this box will appear. Choose the first option. This will put the data from the new queries into new tabs of the report.

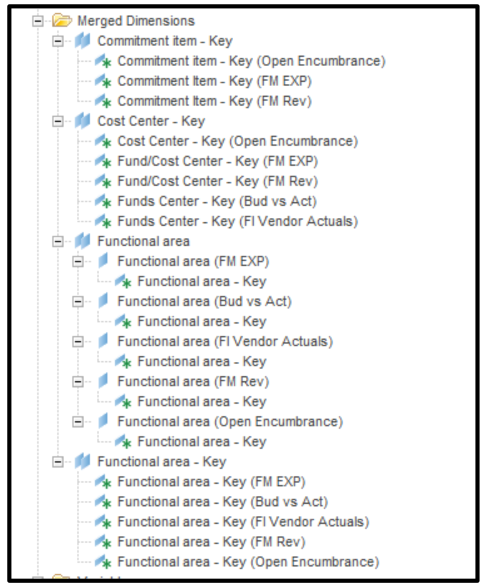


In the Results Objects navigation pane to the left of the report, change the **Arranged By** setting from Alphabetical Order to Query. You'll then notice the objects that are from each query).



13. Merge the like Dimensions and Keys:
    a) In the **Available Objects** area, use the Ctrl key and select Functional Area Dimensions from each of the five queries query. *Note: An object that is bold does not have data. To merge a bold object, you must first drag it into the report and refresh the related query. Once the query is refreshed, you can then merge that object with other like objects.*
    b) Right-click on any of the selected Functional Area dimensions.
    c) Select **Merge.**
    d) You'll then see a new merged dimension for Functional Area in the **Merged Dimensions** area.
    e) Repeat this for the Functional Area – Key, Funds Center (Key and Dimension) and the other like objects you've chosen to use in your report.

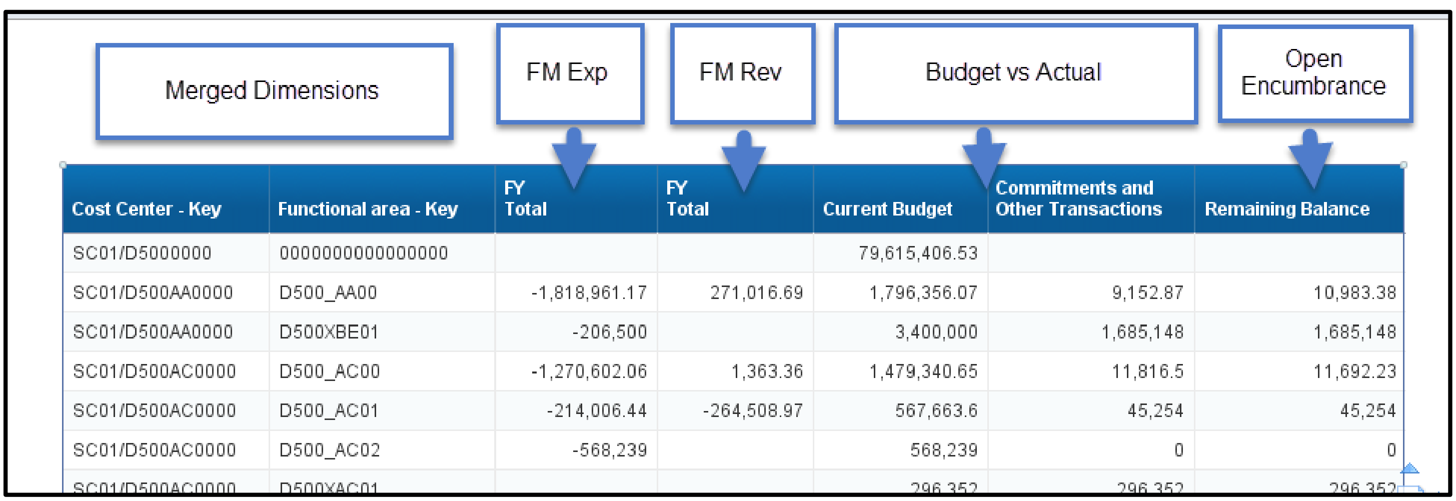




Putting the Report Together:

