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# **SAS<sup>®</sup> Activity-Based Management 6.4 User's Guide**

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## **SAS® Activity-Based Management 6.4: User's Guide**

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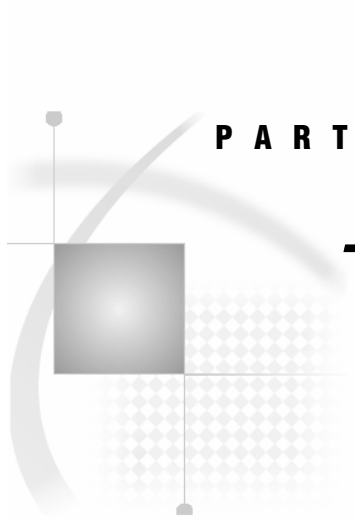
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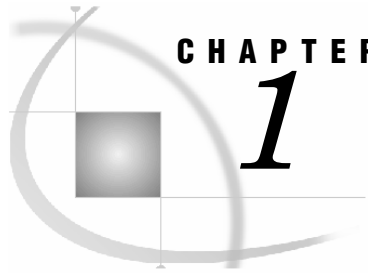
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# CHAPTER 1

## Overview

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## Activity-Based Management

Activity-based management is a system that enables an organization to manage activities and processes. Once these aspects are managed, organization performance and value can improve. By applying direct and indirect business costs to activities, SAS Activity-Based Management enables managers to get a true understanding of the costs and profits that are associated with a product, customer, service, or business process. SAS Activity-Based Management supports ongoing profitability analysis, cost-management initiatives, shared services management, planning and budgeting efforts, and capacity optimization.

An activity-based management system identifies activities, associates resources (expenditures) with those activities, and flows the cost of activities to cost objects.

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## Activity-Based Costing

Activity-based costing is the basic tool of activity-based management. Two critical limitations of traditional cost accounting systems are the following:

- ❑ the inability to report individual product, customer, service, or process costs with a reasonable level of accuracy
- ❑ the inability to provide useful feedback to management for the purpose of operational control

When managers of complex organizations make important decisions using traditional cost accounting systems, inaccurate and/or inappropriate cost information and profitability information cause incorrect decisions. These decisions often affect such areas as pricing, product mix, resource allocations, and budgeting.

Activity-based costing more accurately tracks costs than traditional methods because activity-based costing assumes the following:

- ❑ Activities cause expenditure of resources.
- ❑ Cost objects (the results of activities or products and services produced) create the demand for activities.

Using SAS Activity-Based Management, one or more models can be built to apply direct and indirect organizational costs to specific activities and processes. As a result, managers are able to see actual cost assignments and their bottom-line impacts from an operational perspective. Managers get a true understanding of the cause-and-effect relationships that link resources and processes to outputs. Therefore, business planners can easily forecast resource requirements, create budgets, and optimize capacity usage.

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## SAS Activity-Based Management

With SAS Activity-Based Management, you can analyze business trends, and you can make the results of your analyses available to business professionals throughout your organization. You do not need to know how to program or how to use database tools.

SAS Activity-Based Management guides you through the steps for Web-enabled data analysis and reporting from a model. With access over the Internet to interactive views of a model, to interactive analysis capabilities, and to customizable reports, decision-makers can:

- ❑ learn the true costs of producing and delivering products or services
- ❑ identify areas in which profits could be improved
- ❑ examine processes and act to improve them

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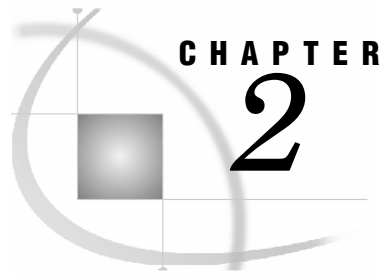
## Licenses

When a SAS Activity-Based Management administrator created your SAS Activity-Based Management account, you were assigned either a Designer license or a Viewer license. The SAS Activity-Based Management administrator also created roles for your organization and assigned one or more roles to you.

Only the SAS Activity-Based Management features that your combination of license and roles (with model permissions) allows you to use are available to you. If you do not know your license or your role, ask your SAS Activity-Based Management administrator.

With a Designer license, you can view and set up models and use SAS Activity-Based Management to import data. With a role that has Read and Write permissions, you can use SAS Activity-Based Management to calculate costs, to generate cubes, to set up reports, to run reports, and so on.

With a Viewer license, you can use the models that have been set up by someone with a Designer license.



## Working in SAS Activity-Based Management

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### Connecting to a Server

Before you can use SAS Activity-Based Management, you must connect to a SAS Activity-Based Management server. When you specify the server name, you need to only specify the server name, not a protocol such as HTTP://. However, if your organization requires a secure connection, then you might need to specify a protocol such as HTTPS://.

*Note:* Your organization might have different requirements.

---

### Current Credentials

Your SAS Activity-Based Management user name and password might not be the same as your network user name and password. If they are the same, then you can use your network logon information, also known as your current credentials, to connect to the SAS Activity-Based Management server.

If your current credentials are not applicable to the server, then you must supply your domain and user name.

---

## Model Availability

Sometimes, you might not be able to perform certain tasks in a model. For example, if you are a Designer and you attempt to edit a part of the model that another Designer is simultaneously editing, you will not be able to edit. However, you will always be able to view model data.

Other tasks affect model availability, regardless of what type of user you are. These tasks require that the model data be in a stable state for some amount of time. For example, if you create a report, the costs in the report should reflect a specific point in time. You do not want someone to change the costs while the report is being generated. Likewise, when SAS Activity-Based Management is calculating a model's costs, you do not want someone to change an account's cost. Allowing such a change would cause the final calculated costs to be wrong.

SAS Activity-Based Management prevents changes from being made during the following tasks:

- ☐ validating a model
- ☐ creating a report
- ☐ calculating costs
- ☐ generating cubes
- ☐ exporting data

---

## Saving Data

SAS Activity-Based Management is an application that enables multiple users to interact with a model that is located on a server. If you are unfamiliar with such an application, there are several differences from a desktop application.

- ☐ Unlike a desktop application in which you must actively save data, data is saved automatically.

Automatic saving enables all users to see the most current data immediately. (The availability of data is controlled by your license and the status of the period/scenario association.)

- ☐ Unlike a desktop application in which your changes can be canceled, changes cannot be canceled.

Because changes are saved for multiple users, your individual changes are immediately merged with other users' changes and cannot be separated. You can cancel a dialog box or wizard, but once you click **OK**, your changes are saved in the model.

- ☐ Unlike a desktop application, which stores a copy of your data in memory so that you can undo your changes, SAS Activity-Based Management writes directly to the model.

Writing directly to the model enables all users to see the most current data immediately.

You cannot undo your changes, except by re-entering previous values. However, to preserve the state of the current model before you make changes, you can export

the model before you change data in the model. Then, if necessary, you can revert to the previous version of the model by importing the model.

## Organization of Features

SAS Activity-Based Management groups features by the following categories:

- ❑ Home page, including Workspace Manager

On the Home page, you access shared information in Workspace Manager. You can start frequently used tasks. For more information, see Chapter 3, “Workspaces and Workspace Manager.”

- ❑ Model mode

In Model mode, you perform the following tasks:

- ❑ build a model and edit a model on the Resource module page, the Activity module page, and the Cost Object module page
- ❑ manage external units on the External Units module page
- ❑ manage attributes on the Attributes page
- ❑ manage drivers on the Drivers page
- ❑ manage dimension members on the Dimension page

- ❑ OLAP mode

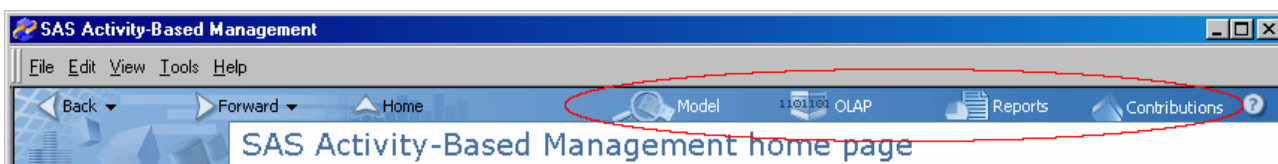
In OLAP mode, you use cubes on the OLAP page to analyze data. For more information, see Chapter 13, “Analyzing Model Data with OLAP.”

- ❑ Reports mode

In Reports mode, you open or create a report configuration. For more information, see Chapter 14, “Reporting Model Data.”

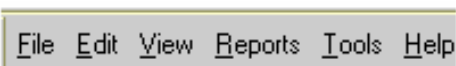
## Changing Modes

To change modes, use the links at the top of the window.



When you change modes, a new menu appears for that mode between the **View** menu and the **Tools** menu.

For example, the **Reports** menu appears when you are in Reports mode.

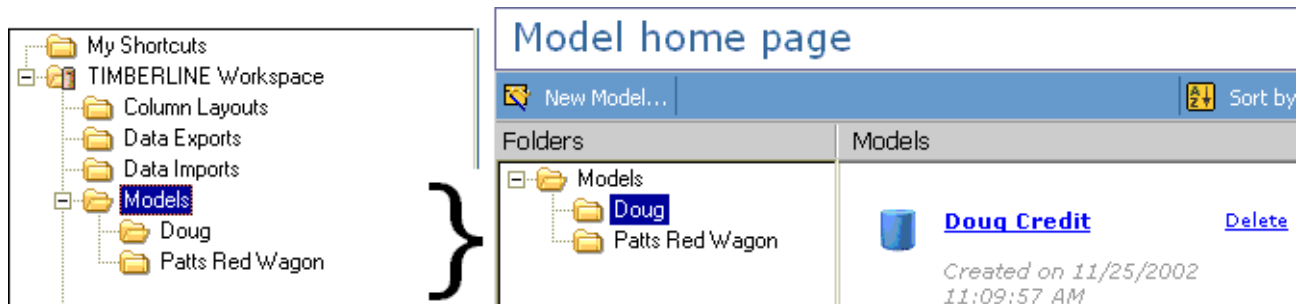


*Note:* Each mode can display a different model and/or a different period/scenario association. When you first change to another mode, you can select a model and a period/scenario association.

## Mode Home Pages

Each mode contains a home page and one or more related pages. Each home page shows you a subset of a branch of Workspace Manager.

For example, the Model mode home page shows you the **Models** branch of Workspace Manager:

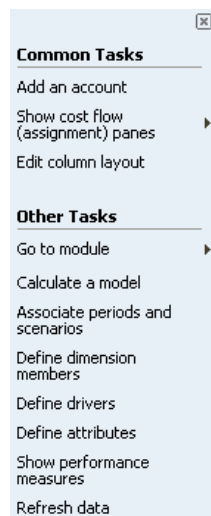


However, mode pages are different from Workspace Manager. On a mode page, you cannot edit the information for an item, and you cannot reorganize the folder structure in the left pane. However, you can sort the items in the right pane.

## Task Bars

Each page has a taskbar that shows you the most frequently used operations that are related to the page.

For example, the taskbar on the Resource module page contains these operations:



On pages other than the mode home pages, you can hide the taskbar in order to display more data.



## Status Bar

The status bar, which is at the bottom of the window, displays informational messages, such as whether the current period/scenario association is published. The status bar also displays the tasks that are currently being performed. From the status bar, you can manage server tasks.

## Refreshing Information

As Designers work in SAS Activity-Based Management, some information is updated automatically. However, this information might not be updated immediately. Whenever the refresh icon turns red (■), new information is available and you can refresh the information.



*Note:* You might not see the new information because it could be on another page or in part of a hierarchy that is collapsed.

Viewers can see changes to global items, such as exchange rates and period/scenario associations, only after they restart SAS Activity-Based Management.

## Canceling a Server Task

You can cancel a SAS Activity-Based Management server task that you initiate. However, after you cancel a task, the model might be in an unusable state.

You might need to cancel a server task if you realize that the task requires too much time or when you start an operation by mistake.

*Note:* A SAS Activity-Based Management system administrator can cancel any task, regardless of who started it. If a SAS Activity-Based Management system administrator cancels a task that you started, a message will notify you.

## The Work Flow

By storing model data in a structure that is optimized for analytical purposes, SAS Activity-Based Management provides fast and intuitive analysis of broad trends and relationships. SAS Activity-Based Management is designed specifically for analyzing data. The following design features enable SAS Activity-Based Management to respond rapidly to complex queries that involve large amounts of data:

- ❑ Data is stored in a multidimensional data structure.
- ❑ Some of the summary calculations are performed before you request them.

The following is an overview of the general work flow.

---

## **Enter Business Data**

- 1 Plan periods and scenarios. Set up periods and scenarios for each SAS Activity-Based Management server.

On each server, all periods and scenarios are shared across all models. Your organization should determine the period hierarchy that works best for all models. Then, set up periods and scenarios.

- 2 Build a model interactively or import model data.
- 3 Calculate costs and generate cubes.

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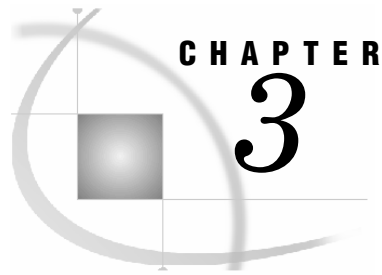
## **Analyze Business Data**

- ❑ Use modules, cubes, and reports to analyze business data.

---

## **Make Business Analyses Available to Others**

- ❑ Set up and save column layouts, OLAP views, published reports, and report configurations.
- ❑ Export cubes and reports.



## CHAPTER

## 3

## Workspaces and Workspace Manager

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---

### Workspaces and Workspace Items

A workspace stores the items, such as column layouts and models, that are created in SAS Activity-Based Management. A workspace is shared by all users on the same server, and it enables your organization to define items once and to apply them to different models as needed.

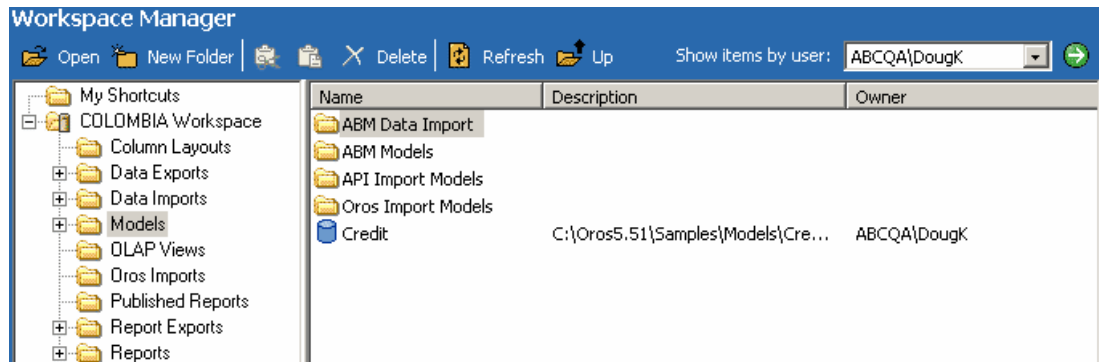
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### Workspace Manager

Workspace Manager, which is located on the Home page, is your personalized view of a workspace. Workspace Manager enables you to select and organize items to fit your needs.

Workspace Manager looks similar to Microsoft Windows Explorer, and most of the commands and techniques that you use in Microsoft Windows Explorer, including drag and drop, function identically in Workspace Manager.

Workspace Manager displays information in two panes, as shown here:



When you select an item in the left pane, the contents of the selected item are shown in the right pane.

The left pane has two main parts: the server area and My Shortcuts.

---

## Server Area

The server area shows all of the items on a SAS Activity-Based Management server. The name of the workspace area is the name of the server on which the items are stored, followed by the word “Workspace.” For example, if the server is named ABCdata, the server area is named ABCdata Workspace. You cannot change this name.

In the server area, you see only those items for which you have permission. Also, you see the folders that have been created by all users, although you do not necessarily see the contents of each folder.

If you are a system administrator for SAS Activity-Based Management, you see every item, regardless of who owns the item, and you can interact with every item.

## Creating and Deleting Items in the Server Area

You cannot rename or delete the top-level folders in the server area. However, if you have the necessary permissions, you can create and delete subfolders within these top-level folders.

When you delete a model, workspace items that depend on that model are not deleted. As a result, when you open a workspace item, you might see an error message about the missing model.

*Note:* You cannot change the model that is associated with an item. To avoid the error message about a missing model, delete the workspace item, and create an identical item that is based on another model.

---

## My Shortcuts

My Shortcuts enables you to organize the items that you need for your work. You can create shortcuts to items that are in the server area. You can use a shortcut to open and use an item.

*Note:* Even if the item that a shortcut refers to is renamed or moved, or if the folder that contains the item is renamed, the shortcut still works.

My Shortcuts holds only folders and shortcuts. Each user of SAS Activity-Based Management has a different My Shortcuts, so you see only the folders and shortcuts that you create. You can use these folders and shortcuts from any computer that is connected to the server on which you create the folders and shortcuts.

Items in the server area are arranged by type. By contrast, in My Shortcuts, you can arrange folders by task and project, and you can create shortcuts to many different types of items in those folders.

---

## Naming Guidelines for Workspace Items

Your organization can develop its own naming guidelines. However, these guidelines must conform to the SAS Activity-Based Management naming conventions. For more information, see the Help.

---

## Ownership and Permissions for Server Area Items

When you create a server area item, SAS Activity-Based Management assigns ownership to you. You can modify the item, rename it, or move it. You can assign permissions to other users, based on the users' roles.

To each role, you can assign the permission to Read or to Read and Write to any item that you own. If you do not assign permissions to a role, users who are members of that role cannot see the item.

To assign permissions to a role, you must be a member of that role. This restriction prevents sensitive company data from unintentional publication. If you need to assign permissions to a role of which you are not a member, ask the SAS Activity-Based Management system administrator to temporarily assign you to the role.

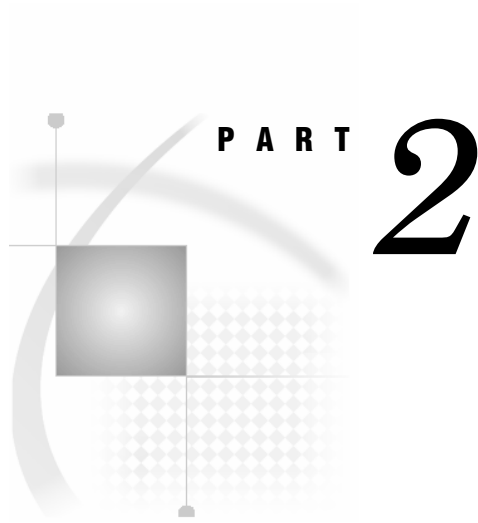
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## Access Conflicts between Roles and Licenses

The access that is granted to a user based on a role sometimes conflicts with the access that is granted by a license. In that case, the most restrictive access applies.

For example, suppose that a user is a Viewer but the user is a member of a role that allows Read and Write access. In that case, the user is restricted to the access of a Viewer, which is Read-only access. Similarly, suppose that a user is a Designer but the user is a member of a role that allows Read-only access. In that case, the user is restricted to Read-only access, even though a Designer usually has Read and Write access.



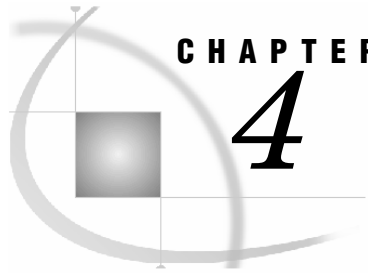


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# CHAPTER 4 Models

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## Introduction

The basic container for activity-based management information in SAS Activity-Based Management is the *model*. A meaningful activity-based management model reflects the organization that it is modeling and uses terms that are familiar to the people who work at the organization. Therefore, a good understanding of your organization's resources, activities, and cost objects is required.

A model contains two types of information: the structure of the model, and the data for specific amounts of time (periods) and for specific circumstances (scenarios).

For more information, see Chapter 5, "Periods and Scenarios."

---

## Structural Information

The structural elements of a model should be named after elements that are present in the organization's environment.

For example, an organization's general ledger account names, such as Wages and Depreciation, can be used to name and reference the resource accounts in the activity-based management model; the hierarchy of processes in an organization can be applied to the activity accounts in the model. For more information, see Chapter 7, "Modules."

Structural information includes the following:

- ❑ accounts to hold costs and information that pertain to resources, activities, and products.

For more information, see Chapter 8, “Accounts and Cost Elements.”

- ❑ assignment paths that assign resource expenses to activities, and activity costs to products.

For more information, see Chapter 10, “Assignments.”

- ❑ drivers for measuring the frequency or intensity of demands that are placed on resources by activities, and on activities by products.

For more information, see Chapter 9, “Drivers.”

- ❑ lists of components that products consist of.

Structural information can change for different periods of time. For example, if your organization changes products or activities seasonally, you can reflect this seasonality in the model.

---

## Guidelines for Creating the Model Structure

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### Anticipate the Needs of Users

---

Before you build a model, define the goals of the model. Each organization has different goals that affect how a model is designed. There is no single correct way to design a model.

Before you build the model, consider the following questions:

- ❑ What are the required outputs, such as reports or cubes?

The people in your organization might need to answer questions such as, “What does this product or service cost?” and “Why does it cost that?”

The type and details of analysis that users perform after the model is built depend on the structure that you define.

- ❑ How well do you know your organization?

Know your organization well before starting to build a model. Consider your organization’s systems, products or services, and customers.

- ❑ What types of information do the people in your organization need?

Ensure that the model accommodates the needs and goals of the organization. Include only that information that supports the needs and goals.

- ❑ What level of detail is important to your organization?

If you include too much detail, you might complicate the analysis without adding useful information. A detailed model requires more maintenance in the future. If you include too little detail, you might fail to reveal opportunities for improvement. Include enough detail to generate any required reports.

Building a model is an iterative process. Few people build a model with all of the necessary information the first time. A model often requires several iterations to determine the best balance between too much information and not enough information.

Communicate often with those people who will use the information provided by the model. Are you including the information that meets their needs? Is the amount of detail enough? Do these people need to analyze the data in ways you have not accommodated in the model?

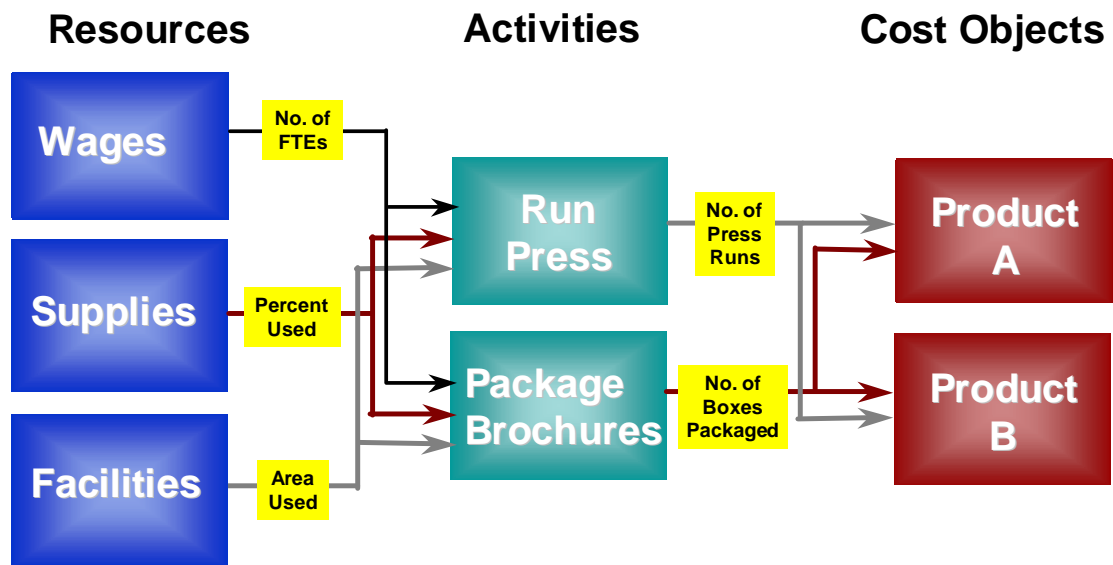
The best method to design a model is to create a paper model before attempting to build the model in SAS Activity-Based Management.

