



SAS[®] Cost and Profitability Management 8.1: What-If Analysis

The correct bibliographic citation for this manual is as follows: SAS Institute Inc. 2014. *SAS® Cost and Profitability Management 8.1: What-If Analysis*. Cary, NC: SAS Institute Inc.

SAS® Cost and Profitability Management 8.1: What-If Analysis

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April 2017

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Chapter 1

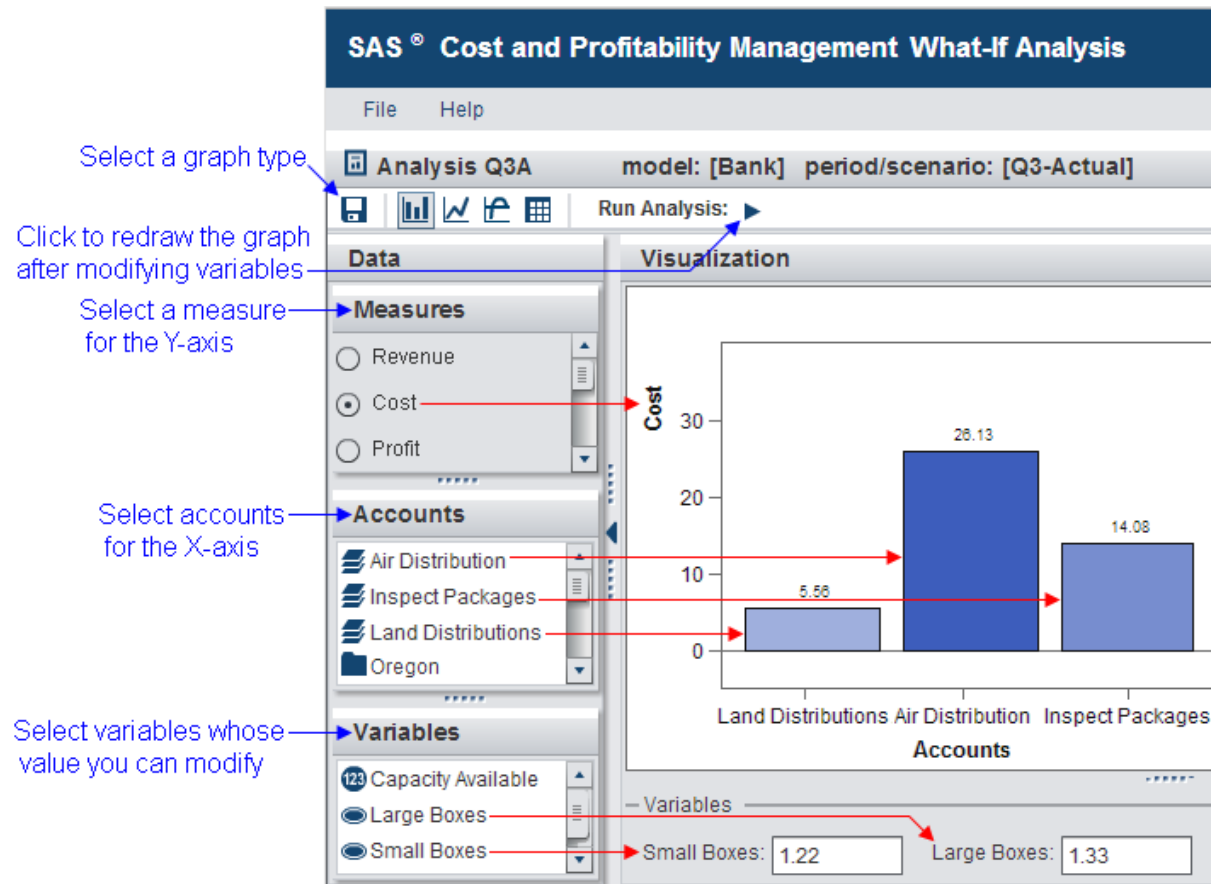
What Is What-If Analysis?

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Introduction

SAS Cost and Profitability Management What-If Analysis allows you to see what happens to accounts when you modify selected variables. After modifying the value of selected variables, you can perform a calculation to see the effect on a measure, such as Cost or Profit, for the selected accounts.

The following picture shows a sample what-if analysis graph.



Graphs

You can produce the following charts and graphs:

- Bar chart
- Line graph
- Profit cliff
- Grid view


Measures


The selected measure whose value appears on the Y-axis of a graph can be one of the following:

- Cost
- Revenue
- Profit
- Unit Cost
- Unit Revenue
- Unit Profit

Accounts

Selected accounts appear along the X-axis of a what-if analysis graph. You can mark any account in a model for what-if analysis. Specifically, this includes both:

leaf accounts 

roll-up accounts 

See [“Mark Accounts for the X-Axis”](#) on page 24.

Variables

You can modify the value of selected variables and then recalculate the model to see the effect on the measures in the graph. The variables whose value you can modify are the following:

Entered cost elements

You can mark any entered cost element to appear as an independent variable in what-if analysis. See [“Mark Entered Cost Elements as Independent Variables”](#) on page 25.

For each entered cost element that you select, two independent variables are created when you use the cost element in a what-if analysis—one for Entered Cost and another for Entered Unit Cost..

Numeric attributes

You can mark any numeric attribute to appear as an independent variable in what-if analysis. See [“Mark Numeric Attributes as Independent Variables”](#) on page 26.

Note: Only the default value of a numeric attribute enters into what-if analysis. If the default value of a numeric attribute is overridden when the attribute is attached to a particular account, then changing the default value has no effect for that particular account. It is only where the default value is not overridden that changing the default value has an effect.

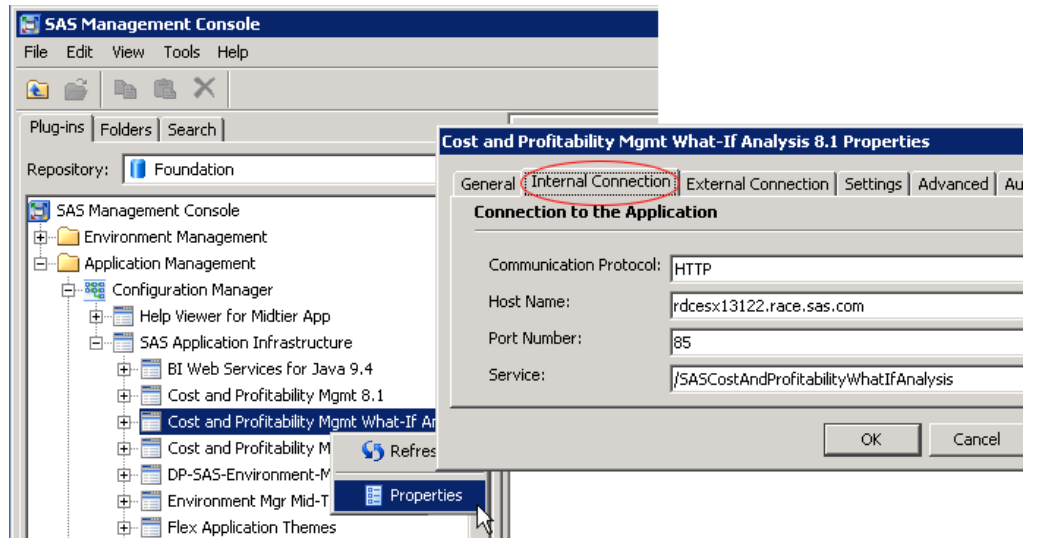
Log On

Log on to What-If application by typing the URL into the command line of a browser. To determine the URL, you can do the following:

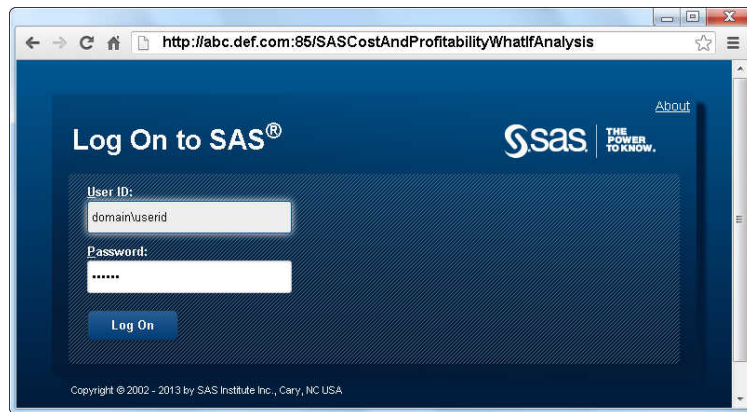
1. Log on to SAS Management Console as an administrator, and access the SAS Cost and Profitability Management middle-tier server.
2. Click the **Plug-Ins** tab.
3. Expand **Application Management**.
4. Expand **Configuration Manager**.
5. Expand **SAS Application Infrastructure**.
6. Right-click **Cost and Profitability Mgmt What-If Analysis 8.1** and select **Properties**.
7. Click the **Internal Connection** tab on the Properties window.

The connection information appears. In the following picture, you can see that the URL for invoking the application is:

```
http://xyz.sas.com:85/SASCostAndProfitabilityManagementWhatIfAnalysis
```



8. Type the URL into the command line of a browser.



9. Log on with a user ID and password.

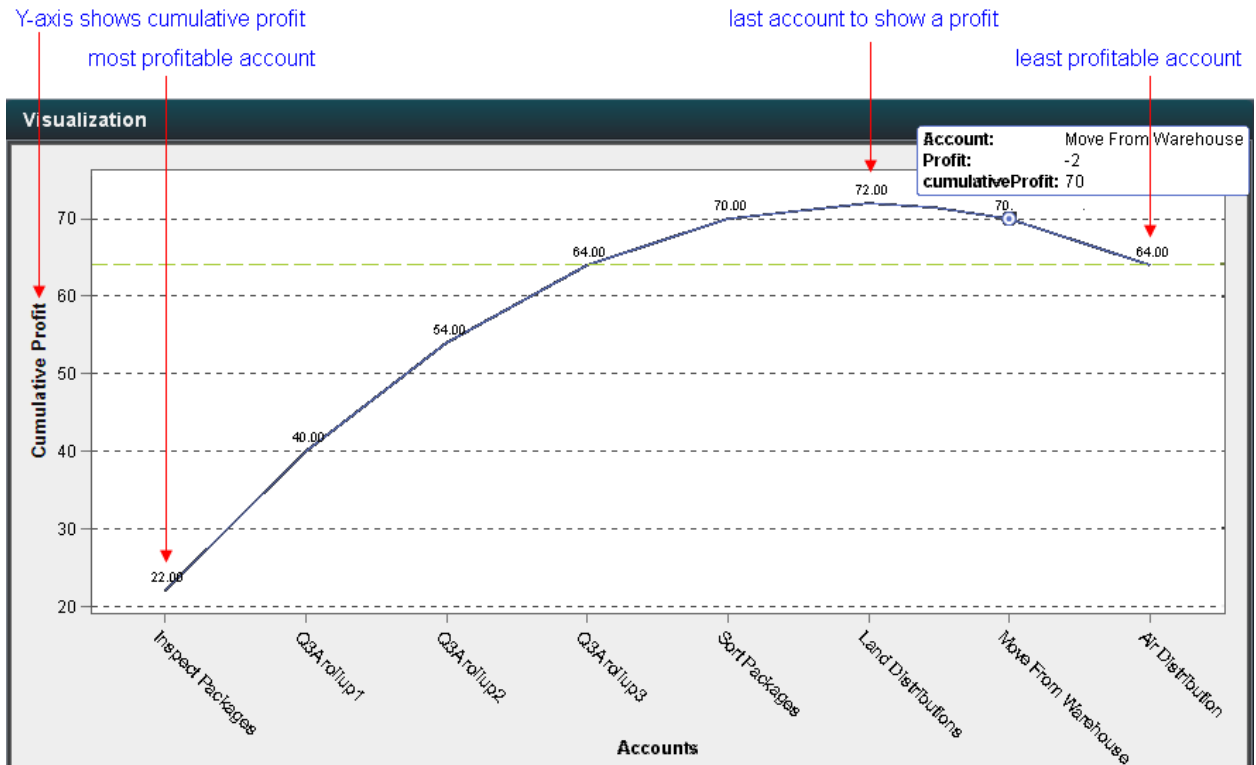
Note: The user ID must exist in the SAS Metadata Server with the capability to Create What-If Analysis. Usually, that means that the user is a member of a group with that capability. Alternatively, the user can have a role with that capability. See “User Capabilities and Groups” in *SAS Cost and Profitability Management: Data Administration Guide*.


What is a Profit Cliff?

A common occurrence in companies is that a small minority of customers account for a large majority of profit. A profit cliff graph identifies the most profitable accounts as well as the least profitable. It displays the most profitable accounts from highest to lowest on the X-axis while accumulated profit is shown on the Y-axis.

The following example of a profit cliff graph displays eight accounts, from the most profitable to the least profitable, along the X-axis. For each account, the point on the Y-axis shows cumulative profit—the sum of profit for that account plus all accounts to its left. If you hover the cursor over one of those points, a pop-up displays the name of the account, its profit, and the total cumulative profit at that point. The point where the slope

of the curve begins to decline marks the point at which accounts to the right have negative profit—they contribute to a decrease in cumulative profit.



To create a profit cliff graph, select the profit cliff icon  on the toolbar.

Note: When you select profit cliff, Profit is selected automatically as the measure.

Chapter 2

How To

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Create a What-If Analysis

1. Satisfy the Prerequisites

To create a new what-if analysis, the following prerequisites must be satisfied:

A. Model element is marked for what-if analysis

An element of at least one model must have been marked for what-if analysis. This means that:

- at least one account must have been marked for what-if analysis (to appear on the X-axis), or:
- at least one entered cost element or one numeric variable must have been marked for what-if analysis (as an item whose value you can modify to see the result)

Note: To do what-if analysis, you must have marked at least one account to appear on the X-axis, and you must have marked at least one entered cost element or one numeric variable whose value you can modify to see the result.

See [Appendix 1, “Marking Model Elements for What-If,”](#) on page 23.

B. Model has been calculated

At least one period/scenario containing the required marked elements must have been calculated.

C. Period/Scenario is published

At least one period/scenario containing the required marked elements must be in the published state. See [“Publish a Period/Scenario Association for a Model”](#) in *SAS Cost and Profitability Management: User’s Guide*.

A new what-if analysis can be created only for period/scenarios that are currently published.

D. User is model owner or has group access

The user who creates a what-if analysis requires two-levels of permission:

1. the capability to Create What-If Analysis. See [“User Capabilities and Groups”](#) in *SAS Cost and Profitability Management: Data Administration Guide*.
2. access to the model to be analyzed. Specifically, the person doing the what-if analysis must either be:
 - the owner of the model to be analyzed
 - a member of a group that has been given read or write access to the model by the model owner. See [“Giving Read or Read/Write Permission to Members of a Group”](#) in *SAS Cost and Profitability Management: User’s Guide*.

