



PUBLIC

SAP BusinessObjects

Document Version: 4.3 Support Package 4 – 2023-12-07

SAP BusinessObjects Analysis, edition for OLAP User's Guide

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Chart display options. 219

1 Document History

The following table provides an overview of the most important document changes.

Version	Date	Description
SAP BusinessObjects Analysis, edition for OLAP 4.3	April, 2020	Initial release.

2 Introduction to SAP BusinessObjects Analysis, edition for OLAP

- [What is SAP BusinessObjects Analysis, edition for OLAP? \[page 12\]](#)
- [The documentation set \[page 13\]](#)
- [Who should read this guide? \[page 14\]](#)
- [Getting Started with Analysis \[page 15\]](#)
- Access our product documentation online at: <http://help.sap.com>.

2.1 What is SAP BusinessObjects Analysis, edition for OLAP?

SAP BusinessObjects Analysis, edition for OLAP is a powerful, web-based OLAP analysis tool that can help you to gain insight into business data and make intelligent decisions that impact corporate performance.

OLAP data is displayed in the analysis window with crosstabs and charts. You create a workspace, add crosstab and chart objects to the analysis window, connect those objects to OLAP data sources, and then interactively define analyses to explore your data.

Analysis is intuitive and easy to use, while providing unique analysis capabilities, including the ability to simultaneously view data from different cubes and providers. For example, you can view sales data from a Microsoft Analysis Services cube on the same sheet as finance data from an SAP BW cube.

Analysis, edition for OLAP is accessed from the BI launch pad in a web browser. All you need is a connection to an SAP BusinessObjects Business Intelligence platform system that has Analysis, edition for OLAP installed. You do not need to install Analysis, edition for OLAP on your local machine.

An edition of SAP BusinessObjects Analysis for Microsoft Office is also available, which integrates Analysis with Microsoft Excel and PowerPoint.

2.1.1 Analysis integration with SAP BusinessObjects Business Intelligence platform

Analysis, edition for OLAP is accessed from the BI launch pad of the SAP BusinessObjects Business Intelligence platform, and Analysis workspaces and data source connections are managed in the BI platform Central Management Console.

- Anyone with web access and the appropriate permissions in the BI platform can access Analysis.
- Analysis workspaces can be published to the Web with SAP BusinessObjects Business Intelligence platform.

Publishing Analysis workspaces to the Web

The BI platform has a multi-tier server architecture that enables you to distribute Analysis workspaces to a large number of users, across and beyond your organization, over the Web.

By publishing workspaces to the Web, you can make your analyses accessible to everyone in your organization with the required permissions.

2.2 About this guide

2.2.1 The documentation set

The documentation set comprises these guides and online help information:

SAP BusinessObjects Analysis, edition for OLAP Administrator Guide

This guide contains detailed information that is useful to a system administrator when installing, configuring, and administering Analysis.

SAP BusinessObjects Analysis, edition for OLAP User Guide

This guide contains the conceptual information, procedures, and reference material required to use Analysis.

SAP BusinessObjects Analysis, edition for OLAP Online Help

The online help is optimized to provide quick answers for everyday tasks in Analysis.

📘 Note

SAP BusinessObjects Analysis, edition for Microsoft Office, although related very closely to SAP BusinessObjects Analysis, edition for OLAP, has its own documentation set, including its own user guide and online help.

2.2.2 Who should read this guide?

The documentation system is tailored to the specific needs of the user. This User Guide is intended for data analysts who will use SAP BusinessObjects Analysis to work with OLAP data.

2.3 Getting started

To start working with Analysis workspaces and analyzing data immediately, see [Getting Started with Analysis \[page 15\]](#). If you're not familiar with OLAP concepts and terminology though, you may want to first read a brief overview of OLAP technology: [Understanding OLAP \[page 181\]](#).

3 Getting Started with Analysis

In SAP BusinessObjects Analysis, edition for OLAP, these are some of the tasks you will perform when you work with your OLAP data:

- [Creating an Analysis workspace \[page 18\]](#)
- [Analyze some data \[page 20\]](#)
- [Add charts and more crosstabs \[page 25\]](#)
- [Save a workspace \[page 28\]](#)

Or, if you want to open and edit an existing workspace, see [Open another Analysis workspace \[page 30\]](#).

Related Information







[Terminology and icons \[page 15\]](#)

[Understanding OLAP \[page 181\]](#)

3.1 Terminology and icons

Before you read any further in the documentation, it would be useful to understand some basic OLAP and Analysis terminology.

Icons used in Analysis

	dimension
	measures or key figures dimension
	display attribute group
	favorite filter
	hierarchy (Default hierarchies are shown in bold.)
	hierarchy level



single measure



individual display attribute (Default attributes are shown in bold.)

Terms used in Analysis

cube	A multi-dimensional or OLAP database in which data is summarized, consolidated, and stored in dimensions, each representing information such as customer, or product line.
dimension	A collection of hierarchies, or a collection of measures.
<div>  Note The use of this term differs from SAP BW terminology. In SAP BW, collections of hierarchies or measures are known as characteristics. Groups of characteristics are called dimensions. </div>	
hierarchy	A collection of related data members, usually organized in a hierarchical structure. For example, in a <Geography> hierarchy, countries would comprise one level in the hierarchy, and cities would comprise a lower level.
member	<p>A base unit of data, representing an entity in a multi-dimensional OLAP database. For example, in a <Geography> hierarchy, some members could be <Antarctica>, <Stockholm>, and <Tibet>.</p> <p>A member in a hierarchy can have parent and child members. <Sweden> would be the parent member of <Stockholm>.</p> <p>Members are represented in a crosstab by columns and rows, and in a chart by pie slices, risers, lines, or other visualizations.</p>
measures dimension	A dimension that represents the actual data; that is, the numbers. For example, a measures dimension could contain measures such as <Sales>, <Cost>, and <Profit>.
fact dimension	A dimension that represents a characteristic of the data and not the data itself. For example, <Customers> or <Products> could be fact dimensions.
attribute, or display attribute	A property of a member, which provides an alternate way of categorizing the member. For example, attributes for a <Product> hierarchy might include color, manufacturer name, case size, and country of origin.
workspace	An Analysis data-analysis document.
analysis	<p>A specific subset of OLAP data. May contain hierarchies, measures, and filters, as well as visual highlighting and user-defined calculations.</p> <p>For more information about analyses, see Analyses and visual components explained [page 33].</p>

analysis view	<p>A saved navigation state of an analysis. The saved information includes applied filters, hierarchies, and available metadata. An analysis view can be shared among applications such as SAP BusinessObjects Analysis (both the edition for OLAP and the edition for Microsoft Office), SAP Crystal Reports, and SAP BusinessObjects Web Intelligence.</p> <p>For more information about analysis views, see Using Analyses in Other SAP BusinessObjects Applications [page 154].</p>
data source	<p>An OLAP cube or query. Typically, data sources are located on remote servers. When you add a data source to your workspace, your workspace can access the data within that cube or query.</p> <p>For more information about data sources, see Connecting to OLAP Data Sources [page 147].</p>
analysis window	The main window in Analysis, containing your crosstab and chart components.
crosstab component	A two-dimensional table object that you add to the analysis window to begin analyzing your data.
chart component	A bar, line, or other type of chart object that you add to the analysis window to visualize your data.
task panel	<p>The panel at the left side of the Analysis screen, containing the Data, Properties, and Outline panels.</p> <p>The task panel also displays task-specific panels such as the Calculation, Filter, and Conditional Formatting panels.</p> <p>The task panel can be hidden to maximize the analysis window size, and automatically appears when required; for example, when adding a calculation.</p> <ul style="list-style-type: none"> • The Data panel is used to add or remove data sources from the analysis. It also contains the metadata explorer, which you use to perform navigation functions such as adding a hierarchy to the rows or columns, adding a background filter (sometimes called a “slice”), or adding a favorite grouping. • The Properties panel displays configurable properties for the selected component; for example, column width, or chart style. • The Outline panel provides an overview of the current workspace, which can be useful when the workspace contains many sheets. It can also be used to quickly switch to another analysis in the workspace, and to remove any superfluous analyses.
metadata explorer	The area within the Data panel that displays the metadata (measures, dimensions, and hierarchies) contained in a data source.
Layout panel	<p>The panel to the left of the analysis window, containing the definition of the selected analysis. You can drag hierarchies and measures into the Layout panel. You can also perform navigational operations on the hierarchies and measures in the Layout panel, including filtering, re-ordering, and swapping objects.</p> <p>The Layout panel duplicates functionality that is available on the crosstab or chart, but the Layout panel also indicates the members that are part of the background filter.</p> <p>The Layout panel can be hidden to maximize the analysis window size.</p>

background filter	<p>A computer monitor can display only two spatial dimensions, but in Analysis, you can work with many data dimensions simultaneously. You place the dimensions and hierarchies that you want to actively analyze on the rows and columns of a crosstab, but you can also narrow the scope of your analysis by selecting members of other hierarchies to filter the crosstab data. These unseen hierarchies represent background filters.</p> <p>For example, if your data cube contains the three hierarchies <Product>, <Market>, and <Year>, and you want to analyze how your products performed in all markets, but only in the year 2010, you could use the <Year> hierarchy as a background filter, selecting only the <2010> member from the <Year> hierarchy. Then only the <Product> and <Market> hierarchies would be shown on the crosstab's view axes for analysis.</p>
header, or member header	The first cell of a member row or column in a crosstab. The member header contains the member text or key.
axis	Any of the spatial axes on an Analysis crosstab or chart component. For example, a crosstab appears as a two-dimensional table, similar to an Excel spreadsheet. The crosstab has two "view" axes, similar to Excel's vertical and horizontal axes. The two view axes are called the row axis and column axis.
sheet	<p>Any of the screen pages of an Analysis workspace.</p> <p>New workspaces contain three sheets, but a workspace can contain any number of sheets. An analysis can be added to any sheet, and an existing analysis can be moved from one sheet to another. New sheets can be added, and sheets can be renamed or deleted.</p> <p>Sheets are useful for categorizing analyses. For example, the first sheet could contain four summary charts, with other sheets containing details of each analysis.</p>

Related Information

[Understanding OLAP \[page 181\]](#)

[Creating an Analysis workspace \[page 18\]](#)

[Analyze some data \[page 20\]](#)

[Add charts and more crosstabs \[page 25\]](#)

[Save a workspace \[page 28\]](#)

[Open another Analysis workspace \[page 30\]](#)

3.2 Creating an Analysis workspace

Analysis workspaces provide an intuitive interface for viewing and studying data cubes.

An Analysis workspace is an interactive document, similar to an Excel workbook, that allows you to connect to and analyze OLAP data. The data is visualized in crosstab and chart components that you add to the sheets in the workspace. You can add up to four components per sheet, and there is no limit to the number of sheets.

Note

To create a workspace, you need the “Create Analysis Workspace” right. If you do not have the right, please refer to the *SAP BusinessObjects Analysis, edition for OLAP Administrator's Guide* or contact your administrator.

Related Information


[Workspace reference \[page 184\]](#)

[To create an Analysis workspace from the BI launch pad \[page 19\]](#)

3.2.1 To create an Analysis workspace from the BI launch pad

1. Start the BI launch pad and log on.




For information about logging on to the BI launch pad, see the *BI Launch Pad User Guide*.

2.  In the *My Applications* area, click the *Analysis, edition for OLAP* icon.

The *Open Data Source* dialog box appears, showing all data sources that are available for you to access data from. Analysis also creates an empty workspace, containing an undefined analysis.

Note

If no data sources have been defined, you will not be able to add any data to the workspace. Your system administrator must define data sources before you can analyze data with Analysis.

3. Select a data source from the list. If you know the name of the data source, enter the name of the data source in the *Find* search bar.
 -  If you have selected a cube, click *OK* to add it to your workspace.
 -  If you have selected a query, click *OK*
 -  If you have selected a system, click *Next* to see the cubes and queries available from that system. Select a cube or query, or click the *Find* tab to find a cube or query, and then click *OK* to add the data source to your workspace.
4. If the data source requires authentication, type your credentials in the logon dialog box and click *OK*.
5. If you selected an SAP BW or SAP HANA data source that contains prompts, the *Prompts* dialog box opens. Select values for the prompts.

For more information about prompts, see [Prompts for SAP BW and SAP HANA data sources \[page 162\]](#).

If authentication succeeds, the data source appears in the list at the top of the Data panel, and the metadata explorer displays the data objects (metadata) contained in the data source.

If authentication fails, first verify that you entered your credentials correctly. If authentication continues to fail, contact your system administrator. Your credentials may not be set up properly in the Central Management Console, or the OLAP server may be offline.

Related Information

[Creating an Analysis workspace \[page 18\]](#)

[To open an existing Analysis workspace \[page 31\]](#)

[Terminology and icons \[page 15\]](#)

[Analyze some data \[page 20\]](#)

[Add charts and more crosstabs \[page 25\]](#)

[Save a workspace \[page 28\]](#)

[Open another Analysis workspace \[page 30\]](#)

[Connecting to OLAP Data Sources \[page 147\]](#)

3.3 Analyze some data

Once you have created a workspace and connected a data source, your next step is to define an analysis and begin working with your data in the analysis window.

An analysis is a specific subset of data from the OLAP cube. You create an analysis by adding OLAP data to the crosstab, and then manipulating the data; for example, by sorting and filtering.

- [Add data to the crosstab \[page 21\]](#)

The following tasks introduce some of the analysis features available in Analysis. You can choose to perform or omit each task, perform the tasks in any order, and experiment with the different options available in each task:

- [Remove unwanted members \[page 21\]](#)
- [Sort the data \[page 21\]](#)
- [Filter the data \[page 22\]](#)
- [Apply conditional formatting \(exception highlighting\) \[page 23\]](#)
- [Add a calculation \[page 24\]](#)

Related Information

[Analyses \[page 33\]](#)

[Terminology and icons \[page 15\]](#)

[Creating an Analysis workspace \[page 18\]](#)

[Add charts and more crosstabs \[page 25\]](#)

[Save a workspace \[page 28\]](#)


[Open another Analysis workspace \[page 30\]](#)

3.3.1 Add data to the crosstab

The first step in defining an analysis is to add data to the crosstab. Because data is represented by dimensions and hierarchies, you populate a crosstab with data by adding hierarchies.

1. Click a hierarchy on the *Data* panel to select it.

If necessary, expand a dimension to reveal its hierarchies.

2.  Click the *Add to Columns* button to add the selected hierarchy to the columns on the crosstab.

Alternatively, you can drag the hierarchy to the *Columns* area in the *Layout* panel, or to the *Drop Columns* area on the crosstab.

3. Repeat those steps to add more hierarchies to the crosstab.



In addition to the columns, you can add hierarchies to the rows or to the background filter, using the *Add to Rows* and *Add to Background Filter* buttons.

Note

The crosstab displays numbers only after you add measures.

4. Explore the members within the hierarchies by expanding the hierarchies.

3.3.2 Remove unwanted members

You can remove or filter members so that you can focus on the data that most interests you.

1. On the crosstab, right-click a member and select *Remove* to remove that member from your analysis.

If you later want to add the member back to the crosstab, you can add it by using the *Filter* panel.

2. On the *Layout* panel, double-click one of the hierarchies.

The *Filter* panel opens. The panel displays the contents of the hierarchy you chose, with all members initially selected.

3. Select only the members that you want to include in your analysis.
4. Click *OK* to update the crosstab.

Related Information

[Filtering Data \[page 64\]](#)

3.3.3 Sort the data

Right-click a member header, point to *Sort*, and select *Ascending* or *Descending*.

Related Information

[Sorting \[page 81\]](#)

3.3.4 Filter the data

Filtering is one of the central workflows in Analysis. Filtering is the action of selecting only the data that is important to you. For example, if you were interested in the poorest-performing sales regions for your company's ice hockey equipment, you might select countries such as Kenya and Indonesia.

1. Right-click a hierarchy on the [Layout](#) panel, point to [Filter](#), and then select [By measure](#).

Note

Filtering by measure is not available with SAP HANA data sources.

For example, if your data source contains ice hockey equipment sales figures, you might want to select the [<Geography>](#) hierarchy to choose Kenya and Indonesia.

On the [Filter](#) panel, you define the conditions for your filter. You can define a filter with a single condition, such as **Less than 1000**, or a complex filter containing multiple conditions.

2. If the hierarchy you selected contains multiple levels, choose a hierarchy level to filter.

A hierarchy can have several levels of members, but a filter is applied to a single level within the hierarchy. For example, if the [<Geography>](#) hierarchy contains [<countries>](#) at level 1, [<states>](#) at level 2, and [<cities>](#) at level 3, you would choose the [<countries>](#) level to select Kenya and Indonesia.

3. Choose a measure to filter on.

For example, if you want to include countries with low sales numbers, you could select a measure such as [<Sales Orders>](#).

4. Define the condition by adding an operator and operand.

For example, you can define a condition to be **Bottom 10** by selecting the [Bottom N](#) operator and typing **10** as the operand. Then, only those ten countries with the lowest numbers of sales orders will be included in the analysis.

5. Click [Add](#) to add the condition to your filter.
6. Add more filter conditions until you have finished defining your filter.
7. If you created multiple conditions, select [AND](#) or [OR](#), depending on how you want your conditions to affect the filtered data.
8. Click [OK](#).

The crosstab display is updated to show you the filtered data.

Note

Filtering by defining filter conditions is called “filtering by measure”. Filtering by selecting and removing individual members from a list is called “filtering by member”, as described in the section [Remove unwanted members \[page 21\]](#). You can filter by member by double-clicking a hierarchy in the [Layout](#) panel.

Related Information

[Filtering Data \[page 64\]](#)

3.3.5 Apply conditional formatting (exception highlighting)

You may want to highlight data that matches some specified criteria. For example, you could highlight negative numbers by applying a red background color to the cells. To do this, you apply conditional formatting.

1. Select a member header, click the [Analyze](#) toolbar tab, and then click [Conditional Formatting](#).
Alternatively, you can right-click a member header, point to [Conditional Formatting](#), and click [New](#).
2. On the [Conditional Formatting](#) panel, type a name to identify the formatting that you are applying, or accept the default name.
3. Choose a measure to base the formatting on.
For example, if you want to highlight any negative numbers in your inventory, you would select the [<Inventory>](#) measure.
4. Choose a formatting type.
You can add a background color to the highlighted cells, or change the text color in those cells, or add a symbol to those cells.
5. When you have defined scaling for a measure format and you want to apply the conditional formatting to the measure:
 - **After** the scaling, select the [Evaluate after calculations and scaling](#) checkbox.
 - **Before** the scaling, leave the checkbox unselected.
6. Choose a color or symbol.
7. Select the conditional operator and the threshold value.
For example, to highlight any negative numbers, you would select the [Less Than](#) operator and type **0** (zero) for the value.
8. Click [Add](#) and then [OK](#) to add the formatting.

Note

If the analysis is based on an SAP BW data source, more options are available in the [Display](#) drawer.

Related Information

[Conditional Formatting \(Highlighting Exceptions\) \[page 85\]](#)

[To apply conditional formatting in SAP BW data sources \[page 88\]](#)

3.3.6 Add a calculation

1. Select two member headers from a measures dimension.

To select multiple member headers, hold down the `Ctrl` key as you click member headers.

Note

Members of a measures dimension are called “measure members” or simply “measures”.

2. Click the arrow beside the *Calculations* button.
3. Choose one of the simple calculations: *Add*, *Subtract*, *Multiply*, or *Divide*.

The calculation is added to the crosstab.

Note

When you use the *Subtract* and *Divide* calculations, the calculation is defined based on the order in which you selected the members.

Tip

The calculation equation appears in a tooltip when you point to the calculation header.

4. Select any measure member header.
5. On the *Analyze* tab, click *Calculations*.
6. On the *Calculation* panel, type a name to identify the calculation that you are adding.
7. Select a hierarchy to base the calculation on.

For example, select *Measures*.

8. Choose where you want to insert your calculation.
9. Define the calculation using the *Function* and *Add Member* buttons.

For example, you could add a simple division calculation like this:

- a. Click *Function* to add an operator.
- b. Choose the *DIVISION* operator.
- c. Select the **operand1** text, including the quotation marks.
- d. Click *Add Member* to select the first operand for the division calculation.
- e. Select the **operand2** text.
- f. Click *Add Member* again to select the second operand.

10. Click *Validate* to verify that you have defined your calculation correctly.

If validation fails, the *Status* field explains why it failed. Correct any errors in your calculation, and click *Validate* again.

11. If the validation is successful, click *OK* to add the calculation to the crosstab.

Related Information

[Calculations \[page 90\]](#)

3.4 Add charts and more crosstabs

In Analysis, you'll typically create a workspace and then begin analyzing data in a crosstab. However, you may soon discover that using a crosstab, while vital to your analysis, can be a rather abstract way of looking at business performance, and can lack visual impact. Adding one or more charts to your analysis can greatly enhance the impact of your analysis, making it more interesting and easier to understand.

You can also add more crosstab components to the analysis, to compare different arrangements of the same data. (If you want to compare different data, see [Adding analyses \[page 37\]](#).)

You can place up to four components on a sheet, and you can add more sheets to your workspace as required.

Related Information

[Overview of Analysis charts \[page 43\]](#)

[Charts reference \[page 215\]](#)

[Crosstabs \[page 40\]](#)

[Crosstab component reference \[page 208\]](#)

3.4.1 Adding a chart or crosstab to the sheet

Once you've created a workspace and defined an analysis on the crosstab, you can add a chart to the sheet simply by clicking any chart button on the *Insert* tab. If there are multiple analyses on the sheet, the added chart is linked to the selected analysis. Typically, the chart is linked to an analysis defined in a crosstab, and therefore displays the same data as the crosstab.

The original component, in this case a crosstab, represents the main analysis, while the added chart represents a sub-analysis, linked to the main analysis. Changes that you make to the main analysis are reflected in the sub-analysis, but changes that you make directly to the sub-analysis are not reflected in the main analysis.

You can add another crosstab to a sheet as a sub-analysis, if you want to explore an alternate arrangement of your data. Or, you can add a crosstab to a sheet as a new analysis, if you want to analyze multiple sets of data.

You can also copy an existing component and make changes to the copy.

Focused analysis

You can set an analysis to focused analysis mode, so that if you select members in the main analysis, the sub-analysis components display only the selected members. This feature allows you to temporarily focus on different parts of your analysis without having to redefine the analysis many times.

For example, if you are analyzing worldwide sales figures for snowboard equipment, you might find an interesting anomaly in the figures from Saudi Arabia. You can then add a chart, turn on focused analysis

mode, and select just the data for Saudi Arabia in your analysis. The chart will then show just the Saudi Arabia data, while your crosstab still shows worldwide data.

If you don't want the added chart or crosstab component to be linked with the main analysis, you can unlink the component from the main analysis to create a new analysis. Using the preceding example, you might decide that the Saudi Arabia situation deserves special attention. You could then unlink the chart from the main analysis, and continue analyzing both worldwide snowboard sales (in the original crosstab), as well as sales within Saudi Arabia.

Related Information

[Terminology and icons \[page 15\]](#)

[Creating an Analysis workspace \[page 18\]](#)

[Analyze some data \[page 20\]](#)

[Save a workspace \[page 28\]](#)

[Open another Analysis workspace \[page 30\]](#)

[Resizing and moving components \[page 122\]](#)

[Sub-analyses \[page 61\]](#)

[Unlinking a sub-analysis \[page 63\]](#)

[Adding analyses \[page 37\]](#)

[Copying a component \[page 123\]](#)






3.4.1.1 To add a chart to a sheet

1. In the analysis window, select the component that you want the chart to be linked to.
2. Click one of the chart buttons on the *Insert* tab.

The chart is added as a sub-analysis, linked to the component that you selected. The added chart is placed below or to the right of existing components on the sheet.

Note

Some of the chart buttons represent families of charts. You can click the button to add the default chart type from that family to the sheet, or click the arrow beside the button to select from the available chart types within that family.

-  Column chart family
-  Multi line chart
-  Multi pie chart
-  Bar chart family
-  Other charts

Alternatively, you can drag a chart from the *Insert* tab into the analysis window, to the position you select.

Note

If you drag a chart family button to the analysis window, the default type from that chart family is added to the analysis window. You can change the chart type later if you wish.




To enlarge the view of a component when there are multiple components on a sheet, you can maximize and restore the component using the Maximize/Restore button in the component's title bar.

Related Information

[Resizing and moving components \[page 122\]](#)

3.4.1.2 To add a crosstab to a sheet as a sub-analysis

This procedure describes how to add a crosstab as a sub-analysis. To add a crosstab as a new analysis, see [Adding analyses \[page 37\]](#).

1. In the analysis window, select the component that you want the crosstab to be linked to.
2.  On the *Insert* tab, click the arrow beside the *Crosstab* button and select *Insert a sub-analysis*.



The crosstab is added as a sub-analysis, linked to the component that you selected. The added crosstab is placed below or to the right of existing components on the sheet.

Alternatively, you can drag a crosstab from the *Insert* tab into the analysis window, to the position you select.



To enlarge the view of a component when there are multiple components on a sheet, you can maximize and restore the component using the Maximize/Restore button in the component's title bar.

3.4.1.3 To copy an existing crosstab or chart

1. In the analysis window, select the crosstab or chart that you want to copy by clicking anywhere within the component.
2.  On the toolbar, click the *Copy* button.
3.  If you want to add the copied component to the same sheet, click the *Paste* button.

Or, if you want to add the copied component to a different sheet, first select the other sheet tab, and then click the *Paste* button.

The copy is added to the sheet, below or to the right of existing components.

3.4.1.4 To delete a component from the sheet



Click the [Delete](#) button on the right side of the component's title bar.

3.5 Save a workspace

Analysis saves its workspaces to the BI platform repository. From the repository, you can open your workspaces through the web, from any machine that has an internet connection.

You can choose to save your changes to the existing workspace, or to save the modified workspace as a new workspace in the repository.

Whenever a workspace contains unsaved modifications, an asterisk (*) appears before its name to indicate a save may be required.

Note

To save a workspace to the BI platform repository, you must have sufficient rights. See your system administrator if you are not sure whether you have such rights.

If you leave your workspace idle, the workspace is automatically saved to your Favorites folder as an “autosave” file, before your session terminates. Typically, a session is terminated after approximately 20 minutes of inactivity, unless your system administrator has set the timeout duration to a different value.

You can also set the default behavior for [Workspace AutoSave](#) feature from the [Preferences](#) page.

Note

Because the autosave workspace is overwritten every time a workspace is automatically saved, you should manually save workspaces that you want to keep, with unique filenames.

In addition to saving workspaces, you can also export data from workspaces to Microsoft Excel, to a PDF file, or to a comma-separated values (CSV) file.

Related Information

[Terminology and icons \[page 15\]](#)

[Creating an Analysis workspace \[page 18\]](#)

[Analyze some data \[page 20\]](#)

[Add charts and more crosstabs \[page 25\]](#)

[Open another Analysis workspace \[page 30\]](#)

3.5.1 To save a newly created workspace



1. On the toolbar, click [Save](#).
2. In the folder tree, browse to the folder where you want to save your workspace.
3. Type a filename for your workspace.
4. Click [Save](#).

3.5.2 To save your changes as a new workspace



1. On the toolbar, click the arrow beside the [Save](#) button, and choose [Save As](#).
2. In the folder tree, browse to the folder where you want to save your workspace.
3. Type a filename for your workspace.
4. Click [Save](#).

3.5.3 To save changes to your existing workspace



On the toolbar, click [Save](#).

Note

- When you save existing workspace in the current folder, [Confirm](#) dialog does not prompt the following message - *A file with that name already exists. Would you like to overwrite this file?*
- The overwrite prompt message displays when you perform a [Save As](#) action and you select the same workspace or you type the name of an existing workspace.

Related Information

[Sending an Analysis workspace to another user \[page 136\]](#)

3.5.4 Automatically saved workspaces

When your workspace has been idle for several minutes, a copy of the workspace is automatically saved to your Favorites folder before your session terminates.

If you then return to your session before the session is terminated, the autosave cycle is reset, and your workspace is autosaved again the next time your workspace becomes idle for several minutes.

You can also set the default behavior for [Workspace AutoSave](#) feature from the [Preferences](#) page.

To set the default behavior for the workspace, perform these steps:

1. Open the [Preferences](#) page in the SAP BusinessObjects BI launch pad.
2. Select [Analysis, edition for OLAP](#).
3. Select the suitable [Workspace AutoSave](#) radio button.

Option	Description
Disabled	Autosave option is disabled for the OLAP workspace.
Enabled for new Workspaces only	Autosave option is enabled for new OLAP workspaces only.
Enabled for new and existing Workspaces	Autosave option is enabled for new and existing OLAP workspaces.

4. Log off the BI launch pad, and log back on.

3.6 Open another Analysis workspace

When you've finished with your current workspace, you can start a new workspace without returning to the BI launch pad.

Or, if you've already saved workspaces to the BI platform repository, you can open any of these workspaces for further editing. If other analysts have saved workspaces to public folders in the repository, you can open these workspaces as well.

Related Information

[Terminology and icons \[page 15\]](#)

[Creating an Analysis workspace \[page 18\]](#)

[Analyze some data \[page 20\]](#)

[Add charts and more crosstabs \[page 25\]](#)

[To save a newly created workspace \[page 29\]](#)

3.6.1 To create a new Analysis workspace from within Analysis



1. On the toolbar, click the [New Workspace](#) button.
2. Confirm that you want to create a new workspace, losing any unsaved changes in your current workspace. Just as when you create a new workspace from the BI launch pad, the [Open Data Source](#) dialog box is displayed, showing all data sources that are available for you to access data from.

Related Information

[Creating an Analysis workspace \[page 18\]](#)

3.6.2 To open an existing Analysis workspace



1. On the toolbar, click the [Open](#) button.
2. Select a workspace from the folder list, and click [Open](#).

You can also open an existing workspace from the [Documents](#) tab in the BI launch pad.

If none of the data sources used on the current sheet of the workspace require you to enter your authentication credentials, the workspace opens at the current sheet.

If any of the data sources used on the current sheet require your authentication credentials, you are prompted for your logon credentials. Type your credentials and click OK to log on to each data source. Or, if you have more than one data source and you want to log on with the same credentials for all data sources on the current sheet, select "Apply these credentials to all connections on the same sheet" before you click OK.

If authentication fails, see [Disabled data source connections \[page 151\]](#), or contact your system administrator. Your credentials may not be set up properly in the Central Management Console, or the OLAP server may be offline.

Note

When you navigate to other sheets in the workspace, you may be prompted for your credentials again if components on those sheets are linked to other data sources that require authentication.

3. If the workspace contains SAP BW or SAP HANA data sources that contain prompts, the [Prompts](#) dialog box opens. Select values for the prompts.
For more information about prompts, see [Prompts for SAP BW and SAP HANA data sources \[page 162\]](#).

3.6.3 To display a warning pop-up when a hierarchy member is missing from the cube

In the BI launch pad [Preferences](#), you can choose whether you want to be warned when some objects that are used in an existing query have been modified or removed from the cube.

1. In the BI launch pad toolbar, click [Preferences](#) to open the [Preferences](#) dialog box.
2. Select [Analysis, edition for OLAP](#) in the Preferences list.
3. Select the [Display warning when object missing from cube](#) check box.
4. Click [Save and Close](#).

These changes take effect the next time you open an Analysis, edition for OLAP document.

4 Analyses

In Analysis, you connect to a data source, and then use the available analysis features to obtain useful information from your data.

You define an analysis by populating a crosstab with data. Start by choosing hierarchies to add to the row and column axes of the crosstab, and to the background filter. Then you can expand and refine the analysis using the many tools that Analysis provides.

You can also define an analysis using a chart component if you prefer.

Related Information

[Adding data to a chart \[page 45\]](#)

[Crosstab component reference \[page 208\]](#)

[Charts reference \[page 215\]](#)

4.1 Analyses and visual components explained

Analyses

An analysis defines a specific subset of data from the OLAP cube that you want to analyze. This subset of data is often referred to as a "slice" because it represents a two-dimensional "slice" of a multi-dimensional cube. For example, if you want to analyze data in a Sales cube, you could define an analysis for Store Costs by Year.

To define an analysis, you specify the measures and hierarchies that you want to include. You do this by adding the hierarchies or members that you want to analyze to the crosstab or chart component. In the preceding example, `<Store Costs>` and `<Year>` are the two hierarchies that you would use when defining this analysis.

Although Analysis workspaces can contain multiple sheets, an analysis is valid only on a single sheet. Therefore, an analysis on sheet 1 does not affect the contents of sheet 2.

It is important to understand that the analysis stores the structure and values of the data but the crosstab and chart visual components display the data.

Visual components

You can display an analysis in different types of visual components: for example a crosstab or a horizontal bar chart.

A crosstab and chart belonging to the same analysis can be thought of as linked because they display the same set of cube data. If you modify the analysis in any way on one visual component, the equivalent action is performed on any of the linked components. For example, if you expand a country member to display data for its provinces on the crosstab component, any linked charts also update to display data for the provinces.

When you add a new crosstab or chart component to a sheet as a sub-analysis, the added component is linked to the active analysis. You can also add a crosstab as a new analysis.

Once hierarchies or members have been added to a component, the analysis and visual components are fixed to the data source. You cannot add members from a different data source into this component.

Related Information




[Sub-analyses \[page 61\]](#)

[Understanding OLAP \[page 181\]](#)

4.2 To define a new analysis

1. On the [Data](#) panel, select the hierarchy that you want to add to the first axis in your crosstab.
You can also select just one or more hierarchy levels, instead of the entire hierarchy.
2. Drag the hierarchy from the Data panel to the [Layout](#) panel:
 - To add the selected hierarchy to the crosstab's rows, drag it to the [Rows](#) area.
 - To add the selected hierarchy to the crosstab's columns, drag it to the [Columns](#) area.
 - To add the hierarchy to the crosstab's background filter, drag it to the [Background](#) filter area.
 - If you are placing members of a measures dimension onto a crosstab, you can also drag them to the main grid of the crosstab component.

You can also use the buttons above the metadata explorer on the Data panel to populate your crosstab. First, select a component in the analysis window, and then click one of these buttons to add the hierarchies to the crosstab:

-  Click [Add to Rows](#) to add the selected hierarchy to the rows on the crosstab.
-  Click [Add to Columns](#) to add the selected hierarchy to the columns on the crosstab.
-  Click [Add to Background Filter](#) to add the selected hierarchy to the background filter.

3. Repeat step 2 for the other crosstab axes.

→ Tip

You may want to turn off automatic layout updating while you define your analysis. When automatic updating is turned on, the crosstab and chart components update as you add each hierarchy to the [Layout](#) panel, causing short delays. To turn off automatic updating, click [Auto Update](#) on the toolbar.

Note

You cannot add members from the same hierarchy to two axes.

Note

When you place a hierarchy on an axis, the default member is automatically selected.

Note

With SAP BW data sources, hierarchies that belong to the same dimension are mutually exclusive. For example, consider a cube that contains a dimension `<Customer>` that contains two hierarchies: `<Country_1>` and `<Country_2>`. You cannot specify `<Country_1>` on the row axis and `<Country_2>` in the background filter in the same analysis.

4.3 Modifying analyses

You can modify an analysis in several ways:

- Apply or modify filtering on the hierarchies.
- Apply sorting, conditional formatting, and other functions from the toolbar.
- Add new hierarchies from the same data source to the [Layout](#) panel, or move hierarchies between axes, or remove hierarchies from the [Layout](#) panel.

Related Information

[Filtering by member \[page 69\]](#)

[Toolbar reference \[page 195\]](#)

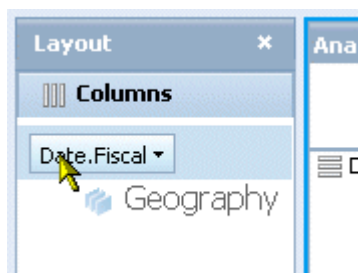
[Expanding and collapsing parent members \[page 106\]](#)

4.3.1 To modify an analysis using the Layout panel

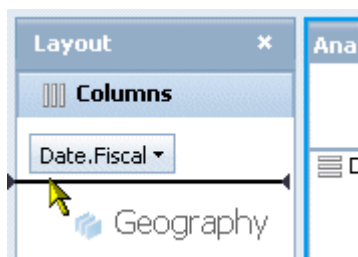
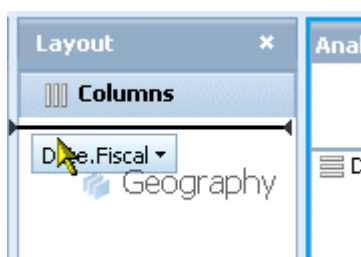
1. On the [Data](#) panel, select the hierarchy that you want to add to the first axis in your crosstab or chart.
You can also select just one or more hierarchy levels, instead of the entire hierarchy.
2. Drag the hierarchy from the Data panel to the appropriate axis in the [Layout](#) panel.

You can choose to replace the existing hierarchy, or nest the new hierarchy with the existing one.