---

## Create a Paper Model

A paper model helps you focus on the model structure before entering data into the model. Sketch the model structure on paper, and note the important levels in the organizational hierarchy. Then, review the paper model with other people in your organization to determine whether you are approaching their needs correctly.

Your paper model might look something like the following:



After you determine that the paper model meets the needs of the people in your organization, you should start collecting the data that is needed by the model.

---

## Collect Data

A review of the paper model will identify the data that you need to collect. The quality and the integrity of the model depend on identifying the data and collecting the data.

There are many different ways to collect data. Most organizations use a combination of techniques and methods, such as the following:

- ☐ conducting interviews with people
- ☐ distributing questionnaires to people
- ☐ analyzing historical records and reports
- ☐ gathering a panel of experts or focus groups
- ☐ observing people and work flow

---

## Guidelines for Sharing Models, Configurations, and Data

Before you build a model and populate it with data, your organization should establish guidelines for when data is saved, the names used to save items, and how data is managed.

After you build a model and analyze it, you will have data that helps you make business decisions (or that helps others in your organization make business decisions). You will want to share your results (model data, analysis results) so that coworkers can use the data that you have collected. However, because a significant amount of data is stored on a single server, you should establish naming conventions and other guidelines so that all users can easily find the correct information.

For example, Workspace Manager lists items that are available for all SAS Activity-Based Management users who are using the same server. Without a naming guideline, items within Workspace Manager might be difficult to locate. For more information, see Chapter 3, “Workspaces and Workspace Manager.”

---

### Saving Items

Establish guidelines for when to save and when not to save column layouts, OLAP views, published reports, and report configurations.

---

### Naming Items

To manage the lists of items that are on a SAS Activity-Based Management server, establish naming conventions. Decide whether a name should include the Designer’s initials. Names of items affect the sort order within folders in Workspace Manager.

### Naming Import Configurations and Models

For model names and import configurations, you might want to include the following information:

- ☐ the goal of the model
- ☐ the licenses that can use the model
- ☐ a short way of referring to the types of structures, dimensions, attributes, or measures that are selected when data is imported
- ☐ the period/scenario associations
- ☐ the date on which the model was imported

### Naming Column Layouts

For column layout names, you might want to include the following information:

- ☐ the users or teams who use the column layout
- ☐ the models or types of models that use the column layout

## Naming Report Configurations

By default, each description on the Reports home page contains the following information:

- ☐ the description that was entered when the report configuration was saved
- ☐ the date on which the report configuration was saved

## Naming OLAP Views

By default, each description on the OLAP home page contains the following information:

- ☐ the description that was entered when the OLAP view was saved
- ☐ the date on which the OLAP view was saved
- ☐ the model name
- ☐ the type of pre-defined OLAP cube
- ☐ the network logon information of the person who saved the OLAP view

---

## Sharing Data with Others

For people who do not use SAS Activity-Based Management, you can export OLAP cubes to a Microsoft Excel spreadsheet, and you can export reports to popular application formats.

---

## Calculating Costs

As you begin entering data from the paper model into the model in SAS Activity-Based Management, you should notice how the costs are conforming to expectations. At any time during the development of the model, you can assign the cost of each account according to the account's driver.

You can enter costs interactively. However, interactively entering data can be tedious and prone to errors. Importing data from an existing data source can minimize tedium and error. For example, if the costs from the general ledger are available, and if you have built the model so that the model's resource account references match the general ledger's account numbers, it is more efficient to add costs to the model by importing them from the general ledger. For more information, see Chapter 17, "Importing Data and Exporting Data."

When you calculate costs, you can choose a specific period/scenario association, or you can choose all associations. For more information, see Chapter 5, "Periods and Scenarios."

---

## Changing the Model Structure after Calculating Costs

After you have calculated costs for an entire model, any of the following actions can invalidate some of the model costs:

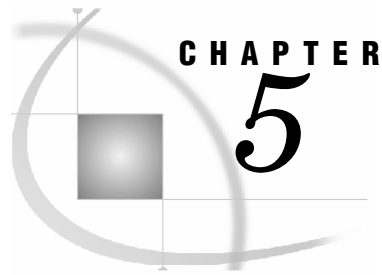
- ❑ adding, deleting, or changing the cost of an entered cost element
- ❑ adding, deleting, or changing the cost of an external unit cost element in a bill of costs
- ❑ changing the cost of an account that is used as an internal unit cost element in a bill of costs
- ❑ changing an account's driver, driver quantities, attribute quantities, or output quantities
- ❑ adding or deleting a roll-up account, an account, or a cost element
- ❑ creating new assignments or deleting existing ones

In all of these actions, costs are updated if you calculate costs. However, it might not be necessary to calculate costs for a minor update.

---

## Errors

You should choose to report all errors at least once while you are calculating costs and generating OLAP cubes. Fix any significant errors that are reported. If you determine that the remaining errors are insignificant, you can then choose to not report all errors. By limiting the number of errors that are reported, you might improve performance when costs are calculated and when OLAP cubes are generated.



## Periods and Scenarios

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### Introduction

A *period* can represent any unit of time: a month, a quarter, a year, and so on. For example, if your organization chooses to enter data each month, then the marketing payroll cost is the amount of payroll for one month.

A *scenario* can be any set of data: actual data, budget data, aggressive plan data, conservative plan data, and so on. Scenarios are used for managing different variations of data within a period. The default scenarios are Actual and Budget.

---

### Setting Up Periods and Scenarios

Periods and scenarios are shared by all models on the same server. Therefore, before people start to use SAS Activity-Based Management, your organization might want to set up a period hierarchy, and you might want to publish guidelines for defining scenarios.

*Note:* Because periods and scenarios are independent of a particular model, you can create them without a model being open. Further, you can define periods and scenarios before you create the first model.

Some scenarios can be agreed upon and can be set up before people start to use SAS Activity-Based Management. Other scenarios can be set up when they are needed. That is, not all scenarios can be anticipated by an organization. Your organization might want to develop guidelines for naming and organizing scenarios in a hierarchy so that the list of scenarios on a server does not become unmanageable.

On the OLAP page, SAS Activity-Based Management automatically rolls up values for each period and scenario that are in the hierarchy above the hierarchy level that contains data. This rolled-up data is not available for reports. For more information, see Chapter 13, “Analyzing Model Data with OLAP.”

---

## Period Start Dates and End Dates

When you define a period, you specify its start date and its end date. These dates are useful to people in your organization, but do not affect the data.

A period must meet these criteria:

- ☐ The duration of the period must be at least one day.
- ☐ The start date can be no earlier than January 1, 1980.
- ☐ The end date can be no later than December 31, 2029.

Periods that are at the same level in the hierarchy must meet these criteria:

- ☐ The periods must be sequential, with no overlapping dates.
- ☐ Each period must be within the date range of the period that is in the next higher hierarchy level.

---

## Organizing Periods and Scenarios

You can create a hierarchy of periods, such as FY2005 > Q1 > January, and a hierarchy of scenarios, such as Budget > Aggressive. By default, each hierarchy level is given a name such as Period L1 or Scenario L1. However, these names are not descriptive during OLAP analysis. So, you can rename period levels and scenario levels if necessary.

---

## Deleting Periods or Scenarios

If a period or scenario is used in a period/scenario association, you cannot delete the period or scenario. You must first delete the period/scenario association in each model, and then you can delete the period or scenario.

---

## Guidelines for Creating Periods and Scenarios

Before you create periods and scenarios, consider the following:

- ☐ You can copy data from one period/scenario association to another period/scenario association. Copying data from one period/scenario association to another period/scenario association enables you to propagate association data to similar period/scenario associations.
- ☐ Model structure is period-specific.

Each period/scenario association can have a unique account and assignment structure. This structure could reflect seasonal products, regional variations, or planning scenarios.



---

## Period/Scenario Associations

A period/scenario association identifies a specific period, such as Q1, and a specific scenario, such as Budget. All model data must reside in a period and must pertain to a scenario. An association represents a period-scenario pair.

If you are a Viewer, then the **Period/Scenario** drop-down lists in SAS Activity-Based Management show only period/scenario associations that have been published. For more information about a published period/scenario association, see the section “Status of Associations.”

*Note:* The structure of a model is based on periods. Therefore, if you change the period/scenario association for a model, the model structure might be changed. In fact, the entire model structure might disappear if the new period/scenario association contains no model structure data.

---

### Copying Data from One Association to Another

You can copy data from one period/scenario association to another period/scenario association. The ability to copy data enables you to propagate association data to similar period/scenario associations.

---

### Calculation Status of Associations

The calculation status of a period/scenario association indicates whether the data in the association is complete and accurate. A calculation status can be either Not calculated or Calculated.

---

### Status of Associations

A period/scenario association can be either Not published or Published.

By default, a period/scenario association is Not published. The data is not ready for Viewers to see because the Designer is in the process of entering the data.

Once the data for a period/scenario association is entered and calculated, the association is Published. This status enables Viewers to see and analyze the data in that period/scenario association.

Typically, a Designer publishes a period/scenario association at the end of a reporting period, such as at the end of a fiscal quarter.

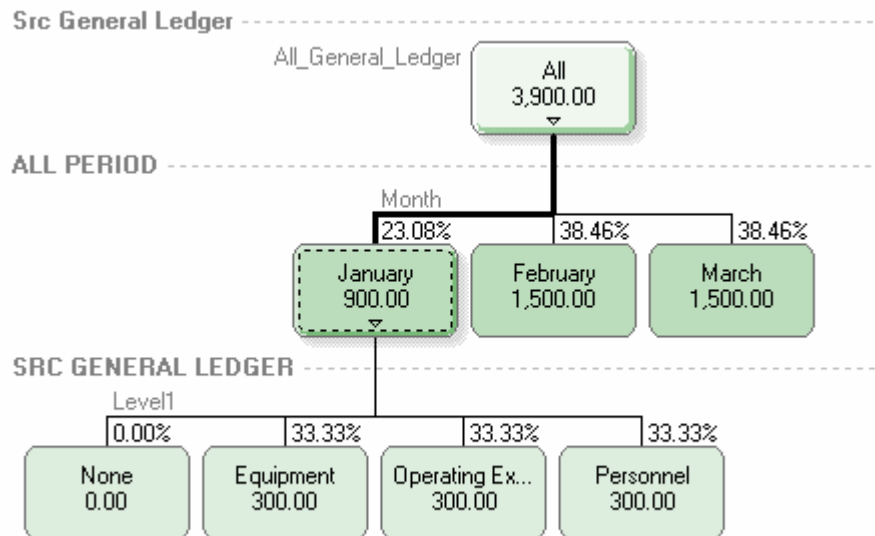
*Note:* As long as a period/scenario association has a status of Published, the data within the association cannot be edited.

## Periods and Scenarios in OLAP Analysis

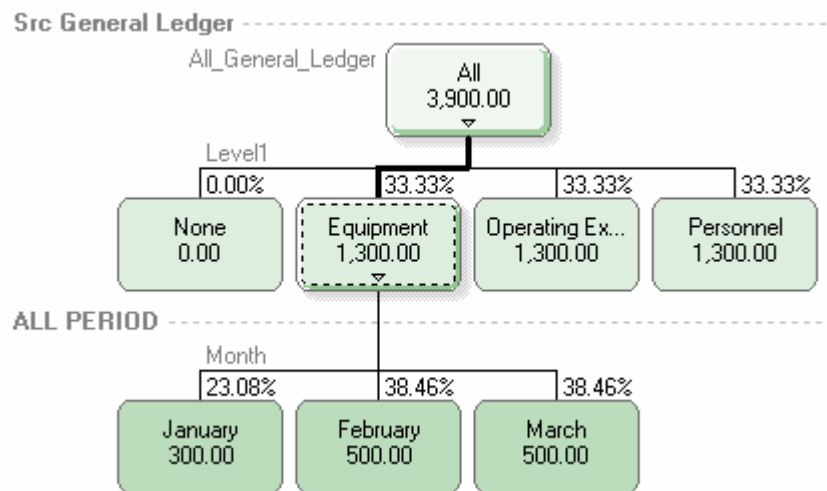
Periods and scenarios are *dimensions* and can be used by business users for OLAP analysis. Periods and scenarios can aggregate data or separate data. (For more information about dimensions and how to organize them for OLAP analysis, see Chapter 6, “Dimensions.”)

For example, suppose that a model contains actual cost data for the first three months of 2005 in the following period/scenario associations: Jan 2005/ACTUAL, Feb 2005/ACTUAL, and Mar 2005/ACTUAL.

When the OLAP cubes are generated and all period/scenario associations are included in an OLAP cube, business users can analyze the data in several ways on the OLAP page. For example, business users can aggregate the costs by month and then by category, as shown in the following figure of the Cube Explorer View:

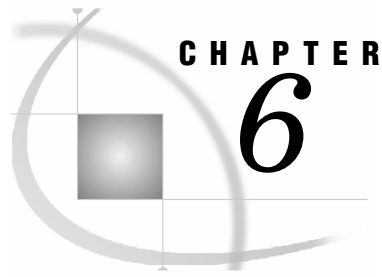


Or, business users can aggregate the costs by category and then by month, as shown in the following figure:



Using combinations of periods and scenarios, business users can achieve many of their analysis goals.





## CHAPTER

# 6

## Dimensions

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### Introduction

A *dimension* is a category by which data can be analyzed. For example, you might want to categorize sales figures by region, by customer, and by product. Each of these categories represents a single dimension. Common dimensions are products, time, geography, customers, promotions, and sales channels.

To further illustrate, suppose that a manager says, “I need to see the data items x, y, and z grouped by a, by b, and by c.” Data items x, y, and z represent measures, and a, b, and c represent dimensions. For example, perhaps the manager needs to see revenue, cost, and profit grouped by region, by customer, and by product. For more information, see Chapter 13, “Analyzing Model Data with OLAP.”

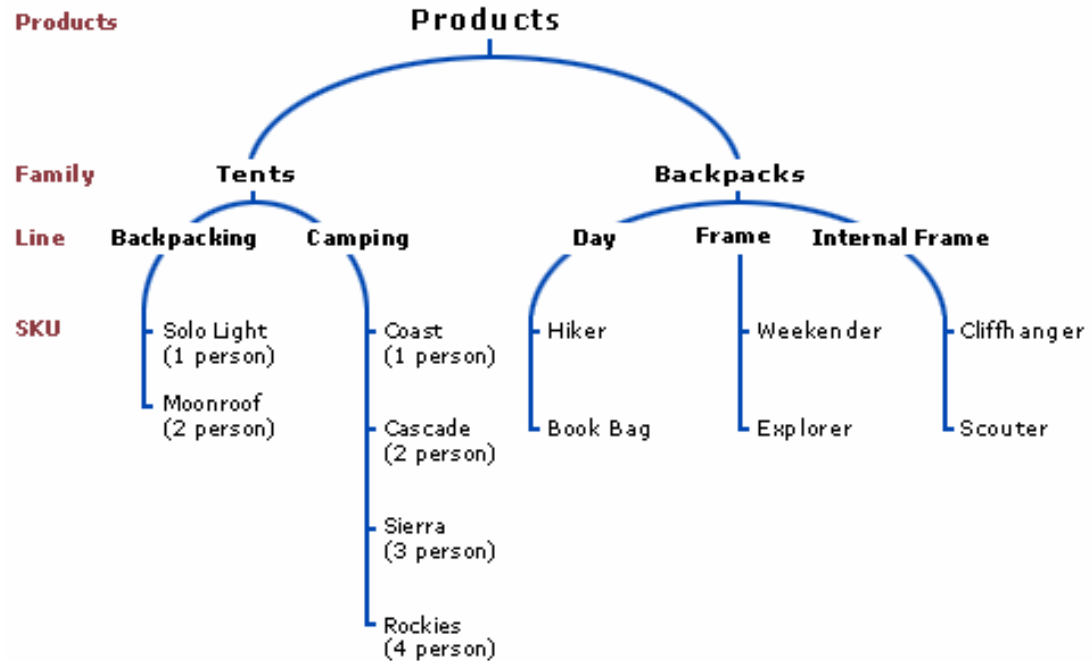
---

### Dimension Levels

To present data in a manageable form, you can group items within a dimension. Each item is then at a specific level in a hierarchy.

By default, each dimension level is given a name, such as Level1. To make this name more meaningful during OLAP analysis, you can rename dimension levels.

For example, in the following Products dimension, you can start with product families (the dimension level named Family). You can divide product families first into product lines (the dimension level named Line), and then into stock keeping units (the dimension level named SKU).



The Products dimension has three levels below it. The levels enable you to show the measures for each level of information.

Dimension levels are a powerful modeling tool because they enable you to ask general questions and expand a dimension to reveal more detail. For example, a Viewer might first ask to see product costs for the past three fiscal years. The Viewer might notice that the costs for 2001 are higher than the costs for the other years. The Viewer might explore levels of the Products dimension to see whether costs were high for a particular product family, product line, or SKU. This type of exploration is known as *drill-down*.

---

## Dimension Members

*Dimension members* are the unique elements in the dimension levels. In the previous example, Backpacking, Frame, and Hiker are examples of dimension members.

---

### All and No <dimension name> Displayed in Model Mode

To help understand what you see on a Model page in SAS Activity-Based Management, you can add a column to display the Intersection Name property. The intersection name lists the dimension members in the dimension order from left to right.

In the following illustration, the Cost Object module roll-up cost represents all product costs and all customer costs. The dimension order is the Product dimension by the Customer dimension, which is often written as Product x Customer. In an intersection name, **All** represents all dimension members in that position in the dimension order. By looking at the intersection name (**IntsectnName** column), you see that the **Solo Light** roll-up account is the intersection of the **Solo Light** dimension member of the Product dimension and all the dimension members of the Customer

dimension (**Solo Light x All**). So, the **Solo Light** roll-up account represents all the product costs of Solo Light, which includes the costs for all customers and all other costs.

Cost Object	Display Name	Intsctnlame	Cost
module roll-up	COST OBJECT (PRIMARY PANE)		\$1,751,735.000
	Moonroof	Moonroof x All	\$173,873.182
	Entryway	Entryway x All	\$226,634.782
	Waterproof Case	Waterproof case x All	\$292,481.457
	Pack Book	pack book x All	\$181,986.542
	Pack Week	Pack Week x All	\$389,447.014
	Pack Expl	Pack Expl x All	\$47,052.759
	Pack Clif	Pack Clif x All	\$183,950.406
	No <Product>	No <Product> x All	\$122,349.124
	Solo Light	Solo Light x All	\$256,308.859
	No <Customer>	Solo Light x No <Customer>	\$248,253.447
	LLCorn	Solo Light x LLCorn	\$256,308.859
	Solo Light x No <Customer>	Solo Light x No <Customer>	\$248,253.447
	No <Product> x LLCorn	No <Product> x LLCorn	\$8,055.412

As you drill down into the **COST OBJECT** module roll-up, you see more details about its costs. When you expand **Solo Light** to see its accounts, you see a **No <Customer>** account, which indicates costs (which are \$248,253.44) that affect the total cost of the Solo Light product, but that are not directly assigned to any specific customer (such as raw materials, manufacturing, and production activities). When you look at the **No <Customer>** intersection name, you see that **No <Customer>** is the intersection of the dimension member and no customer dimension members (**Solo Light x No <Customer>**).

**No <dimension>** represents costs that are outside the identified intersections. For example, suppose that you create a model that represents your department. When you import costs from the general ledger (which contains the costs for *all* departments), you can ensure that the costs of the other departments do not affect your department by putting the costs for the other departments in **No <dimension>**.

The other Solo Light account is **LLCorn**, a customer. This account's intersection name indicates that the account is the intersection of the Solo Light product and the LLCorn customer (**Solo Light x LLCorn**). The account's cost represents the product costs of Solo Light and the customer costs of LLCorn.

For information about how All and No are represented on the OLAP page, see Chapter 13, "Analyzing Model Data with OLAP."

## Types of Dimensions

There are two types of dimensions in a model: structural and attribute.

### Structural Dimensions

*Structural dimensions* are the building blocks of the modules in a model. For example, the typical structural dimensions of the Resource module are region, organization, and general ledger; the Activity module might be structured according to the region or organization dimension, along with an activity dimension. The combination of

dimensions that uniquely identifies a model is the *dimension signature*. For more information, see Chapter 7, “Modules.”

As a Designer, structural dimensions are basically “buckets” to model the flow of costs through your organization. However, this perspective of the costs is generally too detailed for other people in your organization. These people (the business users) require a higher-level of detail, such as details that are provided by attribute dimensions and OLAP analysis. Be aware that how you create the structural dimensions can greatly help business users manipulate the model data into a form that suits their needs.

*Note:* Structural dimensions are created when you first create a model. You cannot delete structural dimensions later, and you cannot create new structural dimensions (but you can create dimension attributes). However, you can add and delete dimension members within each structural dimension.

---

## Attribute Dimensions

*Attribute dimensions* are dimensions that are automatically created whenever dimension attributes are created. You cannot explicitly create an attribute dimension. For information, see Chapter 11, “Attributes.”

The SAS Activity-Based Management OLAP tool makes no distinction between attribute dimensions and structural dimensions. For more information, see Chapter 13, “Analyzing Model Data with OLAP.”

---

## Guidelines for Creating Dimensions

Before you create dimensions, consider the following:

- ❑ Think in terms of dimensions when you begin to plan the model, such as, “Who do I work for?” At the highest level, it’s your entire organization. This can be further refined by a geographic office (world area, country, and/or state or province), a business area (Sales or Finance), and a department (Public Sales or Accounts Payable).

A dimension signature uniquely identifies an account in the model; the dimension signature is the intersection of two or more dimensions. So, think of what dimensions are needed to uniquely identify an account.

- ❑ Dimensions help business users “pull apart” (deconstruct) information in a model. Consider the reporting needs of the business users.

Identify a dimension by the fact that business users need to have the information appear during OLAP analysis.

- ❑ Decide what required data translates into model structure or what data translates into attributes.

After you have defined the structural dimensions, consider how to enhance the structure with attributes to support different aggregations of costs for different business users.

Attribute dimensions are for business users’ needs for reporting. Do not put these needs into the model’s structural dimensions because doing so creates a burden when entering model data or when revising a model.



- ❑ For better performance and easier data entry, minimize the number of dimensions.

Although a dimension intersection can include an unlimited number of dimensions, a smaller number (five or fewer) is more manageable.

- ❑ Ensure that you have a justifiable business need for every dimension or dimension level.

If you create unnecessary dimensions and dimension levels, the resulting OLAP cubes provide too much information and not enough understanding.

- ❑ To help distinguish a dimension from a dimension member, consider the following:

If part of a model is repeated in a single dimension (such as the general ledger accounts of Rent-North Carolina, Rent-New York, and Rent-Kansas), then that part is probably a dimension. In this example, you provide more flexibility for OLAP analysis by creating two dimensions: one dimension for the office location and one dimension for the general ledger expenses.

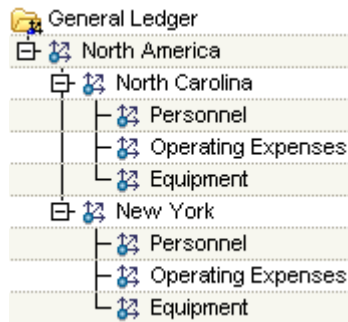
Also, a dimension member can be identified by whether it gives or receives costs (it is part of an assignment). For more information, see Chapter 10, “Assignments.”

---

## Example: Multiple Dimensions for Better Analysis

Suppose that your organization wants to model the North America region, specifically the offices in the states of North Carolina and New York. The model must store the resource costs of personnel, operating expenses, and equipment for each of these locations.