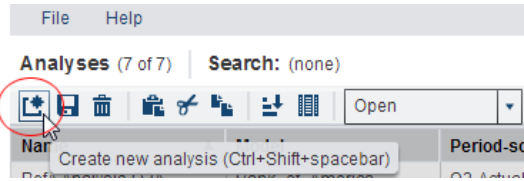
E. Model is not locked

In order for the What-If Analysis application to perform calculations on the model, the model must not be currently locked either for read or for write access. See [“Acquire or Release a Lock on a Model”](#) in *SAS Cost and Profitability Management: User’s Guide*.

Note: An exception is made for a model that is locked by the person doing what-if analysis. That is, if you have acquired a lock on a model in the SAS Cost and Profitability Management client, then you can do what-if analysis on that model without having to first release the lock.

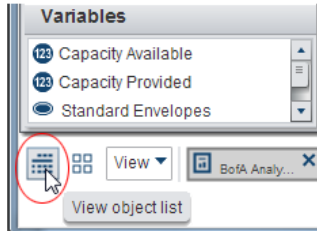
2. Click the Button to Create Analysis

Click **Create analysis** from the page displaying the list of analyses.

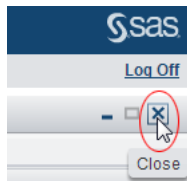


Note: If you don't see the **Create analysis** button because an analysis is already open, then do either of the following:

- Click the **View object list** icon at the bottom-left of the window.



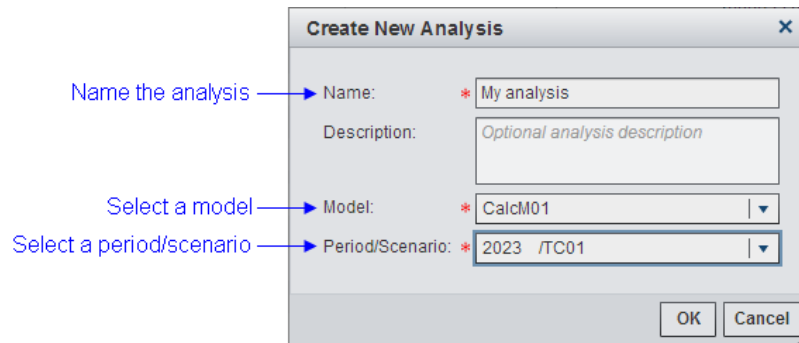
- Close the current analysis by clicking the Close button at the top-right of the analysis pane.



3. Name the Analysis and Select a Model and Period/Scenario





Each new analysis must have a name, which you can change later, and be associated with a model and a single period/scenario.

Note: For a model to appear on the list, it must contain elements that have previously been marked for what-if analysis. See [Appendix 1, "Marking Model Elements for What-If,"](#) on page 23.



4. Select an Analysis Type

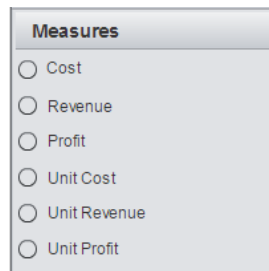
Click one of the analysis icons on the tool bar:

	Bar chart
	Line plot
	Profit cliff See “What is a Profit Cliff?” on page 4. <i>Note:</i> If you select profit cliff, then Profit is selected for you as the measure.
	Grid <i>Note:</i> If you select grid, then all measures are selected automatically to appear on the grid.





5. Select a Measure for the Y-Axis

Select a measure to appear on the Y-axis of a what-if graph.



Note:

- You can not change the list of measures.
- If you select a profit cliff , then Profit is selected automatically.
- If you select a grid , then all the measures are selected automatically.

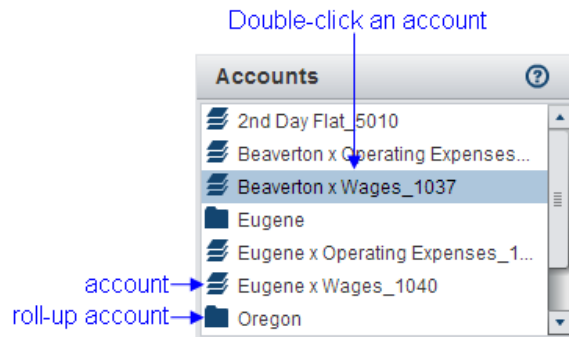
6. Select Accounts for the X-Axis

Select accounts to add along the X-axis. You must select at least one account.

You can select accounts by doing any of the following:

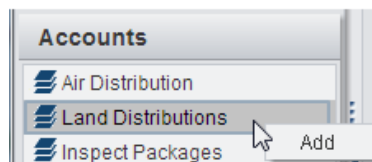
- Double-clicking

Note: You can select multiple accounts.



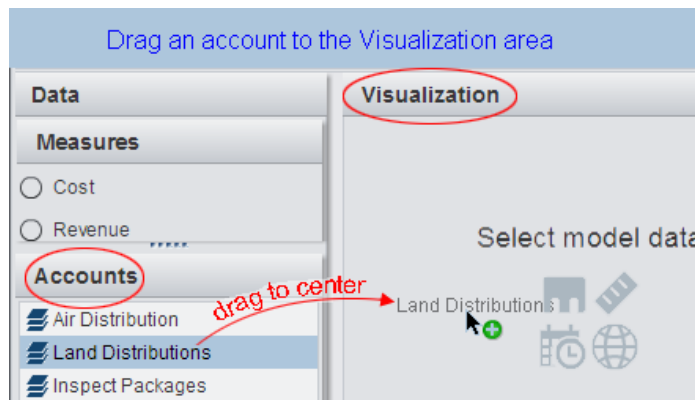
- Right-clicking and selecting **Add**.

Note: You can select multiple accounts.



- Dragging accounts to the Visualization area.

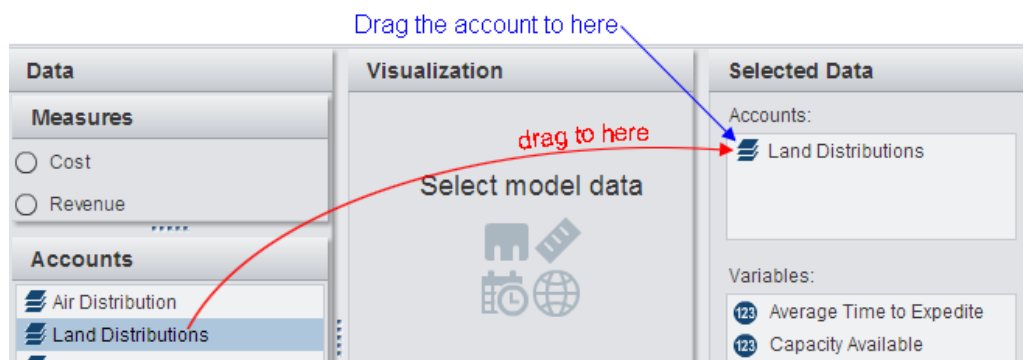
Note: You can select and drag multiple accounts.



- Dragging accounts to the Accounts area

Note: You can select and drag multiple accounts.

The Accounts area is on the right side of the window.