To replace the hierarchy, drag the selected hierarchy to the existing hierarchy; the existing hierarchy is highlighted. When you release the mouse button, the selected hierarchy replaces the existing hierarchy in the crosstab or chart.



To nest the selected hierarchy with the existing hierarchy in the crosstab, drag the selected hierarchy above or below the existing hierarchy. This technique is used to create complex analyses. For more information, see [Nested hierarchies to create complex analyses \[page 38\]](#).



You can also use the buttons above the metadata explorer area on the Data panel to populate your crosstab. First, select a component in the analysis window, and then click one of these buttons to add the hierarchy to the crosstab:

-  *Add to Rows*
-  *Add to Columns*
-  *Add to Background Filter*

3. Repeat step 2 for the other crosstab or chart axes.

Note

You cannot add members from the same hierarchy to two axes.

Note

When you place a hierarchy on a row or column axis, or in the background filter, the default member is automatically selected. With Microsoft Analysis Services, the default member can be set on the

OLAP server. For other OLAP providers, the default member is the first member on the top level of the hierarchy.

Note

If you add a hierarchy to an analysis that already contains that same hierarchy, any sorts, filters, and conditional formats that were previously applied to the hierarchy are removed.

4.4 Adding analyses

When you create a workspace and connect a data source, one analysis is created, linked to that data source. For some analysis purposes, one analysis is all you'll need, but in some cases, you may need to add analyses; for example, if you want to compare two different sets of data on one sheet.

Analyses can be added in a few ways:

- Add a crosstab to the sheet. By default, adding a new crosstab creates a new analysis. The new analysis is connected to the data source that is currently selected on the *Data* panel.
- Add a new data source to the workspace, and then add a crosstab to the sheet. The new analysis is connected to the new data source.
- Add another crosstab or chart component to the sheet as a sub-analysis. The sub-analysis is linked to the original analysis, but you can unlink the new component from the original analysis, creating a separate analysis.

After adding analyses, you define those analyses by adding hierarchies and members to crosstabs or charts.

Related Information

[Sub-analyses \[page 61\]](#)

[Unlinking a sub-analysis \[page 63\]](#)

4.4.1 To add an analysis to a sheet



On the toolbar, select *Insert*, and then click the *Insert Crosstab* button to add an analysis to the current sheet.

The new analysis is connected to the currently selected data source, and is added to the *Outline* panel with an automatically assigned name.

Note

You can also add the crosstab as a sub-analysis, by clicking the arrow beside the *Insert Crosstab* button.

4.5 Nested hierarchies to create complex analyses

OLAP cubes can contain many hierarchies. When you want to include data from multiple hierarchies in your analyses, you nest them.

“Nested hierarchies” means placing two or more hierarchies on the same axis. For example, you may want to view sales figures over different fiscal years, from different geographical locations. You could nest the `<Date.Fiscal>` and `<Geography>` hierarchies on one axis.


Related Information

[Nested hierarchies \[page 110\]](#)

4.6 Deleting analyses

You can delete a disused analysis and all of its associated chart and crosstab components.

4.6.1 To delete an analysis

1. Select the analysis on the [Outline](#) panel.
2.  On the [Outline](#) panel, click [Delete](#).

4.7 Automatic layout updating

By default, all crosstab and chart components associated with an analysis automatically update whenever you make changes to the layout. For example, if you add a hierarchy to the rows, or apply a filter, a crosstab associated with that analysis automatically updates to show the added hierarchy and the applied filter.

Automatic updating can cause momentary delays, however, as data is retrieved from the data source. If you are defining a complex analysis involving many hierarchies and filters, you may want to temporarily disable the automatic layout updating. Then when your analysis definition is complete, you can enable the automatic updating as you begin to analyze the data.

4.7.1 To toggle automatic layout updating

1. Select a crosstab or chart component.
2. On the toolbar, click [Auto Update](#).
All crosstab and chart components associated with the analysis are temporarily disabled.

5 Crosstabs

This section explains how to add and use crosstabs.

5.1 Overview of Analysis crosstabs

The crosstab component is a grid, similar to a spreadsheet, that displays data from a cube. You will usually perform most of your data-analysis tasks using crosstabs. For example, you can sort data in a crosstab, add calculations, add conditional formatting, and filter out data that is irrelevant to your analysis.

This diagram illustrates the elements of an Analysis crosstab:

The diagram shows a screenshot of an SAP Analysis crosstab window titled 'Analysis 1'. The window is divided into two main sections. On the left is a 'Product Model Catalog' pane, and on the right is a 'Measures' grid. Red circles with numbers 1 through 4 point to specific elements: 1 points to the 'Product Model Catalog' pane, 2 points to the 'Measures' header row, 3 points to the 'All Products' row member, and 4 points to the 'Internet Sales Amount' column member. The 'Measures' grid contains four columns: 'Internet Sales Amount', 'Internet Order Quantity', 'Internet Extended Amount', and 'Internet Tax Amount'. The 'Product Model Catalog' pane shows a hierarchy with 'All Products' expanded, showing sub-members: 'Accessories', 'Bikes', 'Clothing', and 'Components'. The data table below shows values for these members across the four measures.

	Internet Sales Amount	Internet Order Quantity	Internet Extended Amount	Internet Tax Amount
All Products	\$ 29,358,677.22	60,398	\$ 29,358,677.22	\$ 2,348,694.23
Accessories	\$ 700,759.96	36,092	\$ 700,759.96	\$ 56,060.80
Bikes	\$ 28,318,144.65	15,205	\$ 28,318,144.65	\$ 2,265,451.62
Clothing	\$ 339,772.61	9,101	\$ 339,772.61	\$ 27,181.81
Components				

1. Row hierarchy or dimension
2. Column hierarchy or dimension
3. Row members
4. Column members

The crosstab comprises three axes, although only two can be displayed on the screen.

- Row axis: the vertical axis that displays rows of data.
- Column axis: the horizontal axis that displays columns of data.
- Background filter axis, or slice axis: the axis that is perpendicular to the two-dimensional crosstab display.

Hierarchies that are placed on the row axis are called row hierarchies. Similarly, you also use column hierarchies and background filter hierarchies in your analyses.

With row and column hierarchies, you can see several members simultaneously on the crosstab. With the background filter hierarchy however, you fix a slice of the data in the crosstab at any one time. The member you

select in the background filter hierarchy is called the background filter member or slice member. For example, if [Week](#) is a background filter hierarchy, you can select any week as the background filter member.

With some OLAP providers, for example SAP BW and Microsoft Analysis Services, you can select multiple members of a hierarchy as a background filter. However, you cannot select multiple members of a measures dimension as a background filter.

For all hierarchies in the cube that are not used on the row, column, or background filter axes, the default member is used to generate data in the crosstab. Therefore, you can generate a valid analysis by placing hierarchies on only the row and column axes because the default member is used for all other hierarchies. If you place a hierarchy in the background filter and leave the default member unchanged, the data in the crosstab is also unchanged.

You can also display more than one dimension or hierarchy on a row or column axis; for example, you can place both a [Measures](#) dimension and a [Years](#) hierarchy on the same axis to show data from the [Measures](#) dimension over several years. This is called “nested hierarchies”.

Analysis, edition for OLAP freezes the dimension and measure in the row headers or column headers in the crosstab. This enables you to see the row headers or column headers even though when you scroll to analyze several rows or columns of data.

Related Information

[Adding a crosstab \[page 41\]](#)

[Adding data to a crosstab \[page 42\]](#)

[Analyses \[page 33\]](#)

[Understanding OLAP \[page 181\]](#)

[Task panel reference \[page 187\]](#)

[Nested hierarchies \[page 110\]](#)

5.2 Adding a crosstab

Visual components, such as a crosstab or any of the chart types, are added to the analysis window by using the toolbar. You can add a crosstab by clicking the crosstab button, or by dragging the crosstab button to the analysis window.

Related Information

[Adding data to a crosstab \[page 42\]](#)

[Analyses \[page 33\]](#)

5.2.1 To add a crosstab to the analysis window



Click the *Crosstab* button on the toolbar.

The component is added to the sheet, below or to the right of existing components. You can later reposition or resize the component if you wish.

Alternatively, you can place a crosstab at a specific location in the analysis window by dragging the crosstab button from the toolbar.

Note

Before your crosstab will show any data, you must add a data source to the sheet, and add data to the crosstab.

Related Information

[Connecting to OLAP Data Sources \[page 147\]](#)

[Adding data to a crosstab \[page 42\]](#)

[Resizing and moving components \[page 122\]](#)

5.3 Adding data to a crosstab

When you create a new Analysis workspace, it contains an empty crosstab. To add some data, you add dimensions and hierarchies from the metadata explorer to the crosstab.

Once you've placed at least one measure on the crosstab, the crosstab is populated with data. You can then proceed to perform your analysis.

Related Information

[Add data to the crosstab \[page 21\]](#)

[Adding a crosstab \[page 41\]](#)

[Analyses \[page 33\]](#)

6 Charts

This section explains how you can present your business data visually by using the available chart types.

6.1 Overview of Analysis charts

You can add charts to your workspaces to present your data graphically. Charts can often emphasize irregularities or trends in your data, and help you focus your business analysis on those areas.

Several chart types are available to help you visualize data:

- [Clustered bar and column charts \[page 47\]](#)
- [Stacked bar and column charts \[page 47\]](#)
- [100% stacked bar and column charts \[page 48\]](#)
- [3D column charts \[page 48\]](#)
- [Multi line charts \[page 48\]](#)
- [Multi pie charts \[page 48\]](#)
- [Scatter charts \[page 48\]](#)
- [Box plot charts \[page 49\]](#)
- [Bubble charts \[page 49\]](#)
- [Radar charts \[page 50\]](#)
- [Waterfall charts \[page 50\]](#)

Chart and crosstab components are linked to analyses. A common analysis scenario is to first create a crosstab component, and then add a chart component as a sub-analysis, linked to the main analysis. Both components display the same data, and both components update simultaneously whenever you make changes to either component. This interaction allows you to repeatedly define and refine your analyses, and see the graphical results of your changes in real time.

Or, if you turn on focused analysis, the sub-analysis displays only a subset of the data in the main analysis. For example, you can use a crosstab for your main analysis, and use a chart for the focused sub-analysis. As a result, when you select data in the crosstab, the chart displays only the selected subset of data.

You can also unlink, or disconnect, a chart sub-analysis from its current analysis, converting it to a new, separate analysis.

Charts can be easily customized. You can change the chart type, or change the appearance of the chart to increase clarity. You can also expand data in the chart to examine the data in more detail. Swapping the chart axes can sometimes improve the presentation as well.

This section describes each of the chart types, how to add a chart to a sheet, how to add data to a chart, and how to customize a chart's appearance.

Related Information

[Analyses \[page 33\]](#)

[Sub-analyses \[page 61\]](#)

[Adding a chart \[page 44\]](#)

[Adding data to a chart \[page 45\]](#)

[Chart types \[page 46\]](#)

[Scrolling through charts \[page 52\]](#)

[Customizing charts \[page 54\]](#)

[Formatting chart labels \[page 131\]](#)

6.2 Adding a chart

Visual components, such as a crosstab or any of the chart types, are added to the analysis window by using the toolbar. You can add a chart by clicking a chart button, or in some cases by dragging a chart button to the analysis window. Some chart buttons represent families of individual chart types. For example, the column chart family includes charts such as stacked column and 3D column.

Related Information

[Adding data to a chart \[page 45\]](#)

[Chart types \[page 46\]](#)

[Scrolling through charts \[page 52\]](#)

[Customizing charts \[page 54\]](#)

6.2.1 To add a chart to the analysis window

Click one of the chart buttons on the toolbar.

Note

Some of the chart buttons represent families of charts. You can click the button to add the default chart type from that family to the sheet, or click the arrow beside the button to select from the available chart types within that family.



For example, click the arrow beside the *Bar charts* button to see the list of available bar chart types, and then select one of the types to add it to the analysis window.

The component is added to the sheet, below or to the right of existing components. You can later reposition or resize the component if you wish.

Alternatively, you can place a chart at a specific location in the analysis window by dragging a chart button from the toolbar. The cursor indicates whether or not you can place the chart component at the position of the mouse pointer. When the mouse pointer is inside a valid drop zone, the drop zone is highlighted.

Note

If you drag a chart family button to the analysis window, the default type from that chart family is added to the analysis window. You can change the chart type later if you wish.

Note

Before your chart will show any data, you must add a data source to the sheet, and add data to the chart.

Related Information

[Connecting to OLAP Data Sources \[page 147\]](#)

[Adding data to a chart \[page 45\]](#)

[To change the chart type \[page 52\]](#)

[Resizing and moving components \[page 122\]](#)

6.3 Adding data to a chart

When you add a chart to a sheet, the chart is added as a sub-analysis, linked to the selected analysis. Therefore, the chart is automatically populated with data if the analysis has been previously defined.

For example, if a sheet contains only a single crosstab, and if that crosstab has been used to define an analysis (data has been added to the crosstab), then when you add a new chart to the sheet, the chart is populated with the same data that is in the crosstab.

If you add a chart to a new sheet that contains only an empty crosstab and an undefined analysis, you will need to define the analysis to add data to the chart.

You can also use the chart component to define an analysis.

Related Information

[Adding a chart \[page 44\]](#)

[Analyses \[page 33\]](#)

[Sub-analyses \[page 61\]](#)

[Chart types \[page 46\]](#)

[Scrolling through charts \[page 52\]](#)

[Customizing charts \[page 54\]](#)

6.3.1 Defining an analysis using an empty chart component

If you want to create a sheet that contains only a chart component, you can use an empty chart component to create an analysis, without first having to define the analysis in a crosstab component.

6.3.1.1 To create an analysis using a chart component

1. Ensure that the workspace has at least one data source added to it.
2. In a new sheet or existing sheet, delete all crosstab and chart components.
3. Place a chart component on the empty sheet.
4. In the metadata explorer, select a dimension or hierarchy that you want to add to your chart.
5. Drag the hierarchy into the appropriate area in the *Layout* panel.
6. Repeat steps 4 and 5 until you have placed all the hierarchies you want to analyze into the *Layout* panel.










If the generated analysis is valid, the chart displays the data returned from the analysis.








Related Information

[Analyses \[page 33\]](#)

6.4 Chart types

Several chart types are available to help you visualize your data.

 Column charts		Clustered column chart	Clustered bar and column charts [page 47]
		Stacked column chart	Stacked bar and column charts [page 47]
		100% stacked column chart	100% stacked bar and column charts [page 48]
		3D column chart	3D column charts [page 48]
 Bar charts		Clustered bar chart	Clustered bar and column charts [page 47]
		Stacked bar chart	Stacked bar and column charts [page 47]
		100% stacked bar chart	100% stacked bar and column charts [page 48]

Line charts		Multi line chart	Multi line charts [page 48]
Pie charts		Multi pie chart	Multi pie charts [page 48]
Other charts		Scatter chart	Scatter charts [page 48]
		Bubble chart	Bubble charts [page 49]
		Box plot chart	Box plot charts [page 49]
		Radar chart	Radar charts [page 50]
		Waterfall chart	Waterfall charts [page 50]

Related Information

[Charts reference \[page 215\]](#)

[Adding a chart \[page 44\]](#)

[Adding data to a chart \[page 45\]](#)

[Scrolling through charts \[page 52\]](#)

[Customizing charts \[page 54\]](#)

6.4.1 Bar and column charts

6.4.1.1 Clustered bar and column charts

Clustered bar and column charts show values compared across categories or over time; for example, sales for each region by month. Several values (a "cluster") are shown grouped together in each category or time period.

6.4.1.2 Stacked bar and column charts

Stacked bar and column charts show how related sets of values compare to each other and contribute to a total. Stacked charts are similar to 100% stacked charts except that stacked charts show the absolute contributions of members to a total while 100% stacked charts show the relative contributions of members to a total.

For example, if you create a column chart that illustrates sales per product, you can use a stacked column chart to show data from several years, one year on top of another.

6.4.1.3 100% stacked bar and column charts

100% stacked bar and column charts show visually what percentage a member contributes to a total. 100% stacked charts are similar to stacked charts except that all bars or columns are the same length and represent 100% of a total. 100% stacked charts show the relative contributions of members to a total, while stacked charts show the absolute contributions of members to a total. The size of each segment of a 100% stacked bar represents the percentage that a member contributes to the total.

6.4.1.4 3D column charts

3D column charts are used to compare data visually in three dimensions. Typically, a 3D chart would show a series of data across categories and over time.

6.4.2 Multi line charts

Line charts are used to show trends in data over time or categories. Markers are shown at each point in the line where a data value exists.

6.4.3 Multi pie charts

Pie charts display the sizes of items that compose a data series, proportional to the sum of the items. A pie chart is used to show the relative contributions of values, and is useful when you want to emphasize a significant element in the data.

To make your pie charts more legible, you can suppress the labels for small pie slices. You can also set the pie slice labels to display either percentages or actual values.

Related Information

[Configuring pie chart labels \[page 59\]](#)

[Formatting chart labels \[page 131\]](#)

6.4.4 Other charts

6.4.4.1 Scatter charts

Scatter charts may be used to show possible correlations between two variables or measures. Data is displayed as a set of points, with their x-y coordinates in the chart specified by the values of the two measures.

For example, if a scatter chart shows data points grouped roughly in a straight line from the lower-left corner to the upper-right corner of the chart, a positive correlation is indicated.

While line charts treat one set of values as non-numeric labels, scatter charts treat both sets of values as numeric data. Therefore, scatter charts require two measures (and only two). If the analysis subsequently changes so that the chart contains fewer than two measures, the scatter chart cannot display any data.

You can specify on the Properties panel which of the available measures are to be plotted on the X and Y axes.

6.4.4.2 Bubble charts

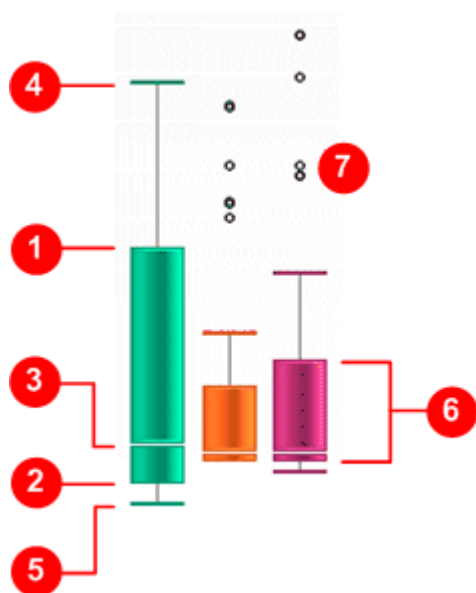
Bubble charts compare three variables or measures. They are similar to scatter charts, with the bubble sizes representing the third measure. For example, a bubble chart would be very effective for illustrating the number of products sold in a certain region; the larger the bubble, the greater the number of products sold in that region.

While line charts treat only one set of values as numeric data, and scatter charts treat two sets of values as numeric data, bubble charts treat three sets of values as numeric data. Therefore, bubble charts require at least three measures. If the analysis subsequently changes so that the chart contains fewer than three measures, the bubble chart cannot display any data.

You can specify on the Properties panel which of the available measures are to be plotted on the X and Y axes, and which measure is to be represented by the bubble sizes.

6.4.4.3 Box plot charts

Box plots are useful for analyzing small data sets that do not suit histograms or column charts. Because of the small size of a box plot, it is easy to compare several box plots in a chart. A box plot is a good alternative or complement to a histogram and is usually better for showing several simultaneous comparisons.



1. upper (3rd) quartile
2. lower (1st) quartile
3. median value
4. largest value, or largest non-outlier value
5. smallest value, or smallest non-outlier value
6. interquartile range (IQR)
7. outliers

The interquartile range (IQR) is equal to the 3rd quartile minus the 1st quartile. Any value that is more than $1.5 \times \text{IQR}$ lower than the first quartile or more than $1.5 \times \text{IQR}$ higher than the third quartile is considered an "outlier".

Outliers are displayed as small circles on the box plot. If your data set contains no outliers, the lower vertical line corresponds to the smallest value and the upper vertical line corresponds to the largest value. If your data set does contain outliers, the lower vertical line corresponds to the smallest non-outlier value, and the upper vertical line corresponds to the largest non-outlier value.

By default, parent members are not plotted if their child members are included in the analysis.

6.4.4.4 Radar charts

Radar charts are useful for comparing the values of several data series and presenting a visual overview of those data sets. For example, if you plot annual rainfall amounts in various cities on a radar chart, the data series that produce the larger shapes on the chart represent cities that have more annual rainfall. Also, the actual shape of the plot for each city gives an overall comparative view.

6.4.4.5 Waterfall charts

Waterfall charts (also known as bridge charts) display vertical columns. Each one of these columns starts at the level where the preceding column ends, so the columns appear to be floating. This type of chart is useful for illustrating a series of positive and negative changes.

Waterfall charts can help you to compare several measures for a single member, or the values of a single measure for several different members.

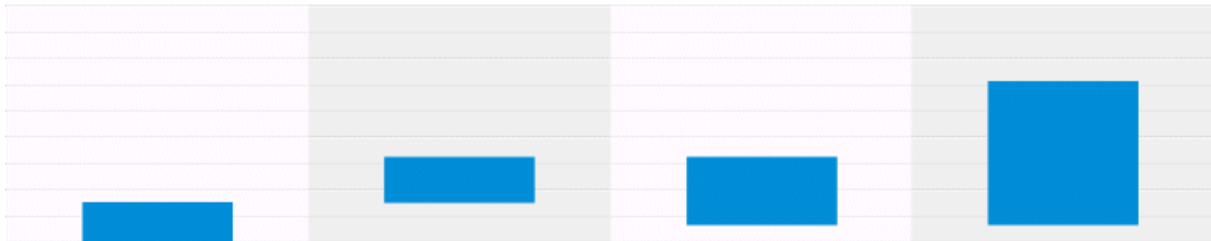
Because waterfall charts have a single axis, focused analysis is enabled by default when you add a waterfall chart. The chart displays data for the selected row in the crosstab.

Waterfall charts display only a single color. You cannot assign different colors to initial values, totals, subtotals, positive values, or negative values.

There are two types of waterfall chart. The type of chart is determined by the data in the columns of the crosstab:

- Simple waterfall charts: linked to a crosstab with measures or a flat dimension on the columns.
- Complex waterfall charts: linked to a crosstab with hierarchical column data.

Simple waterfall charts



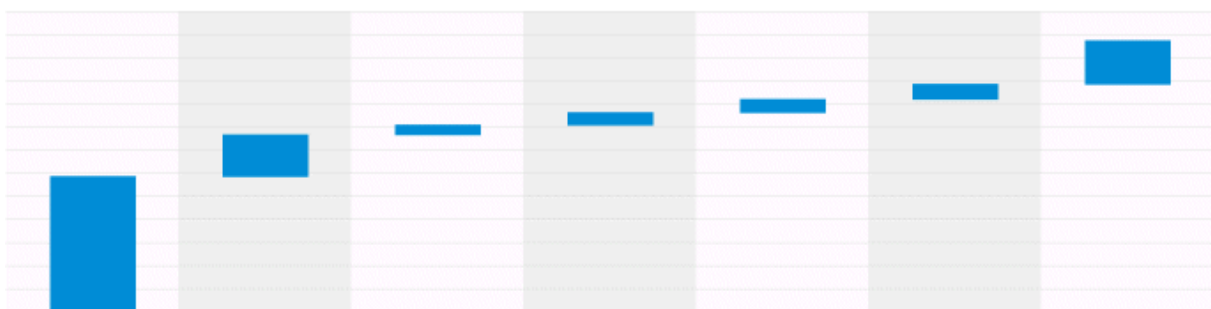
For example, if you have an analysis that shows product inventory, you can create a simple waterfall chart to visualize the net inventory. You place measures related to inventory (such as Warehouse quantity, Returns quantity, Store quantity, and On-order quantity) on the column axis of the crosstab, and products on the row axis. The waterfall chart displays the net cumulative impact of each measure on the overall inventory value of the selected product. Measures such as Warehouse quantity, Store quantity and On-order quantity increase the overall inventory amount, while measures such as Returns quantity and Damaged quantity reduce it. The last column indicates the overall inventory level. As you select different products in the crosstab, the chart updates dynamically to show data for the selected product.

Complex waterfall charts

Complex waterfall charts offer two display modes.

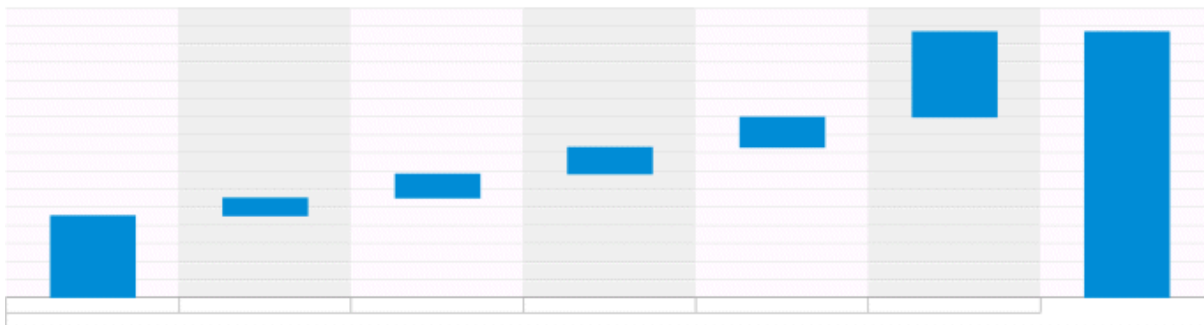
By default, the waterfall chart does not distinguish between parent and child members when there is a multi-level hierarchy on the columns of the crosstab. The column for a parent member behaves like the other columns, and both the parent member and the children add to the total in the chart.

In the following image, the first column is a parent member that shows the sum of its children, and the rest of the columns are children of that parent member:



If you select [Show hierarchical labeling](#) and [Show parent totals](#) for the waterfall chart, however, parent members are distinguished from their children, and do not add to the total value of the column. Instead, the floating column for a parent member begins at the same level as its first child.

In the following image, the parent column showing the sum of its children now appears at the right of the chart:



Related Information

[Displaying a subset of data in a sub-analysis \[page 62\]](#)

[Displaying parent totals in waterfall charts \[page 56\]](#)

6.4.5 To change the chart type

1. Select the chart component.
2. On the toolbar, select *Insert*, and then click *Switch To*.
3. Select the chart type that you want to switch to.

Alternatively, you can right-click the chart graphic and select the chart type that you want to switch to.

Related Information

[Chart types \[page 46\]](#)

[Adding data to a chart \[page 45\]](#)

[Scrolling through charts \[page 52\]](#)

[Customizing charts \[page 54\]](#)

6.5 Scrolling through charts

When you work with large data sets, displaying all of the data on a chart can make it difficult or impossible to distinguish between individual risers or lines on the chart. With most chart types, Analysis adds a range slider to the chart component when the data set is too large to be displayed legibly.



1. Overview scroll bar
2. Selected range
3. Range slider bars
4. Hide/restore button
5. Paging buttons

The chart range slider lets you select a portion of the data set to be expanded and displayed in the main chart graphic, so that you can see the individual bars or markers. You can also use the range slider to scroll through the chart.

Note

You can hide the range slider by clicking the hide/restore button at the edge of the range slider. To restore the range slider, click the button again.

Defining the size of the selected range

First, define the size of the selected range by dragging the range slider bars in the range slider.

The selected range is shown with a white background in the range slider when using the Default or Shadow chart styles, or with a black background when using the Presentation styles.

Moving the selected range within the range slider

Drag the selected range within the range slider to view different subsets of the data that are currently represented in the range slider. Alternatively, you can use the paging buttons at the ends of the range slider to move the selected range.

Scrolling the range slider within the full data set

When the data set is very large, the range slider may not show the entire data set. In that case, use the overview scroll bar to scroll the range slider within the full data set.

Related Information

[Charts reference \[page 215\]](#)

[Adding a chart \[page 44\]](#)

[Adding data to a chart \[page 45\]](#)

[Chart types \[page 46\]](#)

[Customizing charts \[page 54\]](#)

6.6 Customizing charts

Several options are available for customizing the appearance of your charts. All these options are available from the Properties panel.

Related Information

[Adding a chart \[page 44\]](#)

[Adding data to a chart \[page 45\]](#)

[Chart types \[page 46\]](#)

[Scrolling through charts \[page 52\]](#)

6.6.1 Sub-analysis name and description

The name of the sub-analysis appears on the title bar of the chart component and can be included in print output. The description can also be included in print output.

Related Information

[Charts reference \[page 215\]](#)

6.6.1.1 To set name and description properties for a chart

1. On the task panel, click the *Properties* button to display the *Properties* panel.
2. Click the chart to select it.
3. On the *Properties* panel, type a name for your chart in the *Sub Analysis Name* field.

The name that you type here appears on the chart's title bar, and is used to identify the chart on the [Outline](#) panel.

4. If you want any text to be included when you print the chart, type your comments in the [Description](#) field.
5. Click [Apply](#).

6.6.2 Chart styles

You can choose from several predefined styles for displaying your charts.

Related Information

[Charts reference \[page 215\]](#)

6.6.2.1 To change the style of your chart

1. On the task panel, click the [Properties](#) button to display the [Properties](#) panel.
2. Click the chart to select it.
3. On the [Properties](#) panel, choose a value for the [Style](#) property, and then click [Apply](#).

6.6.3 Chart color palettes

You can choose from several predefined color palettes for displaying your charts.

Related Information

[Charts reference \[page 215\]](#)

6.6.3.1 To change the color palette of your chart

1. On the task panel, click the [Properties](#) button to display the [Properties](#) panel.
2. Click the chart to select it.
3. On the [Properties](#) panel, choose a value for the [Palette](#) property, and then click [Apply](#).

6.6.4 Display font

You can set the character font used in your charts.

Related Information

[Charts reference \[page 215\]](#)

6.6.4.1 To change the font used on your chart

1. On the task panel, click the [Properties](#) button to display the [Properties](#) panel.
2. Click the chart to select it.
3. On the [Properties](#) panel, choose a font for the [Font](#) property, and then click [Apply](#).

6.6.5 Displaying totals in charts

If you have totals displayed on the crosstab, you can choose to show those totals in charts that are linked to the same analysis.

Related Information

[Totals, Parents, and Aggregations \[page 102\]](#)

6.6.5.1 To display totals on the chart

1. On the task panel, click the [Properties](#) button to display the [Properties](#) panel.
2. Click the chart to select it.
3. On the [Properties](#) panel, select the [Show Totals](#) check box, and then click [Apply](#).

6.6.6 Displaying parent totals in waterfall charts

If you have a waterfall chart based on a crosstab with a multi-level hierarchy on the columns, you can configure the chart to distinguish between parent and child members in the hierarchy.

When you select [Show parent totals](#) and [Show hierarchical labeling](#) for a waterfall chart based on a crosstab with a multi-level hierarchy on the columns, the column for a parent member does not add to the total height of the floating columns.

Related Information

[Waterfall charts \[page 50\]](#)

6.6.6.1 To display parent totals on a waterfall chart

You must add a multi-level hierarchy to the crosstab columns and insert a waterfall chart based on the crosstab before completing these steps.

1. On the task panel, click the [Properties](#) button to display the [Properties](#) panel.
2. Click the waterfall chart to select it.
3. On the [Properties](#) panel, select the [Show Hierarchical Labeling](#) checkbox and the [Show parent totals](#) checkbox, and then click [Apply](#).

6.6.7 Displaying hierarchical chart labels

Hierarchical chart labels show you the parent-child relationships between members on the chart.

6.6.7.1 To display hierarchical labels on the chart

1. On the task panel, click the [Properties](#) button to display the [Properties](#) panel.
2. Click the chart to select it.
3. On the [Properties](#) panel, select the [Show Hierarchical Labeling](#) checkbox, and then click [Apply](#).

6.6.8 Hiding the chart legend

You can control whether the chart legend is visible.

6.6.8.1 To hide the chart legend

1. On the task panel, click the [Properties](#) button to display the [Properties](#) panel.
2. Click the chart to select it.
3. On the [Properties](#) panel, clear the [Show Legend](#) checkbox, and then click [Apply](#).

6.6.9 Chart axis labels

You can add labels to the chart axes.

Related Information

[Charts reference \[page 215\]](#)

6.6.9.1 To add labels to the chart axes

1. On the task panel, click the [Properties](#) button to display the [Properties](#) panel.
2. Click the chart to select it.
3. On the [Properties](#) panel, type labels in any of these fields:
 - X Axis Label
 - Y Axis Label
 - Z Axis Label
4. Click [Apply](#).

6.6.10 Y axis scale and symbol

You can change the scale of the Y axis.

Related Information

[Charts reference \[page 215\]](#)

6.6.10.1 To set the Y axis scale and symbol

1. On the task panel, click the [Properties](#) button to display the [Properties](#) panel.
2. Click the chart to select it.
3. On the [Properties](#) panel, choose a value for the [Y Axis Scale](#) property, and then click [Apply](#).
You can also type a symbol to use for the [Y Axis Scale Symbol](#) property.

6.6.11 Scatter chart and bubble chart measures

A scatter chart needs sets of values for the X and Y axes for data to be displayed. A bubble chart needs a third set of values, represented by the sizes of the bubbles. You can select which of the available measures in the analysis are to be plotted on the X and Y axes, and which measure is to be used for the bubble sizes.

6.6.11.1 To define the measures for scatter charts and bubble charts

1. On the task panel, click the [Properties](#) button to display the [Properties](#) panel.
2. Click the chart to select it.
3. On the [Properties](#) panel, select the measures that you want to apply to the X and Y axes.
4. For bubble charts, you can also select the measure that will be represented by the sizes of the bubbles.
5. Click [Apply](#).

6.6.12 Configuring pie chart labels

When a pie chart contains several small slices, you may want to suppress the labeling of the smallest slices.

Pie chart labels display percentage values by default. You can change the labels to display actual values.

Related Information

[Formatting chart labels \[page 131\]](#)

6.6.12.1 To configure pie slice labels

1. On the task panel, click the [Properties](#) button to display the [Properties](#) panel.

2. Click the chart to select it.
3. If you want to hide labels for small pie slices, select the *Manually Hide Chart Labels* checkbox on the *Properties* panel.
The *Hide Labels Less Than* property is enabled.
4. Type a percentage value between 0 and 100 into the *Hide Labels Less Than* field.
Pie slices smaller than this percentage have their labels hidden.
5. If you want pie slice labels to display actual values instead of percentages, select *Show actual values* on the *Properties* panel.
6. Click *Apply*.

7 Sub-analyses

When you analyze data, typically a crosstab component is the main focus of your analysis. Other components, for example a chart, support your analysis, helping to visualize the data in a different form. Additional crosstab components can also support your analysis, allowing you to focus on specific areas of your analysis while your original crosstab presents a broad view of the data.

These supporting components represent sub-analyses. When you add sub-analyses, they are linked to a main analysis. For example, if you add a chart sub-analysis, the chart represents the same data as the main analysis. Changes that you make to the main analysis are reflected in the chart. Therefore, if you remove members from an analysis, those same members are automatically removed from the chart sub-analysis.

Changes that you make to the sub-analysis though, are not reflected in the main analysis. For example, if you swap the rows and columns in a sub-analysis, the rows and columns in the main analysis do not change.


Focused analysis

Instead of the sub-analysis showing the same data as the main analysis, you might want the sub-analysis to show just a subset of the data. For example, if you are analyzing worldwide sales, and you find something interesting in the data from one country, you can turn on “focused analysis” mode to explore just the data from that country in a sub-analysis.

Pausing or freezing a sub-analysis

As you perform your analysis, you might find some data that you wish to explore further, so you add a sub-analysis to accomplish that task. But during your exploration of the sub-analysis, you might want to return to the main analysis briefly, while maintaining the sub-analysis in its current state. To accomplish this, you can freeze or pause the sub-analysis.

7.1 To create a sub-analysis

1. Select an analysis in your workspace by clicking anywhere in a crosstab or chart.
2. On the toolbar, select the *Insert* tab.
3.  To insert a crosstab sub-analysis, click the arrow beside the *Insert Crosstab* button, and select *Insert a sub-analysis*. To insert a chart sub-analysis, click one of the chart buttons.
The sub-analysis is created, and is linked to the selected analysis.

7.2 Displaying a subset of data in a sub-analysis

You can turn on focused analysis mode if you want to explore just a subset of data in a sub-analysis.

In focused analysis mode, when you select members or a range of cells in an analysis, the linked sub-analyses update to display only the selected members or cells. This feature allows you to temporarily focus on different parts of your analysis without having to redefine the analysis many times. For example, if your analysis involves all countries in Europe, you could select the Switzerland member in the analysis, to explore only Switzerland's data in the sub-analysis.