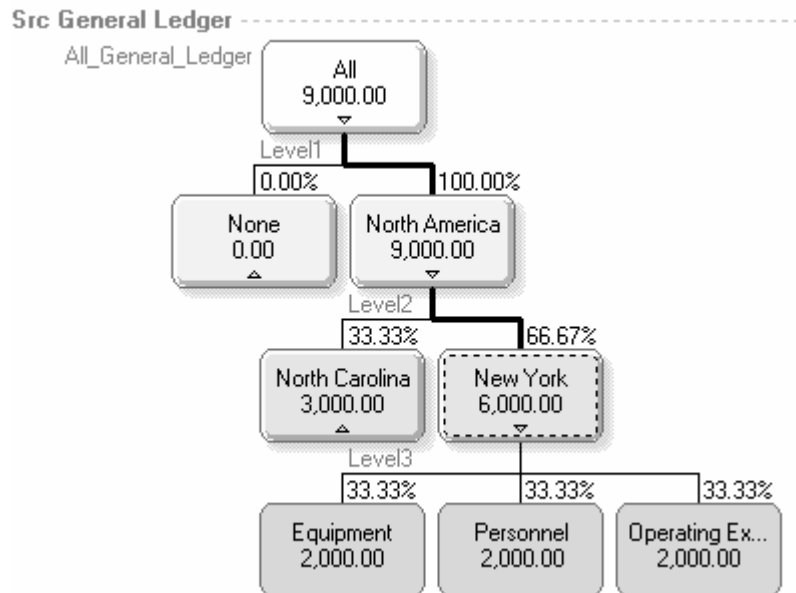
From your perspective as model builder, you can create a single, structural dimension on the Dimensions page as shown in the following figure:



In the Resource module, the structure looks like the following figure (with example values entered):

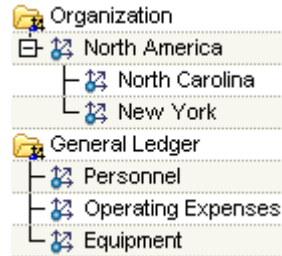
Display Name	Cost
RESOURCE (PRIMARY PANE)	\$9,000.00
North America	\$9,000.00
North Carolina	\$3,000.00
Personnel	\$1,000.00
Personnel_1017-1	\$1,000.00
Operating Expenses	\$1,000.00
Operating Expenses_	\$1,000.00
Equipment	\$1,000.00
Equipment_1019-1	\$1,000.00
New York	\$6,000.00
Personnel	\$2,000.00
Personnel_1026-1	\$2,000.00
Operating Expenses	\$2,000.00
Operating Expenses_	\$2,000.00
Equipment	\$2,000.00
Equipment_1028-1	\$2,000.00

Using this structural dimension, after you build the entire model, the calculated costs are correct. Your business users can analyze the cost data in the OLAP tool, as shown in the following figure of the Cube Explorer View:

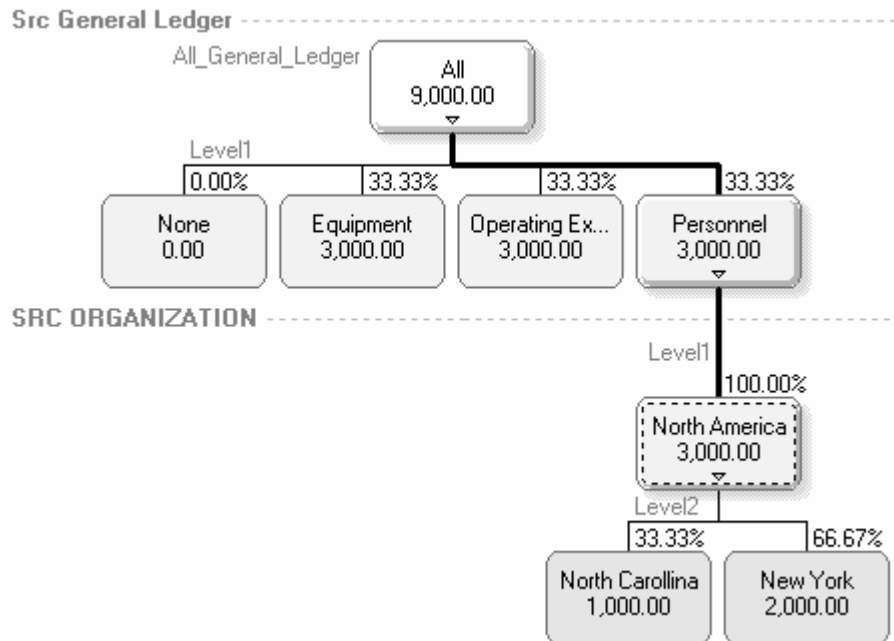


Business users can examine the costs associated with New York *or* North Carolina (which is not expanded in the figure). However, they cannot combine the costs of individual accounts for *both* North Carolina and New York. For example, business users cannot examine the total cost of personnel for both North Carolina and New York.

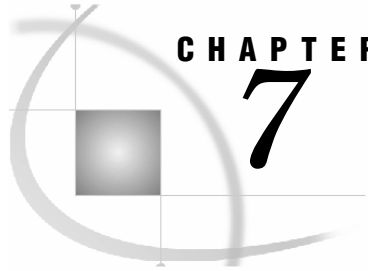
Now, suppose that you want to allow business users more flexibility during OLAP analysis, so that they can combine accounts from different office locations. You can change the previous single, structural dimension to become two dimensions, as shown in the following figure of the Dimensions page:



In the Resources module, the structure looks identical to the previous example. However, in addition to the OLAP analysis shown in the previous example, business users can display the model data so that it reveals the total personnel costs for both North Carolina and New York, as shown in the following figure:







# CHAPTER 7 Modules

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## Introduction

A *module* contains a specific type of cost information in a model, such as information about resources or information about activities. Cost information is contained in accounts and costs elements, which are presented in Chapter 8, “Accounts and Cost Elements.”

The organization of each module corresponds to the organization of structural dimensions. The structural dimensions of each module are addressed later in this chapter.

A model can contain the following modules:

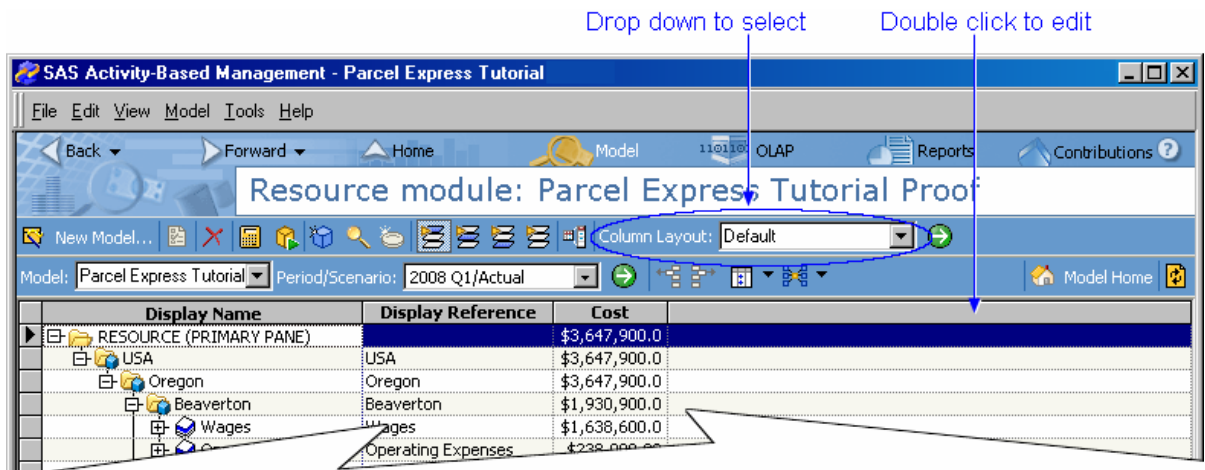
- ☐ Resource module
- ☐ Activity module
- ☐ Cost Object module
- ☐ External Units module

If a model is not a complete activity-based costing implementation, the model is not required to use all of the available modules. For example, suppose that your organization performs work for customers on a customized basis, and you need a model to estimate job costs. You can enter accounts and their costs in the Resource module, Activity module, and the External Units module (if needed), and you can calculate the

model costs. When you later identify the needs of a specific customer, you can create a cost object account that receives costs from the existing accounts. When you calculate the model costs, you can determine the costs of the customized job.

## Columns

SAS Activity-Based Management displays information in each module in user-defined columns in a grid, as shown in the following illustration (select a column layout from the drop-down list):



You can add or remove columns from the grid and specify how information in the columns appears. (Double-click the column header to edit the column layout.) Once you are satisfied with the appearance, you can save the display configuration (called a *saved column layout*). Later, you can display the saved column layout and the columns are displayed as when you saved the layout. For more information, see Chapter 15, “Column Layouts.”

*Note:* Adding or removing columns from the grid does not change the table. Column layouts provide a view of tables—they do not affect the data in the tables. **Select Model > Column Layout > Edit Columns** to add or remove columns. Or, double-click the column header to open the Column Layout dialog box.

*Note:* The **Display Name** column, which is the left-most column in the column layout, is always required, so you cannot remove it, change it, or reorder it.

## References

A *reference* is a unique identifier for an item in a module, such as an account or a cost element.

References are similar to the account numbers or account codes in a chart of accounts and in a general ledger; account numbers uniquely identify line items. For information about reference conventions, see the Help.

## The Cost Object Module

The Cost Object module contains information about products and services. Additionally, products and services can be organized by customers, channels, regions, and so on.

Cost objects can receive costs from resources, activities, other cost objects, or any combination of these three.

### Guidelines for Creating the Structural Dimensions

The typical structural dimensions in the Cost Object module are Products, Customers, and Channels. These dimensions are denoted as Product x Customer x Channel. (For public organizations, the typical structural dimensions are Service and Region.) If your organization is complex, you might need to create other dimensions.

Before you create the structural dimensions, consider the following suggested dimension level names (so that business users can examine data at various levels).

#### Products Dimension

The Products dimension typically contains information about product categories and individual products. For example:

Dimension Level Name	Example
Product Line	Shoes
Product Group	Summer Sandals
Product	Leather Weave
SKU (if needed)	Tan576830

#### Customers Dimension

The Customers dimension typically contains information about customer categories and individual customers. For example:

Dimension Level Name	Example
Customer Group	Retail
Customer Category	Discount
Specific Customer	Big Mart
Location (if needed)	Phoenix

#### Channels Dimension

The Channels dimension typically contains information about distribution channel categories and individual channels. For example:

Dimension Level Name	Example
Channel Group	Traditional
Channel Category	Wholesale
Channel	Catalog
Channel Details (if needed)	Targeted Mail

## The Activity Module

The Activity module contains information about activities. Activities are tasks performed within an organization, such as entering the details of a customer order, operating a machine, or loading a pallet.

Activities can receive costs from resource accounts or from other activity accounts.

### Guidelines for Creating the Structural Dimensions

The typical structural dimensions in the Activity module are Activities and Organization. These dimensions are denoted as Activities x Organization.

Before you create the structural dimensions, consider the following suggested dimension level names and example dimension members.

#### Activities Dimension

The Activities dimension typically contains information about business processes and individual activities.

A *business process* is a group of activities with a common outcome or output. Because activities are the building blocks of business processes, activities and business processes can be incorporated into a single structural dimension. The business processes can be created as the upper (more summary) dimension members, and the activities can be created as the lower (more detailed) dimension members. For example:

Dimension Level Name	Example
Macro Process	Receive Packages
Process	Collect by Region
Activity	Unload Trucks

#### Organization Dimension

The Organization dimension typically contains information about the organization's structure. The information for this dimension can be found in your organization's Organizational Chart.



Each department manager is responsible for the expenses incurred by his/her department. The activity-based management model that is most useful to business users preserves the departments. Preserving each department enables each department manager to examine the activities performed in the department, the costs of those activities, and how the resources for which each manager is responsible affect the activities that he/she manages.

For example:

Dimension Level Name	Example
Facility	North Carolina
Function	Manufacturing
Department	Inspection

---

## The Resource Module

The Resource module contains information about resources, such as salaries, materials, and depreciation. Resources are the costs that are consumed by activities such as planning, introducing new line items, advertising, or promoting products. To understand and manage resources, you should focus on activities and on how they consume resources.

---

### Guidelines for Creating the Structural Dimensions

The typical structural dimensions in the Resource module are General Ledger and Organization. These dimensions are denoted as General Ledger x Organization.

Before you create the structural dimensions, consider the following typical dimensions, suggested dimension level names, and example dimension members.

#### General Ledger Dimension

The General Ledger dimension typically contains information about expense categories and individual expenses. The information for this dimension can be found in your organization's general ledger or other transactional financial system.

The General Ledger categorizes expenses into a hierarchy, an example of which is shown in the following example:

- 1xx Wages, Salaries, and Benefits
  - 10x Salaries and Wages
    - 101 Wages – Hourly
    - 102 Wages – Salary Non-Exempt
    - 103 Wages – Salary
    - 104 Overtime Premium
    - 105 Shift Differential
    - 106 Management Bonus

The lowest level of detail shown (items 101-106) is generally captured in the General Ledger for such purposes as taxes, expense analysis, reconciliation, and internal control. Although this low level of detail is necessary for financial accounting, it is usually too detailed for a SAS Activity-Based Management model. This level of detail is cost *classification*, whereas the level of detail for a model should be cost *behavior*.

To obtain the level of detail of cost behavior, the lowest level of detail in the General Ledger that should be used in a SAS Activity-Based Management model is the next higher level in the example (10x Salaries and Wages). For example:

Dimension Level Name	Example
GL Account Group	Wages, Salaries, and Benefits
GL Account	Salaries and Wages

If the most detailed level of the General Ledger must be in a model, you can use entered cost elements to store these costs. For more information, see Chapter 8, “Accounts and Cost Elements.”

## Organization Dimension

The Organization dimension that was created in the Activity module can be reused here.

---

## The External Units Module

The External Units module contains information about external unit cost elements. An *external unit* is an item, such as a part purchased from a supplier, whose cost is maintained outside of a SAS Activity-Based Management model, but needs to be accounted for in the model. For information about bills of costs, see Chapter 10, “Assignments.”

Like the other modules, the External Units module can contain multiple dimensions. For example, if you obtain parts from several suppliers, you can create the dimensions Supplier and Part. Then, based on the availability and cost of a part, you can enter cost information for the supplier from whom you bought the part.

Suppose that your organization is a municipality that supplies garbage-collection services to residents. You can create an external unit named Tons of Garbage that has a unit cost that is the cost per ton your organization is charged to dispose of the garbage. You can enter the number of tons of garbage collected to calculate the total charge. Also, if your organization supplies bins or carts in which residents place their garbage, you can create an external unit for the cost of each bin or cart.

---

## Guidelines for Creating the Modules

Before you create the modules, consider the following:

- ❑ Start by creating the Cost Object module.  
Identify the expected result and work toward it. If your organization is in the service industry, the cost objects might not be known. In this situation, start by creating the Activity module.
- ❑ Identify the departments (or branches) of your organization.  
The structural dimensions for the Activity module and the Resource module depend on this knowledge. (More information is presented in the sections that address the Activity module and the Resource module.)
- ❑ Create the modules without calculating costs or generating cubes, but validate the model as you progress. (For more information about validating a model, see Chapter 8, “Accounts and Cost Elements.”)  
Not calculating costs or generating cubes enables you to create a model quickly and helps you to identify flaws in the model design before you spend the time calculating costs and generating cubes.



# CHAPTER 8

## Accounts and Cost Elements

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### Accounts

An *account* is an intersection of two dimensions that is similar to a line item in a chart of accounts. Each account contains cost elements.

A *roll-up account* is a cluster of accounts or a cluster of other roll-up accounts that are related by function, department, location, or group. The cost of a roll-up account is the sum of costs for all the accounts and roll-up accounts in the immediate subordinate level.

	Name	Reference
Module roll-up	ACTIVITY (PRIMARY PANE)	All
Roll-up account	Administration	Administration
	Sales and Marketing	Dept-2000
	Support Web Site	2000-Support Web Site
	Trade Show Activities	2000-Attend Trade Show
Account	Preliminary RFQ	2000-Preliminary RFQ
Cost element	Salary - Sale Manage	2000-Salary - Sale Mana
	Salary - Direct Sales	2000-Salary - Direct Sale
	Salary - Trade Show	2000-Salary - Advertisin
	Deprec & Facilities	2000-Deprec & Facilities
	Sales Call	2000-Sales Call
	Take Order	2000-Take Order
	Process Returns	2000-Process Returns
	Engineering	Dept-4000
	Accounting	Dept-5000
	Production	Production

Each module contains a *module roll-up*. A module roll-up is the highest level in the module. A module roll-up represents all the accounts and roll-up accounts in the module.

## Creating and Deleting Accounts

An account corresponds to a dimension member. You must create the dimension member before you can create the account that corresponds to the dimension member.

When you delete an account, the corresponding dimension member still exists, and the dimension member will appear in any cube that you generate. To remove the dimension member from a cube, you must delete the dimension member.

## Guidelines for Creating Accounts

- ❑ Combine similar accounts.

If your organization's general ledger lists the details of travel expenses, such as airfare, hotel, or entertainment, you might want to combine these expenses into one travel account. Are the particular costs incurred together, or are multiple costs caused by the same factor? If so, you might want to combine such costs. Also, if some accounts have small costs, you might want to combine the small accounts into larger accounts that represent more general categories.

Combining accounts into a single account can make creating and maintaining a model easier. However, you must ensure that combining accounts does not hinder business users from reporting the information that they need.

- ❑ Group related accounts.

Group accounts into roll-up accounts if the accounts have similar functionality or are linked to similar activities. For example, the following ungrouped accounts could be grouped as shown:

Ungrouped Accounts	Grouped Accounts
Magazine Advertising Inserts	Advertising
Direct Mail Advertising	Print
In-Store Advertising Circulars	Magazine Inserts
Radio Advertising	Direct Mail
TV Advertising	In-Store Circulars
Yellow Pages Advertising	Radio
	TV
	Yellow Pages

Grouping accounts is similar to the advice concerning the use of multiple dimensions in Chapter 6, "Dimensions." A group, and the levels within a group, provide business users with more flexibility to analyze costs at different levels. In the previous example, business users can examine the individual costs of advertising through Magazine Inserts, Direct Mail, and In-Store Circulars. Business users can also examine the total cost of these methods at the Print level, and the total cost of advertising, regardless of the method.

- ❑ In OLAP analysis, the lowest level that can be examined in a cube is the accounts; cost element costs are rolled up into accounts and cannot be examined individually. Therefore, ensure that cost information that must be available to business users is in accounts, not in cost elements.

---

## Guidelines for Creating Cost Object Accounts

Before you create cost object accounts, consider the following:

- ❑ Name and organize the cost objects so that they are familiar to the business users.

---

## Guidelines for Creating Activity Accounts

Before you create activity accounts, consider the following:

- ❑ Name and organize the activity accounts so that they are familiar to the business users.
- ❑ Distinguish an activity from a task and a process from an activity. A task provides too much detail and a process provides too little detail.

Follow the 5-50 rule:

If a potential activity consumes less than 5% of anyone's time, then it is probably a task. Combine tasks to create an activity or several activities. For example, the tasks of opening correspondence, typing correspondence, and applying postage can be combined into the activity of Communicate with Customers.

However, understanding the task level is important because it clarifies the scope of an activity, it clarifies the boundaries between adjacent activities, and it helps people in your organization relate to the activity.

If a potential activity consumes more than 50% of anyone's time, then it is probably a business process (or business macro process). Divide the activity into finer detail to identify the activities that are involved in the process. For example, the process of Secure Facility can be divided into the activities of Patrol the Grounds, Monitor Automobile Traffic, and Issue Security Badges.

- ❑ An activity account must be active; it is not an arbitrary accounting bucket. The action is denoted by naming an activity account using a verb-noun phrase, such as Process Order or Enter Invoices.
- ❑ An activity account is a cost category that management is concerned about.
- ❑ Ensure that all required activity accounts are defined.

To determine your organization's activities, conduct surveys with the people in your organization.

- ❑ Create an activity account only if management needs to know details about the activity to make decisions.
- ❑ An activity account has one driver that is used for assigning costs. For more information, see Chapter 9, "Drivers."

---

## Guidelines for Creating Resource Accounts

Before you create resource accounts, consider the following:

- ❑ Name and organize the resource accounts so that they are familiar to the business users. Create the references for resource accounts and cost elements so that the references match the account numbers in your organization's chart of accounts.

---


## Cost Elements

The cost of an account is the sum of its *cost elements*. There are four types of cost elements:

- ☐ entered cost element
- ☐ assigned cost element
- ☐ internal unit cost element
- ☐ external unit cost element


---

### Entered Cost Element

An *entered cost element* is the cost that you specify. In the interface, it is represented by this image: .


---

### Assigned Cost Element

An *assigned cost element* is the cost that is flowed from one account to another account. In the interface, it is represented by this image: .


---

### Internal Unit Cost Element

An *internal unit cost element* is a unit (for example, a part that is produced within an organization) whose cost is already represented in the model. This cost flows from one account to another account's bill of costs. In the interface, it is represented by this image: .

---

### External Unit Cost Element

An *external unit cost element* is a unit (for example, a part that is purchased from a supplier) whose cost is maintained outside of a SAS Activity-Based Management model, but needs to be accounted for in the model. In the interface, it is represented by this image: .

In SAS Activity-Based Management, external unit cost elements are treated like accounts. When an external unit cost element's cost is flowed to an account, the flowed cost is listed as an external unit cost element. External unit cost elements always contribute costs, but they do not receive costs.

---

## Validating a Model

As you create each module by creating accounts and cost elements, validate the model to ensure that it is structurally correct.

*Note:* The existence of any of the following conditions does not mean that there are problems in the model. Ensure that the messages produced by the validation are what

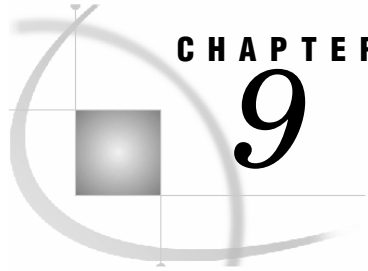


you expect. For example, if you use negative driver quantities in a model, you should expect the validation to report the negative driver quantities.

You can choose to validate the following conditions of a model:

- ❑ Overdriven source accounts do not exist.  
Ensures that an account does not assign to another account(s) more than 100% of its cost.
- ❑ Unassigned accounts do not exist.  
Ensures that all accounts in the Resource module and in the Activity module are assigned. Accounts in the Cost Object module are typically at the end of an assignment path, so they are not assigned to other accounts.
- ❑ Accounts that have zero costs do not exist.  
Ensures that all accounts have costs that are not zero.
- ❑ Empty attributes do not exist.  
Ensures that all attributes that have been added to accounts have values. For numeric attributes, this ensures that the values are not zero. For text attributes, this ensures that the values are not blank.
- ❑ Negative driver quantities do not exist.  
Ensures that an account does not have negative driver quantities.





# CHAPTER 9 Drivers

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## Introduction

A *driver* controls how costs flow from one account to another account by instructing how costs flow from an account. A driver attempts to accurately measure an account's consumption or to assign costs to an account. For example, a driver can be the number of full-time employees (FTEs), the percent of supplies used, or the number of boxes packaged.

---

## Types of Drivers

---

### Basic Driver

A basic driver (named Basic) includes only one factor that represents the relationship between accounts. For example, a basic driver can be the number of hours a machine is running or the number of full-time equivalents that are required for producing a product.

---

### Bill of Costs Driver

A bill of costs driver (named Bill of Cost) represents an account that is a bill of costs. For information about bills of costs, see Chapter 10, “Assignments.”