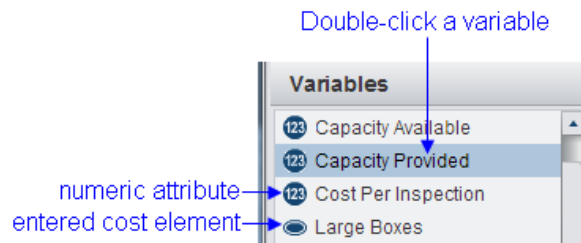
7. Select Variables

Select variables whose value you can modify before updating to see the result of the analysis. You must select at least one variable.

You can select variables by doing any of the following:

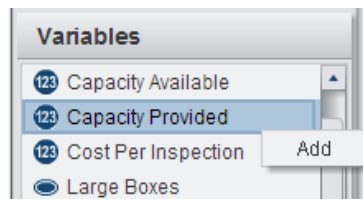
- Double-clicking

Note: You can select multiple accounts.



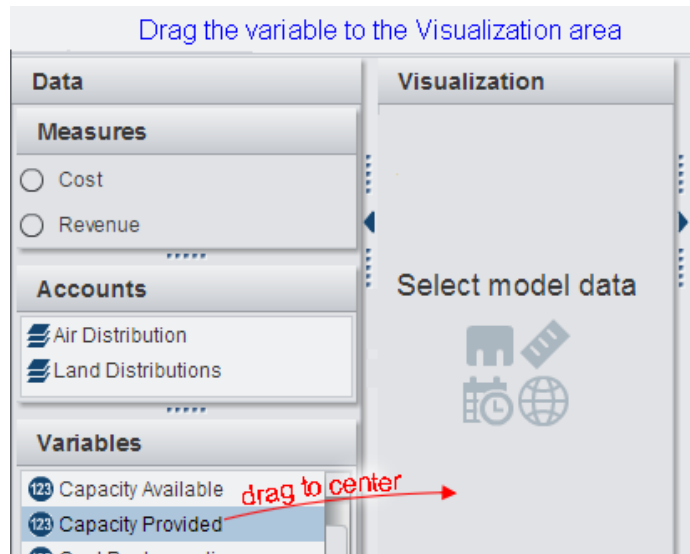
- Right-clicking and selecting **Add**.

Note: You can select multiple variables.



- Dragging variables to the Visualization area.

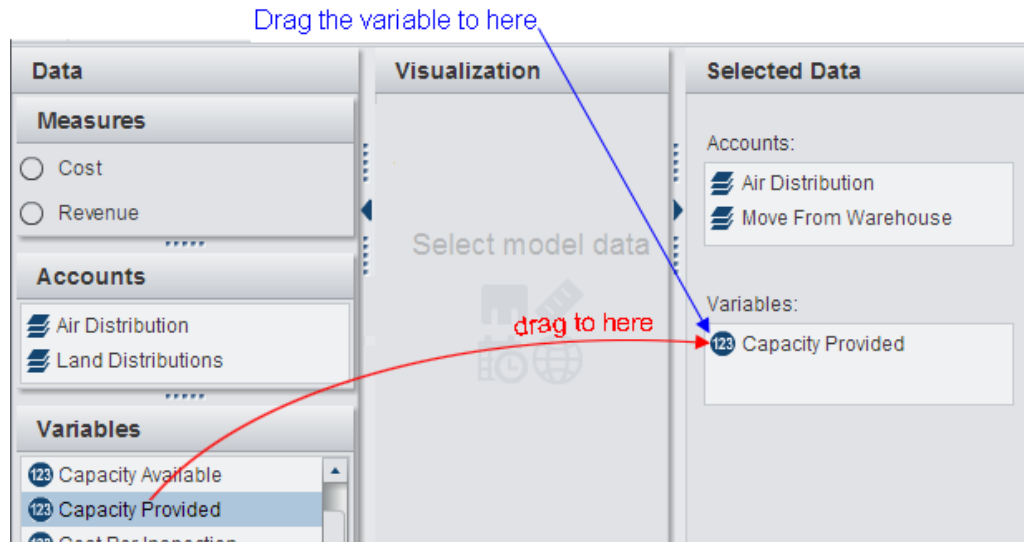
Note: You can select and drag multiple variables.



- Dragging variables to the Variables area

Note: You can select and drag multiple variables.

The Variables area is in the right pane of the window.



8. Display the Analysis Results

Click the **Run Analysis** button to display an updated graph or grid. If you change the value of a variable, then you must click the **Run Analysis** button again to run a calculation and display the new results.



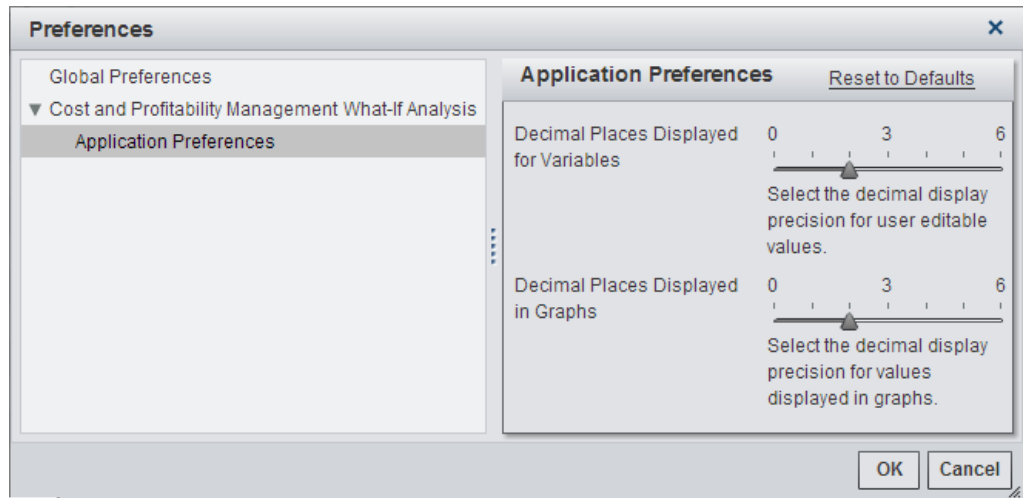
Note: When you run the analysis to calculate costs in order to illustrate a scenario, the driver rules are not considered.

Change the Decimal Display

To change how many digits are displayed to the right of the decimal point in graphs and in variables:

1. Select **File** ⇒ **Preferences** ⇒ **Cost and Profitability Management What-If Analysis** ⇒ **Application Preferences**.

The Application Preferences dialog appears.