Or, you may have a crosstab that contains sales figures, and you want to add a chart that depicts those figures graphically, but only for the fourth quarter of the year. To accomplish that goal, you could create a new analysis and select only the fourth-quarter member for that analysis. Or, you could accomplish the same goal more quickly by adding a chart sub-analysis, linked to the crosstab. Then in the crosstab, you would select the members or range of cells that represent the fourth quarter of the year, and the sub-analysis chart would automatically update to display only the fourth quarter data.

Related Information

[Unlinking a sub-analysis \[page 63\]](#)

7.2.1 To focus your analysis on a subset of data

1. Click a crosstab or chart that represents an analysis, or select an analysis in the [Outline](#) panel.
2. On the toolbar, select [Display](#), and then click [Focused Analysis](#).
Linked sub-analyses now display only the selected data in the main analysis.
3. In the main analysis, select the range of members that you want to display in the sub-analysis.

You can click and drag to select a range, or use **SHIFT** + **CLICK** to select a range. Also, if the members you want to view with focused analysis are not adjacent to each other, you can reorder the members to place them together.

7.3 To pause sub-analysis updating

1. Click a crosstab or chart that represents an analysis, or select an analysis in the [Outline](#) panel.
2. On the toolbar, select [Display](#), and then click [Update Sub-Analysis](#).
Linked sub-analyses no longer update automatically. Click [Update Sub-Analysis](#) again to resume automatic updating.

7.4 Unlinking a sub-analysis

When you add a crosstab or chart sub-analysis to a sheet that contains an analysis, the new component is linked to the main analysis. Changes that you make to the main analysis (usually a crosstab) are reflected in all sub-analyses.

During your analysis though, you may encounter data in the sub-analysis that warrants further exploration. You can pause the sub-analysis, so that it is temporarily frozen in its current state while you continue working with the main analysis, or you can sever the link with the main analysis, converting the sub-analysis to a separate analysis.

If you turn on focused analysis mode, the sub-analysis displays only a subset of the data in the main analysis. If you then unlink the sub-analysis, the sub-analysis is converted to a separate analysis that contains only the focused analysis. A common workflow is to begin working with an analysis, find something interesting in the data, add a sub-analysis, use focused analysis to concentrate on the interesting data, and then unlink the sub-analysis. You can then return to the focused analysis at any time, or copy it to another sheet, for further investigation.

Related Information

[Displaying a subset of data in a sub-analysis \[page 62\]](#)

[To pause sub-analysis updating \[page 62\]](#)

7.4.1 To unlink a sub-analysis

1. Select a sub-analysis component in the analysis window.
2. On the toolbar, select *Display*, and then click *Unlink Sub-Analysis*.

8 Filtering Data

In Analysis, you will often want to narrow the scope of your analysis to focus on important data, by including in your crosstabs and charts only those members that are relevant to your analysis. This action is called filtering.

You can filter members by manually selecting and deselecting them from a list. This is called filtering by member. Or, you can filter members by specifying filter conditions; for example by specifying a condition such as "Greater than 1000". This is called filtering by measure.

8.1 Filtering by measure

If you want to dynamically select members for your analysis, based on rules you define, you can filter a hierarchy by measure.

For example, if you are analyzing worldwide bicycle sales, and you want your analysis to include only those **<Country>** members whose bicycle sales are above a certain threshold, then you could define a filter on the **<Country>** hierarchy to include members whose bicycle sales exceed 100,000.

Unlike filtering by member, filtering by measure is dynamic; that is, whenever you change the view of your data, the filter is reapplied. For example, if you add a "Top 5" filter on a hierarchy, five members are shown. If you then add some members that you had previously removed from the analysis, some of those added members could displace some of the five previously shown members.

You define a filter by creating one or more filter conditions, or rules. For example, if you wanted to increase your advertising in large countries where bicycle sales are not as high as expected, you could define a filter that comprises these rules:

- Bottom 5
- Greater than 100,000

Applying such a filter to a **<Country>** hierarchy would result in the crosstab displaying only the five countries with the lowest bicycle sales greater than 100,000.

Note

Filtering is performed on the original, unformatted values of cells. Adding formatting to cell data can lead to apparent small discrepancies in excluding or including cells. For example, a value displayed as 100.00 would be excluded after a filter has been applied excluding only numbers greater than 100, if its original value were 100.005.

Note

Filtering by measure is not supported for SAP HANA data sources.

Target level

When you define a filter on a hierarchy, you select which level in the hierarchy the filter is applied to. For example, if you apply a filter to a <Geography> hierarchy, you could select the <Country>, <State>, or <City> level. Selecting the <City> level would result in some cities being included in your analysis, but states and countries would not be affected.

The default target level is the highest level in the hierarchy.

Note

For SAP BW data sources, and for dimensions that comprise a flat list of members, the level-selection field is not applicable when you define the filter.

Example: Filtering out poor performers

You want to analyze your company's worldwide bicycle sales, and you want to focus your analysis on the cities where bicycles sell well. You could apply a filter to include in your analysis those cities that represent the top 50% of bicycle sales. To apply such a filter, you could follow this sequence of steps:

1. Place the <Products> hierarchy on the row axis.
2. Filter the <Products> hierarchy so that only the <Bicycles> member appears in the crosstab.
3. Nest the <Countries> hierarchy within the <Products> hierarchy.
4. Place the <Sales> measure on the column axis.
5. Filter the <Countries> hierarchy by measure.
6. Set the target level to be the <Cities> level.
7. Set the measure that the filter is based on to <Sales>.
8. Set the filter condition to include the top 50% of cities.

Multiple filter rules

You can create filters with multiple rules. For example, you could create a filter that combines *Top 30%* and *Bottom 5* rules to determine the five poorest-selling products amongst the products in the top 30% of your sales.

When you add two or more rules to your filter, you need to choose either the *AND* or *OR* operator to define how the filter rules work together.

- When you use the AND operator, only the data that matches all filter rules is displayed in the crosstab.
- When you use the OR operator, data that matches any of the filter rules is displayed in the crosstab.

Filters on nested hierarchies

You can apply filters to multiple hierarchies on an axis. For example, if you place two hierarchies on the row axis, and add a filter to each hierarchy, the two result sets are cross-joined.

8.1.1 Filtering SAP BW data by measure

When filtering an SAP BW hierarchy by measure in Analysis, the target level is not specified. Instead, the following behavior applies:

- The filter is applied only to parent members or leaf members that are visible in the initial view of the hierarchy, that is, the members that are displayed immediately after you add the hierarchy to the crosstab. Manually expanding or collapsing parent members does not change the filter's behavior.
- If you want to change the members that the filter applies to, use the [Expand to Level](#) function before filtering the data. The filter will apply to all of the members displayed in the crosstab after the [Expand to Level](#) operation.
- For each member that meets the filter's conditions, all parent members are also included in the filtered crosstab, regardless of their value.

Related Information

[To expand a hierarchy to a specific level in a crosstab \[page 107\]](#)

8.1.2 Filter types

The following condition types can be used to define a filter:

Condition type	Description
Top N	Displays the top N members for the selected level, per parent. (Available for SAP BW flat lists, but not for SAP BW hierarchies.)
Top %	Displays the top contributors to N percent of the parent for the selected level. (Available for SAP BW flat lists, but not for SAP BW hierarchies.)
Top Sum N	Displays the top members whose cumulative sum is greater than or equal to N. (Available for SAP BW flat lists, but not for SAP BW hierarchies.)
Bottom N	Displays the bottom N members for the selected level, per parent. (Available for SAP BW flat lists, but not for SAP BW hierarchies.)
Bottom %	Displays the bottom contributors to N percent of the parent for the selected level. (Available for SAP BW flat lists, but not for SAP BW hierarchies.)

Condition type	Description
Bottom Sum N	Displays the bottom members whose cumulative sum is greater than or equal to N. (Available for SAP BW flat lists, but not for SAP BW hierarchies.)
Greater than	Displays members that are greater than a specified numeric value for the selected level. (For SAP BW, all hierarchy members that are greater than a specified numeric value are displayed.)
Greater than or equal to	Displays members that are greater than or equal to a specified numeric value for the selected level. (For SAP BW, all hierarchy members that are greater than or equal to a specified numeric value are displayed.)
Less than	Displays members that are less than a specified numeric value for the selected level. (For SAP BW, all hierarchy members that are less than a specified numeric value are displayed.)
Less than or equal to	Displays members that are less than or equal to a specified numeric value for the selected level. (For SAP BW, all hierarchy members that are less than or equal to a specified numeric value are displayed.)
Equal to	Displays members that are equal to a specified numeric value for the selected level. (For SAP BW, all hierarchy members that are equal to a specified numeric value are displayed.)
Not equal to	Displays members that are not equal to a specified numeric value for the selected level. (For SAP BW, all hierarchy members that are not equal to a specified numeric value are displayed.)
Outside	Displays members that are not within the range specified by two numeric values for the selected level. Members that are equal to either of the numeric values are not displayed.
Between	Displays members that are between two specified numeric values for the selected level, including members that are equal to either of the numeric values. (For SAP BW, all hierarchy members that are between two specified numeric values are displayed, including members that are equal to either of the numeric values.)

8.1.3 To filter by measure

1. In the [Layout](#) panel, right-click the hierarchy that you want to filter, point to [Filter](#), and select [By measure](#).
2. In the [Settings](#) area on the [Filter](#) panel, select the target level for this filter.

Note

The target level is not applicable for SAP BW data sources or for dimensions that comprise a flat list of members.

3. In the [Definition](#) area, select a measure from the [Based on](#) list.
For example, if you want to filter the [Product](#) hierarchy based on sales figures, you would select the [Sales](#) measure from the [Based on](#) list.
4. Next, define a rule for your filter by selecting a condition type and entering an operand.
For example, if you want to add a [Top 5](#) rule to the filter, select the [Top N](#) condition type, and type [5](#) into the operand field. For details on the types of conditions you can apply, see [Filter types \[page 66\]](#).

5. Click [Add](#).
6. If you want to define a filter with multiple rules, repeat the preceding steps to add more rules to your filter, and then select either [AND](#) or [OR](#) to determine how the multiple rules will be evaluated.
For information about the [AND](#) and [OR](#) operators, see “Multiple filter rules” in [Filtering by measure \[page 64\]](#).
7. Click [OK](#) to apply the filter.

The target hierarchy is filtered, and a Filter icon appears beside the hierarchy name in the [Layout](#) panel.

8.1.4 To modify an existing filter

You can modify an existing filter by adding and deleting rules.

1. In the [Layout](#) panel, right-click the hierarchy whose filter you want to modify, and select [Filter](#) [By measure](#) [Edit](#).

The existing filter rules are displayed in the [Filter](#) panel.

2. Add and delete rules to define your modified filter.
You cannot directly edit an existing rule; to change a rule, delete it and then add the modified rule.
3. Click [OK](#) to apply the modified filter to the hierarchy.

8.1.5 Removing a filter

You can manually remove a filter, or Analysis can remove filters automatically. Whenever you replace hierarchies on the row or column axes, filters are automatically removed from the analysis. However, filters are not automatically removed if you nest hierarchies or perform a “swap axes” operation.

Related Information

[Removing a sort \[page 83\]](#)

8.1.5.1 To manually remove a filter

In the [Layout](#) panel, right-click the hierarchy whose filter you want to remove, and select [Filter](#) [By measure](#) [Delete](#).

8.1.6 Automatically removed sorts and filters

When any of the following actions is performed, sorts and filters that are applied to that axis (the "target" axis) may be removed:

- Swapping hierarchies, removing a hierarchy, or adding a hierarchy: sorts and filters are removed.
- Nested hierarchies: value sorts are removed, but member name sorts remain. Filters are not affected.

Swapping the positions of the row and column hierarchies with the [Swap Axes](#) button does not remove sorts or filters from the analysis.

8.2 Filtering by member

If you want to include members in your analysis by selecting them from a list, you can filter a hierarchy by member.

For example, if you are analyzing worldwide ski equipment sales, and you want to remove African countries from your analysis, you could open the [Filter](#) panel and deselect African country members. Or, if you want to analyze only European countries, you would first deselect the [Select Everything](#) check box, and then select the [<Europe>](#) member.

On the [Filter](#) panel, you can select individual members, or find members by using a search string. You can search for the string in the member keys or the member text. With SAP BW flat list data, you can also select ranges of members.

Unlike filtering by measure, filtering by member is static; that is, once you've included or removed members from your analysis, they remain included or removed unless you use the [Filter](#) panel again to manually remove or include them.

You can also quickly remove members that are currently displayed in a crosstab or chart, by using the right-click menu.

Note

In the [Filter](#) panel, the same member may be displayed in different places. For example, a measure member might appear in multiple measure groups in SQL Server Analysis Services. In Analysis, selecting or deselecting any of these members selects or deselects the first visual instance, which may not be the same instance that you selected or deselected. This behavior does not cause any analysis issues because all linked members refer to the same member.




Related Information

[Filtering with display attributes \[page 127\]](#)

8.2.1 To remove or add individual members

If you want to remove or add a small number of members, not according to any pattern or parameters, you can accomplish that using the *Filter* panel.

1. In the *Layout* panel, double-click the hierarchy whose members you want to remove or add.

Alternatively, you can right-click the hierarchy, and select  *Filter*  *By member* . The *Filter* panel opens, in Hierarchy view.

2. Select or clear the member check boxes as desired.
 - Click individual members to select and deselect them.
 - Hold down the `Shift` key as you click members, to select or deselect ranges of members.
3. Click *OK* to apply your changes to the crosstab or chart.

Note

If you deselect all members, the *OK* button is disabled because you must select at least one member for each hierarchy on the crosstab.

Related Information

[Showing only selected members \[page 73\]](#)

[To change the display of member keys and text \[page 74\]](#)

[Displaying parent names \[page 74\]](#)

8.2.2 Finding members

Because hierarchies can contain thousands of members, you may want to find members by using a search string instead of trying to locate them in a long hierarchical list. To find members, you enter a search string and specify whether you want to find the string in the member keys or in the member text.

For each hierarchy that you search, Analysis retains in your personal user settings whether your last search type for the hierarchy was of the keys or the text. By default, when you next search on the hierarchy, the same search type is selected.

For example, in your last search for members of customer account, if you searched the key values, the next time you search customer account, the search type is set to key by default.



Use the *Return to Member List* button to clear the search results and return to the full member list. Any members that you selected from the search results remain selected.

Analysis uses search techniques similar to popular internet search engines:

Search String	Search Result
book	Selects all members that contain the word book , such as book , book store , and booklet .
"glass bowls"	Selects only members that contain the exact text inside the quotation marks. In this example, the search would find glass bowls but not glass soup bowls .
glass bowls	Multiple terms include an implicit AND, so in this example, the search would select all members that contain both the words glass and bowls : <ul style="list-style-type: none"> • glass bowls • glass soup bowls
glass OR bowls	Selects members which contain either the word glass or the word bowls . The OR must be capitalized. In this example, the search would find members with these names: <ul style="list-style-type: none"> • glass bowls • glass soup bowls • soup bowls • glass <div> <p>Note</p> <p>If OR is one of the words you want to search for, you must enclose the OR in quotation marks: "OR" OR CA (to find the states Oregon and California).</p> </div>

Note

Search terms are not case-sensitive. Searching for **book** is the same as searching for **Book** or **BOOK** or **boOk**.

Using wildcards in your search

You can use the asterisk wildcard character in your search string to represent one or more characters.

For example, let's compare three searches on the same set of hierarchy members – one without the asterisk and two that use the asterisk, but in different positions.

First, a search for **book** alone returns all the members that contain **book**:

- **book**
- **book store**
- **library book**
- **booklet**
- **textbook**
- **textbooks**

However, a search for **book*** returns only the members that start with **book**:

- **book**
- **book store**
- **booklet**

Finally, a search for ***book** returns only the members that end with **book**:


- book
- library book
- textbook

Related Information

To change the display of member keys and text [page 74]

8.2.2.1 To find members

1. In the *Layout* panel, double-click the hierarchy whose members you want to find.
2. Type a search string in the text box at the top of the *Filter* panel.


3. Click the arrow beside the  *Find Members* button and select where you want the search for the string: *Key* or *Text*.

The first time you search for the members of a hierarchy, by default, the *Filter* panel sets the search type to match the current display mode in the *Filter* panel. However, you can change the search type.


Analysis retains the last search type you used for a hierarchy as the default for your next search on the same hierarchy.

Note

If the display mode is set to *Key : Text*, the search is performed on the keys by default, and if the display mode is set to *Text : Key*, the search is performed on the text by default.

4.  Click the *Find Members* button, or press Enter.
5. Select or clear the member check boxes as desired.
 - Click individual members to select and deselect them.
 - Hold down the shift key as you click members, to select or deselect ranges of members.

Note

 Clicking the *Return to Member List* button returns you to the complete member list. All selected members remain selected.


6. Click *OK* to apply your changes to the crosstab or chart.

Note

If you deselect all members, the **OK** button is disabled because you must select at least one member for each hierarchy on the crosstab.

8.2.3 To select a range of members

With SAP BW flat hierarchies, you can select a range of members in the **Filter** panel.

1. In the **Layout** panel, double-click the hierarchy whose members you want to remove or add.
2. Select **Range Selection**.
3. Choose an operator such as **Between** or **Greater Than**, and then select members to define the range.
If you know the key numbers for the members, type the key numbers into the member fields. If you do not know the key numbers, you can open a table of member keys and the corresponding member text by clicking the **Select Member** button. 
4. Click **Add Range** to add the range to the selection.
5. Repeat steps 3 and 4 to add more ranges to the selection.
6. Click **OK** to apply your changes to the crosstab or chart.

Note

If you deselect all members, the **OK** button is disabled because you must select at least one member for each hierarchy on the crosstab.

8.2.4 Showing only selected members

The **Filter** panel can either show the entire list of members within a hierarchy, or show only the members that have been selected for display in the crosstab or chart.

8.2.4.1 To display only the members that have been selected

Click **Show Selected** to see only those members that are currently selected.

Click **Show All** to toggle the display back to the entire list of members.

8.2.5 To change the display of member keys and text

With SAP BW data, the *Filter* panel can display member text, keys, descriptions, or a combination of text, keys, and descriptions.

Note

By default, the *Member Selector* dialog box displays prompts according to the display configuration defined by your database administrator.

Click *Display*, and select one of the available display modes.

8.2.6 Displaying parent names

The *Filter* panel does not initially display the member parent information, but you can choose to have the panel append parent names to the members.

For example, if the member text is “Wednesday”, and its parents are “2002”, “Qtr 2”, “June”, and “Wk 1”, the member is displayed like this:

```
Wednesday (2002 > Qtr 2 > June > Wk 1)
```

8.2.6.1 To toggle the display of member parent names

On the *Filter* panel, click *Display* > *Show Parent Information*.

8.2.7 Hierarchy view and leaf members view

When you open the *Filter* panel, the member list is shown initially in hierarchy view: all hierarchy levels are shown in the member list.

You can also choose the *Leaf Members* option in the list box, to show all leaf members, independent of their levels in the hierarchy. Leaf members are members that do not have any child members.

Note

The leaf members view is available only with SAP BW data sources.

8.2.8 Favorite filters

You may find that you use the same members of a hierarchy repeatedly. Instead of manually selecting those members every time you use that hierarchy in an analysis, you can define a favorite filter for the hierarchy.

You select the members for the filter, and save the filter with an appropriate name. The filter is saved as a relationship between a user and a data source. Therefore, the same user can apply the same favorite filter to any analysis that uses the same data source.

The favorite filter is shown in the metadata explorer, within the hierarchy that it filters.

Example


You are analyzing boat sales at your Italian and Swiss locations. You save the Italy and Switzerland members as a favorite filter. Later, you are analyzing your boat inventories, and you want to again compare your Italian and Swiss locations. Instead of adding the Country hierarchy to the analysis and selecting the Italy and Switzerland members, you simply add your saved favorite filter to the analysis.


You can add multiple favorite filters to a hierarchy, and add favorite filters to multiple hierarchies in a cube. You can also apply the same favorite filter to multiple analyses if they use the same cube.

If you delete a favorite filter, the crosstabs and charts retain the members that were defined in the favorite filter.


8.2.8.1 To create a favorite filter

You can create a favorite filter on the [Filter](#) panel or in the metadata explorer on the [Data](#) panel.


1. Open the member list:
 - To open the member list on the [Filter](#) panel, double-click a hierarchy or dimension in the [Layout](#) panel.
 -  Or, to use the metadata explorer, select a hierarchy or dimension, and click the [Create Favorite Filter](#) button.
2. Select the members that you want to save as a favorite filter.
You can find members by entering a search string.
3. Save the favorite filter:
 - On the [Filter](#) panel, click [Save Filter](#), type a name for your favorite filter, and click [OK](#).
 - Or in the [Favorite Filter](#) dialog box, type a name for your favorite filter and click [OK](#).

The favorite filter is added to the hierarchy or dimension, and marked with a special icon in the metadata explorer. 

8.2.8.2 To edit a favorite filter

1. Select the favorite filter in the metadata explorer on the [Data](#) panel.
Favorite filters are shown in the [Favorite Filters](#) node under the hierarchy or dimension name.
2.  Click the [Edit Favorite Filter](#) button above the metadata explorer.
3. Select and deselect members to redefine the favorite filter.
You can find members by entering a search string.
4. Click [OK](#) to save the updated favorite filter.

8.2.8.3 To remove a favorite filter

1. Select the favorite filter in the metadata explorer on the [Data](#) panel.
Favorite filters are shown in the [Favorite Filters](#) node under the hierarchy or dimension name.
2.  Click the [Remove Favorite Filter](#) button above the metadata explorer.

8.2.9 Removing displayed members

Usually, you open the [Filter](#) panel to remove members from or add members to your analysis. However, when you want to remove a few members that are currently displayed in your analysis, you can remove them directly from the analysis window:

- Select one or more members in the crosstab or chart, right-click one of the selected members, and click [Remove](#).

To select multiple individual members, hold down the `Ctrl` key while selecting members. To select a range of members, select one end point of the range, hold down the `Shift` key, and then select the second end point.

If you want to focus on only one member, you can also right-click the member and click [Keep Members](#).

Note

Removing members in a chart is possible only if the chart represents an analysis, and not a sub-analysis.

If you want to restore the removed members, use the [Filter](#) panel to select the removed members.

8.3 Filtering SAP BW data using BEx conditions

As well as filtering member and filtering by measure, it is possible for SAP BW data to be filtered by conditions that are defined in SAP Business Explorer. BEx conditions have a similar effect to filtering by measure in Analysis: they filter out members of a hierarchy based on the values of a measure for that hierarchy.

BEx conditions are supported in Analysis. If you connect to a data source that has a condition defined, you can enable or disable the condition in your analysis. By default, BEx conditions are enabled.

When you export a workspace to Excel or PDF, any conditions that are enabled appear in the exported document.







Note

BEx conditions can only be enabled and disabled in Analysis, edition for OLAP. If you want to change the BEx condition, it must be edited in the query designer.

For more information about BEx conditions, see the documentation for SAP Business Explorer available on the SAP Help Portal at <http://help.sap.com>.

8.3.1 To enable or disable a BEx condition

To enable or disable a BEx condition, you must insert a crosstab based on an SAP BW data source that has a condition defined.

1. Right-click the name of a hierarchy or measure in the *Layout* panel or the crosstab and choose  *Filter*  *BEx Conditions* , or, on the *Analyze* tab, click  *Filter*  *BEx Conditions* .
- The BEx conditions are listed in the menu. Enabled conditions have a check mark beside them.
2. Click a BEx condition to enable or disable it.

8.4 Background filters

A computer monitor can display only two spatial dimensions, but in Analysis, you can work with many data dimensions simultaneously. You place the dimensions and hierarchies that you want to actively analyze on the rows and columns of a crosstab, but you can also narrow the scope of your analysis by selecting members of other hierarchies to filter the crosstab data. These unseen hierarchies represent background filters.

For example, if your data cube contains the three hierarchies *<Product>*, *<Market>*, and *<Year>*, and you want to analyze how your products performed in all markets, but only in the year 2010, you could use the *<Year>* hierarchy as a background filter, selecting only the *<2010>* member from the *<Year>* hierarchy. Then only the *<Product>* and *<Market>* hierarchies would be shown on the crosstab's view axes for analysis.

Note

You cannot select multiple members from a measures dimension for a background filter.

Note


A background filter is sometimes referred to as a slice, because the view you see in the crosstab is a two-dimensional "slice" of a multi-dimensional cube.

Related Information

[Task panel reference \[page 187\]](#)

[Restricted characteristics with default values in the Background filter area \[page 159\]](#)

8.4.1 To add a background filter

1. Place a hierarchy or dimension into the *Background* filter area in the *Layout* panel, by dragging it from the metadata explorer, or by using the *Add to Background Filter* button at the top of the metadata explorer. 
If you want to use the default member of the hierarchy as the background filter member, you can omit steps 2 and 3.
2. Double-click the hierarchy or dimension in the *Background* filter area to open the *Filter* panel.
3. On the *Filter* panel, select one or more members, and click *OK*.

Note

If you enter fewer than 12 values, the values are specified in the *Background Filter* area. If you enter more than 12 values, you will only see the number of values in the *Background Filter* area.

8.5 Removing null and zero values

Null values are database entries that have not been initialized with any real data values. For example, if a database record for a house contains a field for the number of rooms in the house, but no number has been entered in that field for that house, the value of that cell is null.

Note

The default behavior is to display null values as empty cells, but you can change that setting on the *Preferences* panel.

Zero values are database entries that have been initialized with data, but the data values are equal to zero.

You can optimize the visual display of your crosstabs and charts by filtering out rows and columns made up of null and zero values.

Filtering null and zero values affects the entire analysis, including all linked crosstab and chart components. You can suppress entire rows, entire columns, or both.

Different OLAP servers support different types of filtering:

For the following data sources, you can remove rows and columns that consist entirely of null and zero values:

- SAP HANA
- SAP BW

- SAP BusinessObjects Planning and Consolidation, version for SAP technology

For the following data sources, you can remove rows and columns that consist entirely of null values:

- Microsoft SQL Server Analysis Services
- SAP EPM data providers based on Microsoft SQL Server Analysis Services
- Teradata
- Extended Analytics
- Oracle Essbase

For these data sources, operations such as filtering nulls and zeros are performed by the OLAP server, instead of Analysis. In this way, Analysis can fetch and render data in smaller chunks instead of retrieving the entire dataset, and the performance, responsiveness, and usability of Analysis are improved.

Related Information

[Task panel reference \[page 187\]](#)

8.5.1 To filter out null and zero rows and columns

1. On the toolbar, click  [Display](#) > [Nulls & Zeros](#)  or  [Display](#) > [Nulls](#) .

The available option depends on the data source. Some data sources do not support filtering out zero values.

2. Choose one of these options:

Option	Description
Hide in row	Remove rows containing only nulls or zeros.
Hide in column	Remove columns containing only nulls or zeros.
Hide all	Remove both rows and columns containing only nulls or zeros.

To restore the removed rows and columns, click  [Display](#) > [Nulls & Zeros](#) > [Show All](#)  or  [Display](#) > [Nulls](#) > [Show All](#) .

Alternatively, you can filter the option from [Preferences](#) and set the default behavior for a new crosstab or chart component.

Note

These preferences only apply to a new component. The behavior of existing component will remain the same.

To select the option from [Preferences](#), perform these steps:

1. Open the [Preferences](#) page in the SAP BusinessObjects BI launch pad.
2. Select [Analysis, edition for OLAP](#).

3. In the *Default Configuration for Nulls and Zeros* section, select one of the option from the above table.

📘 Note

By default the nulls and zeros are shown; that is, the default behavior is *Show all*.

4. Log off the BI launch pad, and log back on.

9 Sorting

Sorting is a systematic organization of data in the OLAP workspace.

You can sort the dimensions and members in your cross tab in ascending or descending order.

9.1 Sorting Values

The sorting options available are as follows:

- Ascending
- Descending

You can place one value sort on each axis.

An ascending sort arranges your data with the smaller values at the top or to the left. A descending sort arranges your data with larger values at the top or to the left. Cells that are uninitialized (null) or invalid are ranked in value below any other cells; they appear last in a descending and first in an ascending sort.

When you sort the data, the parent members are sorted in a order, and child members below the parents are sorted in their own order.

Break Hierarchy

If you want the ascending or descending sorting arrangement not to be restricted within the parent members in the hierarchy, then use break hierarchy.

When you perform break hierarchy, you can see that the dimensions and measures are sorted across the parents in the hierarchy. This enables you to analyze the entire data with only ascending or descending sort.

ⓘ Note

A value sort can be added only to an innermost column or row hierarchy.

ⓘ Note

Value sorts take precedence over member sorts. If you add a value sort to a hierarchy that already has a member sort, the member sort is replaced by the value sort. If a hierarchy with a member sort is dragged to the innermost row or column hierarchy, such that it would negate an existing value sort, the member sort is removed.

ⓘ Note

Sorting multiple measures by dimension member is not supported

ⓘ Note

Replacing a hierarchy or adding a nested hierarchy to an axis that already has a sort applied causes the sort to be removed.




Related Information

[Sorting Member Names \[page 82\]](#)

9.1.1 To sort values


1. Add hierarchy measures and dimension to the cross tab.
2. In the crosstab, select the row or column member header, you want to sort.
3. Select *Analyze* tab.
4. Select the *Sort* button dropdown.
5. Choose either *ascending* or *descending*.
An icon appears beside the member, indicating the direction of the sort and hierarchy of the data.

Note

If you do not want the sorting arrangement to be restricted in the parent hierarchy after sorting, perform break hierarchy. Select  *Sort*  *Break Hierarchy* .

9.1.2 To reverse the sort direction

 In the crosstab, click the *Sort* icon beside the member name.

The icon changes to indicate the new sort direction. 

9.2 Sorting Member Names

In addition to sorting crosstab data by values, you can sort crosstab member names alphanumerically. With SAP BW data sources, you can also sort by display attributes.

Although you can place only one value sort on an axis, you can place multiple member names or attribute sorts on an axis.

Note

By default, alphanumeric sorting is always performed in hierarchical levels.

To sort members alphanumerically

1. Right-click a dimension or hierarchy in the *Columns* or *Rows* areas of the *Layout* panel.
2. Select *Sort*
3. Choose either *A - Z* or *Z - A*.
4. If the dimension or hierarchy contains both member text and keys, you can sort either by text or key by repeating the preceding steps and selecting *Text* or *Key*.

Note

If you do not want the sorting arrangement to be restricted in the parent hierarchy after sorting, perform break hierarchy. Select ► *Sort* ► *Break Hierarchy* ►

Related Information

[Sorting \[page 81\]](#)

[Display Attributes \[page 126\]](#)

9.3 Removing a sort

You can manually remove a sort, or Analysis can remove sorts automatically. Whenever you replace or nest hierarchies on the row or column axes, value sorts (but not member name sorts) are automatically removed from the analysis. However, sorts are not automatically removed if you perform a "swap axes" operation.

Related Information

[Automatically removed sorts and filters \[page 69\]](#)

9.3.1 To remove a value sort



1. In the crosstab, select the row or column member header that you want to remove the sort from.
2. Select the *Analyze* tab.
3. Select the *Sort* dropdown.
4. Select *Remove Sort*.

Alternatively, you can right-click the member header, select *Sort*, and select *Remove sort*, or right-click the *Sort* icon next to the sorted member's name and select *Remove sort*.

Note

If the crosstab contains a sort on the other axis, this sort remains in effect.

9.3.2 To remove a member sort

1. In the [Layout](#) panel or [Analysis](#) window, right-click the dimension or hierarchy that you want to remove a sort for.
2. Select  [Sort](#) .

→ Tip

Alternatively, you can right-click the sort icon and select [Remove sort](#).

9.3.3 Automatically removed sorts and filters

When any of the following actions is performed, sorts and filters that are applied to that axis (the "target" axis) may be removed:

- Swapping hierarchies, removing a hierarchy, or adding a hierarchy: sorts and filters are removed.
- Nested hierarchies: value sorts are removed, but member name sorts remain. Filters are not affected.

Swapping the positions of the row and column hierarchies with the [Swap Axes](#) button does not remove sorts or filters from the analysis.

10 Conditional Formatting (Highlighting Exceptions)

Conditional formatting is used to highlight important differences or unexpected results in your data, by distinguishing values that are inside or outside given ranges. For example, if you were analyzing sales figures and wanted to know which regions had sales lower than a certain value, you could apply conditional formatting to find those poorly performing regions.

This section describes how to apply conditional formatting. For information about applying static formatting to your data, see [Formatting Data \[page 128\]](#).

10.1 Applying conditional formatting

You can apply formatting to the cells in a crosstab to highlight important differences or unexpected results. For example, you might want to add background colors to cells that are greater than or less than a particular value.

\$ 322,057.80	221 ST	58,624.360
\$ 6,378,538.43	10,379 ST	2,717,240.830
\$ 18,805,461.35	21,479 ST	5,676,310.180
\$ 609,484.25	225 ST	75,691.100
\$ 3,762.90	227 ST	55,804.210
\$ 3,268,579.82	3,386 ST	873,601.100

To create a conditional format, you define one or more conditions, or rules, such as "Less Than 1000". You can combine several rules to create a more complex conditional format, such as "Less Than 1000" (red), "Between 1000 and 2000" (yellow), and "Greater Than 2000" (green).

Conditional formatting can be added to columns or rows, or to a selection of cells. After you have created a conditional format, you can edit it, delete it, or toggle it on and off.

For a measure with a measure format that scales the number, you can define when to apply the conditional formatting to the measure – **before** or **after** scaling.

For SAP BW data sources, you can also view and apply conditional formatting to column headers and row headers.

Colors and symbols

These styles of formatting are available:

- Background cell color: the background color of the cells is changed.

- Value color: the color of the values is changed.
- Symbols: symbols are added to the cells, beside the values.

Background cell colors and value colors are arranged in color sets. The default color set ranges from red to blue. You can select other color sets though; for example, a color set comprising shades of green. You can also customize the color set, or invert the order of a color set.

Symbols are also arranged in sets. The default symbol set comprises colored circles, but you can change to a different symbol set; for example arrows, or colored shapes.

Rule priority

If you apply multiple conditional formats to the same cells, or if you apply multiple rules to the same values within one conditional format, the priority levels assigned to the rules determine which conditional formatting is displayed. For example, you can apply these rules within one conditional format:

- Between 500 and 2500
- Greater Than 2000

If a cell contains the value 2200, then both rules apply, but the rule with the higher priority controls how the cell is displayed.

If two conditional formats are applied to the same cells, and both conditional formats contain rules with the same priority, then the conditional format that was added first takes precedence.

“Outside” and “Between” operators

If you use the “Outside” or “Between” operators, the conditional format includes the threshold values that you specify. For example, if you create the rule “Between 1000 and 2000”, the conditional formatting is applied to the values 1000 and 2000, and all values in between. If you create the rule “Outside 1000 and 2000”, the conditional formatting is applied to all values less than or equal to 1000, and all values greater than or equal to 2000.

Toggling conditional formats

You can define a conditional format, then disable it without deleting it, and re-enable it at a later date. For example, in fiscal quarter 1, you might define a conditional format to find unusual data, and then disable the format when you no longer need that data highlighted. In fiscal quarter 2, you could enable the conditional format again because the data in the cube has changed, and you want to apply the same conditional formatting to the new data.

Inactive conditional formats


If you apply a conditional format, and later change the analysis in such a way that the condition rules become invalid, the conditional format is deactivated. If the analysis is subsequently changed so that the condition rules become valid again, the conditional format is reactivated.

Enhanced conditional formatting for SAP BW data sources

Query designers can define conditional formatting for an SAP BW data source. In this case, when you connect to the SAP BW data source in Analysis, the conditional formatting is applied in your workspace. You can view the settings for this conditional formatting and turn it on or off in Analysis.

SAP BW data sources offer additional display options for conditional formatting in Analysis. You can apply formatting to individual data cells, row headers, or column headers. You can also define conditional formatting to display on a different measure than the one that the condition is based on.

10.1.1 To apply conditional formatting

1. Select the members in the crosstab that you want to apply conditional formatting to.
You can select a row or column, or a group of cells.
2. On the toolbar, select *Analyze*, and then click *Conditional Formatting*.
Alternatively, you can right-click the selected cells and choose ► *Conditional Formatting* ► *New* .
3. On the *Conditional Formatting* panel, type a name for the conditional format.
Specifying a unique name, instead of accepting the default name, helps you to identify the conditional formats in a list, if you add several formats to an analysis.
4. In the *Based on* field, select a measure.
The conditions are evaluated using the measure you select. In step 1, if you selected cells belonging to a measure, the *Based on* field is already populated, but you can select any other measure in the analysis.
5. Choose a style from the *Format* field.
6. When you have defined scaling for a measure format and you want to apply the conditional formatting to the measure:
 - **After** the scaling, select the *Evaluate after calculations and scaling* checkbox.
 - **Before** the scaling, leave the checkbox unselected.
7. Select the settings for your first condition rule.
 -  Click the *Priority* button to choose a priority and color for this rule. If you apply multiple conditional formats to the same cells, or define multiple overlapping rules within a conditional format, select priority levels for the rules so that you achieve the desired results. Priority level 1 is the highest priority. You can use the default color set, or invert the color set, or click *Edit* to choose custom colors for the priority levels.
 - Choose an operator and enter a threshold value. The *Outside* and *Between* operators require two values.