---

### Calculated Driver

A calculated driver (named Calculated) includes several factors that represent the relationship between accounts. The factors are determined by an equation that you define. An equation that includes numeric information about the destination accounts produces a calculated driver quantity from multiple variables. For information about equations and functions, see Chapter 12, “Using Equations with Calculated Drivers and Calculated Attributes.”

An equation for a calculated driver is not periodic; the equation remains the same for all periods.

### Example: Shipping a Product

Suppose that a company wants to calculate the shipping cost for products that are shipped on pallets. The shipping vendor’s cost is based on how many pallets are shipped, not on how many units are produced. To determine the shipping cost, the output quantity (the property `OutputQuantity`) is divided by the number of units that a pallet can hold (the user-defined numeric attribute `UnitsPerPallet`), as follows:

$$\text{OutputQuantity} / \text{UnitsPerPallet}$$

If the physical dimensions of the product change, then the number of units that a pallet can hold will change. The value of `UnitsPerPallet` can be changed accordingly. Also, the value of `UnitsPerPallet` can be different for each product, but the same equation can be used for multiple products.

### Example: Delivering a Product to Customers

Suppose that a company wants to calculate the cost of product delivery. To determine the delivery cost, the number of deliveries to each customer per month is multiplied by the average delivery time. Both of these attributes are user-defined numeric attributes.

$$\text{DeliveriesPerMonth} * \text{AvgTimePerDelivery}$$

A customer who prefers more deliveries per month might pay a different delivery cost than a customer who prefers fewer deliveries. Likewise, a customer who is farther away from the company might pay a different delivery cost than a customer who is closer to the company.

### Example: Storage Costs for an Inventory of Finished Goods

Suppose that a company wants to calculate the cost of storing slow-moving products. To determine the storage cost, the output quantity (the property `OutputQuantity`) is divided by the speed at which a product sells (the user-defined numeric attribute `InventoryTurns`). The result of that calculation is multiplied by the volume of storage space that a product requires (the numeric attribute `CuFtPerUnit`), as follows:

$$(\text{OutputQuantity}/\text{InventoryTurns}) * \text{CuFtPerUnit}$$

Dividing `OutputQuantity` by `InventoryTurns` yields the average inventory level in units. To use `CuFtPerUnit`, the Resource module in the model must include costs, such as utilities or rent, that are based on per-cubic-foot values.

### Example: Carrying Costs of an Inventory of Finished Goods

Suppose that a company wants to add costs to a model to calculate the financial carrying cost of inventory. The previous equation could be altered to calculate the financial carrying cost of the inventory, not the storage cost, as follows:

$$(\text{OutputQuantity}/\text{InventoryTurns}) * \text{Cost}$$

### Example: Processing Customer Orders

Suppose that a company processes orders for other companies. The number of orders that are processed is only part of the important data. The company might need to consider the complexity of each order.

To determine the cost of processing an order, the number of orders that are processed (the user-defined numeric attribute `NumberOfOrdersProcessed`) is multiplied by the complexity of each order (the user-defined numeric attribute `OrderComplexityByCustomer`), as follows:

$$\text{NumberOfOrdersProcessed} * \text{OrderComplexityByCustomer}$$

For `OrderComplexityByCustomer`, a different value could be assigned to each customer, and the same equation could be used for all customers.

---

## Evenly Assigned Driver

An evenly assigned driver (named `Evenly Assigned`) assigns equal percentages of an account's costs to each account that receives costs. For example, if you use an evenly assigned driver to assign an account's cost to two accounts, then each account automatically receives 50 percent of the cost.

The evenly assigned driver is often used as a first approximation of the costs that flow between accounts when actual driver quantities are not known. When actual driver quantities are known, replace this driver with a driver that is more accurate.

*Note:* The types of driver quantities are preset for the evenly assigned driver; you cannot change them.

---

## Percentage Driver

A percentage driver (named Percentage) assigns a specified percentage of an account's costs to each account that receives costs. The percentage driver tracks the total percentage and issues a warning if costs exceed 100 percent or if less than 100 percent of costs are used.

The percentage driver is often used as a first approximation of the costs that flow between accounts when actual driver quantities are not known. Unlike an evenly assigned driver that allocates the same percentage to each account that receives costs, a percentage driver enables you to assign a percentage to each account. When actual driver quantities are known, replace this driver with a driver that is more accurate. Or, if determining the actual driver quantities is not practical, ensure that the percentages are reasonably accurate.

*Note:* The types of driver quantities are preset for the percentage driver; you cannot change them.

## Example: Time Spent on Tasks

Suppose that an organization decides that it's not practical to determine the actual number of hours that clerical personnel spend on various tasks per year. The cost to determine the actual number of hours outweighs the benefit. To approximate the annual number of hours, management asks the clerical personnel to record their actual hours for one week. From these recordings, a percentage is assigned to each task. For this organization, a percentage is reasonably accurate and acceptable.

---

## Sales Volume Driver

A sales volume driver (named Sales Volume) is associated with an account that is the source of a profitability assignment.

*Note:* The types of driver quantities are preset for the sales volume driver; you cannot change them.

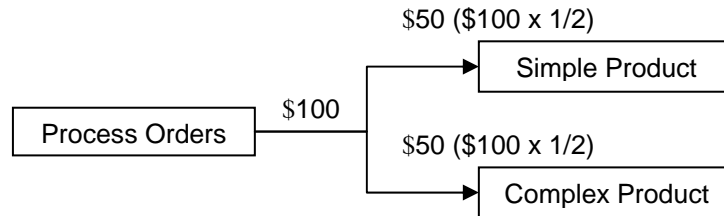
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## Weighted Driver

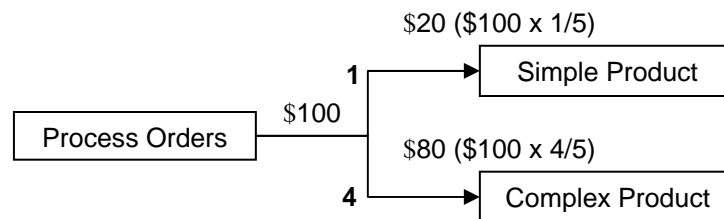
A weighted driver (named Weighted) contains two factors that represent the relationship between accounts. The first factor measures volume (or frequency), and the second factor measures intensity (or complexity). The two factors are multiplied to produce a calculated value that is used for distributing costs. This calculated value, based on weight, is necessary because if the cost of a source account is merely passed to each destination account, the cost incurred by the complexity of each destination account is not considered. Therefore, the cost of each destination account is not accurate.

To compensate for the intensity or complexity of each destination account, a relative weight is specified for each destination account.

For example, in the following figure, the cost (\$100) for the activity Process Orders is equally assigned to the cost objects Simple Product and Complex Product. But, this cost is not accurate because of the difference in complexity between the products.



Suppose that Complex Product is four times more complex than Simple Product. To consider the different complexities, assign a weighted driver to Process Orders. Then, specify the driver weight of 1 to Simple Product and 4 to Complex Product. After calculating, the costs for the products are significantly different and more accurate.



Specify the driver weights using the properties Driver Weight Fixed and Driver Weight Variable, depending on whether the driver supports fixed quantities, variable quantities, or both. For information about the types of driver quantities, see “Types of Driver Quantities” later in this chapter.

### Example: Processing Customer Orders

Suppose that a company sells products with varying numbers of options. Some products offer no options and some products offer many options. The cost of processing customer orders is equal to the number of orders that are processed (frequency), multiplied by the average number of lines per order (complexity, which is the number of options for each product). The products that offer the most options have greater weights than the products that offer fewer (or no) options.

### Example: Supporting Products

Suppose that a company sells products of varying complexity. Some products are simple and yield customer telephone calls that require little time. Some products are complex and yield customer calls that require significant time. Each product is assigned a weight based on the amount of time that is needed for an average customer call.

## Default Driver

The default driver is the driver that SAS Activity-Based Management associates with an assignment when you first create the assignment. You can change the driver later.

There is a default driver for each module.

## Types of Driver Quantities

You can specify the types of driver quantities that a driver will accept as input, preventing inappropriate data from being entered into a model.

For example, if you create a driver that accepts only fixed quantities, SAS Activity-Based Management prevents variable quantities and weighted quantities as follows:

- ❑ In the interface, variable quantities and weighted quantities cannot be entered.
- ❑ When you import model data, variable quantities and weighted quantities are reported as warnings and are ignored.

## Fixed Driver Quantities

For *fixed driver quantities*, the cost that flows to a destination account from a source account does not depend on the output quantity: the source account's unit cost is multiplied by the driver quantity (the property Driver Quantity Fixed (abbreviated DQF)). For information about source accounts and destination accounts, see Chapter 10, "Assignments." For information about properties, see the Help.

For example, suppose that \$100.00 in the resource account **Salary** flows into two activity accounts, **Take Orders** and **Process Orders**. The costs that flow through a basic, fixed-quantity driver are shown in the following figure:

Display Name	Cost		IntsctnName	Cost	DQF
RESOURCE (PRI)	\$100.00				
New York	\$100.00		New York x Take Orders	\$66.67	2.00
Salary	\$100.00		New York x Process Orders	\$33.33	1.00

The driver quantity for **Salary** is 3.00: **2.00** for **Take Orders** and **1.00** for **Process Orders** (the column DQF in the previous figure).

The unit cost that flows from **Salary** is calculated by dividing the total cost of **Salary** by the driver quantity of **Salary**:  $\$100.00/3.00 = \$33.33$ .

So, the cost for each account is calculated as follows:

Account	Unit Cost x DQF	Cost
Take Orders	$\$33.33 \times 2.00$	\$66.67
Process Orders	$\$33.33 \times 1.00$	\$33.33

*Note:* All values are rounded.



## Variable Driver Quantities

For *variable driver quantities*, the cost that flows to a destination account from a source account depends on the output quantity: the source account's unit cost is multiplied by the driver quantity (the property Driver Quantity Variable (abbreviated DQV)) and by the output quantity (either the property Output Quantity (abbreviated OutQty) or the property Output Quantity UE (abbreviated OutQtyUE)).

For example, suppose that \$100.00 in the resource account **Salary** flows into two activity accounts, **Take Orders** and **Process Orders**. The costs that flow through a basic, variable-quantity driver are shown in the following figure:

Display Name	Cost		IntsctnName	Cost	DQF	DQV	OutQtyUE
RESOURCE (PRI)	\$100.00		New York x Take Orders	\$76.92		10.00	10.00
New York	\$100.00		New York x Process Orders	\$23.08		3.00	10.00
Salary	\$100.00						

The driver quantity for **Salary** is 130.00, which is calculated as follows:

Account	DQV x OutQtyUE	Total
Take Orders	10.00 x 10.00	100.00
Process Orders	3.00 x 10.00	30.00
		130.00

The unit cost that flows from **Salary** is calculated by dividing the total cost of **Salary** by the driver quantity of **Salary**:  $\$100.00/130.00 = \$00.7692$ .

So, the cost for each account is calculated as follows:

Account	Unit Cost x DQV x OutQtyUE	Cost
Take Orders	$\$00.7692 \times 10.00 \times 10.00$	\$76.92
Process Orders	$\$00.7692 \times 3.00 \times 10.00$	\$23.08

*Note:* All values are rounded.

## Variable Driver Quantities and Fixed Driver Quantities

You can use both variable quantities and fixed quantities in a single driver.

For example, suppose that \$100.00 in the resource account **Salary** flows into two activity accounts, **Take Orders** and **Process Orders**. The costs that flow through a basic, fixed-quantity and variable-quantity driver are shown in the following figure:

Display Name	Cost		IntsctnName	Cost	DQF	DQV	OutQtyUE
RESOURCE (PRI)	\$100.00		New York x Take Orders	\$76.69	2.00	10.00	10.00
New York	\$100.00		New York x Process Orders	\$23.31	1.00	3.00	10.00
Salary	\$100.00						

The driver quantity for **Salary** is 133.00, which is calculated as follows:

Account	(DQF)	+	(DQV x OutQtyUE)	Total
Take Orders	2.00		10.00 x 10.00	102.00
Process Orders	1.00		3.00 x 10.00	31.00
				133.00

The unit cost that flows from **Salary** is calculated by dividing the total cost of **Salary** by the driver quantity of **Salary**:  $\$100.00/133.00 = \$00.7519$ .

So, the cost for each account is calculated as follows:

Account	(Unit Cost x DQF)	+	(Unit Cost x DQV x OutQtyUE)	Cost
Take Orders	$\$00.7519 \times 2.00$		$\$00.7519 \times 10.00 \times 10.00$	\$76.69
Process Orders	$\$00.7519 \times 1.00$		$\$00.7519 \times 3.00 \times 10.00$	\$23.31

*Note:* All values are rounded.

---

## Weighted Driver Quantities

Weighted driver quantities are used with a weighted driver. For information about weighted drivers, see the “Weighted Driver” section.

---

## Unique Driver Quantities

Driver quantities determine the amount of a cost to distribute from a source account to destination accounts. A driver quantity can be unique or non-unique.

A *unique driver quantity* is a quantity for a destination account that can differ for every assignment to that destination account through the same driver. For each account that receives costs, you must specify the driver quantity.

A *non-unique driver quantity* is a quantity for a destination account that is identical for every assignment to that destination account through the same driver. You specify the driver quantity once for the destination account, and that driver quantity is applied to all assignments. If you determine that you must put the same driver quantity on multiple destination accounts using the same driver, then that driver probably needs to be non-unique.

For example, suppose that the activities **Take Orders** and **Process Orders** flow costs to the cost objects **Simple Product** and **Complex Product**, as shown in the following figure:

Display Name	Cost	DrvName	IntsctnName	DQF
ACTIVITY (PRIMARY PA	\$100.00		No<Customers> x Simple Product	7.00
New York	\$100.00		No<Customers> x Complex Product	10.00
Take Orders	\$76.34	Basic Non-Unique		
Process Orders	\$23.66	Basic Unique		

Display Name	Cost	DrvName	IntsctnName	DQF
ACTIVITY (PRIMARY PA	\$100.00		No<Customers> x Simple Product	1.00
New York	\$100.00		No<Customers> x Complex Product	2.00
Take Orders	\$76.34	Basic Non-Unique		
Process Orders	\$23.66	Basic Unique		

The driver for **Take Orders** is a basic, non-unique driver (named **Basic Non-Unique**). The driver for **Process Orders** is a basic, unique driver (named **Basic Unique**). Even though both activities flow costs to the same cost objects, the driver quantities for each cost object are different (the column **DQF**).

Now, suppose that the driver **Basic Unique** for **Process Orders** is changed to the driver **Basic Non-Unique**. Because the driver quantities are now non-unique, the driver quantities specified for the cost objects in the assignment to the activity **Take Orders** are copied to the assignment to activity **Process Orders**. This is shown in the following figure:

Display Name	Cost	DrvName	IntsctnName	DQF
ACTIVITY (PRIMARY PA	\$100.00		No<Customers> x Simple Product	7.00
New York	\$100.00		No<Customers> x Complex Product	10.00
Take Orders	\$76.34	Basic Non-Unique		
Process Orders	\$23.66	Basic Unique		

Display Name	Cost	DrvName	IntsctnName	DQF
ACTIVITY (PRIMARY PA	\$100.00		No<Customers> x Simple Product	7.00
New York	\$100.00		No<Customers> x Complex Product	10.00
Take Orders	\$76.34	Basic Non-Unique		
Process Orders	\$23.66	Basic Non-Unique		

In the previous example, a non-unique driver might be the best type because the number of orders processed for each product is probably the same number of orders taken for each product.

## Changing Driver Quantities between Unique and Non-Unique

You can change a driver quantity from unique to non-unique, or vice versa, at any time, even after driver quantities have been calculated. If you change a non-unique driver quantity to a unique driver quantity, the driver quantity is copied to each destination account. If you change a unique driver quantity to a non-unique driver quantity, the first driver quantity that is encountered is copied to each destination account.

## Idle Quantities

*Idle quantities* are unused resources or unused time in a model. For example, if a machine can run for 10 hours a day, but is used for only eight hours a day, the idle

quantity for that machine is two hours. You can assign the idle quantity to the destination accounts, as follows:

Display Name	IdlQty	TDQUE		IntsctnName	DQF	IdlQtyUE	IdlDrvQty	DrvIdlCost
ACTIVITY (PRIMARY P				North America x Front Fender	5.00			\$0.00
Production				North America x Rear Fender	3.00			\$0.00
Stamping Parts	2.00	10.00						

The 10 hours that the machine can run is specified in the user-entered total driver quantity (the column **TDQUE**). The eight hours that the machine is used is specified in the fixed-driver quantities (the column **DQF**; five hours for the **Front Fender** and three hours for the **Rear Fender**). The two hours of idle quantity is calculated by SAS Activity-Based Management (the column **IdlQty**; 10 **TDQUE** on the source account minus 8 **DQF** on the destination accounts).

You can specify how idle quantities are distributed for a driver. If you do not activate this feature, idle quantities are not displayed in an account's hierarchy, and idle quantities are not used when an account's cost is calculated.

To specify how idle quantities are distributed in an assignment, you can select one of the choices that are described in the following section. The effect of each choice on the previous example is shown, based on the hourly cost of the machine (a press, in this example), which is \$100.00.

## User-Entered Quantities

If you choose to distribute idle quantities using user-entered quantities, you specify the idle quantities to be assigned to the idle components (the property idle quantity user-entered; the column **IdlQtyUE**). For example, you enter two hours for the **Rear Fender**.

IntsctnName	DQF	IdlQtyUE	IdlDrvQty	DrvIdlCost
North America x Front Fender	5.00			\$0.00
North America x Rear Fender	3.00	2.00	2.00	\$200.00

The system-generated value for the idle driver quantity (the column **IdlDrvQty**) corresponds to your entry. After calculating the costs, the driver idle cost (the column **DrvIdlCost**) is \$200.00 (2.00 x \$100.00).

## User Proportion Quantities

If you choose to distribute idle quantities using user-proportioned quantities, you specify the proportions for the idle quantities (the property idle quantity user-entered; the column **IdlQtyUE**). For example, you enter 1 for the **Front Fender** and 3 for the **Rear Fender**.



IntsctnName	DQF	IdlQtyUE	IdlDrvQty	DrvIdlCost
North America x Front Fender	5.00	1.00	0.50	\$50.00
North America x Rear Fender	3.00	3.00	1.50	\$150.00

The total user-entered idle quantities is 4.00: 1.00 + 3.00. After calculating the costs, the idle driver quantity (the column **IdlDrvQty**) for the **Front Fender** is 0.50 (1/4 x 2.00), and the idle driver quantity for the **Rear Fender** is 1.50 (3/4 x 2.00).

Therefore, the driver idle cost (the column **DrvIdleCost**) for the **Front Fender** is \$50.00 ( $0.50 \times \$100.00$ ). The driver idle cost for the **Rear Fender** is \$150.00 ( $1.50 \times \$100.00$ ).

## Use Driver Quantities

If you choose to distribute idle quantities with driver quantities, the ratio of the driver quantities is used for assigning the idle quantities. For example, the ratio of the driver quantity for the **Front Fender** is  $5/8$  ( $5.00/(5.00 + 3.00)$ ). The ratio of the driver quantity for the **Rear Fender** is  $3/8$  ( $3.00/(5.00 + 3.00)$ ).



IntsctnName	DQF	IdlQtyUE	IdlDrvQty	DrvIdleCost
 North America x Front Fender	5.00		1.25	\$125.00
 North America x Rear Fender	3.00		0.75	\$75.00

After calculating the costs, the idle driver quantity (the column **IdlDrvQty**) for the **Front Fender** is 1.25 ( $5/8 \times 2.00$ ), and the idle driver quantity for the **Rear Fender** is 0.75 ( $3/8 \times 2.00$ ).

Therefore, the driver idle cost (the column **DrvIdleCost**) for the **Front Fender** is \$125.00 ( $1.25 \times \$100.00$ ). The driver idle cost for the **Rear Fender** is \$75.00 ( $0.75 \times \$100.00$ ).

## Evenly Assigned Quantities

If you choose to distribute idle quantities with evenly assigned quantities, the idle quantities are divided evenly among the destination accounts. For example, each of the destination account's idle quantity is 1.00, which is half of the source account's idle quantity of 2.00.

IntsctnName	DQF	IdlQtyUE	IdlDrvQty	DrvIdleCost
 North America x Front Fender	5.00		1.00	\$100.00
 North America x Rear Fender	3.00		1.00	\$100.00

After calculating the costs, the driver idle cost (the column **DrvIdleCost**) for both the **Front Fender** and the **Rear Fender** is \$100.00 ( $1.00 \times \$100.00$ ).

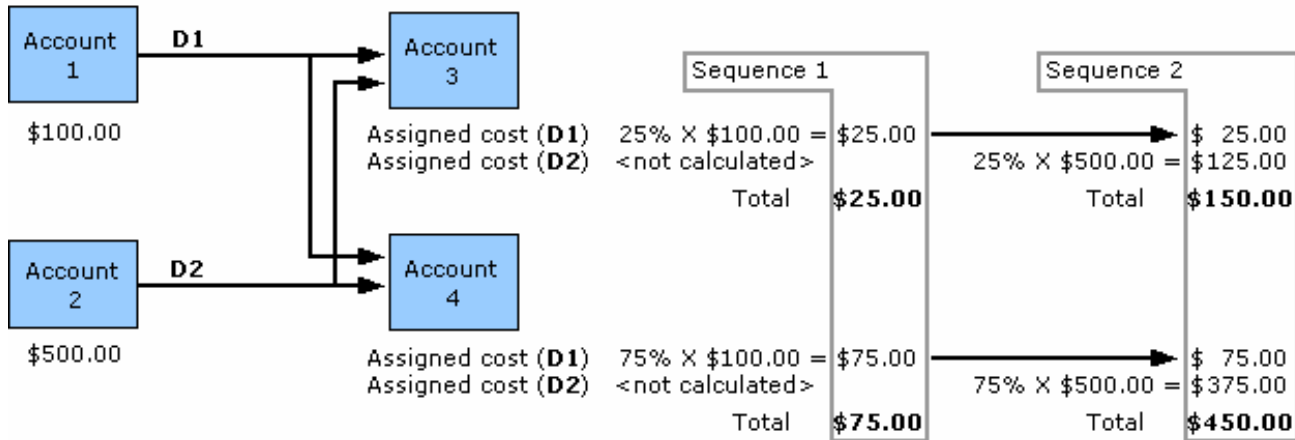
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## Driver Sequencing

*Driver sequencing* changes driver quantities to a property's assigned costs from a previous calculation. As the following shows, the driver quantities that are used in the second calculation are based on the costs from the first calculation.

Driver 1 (D1): Percentage driver set for 25% for each account.  
Sequence #1.

Driver 2 (D2): Percentage driver set for 75% for each account.  
Sequence #2.



*Note:* These overwritten values remain even when you remove driver sequencing for the driver. To change the driver quantities, you must manually change them. Because of the potentially extensive impact on model data, SAS recommends that you define a new driver for use with driver sequencing. You should not use an existing driver to experiment with driver sequencing.

## Misconceptions about Driver Sequencing

The following presents common misconceptions about driver sequencing:

- ❑ Every driver needs a sequence number.  
Specify a sequence number for a driver only when the driver quantities on the destination accounts need to be replaced. This replacement is the only function of driver sequencing.
- ❑ Every driver in an assignment path needs a sequence number.  
Do not specify a driver sequence to indicate the calculation sequence between accounts in an assignment path. For example:

Account A  $\Rightarrow$  Account B  $\Rightarrow$  Account C  
Sequence 1                  Sequence 2

For information about assignment paths, see Chapter 10, “Assignments.”

## User-Entered Cost Allocation

User-entered cost allocation enables you to assign a specific cost to an assignment path.

Some organizations allocate a specific cost to an account or department at the start of a budgetary period. This cost is then depleted during the budgetary period. This type of

allocation is used in more traditional costing methodologies, but it is generally not part of the activity-based costing methodology. However, if the people within your organization are more familiar with this method of allocating costs, you can employ user-entered cost allocation to simulate this use.