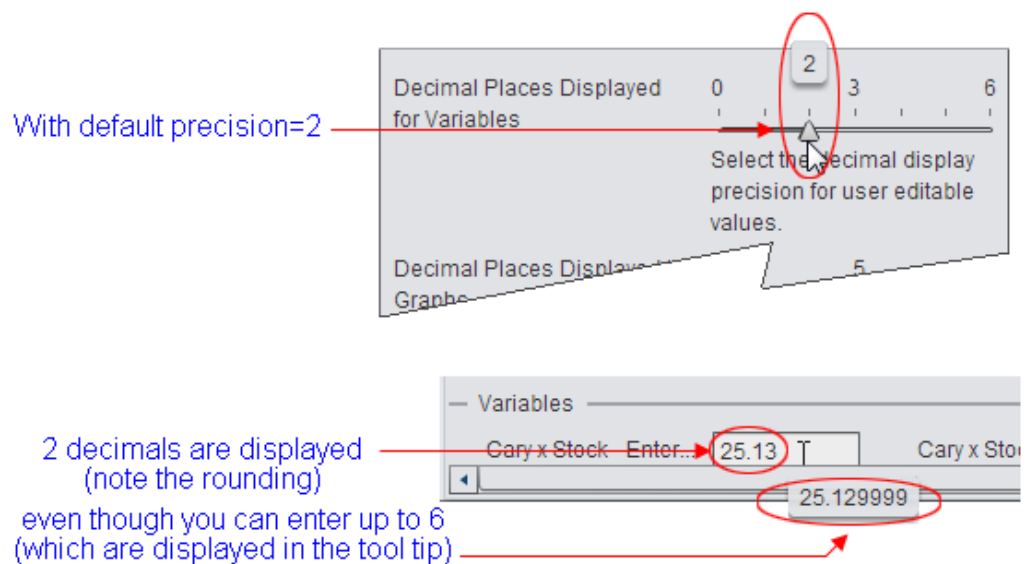
2. Decimal Places Displayed for Variables

The default precision is two decimals. This means that although you can enter up to six digits to the right of the decimal point, only two digits are displayed when focus is removed from the variable. And, the number displayed is rounded for display purposes—even though the actual number that you entered in a variable is used for calculation.

Note: The actual number that you entered is displayed as long as the cursor is in the variable, and the actual number is displayed in a tool tip if you hover the cursor over the variable field.

The following picture shows an example where the number of decimal places displayed in variables is two. Suppose that you enter 25.129999 for a variable. You can see that:

- 25.13 is displayed in the variable field.
- 25.129999 is displayed in the tool tip.



Decimal Places Displayed in Graphs

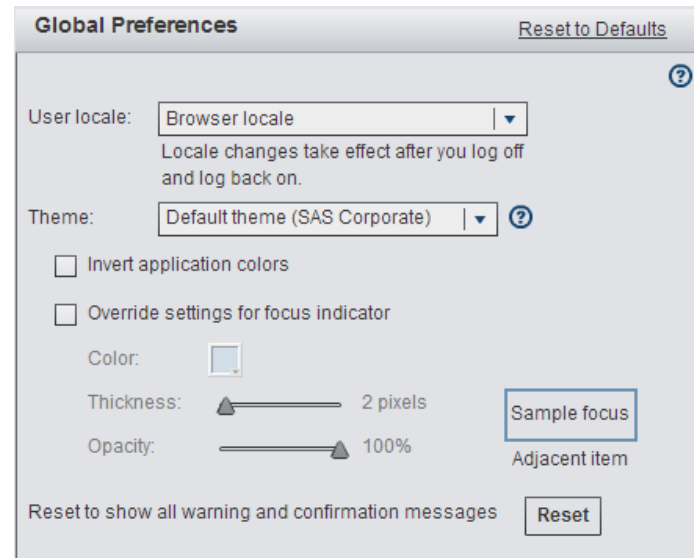
This option specifies how many decimal places are displayed for numbers in graphs. Numbers are rounded for display purposes only even though the actual number can contain up to six digits to the right of the decimal point.

Change Global Preferences

Global preferences apply to all SAS Web applications that are displayed with the Adobe Flash Player.

These preferences are set for each user.

To set global preferences, select **Files** ⇒ **Preferences**. Then select **Global Preferences**.



User locale

specifies the geographic region whose language and conventions are used in the applications. This setting might also apply to some SAS Web applications that are not displayed with the Adobe Flash Player.

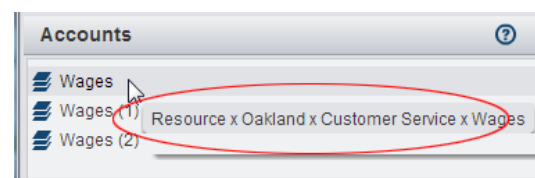
Note: You must log off and back on for the **User locale** preference to take effect fully.

Theme

specifies the collection of colors, graphics, and fonts that appear in the applications.

Change the Label of an Account or Variable

If you hover the cursor over the edge of an account, it's full intersection name is displayed.

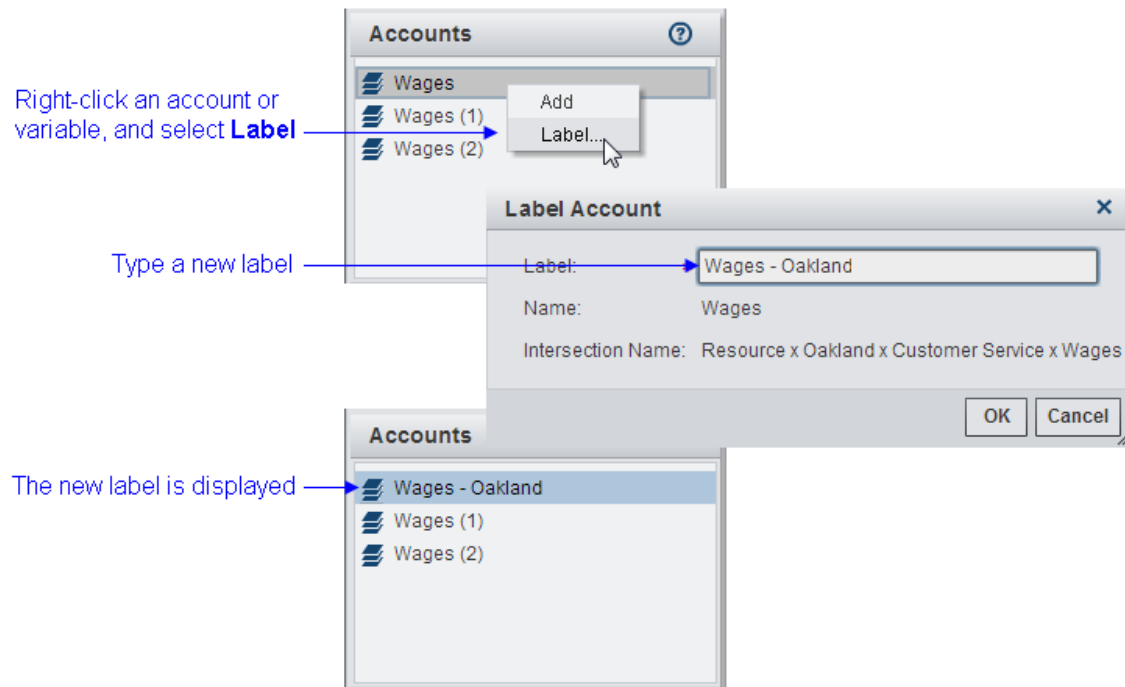


However, because accounts under different dimension members are often named the same (for example, the “Wages” account in different regions), it is convenient to change an account’s label in order to distinguish it from other, similarly-named accounts..

To change the label of an account or variable:

1. Right-click the account or variable and select **Label**.
2. Type a new label, and then click **OK**.

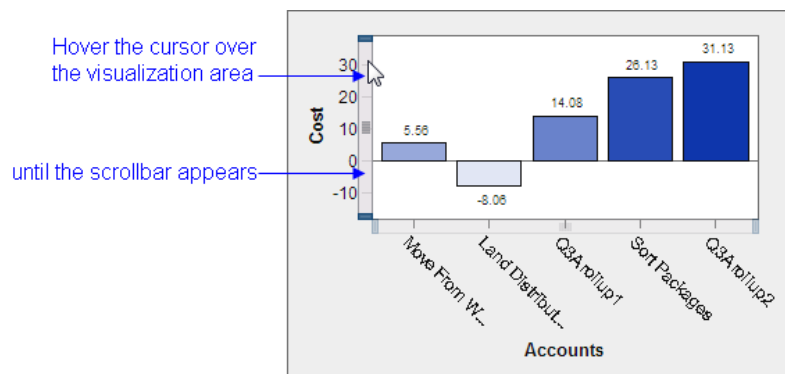
The new label replaces the old.