8. Click [Add](#) to add the rule to the conditional format.
To see the formatting applied to the selected cells, select the [Preview](#) check box. You can clear all formatting rules by clicking [Reset](#).
9. Repeat the preceding steps if you want to add more rules to the conditional format, and click [OK](#) when finished.

10.1.2 To apply conditional formatting in SAP BW data sources

If you are defining conditional formatting for SAP BW data, there are additional options in the [Display](#) panel for displaying the formatting.

1. In the [Conditional Formatting](#) panel, click the [Display](#) drawer.
2. Choose the types of cells that you want to apply the conditional formatting to:

Option	Description
Data Cells	Apply conditional formatting to the data cells of the specified measure.
Row Headers	Apply conditional formatting to the row headers of the specified measure.
Column Headers	Apply conditional formatting to the column headers of the specified measure.

3. If you want to apply the formatting to a different measure, select [Applied to](#). In the dropdown menu, choose the measure that you want to apply conditional formatting to.
4. Click [OK](#).

10.2 Editing conditional formatting rules

After you create a conditional format, you may want to change the settings for a conditional rule. You can edit the priority, operator, or values for a conditional rule at any time.

Related Information

[To edit conditional formatting rules \[page 88\]](#)

10.2.1 To edit conditional formatting rules

1. Click the arrow beside the [Conditional Formatting](#) button, point to the conditional format that you want to edit, and click [Edit](#).

2. In the *Conditional Formatting* panel in the *Rules based on* area, select new settings for the condition rules you want to edit.
3. Click *OK* to apply the changes.

10.3 Removing conditional formatting

You can remove conditional formatting to restore your original view of the data. You can also temporarily disable conditional formats if you need to reuse them in the future.

10.3.1 To remove conditional formatting

1. Click the arrow beside the *Conditional Formatting* button.
2. Point to the conditional format that you want to remove, and click *Delete*.

10.3.2 To toggle conditional formatting

1. Click the arrow beside the *Conditional Formatting* button.
2. Click the conditional format that you want to toggle on or off.

11 Calculations

This section describes the calculation types available to help you analyze your data.

11.1 Overview of calculations

Crosstabs that contain raw multidimensional data are not always easy to read or understand. The data may hide trends, which can be revealed only when new information is derived from it. Calculations provide a way to reveal these trends.

You can add multiple calculations, to enhance your analysis further or to highlight different aspects of the data.

When you add a calculation to your analysis, the calculation is added as an additional member. The calculation also behaves like a member; for example, you can filter or apply conditional formatting to all types of calculated members, except for dynamic calculations.

The following calculation types are available:

Simple calculations

Simple calculations are calculations involving two or more members and one of the basic arithmetical or percentage operators. Simple calculations can involve just two members and an operator; for example `<Product Price - Product Cost>`, but you can also add multiple members; for example `<Price * Sales Tax * Quantity>`. If you select more than two members or measures, only the addition and multiplication calculations are enabled.

For subtraction, division, and percentage calculations, the calculation is defined in the order in which you select the members. That is, if you click the `<Food>` member first, and then the `<Drink>` member, the resulting subtraction calculation would be `<Food - Drink>`.

If you want to create more complex arithmetic calculations, create a custom calculation instead.

You can access these simple calculations quickly from the [Calculations](#) toolbar button, without using the [Calculation](#) panel.

Custom calculations

Custom calculations are calculations that you define, by creating formulas in the [Calculation](#) panel. Custom calculations can be as simple as an addition of two members, or can be a complex combination of functions and members. For example, you could create this custom calculation:

```
TRUNC(ABS("Member1") + ABS("Member2"))
```

You can compose a custom calculation by typing a formula into the [Calculation](#) panel, or by selecting members and functions from lists.

Dynamic calculations

Dynamic calculations are a special type of calculation that recalculates when the data changes in its associated members. For example, if you add a [Rank Number](#) calculation, members are assigned a numerical rank. If you then remove the member ranked 3rd, the member that was previously ranked 4th is now ranked 3rd.

Unlike the other calculation types, dynamic calculations cannot be used as operands in other calculations and cannot have filters applied to them.

Note

Dynamic calculations can be initially applied only to visible measures on an axis. However, removing the measure from the axis does not remove the dynamic calculation.

Note

Custom groups can provide an alternative for some types of calculations. For more information, see [Combining members as custom groups \[page 114\]](#).

Note

You cannot create custom calculations or simple calculations based on the members of a custom group that is added to the crosstab as a separate hierarchy. For more information, see [Adding custom groups to the crosstab \[page 118\]](#).

Related Information

[Creating calculations \[page 91\]](#)

[Calculation descriptions \[page 94\]](#)

[Totals, Parents, and Aggregations \[page 102\]](#)

11.2 Creating calculations

There are several ways to create a calculation:

- You can click the [Calculations](#) button on the toolbar to create a custom calculation with the [Calculation](#) panel.
- You can click the arrow beside the [Calculations](#) button to access simple arithmetic calculations, dynamic calculations, and the [Calculation](#) panel.

- You can right-click a member on the crosstab to access dynamic calculations and the [Calculation](#) panel.

ⓘ Note

Dynamic calculations are available only when you right-click a measure.

ⓘ Note

When working with SAP BW and SAP HANA data sources, calculations can be applied only to measure dimensions and to dimensions that are defined in a characteristic structure.

Related Information

[Calculation descriptions \[page 94\]](#)

[Understanding aggregations \[page 102\]](#)

[Totals, Parents, and Aggregations \[page 102\]](#)

11.2.1 To add a simple calculation

1. Select two or more members on the crosstab.

For subtraction, division, and percentage calculations, the calculation is defined in the order in which you select the members. That is, if you click the **<Food>** member first, and then the **<Drink>** member, the resulting subtraction calculation would be **<Food - Drink>**.

ⓘ Note

With SAP BW and SAP HANA data, calculations are based on measures, so you will need to select two or more measures.

ⓘ Note

If you select more than two members or measures, only the addition and multiplication calculations are enabled.

2. On the toolbar, select [Analyze](#), and then click the arrow beside the [Calculations](#) button.
3. Select one of the operators from the list.
The calculation is added as a new column or row member to the right of or beneath the selected members. A default name is applied, but you can change the name in the [Properties](#) panel.


11.2.2 To add a custom calculation

1. On the toolbar, select [Analyze](#) and then click [Calculations](#) to open the [Calculation](#) panel.

2. In the [Name](#) field, type a name for your custom calculation.
3. From the [Based on](#) list, select the hierarchy or dimension to apply the calculation to.

Note

With SAP BW and SAP HANA data, you can apply calculations only to measure dimensions.

4.  Click the [Member Selector](#) icon beside the [Place After](#) field, and choose where you want the calculated member to be added.
If you selected member headers prior to opening the [Calculation](#) panel, this field is already populated.
5. Enter your calculation formula.

- To insert a function, click [Function](#).
- To insert members, click [Add Member](#).

If you are familiar with the required syntax, you can also manually type in your calculation formula, or adjust a formula that you created using the [Function](#) and [Add Member](#) buttons.

As you create your formula, you can check for errors by clicking [Validate](#).

6. When finished, click [OK](#).
The formula is validated, and if error-free, the calculation is added to the crosstab. If the validation fails, the calculation is not added to the crosstab. A default name is applied, but you can change the name in the [Properties](#) panel.

11.2.3 To add a dynamic calculation

1. Select a measure on the crosstab.
2. On the toolbar, select [Analyze](#), click the arrow beside the [Calculations](#) button, and then point to [Dynamic Calculation](#).
3. Select one of the dynamic calculations from the list.
The calculation is added as a new column or row member to the right of or beneath the selected measure. A default name is applied, but you can change the name in the [Properties](#) panel.

11.2.4 To edit a calculation

1. On the toolbar, select [Analyze](#), and then click the arrow beside the [Calculations](#) button.
2. From the menu, choose the calculation that you want to edit, and then click [Edit](#).
Alternatively, you can click the [Calculation](#) icon in the header of the calculated member.
3. In the [Calculation](#) panel, make changes to the calculation.

Note

For dynamic calculations, you can edit only the [Name](#), [Based on](#), and [Place After](#) fields.

11.2.5 To delete a calculation

1. On the toolbar, select [Analyze](#), and then click the arrow beside the [Calculations](#) button.
2. From the menu, choose the calculation that you want to delete, and then click [Delete](#).

Alternatively, you can right-click the [Calculation](#) icon in the header of the calculated member, and select [Delete calculation](#).

11.3 Calculations with sorts

When you add a calculation, you can specify whether the calculation is to be placed after a particular member. If you add a calculation to a set of sorted members, one of two behaviors is possible:

- If you add the calculation by right-clicking a member, or by clicking the [Calculations](#) button on the toolbar with a member already selected in the crosstab, then the [Place After](#) field in the [Calculation](#) panel is automatically populated with the name of the selected member. The calculation is added to the crosstab immediately following the selected member, and the sort is removed.
- If you add the calculation by clicking the [Calculations](#) button on the toolbar, without selecting a member first, then the [Place After](#) field in the [Calculation](#) panel is empty. The calculation is added to the crosstab, and is sorted along with the other members.

Note

When working with SAP BW and SAP HANA data sources, calculations can be applied only to measure dimensions and to dimensions that are defined in a characteristic structure. You cannot sort across measure dimensions because measures can be different quantities specified in different units, such as dollars and percentages.

11.4 Calculation descriptions

The following calculations are available:

Simple calculations

Simple calculations	Description
Add	Adds the values in two or more rows or columns.
Subtract	Subtracts the values in one row or column from the values in another row or column.
Multiply	Multiplies the values in two or more rows or columns.

Simple calculations	Description
Divide	Divides the values in one row or column by the values in another row or column.
Percentage Difference (same as the custom calculation function PERCENT)	<p>Returns the percentage deviation of operand1 from operand2. If operand1 is less than operand2, then the result is negative.</p> <p>Examples:</p> <ul style="list-style-type: none"> 1 % 2 is -50% (1 is 50% less than 2) 2 % 1 is 100% (2 is 100% more than 1) 3 % 1 is 200% (3 is 200% more than 1)
Percentage Share (same as the custom calculation function PERCENT_A)	<p>Returns the percentage of operand1 to operand2.</p> <p>Examples:</p> <ul style="list-style-type: none"> 1 %_A 2 is 50% (1 is 50% of 2) 2 %_A 1 is 200% (2 is 200% of 1) 3 %_A 1 is 300% (3 is 300% of 1)

Note

Percentage calculations are not available for cross-tabs based on SAP HANA data.

Dynamic calculations

Dynamic calculations	Description
Moving Minimum Value	Returns the current minimum value, within a hierarchy level, compared to the previous values.
Moving Maximum Value	Returns the current maximum value, within a hierarchy level, compared to the previous values.
Accumulative Sum	Returns the accumulative sum, within a hierarchy level, of all the previous values. This is based on the server-formatted value.
Accumulative Sum of Rounded Values	Returns the accumulative sum, within a hierarchy level, of all the previous values. This is based on the displayed value.
Accumulative Count of All Detailed Values	Returns the accumulative count, within a hierarchy, of all previous values.
Accumulative Count of All Detailed Values that are Not Zero, Null, or Error	Returns the accumulative count, within a hierarchy, of all previous values that are not 0, null, or error values.
Moving Average	Returns the moving average, within a hierarchy, of the previous values.
Moving Average of All Detailed Values that are Not Zero, Null, or Error	Returns the moving average, within a hierarchy, of the previous values that are not 0, null, or error values.
Rank Number	Returns the rank order for each value, with the largest value having a rank of 1. Items with the same value will have the same rank.

Dynamic calculations	Description
Olympic Rank Number	Returns the rank order for each value, with the largest value having a rank of 1. Items with the same value will have the same rank, but the rank of the following item will assume the previous values were different. For example, 100 = Rank 1, 90 = Rank 2, 90 = Rank 2, 80 = Rank 4.
Percentage Contribution to Parent	Returns the percentage contribution of each value to its parent value.
Percentage Contribution to Overall Result	Returns the percentage contribution of each value to the overall result value.

Custom calculation functions

Note

Not all the calculations are available for each data source provider.

Percentage calculations	Syntax	Description
PERCENT (same as the simple calculation Percentage Difference)	"operand1 " % "operand2 "	Returns the percentage deviation of operand1 from operand2. If operand1 is less than operand2, then the result is negative. Examples: <ul style="list-style-type: none"> 1 % 2 is -50% (1 is 50% less than 2) 2 % 1 is 100% (2 is 100% more than 1) 3 % 1 is 200% (3 is 200% more than 1)
PERCENT_A (same as the simple calculation Percentage Share)	"operand1 " %_A "operand2 "	Returns the percentage of operand1 to operand2. Examples: <ul style="list-style-type: none"> 1 %_A 2 is 50% (1 is 50% of 2) 2 %_A 1 is 200% (2 is 200% of 1) 3 %_A 1 is 300% (3 is 300% of 1)

Data calculations	Syntax	Description
NODIM	NODIM(<expression>)	Returns purely numerical values for <expression>, and suppresses units and currencies.
DATE	DATE("operand1 ")	The value is seen as the number of days from 01.01.0000 onwards, and is output as a date. The value can be between 0 and one million, which results in a date between 01.01.0000 and 27.11.2738.
TIME	TIME("operand1 ")	The TIME operator takes any measure and creates a measure of type TIME. This function is designed for offset calculations. For example, if you have time measures and want to deduct 4 hours, you can use the TIME operator.

Data calculations	Syntax	Description
NOERR	NOERR (<expression>)	Returns 0 if the calculation of <expression> leads to an arithmetical error. Otherwise, the result is the value of the expression. This is used to avoid error messages so that you can continue to calculate with a defined result.
NDIV0	NDIV0 (<expression>)	Returns 0 if the calculation of <expression> causes a division by 0. Otherwise, the result is the value of the expression. This is used to avoid error messages so that you can continue to calculate with a defined result.
ROLLUP	ROLLUP (operand1)	Calculates the rollup for a set of values.

Mathematical calculations	Syntax	Description
SUMMATION	"operand1 " + "operand2 "	Sum the values of operand1 and operand2.
DIVISION	"operand1 " / "operand2 "	Divide the value of operand1 by the value of operand2.
MULTIPLICATION	"operand1 " * "operand2 "	Multiply the value of operand1 with the value of operand2.
SUBTRACTION	"operand1 " - "operand2 "	Subtract the value of operand2 from the value of operand1.
EXP	EXP ("operand1 ")	Exponential function. It equates to e ** operand1, where e = 2.7182818284590452.
LOG	LOG ("operand1 ")	Natural logarithm is the logarithm to the base e, where e = 2.7182818284590452. LOG is the inverse of EXP.
MOD	"operand1 " MOD "operand2 "	Returns the remainder of the division of operand1 by operand2.
SQRT	SQRT ("operand1 ")	Returns the square root of operand1.
LOG10	LOG10 ("operand1 ")	Returns the logarithm, to base 10, of operand1.
ABS	ABS ("operand1 ")	Returns the absolute numerical value of operand1 without regard to its sign. For example ABS(-1) will return 1 and ABS(1) will also return 1.
CEIL	CEIL ("operand1 ")	Returns the smallest whole value that is not smaller than operand1. For example CEIL(-2.7) will return -2, but CEIL(2.7) will return 3.
DIV	DIV ("operand1 " , "operand2 ")	Returns the whole number of operand1 divided by operand2 and ignores the remainder.
FLOOR	FLOOR ("operand1 ")	Returns the largest whole value that is not larger than operand1. For example FLOOR(-2.7) will return -3, but FLOOR(2.7) will return 2.
FRAC	FRAC ("operand1 ")	Returns the decimal part of operand1. For example FRAC(2.7) will return 0.7.
MAX	MAX ("operand1 " , "operand2 ")	Compares operand1 and operand2 and returns the maximum value.

Mathematical calculations	Syntax	Description
MAX0	MAX0 ("operand1 ")	Returns the maximum of 0 and operand1. This means all negative values will be treated as 0.
MIN	MIN ("operand1 " , "operand2 ")	Compares operand1 and operand2 and returns the minimum value.
MIN0	MIN0 ("operand1 ")	Returns the minimum of 0 and operand1. This means all positive values will be treated as 0.
TRUNC	TRUNC ("operand1 ")	Returns the whole number part of operand1. For example TRUNC(2.7) will return 2.
POWER	"operand1 " ** "operand2 "	Raise operand1 to the power of operand2.
ROUND	ROUND (operand1)	Round the target values to a specified number of decimal places.
Other calculations	Syntax	Description
SIN	SIN ("operand1 ")	Returns the sine of an angle, represented by operand1, specified in radians.
COS	COS ("operand1 ")	Returns the cosine of an angle, represented by operand1, specified in radians.
TAN	TAN ("operand1 ")	Returns the tangent of an angle, represented by operand1, specified in radians.
ASIN	ASIN ("operand1 ")	Returns the arcsine of operand1 (between -pi/2 and pi/2), when the value of operand1 is between -1, and 1.
ACOS	ACOS ("operand1 ")	Returns the arccosine of operand1 (between 0 and pi), when the value of operand1 is between -1, and 1.
ATAN	ATAN ("operand1 ")	Returns the arctangent of operand1 (between -pi/2 and pi/2).
SINH	SINH ("operand1 ")	Returns the hyperbolic sine of an angle, represented by operand1, specified in radians.
COSH	COSH ("operand1 ")	Returns the hyperbolic cosine of an angle, represented by operand1, specified in radians.
TANH	TANH ("operand1 ")	Returns the hyperbolic tangent of an angle, represented by operand1, specified in radians.
AND	<expression1> AND <expression2>	Returns 1 if both <expression1> and <expression2> do not equal 0. Otherwise the result is 0. Only the numerical values of <expression1> and <expression2> are considered, without taking units into account.
OR	<expression1> OR <expression2>	Returns 1 if either <expression1> or <expression2> does not equal 0. Otherwise the result is 0. Only the numerical values of <expression1> and <expression2> are considered, without taking units into account.
XOR	<expression1> XOR <expression2>	Returns 1 if either <expression1> or <expression2> (but not both) does not equal 0. Otherwise the result is 0. Only the numerical values of <expression1> and <expression2> are considered, without taking units into account.

Other calculations	Syntax	Description
NOT	NOT (<expression>)	Returns 1 if <expression> is 0, otherwise the result is 0. Only the numerical value of <expression> is considered, without taking units into account.

11.5 Calculations Support for Various Data Sources

This section explains the calculations support for various data sources.

Data Sources	Calculations
SAP BW	<ul style="list-style-type: none"> • PERCENT • PERCENT_A • NODIM • DATE • TIME • NOERR • NDIVO • SUMMATION • DIVISION • MULTIPLICATION • SUBTRACTION • EXP • LOG • MOD • SQRT • LOG10 • ABS • CEIL • DIV • FLOOR • FRAC • MAX • MAXO • MIN • MINO • TRUNC • POWER

Data Sources	Calculations
	<ul style="list-style-type: none"> SIN COS TAN ASIN ACOS ATAN SINH COSH TANH AND OR XOR NOT
MSAS	<ul style="list-style-type: none"> PERCENT_A PERCENTDIFFERENCE ROLLUP ABS DIVISION EXP FRAC MAX MIN MULTIPLICATION POWER SQRT SUBTRACTION SUMMATION ROUND
SAP HANA	<ul style="list-style-type: none"> SUMMATION DIVISION MULTIPLICATION SUBTRACTION
Teradata	<ul style="list-style-type: none"> PERCENT_A PERCENTDIFFERENCE SUMMATION DIVISION MULTIPLICATION SUBTRACTION

Data Sources	Calculations
Essbase	<ul style="list-style-type: none"> PERCENT_A PERCENTDIFFERENCE SUMMATION DIVISION SUBTRACTION MULTIPLICATION
Oracle OLAP	<ul style="list-style-type: none"> PERCENT_A PERCENTDIFFERENCE SUMMATION DIVISION SUBTRACTION MULTIPLICATION

12 Totals, Parents, and Aggregations

You can choose whether to show or hide totals for each hierarchy in a crosstab based on SAP BW data. Displaying totals for a hierarchy adds additional rows or columns to that hierarchy in the crosstab. These rows or columns display aggregations of the member values within the hierarchy.

For inner hierarchies, the totals are labeled *Result*. When totals are displayed for the outermost hierarchy, a single row or column labeled *Overall Result* is added.

You can also set a hierarchy to show totals only when more than one member is available for aggregation. This option can help you avoid redundant *Result* cells, especially in cases where an inner hierarchy has only a single member nested within a member of the outer hierarchy.

Example

Your workspace has a Product hierarchy nested within a Country hierarchy on the rows of a crosstab. If you choose to display totals for the Product hierarchy, an additional row labeled *Result* is added to the Product hierarchy for each country. For a particular country, the result row shows aggregations such as the total sales of all products in a country, or the average price of products in that country.

If you choose to show totals for the Country hierarchy, an *Overall Result* row appears in the Country hierarchy, and displays aggregated values for all products in all countries.

Parents

In multi-level hierarchies, parent members also display aggregated values. For example, the parent member Europe could display the sum of the values of its child members France, Germany, and Italy, or it could display another type of aggregation.

Parent members are normally displayed above or to the left of their child members. Totals are normally displayed below or to the right of child members. You can change the positions of totals and parents though.

For example, if you are analyzing sales figures for European countries, and if the parent member Europe represents the sum of the country members France, Germany, and Italy, you may want the parent member Europe to be displayed below its child members.

12.1 Understanding aggregations

Aggregations are summaries of members. In a hierarchy, parent member values represent summaries of child member values. For example, if you have a parent member <Africa>, and three child members <Egypt>, <Morocco>, and <South Africa>, the value of the <Africa> member represents a summary of the values

of the child members <Egypt>, <Morocco>, and <South Africa>. Often, the parent member value is the sum of the child member values. However, the parent member value can be a different summary, such as the average of the child member values, or the count of the number of child members. These summary values are called aggregations.

With flat lists, there are no parent members. Therefore, to display an aggregation, you would turn on the display of totals. When you set the aggregation type for a measure, the selected type is applied to both totals and parent members, if there are parent members in the hierarchy.

Each measure member can have one aggregation; if there are multiple measures in the analysis, each member can have a different aggregation. For example, you can choose a Sum aggregation for quantity measures, an Average aggregation for percentage measures, and a Minimum or Maximum aggregation for cost measures.

The following aggregations are supported:

Aggregation	Description
Default	The aggregation value is set to the default aggregation defined on the query.
Minimum	The aggregation value is the minimum of the member values.
Maximum	The aggregation value is the maximum of the member values.
Sum	The aggregation value is the sum of the member values.
Count of All Detailed Values	The aggregation value is the count of the members.
Count of All Detailed Values that are Not Zero, Null or Error	The aggregation value is the count of the members, excluding members whose values are zero, null, or error.
Average	The aggregation value is the average of the member values.
Average of All Detailed Values that are Not Zero, Null, or Error	The aggregation value is the average of the member values, excluding members whose values are zero, null, or error.
Standard Deviation	The aggregation value is the calculated standard deviation of the member values.
Median	The aggregation value is the median of the member values.
Median of All Detailed Values that are Not Zero, Null, or Error	The aggregation value is the median of the member values, excluding members whose values are zero, null, or error.
Variance	The aggregation value is the calculated variance of the member values.
Hide	Do not display any aggregation value.

12.2 To show or hide member totals

You can perform this task in a crosstab that is based on SAP BW data and that represents an analysis (not a sub-analysis).

1. Right-click a member or header of the hierarchy that you want to set totals for.

2. Click [Totals](#) and choose one of the following options:

Option	Description
Hide totals	Totals are not shown for the hierarchy.
Show totals	Totals are shown for the hierarchy.
Hide totals if only one member is available	Totals are displayed for the hierarchy in each case where there is more than one member to aggregate. If only a single member is available, the totals for that member are hidden.

Alternatively, you can filter the option from [Preferences](#) and set the default behavior for a new crosstab or chart component.

Note

These preferences only apply to a new component. The behavior of existing component will remain the same.

To select the option from [Preferences](#), perform these steps:

1. Open the [Preferences](#) page in the SAP BusinessObjects BI launch pad.
2. Select [Analysis, edition for OLAP](#).
3. In the [Default State for Totals](#) section, select one of the option from the following options:
 1. [Default](#) - The default setting is based on the SAP BW query settings
 2. [Hide totals](#)
 3. [Show totals](#)
 4. [Hide totals if only one member is available](#)
4. Log off the BI launch pad, and log back on.

12.3 To set the positions of totals and parents

1. Select a crosstab that represents an analysis (not a sub-analysis).
2. On the toolbar, select [Display](#), and then click [Totals](#).
3. Choose [Position totals after members](#) or [Position totals before members](#).

Alternatively, you can filter the option from [Preferences](#) and set the default behavior for a new crosstab or chart component.

Note




These preferences only apply to a new component. The behavior of existing component will remain the same.

To select the option from [Preferences](#), perform these steps:

1. Open the [Preferences](#) page in the SAP BusinessObjects BI launch pad.
2. Select [Analysis, edition for OLAP](#).
3. In the [Default Positions for Totals / Parents](#) section, select [Position totals after members](#) or [Position totals before members](#).

4. Log off the BI launch pad, and log back on.

12.4 To change the aggregation type

1. Right-click a measure member header.
2. Click  **Totals**  **Calculate totals as** , and select an aggregation type.




Note

The aggregation type is applied to both totals and parent members.

Note

If you are working with a flat list hierarchy (and therefore, there are no parent members), and if totals are not turned on, you cannot change the aggregation type, because aggregations are shown in parent members and totals.

Note

To see the aggregation type applied to a measure, right-click the measure member header, and click  **Totals**  **Calculate totals as** . The selected aggregation type is shown in the list.

13 Exploring Your Analysis

After you've defined an analysis and added calculations and filters, you may need to make adjustments to suit your analysis needs. This section explains some techniques for changing the presentation of your business data, such as swapping and nested hierarchies, and changing the background filters.

This section also describes how you can compare different arrangements of the same data; for example, if you want to compare an exploratory view with a baseline view.

13.1 Expanding and collapsing parent members

When analyzing data, you will often want to explore data at lower levels within a hierarchy. In a crosstab or chart, you can expand a member to show its constituent child members, or collapse the member structure to show only the parent member.



A plus sign next to a member in the crosstab indicates that the member can be expanded; a minus sign indicates that the member has been expanded, and can be collapsed.

Expanding and collapsing parent members with chunked data

With certain types of data source connections, operations such as expanding and collapsing parent members are performed by the OLAP server, instead of Analysis itself. These data sources include the following:

- Microsoft SQL Server Analysis Services
- Extended Analytics
- Profitability and Cost Management
- Teradata
- SAP BusinessObjects Planning and Consolidation, version for the Microsoft platform
- Oracle Essbase

As a result, Analysis can fetch and render data in smaller chunks instead of retrieving the entire dataset, and the performance, responsiveness, and usability of Analysis are improved.

If you have nested hierarchies in an analysis based on one of these data sources, when you expand or collapse a member of the inner hierarchy, that member is expanded or collapsed for each member of the outer hierarchy.

13.1.1 To expand a parent member in a crosstab



Click the plus sign next to the member name to display its child members.

13.1.2 To collapse a parent member in a crosstab

Click the minus sign next to the member name.

13.1.3 To expand a hierarchy to a specific level in a crosstab

The [Expand to Level](#) function allows you to quickly drill to a specific level of a hierarchy on the crosstab.

Instead of expanding or collapsing individual members, you choose a level of the hierarchy. All of the parent members above that level are expanded, and the members at the level you choose are collapsed so that their children do not appear.

1. Right-click the hierarchy on the crosstab or the [Layout](#) panel.
2. Choose [Expand to Level](#) and click the level that you want to view.

13.1.4 To expand a parent member in a chart

1. Right-click a member in the chart.

Note

Expanding and collapsing members in a chart is possible only if the chart represents an analysis, and not a sub-analysis.

Depending on the type of chart, the member could be represented by a marker such as a pie slice or column chart riser, or by a name in the chart legend, or by a caption.

2. Select [Expand](#) to display the child members.

13.1.5 To collapse a parent member in a chart

1. Right-click a member in the chart.

Note

Expanding and collapsing members in a chart is possible only if the chart represents an analysis, and not a sub-analysis.

Depending on the type of chart, the member could be represented by a marker such as a pie slice or column chart riser, or by a name in the chart legend, or by a caption.

2. Select [Collapse](#) to display the parent member.

13.2 Swapping hierarchies

You can swap hierarchies with others to reorient the data in the crosstab or chart.

You can swap a row or column hierarchy with one of the background filter hierarchies, or with another row or column hierarchy.

You can also swap all rows with all columns, both in an analysis and in a sub-analysis.

13.2.1 To swap two hierarchies

1. Drag a hierarchy toward the hierarchy that you want to swap it with.
2. When the existing hierarchy is highlighted, release the mouse button to swap the two hierarchies.

Alternatively, you can right click a hierarchy in the [Layout](#) panel, click [Swap with](#), and choose a hierarchy from the list.

For some configurations of Analysis, you must expand a dimension in the metadata explorer before you can select the hierarchies for that dimension in the [Swap with](#) list.

13.2.2 To swap all rows with all columns

1. Select a crosstab that represents either an analysis or a sub-analysis.
2. On the toolbar, select [Display](#), and then click [Swap Axes](#).

13.2.3 Swapping hierarchies containing sorts and filters

When you swap hierarchies, or add a new hierarchy to a row or column axis, all existing sorts and filters are removed from the analysis. However, if you swap the positions of the row and column hierarchies using the Swap Axes button, the sorts and filters are preserved.

Related Information

[Sorting \[page 81\]](#)

13.3 Pivoting hierarchies

You can pivot hierarchies, to move an item of interest to the background filter and bring another hierarchy into the crosstab. Pivoting is useful when you want to quickly explore another aspect of your data in detail.

Example

To analyze the performance of your supermarket chain, you define an analysis showing products and a few measures; for example, Margin and Revenue. You see that the total revenue for Peaches is lower than expected, so you decide to investigate the revenue for Peaches over time, by pivoting Peaches with the Time hierarchy. The Products hierarchy moves to the background filter with the Peaches member selected, and the Time hierarchy moves to the crosstab. Now the crosstab shows the history of revenue for Peaches only, so you can determine when the revenue falls below expectations.

13.3.1 To pivot hierarchies

1. On the crosstab, right-click a member, and point to *Pivot With*.
2. Select the hierarchy you want to pivot into the crosstab.

ⓘ Note

If all hierarchies are already present in the crosstab, the *Pivot With* option is disabled.

ⓘ Note

For some configurations of Analysis, you must expand a dimension in the metadata explorer before you can select the hierarchies for that dimension in the *Pivot With* list.

13.4 Removing hierarchies

You can remove hierarchies from the crosstab or chart to simplify your analysis.

13.4.1 To remove a hierarchy from a chart or crosstab

1. Select the crosstab or chart component.
2. Drag the hierarchy out of the *Layout* panel.

Alternatively, you can right-click the hierarchy, and select *Remove*.

13.5 Nested hierarchies

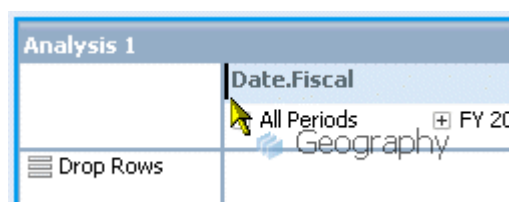
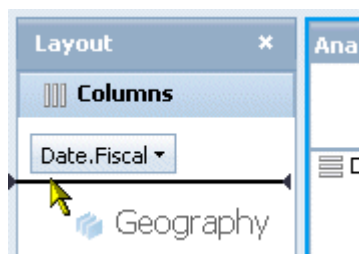
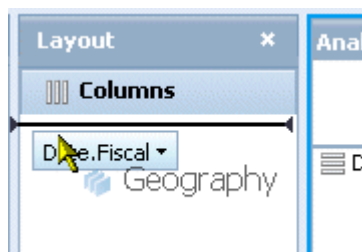
Displaying two or more hierarchies on a crosstab axis is called nesting. When you nest hierarchies, the one nearest the cells is called the inner hierarchy, and any others are called the outer hierarchies.

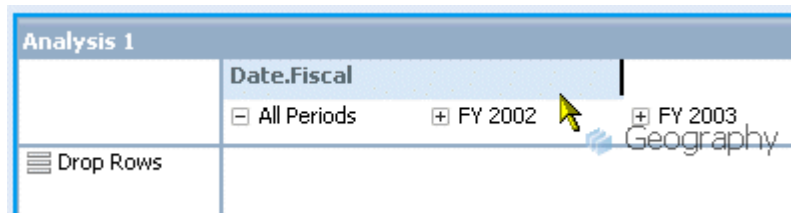
With SAP BW data only, you can also combine the display of nested hierarchies on an axis so that they are easier to navigate.

13.5.1 To nest hierarchies

1. In the metadata explorer, select the hierarchy that you want to nest with an existing hierarchy on the crosstab.
2. Drag the hierarchy to the existing hierarchy in the *Layout* panel or in the crosstab.

An insertion indicator shows you where the selected hierarchy will be placed.





The hierarchies are nested:

Analysis 1					
Measures	Geography		Date.Fiscal		
	<input type="checkbox"/> All Geographies	<input type="checkbox"/> Australia	<input type="checkbox"/> Canada	<input type="checkbox"/> France	<input type="checkbox"/> Germany
	<input type="checkbox"/> All Periods	<input type="checkbox"/> All Periods	<input type="checkbox"/> All Periods	<input type="checkbox"/> All Periods	<input type="checkbox"/> All Periods
Reseller Sales Am	\$ 80,450,596.98	\$ 1,594,335.38	\$ 14,377,925.60	\$ 4,607,537.94	\$ 1,983,

3. Repeat these steps to nest hierarchies on another axis.

Note

When you place a hierarchy on a row or column axis, or in the background filter, the default member of the hierarchy is automatically selected. With Microsoft Analysis Services, the default member can be set on the OLAP server. For other OLAP providers, the default member is the first member on the top level of the hierarchy.

Note

When you nest several hierarchies horizontally, some data or metadata may not be visible in the analysis window. You can reposition the metadata and data panes by dragging the separator between the panes, and you can also use the scrollbars at the bottom of the panes.

With SAP BW data only, you can compact the display of nested hierarchies so that you can navigate them as one combined hierarchy.

Related Information

[To nest hierarchies \[page 110\]](#)

13.5.2 To compact the display of nested hierarchies

With SAP BW data only, you can compact the display of nested hierarchies.

1. On the toolbar, select *Display*, and then click *Hierarchy*.
2. Choose whether you want to compact the row axis or the column axis.

13.5.3 Changing the order of nested hierarchies

You can change the order of nested hierarchies by swapping the hierarchies.

Related Information

[Swapping hierarchies \[page 108\]](#)

13.6 Changing the background filter (changing the slice)

When you place dimensions or hierarchies into the background filter, the default member is automatically selected to filter your analysis. However, you can change the selected member if you want to filter different data. This action is sometimes called “changing the slice”, because you are changing to a different two-dimensional “slice” of a multi-dimensional cube.

Selecting a background filter member is done in the same way as selecting members for the row and column hierarchies.

13.6.1 To select a background filter member

1. In the [Background](#) filter area in the [Layout](#) panel, double-click a dimension or hierarchy.
2. Select one or more members, depending on your data source provider.
3. Click [OK](#).




13.7 Hiding hierarchy levels

When you work with hierarchies, you can hide the hierarchy levels that are not relevant to your analysis. For example, when you analyze sales results, and your Date hierarchy contains the levels years, quarters, and months, you can hide the quarters level to focus on the months.

Related Information

[To hide a hierarchy level \[page 113\]](#)

13.7.1 To hide a hierarchy level

1. In the analysis window, select the crosstab that contains the hierarchy.
2. In the *Layout* panel, right-click the hierarchy.
3. Depending on the number of levels you want to hide, take one of the following steps:
 - For a single level, click *Show levels* and deselect the level.
 - For two or more levels, click  *Show levels*  *Advanced*  and deselect the levels.

13.8 Reordering members

You can reorder members to help you compare data. For example, you may have a *<Country>* hierarchy that comprises these members:

- Antarctica
- Canada
- France
- India
- Mexico
- Switzerland

If you wanted to compare the populations of different penguin species in Antarctica and Switzerland, you could move Switzerland directly beside Antarctica.










Note

You can reorder members only within the same parent, but in a ragged hierarchy, the members can be at different levels.

Note

If the moved members have child members, the child members are moved along with the parent members.

13.8.1 To reorder members

1. In the crosstab, select the members that you want to move.
 2. Right-click one of the selected members, and click  *Reorder Members*  *Move* .
 3. Right-click the member above or below the position where you want to insert the selected members, and click  *Reorder Members*  *Insert Before*  or  *Reorder Members*  *Insert After* .
- Alternatively, you can drag the selected members to their new position.