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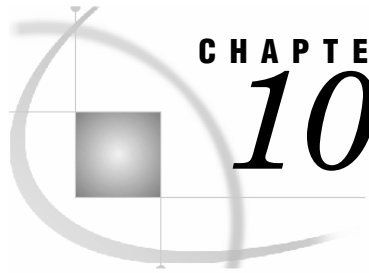
## Guidelines for Creating Drivers

Before you create drivers, consider the following:

- ❑ Minimize the use of unique driver quantities.  
Unique driver quantities can use a lot of memory. They increase processing time, and they do not provide a calculation advantage.
- ❑ Create drivers whose quantities or volumes are already being collected or cost little to measure.
- ❑ When you collect driver data, ensure that the data is current, available, and accurate. Ask individuals in your organization to verify the data's accuracy.
- ❑ In general, use fixed driver quantities for basic drivers. Use variable driver quantities for bill of costs drivers.







# CHAPTER 10

## Assignments

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## Introduction

An *assignment* is a way to distribute costs between accounts. Costs that are assigned between accounts that are in the same module are called *inner-module assignments*. Costs that are assigned between accounts that are in different modules are called *cross-module assignments*.

When you assign a cost from one account to another account, the cost is said to flow from the first account to the second account. The first account is called a *source account* because it is the source of costs for the second account. The second account is called the *destination account* because it receives the first account's cost flows.

The manner in which the cost flows is controlled by a driver. A single source account can flow its costs to any number of destination accounts, but each source account can have only one driver. (For information about drivers, see Chapter 9, "Drivers.")

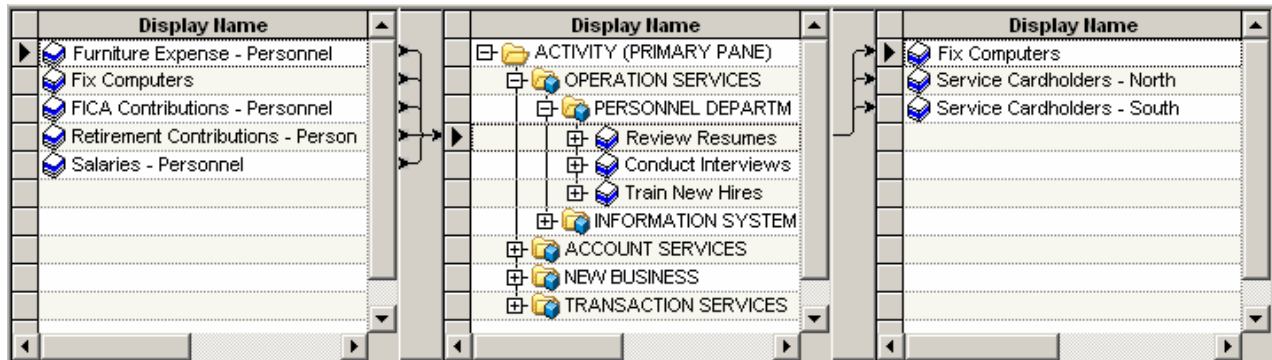
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## Assignment Paths

As you create assignments between accounts on the Resource module page, the Activity module page, and the Cost Object module page, you create a sequence of accounts through which costs flow. This sequence is called the *assignment path*. For example, suppose that costs are assigned first from account A to account B. Then costs are assigned from account B to account C. This process creates an assignment path from account A to account C.

## Assignments Panes

You can divide the Resource module page, Activity module page, and Cost Object module page into up to three panes. The panes enable you to easily create assignments or to see the assignments between accounts.



For example:

☐ One pane

The primary pane shows you one module at a time. The primary pane always displays the hierarchy of the module that you are viewing. The left and right panes display accounts only, not module hierarchy.

☐ Two panes

The primary pane and the left or right pane show you assignments from one module to another module, as well as assignments that are in the same module.

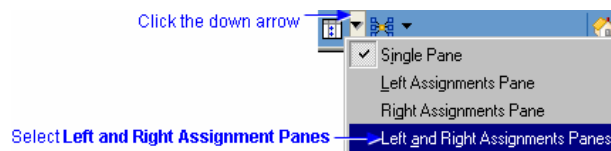
☐ Three panes

The left pane, the primary pane, and the right pane show you assignments that flow the costs from resources, through activities, to cost objects.

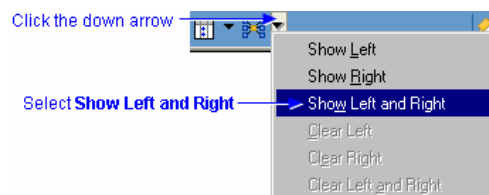
Costs flow from the left to the right. The space between the panes is called the *splitter bar*. Lines and arrows indicate the assignments between accounts.

To display assignments, such as in the picture above:

- 1 Select **Left and Right Assignment Panes** from the View Assignment Panes icon.



- 2 Select **Show Left and Right** from the Show Assignments icon.



If there are no assignments, you see nothing additional when you show assignments.

---

## Bills of Costs

When you use the bill of costs driver to create an assignment between accounts, you create a bill of costs between accounts. A *bill of costs* (BOC) provides an easy way to add material costs and unit costs directly to accounts.

Use a bill of costs for these circumstances:

- ❑ Costs outside of the general ledger need to be included in a model.

Not all costs that are assigned through a model come from the general ledger. For example, material costs (the cost of purchased components) can be additional product cost information, which often comes from a Material Requirements Planning (MRP) system.

- ❑ Unit cost elements in a model that are associated with product families need to be tracked.

If you create an assignment from an external unit, the bill of costs driver is automatically specified. If you create an assignment from an internal unit, you must specify the driver.

A bill of costs driver quantity can include variable quantities, fixed quantities, or both. For information about driver quantities, see Chapter 9, “Drivers.”

---

## Discrete-Manufacturing Environments

In a discrete-manufacturing environment, a bill of materials is a familiar concept. Usually, each product has a bill of materials that lists all the product’s components and their costs. In the simplest case, a bill of materials is a list of the product’s components, the number of units of each component that the product includes, and the unit cost for each component. Because bills of materials exist in many environments, bills of costs correspond to them to some degree.

In discrete-manufacturing environments, products that are components of other products are called internal unit cost elements. Each internal unit cost element can have its own bill of costs.

---

## Process-Manufacturing Environments

In a process-manufacturing environment, an activity might have a bill of costs. A bill of costs for an activity lists all materials that were added during that activity in the process. Because material costs are added to the specific activities that consume them, you can trace the cost of finished products more accurately.

---

## Types of Bill of Costs Quantities

A bill of costs quantity can include variable quantities, fixed quantities, or both. For information about types of driver quantities, see Chapter 9, “Drivers.”

## Variable Quantities

For variable quantities, the cost that flows to an account from the bill of costs depends on the output quantity: the unit cost of the bill of costs is multiplied by the driver quantity (the property Driver Quantity Variable; the column **DQV**) and by the output quantity (either the property Output Quantity or the property Output Quantity UE, the column **OutQtyUE**).

For example, suppose that a company manufactures bicycles. The rubber tires are purchased from another company for \$5 each. (This value was specified when the external unit was created.) Because each bicycle requires two tires, the unit cost of the bill of costs is \$10. If the company produces 100 bicycles, the total cost is \$1,000 (100.00 x \$5.00 x 2.00).

(Note that all other cost elements have been removed to better illustrate the bill of costs.)

Display Name	Cost	OutQtyUE	DQF	DQV
COST OBJECT (PRI)	\$1,000.00			
North America	\$1,000.00			
Bicycle	\$1,000.00	100.00		
Tire	\$1,000.00		0.00	2.00

$\$1,000.00 = 100.00 \times \$5.00 \times 2.00$   
 bicycles produced      unit cost per tire      tires per bicycle

## Fixed Quantities

For fixed quantities, the cost that flows to an account from the bill of costs does not depend on the output quantity: the unit cost of the bill of costs is multiplied by the driver quantity (the property Driver Quantity Fixed, the column **DQF**).

For example, suppose that the bicycle manufacturer buys a drum of grease at the beginning of each year. The unit cost of the bill of costs is the current price of the drum of grease, regardless of how many bicycles are produced.

(Note that all other cost elements have been removed to better illustrate the bill of costs.)

Display Name	Cost	OutQtyUE	DQF	DQV
COST OBJECT (PRI)	\$425.00			
North America	\$425.00	(ignored)		
Bicycle	\$425.00	100.00	1.00	
Grease	\$425.00		1.00	

$$\$425.00 = \$425.00 \times 1.00$$

bicycles produced      drums of grease  
 unit cost per drum

## Variable Quantities and Fixed Quantities

You can use both variable quantities and fixed quantities in a single bill of costs.

(Note that all other cost elements have been removed to better illustrate the bill of costs.)

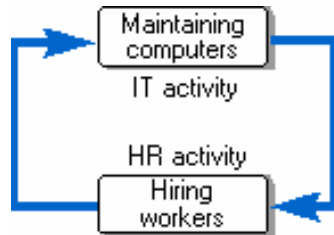
Display Name	Cost	OutQtyUE	DQF	DQV
COST OBJECT (PRI)	\$1,425.00			
North America	\$1,425.00			
Bicycle	\$1,425.00	100.00	1.00	
Tire	\$1,000.00		0.00	2.00
Grease	\$425.00		1.00	

## Reciprocal Costing

*Reciprocal costing* is a technique that enables costs to be shared between two or more accounts in the same module. With reciprocal costing, part of an account's cost flows to another account, and part of that account's cost flows back to the original account.

You create reciprocal costs by creating an assignment from an account or from an internal bill of costs.

For example, suppose that part of the cost of the Information Technology (IT) department is based on how much time IT personnel spend maintaining the computers in the Human Resources (HR) department. Part of the cost of the HR department is based on how much time HR personnel spend hiring IT workers. These two activities are reciprocal accounts because they share costs.



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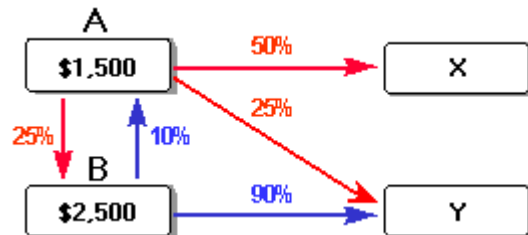
## Guidelines for Creating Reciprocal Costs

When you use an internal bill of costs to create a reciprocal cost, consider the following:

- ❑ You can attach more than one reciprocal internal bill of costs within the same module.
- ❑ You must attach an internal bill of costs to a third account so that costs flow out of the reciprocal cost assignment. Otherwise, the two accounts in the reciprocal cost assignment create a continuous loop.

## Reciprocal Costs Calculation

Reciprocal costs are calculated using simultaneous equations. This means that the costs that are shared between accounts A and B are calculated at the same time, as follows:



The equations:

$$A = 1,500 + .10B$$

$$B = 2,500 + .25A$$

$$X = .5A$$

$$Y = .25A + .9B$$

The results:

$$A = \$1,794.87$$

$$B = \$2,948.72$$

$$X = \$897.44$$

$$Y = \$3,102.56$$

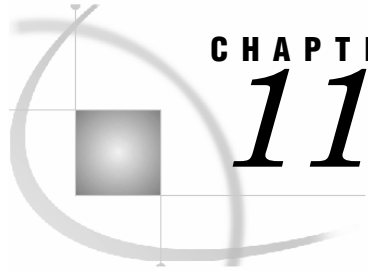
## Guidelines for Creating Assignments

Before you create assignments, consider the following:

- ❑ You can assign costs from one account to another account, but you cannot assign costs to a roll-up account.
- ❑ Try to assign 100 percent of an account's costs to other accounts.  
If you do not assign 100 percent, SAS Activity-Based Management issues warnings when you calculate costs.







# CHAPTER 11

## Attributes

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## Introduction

An *attribute* is a label that is added to an account. Each attribute is a characteristic that is used for analysis or for a calculated value. An attribute conveys information about the account.

You create an attribute on the Attributes page. You add and delete (manage) the attributes that have been added to an account on the Resource module page, the Activity module page, and the Cost Object module page.

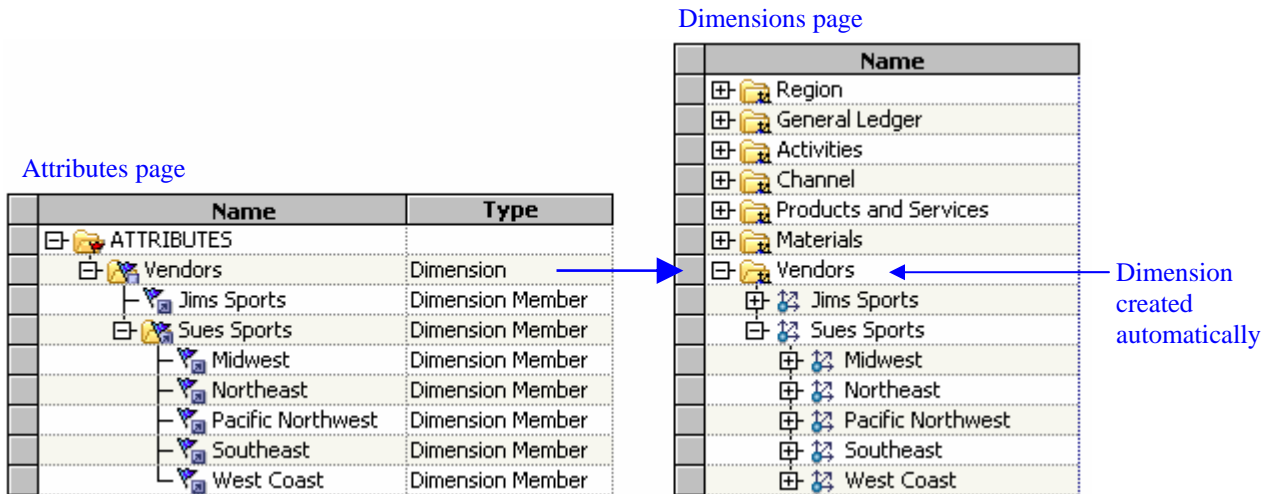
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## Boolean Attributes

A Boolean attribute is either added to an account or it is not. A Boolean attribute does not store a value.

## Dimension Attributes, Dimension Member Attributes, and Dimension Value Attributes

A dimension attribute corresponds to a dimension. When you create a dimension attribute on the Attributes page, a dimension is automatically created on the Dimensions page, as shown:



The leaf node of a dimension attribute is called a *dimension value attribute*. It is the dimension value attribute that applies to an account. Whereas a dimension member attribute contains a dimension value attribute, a dimension value attribute cannot contain other attributes.

If you attempt to create another attribute within a dimension value attribute, the dimension value attribute automatically becomes a dimension member attribute. For example, you can see in the following that if you create an **Ohio** attribute inside the **Midwest** attribute, then the **Midwest** attribute automatically becomes a dimension member attribute:

Vendors	Vendors	Dimension	← Dimension attribute
Jims Sports	Jims Sports	Dimension Member	
Sues Sports	Sues Sports	Dimension Member	← Dimension member attribute
Midwest	Midwest	Dimension Member	← Dimension member attribute
Ohio	Ohio	Dimension Member	← Dimension value attribute

Dimension value attributes can facilitate data entry because a drop-down list of possible attribute values is displayed in the interface. For example, from the previous illustration, the following drop-down list is displayed when a user sets the value of the **Vendors** attribute:

	Display Name	Cost	Vendors
[-] Folder	COST OBJECT (PRIMARY PANE)	\$3,647,900.0	
[-] Folder	USA	\$3,647,900.0	
[-] Folder	Oregon	\$3,647,900.0	
[-] Folder	Beaverton	\$1,930,900.0	
[-] Folder	Drop Box	\$15,468.14	
[-] Folder	2nd Day Guarante	\$0.00	Southeast
[-] Folder	Overnight Expres	\$0.00	
[-] Folder	Standard Ground	\$0.00	
[-] Folder	No <Pr>nts and	\$5,468.14	

Vendors

- Jims Sports
- Sues Sports
  - Midwest
  - Northeast
  - Pacific Northwest
  - Southeast**
  - West Coast

Dimension attributes, dimension member attributes, and dimension value attributes provide business users with roll-up values for OLAP analysis that differ from the values available from the structural dimensions. Using dimension attributes, you enhance a model by classifying or organizing information in ways that will help business users analyze model results.

For example, dimension attributes are commonly used to indicate which resources are fixed or variable and which activities are value-added or non-value-added. Other typical dimension attributes include core, sustaining, and discretionary; strategic and non-strategic; and primary and secondary.

## Numeric Attributes

A numeric attribute stores a number. What the number represents is documented by the unit of measure. The unit of measure is text that provides meaning to the unit. For example, the unit of measure could be cases, pounds, kilograms, and so on. Without a unit of measure, a numeric attribute has little meaning. Alternatively, the name of the numeric attribute can indicate the unit of measure, as in Miles Shipped or Number of Pallets.

A numeric attribute can serve purposes such as:

- ❑ A numeric attribute can track a model's financial measures or non-financial measures.
- ❑ A numeric attribute can track activity performance over time.
- ❑ A numeric attribute can be a performance measure for special reporting purposes.

The data that a numeric attribute contains can be used in calculated drivers and in calculated attributes.

---

## Calculated Attributes

A calculated attribute stores a number that is calculated from numeric properties of a model and/or from other calculated attributes, based on an equation that you define. For more information, see Chapter 12, “Using Equations with Calculated Drivers and Calculated Attributes.”

Property values and attribute values are derived from the account to which the attribute is attached. For example, the value of a calculated numeric attribute that is based on the property Cost depends on the account to which the attribute is attached, because each account has a different cost.

Unlike the equation for a calculated driver, which remains the same for all periods, the equation for a calculated attribute can change with each period.

---

### Example: Average Cost of Processing a Customer Order

Suppose that a company provides order-processing services to other companies. To determine the average cost of processing an order, the cost (the property Cost) is divided by the number of orders processed (the user-defined numeric attribute Orders Processed), as follows:

$\text{Cost} / \text{“Orders Processed”}$

---

### Example: Average Number of Cases Loaded per Employee

Suppose that a company loads goods onto trucks for shipping. Management wants to determine how many cases are loaded per full-time employee. The number of cases loaded (the user-defined numeric attribute Cases Loaded) is divided by the number of full-time employees who are loading cases (the user-defined numeric attribute FTE), as follows:

$\text{“Cases Loaded”} / \text{“FTE”}$

---

## Text Attributes

A text attribute stores alphabetic and numeric characters. A text attribute provides information about the account to which the attribute is added. For example, a text attribute named Cost Analysis can indicate whether a resource account is a fixed cost or a variable cost. Or, a text attribute named Life Cycle can indicate where a cost object account belongs in a life cycle: analysis, start-up, entry, build, mature, decline, or withdrawal.

The maximum length of a text attribute is 2048 characters.

---

## Attribute Folders

An attribute folder organizes attributes. An attribute folder can contain any type of attribute and multiple types of attributes, because the folder itself has no type. However, a dimension attribute folder can contain only dimension member attributes or dimension value attributes. In addition, dimension member attributes must be contained in a dimension attribute folder.

You cannot explicitly create a dimension attribute folder. When you explicitly create a new dimension attribute, SAS Activity-Based Management automatically creates it as a dimension attribute folder.

---

## Stages Attributes

Stages are used for analyzing the multi-stage contributions cube. To define stages, add specific dimension value attributes to accounts. You must create these dimension value attributes within a dimension attribute named Stages. You can give a dimension value attribute any name, but the name must conform to the naming conventions. (For information about the multi-stage contributions cube, see Chapter 13, “Analyzing Model Data with OLAP.”)

To see the stages in the multi-stage contributions cube, you must specify the properties for the cube. For information about specifying the properties for the multi-stage contributions cube, see Chapter 13, “Analyzing Model Data with OLAP.”

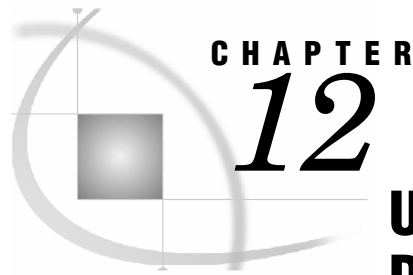
---

### Guidelines for Adding Stages to Accounts

Follow these guidelines when you add Stages to accounts:

- ❑ Do not add more than one stage (or one member of a Stages attribute) to an account.
- ❑ Do not skip an account that you need for analysis.  
For example, suppose that an IT Salaries account is assigned to an IT Help Desk account, and that the IT Help Desk account is subsequently assigned to a Design Products account. Ensure that a different Stages attribute is added to each account. Do not skip the IT Help Desk account.
- ❑ Do not add stages to accounts that you do not need for analysis.  
Every account that has a stage is included in the multi-stage contributions cube. The cube can be generated more quickly if accounts not needed for analysis are omitted.
- ❑ To avoid performance problems, do not exceed six to eight stages.





## Using Equations with Calculated Drivers and Calculated Attributes

---

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---

### Introduction

When you create a calculated driver or a calculated attribute, you must define the associated equation. An equation can contain the following elements:

- ☐ basic functions
- ☐ system-defined numeric properties
- ☐ user-defined numeric attributes

For information about calculated drivers, see Chapter 9, “Drivers.” For information about calculated attributes, see Chapter 11, “Attributes.” For information about the functions you can use in equations, see the Help.

---

### Defining Equations

To define an equation, select numeric properties, numeric attributes, and operators. To include user-defined numeric attributes, you must create these attributes before you define an equation.

If you use a numeric attribute in a calculated driver equation, you must add that attribute to all destination accounts of the assignment before running any calculations. When you add the attribute, enter the appropriate values for both the numeric attribute and the driver quantity. The numeric attribute and the driver quantity must contain values; they cannot be blank. You can add the numeric attribute either before defining the calculated driver, or after. The numeric attribute must be added before you run a calculation; otherwise, you might encounter errors, or costs might be calculated as zero.

---

### Source Accounts and Destination Accounts

An equation can use the numeric properties and numeric attributes of a source account or a destination account. In the SAS Activity-Based Management interface, the

list of numeric properties includes the keywords **[Source]** and **[Destination]**. When you select either of the keywords to include in an equation, you see the notation Source. or Destination., followed by a property or attribute. For example, Source.Cost or Destination.UnitCost.

---

## Property Names in Equations

The property names in equations are the same as the property names that you see elsewhere in SAS Activity-Based Management, except that the spaces are removed. For example, the property Allocated Cost is AllocatedCost in an equation.

Occasionally, the property name that is used in an equation contains an abbreviation, such as DimLevelName for the property Dimension Level Name, or TDQ for the property Total Driver Quantity.

---

## Testing Equations

Testing an equation validates the operators and ensures that the syntax is correct. However, numeric properties and numeric attributes are not validated. Equation testing does not guarantee that the equation is valid or that the equation will yield the intended value.

During calculation, if an equation references an item that does not exist, a warning is displayed. If you use an invalid equation, SAS Activity-Based Management halts the calculation as soon as it encounters the invalid equation. Subsequent values in the model are not calculated.

---

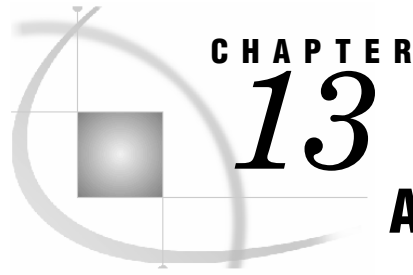
## Using Attribute Names

To ensure that SAS Activity-Based Management correctly interprets any special characters or spaces in a numeric attribute name, enclose the name in double quotation marks (“ ”). You do not need to use quotation marks for a numeric property name.

For example, in the following equation, OutputQuantity does not require quotation marks because it is a system-defined numeric property. But, Units Per Pallet requires quotation marks because the name contains spaces.

