

IBM Cognos 8 BI Analysis Studio: Analyze Data (v8.4)

Module 3: Crosstab Layouts

Objectives

At the end of this module, you should be able to:

- nest data in a crosstab report
- design advanced crosstabs

This module takes approximately **60** minutes to complete.

Lesson 1: Nested Crosstab Layout

Scenario

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As a sales manager in Europe, you have been asked to analyze the quarterly sales performance of specific products in all the Northern European countries.

To do this, you want to create a new crosstab layout that will break down the data by country and products on the rows, and by quarters on the columns.

You then want to show similar data for Southern Europe without displaying the quarters of each year.

Let's learn how to perform these tasks in Analysis Studio.

Lesson 1: Nested Crosstab Layout

Topic 1 – Nested Data

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Nested Data

You have learned about a basic crosstab layout that contains a single set of rows and columns. This crosstab format helps you explore the data across only two dimensions. To increase the perspective of your data exploration, you can nest additional dimensions within the rows, the columns, or both.

Nesting also helps to break down the data by multiple levels or dimensions.

You can nest levels from different dimensions. For instance, you can nest a level of the Retailers dimension within the Product dimension.

You can also nest levels from the same dimension. This will help you see the high-level data as well as the breakdown. For instance, you can nest quarters in a year or nest cities in a country.

In addition, you can nest a measure or multiple measures in the Rows or Columns areas.

[Click here to know more about nesting.](#)

Lesson 1: Nested Crosstab Layout

Topic 1 – Nested Data

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Nest Items from Different Dimensions

You will now view the steps for nesting data from different dimensions.

Click the Step List button if you want to manually step through the demonstration.

Click Start to proceed.

(Note: A vertical flashing black bar appears when you are in the correct drop zone.)

The nested crosstab layout is created.

Note: The two levels of rows appear in the overview area. However, the label does not fully appear. To view the full label in the overview area, you can click the short vertical bar on the left of the column label, and then drag it slightly to the right.

Lesson 1: Nested Crosstab Layout

Topic 1 – Nested Data

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Nest Items from Same Dimensions

You will now view the steps for nesting data from the same dimensions.

Click the Step List button if you want to manually step through the demonstration.

Click Start to proceed.

The data is nested within the dimension and the overview area's column label is titled Combination.

Lesson 1: Nested Crosstab Layout

Topic 1 – Nested Data

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Replace a Nested Set

You can replace one nested set with another for comparison. For example, you can replace Northern Europe with Southern Europe in the crosstab.

You will now view the steps for replacing the sets in a nested crosstab.

Click the Step List button if you want to manually step through the demonstration.

Click Start to proceed.

The nested items are replaced.

Lesson 1: Nested Crosstab Layout

Topic 1 – Nested Data

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Remove a Nested Level

You will now view the steps for removing the nested levels.

Click the Step List button if you want to manually step through the demonstration.

Click Start to proceed.

The nested level is removed.

Lesson 1: Nested Crosstab Layout

Topic 2 – Drill Down on a Different Dimension

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Drill Down on a Different Dimension

When different dimensions are nested, and you drill down on one dimension, the next level of detail appears in that dimension. However, the data of the outer dimension will not change. This is because the two dimensions are independent.

For instance, if the inner dimension is Years and the outer dimension is Retailers, then drilling down on a year will show the quarters of that year. The Retailers dimension will remain unaffected.

Similarly, when you drill down on the outer dimension, the data of the inner dimension will not change.

For instance, if the inner dimension is Years and the outer dimension is Retailers, then drilling down on Retailers will show the countries, but the Year dimension will remain unaffected.

Lesson 1: Nested Crosstab Layout

Topic 3 – Drill Down on the Same Dimension

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Drill Down on the Same Dimension

When items from the same dimension are nested, and you drill down on an item in the inner nested level, the outer level will update and display the item you drilled down on.

You cannot drill down on an item in the outer level of nesting. This is because the details for the outer level of nesting are already displayed in the inner level of nesting.

For example, drilling down on 2005 Q1 will show the monthly data and the outer level will update and show the item that you drilled down on. However, you cannot drill down on the outer level, that is, 2005 Q1.

Lesson 1: Nested Crosstab Layout

Topic 4 – Swap Nested Levels

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Swap Nested Levels

After you have nested levels you may want to swap them to see the same data from a different perspective. For instance, retailer regions are nested in the Products dimension when you would prefer to have products nested in the Retailers dimension.

You can swap the inner and outer levels of nesting in either the rows or the columns. Use the overview area to swap nested rows and columns by dragging a set to the opposite side of the other set within the rows or columns section of the overview area.