13.9 Combining members as custom groups

Sometimes you need to answer business questions that cannot be easily addressed by filtering an analysis or by adding calculations. Custom groups add flexibility to your analysis by allowing you to combine multiple members from one or more hierarchies belonging to the same dimension into a single group.

For example, you can use a custom group to examine sales data for a selection of products in a certain style or color, such as minivans and sport utility vehicles painted blue or silver.

After you choose the members to include in a custom group, you can add the group to the crosstab as a member of an existing hierarchy that it is based on, or view it as a separate hierarchy.

Custom groups can be easily reused and shared. They appear in the metadata explorer in a folder within the dimension that they relate to. If you add a custom group to a hierarchy, it remains as a member of that hierarchy for your workspace until you remove it. With the appropriate permissions, custom groups can also be shared with other users in your organization who have access to the same data source. Individual users can save private copies of a shared custom group and edit them if necessary.

Note

Custom groups are supported only for Microsoft Analysis Services and Oracle Essbase data.


Note

Custom groups are not supported in other applications such as Analysis, edition for Microsoft Office, Crystal Reports, and Web Intelligence. As a result, analysis views cannot contain custom groups. When you export an analysis view from Analysis, edition for OLAP, any custom groups are removed from the analysis view.

Note

Custom groups based on Essbase data use the Aggregate function in the Multidimensional Expressions (MDX) language to calculate the total value for members included in their definition. For more information about the behavior of the Aggregate function in MDX, refer to the documentation for Oracle Essbase.

13.9.1 To create a custom group

1.  To create the custom group in the metadata explorer, select the appropriate dimension or hierarchy and click ► **Custom Group** ► **Create custom group** .

You can also create a custom group in the crosstab by selecting one or more members in the appropriate hierarchy, right-clicking a member, and clicking ► **Custom Group** ► **New** .



The **Custom Group** dialog box appears. In this dialog box, you can edit the name of the custom group, add or remove members, and set whether the custom group is shared or private.

2. Type a name for the custom group.

The name must be unique from other custom groups, including other users' private custom groups. This restriction prevents naming conflicts in case a custom group is shared.

3. If necessary, select the appropriate hierarchy in the [Hierarchies](#) list.
4. Choose an option from the [Selection Method](#) list.

Option	Description
Individual	This selection method allows you to manually select a static set of members from the hierarchy.
Search Definition	<p>This selection method allows you to define a dynamic set of members based on a search term that you type. This selection method is useful if the members in your cube change frequently and you want to automatically update your custom group to include certain types of members.</p> <p>All of the displayed search results are selected, and you cannot deselect or add individual members. You can change the selection only by using a different search term.</p> <p>The member list for the custom group updates automatically each time you connect to the relevant data source.</p> <p>For example, if you use a search definition for a product hierarchy and search for the term “minivan”, all of the members that contain that term are added to the custom group. When a new minivan is added to the product hierarchy, that minivan is automatically added to your custom group.</p>
Condition Definition	<p>This selection method allows you to define a dynamic set of members based on measure conditions. This selection method is useful if you are interested in members that meet certain numerical conditions.</p> <p>You can set multiple conditions and choose to link them with an AND or OR operation.</p> <p>The members that meet your conditions are included in the custom group definition, and you cannot deselect or add individual members.</p> <p>For example, if you want to examine data about vehicles that are less popular, you could set a condition on a product hierarchy for vehicle types with fewer than 5000 units sold.</p>

5. Select members for the hierarchy.
 - For the individual selection method, use the checkboxes next to each member in the list to make your selections. The member selector functions similarly to the [Filter](#) dialog box for filtering a hierarchy by member. You can select members in the hierarchy structure and search for members that contain a specific string. You cannot select all of the members in the hierarchy. For detailed documentation on these functions, see the topics in the “Filtering by member” section.
 - For the search definition method, type search terms and click [Find Members](#). The results are displayed in the member list. If necessary, change the search term to capture a different set of members. For detailed information about search functionality, see [Finding members \[page 70\]](#).
 - For the condition definition method, set a condition by choosing a level of the hierarchy, a measure, and an operator. For more information on condition types, see [Filter types \[page 66\]](#). Type the necessary values for the condition and click [Add](#). If necessary, you can set multiple conditions and select [OR](#) to include members that meet any of the conditions or [AND](#) to select only members that meet all of the conditions.
6. To add the hierarchy to the custom group definition, click the + icon next to the [Hierarchies](#) list.
7. If you want to select members from another hierarchy, repeat steps 3 to 6. Select [Intersect](#) () or [Complement](#) () for the previous hierarchy to group the members of the two hierarchies.

Note

This option is available only for MSAS data sources. For Essbase data sources, multiple hierarchies are rendered as levels under the common node within a single hierarchy.

Note

If a hierarchy has multiple root members, that is, two or more members at the top-level of the hierarchy, you must add it as the first hierarchy in the custom group definition. The **+** icon next to the *Hierarchies* list is disabled if you try to add it after the first hierarchy.

8. If you want to share the custom group with other people in your organization who have access to the same data source, select *Share with organization*. This checkbox is available only if your BI administrator has granted you permission to share custom groups.
9. Click *OK*.

Related Information

[To remove or add individual members \[page 70\]](#)

[Sharing custom groups \[page 120\]](#)

[Custom groups based on multiple hierarchies \[page 116\]](#)

13.9.1.1 Custom groups based on multiple hierarchies

With Essbase and MSAS data sources, it is possible to create custom groups that contain members from multiple hierarchies.

Custom groups based on multiple MSAS hierarchies



When you create a custom group based on an MSAS hierarchy, the first hierarchy that you add in the *Custom Group* dialog box determines the member names that will appear when you add the custom group to the crosstab as a hierarchy. You can then add members from subsequent hierarchies to narrow the data down further. However, the names of the members from these hierarchies will not appear in your analyses.

For example, if you are interested in the sales of certain gender-specific cycling products, you could create a custom group based on a *Product* dimension. You want to navigate the custom group by the type of product, so you select members from the *Product Category* hierarchy first. You might select the *Road Bikes* and *Jerseys* members, for example. Then, you choose the *style* hierarchy and select the *women's* member from that hierarchy.

When you view the custom group as a hierarchy, you can drill into the *Road Bikes* and *Jerseys* members to view their children in the *Product Category* hierarchy. However, the members of this hierarchy are filtered based on their style. The grouping operation that you choose determines how the data is filtered.

Grouping members across hierarchies

There are two methods of grouping members from different hierarchies in a custom group:

Grouping operation type	Description
<i>Intersect</i>	<p>Data is displayed for members of the first hierarchy that also relate to the members of the second hierarchy.</p> <p>In the previous example, if you choose <i>Intersect</i> () , the custom group shows data for women's road bikes and jerseys. Unisex and men's products are removed from the custom group.</p>
<i>Complement</i>	<p>Data is displayed for members of the first hierarchy that do not relate to the members of the second hierarchy.</p> <p>In the previous example, if you choose <i>Complement</i> () , the custom group shows data for unisex and men's road bikes and jerseys. Women's products are removed from the custom group.</p>

Custom groups based on multiple Essbase hierarchies

While creating a custom group based on MSAS data, you can select members from only one hierarchy at a time in the member list. However, for Essbase custom groups, you select all the members at once. Essbase hierarchies that are related to each other are displayed under the same parent member in Analysis, so all of the available members appear in the member list and you can select a different hierarchy and its members as individual levels within the same hierarchy.

Note

Members can appear multiple times in an Essbase hierarchy. To avoid data for a member being counted twice, you may need to manually deselect extra instances of these members when you create the custom group. For example, a `Product` hierarchy might contain a hierarchy of all of the available products, and another hierarchy listing only the high-end luxury products. In this case, if you select the members of the luxury product hierarchy, you must be careful not to select them again in the other hierarchy.

Custom groups with members from three or more hierarchies

In a default configuration of Analysis, you can include members from up to four MSAS hierarchies in a custom group.

The order of operations for resolving multiple links between hierarchies proceeds from the hierarchies that you added first to those that you added last. That is, the link between the first two hierarchies is resolved first, and then the link between those combined hierarchies and the third hierarchy, and so on.

13.9.1.2 Grouping individual and conditional definitions using the intersect operation

If the first hierarchy in a custom group uses individual member selection, and it intersects with another hierarchy using a condition definition, the custom group may show unexpected measure values when it is viewed as a separate hierarchy.

The condition is applied to the second hierarchy in isolation, without the restrictions that you made for the first hierarchy. When the hierarchies are intersected, data for members that you did not select for the first hierarchy may be included in the custom group, and measures may not have the correct values.

In this case, you must add the hierarchy with the conditional definition as the first hierarchy in the custom group, and then the hierarchy with individually selected members. When you switch the order of the hierarchies, only the data that matches both the condition and the individual selection will be included in the custom group.

13.9.2 Adding custom groups to the crosstab


You can use custom groups in two distinct ways in your analysis: as a member of an existing hierarchy, or as a separate hierarchy.

Custom groups as hierarchy members

If you create a custom group in the crosstab, it appears as the last member of the hierarchy that you used to create it. You can also drag the custom group from the metadata explorer to this hierarchy in the crosstab to add it as a member.


The custom group then acts as a leaf member: you can remove it from the hierarchy, create calculations based on it, and so on. When you are reordering members, custom groups can be moved only to the position of the first or last member in the hierarchy.

If you add the same hierarchy to another analysis, the custom group will appear as a member of the hierarchy again. This behavior continues until you manually remove the custom group from the hierarchy by right-clicking it in the crosstab and clicking [Remove](#). Any calculations based on the custom group will also be removed.

If you want to explore the members of a custom group, you can click the icon next to the custom group (). Clicking this button opens a new analysis with the custom group as the only member hierarchy. The measures from the previous analysis are also added to the new analysis.

Custom groups as separate hierarchies

With the custom group as a separate hierarchy, you can drill down into the group to see how individual members contribute to the data.

Custom groups can be added as a hierarchy in two ways: you can move the custom group from the metadata explorer to an axis that does not have a conflicting hierarchy, or, if the custom group is already added as a member of a hierarchy in another analysis, you can click the icon next to the custom group ().

Note

When you add a custom group as a separate hierarchy, you cannot create simple calculations or custom calculations based on its members.

Related Information

[Add data to the crosstab \[page 21\]](#)

[Remove unwanted members \[page 21\]](#)

[Expanding and collapsing parent members \[page 106\]](#)

13.9.2.1 Custom groups with missing members

When a member that is included in a custom group is repositioned or removed in the data source, the custom group definition is affected.

You may need to confirm the definition of the custom group before it can be used in an analysis. In this case, if you open a workspace that uses the custom group in an analysis, or if you try to add the custom group to an analysis, a message prompts you to edit the custom group. When you right-click the custom group in the metadata explorer and click [Edit](#), the missing member is removed from the custom group. If necessary, you can review and edit the custom group to make sure that its definition is still correct.



Note

This behavior does not apply when a parent member is selected for a custom group definition and one or more of its children are repositioned or removed in the data source. In this case, you do not need to edit the custom group. The child members are automatically removed from the custom group when the workspace is opened, and any analyses containing the custom group are still valid.

13.9.3 To edit a custom group

You can edit your private custom groups to change their names and add or remove members. With the appropriate permissions, you can also share your custom groups with the rest of your organization.

Shared custom groups can be edited only by their owners, or by users with special permissions.

1.  Select the custom group in the metadata explorer and click ► [Custom Group](#) ► [Edit Custom Group](#) ►. You can also right-click the custom group in the crosstab and click ► [Custom Group](#) ► [Edit](#) ►, or double-click the [Custom Group](#) icon in the crosstab ().

The *Custom Group* dialog box appears. In this dialog box, you can edit the name of the custom group, add or remove members, and share the group with other members of your organization.

2. Edit the custom group as necessary and click *OK*.

Related Information



[Sharing custom groups \[page 120\]](#)

[To create a custom group \[page 114\]](#)

13.9.4 Sharing custom groups

In general, you create private custom groups that only you can view. With the appropriate permissions, it is also possible to create shared custom groups that are available to the entire organization. You can set the privacy of a custom group using the *Share with organization* checkbox in the *Custom Group* dialog box.

When you share a custom group, you cannot make it private again, because other members of your organization may be using the custom group in their analyses. As the owner of a shared custom group, you can edit or delete it, but these actions may impact other users' analyses.

Shared custom groups appear in the metadata explorer in the *Custom Groups* folder within the relevant dimension. Different icons help you distinguish between shared custom groups () and private ones ().


If other users have shared custom groups, you can use them in your analysis, although you cannot edit them unless an administrator has granted you specific permissions to do so. Instead, you can save a private copy of the shared custom group and edit it to meet your needs.

Related Information

[To save a new copy of a custom group \[page 121\]](#)

13.9.4.1 To share a custom group


If you have the appropriate administrative rights, you can share your custom group with others in your organization. Shared custom groups cannot be made private again.

1.  Select the custom group in the metadata explorer and click ► *Custom Group* ► *Edit Custom Group* .
You can also right-click the custom group in the crosstab and click ► *Custom Group* ► *Edit* .
2. In the *Custom Group* dialog box, click *Share with organization*.
3. Click *OK*.

For other users in your organization, the shared custom group appears in the *Custom Group* folder for the appropriate dimension in the metadata explorer.

13.9.5 To save a new copy of a custom group

Saving a new copy of an existing custom group can be useful if you need two similar custom groups based on the same hierarchy, or if you want to create a private version of a shared custom group.

1.  Select the custom group in the metadata explorer and click ► *Custom Group* ► *Save Custom Group As* ►.
2. Type a name for the new custom group, and make any other changes in the *Custom Group* dialog box.

Note

The name must be unique from other custom groups, including other users' private custom groups. This restriction prevents naming conflicts in case a custom group is shared.

3. Click *OK*.

In the metadata explorer, the new custom group is added to the *Custom Groups* folder for the dimension that it is based on.

Related Information

[To edit a custom group \[page 119\]](#)

13.9.6 To delete a custom group


You can permanently delete your private custom groups. If you have the appropriate permissions, you can also delete shared custom groups.

Note

This action is permanent and cannot be undone. If you only want to remove the custom group from your analysis, you can right-click it in the analysis window and click *Remove*, or click and drag it from the *Layout* panel of a crosstab.

Note

Other users in your organization may have added shared custom groups to their analyses. If you delete a shared custom group, it will be removed from these analyses.

1.  Select the custom group in the metadata explorer and click ► *Custom Group* ► *Delete Custom Group* ►.

You can also right-click the custom group in the crosstab and click ► *Custom Group* ► *Delete* ►

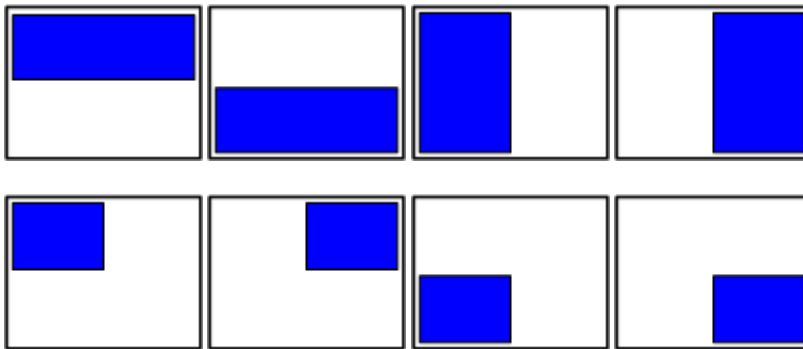
2. Click *Yes*.

The custom group is permanently deleted and removed from analyses in the current workspace. If the custom group has been added to analyses in other workspaces, it is removed from those workspaces when they are opened.

13.10 Resizing and moving components

You can drag any chart or crosstab component from its current position to any other valid position.

These are the valid positions:



Note



You can also maximize a component to fill the analysis window, by clicking the *Maximize* button in the component's title bar.

13.10.1 To move or resize a chart or crosstab

Click the title bar of the component you want to move or resize, and drag the component to one of the valid positions.

The drop location is highlighted as you move the mouse cursor in the analysis window. You can drag a component that occupies a single quadrant of the screen to a new position that occupies half of the screen, or vice versa. The component automatically resizes to the new position when you release the mouse button. Other components are also automatically resized if necessary.


13.11 Copying a component

You can copy a component to compare variations in data. For example, if you have a set of data displayed in a crosstab and chart, but you want to make small adjustments to your analysis and compare the changes with your baseline analysis, you can copy the components.


You can copy a component to the same sheet or to a different sheet. When you copy components, the analyses associated with the original components are also copied.

13.11.1 To copy a component

1. Click anywhere inside the component that you want to copy.

2.  On the toolbar, click [Copy](#).

Alternatively, you can press `CTRL+C` to copy the component.

3.  On the toolbar, click [Paste](#) to paste a copy of your component onto the current sheet.

Alternatively, you can press `CTRL+V` to paste the component.

If you want to paste the copied component onto another sheet, change to a different sheet before you paste the component.

The copied component is added below or to the right of existing components on the sheet.

13.12 Copying cell contents




Copy the contents of a cell from an analysis to paste them into another application by right-clicking the cell and clicking [Copy contents](#).

13.13 Undo and redo

Analysis includes multiple levels of undo. With multiple levels of undo, you can undo changes to a workspace, in reverse order, until you have your workspace in the condition you want it.

You can also undo all of your changes in one step, to restore the original state of the workspace when you opened it, even if you've saved the workspace after opening it.

The redo feature reverses an undo. If you move or resize a component, for example, and do not like its new position, you can click [Undo](#) to move it back to its original position. If you then change your mind, you can click [Redo](#) to restore the latest change. [Redo](#) does not reverse a [Discard Changes](#) action.

-  To undo an action, click *Undo* on the toolbar.
The first time the button is clicked, it reverses the most recent change made to the workspace. Each additional time the button is clicked, it reverses the next most recent change.
-  To undo all changes and revert to the original workspace, click the *Discard Changes* button on the toolbar.
-  To redo a change after you have undone it, click *Redo* on the toolbar.
The Undo and Redo buttons are disabled whenever there is nothing to undo/redo, or when you have made a change that cannot be reversed.

Note

You can only undo or redo actions in order from the most recent backward. You cannot undo an action without undoing more recent actions.

Note

Deleting a data source or a sheet clears the Undo/Redo history.




Related Information

[Toolbar reference \[page 195\]](#)

13.14 Commenting on data

To store information related to the data in an analysis workspace and communicate more directly with colleagues who explore the same analysis, you can add comments to crosstab cells. You can also view, edit, and delete comments added to an analysis.

Everyone who has access to the analysis workspace can view, add, edit, and delete comments.

A cell with a comment shows a red triangle in the upper righthand corner of the cell. To display the comment text in a tooltip, you can hover your mouse over the triangle. To view or edit the entire comment, you can right-click the cell and select  *Comment*  *Edit* . Or, click the cell and, on your keyboard, press Shift + F2.

A comment includes:

- An area for comments
- The name of user who last edited the comment text
- The date of the last edit
- The location of the cell that the comment relates to, indicated by the name of the row and column that intersect at the cell
- The value that the cell contains

The comments are saved with the workspace analysis and are both migrated and promoted with it.

Related Information

[To add a comment \[page 125\]](#)

[To edit a comment \[page 125\]](#)

[To delete a comment \[page 125\]](#)

13.14.1 To add a comment

1. Right-click the cell where you want to add the comment and select ► **Comment** ► **New** ►. Or, click the cell and, on your keyboard, press **Shift** + **F2**.
2. In the **Add Comment** panel, type your comment in the comment area.
3. Click **OK**.

13.14.2 To edit a comment

1. Right-click the cell with the comment you want to edit and select ► **Comment** ► **Edit...** ►. Or, click the cell and, on your keyboard, press **Shift** + **F2**.
2. In the **Edit Comment** panel, you can make the following changes:
 - Add or edit the comment text.
 - Delete all the text from the comment area by clicking **Clear**.
3. Click **OK**.

13.14.3 To delete a comment

Right-click the cell with the comment that you want to delete and select ► **Comment** ► **Delete** ►.

14 Display Attributes

Display attributes are properties of members, which provide an alternate way of categorizing the members. For example, attributes for a **<Product>** hierarchy might include color, manufacturer name, case size, and country of origin.

Note

Display attributes are available only with SAP BW and SAP HANA data sources.

You can add display attributes to your analysis to provide additional information about the members in the crosstab. You can also sort by display attribute.

Example

Anne works for a film distributor, and has expanded her **<Product>** hierarchy to view the many films available from her company. Anne has also added display attributes associated with that hierarchy to her view. To help her identify the movies that would be suitable for resale by a supermarket chain, Anne applies an alphanumeric sort on the **<Movie Classification>** display attribute.

Default display attributes appear in bold in the metadata explorer.

Note

If you add a display attribute to the **Layout** panel, but no hierarchy from its associated dimension is present in the **Layout** panel, the default hierarchy for that dimension is added along with the display attribute.

Note

The first time you add a hierarchy or display attribute to the row or column axis, the default display attributes are also added.

14.1 To add or remove display attributes

To add display attributes, drag them from the metadata explorer to the **Layout** panel or to the row or column axis on the crosstab.

To remove attributes, drag them out of the **Layout** panel or crosstab.

Alternatively, you can right-click a hierarchy in the **Layout** panel or in the crosstab, point to **Attributes**, and select or deselect display attributes.

Note

When you add several display attributes to the row axis, some data or metadata may not be visible in the analysis window. You can reposition the metadata and data panes by dragging the separator between the panes, and you can also use the scrollbars at the bottom of the panes.

14.2 Filtering with display attributes

The first time you filter a hierarchy by member, the display attributes that appear in the crosstab with that hierarchy also appear in the *Filter* panel. Using the *Display* button in the *Filter* panel, you can add other display attributes to the *Filter* panel, or remove currently displayed attributes. These display attributes can help when filtering members.

Note

Each subsequent time that you filter that same hierarchy by member, the previous display attribute settings in the *Filter* panel are remembered.

Note

The display attributes that you add to the *Filter* panel are not automatically added to the crosstab. To add display attributes to the crosstab, drag them from the metadata explorer to the crosstab.

Example

Your crosstab contains the Products hierarchy, and is also showing the “Country of Origin” display attribute associated with that hierarchy. You open the *Filter* panel to filter the Products hierarchy by member, and the “Country of Origin” display attribute also appears in the *Filter* panel. For your analysis, you are interested in only those products that are colored red, so you add the “Color” display attribute to the *Filter* panel. Now you can select all red members in the *Filter* panel.

Related Information

[Filtering by member \[page 69\]](#)

15 Formatting Data

This section describes how to change the appearance of your data by adding static formatting, by resizing rows and columns, and by changing how hierarchy members are labeled. For information about conditional formatting, see [Conditional Formatting \(Highlighting Exceptions\) \[page 85\]](#).

15.1 Formatting data in the crosstab

You can format your data to suit your analysis or presentation requirements. Formatting options include the following:

- Decimal places
- Thousands separator
- Appearance of negative values
- Scale

Note on formatting

Formatting alters only the appearance of the data, not the value of the data itself. For example, displayed data may be rounded off. To see the real values of the data, clear the [Show formatted cell values](#) check box on the [Properties](#) panel.

Thousands separator

You can display or suppress the thousands separator. For example, a value of 1000 can be displayed as 1 , 000.

Negative values

You can configure how negative values are displayed. For example, you can display a negative value of 1000 as -1000 or (1000).

Decimal places

Although the default number of decimal places is 2, you can set this number to be anything from 0 (show numbers as integers) to 99. Remember that changing the number of displayed decimal places does not affect the value of the data.

Scale

You can scale the displayed values to make them easier to read in the crosstab. For example, if a column contains several values between 5,000,000 and 20,000,000, you can select the Millions scale to display those values as 5M to 20M.

After you apply a scale for a measure, if you define conditional formatting for the same measure, you also define whether the conditional formatting is applied to the measure before or after the scaling.

Note

If you are analyzing SAP BW data that includes scaling factors, the scaling factors are automatically displayed in the crosstab.

Note

The default settings for decimal places and the thousands separator are determined by the saved language that an administrator sets for the data source connection in the CMC. If you are analyzing data from an MSAS connection that does not have a saved language, the default settings for decimal places and the thousands separator are determined by your Preferred Viewing Locale, which is set in the [Preferences](#) dialog box of the BI launch pad.

15.1.1 To set the format of displayed data

1. On the toolbar, select [Display](#), and then click [Measure Format](#).

Note

Data must be present on the row and column axes before the [Measure Format](#) button is enabled.

2. On the [Measures](#) list, select all measures that you want to apply formatting to.
3. On the [Type](#) list, click the number format that you want to use.

The formatting options depend on the type that you selected:

Server	Analysis uses the display format defined on the server.
Number	You can set the number of decimal places, include a thousands separator, choose how negative values are displayed, or scale values.

<i>Percentage</i>	You can show values as percentages and set the number of decimal places.
<i>Scientific</i>	You can show values in scientific notation and set the number of decimal places.

- Set the options and then click *OK* to apply the formatting to the data.

15.1.2 To remove data formatting

- On the toolbar, select *Display*, and then click *Measure Format*.
- On the *Measures* list, select all measures that you want to remove formatting from.
- On the *Type* list, select *Server*.
- Click *OK*.

The data is shown without formatting.

15.2 Display settings for members in the crosstab

For some data sources, members have several string properties that can be displayed in Analysis:

Data source	Available string properties
SAP BW	<ul style="list-style-type: none"> <i>Key</i> <i>Text</i> <i>Short description</i> <i>Key : Text</i> <i>Key : Short description</i> <i>Text : Key</i>
SAP HANA	<ul style="list-style-type: none"> <i>Key</i> <i>Text</i> <i>Key : Text</i> <i>Text : Key</i>
Oracle Essbase	<ul style="list-style-type: none"> <i>Name</i> <i>Caption</i> <i>Name : Caption</i> <i>Caption : Name</i>

These string properties can be viewed and changed by right-clicking a hierarchy name on the crosstab and choosing *Display as*.

Note

When you select two string properties, such *Key : Text*, the properties are concatenated into a single string and displayed in a single column or row. They do not appear as separate columns or rows.

15.3 Formatting chart labels

Numerical values in Analysis charts are always formatted using a comma as the thousands separator and a dot character as the decimal separator. For example, 198,206.513 could be displayed as a label for a slice of a pie chart if you selected *Show actual values* on the *Properties* panel.

15.4 Resizing columns

Crosstab column widths are defined by the Column Width property on the Properties panel. If the default width obscures member headers or restricts the number of cells displayed in the crosstab, you may want to resize the columns.

15.4.1 To resize a column

1. Point to a column header separator; the resize symbol appears:



2. Drag the separator to the column width you require.

You can also set the column width on the Properties panel. Changing this setting applies the new column width to all columns, and overrides any resizing previously applied to individual columns.

15.5 Resizing rows

Cell data may span multiple lines. You can resize rows to show all the data within a cell.

15.5.1 To resize a row

1. Point to a row header separator; the resize symbol appears:



2. Drag the separator to the row height you require.

You can also set the row height on the Properties panel. Changing this setting applies the new row height to all rows, and overrides any resizing previously applied to individual rows.

16 Sheets

A workspace can contain multiple sheets. Sheets are useful for grouping related analyses together in one workspace. For example, a workspace might represent the solution to a particular problem, with each sheet representing a step in the solution.

When you create a new workspace, three sheets are included, but you can add or remove sheets to suit your analysis. You navigate between sheets by using the sheet tabs at the bottom of the analysis window.

The *Outline* panel, in the task panel to the left of the analysis window, displays the high-level structure of your workspace. Each sheet is shown along with the crosstab and chart components it contains.

Note

Each sheet has its own set of analyses and components, which are not shared and which cannot be linked across sheets. Analyses and components on one sheet can therefore have the same names as analyses and components on other sheets.

Related Information

[Outline panel \[page 195\]](#)

16.1 Inserting, deleting, and renaming sheets

Although a workspace always contains at least one sheet, you can add as many sheets as you want, and delete any sheets that you no longer want.

Sheet captions appear in the sheet tabs at the bottom of the analysis window. When you create a new workspace or add new sheets to a workspace, the sheets are assigned default names, but you can change the names.

16.1.1 To insert a sheet

1. Right-click a sheet tab.
2. Select *Insert New*.

A new sheet is created and a new sheet tab is inserted to the right of the sheet tab that you clicked. The new sheet becomes the active sheet.

16.1.2 To delete a sheet

1. Right-click the sheet tab corresponding to the sheet you want to remove.
2. Select *Delete*.

If the sheet to be deleted contains a crosstab or chart component, a confirmation dialog box appears. Click Yes to confirm the sheet deletion.

16.1.3 To rename a sheet

1. Right-click the sheet tab and select *Rename*.
2. Type a new caption for the sheet.

Note

The maximum length of a caption is 60 characters.

3. Click outside the sheet tab, or press *Enter* to save the changed caption.

17 Saving and Sharing Workspaces

This section shows you how to share your workspaces with other users.

17.1 Saving Analysis workspaces for sharing with others

If you want to share your Analysis workspaces over the web with other analysts and end users, you can save your workspaces to a public folder in the BI platform repository.

Note

To save a workspace to a public folder in the BI platform repository, you must have sufficient rights. See your system administrator if you are not sure whether you have such rights.

Related Information

[Save a workspace \[page 28\]](#)

17.1.1 To save your workspace in a public folder



1. On the toolbar, click the arrow beside the [Save](#) button, and choose [Save As](#).
2. In the folder tree, expand the [Public Folders](#) folder and browse to the folder where you want to save your workspace.
3. Type a filename for your workspace.
4. Click [Save](#).

Related Information

[Save a workspace \[page 28\]](#)

[Sending an Analysis workspace to another user \[page 136\]](#)

17.2 Sending an Analysis workspace to another user

You can send a workspace to another BI platform user or to an email recipient.

If you have any unsaved changes in your workspace, the workspace is first saved with a unique name in your Favorites folder. That saved workspace is then sent to the BI platform user or email recipient as a link.

Note

You cannot send a workspace as an attachment to another BI platform user or to an email recipient.

Related Information

[Save a workspace \[page 28\]](#)


17.2.1 Sending an Analysis workspace to another BI platform user

You can send a workspace to another BI platform user's Inbox. You can send either a copy of the workspace file itself, or a shortcut to the workspace in the BI platform repository.

Note

Before you can send a workspace to another user's Inbox, your administrator will need to grant specific rights to you.

17.2.1.1 To send a workspace to a BI platform user


1.  On the toolbar, click the [Send To](#) button.
2. If you want to send the workspace to the default Inboxes, select the [Use default settings](#) option, and then skip to step 6.
Or, if you want to specify the Inboxes to send the workspace to, clear the [Use default settings](#) option.
3. Add recipients to the Selected Recipients list.
4. Select a target name for the workspace.
5. Select the [Shortcut](#) option to send the workspace as a hyperlink, or select the [Copy](#) option to send the workspace as a file.
6. Click [Send](#) to send the workspace.

You can also send workspaces to BI platform users from the BI launch pad. For more information, see the *BI Launch Pad User Guide*.

17.2.2 Sending a workspace to an email recipient

You can send your workspace to an email recipient by including a hyperlink to the workspace in the email.

17.2.2.1 To send a workspace to an email recipient

-  On the toolbar, click the arrow beside the [Send To](#) button, and then click [Email](#).

Note

If you receive this error message: "*The destination plugin required for this action is disabled. If you require this functionality, please contact your system administrator*", inform your system administrator that the BI platform Adaptive Job Server has not been configured for email destinations.

- If you want to send the workspace to the default email addresses, select the [Use default settings](#) option, and then skip to step 5.
Or, if you want to specify the email addresses to send the workspace to, clear the [Use default settings](#) option.
- Enter the From, To, and Cc addresses, and a subject.
- Add the [Viewer Hyperlink](#) placeholder to the Message field.
- Click [Send](#) to send the email.


You can also send workspaces to email addresses from the BI launch pad. For more information, see the *BI Launch Pad User Guide*.

17.3 Using OpenDocument URLs to share workspaces

In some types of SAP BusinessObjects documents, for example SAP Crystal Reports and SAP BusinessObjects Web Intelligence documents, you can create OpenDocument links to Analysis workspaces so that users of those documents can access Analysis workspaces quickly, without having to start Analysis. To create an OpenDocument link, you embed the URL for an Analysis workspace into a document.

You can also embed the workspace URL into an email or other office document.

17.3.1 To get the URL for a workspace

-  With a workspace open, click the arrow beside the [Send To](#) button.
- Select [Document Link](#).
The URL for the current workspace is shown.

3. Copy this URL to your Crystal report, Web Intelligence document, or other office document.

17.3.2 Parameterized URLs

When you open an Analysis workspace based on an SAP BW data source that has prompts associated with it, you usually need to specify values for these prompts before you can access the workspace.

However, it is possible to add parameters to an OpenDocument URL to set SAP BW prompt values. If a parameterized URL provides values for all of the mandatory prompts for a workspace, you can open the workspace without entering prompt values first. You can specify different prompt values after opening the workspace, if necessary.

Note

Parameterized URLs for SAP HANA workspaces are not supported in this release.

Parameterized OpenDocument URLs are usually constructed by administrators or IT specialists. To create a parameterized URL, you must be familiar with the OpenDocument syntax, and the technical names of the prompt variables and values that you want to specify. For more information, refer to the *SAP BusinessObjects Analysis, edition for OLAP Administrator Guide* available on the SAP Help Portal at <http://help.sap.com>.

Related Information

[Prompts for SAP BW and SAP HANA data sources \[page 162\]](#)

18 Printing and PDF Files

This section shows you how to export your workspaces to PDF files, which you can print or send to colleagues.

After performing your analysis, you may want to share your findings by exporting your workspace to a PDF file, or by printing your data. Using the printing capability in Analysis, you can do the following:

- [Print a sheet \[page 139\]](#)
- [Print data \[page 140\]](#)

A PDF representing the data or sheet that you want to print is created, and opened in a new browser window using your default PDF viewer. You can then send the PDF file to colleagues, or print hard copies of the data from the PDF viewer.

ⓘ Note

If a sheet contains two or more components, and you want to print only one of the components, you can maximize the component in the analysis window, and then print the sheet.

Crosstab and charts are printed as they appear on screen, with minor exceptions. Also, member headers that do not fit within the column widths may be truncated differently from how they are truncated on screen.

If you print an analysis with prompt values, the values are displayed on a separate page in the PDF.

Formatted values or actual values

From the Properties panel, you can control whether formatted values or actual values are displayed in the crosstab. When you print a crosstab, the formatting of the cell values in the print output matches the on-screen display.

If your SAP BW data is displayed in the crosstab with scaling factors, the scaling factors are preserved in the PDF output.

Related Information

[Saving and Sharing Workspaces \[page 135\]](#)

[Exporting Data \[page 142\]](#)

18.1 Print a sheet

You can print only the sheet that is currently open.


When you print a sheet, all components on the sheet are printed together, as they appear on the screen. Only the data visible on the screen is printed; if instead you want all the data in your analysis printed, use the data printing option instead.

The sheet is sized to fit the paper size and orientation print options that you select, and the aspect ratio is preserved.

18.2 Print data

You can choose to print raw data instead of the crosstab or chart representations of your data. When you choose the data printing option, all the filtered data in an analysis is printed; not just the data visible on the screen. If you choose to print the data from a crosstab, the cell formatting applied to the crosstab is retained. Data is formatted to fit the paper size and orientation print options that you select.

18.3 To export to PDF

1.  On the toolbar, click *Print*.
2. Select *Sheet* or *Data*.
For more information about sheet printing and data printing, see [Print a sheet \[page 139\]](#) and [Print data \[page 140\]](#).
3. If you chose data printing, select an analysis to be printed. If you select a crosstab, any cell formatting applied to the crosstab is retained in the print output. You can also apply either of the options *Fit to Page Width* or *Repeat Headings*.
For descriptions of the available print options, see [Print options \[page 140\]](#).
4. Select a paper size and print orientation.
5. Choose the information fields you want to display in the header and footer.
If you choose the *Custom Text* field, type your custom text into the text boxes.
6. Click *OK*.
Your data is converted to a PDF and opened in a new browser window using your default PDF viewer. You can then print hard copies of the data from the PDF viewer.

18.4 Print options

These print options are available:

Option	Description
Sheet or Data	Choose Sheet if you want to print the current sheet of your workspace. Choose Data if you want to print all of the data from an analysis.
Fit to Page Width	Select this option to scale the printed output so that all columns fit within a page. This option is available only when printing data.
Repeat Headings	Select this option if you want row and column headers to be repeated on each printed page. This option is available only when printing data.
Paper Size	Choose from these paper sizes: Letter, Legal, A4, and A3.
Page Orientation	Select Landscape or Portrait orientation.

The following information fields are available for you to add to the headers and footers of the printed pages. Some fields are available only with data printing and some only with sheet printing.