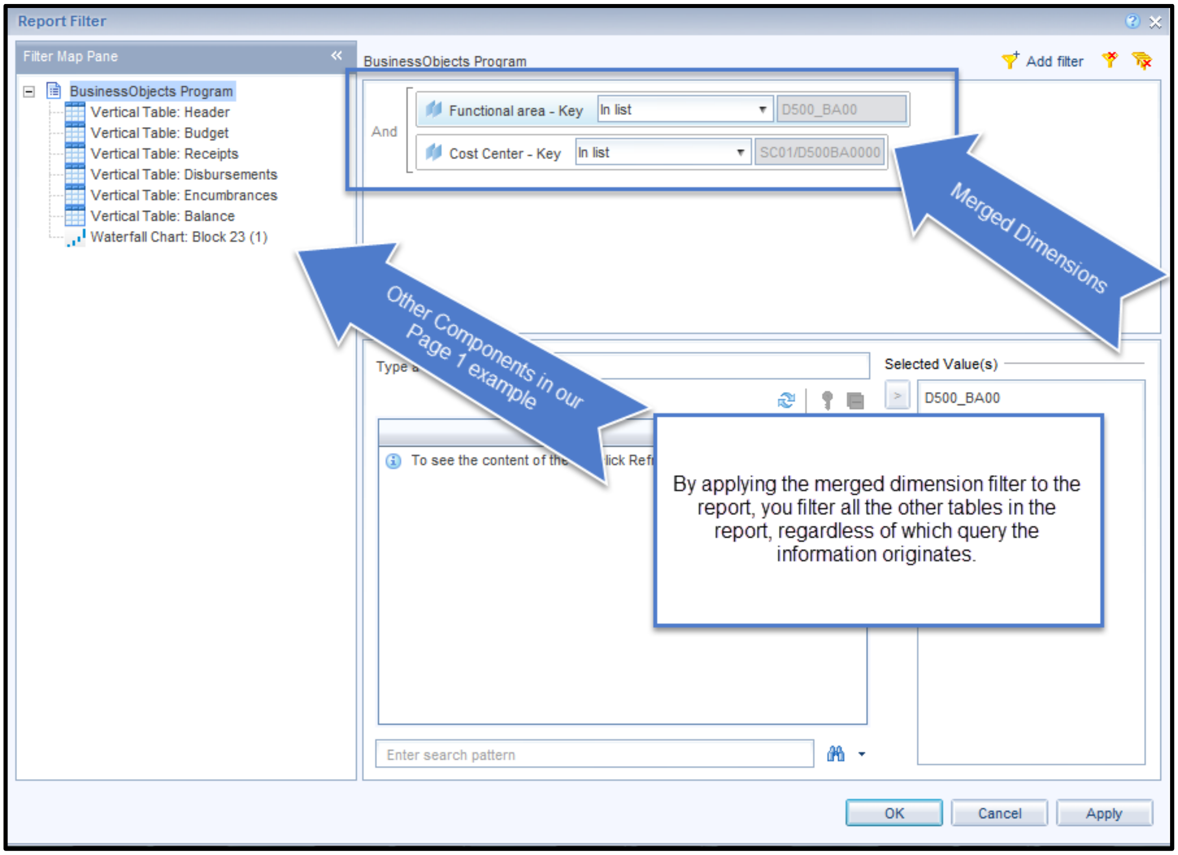
Now that you have merged dimensions, you can use those new objects in the report to combine and filter your data. The new object allows you to bring in information from different queries into the same block or section.

To create a table, simply build your table by dragging items from the available objects area into the report to build your tables. Like this:

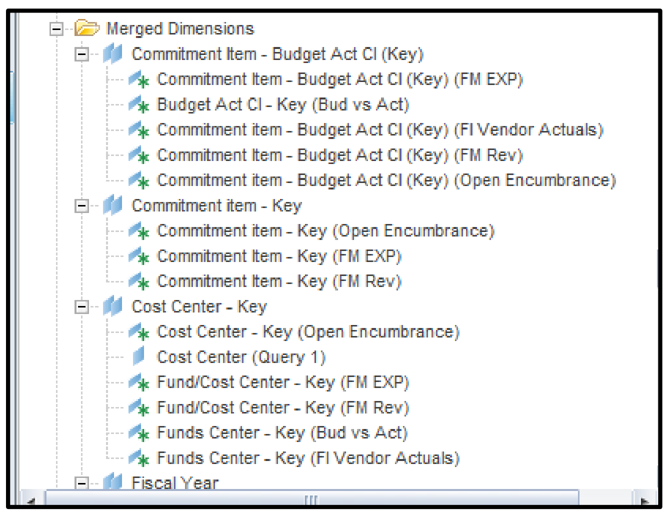


Cost Center - Key	Functional area - Key	FY Total	FY Total	Current Budget	Commitments and Other Transactions	Remaining Balance
SC01/D5000000	0000000000000000			79,615,406.53		
SC01/D500AA0000	D500_AA00	-1,818,961.17	271,016.69	1,796,356.07	9,152.87	10,983.38
SC01/D500AA0000	D500XBE01	-206,500		3,400,000	1,685,148	1,685,148
SC01/D500AC0000	D500_AC00	-1,270,602.06	1,363.36	1,479,340.65	11,816.5	11,692.23
SC01/D500AC0000	D500_AC01	-214,006.44	-264,508.97	567,663.6	45,254	45,254
SC01/D500AC0000	D500_AC02	-568,239		568,239	0	0
SC01/D500AC0000	D500XAC01			296,352	296,352	296,352

You can also use merged dimensions to filter several blocks in a report at once. The information on our summary page comes from 4 different queries, but we're able to use the merged dimension to filter them all at once. We have blocks for each query. One that shows the budget for the program, one that shows receipts, a disbursements table and a commitments tables. By utilizing merged dimensions we can place a filter at the report level to filter the other tables in the report. Like this:

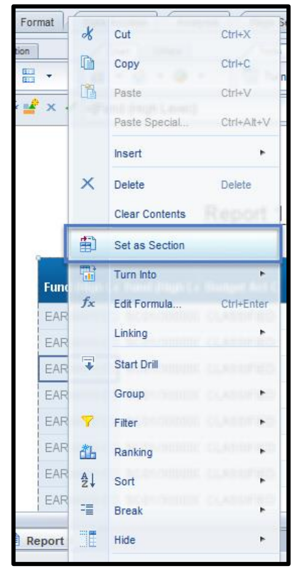


Working with merged dimensions is exactly the same as using objects from just one query. The merged dimension will simply merge all the values for the field from each query and allow you to relate the measures to the shared dimension that is found in two or more queries. The only difference is that you'll be using the dimensions in the **Merged Dimension** area of the available objects area. Here:

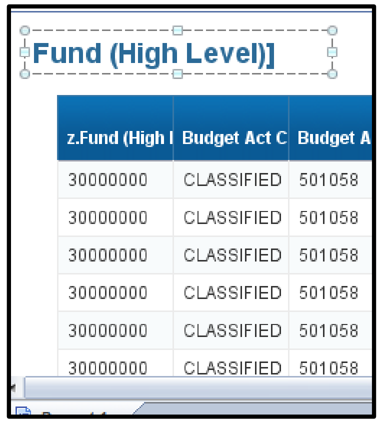


Creating Sections:

You can create a section on a merged dimension and then place tables within that section. Each table will be filtered by the section value. You can create sections on merged dimensions as you would with any other objects.



14. Drag your merged dimension into the report
    a) Right-click in the column of the merged dimension
    b) Choose **Set Section**