However, you cannot swap nested levels from the same dimension. This is because the 'parent' level must appear to the left of or above the 'child' level.

Lesson 1: Nested Crosstab Layout

Topic 4 – Swap Nested Levels

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Swap Nested Levels

You will now view the steps for swapping nested levels using the overview area.

Click the Step List button if you want to manually step through the demonstration.

Click Start to proceed.

A flashing black bar appears before you release the mouse.

The nested levels are swapped.

Lesson 1: Nested Crosstab Layout

Learning Activity

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Refer to the following scenario and try this learning activity.

You have created a basic crosstab layout by inserting Products, Time, and Revenue in the Rows, Columns, and Measure area respectively. You want to focus your analysis on the product line that generated the least amount of revenue across all years. Next, you want to break down the revenues for each product type by the countries of Northern Europe. Finally, you want to view this analysis by the quarters of each year.

- Drill down on Outdoor Protection.
- Nest Northern Europe within the Product Type rows.
- Nest the quarterly information in Years.

Complete this task in 5 steps.

Use the Show Me/Step List buttons if you need help.

Click Start to proceed.

You have created a nested crosstab layout to view the desired information.

Lesson 1: Nested Crosstab Layout

Learning Activity

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Refer to the following scenario and try this learning activity.

You have created a crosstab layout by inserting Products, Time, and Revenue in the Rows, Columns, and Measure area respectively. You have nested Northern Europe in the Rows area. In addition, you have nested the quarterly information in Years. Now, you want to view the data of the Southern European countries in the nested crosstab without displaying the quarters of each year.

Replace Northern Europe with Southern Europe and remove the nested level in the Year dimension.

Complete this task in 3 steps.

Use the Show Me/Step List buttons if you need help.

Click Start to proceed.

You have replaced the nested item and removed the items within another dimension.

Lesson 2: Advanced Crosstab Layouts

Scenario

Page: 1

As a sales manager, you are creating a complex crosstab layout that contains multiple levels of data. You want to view the revenue figures only after you have finished designing the crosstab layout.

In addition, you want to design a crosstab layout that will help you break down the revenues by retailer regions as well as order methods.

You also want to customize the previous report so that they contain both the nested and stacked data.

Let's see how to perform these tasks in Analysis Studio.

Lesson 2: Advanced Crosstab Layouts

Topic 1 – Analyze Data in a Complex Layout

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Design Crosstabs without Retrieving Data

By default numerical data is automatically retrieved once the drop zones of the crosstab are populated. However, this can be time consuming if you are designing a complex crosstab with multiple levels and dimensions. This is because a large amount of information has to be loaded every time for each action.

When analyzing data in complex crosstab layouts, you can use the Get Data function. This function lets you create the layout of the report, and then retrieve all the data at one particular time.

You can access the Get Data function from the Settings menu. When working with Get Data, you cannot switch to a chart without first retrieving the data.

Note: The Get Data link in the work area is a toggle; once clicked, data will be retrieved with each report modification until reset from the Settings menu. If you wish to see the results without toggling off Get Data, run the report from the toolbar or Run menu. The results will be visible in the Cognos Viewer window.

Lesson 2: Advanced Crosstab Layouts

Topic 1 – Analyze Data in a Complex Layout

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Show a Complete Level of Data

The Down a Level function helps you analyze data in complex crosstabs. This lets you view all of the items in the next level of the hierarchy, not just the children of one item.

For example, when you drill down on 2005, you see the next level of the Time hierarchy, but are restricted to the 2005 quarters. When you use Down a Level, you can view all of quarters for each year.

You can repeat Down a Level for as many levels as the dimension contains. This is useful for a monthly analysis across all years or an All Employees analysis.

Similarly, to navigate up in the hierarchy, you can use the Up a Level function.

Note: Another technique to show all items at the lowest level of a dimension, is to expand any branch of a hierarchy in the Insertable Objects pane until you reach the lowest level of the dimension and then right-click any item at the lowest level and click Replace with All Items > (Row or Column).

Lesson 2: Advanced Crosstab Layouts

Topic 1 – Analyze Data in a Complex Layout

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Analyze Data in a Complex Layout

You will now view the steps for analyzing data in a complex layout using the Get Data and Down a Level functions.

Click the Step List button if you want to manually step through the demonstration.

Click Start to proceed.

The numerical values retrieved from the data source appear in the crosstab.

Lesson 2: Advanced Crosstab Layouts

Topic 2 – Stacked Crosstab

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Stacked Crosstab

You have learned how to create a nested crosstab layout containing additional levels within each set of the rows and columns.