Header and Footer fields	Description
Sheet Name	The name of the workspace sheet, defined on the sheet tabs at the bottom of the analysis window.
Analysis Name	The name of the analysis, as defined on the Properties panel.
Component Name	The name of the crosstab or chart component that you select when printing data.
Component Comments	The contents of the Description field for the crosstab or chart component, on the Properties panel.
Workspace Name	The name assigned to the workspace when saved.
Page Number	The printed page number.
Today's Date	The current date.
Refresh Date	The date that the data source was last refreshed.
Custom Text	Select this option and then type your own text into the text field.

19 Exporting Data

This section describes how to export data to Microsoft Excel or to comma-separated values (.csv) files.

19.1 Exporting data to Excel

You can export data from your analyses to Microsoft Excel, to allow Excel users to share your data. The data can either be viewed immediately in Excel, or saved to an .xlsx or .xlsx file that can be opened with Excel or third-party applications. To view your data immediately in Excel, you must have Excel already installed on your machine.

If the exported analysis has both crosstab and chart components associated with it, the data is exported to an Excel worksheet, and the chart is exported as a static image. If the analysis has only a chart component associated with it, only the static chart image is exported.

When you export crosstab to an Excel workbook, Excel displays the highlighted results row with the same background color and boldface font as Analysis, edition for OLAP displays in crosstab analysis.

The diagram below illustrates the highlighted results row and boldface font:

	A	B	C	D	E
1	Background Filter:				
2					
3		Key Figures			
4	Country Hierarchy 01	Order Amount	Order Quantity	Product Price	Product Price (Float)
5	Overall Result	\$ 277,290,434.96	307,196 PC	80,103,178.150	98,892,804.4216972
6	WORLD : WORLD	\$ 237,575,779.16	262,461 PC	68,429,434.060	84,480,775.8627108
7	EUROPE : EUROPE	\$ 25,977,635.54	31,009 PC	8,491,926.990	10,483,859.6218076
8	8 : Belgium	\$ 3,527,705.36	3,826 PC	973,385.440	1,201,710.3212133
9	18 : Czech Republic	\$ 23,089.50	148 PC	41,432.800	51,151.6007439
10	19 : Denmark	\$ 3,289.80	141 PC	26,599.260	32,838.5898998
11	23 : England	\$ 7,098,705.92	7,886 PC	2,142,500.900	2,645,062.6226116
12	24 : Finland	\$ 84,209.40	150 PC	35,050.640	43,272.3915134
13	25 : France	\$ 3,906,241.00	6,965 PC	1,957,188.360	2,416,281.7277914
14	26 : Germany	\$ 5,688,752.38	6,331 PC	1,760,437.760	2,173,379.7724007
15	27 : Greece	\$ 546,891.70	130 PC	37,934.930	46,833.2430733
16	28 : Hungary	\$ 2,237.40	141 PC	47,571.740	58,730.5383940
17	31 : Ireland	\$ 273,082.12	518 PC	158,075.050	195,154.3667134
18	37 : Luxembourg	\$ 473,643.40	402 PC	117,377.360	144,910.3091050
19	42 : Netherlands	\$ 4,349,787.56	4,371 PC	1,194,372.750	1,474,534.1383478
20	NORTH_AMERICA : NORTH_AMERICA	\$ 202,401,620.34	219,944 PC	57,081,729.690	70,471,265.4435861
21	ASIA_PAC : ASIA_PAC	\$ 7,656,112.66	9,065 PC	2,249,212.580	2,776,805.4266235
22	MIDDLE_EAST : MIDDLE_EAST	\$ 1,540,410.62	2,443 PC	606,564.800	748,845.3706936
23	REST_H : Not Assigned Country (s)	\$ 39,714,655.80	44,735 PC	11,673,744.090	14,412,028.5589578
24					

When you export multiple components, the data from each component is exported to a separate sheet within the same Excel workbook.

For each analysis that has prompt values associated with it, a separate sheet is added to the Excel workbook to display the prompt values.

Sorts, filters, scaling factors (for SAP BW data only), and conditional formatting are preserved in the exported data. Conditional formatting also makes use of the native Excel conditional formatting. Calculated data is exported, but the calculation formulas are not preserved.

19.1.1 To export data to Excel

1.  On the toolbar, click the arrow beside the [Export](#) button, and then click [XLS](#) or [XLSX \(Excel 2007 and later\)](#).

Note

The [Export](#) button is disabled until the current sheet contains a valid analysis.

2. In the dialog box, select the crosstab or chart component whose data you want to export.
You can also select the component in the analysis window or on the [Outline](#) panel before you click the [Export](#) button. If you select multiple components to export, the data from each component is exported to a separate sheet within the same Excel workbook.
3. If your analysis contains nested hierarchies, and you want to repeat the outer hierarchy member header for each inner hierarchy member, select the [Repeat outer header members](#) option.
4. If your analysis has multiple linked components, and you want to export data from those linked components as well, select the [Include linked crosstabs and charts](#) option.
5. If a member on the crosstab rows has both key and text values displayed, and you want the values to appear in separate columns in Excel, select [Export Key and Text values as separate columns](#).
This option applies only to analyses based on SAP HANA or SAP BW data. It is available if both key and text string properties are displayed for at least one member on the crosstab rows.
6. Click [OK](#) to export the data.

If you have Microsoft Excel installed on your machine, you can save the file to disk, or open the file immediately.

If you do not have Excel installed, save the file to disk with an `.xls` or `.xlsx` extension. You can then install Excel or a 3rd-party application to open the saved file.

19.2 Exporting data to comma-separated-values (.csv) files

You can export data from your analyses to comma-separated-value format, to allow users of other applications to share your data. The comma-separated values can either be viewed immediately in an application such as Excel, or saved to a `.csv` file.

Data is exported in the orientation displayed in the crosstab. If the analysis has only a chart component associated with it, data from that analysis is exported but the chart visualization is not.

Sorts and filters are preserved in the exported data. Calculated data is exported, but the calculation formulas are not preserved.

SAP prompt values are also exported in the .csv file.

19.2.1 To export data to a .csv file

1.  On the toolbar, click the arrow beside the [Export](#) button, and then click [CSV](#).

Note

The Export button is disabled until the current sheet contains a valid analysis.

2. In the dialog box, select the crosstab or chart component whose data you want to export.
You can also select the component in the analysis window or on the [Outline](#) panel before you click the [Export](#) button.
3. If your analysis contains nested hierarchies, and you want to repeat the outer hierarchy member header for each inner hierarchy member, select the [Repeat outer header members](#) option.
4. If a member on the crosstab rows has both key and text values displayed, and you want the values to appear in separate columns in the .csv file, select [Export Key and Text values as separate columns](#).
This option applies only to analyses based on SAP HANA or SAP BW data. It is available if both key and text string properties are displayed for at least one member on the crosstab rows.
5. Click [OK](#) to export the data.

If you have a .csv file viewer such as Microsoft Excel installed on your machine, you can save the file to disk, or open the file immediately.

If you do not have a .csv file viewer installed, save the file to disk with a .csv extension. You can then install Microsoft Excel or another application to open the saved file.

19.3 Exporting to an analysis application

Application designers use SAP BusinessObjects Design Studio to create analysis applications and dashboards on top of SAP BW and SAP HANA data sources. These analysis applications are available through the BI platform or through SAP BusinessObjects Mobile, and can be designed for desktop browsers and mobile devices.

Analysis, edition for OLAP is closely integrated with Design Studio. After you create a workspace in Analysis, you can export it as an analysis application for further editing in Design Studio, and for flexible use by mobile or desktop users.

Exporting analysis applications offers several advantages:

- Interactivity: when viewing the analysis application, users can sort, drill, and change the members of background filters.
- Customization: analysts can decide which crosstabs and charts to include in the analysis application. Optionally, application designers can edit the application in Design Studio if necessary.

- Support for multiple components: an analysis application can include multiple crosstabs and charts. It can also contain multiple sheets.
- Mobile support: analysis applications can be viewed on mobile devices such as the iPad. When you export your workspace from Analysis, you can choose to optimize the application for mobile devices.

Before you can export workspaces as analysis applications, Design Studio must be installed and integrated with the BI platform. For more information, see the *Administrator Guide: SAP BusinessObjects Design Studio based on SAP BusinessObjects BI Platform* available on the SAP Help Portal at <http://help.sap.com>.

You must also have the appropriate BI platform permissions to export a workspace as an analysis application. For more information, see the *Rights Management* section of the *SAP BusinessObjects Analysis, edition for OLAP Administrator Guide*.

For more information about creating applications in SAP BusinessObjects Design Studio, see the *User Guide: SAP BusinessObjects Design Studio* available on the SAP Help Portal at <http://help.sap.com>.

Note

Some chart types in Analysis, edition for OLAP are not supported in analysis applications and are replaced by clustered column charts.

19.3.1 To export an analysis application

You can export analysis applications when the following prerequisites are met:

- SAP BusinessObjects Design Studio is installed and integrated with the BI platform.
- You have the appropriate BI platform permissions.
- Your workspace has at least one crosstab based on SAP BW or SAP HANA data.

1.  On the toolbar, click *Create Analysis Application*.

You can also click the arrow beside the *Export* button, and click *Analysis Application*.

2. Select a format for the analysis application:
 - *Desktop*: this format is designed for a desktop computer or laptop, and has a similar appearance to Analysis, edition for OLAP. Up to four analyses can be displayed on one sheet.
 - *iPad*: this format is designed for the iPad, which has a smaller display area than a desktop computer. Each analysis is displayed individually, and users can navigate between different analyses on the same sheet using a swipe gesture.

Note

Multiple sheets are supported in both formats.

3. Select the crosstabs and charts that you want to include in the analysis application.
4. Select the *Open immediately* checkbox to open the analysis application in your browser window for testing immediately after you export it.
5. Click *Save*.
6. Navigate to the folder in the BI platform repository where you want to save the analysis application. Type a name for the application and click *OK*.

The components that you selected are converted to an analysis application and saved in a folder with the name that you entered.

19.3.2 Available chart types in analysis applications

The following charts are not supported in analysis applications:

- 3D Clustered Column
- Box Plot
- Waterfall

When you export them to an analysis application, they appear as clustered column charts.

All other Analysis chart types are supported.

20 Connecting to OLAP Data Sources

This section describes how to connect to OLAP data sources.




20.1 OLAP data source objects

Before you can begin working with data in Analysis, you must add a data source to the workspace.

A data source is a repository object, created by your system administrator, that contains all the information that is required for Analysis to connect to an OLAP server.

The administrator creates data source objects for as many different OLAP data providers as you and your fellow analysts require. Analysts then have all of these data sources available to add to their workspaces.

These types of data source objects can be defined by the administrator:

Icon	Data source type	Description
	Cube	The data source object points directly to a single OLAP cube on the OLAP server.
	Query	The data source object points directly to a single OLAP query on the OLAP server.
	System	The data source object points to an OLAP server, which can contain many cubes and queries.

Related Information

[Adding data sources \[page 147\]](#)

[Changing data sources \[page 149\]](#)

[Removing a data source \[page 150\]](#)

[Disabled data source connections \[page 151\]](#)

[SAP BW Data Sources \[page 156\]](#)

20.2 Adding data sources

After your administrator has created data source objects, you can add data sources to your workspace. You can add a single data source if you need to analyze data from just one database, or you can add several data sources, and use a different data source with each analysis in your workspace. However, once you have begun

to design your analysis, the analysis and its crosstab and chart components are fixed to the data source. You cannot add metadata from one data source to an analysis that already contains metadata from another data source.

When adding a data source to your workspace, if you select a cube or query, the data is connected immediately to the workspace. If you select a system, you must first choose a cube or query within that system.

Finding a data source

In the [Open Data Source](#) dialog box, you can either choose a data source from a list, or find a data source.




Finding follows these rules:

- In SAP BW and SAP HANA systems, the find is performed on both the name and description of data source objects. In other systems, the find is performed only on cube names.
- To find only those data sources whose text or key exactly matches your search string, enclose your search string in quotation marks.
- To find data sources whose text or key includes your search string, do not enclose your search string in quotation marks.
- If your search string comprises multiple words separated by spaces, a separate find is executed for each word, and the results are aggregated.
- You can use an asterisk (*) as a wildcard character. To include an asterisk as a regular character within the search string, enclose the search string in quotation marks.
- If exactly one matching data source is found, and either the text or key exactly matches the search string, then the data source is automatically selected.

20.2.1 To add a data source to a workspace

1.  On the [Data](#) panel, click the [Connect to a data source](#) button.

The [Open Data Source](#) dialog box appears, showing all data sources that are available for you to access data from.

2. Select a data source from the list.
 -  If you selected a cube, click [OK](#) to add it to your workspace.
 -  If you selected a query, click [OK](#) to add it to your workspace.
 -  If you selected a system, click [Next](#) to see the cubes and queries available from that system. Select a cube or query, or click the [Find](#) tab to find a cube or query, and then click [OK](#) to add the data source to your workspace.
3. If the data source requires authentication, type your credentials in the logon dialog box and click [OK](#).
4. If you selected an SAP BW or SAP HANA data source that contains prompts, the [Prompts](#) dialog box opens. Select values for the prompts.

For more information about prompts, see [Prompts for SAP BW and SAP HANA data sources \[page 162\]](#).

If authentication succeeds, the data source appears in the list at the top of the Data panel, and the metadata explorer displays the data objects (metadata) contained in the data source.

If authentication fails, first verify that you entered your credentials correctly. If authentication continues to fail, see your system administrator. Your credentials may not be set up properly in the Central Management Console, or the OLAP server may be offline.

20.2.2 Viewing OLAP data in the workspace

Once you have a data source added to your workspace, you can define an analysis and begin working with your data in the analysis window.

Related Information

[Analyses \[page 33\]](#)

[OLAP data source objects \[page 147\]](#)

[Changing data sources \[page 149\]](#)


[Removing a data source \[page 150\]](#)

[Disabled data source connections \[page 151\]](#)

20.3 Changing data sources

If you are currently working with one data source, but want to work with a different data source, you can change to a different data source on the Data panel. However, you cannot use data from the second data source in a component that already contains data from the first data source. You must add a new analysis, and add the data from the second data source to that new component.

20.3.1 To change to a different data source


1.  If the data source that you want to change to has not yet been added to your workspace, click the [Connect to a data source](#) button on the Data panel.
Or, if the data source that you want to change to has already been added to your workspace, select the data source from the list on the Data panel. The contents of the metadata explorer change to reflect the new data source. Skip to step 5 of this procedure.
2. In the [Open Data Source](#) dialog box, select the desired data source and click [OK](#).
3. If the data source requires authentication, type your credentials in the logon dialog box and click [OK](#).

If authentication succeeds, the data source appears in the list at the top of the Data panel, and the metadata explorer displays the data objects (metadata) contained in the data source.

If authentication fails, first verify that you entered your credentials correctly. If authentication continues to fail, see your system administrator. Your credentials may not be set up properly in the Central Management Console, or the OLAP server may be offline.

4. If you selected an SAP BW or SAP HANA data source that contains prompts, the *Prompts* dialog box opens. Select values for the prompts.

For more information about prompts, see [Prompts for SAP BW and SAP HANA data sources \[page 162\]](#).

5.  On the toolbar, select *Insert*, and then click the *Insert Crosstab* button to add a new analysis to the analysis window.

You can now add data from the new data source to the new analysis.

Note

You cannot add data from the new data source to a component that already contains data from another data source.

Related Information

[OLAP data source objects \[page 147\]](#)

[Adding data sources \[page 147\]](#)


[Removing a data source \[page 150\]](#)

[Disabled data source connections \[page 151\]](#)

20.4 Removing a data source

On the Data panel, you can remove OLAP data sources from your workspace.

20.4.1 To remove a data source from a workspace

1. In the data source area on the Data panel, select the data source that you want to remove from your workspace.
2.  Click *Remove selected data source*.

If any analyses currently use that data source, a warning message appears.

Related Information

[OLAP data source objects \[page 147\]](#)

[Adding data sources \[page 147\]](#)

[Changing data sources \[page 149\]](#)

[Disabled data source connections \[page 151\]](#)

20.5 Disabled data source connections

Data source connections in your Analysis workspaces can be disabled for several reasons:

- You cancel the connection logon dialog box deliberately.
- Authentication fails with the credentials you provided. For example, the password you provided does not match the password stored in the Central Management Console.
- Authentication fails for reasons that are beyond your control. For example, the OLAP server has been restarted, disconnected from the database, or shut down for maintenance.

If any of your data source connections are disabled, the analyses that are based on the disabled data sources are not executed. The disabled data sources still appear in the active data source list, but are unavailable. Your system administrator can help you to re-establish the disabled connections.

21 Linking to Reports

When you analyze OLAP data in Analysis, you may find interesting information that you would like to explore in another Analysis data-analysis document or in a related SAP Crystal Reports or Web Intelligence report. To access one of these documents or reports, you create a jumplink to it within your Analysis workspace.

The power user or report designer who creates the target reports in SAP Crystal Reports or in Web Intelligence must also make them available to Analysis users.

When you open a linked report, contextual information, such as row and column member text, is passed as parameters to the report. These parameters enable the report to display more information related to those members.



For example, while analyzing your data in Analysis, you discover that many of your loyalty customers have purchased generic coffee beans from the Seattle store in 2010. You decide to run a promotion to encourage those customers to try premium coffee beans instead. A report designer has provided you with a Crystal report that retrieves the names and addresses of your loyalty customers from a database. You create a jumplink from your analysis to the Crystal report, and select the parameters “generic coffee beans”, “Seattle”, and “2010” to send to the linked Crystal report. The report queries the relational database and returns the names and addresses of the loyalty customers who bought generic coffee beans from the Seattle store in 2010.

When the target for the jumplink is a SAP Crystal Reports or WebIntelligence report that contains variables, the answers to variables are also passed from the source document to the target. However, when the target for the jumplink is an Analysis data-analysis document that contains variables, you receive a prompt to enter or select a variable in the target document. The answers to variables are not passed automatically from one Analysis data-analysis document to another.

The report that you link to can contain transactional data related to the OLAP cube's data. When this is the case, linking is similar to drill through. However, the linked report can contain any type of data; it is only necessary that the report accepts at least one parameter from the workspace.

Once defined, the jumplinks are stored in the workspace until manually deleted. You can therefore share the workspace with other users, enabling them to explore the information in the linked report as well.

21.1 To create a jumplink to a report

1. Right-click the row header, column header, or cell that represents the parameter or parameters that you want to pass to the report, and select  [Jumplink](#) > [New](#) .

If you right-click a row or column header, that parameter is made available to pass to the report. If you right-click a crosstab cell, then the cell value, the row and column headers, and any background filter members are made available to pass to the report.

2. Click [Change](#) to select a report from the BI platform repository.

If you want to display only a specific report type, you can select [Web Intelligence](#) or [Crystal Reports](#) from the list at the bottom of the [Repository Explorer](#).

3. Navigate to the appropriate report, select it, and click [OK](#).

4. Select the parameter or parameters that you would like to pass to the report, and click [OK](#).

The jumplink is created, and the report is opened in your browser. The jumplink is saved with the workspace, so that other users of the workspace can follow the jumplink later.

21.2 To view a linked report

1. Right-click a row header, column header, or cell, and select [Jumplink](#).

2. Select the linked report name from the list of options.

The linked report is opened in your browser, and the parameters corresponding to the member header or cell that you right-clicked are passed from Analysis to the report.

21.3 To delete a jumplink to a report

1. Right-click a cell, row header, or column header in your crosstab.

2. Select  [Jumplink](#) .

Because jumplinks are associated with analyses, not with members or crosstab cells, you can right-click any cell or member in the crosstab to access a jumplink. If any jumplink is associated with the current analysis, it appears in the list when you right-click.

21.4 Reports available for linking

Your administrator may have defined associations between Analysis data source connections and universes. If the data source connection you're using has been associated with a universe, the [Display only reports based on the associated Universe](#) checkbox in the [Repository Explorer](#) is selected. When you create a new jumplink to a report, the list of reports initially shown in the [Repository Explorer](#) includes only the reports that use the universe associated with your Analysis data source connection.

If you want to access reports based on a different universe, clear the [Display only reports based on the associated Universe](#) checkbox.

22 Using Analyses in Other SAP BusinessObjects Applications

After you perform an analysis, you may want to use other SAP BusinessObjects applications to communicate your findings and share the analysis. For example, you can use SAP Crystal Reports to create highly-formatted reports for broad distribution. Or you can use SAP BusinessObjects Analysis, edition for Microsoft Office to share your analysis with Finance department users.

To use an analysis in other applications, you export it as an analysis view. An analysis view is a saved navigation state of an analysis that includes applied filters, hierarchies, and available metadata. It represents the data definition, not how it is visualized.

Analysis views can be shared among applications such as SAP BusinessObjects Analysis (the edition for OLAP and the edition for Microsoft Office), SAP Crystal Reports, and SAP BusinessObjects Web Intelligence. Analysis, edition for OLAP and Analysis, edition for Microsoft Office can import and export analysis views, but other applications can only import analysis views. Users of these applications can choose how to visualize the data.

Like workspaces, analysis views are saved to the BI platform repository. While a workspace can include several analyses, an analysis view includes only one analysis.

Note

Analysis views that are based on SAP HANA data sources are not supported in Web Intelligence and Crystal Reports.

Note

If you want to work with Analysis, edition for OLAP content in SAP BusinessObjects Design Studio, you can export your workspace as an analysis application. For more information, see [Exporting to an analysis application \[page 144\]](#).

22.1 To export an analysis view


1. In the analysis window, select the crosstab or chart component that you want to export as an analysis view.

Note


You cannot export a sub-analysis as an analysis view.

Note

Custom groups are not supported in analysis views. If the component contains custom groups, they will be removed in the analysis view.

2.  On the toolbar, click the arrow beside the [Export](#) button, and click [Analysis View](#).
 3. Select a location to save your analysis view to.
 4. Type a filename for the analysis view.
 5. Click [Save](#).
- The analysis view is exported to the repository.

22.2 To import an analysis view

1. In your Analysis workspace, navigate to the sheet where you want to import the analysis view.
2.  On the toolbar, click the arrow beside the [Open](#) button, and click [Analysis View](#).
3. In the folder list, select an analysis view, and click [OK](#).

If the analysis view represents SAP BW or SAP HANA data containing prompts, you may need to select prompt values before the analysis view can be opened.

The imported analysis view is added as a crosstab below or to the right of existing components on the sheet.

23 SAP BW Data Sources

Analysis can connect to SAP BW data sources and take advantage of features such as prompts, variants, display attributes, BEx conditions, and the Report-Report Interface.

When working with SAP BW data, note that some Analysis features behave differently than with other data sources:

- When connecting to an SAP BW data source, you may need to enter prompt values.
- Calculations can only be applied to measures.
- You can apply conditional formatting to a column or row header, or to a different measure than the one that the condition is based on.
- Members can be displayed with either their keys or text.
- Data can be filtered by restricted characteristics with default values or by BEx conditions

Note

The terminology used in this guide sometimes differs from SAP BW terminology. For more information, see [Terminology and icons \[page 15\]](#).

Related Information

[Prompts for SAP BW and SAP HANA data sources \[page 162\]](#)

[Display settings for members in the crosstab \[page 130\]](#)

[To apply conditional formatting in SAP BW data sources \[page 88\]](#)

[Filtering SAP BW data using BEx conditions \[page 76\]](#)

23.1 Key figures and formatted values

By default, Analysis retrieves and displays formatted cell values. Key figures (measures dimensions) that have been formatted to display a specific unit on the cube are displayed with the correct unit formatting in Analysis.

23.1.1 Formatting with no key figures

The SAP BW administrator can create an SAP BW query that has no visible key figures (no visible measures dimension). There is no measure formatting for these queries because they contain no measures (or the measures are not visible).

23.2 Report-Report Interface

When building queries using the SAP Business Explorer (BEx), an IT specialist can configure links between reports through the Report-Report Interface (RRI). These links provide the ability to jump to a variety of targets such as reports, other BEx queries, ABAP transactions, and web addresses.

Analysis, edition for OLAP workspaces can act as RRI senders. If your analysis uses an SAP BW data source with RRI targets, you can view and access RRI targets by right-clicking members in the crosstab.

Targets can help you perform tasks such as the following:

- Navigate to various result object-specific targets. For example, from the name of a sales representative, navigate to that sales rep's employee fact sheet or order volume.
- Start workflows or activities. For example, from a crosstab showing cost per cost center, create a request for clarification and send it to the accounting department.

RRI targets can be context-sensitive, so that the target report reflects the member that you right-clicked in the crosstab.

Note

Analysis workspaces do not act as RRI receivers, that is, an RRI link cannot be configured to point directly to a workspace. However, using the OpenDocument URL for an Analysis workspace, an IT specialist can use RRI to create a generic URL link that points to the workspace.

For more information about RRI, see the documentation for SAP technology available on the SAP Help Portal at <http://help.sap.com>.

Related Information

[Using OpenDocument URLs to share workspaces \[page 137\]](#)

23.2.1 Accessing RRI targets

To access the list of RRI targets for a BEx query, right-click the crosstab member that interests you and click [Go To](#). Click a target to open it.

You may be prompted to enter credentials for the target. RRI in Analysis supports single sign-on (SSO). If SSO is configured and if you have already provided the necessary authentication for the target, you can view it without re-entering your credentials.

If you click a BEx query target, the query opens as a new crosstab in the Analysis workspace, and the data source is added to the [Data](#) pane. The new crosstab focuses on the member that you jumped from. If the current worksheet already has four Analysis components, then the crosstab opens in a new sheet.

If you click another type of target, it opens in a new browser window.

23.3 Mutually exclusive hierarchies

In SAP BW data sources, hierarchies that belong to the same dimension are mutually exclusive. For example, consider an SAP BW cube that contains a dimension `<Customer>` that contains three hierarchies: `<Country_1>`, `<Country_2>`, and `<Country_3>`. Only one of these hierarchies can be included in a single crosstab or chart analysis. You cannot specify `<Country_1>` on the row axis and `<Country_3>` in the background filter in the same analysis.

23.4 Unbalanced and ragged hierarchies

Analysis supports unbalanced and ragged hierarchies.

23.5 Scaling factors

If your SAP BW query was designed with scaling factors included, those scaling factors are displayed in the crosstab. For example, a value may be displayed as follows:

1234 * 10000

These scaling factors are supported in Analysis:

- 1
- 10
- 100
- k
- 10,000
- 100,000
- M
- 10,000,000
- 100,000,000
- G

Note that common abbreviations are displayed instead of numeric scaling factors for thousands, millions, and billions.

If scaling factors appear in the crosstab, they also appear in data exported to Excel or to PDF files.

23.6 Restricted characteristics with default values in the Background filter area

In the BEx Query Designer, SAP BW data sources can be filtered by restricting one or more characteristics to certain default values. If such a characteristic is added to the *Free Characteristics* area in SAP BEx Query Designer, it will be added to the *Background* filter area in Analysis when you connect to the data source.

Like any background filter, you can change the members or remove the filter from your analysis.

For more information on restricting characteristics, refer to the documentation for BEx Query Designer available on the SAP Help Portal at <http://help.sap.com>.

Related Information

[Background filters \[page 77\]](#)

[Changing the background filter \(changing the slice\) \[page 112\]](#)

23.7 Formatting dates for SAP BW data

When you connect to an SAP BW data source, the format for displaying dates in the analysis window is determined by a setting on the SAP BW server for the user profile that you used to connect to the data source.

If you want to change the format for dates in your workspaces, you can use the SU01 transaction on the SAP BW server to configure this setting. For more information, see the documentation for SAP technology available on the SAP Help Portal at <http://help.sap.com>.

Analysis uses the same date format for displaying all date values and members in a workspace. If you connect to multiple SAP BW data sources with different date format settings, all dates are displayed using the format for the first SAP BW data source that you connected to. If you want to use the date format for a different SAP BW data source, you must create a new workspace and connect to that data source first.

Related Information

[To enter prompt values \[page 166\]](#)

23.8 Currency Translation

Currency translation allows you to convert the currency for key figures in the analysis workspace. In your analysis workspace, the key figures defined in a currency type can be converted into another currency type.

For example, in your analysis workspace, the key figures are defined in US dollars, and you want to convert them to Australian dollars. Currency translation converts the currency from US dollars to Australian dollars.

Currency translation is supported for SAP NetWeaver Business Warehouse (BW) data sources. Currency translation types are created in SAP NetWeaver BW data sources. For more information, see SAP Help Portal at <http://help.sap.com>

To translate the currency, perform the following steps:

1. Select the crosstab.
2. In the *Analyze* tab, choose *Currency Translation*.
3. In the *Currency Translation* window, select *Target Currency* and *Translation Type* from the dropdown box.
4. Choose *Convert*.

The currency is changed in the analysis workspace as per the selected target currency.

If you want to convert the currency again, go to the *Currency Translation* window and choose *No Conversion* in the *Translation Type* dropdown box. Now perform the above mentioned procedure to translate the currency.

Note

The options in the *Target Currency* and *Translation Type* list are interdependent. When you select the *Target Currency*, the system enables you to select all *Translation Type* that support this currency.

24 SAP HANA Data Sources

Analysis can connect to SAP HANA data sources to take advantage of the reliability and performance of in-memory computing. SAP HANA data sources share some features with SAP BW sources, such as prompts and hierarchy display attributes. For more information on prompts, see [Prompts for SAP BW and SAP HANA data sources \[page 162\]](#).

⚠ Caution

BI Platform 4.3 ships with BICS3 components. Along with SAP HANA and SAP HANA HTTP providers, the BI Platform also supports the SAP HANA 2.X provider. However, only OLAP connections with the SAP HANA HTTP provider are supported in Analysis, edition for OLAP, as JDBC connectors used by the application aren't provided with the BICS3 components. Analysis, edition for OLAP 4.3 doesn't support OLAP connections using SAP HANA or SAP HANA 2.X providers. If you're using OLAP connections with an SAP HANA provider, make sure that they use the HTTP provider. If not, please change the connection settings of workspaces based on SAP HANA data sources and change the provider to SAP HANA HTTP.

Please refer to the *To replace a data source connection* section of the *SAP BusinessObjects Analysis, edition for OLAP Administrator's Guide* to change the connection settings.

Documentation for SAP HANA is also available on the SAP Help Portal at <http://help.sap.com>.

Related Information

[Display settings for members in the crosstab \[page 130\]](#)

24.1 Time hierarchies in SAP HANA data sources

Time is an attribute view in SAP HANA that can be configured to include time attributes such as year, quarter, month, and day. These attributes can be organized in a hierarchy with multiple levels.

However, such hierarchies are not supported in this release of Analysis. If a time hierarchy has multiple levels, you cannot add it to an analysis. Flat time hierarchies, with all attributes on the same level, are supported.

25 Prompts for SAP BW and SAP HANA data sources

When you connect to an SAP BW or SAP HANA data source that has variables, the *Prompts* dialog box opens so that you can specify their values. The prompt values that you specify determine the data that is returned and displayed.

The *Prompts* dialog box also opens when you perform any of the following tasks with a data source that contains prompts:

- Click *Change prompt values*.
- Open a saved workspace.
- Navigate to a sheet for the first time, if you have not yet specified prompt values for a data source used in the sheet.

For more information about SAP BW variables, see the documentation for the SAP Business Explorer Query Designer, in the SAP Technology Library, at the SAP Help Portal: <http://help.sap.com>.

For more information about SAP HANA variables, see the *SAP HANA Modeling Guide* available on the SAP Help Portal at <http://help.sap.com>.

Related Information

[Parameterized URLs \[page 138\]](#)

25.1 Navigating the Prompts dialog box

The *Prompts* dialog box displays the prompts for a data source in the workspace. You can click a data source to view its prompts.

Each row in the *Prompts* dialog box contains a prompt set up by an IT specialist in the data source.

If default prompt values are set up in the data source, prompts in the *Prompts* dialog box may already contain values. You can accept these values, or you can specify different values.

When opening a saved workspace containing saved prompt values, the saved prompt values are restored as opposed to the default ones. If the workspace was saved without any prompt values, then the default values are used.

From the *Prompts* dialog box, you can do the following:

- View required and optional prompts.
- Expand all optional prompts.

- Merge prompts.
- Use SAP variants to set prompt values for SAP BW variables.

Related Information

[Viewing required or optional prompts \[page 163\]](#)

[Expanding all optional prompts \[page 164\]](#)

[Validating prompt values \[page 166\]](#)

[Merging prompts \[page 168\]](#)

[Using SAP variants to set prompt values \[page 169\]](#)

25.2 Required and optional prompts

Prompts may be required or optional, depending on how they are configured in the query.

Required prompts are prompts that you must provide a value for when the *Prompts* dialog box opens. They are denoted with asterisks in the *Prompts* dialog box.

Optional prompts are prompts that you do not have to select values for. If you do not select values, they will use default values to return data.

25.2.1 Viewing required or optional prompts

You can select which prompts are displayed by clicking the appropriate tab in the header:

- *All*
- *Required*
- *Optional*

Alternatively, you can switch between required and optional prompts by clicking *View hidden required prompts* or *View hidden optional prompts* in the *Prompt Summary* list.

By default, only the required prompts are displayed when the *Prompts* dialog box first opens. Your system administrator can change this behavior, so that all prompts display initially.

Note

In BI 4.1 SP5 release, users can view the display values for the prompts set in the SAP BW query.

For more information, see the *Configuration files for the MDAS Server* section of the *SAP Business Objects Analysis, edition for OLAP Administrator Guide*.

25.2.2 Expanding all optional prompts

To expand and view all optional prompts, click ► **Actions** () ► **Expand optional prompts** ►.

25.3 Prompt types

The following prompt types are available for both SAP BW and SAP HANA variables:

Prompt type	Description
Key date prompts	<p>Key date prompts are single-value prompt types where you can indicate a specific date for the data you want to see (provided that data is configured in the cube to be time-dependent). Time-dependent metadata is filtered based on the key date prompt.</p> <p>The value for the key date prompt must be specified first, because it limits the data available to other prompts.</p>
Single value prompts	<p>Single value prompts allow you to specify a single member in the <i>Prompts</i> dialog box to be returned from the default flat hierarchy for a dimension.</p>
Multiple single value prompts	<p>Multiple single value prompts allow you to specify one or more members in the <i>Prompts</i> dialog box to be returned from the default flat hierarchy for a dimension.</p>
Range prompts	<p>Range prompts consist of two members that you specify in the <i>Prompts</i> dialog box. The two members create a range which is used as a filter for the data returned and displayed in Analysis.</p> <p>You must ensure that you create a valid range by specifying a second member that occurs after the first specified member in the hierarchy.</p>
Complex selection prompts	<p>Complex selection prompts allow you to specify one or more conditions from the <i>Prompts</i> dialog box, which are then used to filter the data returned and displayed in Analysis.</p>
Formula prompts	<p>Formulas are calculations that may have been defined by an administrator on the key figures (or measures) dimension.</p> <p>If Analysis requires you to enter a value for a formula prompt, you must enter a numerical value only. The value</p>

Prompt type	Description
	you enter is then used to complete the formula, and the data returned is the result of the formula.
Currency prompt	A currency prompt is a special type of prompt used to convert values based on an exchange rate table. The exchange rates used to perform the conversion are set at the data source, and are not visible from Analysis.

The following prompt types are available for SAP BW variables only:

Prompt type	Description
Hierarchy prompts	<p>Dimensions contain a hierarchy or multiple hierarchies grouped together into a single logical collection.</p> <p>The hierarchy you specify in the Prompts dialog box restricts the hierarchies you can use on that dimension to the chosen hierarchy.</p> <p>Hierarchy prompts often come paired with hierarchy node prompts, where both prompts apply to the same dimension. The hierarchy node prompt can dynamically apply to whichever hierarchy has been specified for the hierarchy prompt. In these cases, you specify the hierarchy prompt before specifying the hierarchy node prompt.</p>
Hierarchy node prompts	Hierarchy node prompts can be single-value or multiple-value, depending on how they are set up in the SAP BW query. In the Prompts dialog box, you specify one or more members to be returned from the hierarchy.

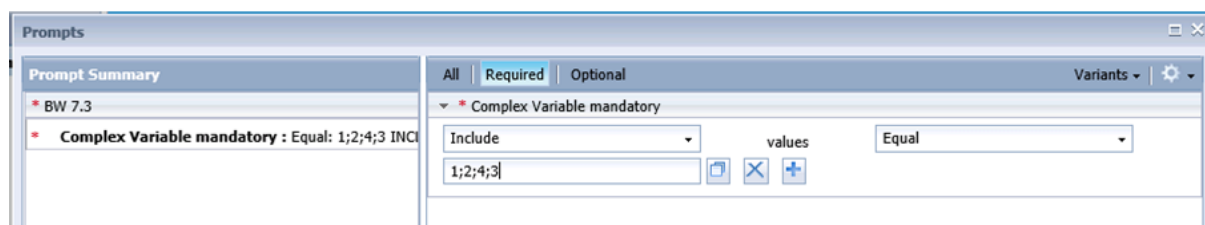
The following prompt types are available for SAP HANA variables only:

Prompt type	Description
Multiple range prompts	<p>Multiple range prompts for SAP HANA data sources consist of one or more ranges that you specify in the Prompts dialog box. The ranges filter the data that is returned and displayed in Analysis.</p> <p>You define the ranges by specifying two members for each range, and you can add or remove ranges as necessary. When selecting members, you must ensure that you create a valid range by specifying a second member that occurs after the first selected member in the hierarchy.</p>
Single complex selection prompts	This prompt type functions like a complex selection prompt, except that you can specify only one condition from the Prompts dialog box. This condition is used to filter the data returned and displayed in Analysis.