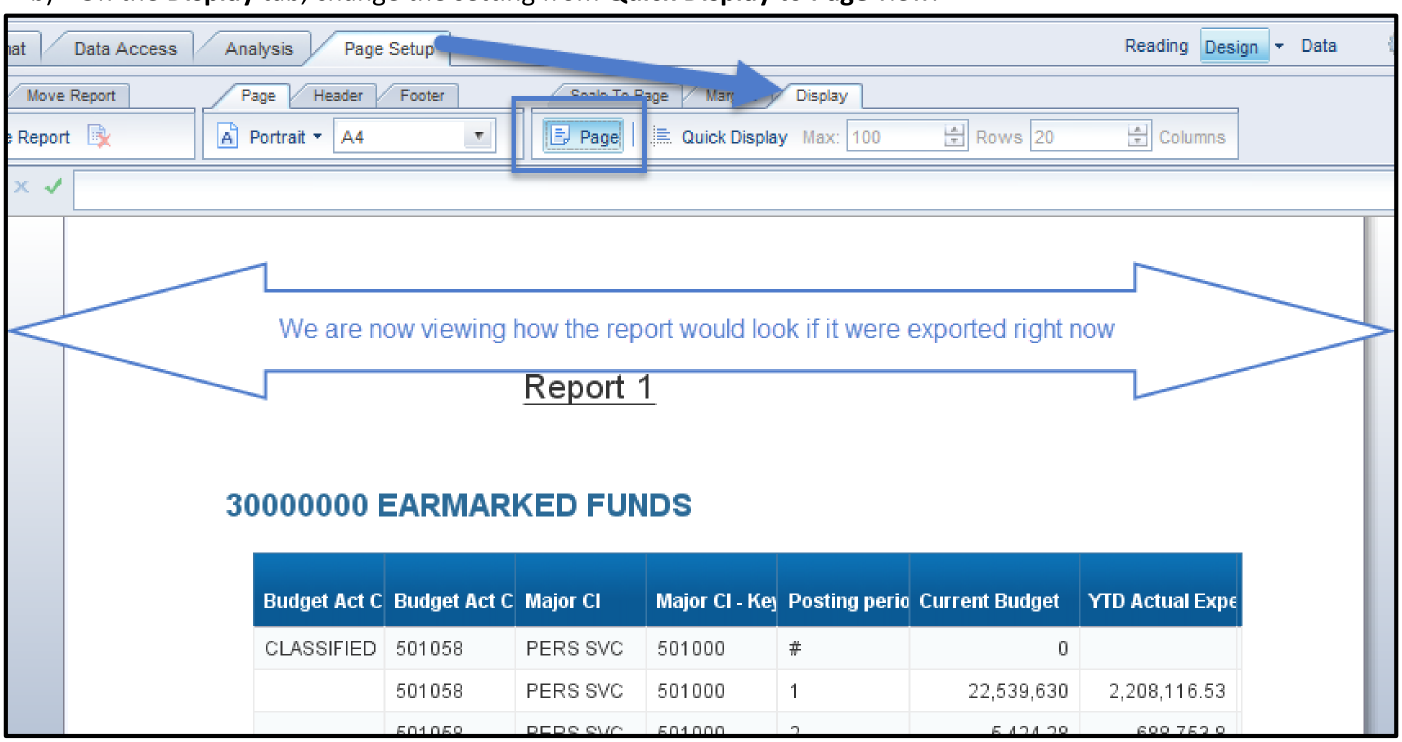


BusinessObjects will then break each different value within your table. You can then create one or more tables within the section.

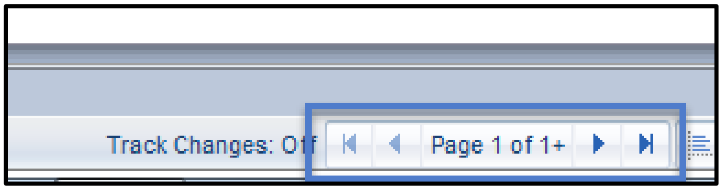
Changing the display:

Once your table is set, it's a best practice to start arranging the information on the page in the way that you want the final report displayed. This is best done using **Page Display**.

15. To see how the finished report is going to look:
    a) Go to the **Page Setup** tab
    b) On the **Display** tab, change the setting from **Quick Display** to **Page** view.