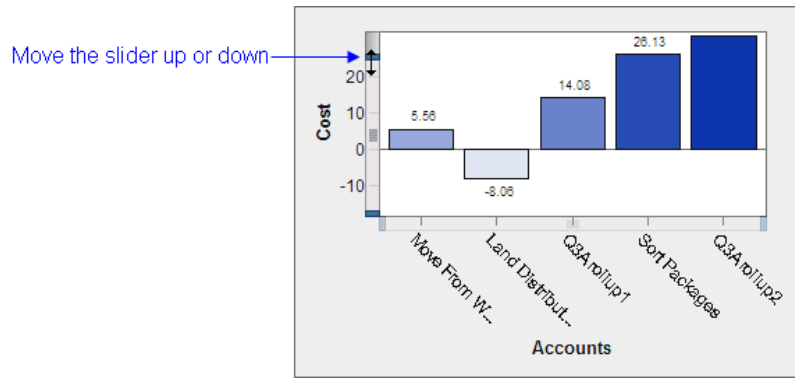
Change the Scale of Axes of a Graph

To change the scale of the axes of a graph:

1. Hover the cursor over the Visualization area until a scrollbar appears.



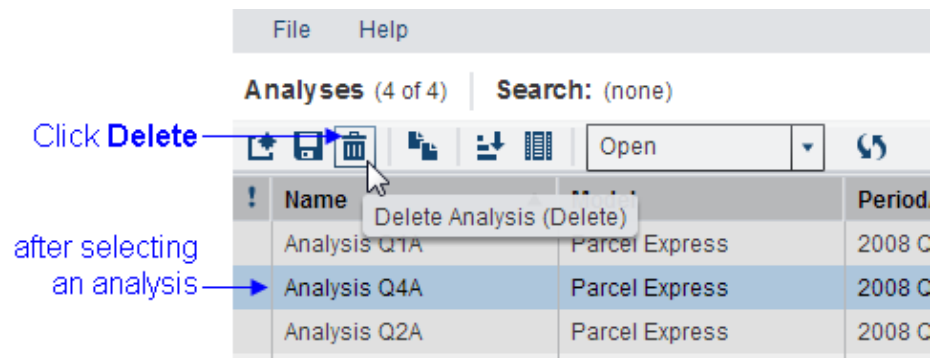
2. Move the slider up or down.



Delete an Analysis

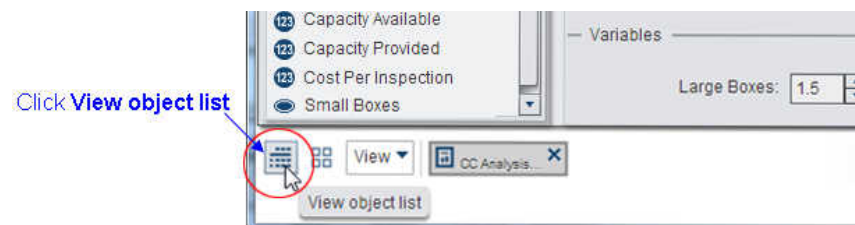
To delete an analysis:

1. Select an analysis from the list of analyses (see “Display a List of Analyses” on page 17).
2. Click the **Delete** icon.



Display a List of Analyses

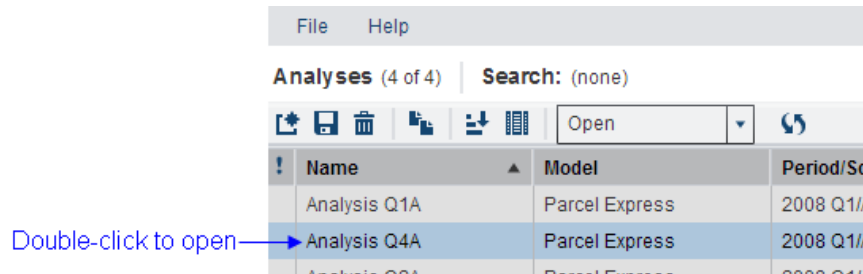
To display a list of all analyses, click the **View object list** icon at the bottom left of the window.



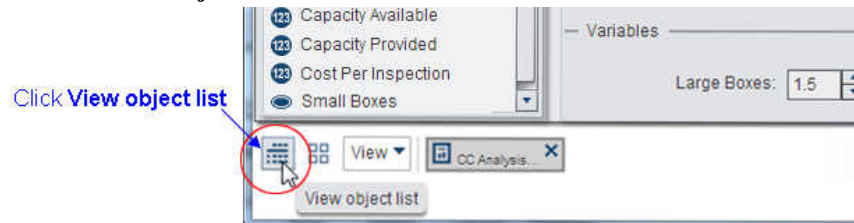
Open an Analysis

You can open an existing analysis by doing either of the following:

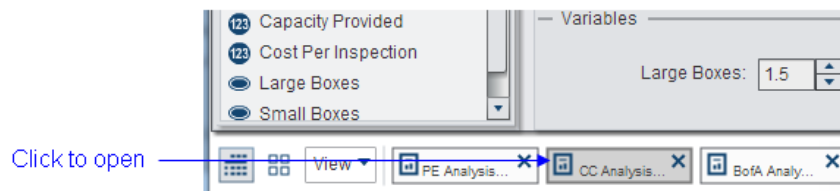
- From the list of analyses, select an analysis and click **Open**, or double-click the analysis.




Note: If the list of analyses is not visible because an analysis is already open, then click the **View object list** icon at the bottom left of the window.




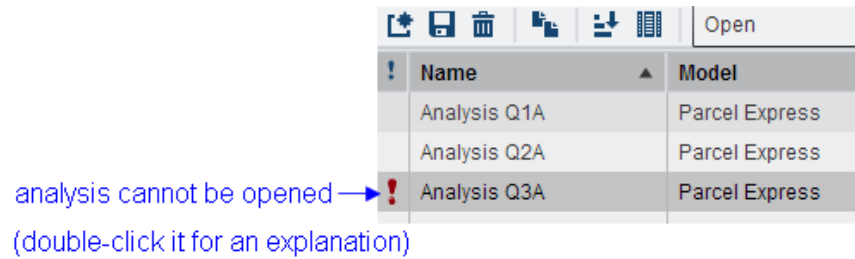
- Click the analysis icon at the bottom of the application window. Clicking the icon reopens the analysis.



Refresh Analyses

An exclamation mark  in the first column of the list of analyses means that the analysis can not be opened. For example, if the model for the analysis has been unpublished without being republished, then the saved analysis cannot be opened.

- Double-click the analysis for an explanation.
- Click Refresh  to refresh the list of analyses.



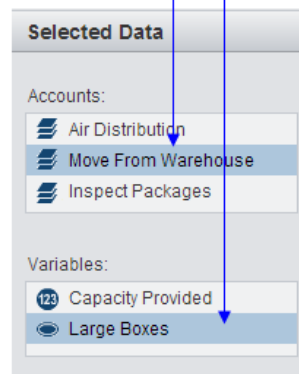
Remove Accounts or Variables

You can remove accounts or variables from an analysis by doing any of the following:

- Double-click the account(s) or variable(s)

Note: You can select multiple accounts or variables.