25.3.1 Setting Multiple Values in Complex Selection Prompts

If you want to select multiple values under the **Equal** and **Not Equal** criteria, use the semicolon “;” delimiter.

You can also use the add button to select multiple values. These values are displayed in separate text fields.



25.4 Validating prompt values

By default, prompt values are automatically validated before they are submitted for processing. Check marks and X icons in the *Prompt Summary* list indicate whether prompt values are valid. You are not able to submit invalid prompt values.

Your system administrator can disable automatic prompt validation. If automatic prompt validation is disabled, a *Validate* button appears next to the *OK* button. In this case, prompt values are validated when you click *Validate*, or when you click *OK* to submit the prompt values.

For more information, see the *Prompt validation* section of the *SAP Business Objects Analysis, edition for OLAP Administrator Guide*.

25.5 To enter prompt values

When you perform a task that requires SAP BW or SAP HANA prompt values to be set, the *Prompts* dialog box opens. Perform the following steps for each mandatory prompt, and any optional prompts that you want to select values for.

1. Select a prompt from the *Prompt Summary* list.
2. Define the prompt value:

Prompt type	Steps to define the prompt value
Key date	Click the date field. Type a date in the format that was set by your database administrator, or click the icon beside the date field and select a date from the calendar.
Single value	Click the button beside the value field and choose a member from the list. You can also type the member's key in the value field.

Prompt type	Steps to define the prompt value
Multiple single value	Click the button beside the value field and choose one or more members from the list. You can also type the key for one or more members in the value field, using semicolons to separate multiple values.
Range	Click the buttons beside the value fields and choose members to define the end points of the range. You can also specify values by typing a member's key in the <i>Start</i> and <i>End</i> fields.
Multiple range	<ol style="list-style-type: none"> 1. Click the buttons beside the value fields, and choose members to define the end points of the range. You can also type the member's key in the prompt field. 2. Click the + icon to add the range. 3. If you want to define another range, repeat the previous steps.
Complex selection	<ol style="list-style-type: none"> 1. Select either <i>Include</i> or <i>Exclude</i>, and then select an operator. For example, to select members that are outside a specified range, choose <i>Exclude</i> and the <i>Between</i> operator. 2. Specify the threshold value or values. To specify a value, click the button beside the value field and choose a member from the list. You can also type the member's key in the prompt field. 3. When you have finished defining the rule, click the <i>Add</i> button. 4. If necessary, add more rules to further define the prompt value.
Single complex selection	<ol style="list-style-type: none"> 1. Select either <i>Include</i> or <i>Exclude</i>, and then select an operator. For example, to select members that are outside a specified range, choose <i>Exclude</i> and the <i>Between</i> operator. 2. Specify the threshold value or values. To specify a value, click the button beside the value field, and choose a member from the list. You can also type the member's key in the prompt field.
Hierarchy	Select a hierarchy from the list. You can also begin to type the name of the hierarchy and then click the hierarchy when it appears in the list.
Hierarchy node	<p>Click the button beside the value field and choose one or more members from the list.</p> <p>You can also type the key for one or more members in the value field, using semicolons to separate multiple values, or type the extended syntax to select a member and its children. For example, type +EUROPE(Text \Node) to select Europe and its child members. To select all members that are not assigned to a parent member in the hierarchy, type +REST_H(1HIER_REST).</p>
Formula	Enter a numerical value.
Currency	Click the button beside the value field and choose a currency from the list. You can also type the currency code in the value field.

If allowed, an initial value, denoted with a number sign (" # ") can be selected in the *Prompts* dialog box. This explicitly selects all data records, including those which do not correspond to a member of the hierarchy.

Note

If the following prompts are date values, you can type a date in the format that was set by your database administrator, or click the icon beside the date field and select a date from the calendar:

- Key date
- Single value
- Multiple single value
- Range
- Complex selection

3. If you want the default prompt values to be reset the next time the workspace is open, deselect *Save prompt values with workspace*.

4. If automatic prompt validation has been disabled, you can click [Validate](#) to manually validate the prompt values.
5. Click [OK](#).
The query is executed and the filtered metadata is displayed in the crosstab.

Related Information

[Validating prompt values \[page 166\]](#)

25.6 To change prompt values

1. In the list at the top of the [Data](#) panel, select a data source that contains prompts.
2. Click the [Prompts](#) button.
3. In the [Prompts](#) dialog box, select new prompt values.

Related Information

[To enter prompt values \[page 166\]](#)

25.7 Merging prompts

In an Analysis workspace with multiple queries, it is possible that the same variable may be used several times. By merging prompts, you can enter a value for a duplicate prompt once, and have the same value applied to all the other instances. Merged prompts make it more convenient to enter values and reliably ensure that the same value is applied across all appropriate queries.

Note

When [Merge prompts](#) is enabled, the use of variants changes in the following ways:

- You cannot create or save new variants.
- Variants for all the active connections within the workspace are displayed in the submenu.
- If you apply multiple variants, a prompt will always take the value of the most recently applied variant.

 To merge prompts, click  [Actions](#)  [Merge prompts](#) .

25.8 Using SAP variants to set prompt values

SAP variants are sets of saved values for SAP BW query prompts. To save time when connecting to an SAP BW query with multiple prompts, you can use a variant to set the prompt values. Instead of setting values for prompts individually, you select a variant to simultaneously specify the values for several prompts. Variants are useful if you frequently connect to a query with a large number of prompts and you usually specify the same prompt values.

Analysis, edition for OLAP can use existing SAP variants created in BEx Analyzer or Analysis, edition for Office. SAP variants created with Analysis, edition for OLAP can also be used in those applications.

Two types of variants are available:

- Personal variants are available only for the creator of the variant.
- Public variants are accessible by any user on the same system.

For an SAP BW query with multiple prompts, you can perform the following tasks:

- Create and save a new variant.
- Set prompt values using a variant.
- Set a variant as the default for a query.
- Change the value of a variant.
- Rename a variant.
- Delete a variant.
- Designate a public variant.


Note

When prompt merging is enabled, you cannot create a new variant. Additionally, when prompt merging is enabled, variants for all connections on the current sheet are available. You can apply multiple variants but the prompt will always take the value of the most recently requested variant.

Related Information

[Prompts for SAP BW and SAP HANA data sources \[page 162\]](#)

25.8.1 To create a new variant

1. In the [Prompts](#) dialog box, set your prompt values.
2. To save the set of prompts as a new variant, click [Variants](#) > [Save As](#) .
3. Type a description in the [Description](#) field.
The description also acts as the name of the variant.
4. If you want to set this variant as the default for this data source, select [Set as the default for this query](#).

5. If you want to allow other users to access this variant, select [Save as public variant](#) and provide a unique technical name.
6. Click [Save](#).

Related Information

[To enter prompt values \[page 166\]](#)

25.8.2 To set prompt values using a variant

1. In the [Prompts](#) dialog box, click ► [Variants](#) ► [Personal Variants](#) ► to access your personal variants, or
► [Variants](#) ► [Public Variants](#) ► to access public variants.
The menu lists the first ten variants.
2. Select a variant.
 - If the variant that you want to use appears in the list, click it.
 - If the variant does not appear in the list, click [More](#). The [Variants](#) dialog box appears, listing all public or personal variants. You can sort the list by name or description to find the appropriate variant. Select the variant and click [OK](#).

The prompt values for the variant are applied in the [Prompts](#) dialog box. A bullet marker appears beside the variant in the menu to indicate that it is active. If necessary, you can manually specify the values for one or more prompts.

25.8.3 To change the prompt values for a variant

1. Select the variant.
2. Edit the prompt values.
3. Click ► [Variants](#) ► [Save](#) ►.

Related Information

[To set prompt values using a variant \[page 170\]](#)

[To enter prompt values \[page 166\]](#)

26 Microsoft Analysis Services Data Sources

Analysis can connect to Microsoft SQL Server Analysis Services data sources and can take advantage of features in Analysis Services such as perspectives and display folders. This section describes these features and shows you how to use them in your workspaces. Some definitions are included to help you understand Analysis Services terminology.

Dimensions

Dimensions in Analysis Services are collections of hierarchies.

Hierarchies

Attributes are the building blocks of dimensions, and are used in Analysis Services to organize measures contained in a cube.

In Analysis Services, a dimension is a collection of attributes that describe the data that is provided by the tables in a data source view.

A business user cannot see the attributes in a dimension from a client application such as Analysis. The attributes must first be organized into hierarchies before their members can be navigated in a cube.

Two types of hierarchies can be created from attributes: attribute hierarchies and user hierarchies.

- An attribute hierarchy is created for every attribute in a dimension, and has the same name as the attribute. The attribute hierarchy enables users to browse the members of an attribute. An attribute hierarchy has only one level. Attribute hierarchies ensure that a cube's cells can be referenced without relying on user hierarchies, so that security and calculations are independent of a cube's navigation paths. To the business user, an attribute hierarchy appears no different from hierarchies that you create, and allows business users to browse members of an attribute. Attribute hierarchies replace the concept of virtual dimensions found in earlier versions of Analysis Services.
- A user hierarchy is any hierarchy other than an attribute hierarchy. A user hierarchy is composed of attributes that are organized into levels that provide navigation paths in a cube. The member structures of user hierarchies can take one of four basic forms, depending on how members are related to each other:
 - Balanced hierarchies
 - Unbalanced hierarchies
 - Ragged hierarchies
 - Parent-child hierarchies

Because user hierarchies, unlike attribute hierarchies, can contain many levels, they are often referred to as multilevel hierarchies.

Fact tables

A fact table is a database table that contains measures or metrics of a business process. For example, a fact table for a grocery store might include measures such as [Sales](#), [Inventory](#), and [Profit](#).

Dimension tables

A dimension table is a database table that contains attributes that describe the business entities of an enterprise. The attributes are used by data analysts to constrain and group database queries. For example, a [Store](#) table might include store locations and sizes.

Measure groups

A measure group contains one or more measures from the same fact table. All Analysis Services cubes and perspectives contain at least one measure group.

In Analysis, measure groups are shown on the Data panel, and in the [Filter](#) panel when you filter by member.

Display folders

Display folders are optional folders that can be configured on the Analysis Services server to organize hierarchies into folder structures. The folder structures make it easier for users to navigate the hierarchies grouped under a single dimension from a client application.

In Analysis, display folders are shown on the Data panel only; they do not appear in the [Filter](#) panel. Also, you cannot select a display folder; only the hierarchies within the display folders.

Perspectives

Cubes can be very large and thus difficult to navigate in SQL Server Analysis Services. A single cube can represent the contents of an entire data warehouse, with each measure group in a cube representing a single fact table, and each dimension representing a dimension table in the data warehouse. This prospect can be daunting to users, who often need to interact with only a small portion of a cube to satisfy their business intelligence and reporting requirements.

In Analysis Services, a perspective can reduce the perceived complexity of a cube by allowing you to define a viewable subset of the cube. The perspective's definition controls which objects in a cube are visible to a business intelligence application.

Analysis treats perspectives as regular cubes. For example, perspectives appear as regular cubes when you create a new data source connection in the Central Management Console.

26.1 Custom calculations with missing members

For MSAS data sources, when a member that is included in a custom calculation is repositioned or removed in the data source, the custom calculation becomes invalid. The cell values for the calculation display as `ERROR`.

You can correct the calculation by editing it and removing the missing members. You must be aware of which members have been repositioned or removed in the data source.

Related Information

[Calculations \[page 90\]](#)

26.2 Drilling Through to the Underlying Relational Data

When you analyze OLAP data, you can also explore the data from the underlying relational transactions that contributed to the value in a specific cell. You can also export the data from those transactions to an Excel or CSV file.

For example, you can see the value for aggregated online purchases for one customer and drill through it to view the details of each purchase, such as the product ordered and the purchase price, quantity, and date.

When the analysis uses one or more background filters, you can decide whether or not to apply the same filters to the underlying relational data.

To drill through to the underlying relational data for a value, right-click the cell that contains the value that interests you and click the appropriate menu option:

- [Drill through](#) to drill through to unfiltered relational data
- [Drill through with the filter context](#) to apply the filters to the relational data

If relational data is available, it shows in the [Drill Through](#) panel where you can:

- See the number of rows in the drill-through results at the bottom of the panel.
- See or hide the context for the drill-through results by clicking [Query context](#).
- Export the drill-through results to an Excel or CSV file by clicking [Export to Excel/CSV](#).

Note

The number of rows per page, the total number of rows displayed, and the column display can be configured by the administrator. For more information, see the *Configuration files for the MDAS Server* section of the *SAP Business Objects Analysis, edition for OLAP Administrator Guide*.

Related Information

[To export relational data \[page 174\]](#)

26.2.1 To export relational data

You can export the underlying relational data to Microsoft Excel or CSV.

Drill-through functionality is only available with Microsoft SQL Server 2008 Analysis Services or Microsoft SQL Server's later versions.

With Microsoft SQL Server Analysis Services, your database administrator must enable the drill-through functionality at the cube level and grant you permission to perform a drill-through operation in a cube role.

In the upper left corner of the *Drill Through* panel, click *Export to Excel/CSV* and select the file type for your export.

27 Oracle Essbase Data Sources

Analysis can connect to Oracle Essbase data sources and take advantage of features in Essbase such as measure hierarchies and attribute dimensions.

Related Information

[Display settings for members in the crosstab \[page 130\]](#)

27.1 Attribute dimensions

With Oracle Essbase data sources, you can retrieve and analyze data not only from the perspective of dimensions, but also in terms of characteristics, or attributes, of those dimensions. For example, you can analyze product profitability based on size or packaging. Or you can reach a more effective conclusion from your analysis by incorporating a market attribute such as the population size of each market region. For example, such an analysis could tell you that decaffeinated drinks that are sold in cans in small markets are less profitable than you had anticipated.

To get more detailed information, you can filter the analysis by specific attribute criteria, including minimum or maximum sales, and profits of different products in similar market segments. To enable this type of analysis, you create attribute dimensions in the database outline.

Attribute dimensions capture the attributes of something else. In an Essbase cube, they do not exist as dimensions on their own. An attribute dimension must be associated with a standard dimension. A standard dimension is any dimension that is not tagged as an attribute dimension.

In Analysis, attribute dimensions appear and function like other dimensions on the rows or columns of the crosstab. They can be useful in filtering data for a dimension that they are associated with.

27.1.1 Using attribute dimensions to filter data

You can filter the data for a dimension by adding an associated attribute dimension to the [Background](#) filter area. The crosstab displays data only for members that are associated with the selected attribute member.

For example, if you add a dimension called `Product` to the rows of the crosstab, and it has an associated attribute dimension `Caffeinated`, you might select an attribute dimension member named `Caffeinated_True` for the background filter.

In this example, data is displayed for caffeinated drink products only. Null values are displayed for decaffeinated drink products.

27.2 Measure hierarchies

Essbase data sources support measure hierarchies, which can be expanded or collapsed in the crosstab. These types of measures allow you to drill to the different components that make up a measure. For example, a Profit measure could be expanded to show a Revenue measure and a Costs measure.

You can also navigate measure hierarchies in the metadata explorer. Adding a child member of the hierarchy to the crosstab has the effect of filtering the hierarchy by member. For example, if you add Profit to the columns of the crosstab, only the Profit member and its parents and children will be included in the analysis.

When you right-click the name of the measure hierarchies in the crosstab, the [Show levels](#) and [Expand to level](#) functions are available.

27.3 Selecting an alias table

Alias is an alternate name that can be used for dimension and measures in OLAP workspace.

You can select alias from the alias table for the dimension and measures in your analysis workspace.

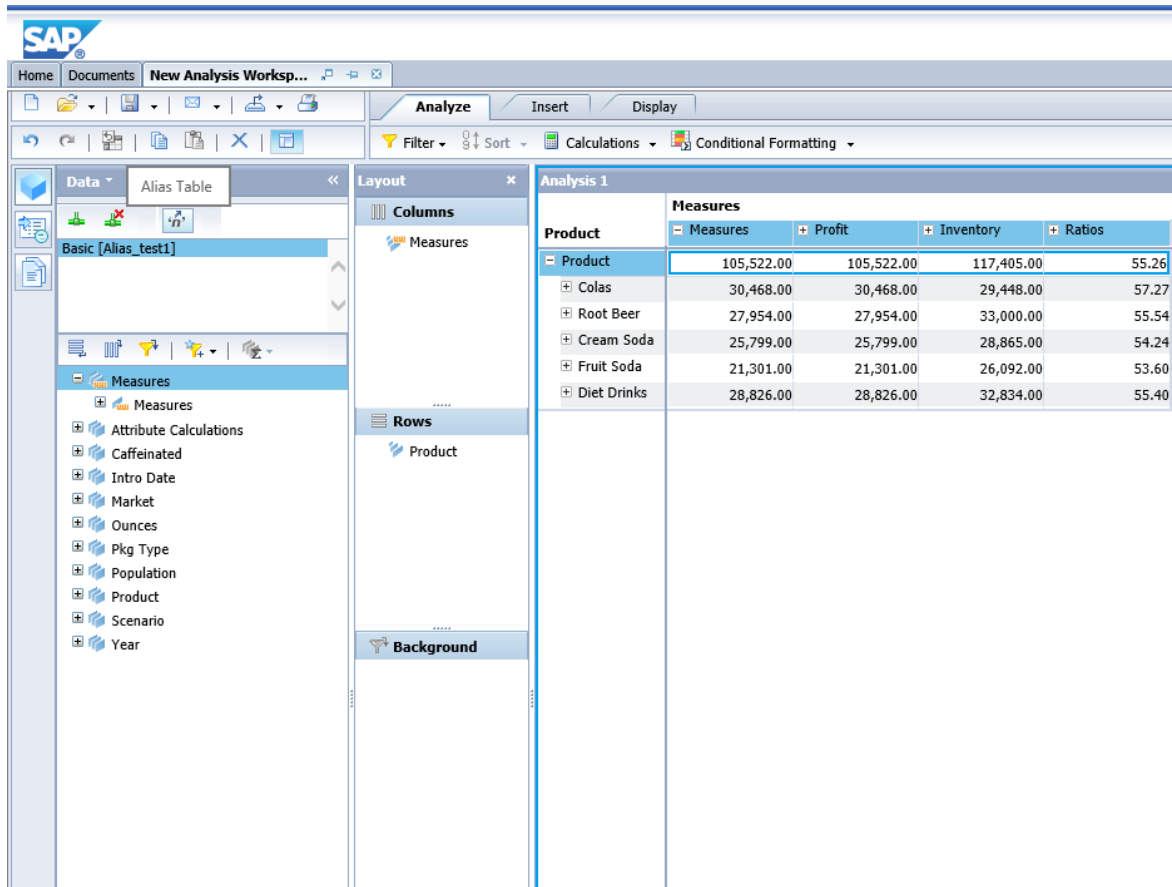
Initially, when the information is displayed in the OLAP analysis workspace, the default table information for dimension and measures for the OLAP workspace is used from the Oracle Essbase data source. You can change the default table to any other alias from the alias table however. If you want to see the selected alias as default in the workspace for future use, save the OLAP analysis workspace.

For example: The cross tab has a dimension named as "Product". To change the name from "Product" to "New_Product", the alias is defined and created in the Oracle Essbase data source. To use the alias in the analysis workspace, select the appropriate alias from the alias table to change the name "Product" to "New_Product". The name in the cross tab is changed to "New_Product"

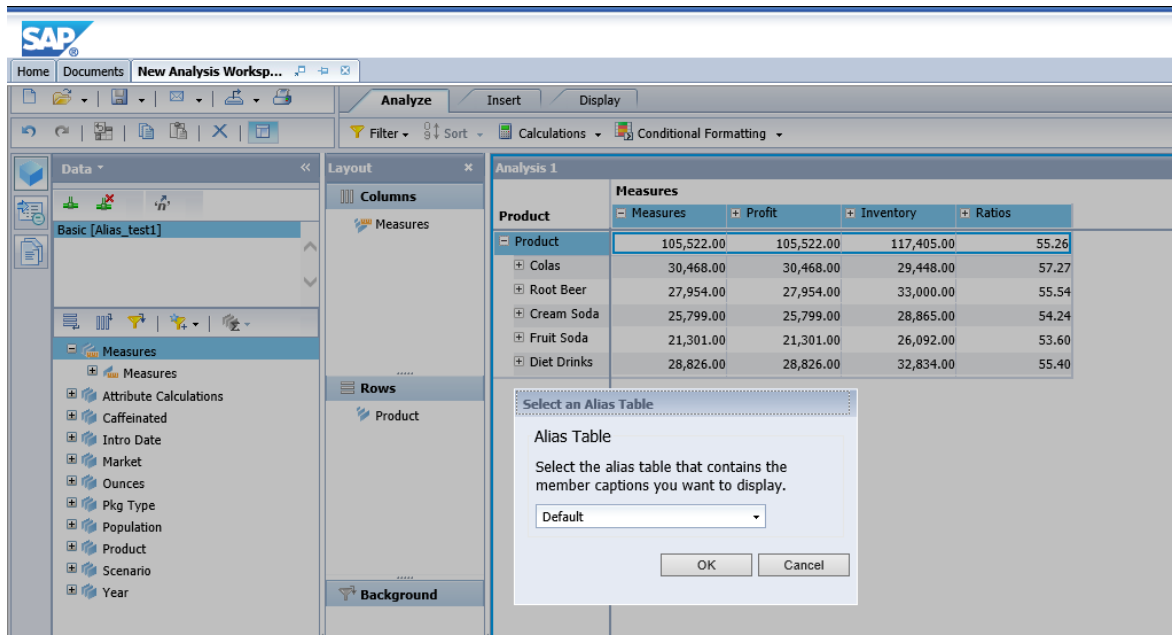
Alias table supported by Oracle Essbase data source. The aliases are defined and created by system administrator of Oracle Essbase data source and stored in the database outline.

To select an alias table, perform the following steps:

1. Add measures and dimension to the cross tab.
2. In the [Data](#) panel, choose the Alias table icon



3. In the *Select an alias table* window, select an alias from the dropdown box and choose *OK*



Note

- The measures and dimensions are displayed according to the selected alias table.

- If the alias is not set for a dimension or a measure in the selected alias table, the values in the default table are displayed for the particular dimension or measure.

4. Save the analysis workspace to maintain the selected alias

.

The alias is changed in the analysis workspace.

Next time you open the workspace, you will see that the alias is selected that the workspace was last saved with..

28 Accessibility

Accessibility mode

Analysis provides an accessibility mode for users with visual or motor impairments. To enable accessibility mode, perform these steps:

1. Open the [Preferences](#) page in the SAP BusinessObjects BI launch pad.
2. Click [Analysis, edition for OLAP](#).
3. Select the [Accessibility Mode](#) check box.
4. Log off the BI launch pad, and log back on.

In accessibility mode, tooltips contain more verbose text for screen reader support. Also, the keyboard actions described later in this section are available in accessibility mode.

Color schemes and fonts

To assist users, Analysis provides several color schemes and font choices. These options are available from the Properties panel.

Keyboard shortcuts

Keys	Action
Tab	<p>Move the focus to the next region in the crosstab.</p> <p>These are the regions that you can access by pressing the Tab key:</p> <ul style="list-style-type: none">• Column members area• Row members area• Cell area
Arrow keys	In the crosstab, move the focus one cell up, down, left, or right. In the metadata explorer, move the focus up or down, or expand and collapse objects.
Spacebar	Select the cell or object that has focus.
Shift + Spacebar	Extend the cell selection from the existing selected cells to the currently selected cell.
Ctrl + Spacebar	Select multiple member headers.
+	Expand a parent member or object.
-	Collapse a parent member or object.
Shift + arrow keys	Extend the selection to include more cells.

Keys	Action
Ctrl + F4	Close a crosstab or chart component.
Shift + F10	Select the cell that has focus, and then display the context (right-click) menu.
Ctrl + F10	Maximize or Restore a crosstab or chart component.
Esc	Perform any of these actions: <ul style="list-style-type: none"> • Close the context menu • Close the drop-down list • Close or end other actions

29 Understanding OLAP

SAP BusinessObjects Analysis is a tool for viewing and analyzing business data, specifically OLAP (Online Analytical Processing) data. This section explains OLAP.

29.1 OLAP Overview

Relational databases store data as individual records. Each record may contain a number of fields, but all these fields relate to just one record. For example, a Product record might have a number of fields containing information about that Product, such as sales transactions to different customers in different regions.

Online Transaction Processing (OLTP) applications are used to query this information and keep it up to date. OLTP is designed to enable a large number of users to update and retrieve comparatively small numbers of individual records quickly.

Although relational databases hold data in a one-dimensional format—one record at a time—business problems are usually multi-dimensional. A typical requirement would be to analyze Sales by Product by Region, for example. If this were to give a clear picture of the business, it would involve summarizing and analyzing a large number of different records. Using traditional OLTP applications for decision support therefore involves retrieving thousands of records and summarizing them on the fly to build database tables. This is not what OLTP applications were designed to do, and operations of this sort on a large database can take hours and even days of processing time to complete.

Online Analytical Processing (OLAP) applications are designed from the start with online data analysis in mind. To reduce processing time, relational data is summarized and pre-consolidated into matrix table format. Because these tables usually have three (or more) dimensions, they are referred to as data "cubes". OLAP data represents the hierarchical aggregations of the individual transactions. Consequently, the aggregated data can be analyzed much faster than relational data.

29.2 Multi-dimensional data cubes

To understand multi-dimensional data, first think of a spreadsheet showing how different products are selling in different markets:

Product	Region			
	USA	CAN	UK	
	Product 1	534	212	231
	Product 2	45	21	12
	Product 3	321	324	112
	Product 4	234	120	43
	Product 5	78	43	31
	Product 6	32	12	2

This spreadsheet shows sales for each Product within each Region. This data has two dimensions: **<Product>** (shown in the rows), and **<Region>** (shown in the columns). Also, each dimension comprises several **<members>**; in this example, members of the **<Region>** dimension include **<USA>**, **<Canada>**, and the **<UK>**.

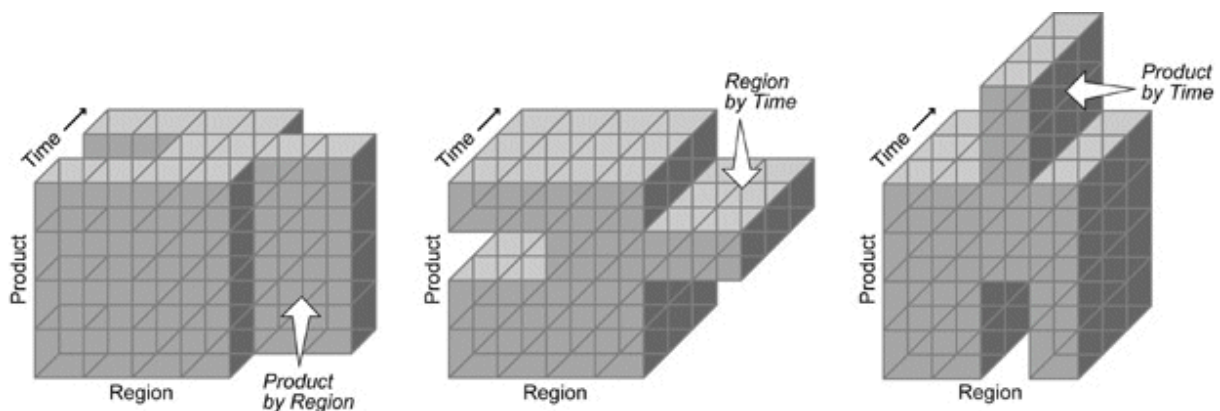
A spreadsheet like this is of limited use as it only shows sales performance at one point in time. To track performance for different Time periods, business analysts would need to stack up several spreadsheets, one for each time period, like this:

Product	Region			
	USA	CAN	UK	
	Product 1	534	212	231
	Product 2	45	21	12
	Product 3	321	324	112
	Product 4	234	120	43
	Product 5	78	43	31
	Product 6	32	12	2

Time →

Together, these spreadsheets show a third dimension, Time, to add to the first two (Product and Region).

Another way of representing these stacked-up data cells is in the form of a cube:



We call this the "data cube".

The data cube allows analysts to slice data in different ways in order to get answers to different business questions, such as:

- How are our products selling in each region (view **<Product>** by **<Region>**, as before)?
- How do our products sell at different times of the year in each market (**<Product>** by **<Region>** by **<Time>**)?
- How do our products sell at different times of the year (view **<Product>** by **<Time>**)?

This example has only three dimensions. OLAP applications can handle many more than three.

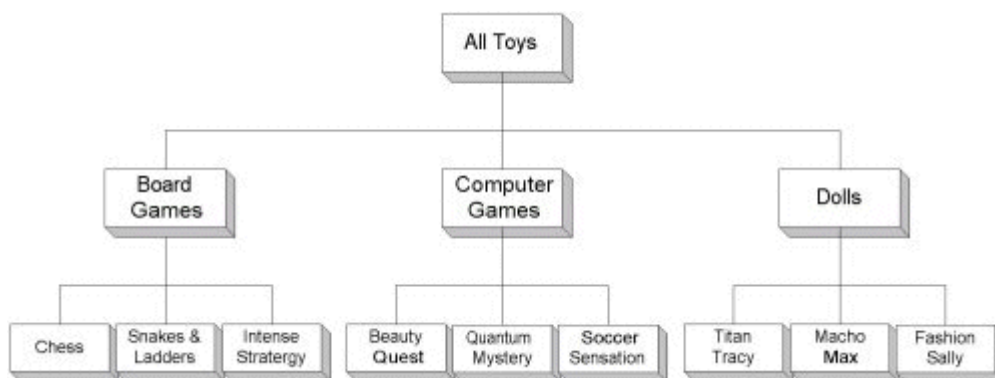
A fourth dimension might allow analysts to slice up the data by **<Customer>**, for example.

This is harder to picture than three dimensions, but it works in the same way; with another dimension, there are more possible ways of slicing the cube, to provide answers to questions such as 'Which UK customer buys the most (or least) of a certain product at Christmas?'

29.3 Hierarchical data

OLAP also allows analysts to organize each one of the data dimensions into a hierarchy of sub-groups and totals to reflect the organization of their business.

For example, the staff of a toy shop might want to store figures for groups of products and all products, as well as for individual products, like this:



OLAP allows analysts to view data for **<All Toys>** at the top level, then drill-down to lower and lower levels of detail, so that they can discover the precise source of a particular performance variation in their data.

By allowing analysts to use several dimensions in their data cube, with the possibility of a hierarchy in each dimension, OLAP reflects the way they picture their business, and is not constrained by the structure of information storage.

Through OLAP, analysts can gain a better understanding of their business by viewing, comparing and working with information in ways simply not possible before.

30 User Interface Reference

This section describes the user interface elements within SAP BusinessObjects Analysis, edition for OLAP. For help with performing tasks, see the appropriate sections in the rest of this User Guide.

30.1 Workspace reference

A workspace is an Analysis data-analysis object. You create a workspace in Analysis, analyze your data in it, and save it as a single file in the BI platform repository. You can then re-open the workspace to continue your analysis, or share the workspace with other users.

The default workspace contains three sheets, each with an empty crosstab and undefined analysis. You can add crosstab and chart components to the analysis window, or add additional sheets to the workspace, as your analysis increases in scope.

Related Information

[Analysis window reference \[page 184\]](#)

[Task panel reference \[page 187\]](#)

[Toolbar reference \[page 195\]](#)

[Crosstab component reference \[page 208\]](#)

[Charts reference \[page 215\]](#)

30.2 Analysis window reference

The main work area is called the analysis window. You can add up to four components to each sheet in the analysis window, in any combination of crosstabs and charts.

Crosstab and chart components can occupy any of the four quadrants in the analysis window, or two adjacent quadrants, or all four quadrants if you have a single component on the sheet.

The areas in the analysis window where you can drag components to from the toolbar are called drop zones. The locations of the component drop zones change as you add or reposition components in the analysis window.

Related Information

[Workspace reference \[page 184\]](#)

[Task panel reference \[page 187\]](#)

[Toolbar reference \[page 195\]](#)

[Crosstab component reference \[page 208\]](#)

[Charts reference \[page 215\]](#)

30.3 Layout panel reference

The [Layout](#) panel is where you place hierarchies and measures to define your analysis. You can place either a single hierarchy or measure, or a group of selected measures, in the [Rows](#), [Columns](#), or [Background](#) areas in the [Layout](#) panel. You can also nest hierarchies to help you define more complex analyses.



Click this button in the toolbar to toggle the Layout panel on and off.

Related Information

[Workspace reference \[page 184\]](#)

[Analyses \[page 33\]](#)

[Nested hierarchies to create complex analyses \[page 38\]](#)

30.3.1 Drop zones in the Layout panel

The [Layout](#) panel contains drop zones for placing hierarchies when you define an analysis.

You drag a hierarchy or hierarchy level or measures to the center drop zone to add members to an empty axis, or to replace existing members on that axis.

You drag a hierarchy or hierarchy level or measures to the upper or lower drop zone to add members to existing members on that axis. The new members are nested with the existing members.

Related Information

[Nested hierarchies to create complex analyses \[page 38\]](#)

30.3.2 Hierarchy functions in the Layout panel

You can right-click a hierarchy in the [Layout](#) panel to access these functions:

- Filter—filters the hierarchy by member or by measure.
- Sort—selects a sort type.
- Show levels—selects which hierarchy levels are displayed.
- Expand to level—expands the entire hierarchy to the level that you choose.
- Display as—selects a format for displaying member names.
- Move to—moves the hierarchy to another axis.
- Move before—nests the hierarchy before another hierarchy.
- Move after—nests the hierarchy after another hierarchy.
- Swap with—swaps positions with another hierarchy.
- Remove—removes the hierarchy from the crosstab.

Related Information

[Filtering Data \[page 64\]](#)

[Sorting \[page 81\]](#)

[Hiding hierarchy levels \[page 112\]](#)

[To change the display of member keys and text \[page 74\]](#)

30.3.3 Custom groups and multiple members in a background filter

You may need to view data for a group of members that does not roll up to an existing parent member in a hierarchy.

For example, if you are interested in sales figures by region, then when you select CA, you see the aggregated sales for all cities in the state of California. But if you are interested in only the cities of Los Angeles and Portland, you cannot select one single member in the hierarchy that gives you the aggregated sales for just these two cities. Or if you are interested in only a few cities in the state of California, but not all of them, again there is no single member that gives you the aggregated sales for just those cities.

To view data for such a group of members, you can specify multiple members for a background filter, or you can create a custom group.

Note

You cannot select multiple members from a measures dimension for a background filter.

Note

Custom groups are available only for MSAS and Essbase data.

Related Information

[Combining members as custom groups \[page 114\]](#)

[Background filters \[page 77\]](#)

30.3.4 Additional details in Layout panel

Analysis provides additional details about the parent information along with the member information. When you add members or dimensions to the crosstab, layout panel displays parent information of the measure or dimension.

To enable additional details in layout panel, perform these steps:

1. Open the [Preferences](#) page in the SAP BusinessObjects BI launch pad.
2. Select [Analysis, edition for OLAP](#).
3. Select the [Additional details in metadata panels](#) check box.
4. Log off the BI launch pad, and log back on.

30.4 Task panel reference

The task panel, the panel at the left side of the workspace, contains the Data, Properties, and Outline panels. These panels are used to define analyses, view dimensions and hierarchies, add and change data sources, view component properties, and view the overall structure of analyses.



Click this icon in the panel title bar to hide the task panel. Click any panel button to open that panel:



Data panel



Properties panel



Outline panel

Related Information

[Workspace reference \[page 184\]](#)

[Analysis window reference \[page 184\]](#)

[Toolbar reference \[page 195\]](#)

[Crosstab component reference \[page 208\]](#)

[Charts reference \[page 215\]](#)

30.4.1 Data panel

On the Data panel, you add data sources, and view the dimensions, hierarchies, and hierarchy levels defined in those data sources.

Related Information

[Task panel reference \[page 187\]](#)

[Properties panel \[page 193\]](#)

[Outline panel \[page 195\]](#)

30.4.1.1 Data panel data source area

At the top of the *Data* panel, you can find a list of all the active data sources that have been added to the workspace and the name of their connection. When you create a new workspace, you are prompted to add the first data source, but you can later add as many data sources as you want.

→ Tip

The connection, the cube and the provider appear in a tooltip when you hover your mouse over the data source.