OutputQuantity/“Units Per Pallet”





## Analyzing Model Data with OLAP

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---

### Introduction

OLAP is a technology that is used to create decision-support software. OLAP enables users to quickly analyze data that has been summarized into multidimensional views and hierarchies. By summarizing predicted queries into multidimensional views and hierarchies before run time, SAS Activity-Based Management's OLAP tool provides the benefit of increased performance over traditional database access tools. Most of the resource-intensive calculation that is required to summarize the data is done before a query is submitted.

---

### Measures

Data that is most likely to be summarized are stored as values, either as currency or as numbers. *Measures* are the values that are aggregated and analyzed. A model can have values for costs, for sales quantities, for revenue, and so on. These values form the measures. For example, a model has information about product sales: product costs, sales quantities, and revenue. If you want to evaluate the success of a particular region, you can compare that region's total revenue to the total revenue of each other region.

---

## Cubes

A *cube* is the basic unit of analysis: it represents a particular domain of inquiry in OLAP. A cube contains a subset of model data, such as single-stage contributions, multi-stage contributions, or resource contributions. Each cube combines multiple dimensions and the measures that the dimensions contain into one unit. SAS Activity-Based Management cubes are standard OLAP cubes.

You use SAS Activity-Based Management to connect to the cubes on a SAS Activity-Based Management server and to interact with these cubes. For each model, a Designer can generate cubes. Viewers can then manipulate these cubes on the OLAP page to interactively analyze data.

In an analysis grid, a cube's dimensions determine the columns and rows. The measures are the data in the cells of the columns and rows.

A cube in which costs are indexed by two dimensions (such as customer and product) is a two-dimensional cube. A cube in which costs are indexed by three dimensions (such as region, customer, and product) is a three-dimensional cube.

It does not matter how many dimensions a cube has; the storage unit is a cube, and the cube represents  $n$  dimensions of data. A cube enables you to perform multidimensional data analysis. You extract useful knowledge from an  $n$ -dimensional cube, and you represent the knowledge so that it can be easily understood.

In a cube, measures are aggregated within a single dimension and for all combinations of dimension members from different dimensions. These aggregations enable you to analyze measures by dimension members in different dimensions simultaneously. For example, you can analyze quarterly costs for products within a region.

---

## Fact Tables

Each cube is based on a *fact table*, which stores model data for the cube. When you generate a cube, the fact table is generated first. Then the cube is created from the fact table.

To make your data analysis capabilities more flexible, you can choose to generate a fact table without generating the associated cube. You can use the fact table to generate a customized cube in another application, such as SAS OLAP Cube Studio or Microsoft Analysis Services.

*Note:* When you generate a fact table, SAS Activity-Based Management determines whether any model data has changed since the last time the model was calculated. If any model data has changed, the period/scenario association is calculated to ensure that the model data is correct. In addition, you can force the model to be calculated.

---

## Generating Cubes

After you calculate costs, you can generate cubes to analyze a model on the OLAP page. Generating a cube is a two-part process. First, you create a cube configuration to specify options for generating the cube. Then, you invoke the cube configuration to do

the generation. The process is separated into two steps so that your generation options are remembered instead of your having to re-specify them each time you generate. For detailed information, see Chapter 31, “Working with Cube Generation.”

*Note:* When you generate a cube, SAS Activity-Based Management determines whether any model data has changed since the last time the model was calculated. If any model data has changed, the period/scenario association is calculated to ensure that the model data is correct. In addition, you can force the model to be calculated.

When SAS Activity-Based Management generates cubes, it can optionally perform calculations that pre-aggregate numeric data to give you faster performance when you work on the OLAP page. For large models, pre-aggregating data for cubes can take many hours to complete. The following factors are listed in order, from those that take more time to generate a cube, to those that take less time:

- ❑ the number of stages

For information about stages, see Chapter 11, “Attributes.”

- ❑ the number of dimensions

When you import model data, select fewer than six or eight dimensions. For information about dimensions, see Chapter 6, “Dimensions.”

- ❑ the length of assignment paths

Assignment paths should contain fewer than 10 items.

- ❑ the number of accounts and the number of assignment paths

For information about assignments and assignment paths, see Chapter 10, “Assignments.”

After you calculate costs and generate cubes, check for errors.

*Note:* Whenever you generate cubes, cubes that were generated previously are no longer available for viewing.

---

## Pre-Defined Cubes

### Single-Stage Contributions Cube

The single-stage contributions cube enables you to answer questions such as:

- ❑ Which activity costs contribute to product, customer, service cost, and so on?
- ❑ When costs are assigned within the Cost Object module, which subassembly costs contribute to product costs?
- ❑ What are the costs of resources that contribute to activities?

The single-stage contributions cube enables you to analyze the cost contributions from one assignment level back. Where costs originate or end does not matter. Typically, cost is contributed from:

- ❑ activities to cost objects
- ❑ resources to activities

You do not need to add stages attributes to accounts; you can use each module as a stage. For information about stages attributes, see Chapter 11, “Attributes.”

If you need to see driver quantities during OLAP analysis, use the single-stage contributions cube because it is the only cube that contains driver quantities.

## Multi-Stage Contributions Cube

The multi-stage contributions cube enables you to address issues and answer questions such as:

- ❑ Product A is not profitable. I want to trace the costs back through activities and then to resources that contribute costs to this product.
- ❑ What are the costs for Product B that originate in salary resources and are assigned through the Inspection activity to this product?

The multi-stage contributions cube enables you to analyze cost contributions into and out of stages defined in a model. You can define each module as a stage or you can use stages attributes. For information about stages attributes, see Chapter 11, “Attributes.”

## Resource Contributions Cube

The resource contributions cube enables you to analyze resource costs that contribute to a product, customer, service cost, and so on. Or, use the resource contributions cube to analyze the products, customers, service costs, and so on, that receive costs from resources.

The resource contributions cube enables you to study cost contributions from original accounts in which costs were entered to final accounts that do not assign costs to other accounts. Generally, these cost contributions are from resource accounts to cost object accounts, but where the original or final accounts reside does not matter.

*Note:* The resource contributions cube contains only the costs of the first account in an assignment path and the costs of the last account. It does not contain the intermediate accounts and their costs.

---

## Working on the OLAP Page

You can analyze dimensions and measures in a grid view, a chart view, and a Cube Explorer View. The predefined cube that you choose determines which dimensions and measures are available to you, as well as what types of analyses you can perform.

*Note:* Models are not displayed in the **Model** drop-down list on the OLAP page until you generate the model's cubes.

You can view data in one or two windows, depending on your needs.

The OLAP toolbar buttons that are available to you depend on which window is selected and on what type of information is displayed in the window.

---

## OLAP Page Performance

If the SAS Activity-Based Management server does not finish pre-aggregating data during cube generation, some data might be aggregated while you are using the OLAP page. This can result in poor performance. Therefore, you might want to increase the server's default time limit (about 10 hours) for pre-aggregating data. To increase the default time limit, contact your regional SAS Technical Support for assistance.

---

## OLAP Views

An *OLAP view* is a collection of information, such as a cube and a model, that controls how a cube is displayed on the OLAP page.

### Cube Availability

When you try to display a cube in an OLAP view, the following situations might cause the cube to be unavailable:

- ☐ another user is currently regenerating the cube
- ☐ the cube on which a saved OLAP view is based has been deleted

### Saving an OLAP View

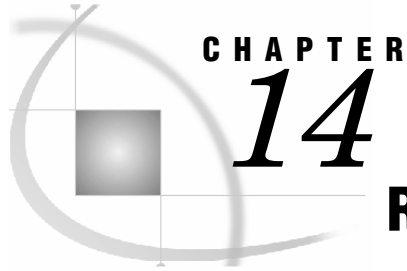
When you save an OLAP view, all of the following are saved:

- ☐ the cube
- ☐ the model
- ☐ the OLAP view's layout
- ☐ the OLAP view's contents

During analysis, changes that you make to a grid view, a chart view, and a Cube Explorer View are retained during a session, even when you return to the OLAP page after viewing other tabs. However, changes are lost when you close SAS Activity-Based Management or when you close a grid view, a chart view, or a Cube Explorer View.

If you want changes to be available later, save the OLAP view. However, the window positions and window states are not saved.





# CHAPTER 14

## Reporting Model Data

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## Reports

A report is created as an Adobe Acrobat PDF file.

As a Designer, the Report Wizard guides you through a series of steps for selecting data, running a report, and saving a report.

As a Viewer, you can view, print, and export a report set up for you by a Designer. If you want to be able to set up reports yourself, ask your SAS Activity-Based Management administrator to assign a Designer license to you.

---

### Model Size and Report Performance

Model size affects the performance of the reports. This is particularly true of the Multi-level Contributions report, which contains a large amount of detailed data. The time required to gather the data depends on the size of the model. Likewise, creating a report that includes data from multiple period/scenario associations requires more time than from a single period/scenario association.

When creating a report for a large model, consider creating a report for each module, instead of creating a single report for all modules. Likewise, create a report for a single period/scenario association, instead of creating a report for multiple period/scenario associations.

---

## Report Header

Each report has a *header* that lists pertinent information for that report. All or some of the following information can be listed in a report's header:

Information	Description
Model Name	the model selected for the report
Module	one or more modules selected for the report; each module starts on a new page
Period	the period selected for the report
Scenario	the scenario selected for the report
View Perspective	the dimension selected for the report
Filtered	indicates that one or more attributes were used to select data for the report; attributes that are used to select data are listed on a report's last page

---



---

## Setting up a Report

To create a report, the Report Wizard guides you through a series of steps for selecting data, running a report, and saving a report. The modules, period/scenario association, and dimensions that you select determine the data that is included in the report.

**Note:** To create a report you do not have to generate a cube. However, to create the following reports you must have already generated the Fact table for the model:

- Resource Contributions
  - Destination Furthest
  - Profit and Loss (Resource Contribution)
- 

## Saving Report Data

To save the report, you have the following options: exporting and publishing.

## Exporting a Report

If you want to edit a report after running it, such as adding a company logo, you must export the report.

When exporting a report to SAS Enterprise Guide, you must add a task to the SAS Enterprise Guide add-ins before you can view the report. The programmatic identifier (ProgID) is AbmEGPlugin.ReportData. For more information about SAS Enterprise Guide add-ins, see the SAS Enterprise Guide Help.



## Publishing a Report

If you want other users to see the report with the data reflecting a specific point in time, you can publish the report. Publishing the report enables other users to see the report without rerunning the report. For a report that requires considerable time to run, publishing the report can save other users time.

---

## Report Configurations

Once you open a report, you can save selections in the report to use later for a specific model or multiple models. This saved information is called a *report configuration*.

---

### Saving a Report Configuration

You are not saving the report's data. Rather, you are saving the report configuration for later use.

All report configurations saved by Designers and Viewers on the same SAS Activity-Based Management server are listed in Workspace Manager. Therefore, your organization might want to establish guidelines for saving and naming report configurations. Although all users see the report configuration listed in Workspace Manager, each user's access to the report configurations is controlled by each report configuration's ownership and permissions. For information about ownership and permissions, see Chapter 3, "Workspaces and Workspace Manager."

---

### Selecting a Period/Scenario Association

Before opening a saved report configuration, select the period/scenario association for the current model. When you open a saved report configuration, the current model's period and scenario are used.

---

## Report Templates

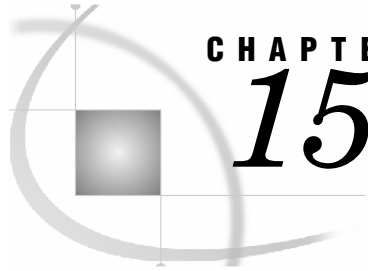
A *report template* is a file that specifies the layout of a report and the fields of data in a report (but not the data itself). When you create a report, you choose a report template.

---

### Pre-Defined Report Templates

SAS Activity-Based Management has predefined report templates that provide formats and that permit great flexibility in the amount and type of information to include in a report. For a list of the predefined report templates and their descriptions, see the Help.





# CHAPTER 15

## Column Layouts

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---

## Introduction

Each column in a grid in SAS Activity-Based Management displays a property. A *property* refers to any model item that holds the values that were entered by a user or that were calculated by SAS Activity-Based Management. For information about properties, see the Help.

A *column layout* is a collection of displayed columns, column formats, and the column order. You can customize column layouts on the following pages to display various information, such as properties, attributes, periods, and scenarios:

- ☐ the Resource module page
- ☐ the Activity module page
- ☐ the Cost Object module page
- ☐ the External Units module page

For more information, see Chapter 7, “Modules.”

When you save a customized column layout, you assign a name to the column layout so that you can retrieve it later. If a model is open, the column layout is applied to that model. If you select a column layout from Workspace Manager when a model is not open, the original model that was saved with the column layout is opened as well. The selected column layout is applied to the corresponding model, and the Resource module page is opened.

Each named column layout has four different aspects, one for each module. For example, instead of creating different named column layouts for each module, such as My Favorite for Resource module or My Favorite for Activity module, you can create one column layout named My Favorite that changes based on which module is displayed.

All column layouts that have been saved by all users on the same server are listed in Workspace Manager. Therefore, your organization might want to set up guidelines for saving and naming column layouts.

## Showing Multiple Period/Scenario Associations

By default, a new column displays values for a model's current period/scenario association. When you want to compare measures across period/scenario associations, create columns that have different period/scenario associations.

Display Name	Display Reference	2003 Cost	2001 Cost	2000 Cost
RESOURCE (PRIMARY PANE)		\$2,417,843.00	\$2,352,343.00	\$2,366,843.00
PERSONNEL	PER	\$123,100.000	\$57,600.000	\$72,100.000
COMPENSATION	PER-COMP	\$104,000.000	\$38,500.000	\$53,000.000
Salaries - Personnel	PER-SALARIES	\$104,000.000	\$38,500.000	\$53,000.000
Temp Salaries	510-8110350	\$0.000	\$1,000.000	\$15,000.000
Part Time Salaries	510-8110200	\$4,000.000	\$2,500.000	\$5,000.000
Non-Exempt Salaries	510-8110100	\$8,000.000	\$10,000.000	\$8,000.000
Exempt Salaries	510-8110050	\$75,000.000	\$25,000.000	\$25,000.000

## Default Column Layout

The default column layout is the column layout that is shown to all users by default, before any columns are added or removed and before any columns are formatted. The columns that are included are Display Name, Display Reference, and Cost.

After changing the default column layout, do not save the column layout. If you save changes to the default column layout, the default column layout is changed for all users. Instead, save your changes to the default column layout in a separate column layout.

*Note:* The column Display Name is the system-generated name for an item, not the name that you choose or that you can edit. To display the name that you can edit, add to the grid a column to display the property Name. For information about adding a column, see Chapter 28, "Working with Column Layouts."

## Formatting Columns

When you add a column to the following pages, SAS Activity-Based Management assigns default formatting to the column:

- ☐ the Resource module page
- ☐ the Activity module page

- ❑ the Cost Object module page
- ❑ the External Units module page

The default column formatting is based on the following factors:

- ❑ the type of underlying data
- ❑ your Microsoft Windows Regional Options
- ❑ the default currency
- ❑ the display precision that you specified in your options

You can change some of the formatting for individual columns. You can specify a column's general appearance, such as text color, background color, cell alignment, and font style. Additionally, you can specify the currency and the format type in the column. Changing the currency or the format type affects how the underlying data is displayed; it does not change the currency or the format type of the underlying data itself.

Formatting affects the display of information in the grid; cubes on the OLAP page display the model's base currency in the view title bars. Measures on the OLAP page are formatted as numbers.

Some reports can display any two currencies that were specified in exchange rates tables. In addition, you can export a report to another application, and then change the formatting. For information about exchange rates, see Chapter 16, "Currencies and Exchange Rates."

---

## Color, Style, and Alignment

To highlight important information, you can specify the foreground color and the background color for a column. Also, you can specify the font style, such as bold or italic, and the alignment of data within a column, such as right-aligned or left-aligned.

To ensure that columns are not too wide or too narrow for their contents, you can specify that column widths should change according to the width of each column's contents.

---

## Type

A column's format type controls the column's basic appearance.

### Currency Type

The Currency type displays column values as currency. A column can display either the model's base currency or a currency that was specified in an exchange rates table. You can select any available currency, including the currencies that are not specified in an exchange rates table. If you select a currency that does not have an exchange rate, all of the column values are displayed as zeros.

### Number Type

The Number type displays column values as numbers.

## Percentage Type

The Percentage type displays column values by multiplying each value by 100 and then appending the percentage symbol (%).

*Note:* The Percentage type pertains only to individual column values. The percentage that each column value contributes to the total of all the column values is not calculated.

## Text Type

The Text type displays column values as text.

## Checkbox Type

The Checkbox type displays column values as check boxes. Each cell is either checked or not checked.

---

## Available Format Types

The format types that are available for a specific column depend on the data in the column. For example, a column that contains text cannot be formatted to display as percentages or as numbers because the underlying data is not numeric. The following table lists the format types for the underlying data:

Underlying data	Available format types
Text	Text
Cost or rate	Currency (default) Number
Number or quantity	Number (default) Currency Percentage
Percentage	Percentage (default) Number
Boolean	Checkbox

---

## Negative Numbers

You can specify how negative numbers are displayed. The default appearance for negative numbers is based on your Microsoft Windows Regional Options.

---

## Precision

Precision is the number of decimal places that are displayed for numbers in a column. Your user options affect precision.

*Tip:* Before you add new columns, set the default precision in your user options. Then, if necessary, set the precision for any column in which you want the precision to be different from the default precision.

*Note:* For the following properties, if you select the Percentage type, each column value can have only two decimal places:

- ☐ Driver Percentage
- ☐ Idle Percentage

---

## Currency Formatting

The number of decimal places that you specify in your options overrides the No. of digits after decimal setting in your Microsoft Windows Regional Options.

Change this...	In this dialog box...	Example
<b>Positive currency format</b>	Customize Regional Options	1,1 F
<b>Negative currency format</b>	Customize Regional Options	-1,1 F
<b>Decimal symbol</b>	Customize Regional Options	,
<b>No. of digits after decimal</b>	Customize Regional Options	2
<b>Digit grouping symbol</b>	Customize Regional Options	a space
<b>Digit grouping</b>	Customize Regional Options	123 456 789

---

## Displaying the Currency Symbol

You can add columns on the Resource module page, the Activity module page, and the Cost Object module page to display different currencies in the same display.

You can choose to display the currency symbol as part of the number formatting, or in column headings. If you choose to display the currency symbol in column headings, then you can choose to display the currency symbol, the currency code, both, or neither. You might want to display only the currency code if your computer's fonts do not support currency symbols.

---

## Saving a Column Layout

When you save a column layout, the following information is saved:

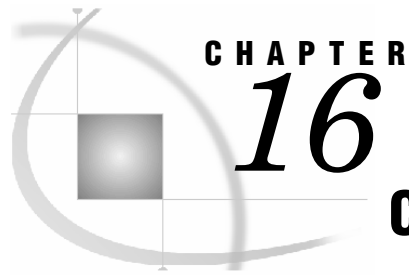
- ☐ the description
- ☐ the column headings

- ❑ the information that is displayed in each column, and the period/scenario association to which the information pertains
- ❑ the format for each column, and the order of the columns from left to right
- ❑ the model
- ❑ the column widths
- ❑ the open module

The following information is not saved:

- ❑ the number of assignments panes that are visible





## Currencies and Exchange Rates

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### Currencies

A *currency* represents a unique monetary system that is identified by a name and by a three-letter code (currency code).

You can display a model's costs in more than one currency simultaneously. However, you must first define the currencies and their exchange rates. SAS Activity-Based Management can display a model's costs in whatever currency you select, using the exchange rate that is associated with each currency. For more information, see Chapter 27, "Working with Currencies."

---

#### Base Currency

When you create a model, you can select the *base currency* that you want to use for calculating the model's costs. SAS Activity-Based Management saves the base currency with the model.

*Note:* Once you set a model's base currency, you cannot change it later.

---

### Exchange Rates

An *exchange rate* is a multiplier that is used to convert values from one currency to another currency. You enter exchange rates in an exchange rates table. Because exchange rates tables are shared by all the models on the same SAS Activity-Based Management server, you can compare costs between models.

When you enter an exchange rate in an exchange rates table, the exchange rate's corresponding multiplier is automatically entered. After entering an exchange rate, you can change it.

You can easily add all the euro exchange rates at once. After adding the default euro exchange rates, you can change them. If a period is before 1999, the euro currency is not available.

Exchange rates can vary from one period/scenario association to another period/scenario association. To add exchange rates quickly, you can copy an exchange rates table from one period/scenario association to another period/scenario association.

The display precision that you see in an exchange rates table is determined by your user options.

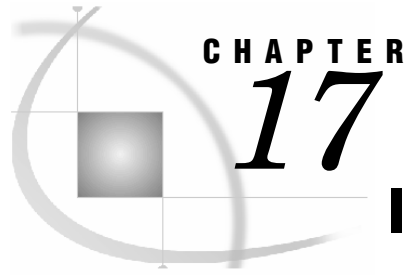
For more information about working with exchange rates, see Chapter 27, “Working with Currencies.”

---

## Selecting Currencies for an Exchange Rates Table

A currency is not the same as a locale. A locale can support multiple currencies. For example, you can use Microsoft Windows to set the locale to French (France). In SAS Activity-Based Management, you can format a unit cost column for francs with a currency of France (F) and add a column and format it with a currency of euro.

All currencies are available for you to specify in an exchange rates table. You add the currencies that you want to use. For more information about selecting currencies, see Chapter 27, “Working with Currencies.”



# CHAPTER 17

## Importing Data and Exporting Data

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## Introduction

This chapter discusses importing and exporting data at a conceptual level. For task-based instructions and procedures related to importing and exporting data, see Chapter 33, “Working with Importing Data and Exporting Data.”

In general, there are two ways to build a model:

- ☐ interactively enter data into a model
- ☐ import data into a model

Because manually building a model is time-consuming, error-prone, and leaves little time for analysis, importing data is the recommended method.

---

## Building a Model by Importing Data

To build a model or to add data to a model in SAS Activity-Based Management, you can interactively enter data in Model mode or you can import data. You can import data from the following sources:

- ❑ an Oros model (not addressed in this document)
- ❑ a database
- ❑ an XML file

When you import data, you can use the wizards in SAS Activity-Based Management, or you can use the SAS Services API to write a program that imports data from a database or from an XML file. (Writing a program is not addressed in this document.)

---

### Importing Data: General Steps

The following steps describe how to import data:

- 1 Verify that a Designer license has been assigned to you.
- 2 Import the data. You can choose to import the entire data set at once, or you can import the data in groups and populate the model in the following general steps:

**Import 1:** The first import step defines the existence of the model and includes the Dimension, DimensionOrder, Period, and Scenario tables. This step is equivalent to the finishing point of the New Model Wizard when you interactively build a model.

**Import 2:** The second import step defines the model's content (resources, activities, and cost objects) and includes the Account, DimensionLevel, and DimensionMember tables. This step is equivalent to the finishing point of the New Account Wizard when you interactively create accounts. The Account table includes the revenue and sold quantities.

**Import 3:** The third import step loads costs into the model and includes the EnteredCostElement and ExternalUnit tables. This step is equivalent to the point where you create cost elements in the New Account Wizard when you interactively build a model.

**Import 4:** The fourth import step flows costs through the model using assignments with quantities for flow calculation. This step includes the Assignment and Driver tables. This step is equivalent to the point where you interactively create assignments and specify driver quantities in the New Account Wizard.

**Import 5:** The fifth import step creates attributes for analysis and numerical attributes for performance measures (cost per unit). This step includes the DimensionAttributeAssociation, ValueAttribute, and ValueAttributeAssociation tables. This step is equivalent to creating attributes and attaching attributes to accounts when you interactively build a model.

**Import 6 (optional):** The sixth import step includes the AssignmentNonUnique, CurrencyRate, PeriodLevel, and ScenarioLevel tables.