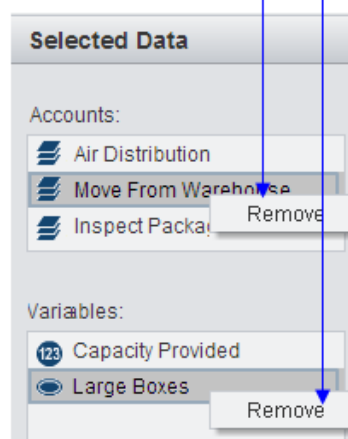
Double-click to remove



- Right-click and select **Remove**

Note: You can select multiple accounts or variables.

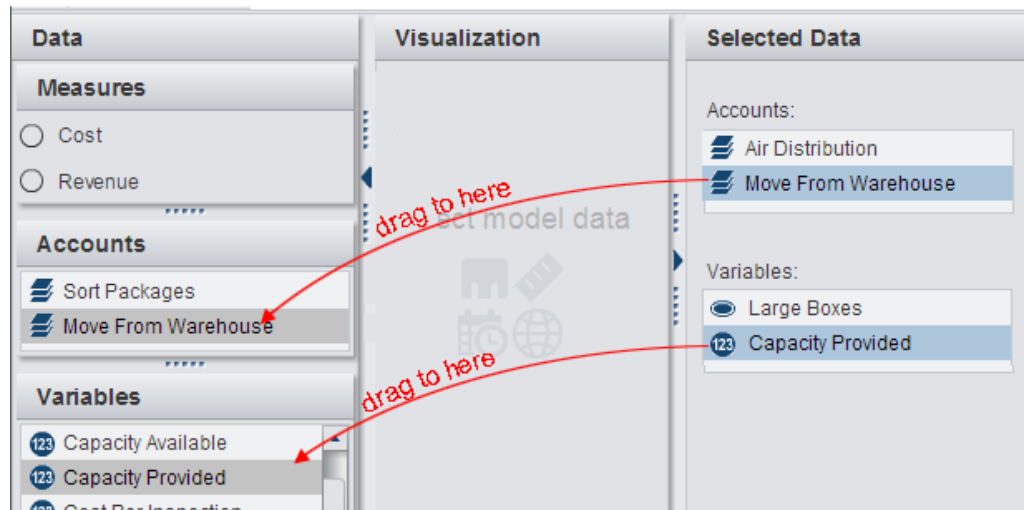
Right-click and select **Remove**



- Drag the account(s) to the **Accounts** area at the left of the window, and drag variables to the **Variables** area at the left of the window.

Note: You can drag multiple accounts or variables.

Drag accounts to the **Accounts** area
 Drag variables to the **Variables** area

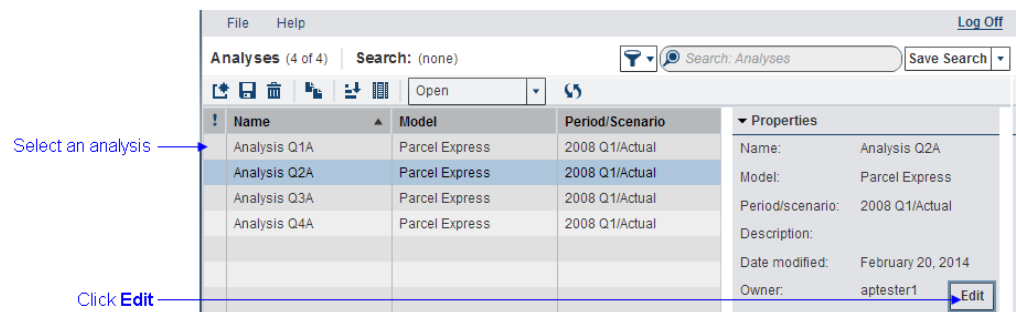


The **Data** area is in the left pane of the window.

Rename an Analysis

To rename an analysis or to change its description:

1. Select an analysis from the list of analyses.
 See “Display a List of Analyses” on page 17.
2. Click **Edit**.

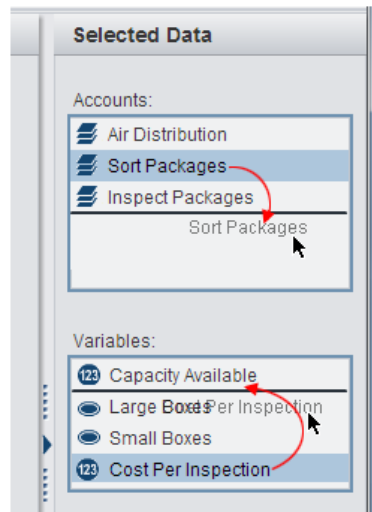


Reorder Accounts or Variables


To reorder accounts or variables in an analysis, drag the account or variable to its new position in the **Selected Data** area.

Note: You can select and drag multiple accounts or variables.

Drag the account or variable
to a different position



Save an Analysis

To save an analysis, click the Save button , or select **File** ⇒ **Save All**.

The Save All dialog opens which allows you to select the analyses that you want to save.

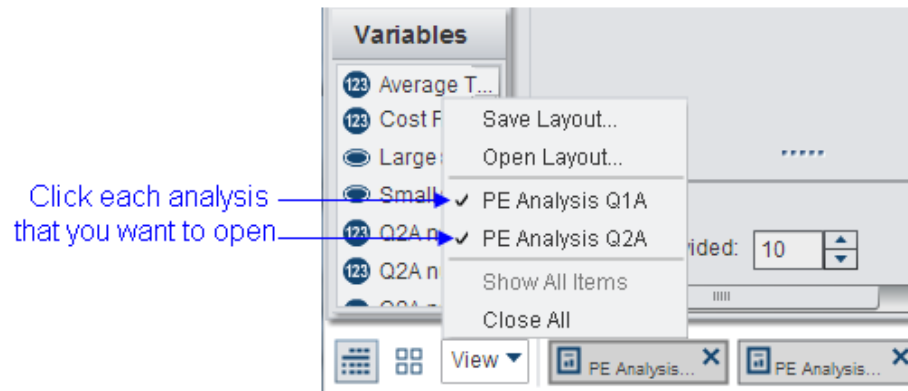
Note: You can not save an analysis whose model is in the process of calculating. Once it finishes calculating, then you can save the analysis and close the application if you want.

View Multiple Analyses at the Same Time

To view multiple analyses, select **View** (at the bottom of the window) and click the analyses that you want to see.

Note: The analyses must have been already opened (see “[Open an Analysis](#)” on page 18).

Viewing multiple analyses at the same time allows you to compare the effect of different changes to the variables.



Note: When multiple analyses are open, you can drag each analysis to the position on the screen that you want.

Appendix 1

Marking Model Elements for What-If

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Overview

In order for anyone to do what-if analysis using the What-If Analysis application, there must be model elements that have been marked for what-if analysis.

Using the SAS Cost and Profitability Management client, you can mark the following model elements for use in what-if analysis:

Accounts

You can mark any account, including roll-up accounts to appear as items along the X-axis of a what-if analysis. See [“Mark Accounts for the X-Axis”](#) on page 24.

Entered cost elements

You can mark any entered cost element to appear as an independent variable in what-if analysis. See [“Mark Entered Cost Elements as Independent Variables”](#) on page 25.

For each entered cost element that you select, two independent variables are created when you use the cost element in a what-if analysis—one for Entered Cost and another for Entered Unit Cost..