Click [Connect to a data source](#) to see a list of data sources that your system administrator has defined.

For more information about data sources, see [OLAP data source objects \[page 147\]](#). For information about defining OLAP data source connections, see "Creating OLAP data source connections" in the *Administrator Guide*.

Once you have added at least one data source, you can select the data source to view the metadata in the metadata explorer, and define your analysis in the analysis window.

If any of your data sources are disabled, analyses that are based on the disabled data sources are not executed. The disabled data sources still appear in the active data source list, but are unavailable.

Related Information

[Disabled data source connections \[page 151\]](#)

[Task panel reference \[page 187\]](#)

[Properties panel \[page 193\]](#)

[Outline panel \[page 195\]](#)

30.4.1.2 Data panel data source buttons

Above the data source area on the Data panel are buttons that you can use to add, remove, and refresh data sources.

For more information about adding and removing data sources, see [Adding data sources \[page 147\]](#) and [Removing a data source \[page 150\]](#).



Connect to a data source **button**

Click this button to add a data source to the list of active data sources on the Data panel.



Remove selected data source **button**

Click this button to remove a data source from the list of active data sources on the Data panel. The button is enabled when a data source is selected on the list.



Prompts **button**

Click this button to edit your prompts against the SAP BW or SAP HANA data source that your analysis is connected to.

Note

This button is visible only when an SAP BW or SAP HANA data source that contains prompts is selected in the data source area.

Related Information

[Data panel data source area \[page 188\]](#)

[Data panel metadata explorer \[page 190\]](#)

[Data panel metadata explorer buttons \[page 191\]](#)

[Data panel \[page 188\]](#)

[Outline panel \[page 195\]](#)

[Properties panel \[page 193\]](#)












[Prompts for SAP BW and SAP HANA data sources \[page 162\]](#)

30.4.1.3 Data panel metadata explorer

The metadata explorer displays cube dimensions and hierarchies in a tree structure.

When you open a data source, any measures dimensions are automatically expanded in the metadata explorer to show the constituent measure members or measure groups.

Default hierarchies and display attributes are shown in bold.

	dimension
	measures or key figures dimension
	group display attributes
	favorite filter
	hierarchy (Default hierarchies are shown in bold.)
	hierarchy level
	single measure
	individual display attribute (Default attributes are shown in bold.)
	<i>Custom Groups</i> folder
	private custom group
	shared custom group

You define analyses using the metadata explorer. You select hierarchies and measures, and add them to a crosstab or chart in the analysis window.

For information about how to define an analysis, see [Analyses \[page 33\]](#). For more information about using crosstabs and charts, see [Crosstabs \[page 40\]](#) and [Charts \[page 43\]](#).

Related Information

[Task panel reference \[page 187\]](#)

[Properties panel \[page 193\]](#)

[Outline panel \[page 195\]](#)

30.4.1.4 Data panel metadata explorer buttons

Above the metadata explorer area on the Data panel are buttons that you can use to add metadata to the analysis, instead of dragging hierarchies and measures into the [Layout](#) panel or crosstab.

To populate your crosstab or chart component, first select the component, then select a metadata object (dimension, hierarchy, hierarchy level, display attribute, or measure) in the metadata explorer, and then click one of the buttons to add the selected metadata to the component. If you select a hierarchical dimension, the default hierarchy within that dimension is added to the component. If you select a display attribute, the hierarchy associated with the attribute is also added to the component.

You can select individual metadata objects, or ranges of objects:

- Click individual metadata objects to select and deselect them.
- Hold down the `Shift` key as you click objects, to select or deselect ranges of objects.

Background filters are a special case. See [Overview of Analysis crosstabs \[page 40\]](#) and [Task panel reference \[page 187\]](#) for more information about using background filters.



Add to Rows button

The button is enabled when a visual component is selected, and at least one metadata object is selected in the metadata explorer.

- If the crosstab rows are empty, click this button to add the selected data to the crosstab row axis.
- If the crosstab rows contain data from the same hierarchy as the selected data, click this button to replace the existing data with the selected data.
- If the crosstab rows contain members not from the same hierarchy as the selected members, click this button to nest the existing members inside the selected members in the row axis.

Note

If members from the source hierarchy are already specified on a crosstab axis other than the row axis, the existing members from the source hierarchy are removed from the crosstab.



Add to Columns button

The button is enabled when a visual component is selected, and at least one metadata object is selected in the metadata explorer.

- If the crosstab columns are empty, click this button to add the selected data to the crosstab column axis.

- If the crosstab columns contain members from the same hierarchy as the selected members, click this button to replace the existing data with the selected data.
- If the crosstab columns contain members not from the same hierarchy as the selected members, click this button to nest the existing members inside the selected members on the column axis.

Note

If members from the source hierarchy are already specified on a crosstab axis other than the column axis, the existing members from the source hierarchy are removed from the crosstab.



Add to Background Filter button


The button is enabled when a visual component is selected, and at least one metadata object is selected in the metadata explorer.

- If the crosstab background filter area is empty, click this button to add the selected data to the crosstab background filter.
- If the crosstab background filter contains members from the same hierarchy as the selected members, click this button to replace the existing data with the selected data.
- If the crosstab background filter contains members not from the same hierarchy as the selected members, click this button to nest the existing members inside the selected members in the background filter.

For information about using multiple members in a background filter, see [Task panel reference \[page 187\]](#).



Create Favorite Filter button

Click this button to create a favorite filter. After you save the filter, the filter is shown with a special icon in the metadata explorer. 



Edit Favorite Filter button

Click this button to change the members defined in a favorite filter.



Delete Favorite Filter button

Click this button to remove a favorite filter.

Create Custom Group button

Click this button to create a custom group.

Edit Custom Group button

Click this button to edit the selected custom group.

Delete Custom Group button

Click this button to delete the selected custom group.

Related Information

[Task panel reference \[page 187\]](#)

[Properties panel \[page 193\]](#)

[Outline panel \[page 195\]](#)

[Combining members as custom groups \[page 114\]](#)

30.4.2 Properties panel

The Properties panel displays a set of properties for the selected object. You can select a crosstab or chart, and view the properties for that object on the Properties panel. The properties available to view or modify on the Properties panel depend on the component selected.

These object properties can be modified on the Properties panel:

Object	Properties that can be modified
crosstab	<ul style="list-style-type: none"> • Analysis Name • Description • Column Width • Row Height • Wrap column text • Wrap row text • Highlight Totals • Show formatted cell values • Display Null Cells As <p>For information about these properties, see Crosstab component reference [page 208].</p>
chart	<ul style="list-style-type: none"> • Sub-Analysis Name • Description • Style • Palette • Font • Show Visual Totals • Show Hierarchical Labeling • Show Legend • X Axis Label • Y Axis Label • Z Axis Label • Y Axis Scale • Y Axis Scale Symbol • X Axis Measure • Y Axis Measure • Bubble Size Measure • Manually Hide Chart Labels • Hide Labels Less Than • Show actual values <p>For information about these properties, see Charts reference [page 215].</p>

For descriptions of these properties and how to use them, see [Crosstab component reference \[page 208\]](#) and [Charts reference \[page 215\]](#).

Related Information

[Task panel reference \[page 187\]](#)

[Data panel \[page 188\]](#)

[Outline panel \[page 195\]](#)

30.4.3 Outline panel

The *Outline* panel shows the relationships between analyses and visual components (crosstabs and charts) on all sheets.

Related Information

[Task panel reference \[page 187\]](#)

[Data panel \[page 188\]](#)

[Properties panel \[page 193\]](#)

30.5 Toolbar reference

You can perform most of your data-analysis tasks with the toolbar.

Note

Some of the toolbar buttons may be disabled, depending on the rights that have been assigned to users within the Central Management Console, and depending on which object or component is selected in the analysis window.

For more information on rights in the Central Management Console, see your system administrator or the *SAP BusinessObjects Analysis, edition for OLAP Administrator Guide*.

For details on using the toolbar, see the following topics:

Related Information

[Workspace reference \[page 184\]](#)

[Analysis window reference \[page 184\]](#)

[Task panel reference \[page 187\]](#)

[Crosstab component reference \[page 208\]](#)

[Charts reference \[page 215\]](#)

30.5.1 Toolbar overview

The toolbar contains buttons for the most commonly used functions, many grouped into tabs.

Several buttons have more than one function associated with them. For example, the Calculation button is used to perform several types of calculations.

Some of these multi-function buttons have a default action associated with them. For example, clicking the arrow beside the Sort button displays the sort operations that can be applied to the selected member, but clicking the Sort button itself applies the default Ascending sort.

A chart button can be clicked to add a chart of that type to the default position in the analysis window, or the button can be dragged to add the chart at a specific location in the analysis window.

Note

Many of the toolbar functions are also duplicated in context-sensitive right-click menus. For example, if you right-click a hierarchy or a member header, a menu that contains relevant options appears.

30.5.2 Application buttons

30.5.2.1 New Workspace button



Use this button to create a new Analysis workspace.

Related Information

[Creating an Analysis workspace \[page 18\]](#)

30.5.2.2 Open button



Use this button to open an existing workspace from the SAP BusinessObjects repository. Click the Open button to execute the default Open Workspace function, or click the arrow beside the Open button to display options for opening workspaces or analysis views.

Related Information

[Open another Analysis workspace \[page 30\]](#)

30.5.2.3 Save button



Use this button to save your workspace to the SAP BusinessObjects repository. Click the Save button to execute the default Save function, or click the arrow beside the Save button to display options for saving your file.

These save options are available:

Option	Function
Save	<p>Saves the current workspace.</p> <p>If you have created a new workspace and have not yet saved it, choosing the Save function executes instead the Save As function.</p>
Save As	<p>Saves the current workspace as a new repository object. The workspace can be newly created or a modification of an existing workspace.</p> <p>The Save As function allows you to choose the location and name of your new workspace.</p>

Related Information

[Save a workspace \[page 28\]](#)

30.5.2.4 Send To button



Use this button to send a workspace to another BI platform user, or to an email recipient. Click the Send To button to execute the default "SAP BusinessObjects Inbox" function, or click the arrow beside the Send To button to display options for sending your workspace.

These options are available:

Option	Function
SAP BusinessObjects Inbox	Sends the workspace to the Inbox of another BI platform user.
Email	Sends the workspace to an email recipient, as a link within an email. After clicking the link, the recipient must log on to the BI platform to see the workspace.
Document Link	Displays the URL for the workspace.

Related Information

[Sending an Analysis workspace to another user \[page 136\]](#)

30.5.2.5 Export button



Use this button to export data from an analysis to any of these destinations:

- Microsoft Excel (.xls or .xlsx)
- comma-separated-values (.csv) file
- PDF (for distribution or printing)
- Analysis view
- Analysis application

Click the Export button to export data to Excel, or click the arrow beside the Export button to choose from the export options.

Related Information

[Exporting data to Excel \[page 142\]](#)

[Exporting data to comma-separated-values \(.csv\) files \[page 143\]](#)

[Printing and PDF Files \[page 139\]](#)

[Using Analyses in Other SAP BusinessObjects Applications \[page 154\]](#)

[Exporting to an analysis application \[page 144\]](#)

30.5.2.6 Print button



Use this button to print your data to a PDF file. When you click this button, the [Export to PDF](#) dialog box opens. From the dialog box, you can choose to print selected sheets or raw data. Within your PDF file viewer, you can then save your output as a PDF file, or send it to your printer.

Related Information

[Printing and PDF Files \[page 139\]](#)

30.5.2.7 Undo button



Use this button to reverse the most recently performed action.

Note

Deleting a data source, analysis (on the Outline panel), or sheet clears the undo/redo history.

Note

A maximum of ten undo levels are saved.

Related Information

[Undo button \[page 198\]](#)

30.5.2.8 Redo button



Use this button to re-apply the action that was reversed by the Undo button.

Note

A maximum of ten redo levels are saved.

30.5.2.9 Discard Changes button



Use this button to discard all changes made to the workspace since it was opened.

30.5.2.10 Copy button



Use this button to copy the currently selected crosstab or chart component. After copying the component, you can paste the component onto the same sheet or a different sheet.

Note

The Copy button is disabled until you select a crosstab or chart component.

Related Information

[Copying a component \[page 123\]](#)

30.5.2.11 Paste button



Use this button to paste the copied crosstab or chart component to the same sheet or a different sheet.

Note

The Paste button is disabled until you copy a crosstab or chart component.

Related Information

[Copying a component \[page 123\]](#)

30.5.2.12 Delete button



Use this button to delete the selected crosstab or chart from the sheet.

Note

The Delete button is disabled until you select a crosstab or chart component.

30.5.2.13 Hide Layout Panel button



Use this button to toggle the Layout panel on and off.

30.5.2.14 Help button



Use this button to open the Analysis online help.

30.5.2.15 Auto Update button

Use the Auto Update button to toggle automatic layout updating.

Related Information

30.5.3 Analyze tab buttons

30.5.3.1 Filter button

Use the Filter button to filter the data displayed in crosstabs and charts.

Select [By member](#) to filter the data by selecting members from a list.

Select [By measure](#) to filter the data by defining filter rules.

Select [BEx Conditions](#) to filter SAP BW data using conditions defined in SAP Business Explorer.

Note

The [Filter](#) button is disabled until you select a row or column in a crosstab.

Note

Filtering by measure is not available for analyses based on SAP HANA data.

Note

If your crosstab contains nested hierarchies, you can add a filter only to members of the innermost hierarchy.

Related Information

[Filtering Data \[page 64\]](#)

[Filtering SAP BW data using BEx conditions \[page 76\]](#)

30.5.3.2 Sort button

Use the Sort button to sort the data in the crosstab.

Click the Sort button to apply the default ascending sort, or click the arrow beside the Sort button to display a list of sorting options that you can select from.

These sorting options are available:

Option	Function
Ascending (default)	Sorts the selected row or column in ascending order. The hierarchical structure of the members is maintained.
Descending	Sorts the selected row or column in descending order. The hierarchical structure of the members is maintained.
Delete	Removes a sort from a row or column.

Note

The Sort button is disabled until you select a single row or column in a crosstab.



Note

The Delete option is disabled until you select a single row or column in a crosstab, that has a sort applied to it.

Note

If your crosstab contains nested hierarchies, you can add a sort only to a member of the innermost hierarchy.

When a member has a sort applied, an icon appears beside the member name, indicating the direction of the sort.

Icon	Option	Function
	Ascending	Indicates that the row or column is sorted in ascending order.
	Descending	Indicates that the row or column is sorted in descending order.

Clicking the icon reverses the sort direction.

Related Information

[Sorting \[page 81\]](#)

30.5.3.3 Calculations button

Use the Calculations button to add a calculation (calculated member) to the crosstab.

Click the Calculations button to open the [Calculation](#) panel if you want to create custom calculations, or click the arrow beside the Calculations button for more calculation options.

Note

If you select one member before you click the Calculations button, you can access the dynamic calculations. If you select two members before you click the Calculations button, you can access the simple arithmetic calculations.

These calculation options are available:

Calculation	Description
Add	Adds the values in the selected rows or columns.
Subtract	Subtracts the values in the selected rows or columns. The cell values from the second selected row or column are subtracted from the values in the first selected row or column.
Multiply	Multiplies the values in the selected rows or columns.
Divide	Divides the values in the selected rows or columns. The cell values from the first selected member row or column are divided by the values in the second selected row or column.
Dynamic Calculation	Opens a list of dynamic calculations.
Custom Calculation	Opens the Calculation panel so that you can create a calculation by defining a formula.

Related Information

[Calculations \[page 90\]](#)

30.5.3.4 Conditional Formatting button

Use the Conditional Formatting button to apply color to or add symbols to the cells in a crosstab, highlighting important differences or unexpected results.

For example, you might want to highlight a value that is greater or less than a predetermined value.

Note

The Conditional Formatting button is disabled until you select a member in a crosstab.

Related Information

[Conditional Formatting \(Highlighting Exceptions\) \[page 85\]](#)

30.5.4 Insert tab buttons

30.5.4.1 Insert Crosstab button



Use the Insert Crosstab button to place a crosstab onto a sheet. You can place up to four visual components on a sheet, in any combination of crosstabs and charts.

To place a crosstab on a sheet, drag the Crosstab button from the toolbar into the analysis window. Alternatively, you can click the Crosstab button to insert the crosstab on the current sheet. The component is added to the sheet, below or to the right of existing components; however, you can reposition components in the analysis window later.

Click the arrow beside the Insert Crosstab button for other options.

Related Information

[Crosstabs \[page 40\]](#)

[Crosstab component reference \[page 208\]](#)











30.5.4.2 Chart buttons

Use the chart buttons to place a chart onto a sheet. You can place up to four visual components on a sheet, in any combination of crosstabs and charts.

To place a chart on a sheet, click a chart button. Or, if the chart that you want to add to the sheet does not have its own button, but instead is a member of one of the chart families, click the arrow beside the button for that chart family, and then select a chart type from the list. The component is added to the sheet, below or to the right of existing components; however, you can reposition components in the analysis window later.

These chart types are available:

Chart Type	
	Column chart family
	Clustered Column
	Stacked Column
	100% Stacked Column
	3D Clustered Column
	Line

Chart Type	
	Pie
	Bar chart family
	Clustered Bar
	Stacked Bar
	100% Stacked Bar
	Other charts
	Scatter
	Bubble
	Box Plot
	Radar
	Waterfall

Related Information

[Charts \[page 43\]](#)

[Charts reference \[page 215\]](#)

30.5.4.3 Switch To button

Use the Switch To button to change a crosstab to a chart, or to change a chart to a crosstab or a different type of chart.

30.5.5 Display tab buttons

30.5.5.1 Swap Axes button

Use the Swap Axes button to swap the horizontal and vertical axes of the selected component.

Any sorts and filters in the analysis are preserved.

Note

The Swap Axes button is disabled until you select a crosstab or chart.

30.5.5.2 Hierarchy button

Use the Hierarchy button to switch between the normal display of nested hierarchies and the compact axis display.

Note

The compact axis display is available only with SAP BW data, and therefore the Hierarchy button is available only when using SAP BW data.

30.5.5.3 Measure Format button

Use the Measure Format button to change the appearance of your data by adding formatting.

Some of the types of formatting you can add are:

- The way the numbers in your crosstab are displayed (for example, in scientific notation).
- The number of decimal places displayed (any number from 0 to 99; the default is 2).
- The way negative values are displayed.

Related Information

[Formatting Data \[page 128\]](#)

30.5.5.4 Totals button

Use the [Totals](#) button set where totals and parents appear in the crosstab.

Related Information

[Totals, Parents, and Aggregations \[page 102\]](#)

30.5.5.5 Nulls button

Use the [Nulls](#) button to suppress rows and columns that contain only null values from being displayed in the crosstab.

You can also suppress rows only, columns only, or both.

Related Information

[Removing null and zero values \[page 78\]](#)

30.5.5.6 Nulls & Zeros button

Use the [Nulls & Zeros](#) button to suppress rows and columns that contain only null or zero values from being displayed in the crosstab.

You can also suppress rows only, columns only, or both.

Related Information

[Removing null and zero values \[page 78\]](#)

30.5.5.7 Focused Analysis button

Use the Focused Analysis button to toggle focused analysis mode on and off.

Related Information

[Displaying a subset of data in a sub-analysis \[page 62\]](#)

30.5.5.8 Update Sub-Analysis button

Use the Update Sub-Analysis button to toggle the updating of a sub-analysis.

Related Information

[Sub-analyses \[page 61\]](#)

30.5.5.9 Unlink Sub-Analysis button

Use the Unlink Sub-Analysis button to unlink a sub-analysis from the main analysis.

Related Information

[Unlinking a sub-analysis \[page 63\]](#)

30.6 Crosstab component reference

The diagram below illustrates the elements of the crosstab component:

The diagram shows a crosstab component window titled 'Analysis 1'. It features a tree view on the left and a data table on the right. Red circles with numbers 1 through 4 point to specific elements: 1 points to the tree view, 2 points to the 'Measures' header, 3 points to a row member 'Accessories', and 4 points to a column member 'Internet Tax Amount'.

Product Model Category	Internet Sales Amount	Internet Order Quantity	Internet Extended Price	Internet Tax Amount
All Products	\$ 29,358,677.22	60,398	\$ 29,358,677.22	\$ 2,348,694.23
Accessories	\$ 700,759.96	36,092	\$ 700,759.96	\$ 56,060.80
Bikes	\$ 28,318,144.65	15,205	\$ 28,318,144.65	\$ 2,265,451.62
Clothing	\$ 339,772.61	9,101	\$ 339,772.61	\$ 27,181.81
Components				

1. Row hierarchy or dimension
2. Column hierarchy or dimension
3. Row members
4. Column members

Related Information

[Crosstabs \[page 40\]](#)

[Workspace reference \[page 184\]](#)

[Analysis window reference \[page 184\]](#)

[Task panel reference \[page 187\]](#)

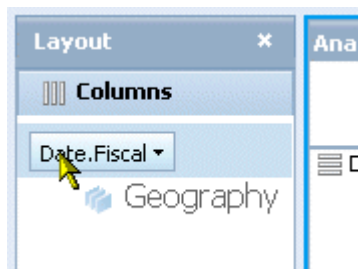
[Toolbar reference \[page 195\]](#)

[Charts reference \[page 215\]](#)

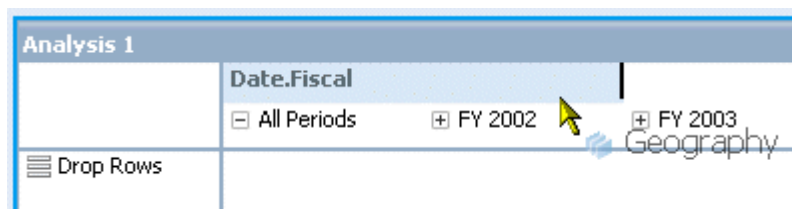
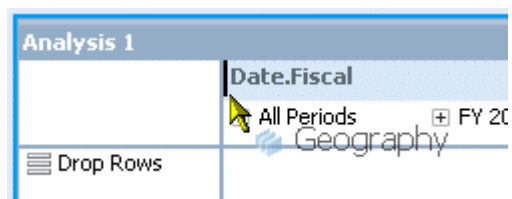
30.6.1 Drop zones in the crosstab

The [Layout](#) panel is where you place hierarchies and measures when you define an analysis. An additional drop zone, in the crosstab grid, is used to add members of a measures dimension to the crosstab. See [Crosstab component reference \[page 208\]](#) for more information.

You drag a hierarchy or hierarchy level to the center drop zone to add members to an empty axis, or to replace existing members on that axis.



You drag a hierarchy or hierarchy level to the left or right drop zone to add members to existing members on that axis. The new members are nested with the existing members.



Related Information

[Nested hierarchies to create complex analyses \[page 38\]](#)

30.6.2 Hierarchy functions in the crosstab

You can right-click a measure or hierarchy in the [Layout](#) panel to access these functions:

- Filter—filters the hierarchy by member or by measure.
- Sort—selects a sort type.
- Show levels—selects which hierarchy levels are displayed.

→ Tip

You can hover over a dimension to quickly verify which hierarchy levels are displayed.

- Expand to level—expands the entire hierarchy to the level that you choose.
- Display as—selects a format for displaying member names.
- Move to—moves the hierarchy to another axis.
- Move before—nests the hierarchy before another hierarchy.
- Move after—nests the hierarchy after another hierarchy.
- Swap with—swaps positions with another hierarchy.
- Remove—removes the hierarchy from the crosstab.

Related Information

[Filtering Data \[page 64\]](#)

[Sorting \[page 81\]](#)

[Hiding hierarchy levels \[page 112\]](#)

[To change the display of member keys and text \[page 74\]](#)

[Crosstab component reference \[page 208\]](#)

[Crosstabs \[page 40\]](#)

[Crosstab component reference \[page 208\]](#)

[Crosstab component reference \[page 208\]](#)

[Crosstab component reference \[page 208\]](#)

30.6.3 Crosstab grid

The crosstab grid is where member headers and data are displayed.

Row and column resizing

You can drag the edges of row and column member headers to resize them.

Icons in member headers

If you have applied any sorting or calculations to a member, icons are displayed in the member header.

Member functions

You can right-click a member header in the crosstab grid to access these functions:

- Drill—For information on expanding and collapsing members, see [Expanding and collapsing parent members \[page 106\]](#).
- Sort—For information on sorting data, see [Sorting \[page 81\]](#).
- Conditional Formatting—For information on adding conditional formatting to data, see [Applying conditional formatting \[page 85\]](#).
- Calculation— For information on adding and defining calculations, see [Creating calculations \[page 91\]](#).
- Dynamic Calculation—For information on adding and defining calculations, see [Creating calculations \[page 91\]](#).
- Custom Calculation—For information on adding and defining calculations, see [Creating calculations \[page 91\]](#).
- Pivot With—For information on pivoting hierarchies, see [Pivoting hierarchies \[page 109\]](#).
- Reorder Members—For information on reordering members, see [Reordering members \[page 113\]](#).
- Custom Group—For information on custom groups, see [Combining members as custom groups \[page 114\]](#).
- Jumplink—For information on creating links to other documents, see [Linking to Reports \[page 152\]](#).
- Keep Members—For information on keeping members, see [To remove or add individual members \[page 70\]](#).
- Remove—For information on hiding members, see [To remove or add individual members \[page 70\]](#).

Cell drop zone

To add measures to the crosstab, you can drag measures to the row or column axis, or to the background filter, but you can also drag measures to the main cell area. This drop zone is for the purpose of changing or adding members of a measures dimension only. You cannot drop members of a non-measures dimension on the cell drop zone, and you cannot drop the entire measures dimension on the cell drop zone.

When you drop measures on the cell drop zone, those measures are placed on the column axis.

If you have already placed some members of a measures dimension on the row or column axis, dropping additional measures onto the cell drop zone adds those measures to the other measures on the same axis.

If you have already placed a measure member in the background filter, dropping another member onto the cell drop zone swaps the measures dimension to the column axis and adds the new member to the selection.

Cell selection

If you want to apply conditional formatting to just a selection of cells, you can click and drag in the crosstab to select a range of cells.

Related Information

[Crosstab component reference \[page 208\]](#)

[Crosstabs \[page 40\]](#)

[Crosstab component reference \[page 208\]](#)

[Crosstab component reference \[page 208\]](#)

30.6.4 Crosstab display options

The following options are available to customize the appearance of the crosstab. You can access these options from the Properties panel. For information about these properties, see [Crosstab component reference \[page 208\]](#).

Option	Values
Analysis Name	Text string up to 50 characters
Description	Text string up to 255 characters
Column Width	Numeric value
Row Height	Numeric value
Wrap column text	Yes, No
Wrap row text	Yes, No
Highlight Totals	Yes, No
Show formatted cell values	Yes, No
Display Null Cells As	Text string up to 50 characters

30.6.4.1 Descriptions of crosstab display options

Analysis Name

This option defines the name of the analysis represented by the crosstab component. The name is displayed in the crosstab's title bar, and is also used to identify the crosstab on the [Outline](#) panel. The default value is the name generated automatically when the crosstab is created.

Description

In addition to the crosstab's name, you can add comments to describe the crosstab, up to a maximum of 255 characters. Descriptions are optional and are not displayed on the crosstab component, but if you print a crosstab to a PDF document, the description can be added in the page header or footer.

Column Width

This option defines the width of crosstab columns, in pixels. The value you enter applies to all columns in the crosstab.

The minimum allowed value is 20.

Row Height

This option defines the height of crosstab rows, in pixels. The value you enter applies to all rows in the crosstab.

The minimum allowed value is 20.

Wrap column text

This option defines whether text in the column headers of the crosstab wraps.

The default value is **No**.

Wrap row text

This option defines whether text in the row headers of the crosstab wraps.

The default value is **No**.

Highlight Totals

This option defines whether totals are highlighted with a unique color in the crosstab.

The default value is `Yes`.

Show formatted cell values

This option defines whether cell values are displayed with or without the formatting defined in the Measure Format dialog box. For more information about formatting measures, see [Formatting Data \[page 128\]](#).

The default value is `Yes`.

Display Null Cells As

This option defines how null values are displayed. You can type any text that you want, up to a maximum of 50 characters. The input is always treated as text, even if numeric values are entered.

By default, null values are displayed as empty cells.

Related Information

[Task panel reference \[page 187\]](#)

[Crosstab component reference \[page 208\]](#)

[Crosstabs \[page 40\]](#)

[Crosstab component reference \[page 208\]](#)

[Crosstab component reference \[page 208\]](#)

30.6.5 Crosstab tooltips

The tooltip for a member header displays the member level and text.

Related Information

[Crosstab component reference \[page 208\]](#)

[Crosstabs \[page 40\]](#)

[Crosstab component reference \[page 208\]](#)

[Crosstab component reference \[page 208\]](#)

30.7 Charts reference

The chart component comprises the main chart graphic and, with large data sets, a range slider to help you navigate the data in the chart.

Related Information

[Charts \[page 43\]](#)

[Chart range slider \[page 215\]](#)

[Chart graphic \[page 217\]](#)

[Chart display options \[page 219\]](#)

[Workspace reference \[page 184\]](#)

[Analysis window reference \[page 184\]](#)

[Task panel reference \[page 187\]](#)

[Toolbar reference \[page 195\]](#)

[Crosstab component reference \[page 208\]](#)

30.7.1 Chart range slider



1. Overview scroll bar
2. Selected range
3. Range slider bars
4. Hide/restore button
5. Paging buttons

The chart range slider lets you scroll through charts that contain large data sets. It appears automatically when the data set in the chart is too large to be displayed legibly in the main chart graphic. The range slider is available with these chart types:

- column charts (except 3D clustered column)

- line charts
- pie charts
- bar charts

Range slider bars

The range slider bars let you resize and reposition the selected range within the range slider control. You move the bars to the approximate positions you want, and when you release the mouse button, the bars are adjusted to the nearest logical data points.

Selected range

The area between the range slider bars is the selected range. This range is expanded in the main chart graphic. You can also drag the selected range within the range slider to scroll through the chart.

Overview scroll bar

With very large data sets, the range slider cannot display the full data set legibly. Instead, the overview scroll bar represents the full data set while the range slider represents only a portion of the full data set. The relative size of the scroll box within the overview scroll bar indicates the percentage of the full data set being displayed in the range slider.

Use the overview scroll bar to move the range slider to different subsets of the full data set.

Hide/restore button

To allow the main chart graphic to occupy more space in the chart component, you can hide the range slider by clicking the arrow button at the edge of the range slider. Click the arrow button again to restore the range slider.

Paging buttons

The arrow buttons at the ends of the range slider move the selected range by one "page" of elements within the range slider. A page is defined as the current size of the selected range.

With very large data sets, the range slider represents only a portion of the full data set. In that case, the arrow buttons move the selected range by one page of elements as usual, until the selected range reaches the end of the range slider. Clicking an arrow button again moves the selected range further but also moves the range slider within the full data set.

Autoscaling in the range slider

In the range slider, the values are scaled automatically to fit the slider. For example, in a column or bar chart, if the subset of data currently being displayed in the range slider includes values between 1 and 100, the number 2 is represented by a very short riser. But if you scroll the range slider to a different subset of data that includes values only between 1 and 2, the values are scaled so that the number 2 is represented by a long riser.

Related Information

[Scrolling through charts \[page 52\]](#)

[Charts reference \[page 215\]](#)

[Charts reference \[page 215\]](#)

[Charts reference \[page 215\]](#)

30.7.2 Chart graphic

The chart graphic displays the data returned by the defined analysis or sub-analysis.

Member functions

If the chart represents a sub-analysis, you can right-click the chart graphic to change the chart type. If the chart represents an analysis, you can right-click a member in the chart to access these functions:

- Expand, Collapse—For information on expanding and collapsing members, see [Expanding and collapsing parent members \[page 106\]](#).
- Remove—For information on removing members, see [To remove or add individual members \[page 70\]](#).
- Switch to a different chart type, or to a crosstab—For information on chart types, see [Chart types \[page 46\]](#).

Related Information

[Charts reference \[page 215\]](#)

[Charts reference \[page 215\]](#)

[Charts reference \[page 215\]](#)

30.7.2.1 Charts with large data sets

Elements in charts are automatically sized to fill the available space efficiently, using intelligent display techniques to fit as much legible member text into the chart as possible. However, if a chart has a large data set, the chart may not be able to display all elements, or some member text may be omitted from the chart.

Member text in charts

If your chart includes many members on an axis, member text is staggered and reoriented to display as much text as possible. However, if the number of members is very large, only a subset of the member text is displayed on the chart, so that the remaining text is legible.

Member text that is omitted from the chart can be viewed in tooltips when you rest the mouse pointer over members.

Related Information

[Charts reference \[page 215\]](#)

30.7.2.2 Chart colors and style

Several color palettes and styles are available for displaying your charts.

Related Information

[Charts reference \[page 215\]](#)

30.7.2.3 Data type considerations

The measures defined on a cube might not be based on the same unit of measure or data type. For example, measures such as Unit Sales, Store Cost, and Store Sales use the data type `double`, but the Sales Count measure uses the data type `integer`. When the chart is rendered, all numeric values are converted to the data type `double`.

30.7.3 Chart display options

The following options are available to customize your charts. You can access these options from the [Properties](#) panel. For information about these properties, see [Charts reference \[page 215\]](#).

Option	Values
Analysis Name	Text string up to 50 characters
Description	Text string up to 255 characters
Style	Default Shadow Presentation Presentation Shadow
Palette	Default Cool Warm Hot Lavender Rose Desert Forest Ocean Monochrome
Font	Fonts set up by your system administrator
Show Totals	Yes, No
Show Hierarchical Labeling	Yes, No
Show Legend	Yes, No
X Axis Label	Text string up to 50 characters
Y Axis Label	Text string up to 50 characters
Z Axis Label	Text string up to 50 characters
Y Axis Scale	No Scale, Billions, Millions, Thousands, Thousandths, Millionths
Y Axis Scale Symbol	Text string up to 50 characters
X Axis Measure	Measures available in the analysis
Y Axis Measure	Measures available in the analysis
Bubble Size Measure	Measures available in the analysis
Manually Hide Chart Labels	Yes, No

Option	Values
Hide Labels Less Than	Value between 0 and 100
Show actual values	Yes, No

30.7.3.1 Descriptions of chart display options

Analysis Name

This option defines the name of the chart component. The name is displayed in the chart's title bar, and is also used to identify the chart on the [Outline](#) panel. The default value is the name generated automatically when the chart is created.

Description

In addition to the chart's name, you can add comments to describe the chart, up to a maximum of 255 characters. Descriptions are optional and are not displayed on the chart component, but if you print a chart to a PDF document, the description can be added in the page header or footer.

Palette

Several predefined color palettes are available to help you customize your chart components.

Style

These styles are available for customizing your charts:

Style	Visual effects
Default	none
Shadow	3D effect
Presentation	Black background
Presentation Shadow	Black background, 3D effect

Font

The fonts available in the Print dialog box and in the chart Properties panel are default fonts. Your system administrator can enable additional fonts.

Show Totals

If you have totals displayed on the crosstab, you can choose to show those totals in charts that are linked to the same analysis.

Show Hierarchical Labeling

When hierarchical labeling is on, the chart axis labels show the parent-child relationships of the members. The default value is `No`. Hierarchical labeling is applied only when the Show Parents option is set to Yes.

Show Legend

Choose `Yes` if you want the chart legend to be displayed. The default value is `Yes`.

Note

If there is limited space available in the chart component, the chart legend is automatically removed.

X Axis Label

The X axis is the horizontal axis.

Y Axis Label

The Y axis is the vertical axis.

Y Axis Scale

You can scale the displayed values. For example, if a chart contains several values between 5,000,000 and 20,000,000, you can select the Millions scale to display those values as 5 to 20.

Y Axis Scale Symbol

You can specify the label applied to the Y axis scaling. For example, if you select the [Millions](#) scale, you can add the label "(in millions of dollars)".

Z Axis Label

The Z axis is the lower-right axis for 3D clustered column charts.

X Axis Measure

For scatter and bubble charts, this option defines which of the measures available in the analysis is plotted on the chart's X axis.

Y Axis Measure

For scatter and bubble charts, this option defines which of the measures available in the analysis is plotted on the chart's Y axis.

Bubble Size Measure

For bubble charts, this option defines which of the measures available in the analysis is represented by the sizes of the bubbles.

Manually Hide Chart Labels

For pie charts, this option allows you to suppress labels for small pie slices. When this option is set to **Yes**, the [Hide Labels Less Than](#) property is enabled.

Hide Labels Less Than

For pie charts, this option sets the level below which the pie slice labels are suppressed. This option is enabled only if the [Manually Hide Chart Labels](#) property is set to **Yes**.

Show actual values

Choose **yes** if you want pie chart labels to reflect actual values instead of percentages. The default value is **no**.

Related Information

[Properties panel \[page 193\]](#)

[Charts reference \[page 215\]](#)

[Chart range slider \[page 215\]](#)

[Chart graphic \[page 217\]](#)



[Chart types \[page 46\]](#)

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