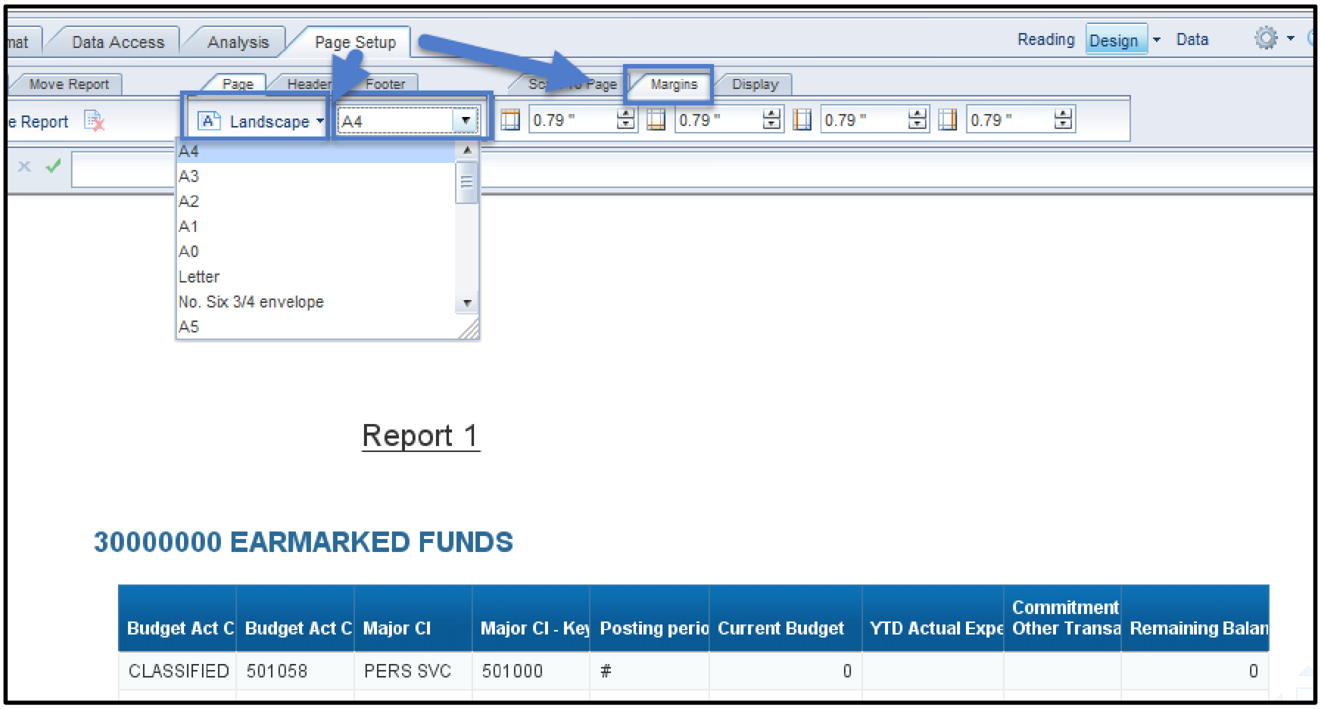


Note: you can go to the next page using the next page options at the bottom of the report:



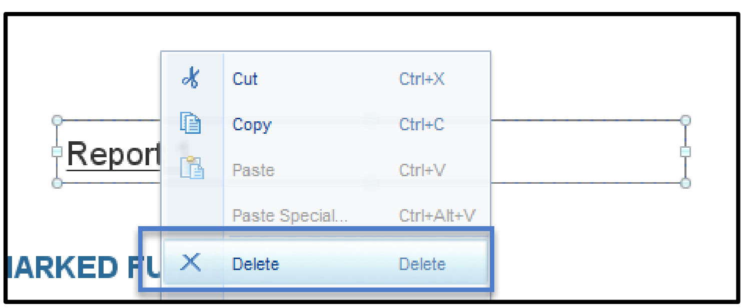
Changing the Margins, Orientation, and Page Size:

16. Change the page properties by going to the **Page Setup** tab and changing the **Margins** or other **Page** properties.



Removing Items from your report:

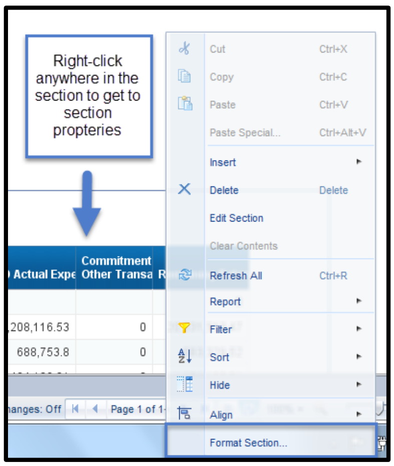
17. Almost any item (table, chart, cell, section, etc.) can be deleted by right-clicking and choosing delete. Let's delete the "Report 1" cell by right-clicking and choosing delete.

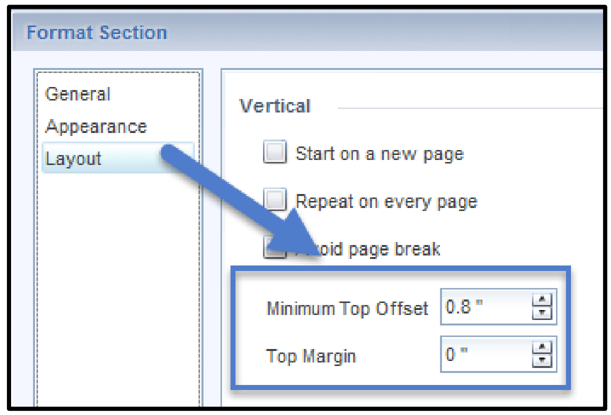


Positioning the section, table, and sizing the columns:

Once you have the tables or sections in the report that you need, you can position them anywhere in the report.