Numeric attributes

You can mark any numeric attribute to appear as an independent variable in what-if analysis. See [“Mark Numeric Attributes as Independent Variables”](#) on page 26.

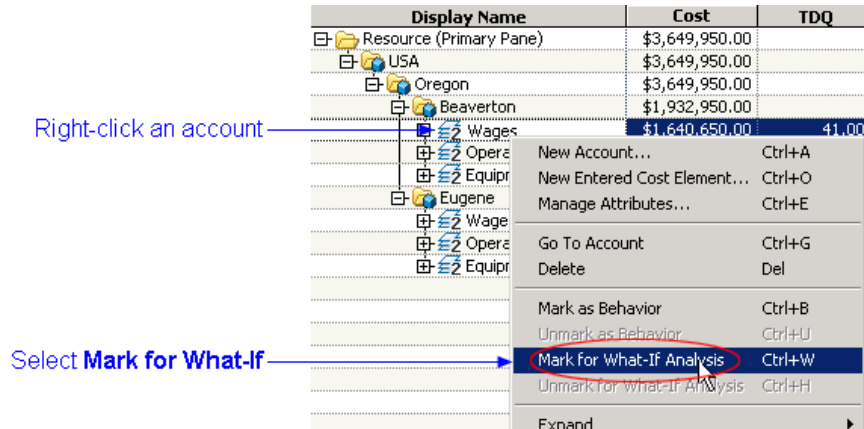
Note: Only the default value of a numeric attribute enters into what-if analysis. If the default value of a numeric attribute is overridden when the attribute is attached to a particular account, then changing the default value has no effect for that particular account. It is only where the default value is not overridden that changing the default value has an effect.

Mark Accounts for the X-Axis

To mark an account for use on the X-axis of a graph in What If Analysis:

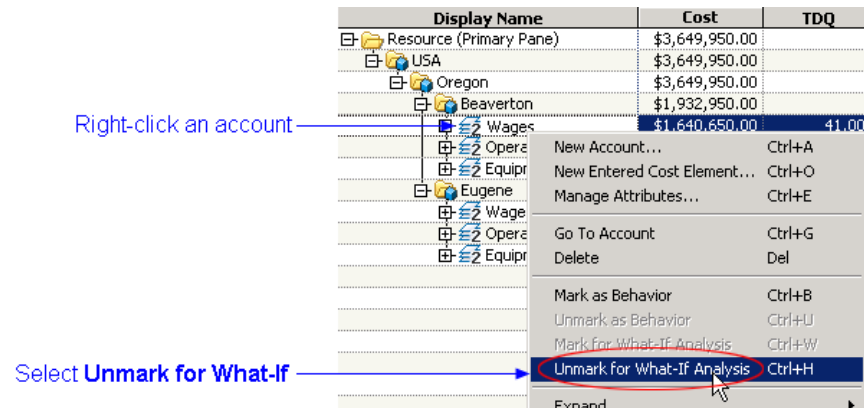
1. Right-click an account in any module view.

Note: You can select any account including roll-up accounts.
2. Select **Mark for What-If Analysis**.



To Unmark an Account for What-If

1. Right-click the account.
2. Select **Unmark for What-If Analysis**.



Select a Measure for the Y-Axis

The measures that you can select to appear on the Y-axis of a what-if analysis are pre-determined. For a profit-cliff graph, only Profit can appear as the measure on the Y-axis. For any other graph, you can select one of the following measures:

- Cost

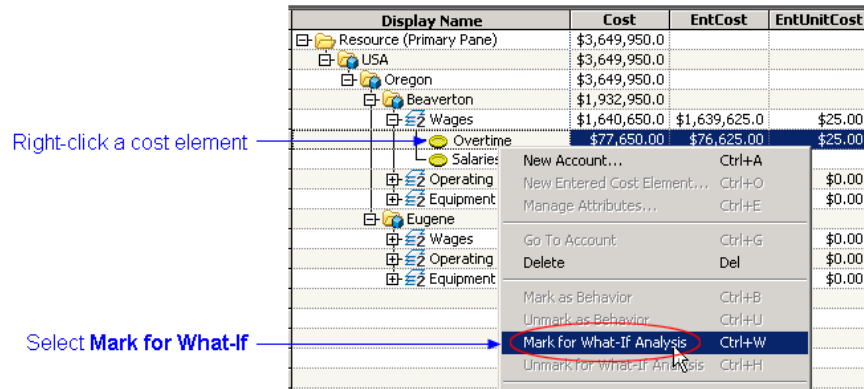
- Revenue
- Profit
- Unit Cost
- Unit Revenue
- Unit Profit

Note: You can not change the list of available measures.

Mark Entered Cost Elements as Independent Variables

To mark an entered cost element for use as an independent variable in What If analysis:

1. Right-click the entered cost element in a module view.
2. Select **Mark for What-If Analysis**.

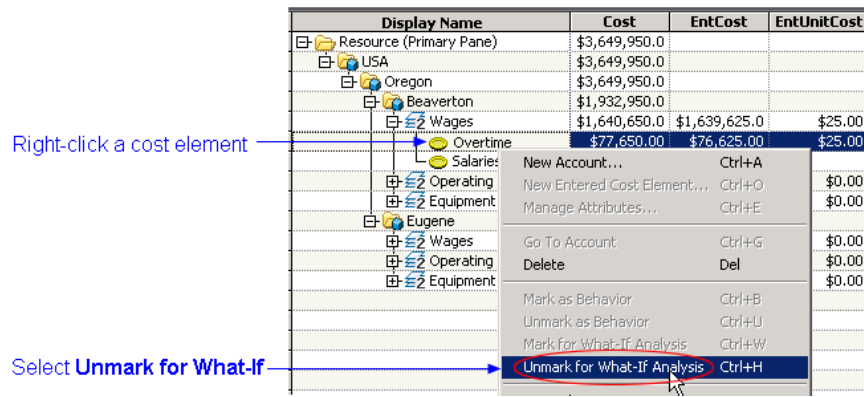


When you mark an entered cost element for what-if analysis, two independent variables are created whose value you can modify during what-if analysis::

- one for the entered cost element's EnteredCost
- one for the entered cost element's EnteredUnitCost

To Unmark a Cost Element for What-If

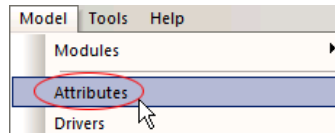
1. Right-click a cost element in a module view.
2. Select **Unmark for What-If Analysis**.



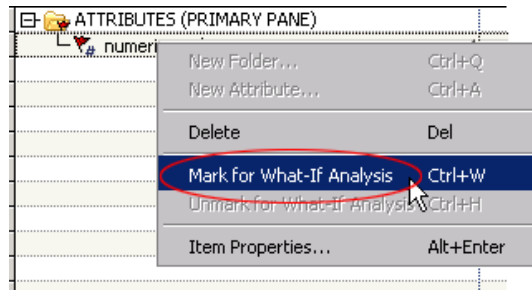
Mark Numeric Attributes as Independent Variables

To mark a numeric attribute for use as an independent variable in What If Analysis:

1. Select **Model** ⇒ **Attributes** to open the Attributes page for a model.



2. Right-click a numeric attribute.
3. Select **Mark for What-If Analysis**.



To Unmark an Attribute for What-If Analysis

1. Right-click a numeric attribute.
2. Select **Unmark for What-If Analysis**.