Another layout that is commonly used is the stacked crosstab layout. In a stacked crosstab, two or more independent sets are adjacent to each other. This layout lets you compare two or more sets of items within the same crosstab.

For rows, a new set is appended below or above the existing set. For columns, the new set is appended to the left or right of the existing set.

In the overview area, stacked sets appear as a single box labeled Combination. Each set has its own selector bar for selecting, nesting, deleting, and other functions.

You can insert a set before or after a selected set by right-clicking the desired set in the Insertable Objects pane, pointing to Insert, and then clicking After Selected Set, or Below Selected Set.

Lesson 2: Advanced Crosstab Layouts

Topic 2 – Stacked Crosstab

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Create a Stacked Crosstab

You will now view the steps for creating a stacked crosstab.

Click the Step List button if you want to manually step through the demonstration.

Click Start to proceed.

A stacked crosstab layout is created.

Lesson 2: Advanced Crosstab Layouts

Topic 3 – Asymmetrical Crosstab

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Asymmetrical Crosstab

An asymmetrical crosstab layout contains both nested and stacked sets.

Asymmetrical sets allow you to effectively merge several analyses into one.

When creating asymmetrical crosstab layouts, you might require additional insertion techniques other than a simple drag-and-drop operation.

Note: Avoid adding too many sets though, as an overall objective is always to make each analysis easy to understand.

Lesson 2: Advanced Crosstab Layouts

Topic 3 – Asymmetrical Crosstab

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Create an Asymmetrical Crosstab

You will now view the steps for creating an asymmetrical crosstab.

Click the Step List button if you want to manually step through the demonstration.

Click Start to proceed.

An asymmetrical crosstab is created that contains both nested and stacked sets.

Lesson 2: Advanced Crosstab Layouts

Topic 4 – Custom Sorts

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Default and Custom Sorts

When the rows are nested, you can sort the inner level of rows on a specific column by right-clicking the column, pointing to Sort, and clicking the sort order. This does not let you sort the outer level of rows.

To sort the outer level of rows, you can right-click the selector bar or the column label in the overview area, point to Sort, and select the sort order.

By default, items in nested sets are sorted based on the values of the innermost nested row or column.

You can use custom sorting to sort nested or stacked sets differently than the default sorting. For example, you can sort items based on a measure other than the default measure, or based on a row or column other than the summary values of the opposite axis. The custom sort option also lets you sort by an attribute and a label.

Lesson 2: Advanced Crosstab Layouts

Topic 4 – Custom Sorts

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Perform a Custom Sort

You will now view the steps for performing a custom sort.

Click the Step List button if you want to manually step through the demonstration.

Click Start to proceed.

Lesson 2: Advanced Crosstab Layouts

Learning Activity

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Refer to the following scenario and try this learning activity.

You want to create an analysis to view the promotional data for each country. You want to design a crosstab layout first and view the data later. Before retrieving the data, you want to show a complete list of all retailer countries.

- Create an analysis with the Promotions, Retailers, and Promotion plan revenue in the Rows, Columns, and Measure area respectively.
- View the complete level of data for retailer countries.
- Retrieve data.

Complete this task in 8 steps.

Use the Show Me/Step List buttons if you need help.

Click Start to proceed.

You have retrieved the data after designing the crosstab.

Lesson 2: Advanced Crosstab Layouts

Learning Activity

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Refer to the following scenario and try this learning activity.

You would like to see the revenues broken down by order method as well as the retailers. In addition, you want to see the revenue for both 2005 and 2006.

Create an analysis with 2005 and 2006 in the Columns area, Retailers in the Rows area, and revenue in the Measure area. Place Order Method below Retailers in the rows.

Complete this task in 8 steps.

Use the Show Me/Step List buttons if you need help.

Click Start to proceed.

You have created a stacked layout to view the desired information.

Lesson 2: Advanced Crosstab Layouts

Learning Activity

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Refer to the following scenario and try this learning activity.

You want to view the gross profits along with the revenues generated by the products in a given time period. To view the data in this way, you will create an asymmetrical crosstab.

Create an analysis with the Retailers in the Rows area, Time hierarchy in the Columns area, and revenue in the Measure area. Add Stack Order method below Retailers in the rows. Nest the Gross Profit level above the Order Method row.

Complete this task in 10 steps.

Use the Show Me/Step List buttons if you need help.

Click Start to proceed.

You have created an asymmetrical layout to view the desired information.

Summary

Well done! You learned about the different crosstab layouts. You should now be able to:

- nest data in a crosstab report
 - design advanced crosstabs
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