### 3 Check for errors and warnings.

For a detailed summary about which tables to group in each step and in what order to import tables, see the following table. For information about the tasks of importing data and exporting data, see Chapter 33, “Working with Importing Data and Exporting Data.”

## Import Process Summary

The following table summarizes the process for importing your data in steps:

Table name	Requires dimension signature	Requires reference numbers	Has multiple keys?	Import step order
Dimension			No	Import 1
DimensionOrder			No	Import 1
Period			No	Import 1
Scenario			No	Import 1
Account*	Yes	Yes	Yes	Import 2
DimensionLevel			No	Import 2
DimensionMember			No	Import 2
EnteredCostElement		Yes	Yes	Import 3
ExternalUnit	Yes	Yes	Yes	Import 3
Assignment		Yes	Yes	Import 4
Driver			No	Import 4
DimensionAttributeAssociation	Yes	Yes	Yes	Import 5
ValueAttribute			No	Import 5
ValueAttributeAssociation	Yes	Yes	Yes	Import 5
AssignmentNonUnique		Yes	Yes	Optional
CurrencyRate			No	Optional
PeriodLevel			No	Optional
ScenarioLevel			No	Optional
*Note: The Account table must contain both a dimension signature and a reference number, while the other tables listed with <b>Yes</b> in both columns must have either a dimension signature or a reference number.				

For a more detailed explanation of dimension signatures, reference numbers, and their requirements, see the “Understanding Keys” section later in this chapter.

## Updating a Model with New Structure and New Periodic Values

The following table lists the required tables for updating a model with new structure and new periodic values:

Table name
Period
Scenario
Account
DimensionLevel
DimensionMember
EnteredCostElement
ExternalUnit
Assignment
Driver
DimensionAttributeAssociation
ValueAttribute
ValueAttributeAssociation
ValueAttributePeriodicDef

## Updating a Model with New Periodic Values

The following table lists the required tables for updating a model with new periodic values:

Table name
Account
EnteredCostElement
ExternalUnit
Assignment
ValueAttributeAssociation
ValueAttributePeriodicDef

## Preparing the Source Data

As you prepare the source data, consider the importance of designing a sound model. The design of a SAS Activity-Based Management model determines the data that you need to provide.

- ☐ What are the dimensions to use in defining the model?
- ☐ What sources will you have available for the expenses?

- ❑ What sources will you have available for transactional quantities to use as drivers?

The availability of this data in an existing electronic format affects your data collection and transformation requirements. For more detailed model design information, see Chapter 4, “Models.”

---

## Importing Data from a Database

Before you import data from a database, ensure that the SAS Activity-Based Management server can access the database. Then, review the information about connection strings that is presented in the “Connection Strings” section later in this chapter. To import the data, you can use the wizard, or you can write a program.

You can import information from any data source that supports OLEDB. The following types of data sources are the most common:

- ❑ SAS
- ❑ Microsoft SQL Server
- ❑ Oracle
- ❑ Microsoft Access
- ❑ Microsoft Excel workbook (spreadsheet ranges)
- ❑ SAS Activity-Based Management Adapter for SAP R/3

## The Data Schema

The database to be imported must match the data schema. For task-based information regarding the data schema, see the Help. When the database is imported, SAS Activity-Based Management attempts to convert all values in the database to a reasonable format type. For example, if imported dates are in the Microsoft SQL Server varchar format, the dates are converted to binary dates that are compatible with the SAS Activity-Based Management database. SAS Activity-Based Management attempts to convert all numeric values.

## Understanding Keys

The SAS Activity-Based Management model is based on a dual-key concept. To define any account in the model, you can describe it based on its dimension signature or its reference.

### Dimension signature key

The dimension signature consists of a dimension reference and a dimension member reference for each dimension used to define an account. In the following example, the Resource module has been defined based on two dimensions (Region and General Ledger Account). The individual accounts are defined as intersections of these two dimensions. So, the **Wages** account (highlighted) consists of an intersection of the Region=Beaverton and the General Ledger Account=Wages. This account definition can be displayed in the grid with the intersection name (the column **IntsctnName**) or the intersection reference (the column **IntsctnRef**) properties.

Display Name	Reference	DimRef	DimMemRef	IntsctnName	IntsctnRef
RESOURCE (PRIMARY PANE)					
USA	USA	Region	USA	USA x All	USA x All
Oregon	Oregon	Region	Oregon	Oregon x All	Oregon x All
Beaverton	Beaverton	Region	Beaverton	Beaverton x All	Beaverton x All
Wages	B_WG	GL	Wages	Beaverton x Wages	Beaverton x Wages
Operating Expenses	B_OE	GL	Operating Expenses	Beaverton x Operating Expenses	Beaverton x Operating Expenses
Equipment Expenses	B_EE	GL	Equipment Expenses	Beaverton x Equipment Expenses	Beaverton x Equipment Expenses
Eugene	Eugene	Region	Eugene	Eugene x All	Eugene x All
Wages	E_WG	GL	Wages	Eugene x Wages	Eugene x Wages
Operating Expenses	E_OE	GL	Operating Expenses	Eugene x Operating Expenses	Eugene x Operating Expenses
Equipment Expenses	E_EE	GL	Equipment Expenses	Eugene x Equipment Expenses	Eugene x Equipment Expenses

The dimension signature for this account is based on the dimensions that are used and the dimension members that are used, so the dimension signature for this account requires multiple values as shown here:

Property	Examples
DimRef1	Region
DimMemberRef1	Beaverton, Eugene
DimRef2	General Ledger Account (GL)
DimMemberRef2	Wages, Operating Expenses, Equipment Expenses

### Reference key

In the previous example, the reference for the account is **B\_WG**, and this single value uniquely identifies the account.

### Guidelines for using dimension signatures and references

When importing data for assignments, cost elements, dimension attribute associations, and value attribute associations, you can choose to import with either a dimension signature or reference key. As you define the extraction and transformation processes to create the staging tables for SAS Activity-Based Management, you should be aware of the advantages and disadvantages of using one method over another.

If you are importing model data using references rather than dimension signatures, you must define both the reference and the dimension signature in the Account table. The Account table can be used as a mapping index to match the imported data in staging tables (Assignment, EnteredCostElement, DimensionAttributeAssociation, and the ValueAttributeAssociation tables) to their respective dimension signature as defined in the model. The advantage of using references rather than dimension signatures is that the import tables can have significantly fewer columns. For example, in a two-dimension model, the reference would be a single column to import and the dimension signature would be four columns to import. The total impact of this change to the Assignment table would be six fewer columns required.



If you are importing model data using dimension signatures, you must include the dimension reference and dimension member reference for each dimension, which can be tedious to maintain. For example, in a two-dimension model, the required keys include four columns for the two dimensions. However, there is one advantage of importing data using dimension signatures: you can automatically create new accounts that appear in the transaction tables (Assignment, EnteredCostElement, DimensionAttributeAssociation, and the ValueAttributeAssociation tables). The dimension signature method provides a distinct advantage over the reference key method because the reference key method skips any new accounts that are found in the transaction tables and fails to import them.

## The Database Tables in the Data Schema

The following tables define the SAS Activity-Based Management data schema. Each table corresponds to a specific structural or periodic aspect of a model, such as periods, scenarios, dimensions, and so on. Use the data schema to create a database that will hold the information you want to import into a model. This data schema is also used by SAS Activity-Based Management to export models to XML files.

When you build a new model by importing data, you must import the following tables:

- ☐ Dimension
- ☐ DimensionOrder
- ☐ DimensionLevel
- ☐ DimensionMember
- ☐ Driver
- ☐ Account
- ☐ EnteredCostElement
- ☐ Assignment

*Note:* You must define at least one dimension for each of these tables or the import will fail or an empty model will be created.

The following table provides a brief description of each table. For information about the columns contained in each table and the fields that are required when importing data, optional when importing data, and calculated (available only when exporting data), see the Help.

Table Name	Description
Model	<p>Specifies the model name, the description, and the default values for the model.</p> <p>This table is not required when importing data because you must specify the model name when importing data.</p>
Period	<p>Specifies the period names, the descriptions, and the start dates and the end dates.</p> <p>If the required periods already exist on the SAS Activity-Based Management server, then this table is not required when importing data.</p>
PeriodLevel	<p>Specifies the level names for period hierarchies.</p> <p>If the required period levels already exist on the SAS Activity-Based Management server, then this table is not required when importing data.</p>
Scenario	<p>Specifies the scenario names and the descriptions.</p> <p>If the required scenarios already exist on the SAS Activity-Based Management server, then this table is not required when importing data.</p>
ScenarioLevel	<p>Specifies the level names for scenario hierarchies.</p> <p>If the required scenario levels already exist on the SAS Activity-Based Management server, then this table is not required when importing data.</p>
CurrencyRate	<p>Specifies currency exchange rates for each period.</p> <p>If multiple currencies are not required in the model, then this table is not required when importing data.</p>
Dimension	<p>Specifies the dimensions in the model. This table must include the dimensions required for building the structure of the Resource module, the Activity module, the Cost Object module, and the External Units module. The Dimension table includes the dimension attributes, if dimension attributes are used in the model. Do not include numeric attributes, text attributes, and Boolean attributes.</p> <p>This table is required when importing data.</p>
DimensionOrder	<p>Specifies the order of the dimensions in the Resource module, the Activity module, the Cost Object module, and the External Units module. The records in the DimensionOrder table must be sorted according to module type and sequence number.</p> <p>This table is required when importing data.</p>

Table Name	Description
DimensionLevel	Specifies level names in a dimension hierarchy. This table is required when importing data.
DimensionMember	Specifies the hierarchy for each dimension. This table is required when importing data.
Account	Specifies the dimension intersections in the Resource module, the Activity module, and the Cost Object module. The combination of the columns DimRef<n> and DimMemberRef<n> for each valid dimension is the dimension signature. Do not include dimension signatures for the External Units module in this table. This table is required when importing data.
ExternalUnit	Specifies the dimension intersections for the External Units module. The combination of the columns DimRef<n> and DimMemberRef<n> for each valid dimension is the dimension signature. If the model does not use external units, then this table is not required when importing data.
EnteredCostElement	Specifies the entered cost elements and the account that is associated with each entered cost element. The account that is associated with an entered cost element can be specified with the column AccountReference or with the columns DimRef<n> and DimMemberRef<n>. If the model does not use entered cost elements, then this table is not required when importing data.
Driver	Specifies the drivers. This table is required when importing data.
Assignment	Specifies the assignments, including assignments from the External Units module. The accounts in an assignment can be specified with the columns SourceReference and DestinationReference or the columns SourceDimRef<n> and SourceDimMemberRef<n>, and DestinationDimRef<n> and DestinationDimMemberRef<n>. This table is required when importing data.
AssignmentNonUnique	Specifies the driver quantities on destination accounts for all drivers where the driver quantity type is nonunique. The driver quantity on a destination account can be specified with the column DestinationReference or the columns DimRef<n> and DimMemberRef<n>. This table is not required when importing data because the unique and nonunique driver quantities can be specified in the Assignment table.
ValueAttribute	Specifies the attribute hierarchy for numeric attributes, text attributes, and Boolean attributes. This table is not required when importing data.
ValueAttributePeriodicDef	Specifies the default value and formula for the numeric attributes. This table is required when importing data that has value attributes.

Table Name	Description
ValueAttributeAssociation	Specifies the accounts that are associated with numeric attributes, text attributes, and Boolean attributes. The accounts can be specified with the column ItemReference or the columns DimRef<n> and DimMemberRef<n>. <p>This table is not required when importing data.</p>
DimensionAttributeAssociation	Specifies the accounts that are associated with dimension attributes. The accounts can be specified with the column ItemReference or the columns DimRef<n> and DimMemberRef<n>. <p>This table is not required when importing data.</p>

## Creating Sample Database Tables

To understand how to create database tables, you should interactively import a sample model. The sample model demonstrates the dimensions and dimension order for each module, the default period/scenario association, and anticipated periods and scenarios. Use the sample model as a source for the model export to a database for general use.

Create the sample database tables by performing the following general steps:

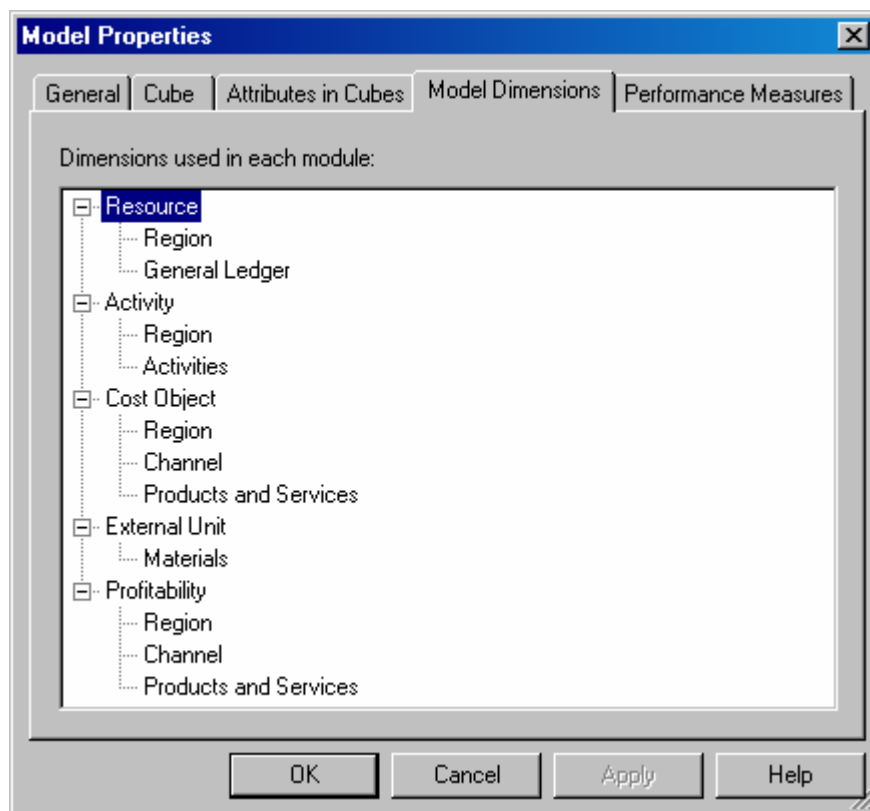
- 1 Import a sample model in XML format. The sample models are located in the following directory:

**C:\Program Files\<Client\_Installation\_Location>\Activity-Based Management Solution\Client\Samples\Models\Native**

- 2 Create a target database and ensure that it exists to export your sample database.
- 3 Archive the model.

This creates a set of database tables. For information about this task, see Chapter 33, “Working with Importing Data and Exporting Data.”

- 4 Review the contents of the model.



If the model that you want to import has the same number of dimensions in each module as the sample model previously shown, you can use the sample model directly. The External Units module consists of one dimension; the Resource module consists of two dimensions; the Activity module consists of two dimensions; and the Cost Object module consists of three dimensions. After you export the sample database, modify the contents of the tables to reflect your own data in the appropriate dimension signature columns.

If the model that you want to import has a different number of dimensions in each module as the sample model, then the sample model can still provide a good starting point for creating a staging table template. But, you must customize all of the tables that require the dimension signature (the Account, Assignment, EnteredCostElement, ExternalUnit, DimensionAttributeAssociation, and ValueAttributeAssociation tables) to include all of the dimensions that you used in the model that you want to import.

Number of dimensions in the imported model	Difference in the number of dimensions in the sample model
External Units module: two dimensions	Add one dimension
Resource module: one dimensions	Remove one dimension
Activity module: three dimensions	Add one dimension
Cost Object module: five dimensions	Add two dimensions

Exporting to a database creates all of the required tables with most of the required columns. The required columns in some of the tables depend on the number of

dimensions in a model. Because each dimension signature consists of a pair of columns, any table with dimension signature columns will add columns as the number of dimensions in the model increases. Although you can manually create the tables, exporting to a database reduces the risk of omitting required tables, omitting required columns within tables, and creating typographical errors. And, it gives you a viable sample to follow in developing your own staging table content and when building a SAS Activity-Based Management model.

## Database Table Relationships, Dependencies, and Data Values

There are no database-enforced relationships between any of the SAS Activity-Based Management tables, and there are no dependencies between tables. You can specify any values in the tables that you need. However, while the data is being imported, SAS Activity-Based Management checks the validity of the values and rejects any invalid records. You will receive messages that indicate any errors.

If you import all the tables at one time, the wizard will import the tables in the correct order, so errors are minimized. However, if you import individual tables, then you must ensure that the tables are imported in the correct order, as noted in the “Importing Data: General Steps” section. Here are a few examples of common errors made while importing tables:

- ❑ A record in the DimensionMember table does not correspond to a record in the Dimension table. You must import the Dimension table before you import the DimensionMember table.
- ❑ A record in the Account table does not correspond to a record in the DimensionMember table. You must import the DimensionMember table before you import the Account table.
- ❑ A record in the Assignment table (where the source account or the destination account is) is not in the Account table. You must import the Account table before you import the Assignment table. If you select the option to create a new Account through the Assignment’s dimension signature, you do not need to import the Account table first.

## Data from Multiple Databases

You can import data from multiple databases by first creating a database view. The view specifies which data you want to import from multiple tables in multiple databases. Then, you can use the wizard.

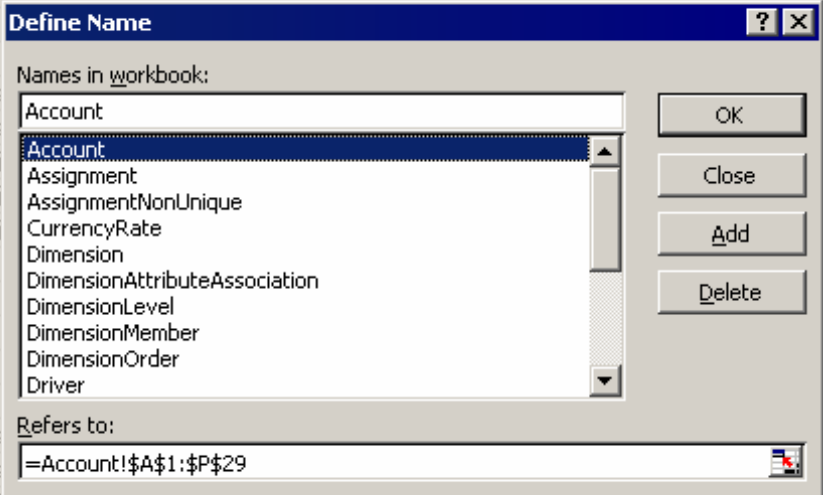
Alternatively, you can use the SAS | ABM Web Services Integration API to write a program that uses an XML import configuration to specify each database in a separate StagingArea element. For information about the StagingArea element, see the Help. For information about the SAS | ABM Web Services Integration API, see the SAS Activity-Based Management product page on your local server:  
[http://<Your\\_Server\\_Name>/SasSolutions/ABM/](http://<Your_Server_Name>/SasSolutions/ABM/).

## Data from a Microsoft Excel Workbook

If you want to import data from a Microsoft Excel workbook, you must create named ranges for the different sets of data. To create a named range, highlight the data and select **Insert > Name > Define**. Multiple named ranges must be defined for each

required stage table inside a single Microsoft Excel spreadsheet, as shown in the following example:

	A	B	C	D	E	F
1	Period	Scenario	Reference	Name	ModuleType	DriverName
2	2003	ACTUAL		Sales and Mktg_Ads and Shows	Resource	Ads Placed
3	2003	ACTUAL		Sales and Mktg_Deprec and Facilities	Resource	Sq Feet
4	2003	ACTUAL		Sales and Mktg_Salary	Resource	Hours Salary
5	2003	ACTUAL		Engineering_Deprec and Facilities	Resource	Sq Feet
6	2003	ACTUAL		Engi		
7	2003	ACTUAL		Engi		
8	2003	ACTUAL		Meta		
9	2003	ACTUAL		Meta		
10	2003	ACTUAL		Sewi		
11	2003	ACTUAL		Sewi		
12	2003	ACTUAL		Sewi		
13	2003	ACTUAL		Sale		
14	2003	ACTUAL		Sale		
15	2003	ACTUAL		Sale		
16	2003	ACTUAL		Engi		
17	2003	ACTUAL		Engi		
18	2003	ACTUAL		Meta		
19	2003	ACTUAL		Meta		
20	2003	ACTUAL		Sewing_Cutting	Activity	Components
21	2003	ACTUAL		Sewing_Sew	Activity	Hours Pl



## Importing Data from an XML File

Before you import data from an XML file, ensure that the SAS Activity-Based Management server can access the XML file. To import the data, you can use the wizard, or you can write a program.

The XML file should be an XML file that was exported from SAS Activity-Based Management. You should not import a manually created XML file, because it is challenging to dynamically create an XML file with the correct format for directly importing model data.

## XML Import Configurations

Create one XML import configuration for new structures. Create a different XML import configuration to delete or update existing structures. Do not add, delete, and update structures in the same XML import configuration. For examples of XML import configurations, see the Help.

## Period/Scenario Associations

Period/scenario associations are ignored unless there is a model element (such as an account or a cost element) that contains data for the period/scenario association.

## Exporting Model Data

You can export model data to a database (Microsoft SQL Server, Oracle, or Microsoft Access) or to an XML file. If you want to export only a portion of the model data, you must export to a database. If you export to an XML file, all model data is exported. If you want to export all of the model data, you can export to a database or to an XML file.

The following table lists some of the reasons why you might export model data. For each reason, the table shows whether you would export to a database or to an XML file.

Reason for exporting model data	Export destination
To export model data and to manipulate the data, and then to import the data back into the model or into another model	Database
To archive a model	Database XML file (requires less disk space)
To export some of the items in the model, but to exclude other items	Database

## Using the Export Wizard to Export Data

When you use the Export Wizard to export model data, you can choose to export to a database or to an XML file. If you export to a database, you can select individual database tables and properties to export. If you export to an XML file, you must export all of the model data.

*Note:* If the database or the XML file already exists, it is overwritten.

## Archiving a Model

When you archive a model, important model data is preserved so that the model can be restored to a saved state. Although not all model data is preserved, user-entered data and unique data are saved. Model data that is not saved is regenerated by SAS Activity-Based Management when the model is restored and calculated.