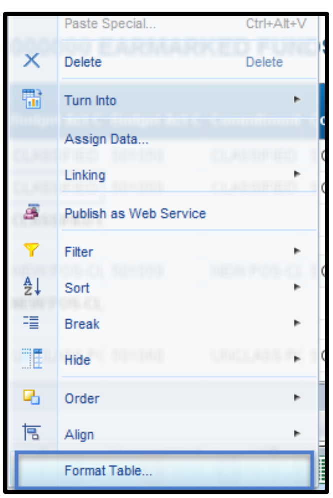
18. To adjust the layout of the section:
    a) Right-click anywhere in the section
    b) Go to **Format Section**
    c) In the **Layout** area, change the **Minimum Top Offset** and **Top Margin** to ensure that there is no extra space at the top

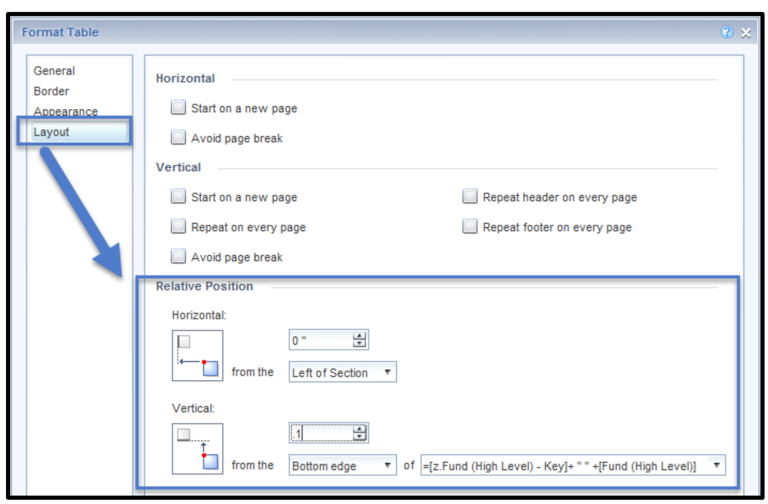




19. To adjust tables:
    a) Right-click on the edge of the table
    b) Go to **Format Table**
    c) In the **Layout** area, set the Horizontal position to 0” to the left of the section.

Note: The steps for positioning a text box is the same



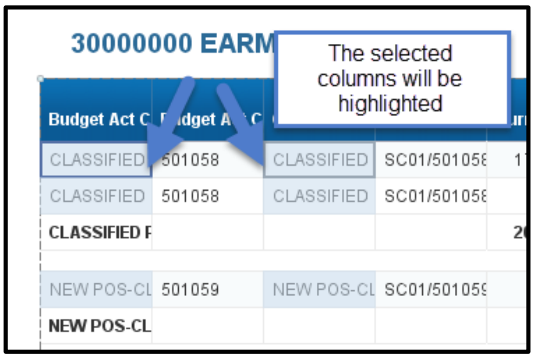


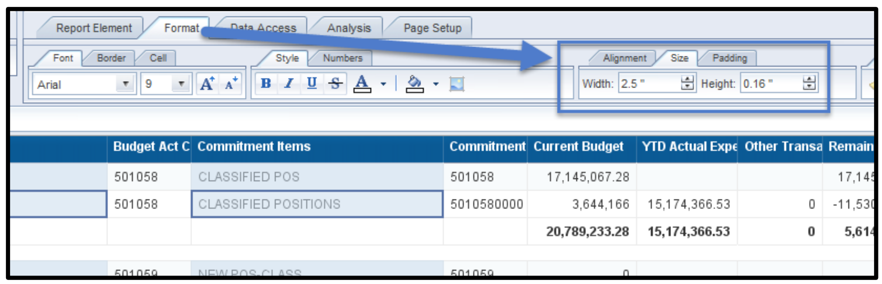
Note: You can make the table's position relative to other tables, charts, or cells in a report by selecting whether to make them relative to the Bottom Edge or Top Edge of a report component. In the example above, the table is set be positioned .1" at the bottom edge of our section header. This is particularly useful when you have several tables of information on one page of the report and the length of any one table is subject to change. Making tables relative to another will avoid one table overlapping another.

Adjusting the size of columns

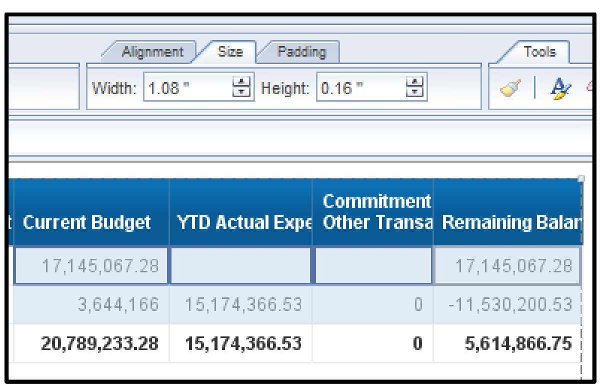
You can set any column to auto-width, but for reports intended to be exported to PDF (like this one). It's generally a best practice to have each column have a set width.

20. Change the size of multiple columns simultaneously:
    a) Use Ctrl and left-click the Budget Act CI and Commitment Items dimensions.
    b) On the **Format** tab, go to the **Size** subsection and set both columns to 2.5"



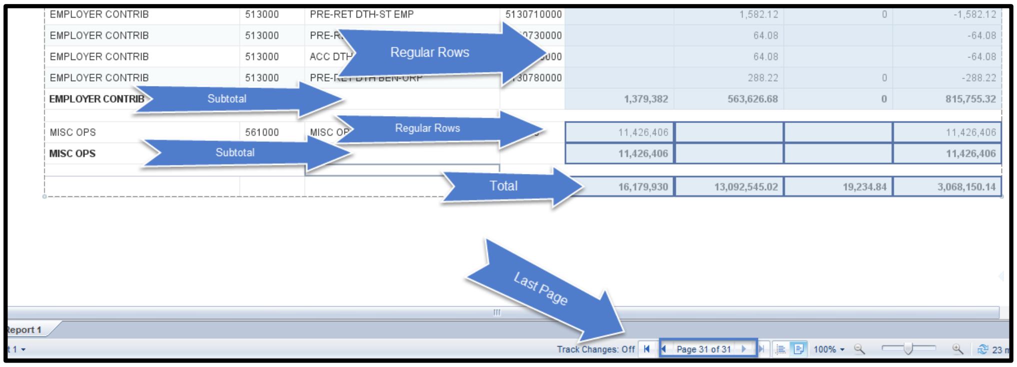


21. Change the size of the measures by:
    a) Using Shift and left click within the Budget column.
    b) Left-clicking the remaining balance column. This will select the two columns and all columns in between.
    c) Change the size to 1.4"

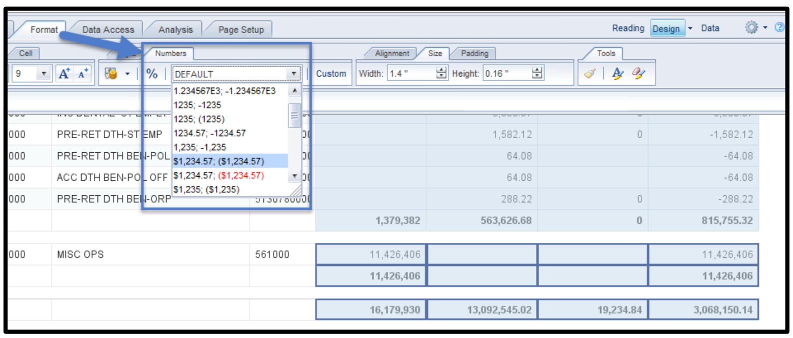


22. To Format Numbers:
    a) Select all measures using Ctrl and left-clicking.
        i) Note: You will need to select each measure in the subtotals and totals rows if you have subtotaled the table before formatting the numbers (which we did).

ii) Note 2: This is easier done by going to the last page of the report to see the totals rows, the subtotals rows, and regular rows.



b) Once all the measures are selected and highlighted (like the image above), you can choose the number format of your choice. The setting will then be applied to all selected columns.



Putting Tables into your Report:

Once you've got your margins and other settings changed, you can drag information from the different queries into a report and filter them all for the same FI Account Assignment Information using the Merged Dimensions that we merged earlier. Your report can contain multiple tables from multiple queries, but using a merged dimension will allow us to filter each table for the same Funds Center/Functional Area.