You might want to archive a model for the following reasons:

- ☐ to create a backup
- ☐ to save a version before making major changes
- ☐ to restore a model after upgrading a SAS Activity-Based Management server
- ☐ to transport a model between SAS Activity-Based Management servers

## Exporting Data for Further Business Analysis

Exporting model data enables you to make better business decisions in the following areas:



## **Product costing**

Determining a product's true cost is critical. Exporting results for product costing improves business by:

- ☐ focusing on leading, rather than lagging, indicators to corporate success
- ☐ indicating what products truly cost and focusing management efforts
- ☐ determining what products you should sell and your competitive advantage
- ☐ identifying how you can change your processes to improve costs

Results include:

- ☐ detailed product cost report
- ☐ product cost activity contribution report
- ☐ resource contribution analysis report
- ☐ activity and driver unit rates report for forecasting

## **Profitability analysis**

The challenge is to determine the profitable products produced and the services delivered. Exporting results for profitability analysis improves business by:

- ☐ determining the most and least profitable product sold
- ☐ determining the most profitable customers and market segments served
- ☐ facilitating focused strategic marketing to emphasize profitable products
- ☐ steering corporate process improvement efforts to the greatest benefits

Results include:

- ☐ product profitability cliff analysis
- ☐ product profitability analysis
- ☐ customer and market segment profitability analysis
- ☐ activity effectiveness analysis
- ☐ resource consumption analysis

## **Planning and budgeting**

The ability to predict future financial results and appropriately allocate resources is critical. Exporting results for planning and budgeting improves business by:

- ☐ identifying resource constraints or areas of excess capacity that restrict future growth
- ☐ increasing accuracy and accountability for the budget using activity-based analysis
- ☐ providing scenario analysis to evaluate strategic alternatives
- ☐ reducing the budgetary cycle time and improving responsiveness to market conditions

Results include:

- ☐ forecasted profitability report
- ☐ capacity utilization reports
- ☐ resource capacity constraints and cost reports

- ❑ activity effectiveness analysis
- ❑ budget variance reports for costs and demands

### **Service costing**

Understanding the cost behavior of the services your organization delivers is critical. Effective management of services depends on understanding the activities required to deliver the services and the relative costs of those activities. Exporting results for service costing improves business by:

- ❑ increasing accountability between the customer demands and the costs incurred
- ❑ identifying the cause-and-effect nature of services and work performed
- ❑ determining the activity consumption for services delivered
- ❑ providing scenario analysis to evaluate service-level alternatives

Results include:

- ❑ services trend analysis report
- ❑ services activity consumption report
- ❑ services resource contribution report
- ❑ services profitability analysis by customer and service category

### **Shared services costing**

Understanding the cost behavior of the shared services your organization delivers to internal customers is critical. Exporting results for shared service costing improves business by:

- ❑ increasing accountability between the customer demands and the costs incurred
- ❑ identifying the cause-and-effect nature of services and work performed
- ❑ determining the activity consumption for services delivered
- ❑ determining an appropriate benchmark for make-or-buy decisions for services
- ❑ providing scenario analysis to evaluate service-level alternatives

Results include:

- ❑ shared services trend analysis report
- ❑ shared services report for internal billing or cost allocations
- ❑ shared services activity consumption report
- ❑ shared services resource contribution report

## **Determining the Tables to Export for Business Analysis**

When you export model data for business analysis, you must determine which tables to export with the appropriate calculated values. You can export the following SAS Activity-Based Management standard staging tables with calculated values.

**Account table**

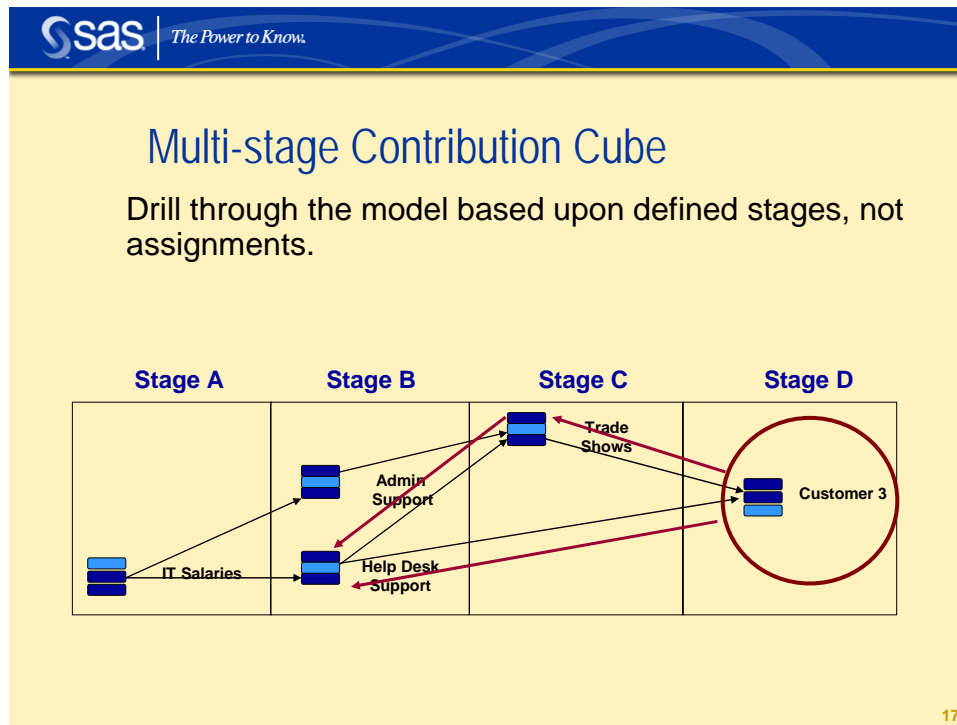
Exporting the Account table with the calculated values enables you to perform additional analysis on any account, which is useful for static, calculated values analysis, but is not useful for cost-flow analysis. The types of fields in an exported Account table include:

- ❑ **Definitional**
  - ❑ Keys: dimension signature and reference
  - ❑ Model, module type, period, scenario, driver names, model name, unit of measure, periodic note
- ❑ **Entered values:** OutputQuantityUE, Revenue, SoldQty, TDQUE
- ❑ **Calculated values**
  - ❑ Cost values: AllocatedCost, AssignedCost, AssignedIdleCost, AssignedNonReciprocalCost, AssignedReciprocalCost, DrivableCost, DrivenCost, DriverRate, EnteredCost, IdleCost, InventoryCost, ReceivedAllocatedCost, ReceivedAssignmentCost, ReceivedBocCost, ReceivedCost, ReceivedDrivenCost, ReceivedNonReciprocalCost, ReceivedReciprocalCost, UnassignedCost, UsedCost
  - ❑ Driver data: AssignedIdleQuantity, DrivenQuantity, IdlePercentage, IdleQuantity, InventoryQuantity, OutputQuantity, TDQ, TDQBasic, TDQCalculated, UnassignedQuantity, UsedQuantity
  - ❑ Profitability analysis (uses both entered values and calculated values): Cost, Profit, Revenue, SoldQuantity, UnitCost, UnitProfit, UnitRevenue
- ❑ **Attributes (specific to the model design)**
  - ❑ Dimensional attributes—used for grouping
  - ❑ Numerical attributes—entered values
  - ❑ Calculated attributes—performance measures

**Assignment table**

Exporting the Assignment table with the calculated values enables you to trace specific costs as they flow through a model. The Assignment table provides the cost flow and driver-quantity flows between each source account and destination account. It contains the content from the single-stage contributions OLAP cube fact table. The types of fields in an exported Assignment table include:

- ❑ **Definitional**
  - ❑ Keys (for both the source account and destination account): dimension signature and reference
  - ❑ Destination module type, driver name, model name, period, scenario, source module type
- ❑ **Driver analysis:** DriverQuantityBasic, DriverQuantityCalculated, DriverQuantityFixed, DriverQuantityVariable, DriverWeightFixed, DriverWeightVariable, IdleDriverQuantity, IdleDriverQuantityUE
- ❑ **Cost flow:** allocated cost, cost, idle cost, source cost
- ❑ **Attributes (specific to the model design)**
  - ❑ Dimensional attributes—used for grouping
  - ❑ Numerical attributes—entered values
  - ❑ Calculated attributes—performance measures

**Multi-stage contributions cube fact table – (with calculated values)**

The cube fact table holds all of the calculations for cost flow through the model. The multi-stage contributions cube holds cost flow from each step through the model. Using the multi-stage contributions cube, an analysis can be created to trace a single, final cost object, through each contributing cost, to the activities, then back to the original resource. In the previous example, all stages (A through D) are available for analysis in the multi-stage contributions cube.

For more information about fact tables, see Chapter 13, “Analyzing Model Data with OLAP.”

The resource contributions cube holds the cost flow from the end points of an assignment; the resource contributions cube enables you to compare the final destination with the original-entered cost elements. In the previous example, only Stage A and Stage D are available in the cube. The resource contributions cube is most useful in determining (for a given product) which departments contribute effort to produce the product.

**Multi-stage cube**

The types of fields in an exported multi-stage contributions cube include:

- ☐ Definitional
  - ☐ Keys for each account (resources, activities, cost objects, external units): dimension signature and reference
  - ☐ Activity module type, Cost Object module type, model name, period, Resource module type, scenario
- ☐ Entered values: OutputQuantityUE, Revenue, SoldQty, TDQUE

- ❑ Calculated values: Cost, OutputQuantity
- ❑ Attributes specific to the model design (resources, activities, cost objects, external units)
  - ❑ Dimensional attributes—used for grouping
  - ❑ Numerical attributes—entered values
  - ❑ Calculated attributes—performance measures

### **Resource contributions cube**

The types of fields in an exported resource contributions cube include:

- ❑ Definitional
  - ❑ Keys for each beginning or final account (resources, cost objects): dimension signature and reference
  - ❑ Destination module type, model name, period, scenario, source module type, source reference
- ❑ Entered values: DestinationSoldQuantity
- ❑ Calculated values: ContribCost, ContribPcnt, DestinationCost, DestinationOutputQuantity
- ❑ Attributes specific to the model design for each beginning or final account (resources, cost objects)
  - ❑ Dimensional attributes—used for grouping
  - ❑ Numerical attributes—entered values
  - ❑ Calculated attributes—performance measures

### **Report table exports**

The types of reports that you can generate include:

- ❑ Reports exported from SAS Activity-Based Management
 

You can choose to export the standard staging tables or you can export the standard fields and contents, which are created in the standard reports that are installed with SAS Activity-Based Management.
- ❑ Reports on imported data content directly inside SAS Enterprise Guide
 

Using the SAS Activity-Based Management Add-In for SAS Enterprise Guide, the SAS Activity-Based Management reports can be run directly from within SAS Enterprise Guide. This produces a SAS table that can be used in further analysis.

The exported report tables are consistent with the standard report templates that are formatted and shipped with SAS Activity-Based Management. For more information about the reports, see Chapter 14, “Reporting Model Data.”

<b>Report</b>	<b>Number of standard report templates</b>	<b>Multiple currencies supported</b>
Destination furthest	1	1
Dimensional attribute cost	1	
Dimensional attribute unit cost	1	
Dimensional view	1	
Driver - cost and rate	1	
Idle capacity	1	
Module hierarchy	1	1
Multi-level contributions	1	
Multi-level contributions with cost elements	1	
Profit and loss – depth – horizontal	1	
Profit and loss – depth – vertical	1	
Profit and loss – resource – horizontal	1	
Profit and loss – resource – vertical	1	
Profit cliff	1	
Resource contributions	1	1
Resource contributions by attribute	1	
Resource contributions with cost elements	1	1
Single-stage assignments	1	1
Single-stage contributions	1	1
Unassigned costs	1	
Unit cost	1	1
<b>Total number of export report tables</b>	<b>21</b>	<b>7</b>

For more information on the standard report templates and their content, see the Help.

## **Working with Tables, Dimensions, Properties, and Attribute Values**

For tables, dimensions, properties, and attribute values, you can export all items or specific items. You can change the name of each exported item from its default name. For maximum flexibility with tables, you can export the same table to multiple export tables. For example, you can export the Account table to the tables named ResourceAccounts and ActivityAccounts. The Export Wizard shows you which fields are required for reimporting data.

## Exporting, Filtering, and Limiting Calculated Results

Here are the general steps that you perform when exporting model data:

- ❑ Export only certain period/scenario associations.  
You can export one or more period/scenario associations.
- ❑ Export only certain tables.  
You can select the specific SAS Activity-Based Management staging table you want to export. You can choose to change the names of the tables that you are exporting, which is useful when you are exporting multiple tables of the same type for distribution across a large audience (actual account and planning account).
- ❑ Choose the specific fields to be included in the dimension signature in all of the tables to be exported.  
The required fields for the dimension signature include dimensional reference and the dimensional member reference. These fields are required if you want to reimport the exported data into SAS Activity-Based Management. However, for readability and integration with other systems (data warehouses), you might find it helpful to include the dimension name, the dimension member name, the dimension level, and the dimension level name.
- ❑ Export only certain fields in the tables.  
You can select specific fields within each table to be exported. The default (archive) selections of fields do not include any calculated values, so be sure to carefully select the calculated values you need to export for further analysis or to import into another system (data warehouse). For each field you export, you can change the names of the fields, which is particularly useful when creating a SAS Activity-Based Management system to import into another system (which might have predefined fields). You can change the numbers in a dimension signature to a more useful notation of the organizational structure.
- ❑ Export only certain dimensions in specific tables.  
You can eliminate unnecessary fields in the exported data. This is useful in the multi-stage contributions cube. The default behavior is to include all of the possible dimensions in each stage of the export, but in most SAS Activity-Based Management models, only a limited number of dimensions actually apply to a given stage in the model. By eliminating unnecessary fields, you can significantly decrease the size of the exported data.
- ❑ Export only certain members in a dimension in specific tables.  
You can define a specific point in the dimensional hierarchy to include in the exported data. This filter method is useful for creating specific exports for an organizational structure (specific departments, specific product lines, or specific customer types).
- ❑ Export multiple tables of a specific type—add table-and-field filtering for content.  
When performing business analysis, you might want to export a single model into multiple tables, which is useful when providing specific results tables to specific departments. The ability to export a single SAS Activity-Based Management staging table into multiple database tables might be useful when splitting the actual costs and budget costs. To export a single table into multiple tables, you need to add a table and select multiple versions of the same staging table type, and map the versions to different destination table names. Then, apply a filter to limit the results going to each destination table.

## Filtering Data

Use the following methods to filter the data that you want to export:

- ❑ selecting parts of a dimension
- ❑ specifying comparisons for the values of attributes
- ❑ specifying comparison operators for the values of fields in a table

If you filter by a table field, you do not need to export the field.

The following table lists the comparison operators:

Operator	Description	Field type
LIKE	<p>Wildcard</p> <p>Use the percentage symbol (%) to specify any amount of text, including spaces. For example, Name LIKE fiscal% will match “fiscal,” “fiscally,” and “fiscal year 2006.”</p> <p>Use an underscore (_) to specify a single character. For example, Name LIKE account_ will match “account1,” “account2,” and “accountX.”</p> <p>If you omit both % and _, the comparison is the same as when you use the operator =. For example, <b>Name LIKE fiscal</b> is equivalent to <b>Name = “fiscal”</b>.</p>	Text
=	Equal	Text or numeric
<>	Not equal	Text or numeric
<	Less than	Numeric
>	Greater than	Numeric
<=	Less than or equal to	Numeric
>=	Greater than or equal to	Numeric

## Connection Strings

When you import data from a database or when you export data to a database, you must set up a connection string to the database. If possible, you should name your source tables and fields so that they match the target tables and fields. Matching the names enables the Import Wizard to automatically map the source tables and fields to the target tables and fields.

OleDb is Microsoft’s system-level data access interface to various database management system services. OleDb can access both relational data sources and non-relational data sources and provides access to a particular data source by using a data provider. The data provider is often referred to as an OleDb provider.

*Note:* There are many data providers. This section discusses only the most common data providers. The data provider that you must use depends on the database to which you want to connect.



For SAS Activity-Based Management, the most common OLEDB providers include:

- ❑ Microsoft OLEDB Provider for SQL Server, which provides access to databases that were built with Microsoft SQL Server versions 6.5 and 7.0.
- ❑ Oracle Provider for OLEDB, which provides access to Oracle databases. (An Oracle client must be installed on the same computer.)
- ❑ Microsoft Jet 4.0 OLEDB Provider, which provides access to data in Microsoft Access databases, as well as access to tabular data that is stored in Microsoft Excel workbooks.

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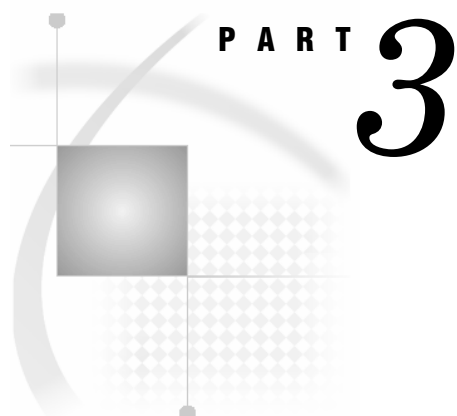
## Connecting to a Microsoft Access Database or to a Microsoft Excel Workbook

The SAS Activity-Based Management architecture is client/server; therefore, it is important to understand how the process of importing data or exporting data relates to file sharing and security settings in Microsoft Windows.

To connect to a Microsoft Access database or to a Microsoft Excel workbook, the Import Wizard or Export Wizard on a SAS Activity-Based Management client must build a standard OLEDB connection string to the data source. Although the OLEDB connection string is created on a SAS Activity-Based Management client, the connection string is passed to the SAS Activity-Based Management server to be processed. It is the server, not the client that actually connects to the data source. Therefore, both the client and the server must be able to access the data source through the same path. The requirement that both the client and the server use the same path means that the path cannot be a relative path. The easiest path to use is a Universal Naming Convention (UNC) path. For example, \\ServerName\Stagetables.

Further, when the SAS Activity-Based Management server connects to a Microsoft Access database or to a Microsoft Excel workbook, the server must use the ASP.NET user account. The ASP.NET user account allows connections only to files that are located on the SAS Activity-Based Management server. Therefore, the Microsoft Access database or the Microsoft Excel workbook must be located on the SAS Activity-Based Management server.





## Building a Model

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# CHAPTER 18

## Working in SAS Activity-Based Management

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### Introduction

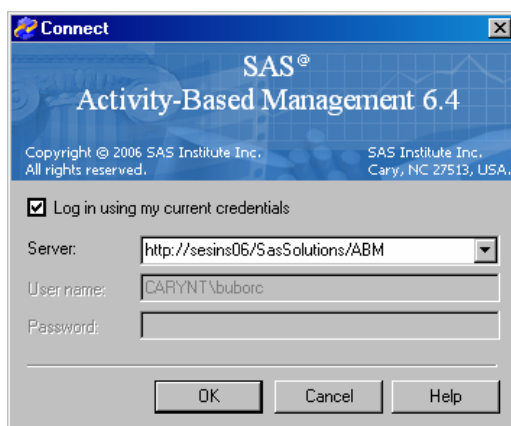
This chapter contains task-based information about working in SAS Activity-Based Management. For more conceptual information, see Chapter 2, “Working in SAS Activity-Based Management.”

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### Connect to a Server

- 1 Start SAS Activity-Based Management.

The Connect dialog box appears.



- 2 To log on using a network account other than your current network login information (credentials), clear the **Log in using my current credentials** option.
- 3 To select a different server, select a server from the **Server** drop-down list, or type the server name.

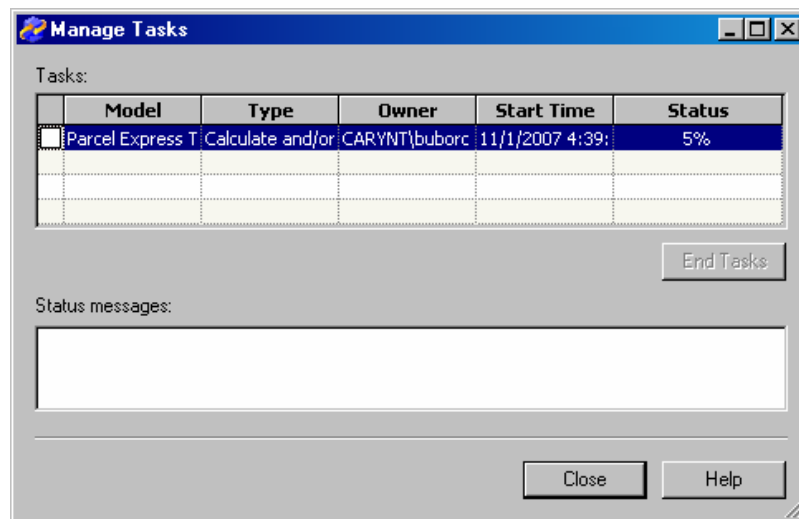
- 4 If you cleared the **Log in using my current credentials** option, then do the following:
  - a Type your domain and **User name**. For example, HQ\AlexW.
  - b Type your **Password**.
- 5 If multiple languages are installed on your computer, select the **Language** that you want to use for the interface.

*Note:* If only one language is installed, the **Language** drop-down list is not displayed.

---

## Cancel a Server Task

- 1 Select **Tools > Manage Tasks**.  
The Manage Tasks dialog box appears.



- 2 From the list of **Tasks**, select a task.  
You can select more than one task. A check mark is displayed next to the selected tasks.
- 3 Click **End Tasks**.  
There might be a delay before the task(s) is canceled.



## Working with Workspaces and Workspace Manager

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*Create a Shortcut to a Workspace Item 127*

*Review or Change the Properties of a Workspace Item 128*

*Create a Folder 129*

*Move a Workspace Item 130*

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### Introduction

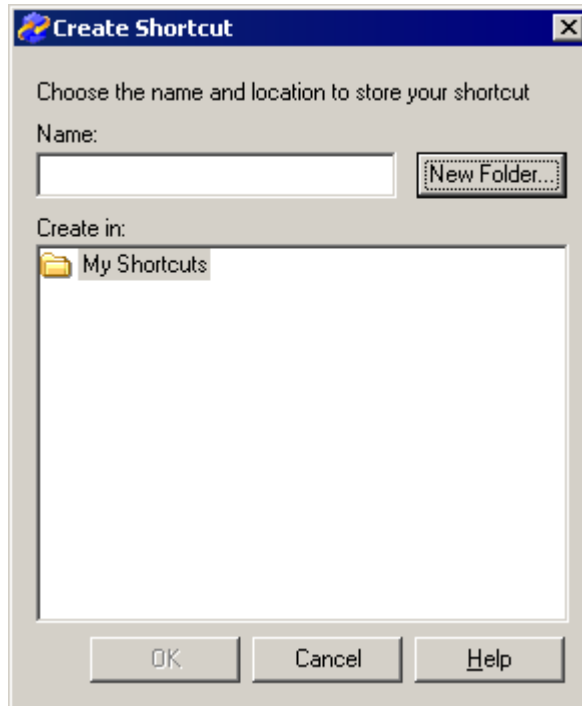
This chapter contains task-based information about workspaces and Workspace Manager. For more conceptual information, see Chapter 3, “Workspaces and Workspace Manager.”

---

### Create a Shortcut to a Workspace Item

- 1 Click the **Home** link .
- 2 In Workspace Manager, select an item in the server area.
- 3 Select **File > Create Shortcut**.

The Create Shortcut dialog box appears.



- 4 Type the **Name**.

The name must follow the naming conventions. For information, see the Help.

- 5 In the **Create in** list, select the folder in which you want to place the shortcut.

- 6 To create a new folder in which to place the shortcut, click **New Folder**.

The New Folder dialog box appears.

- 7 Type the folder **Name**.

*Tip:* You can create a shortcut by dragging an object from the server area into **My Shortcuts**.

---

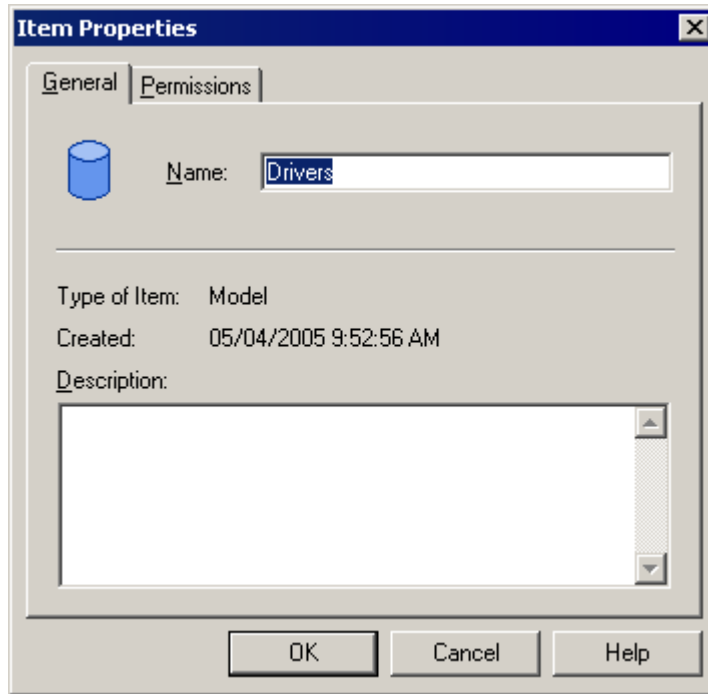
## Review or Change the Properties of a Workspace Item

- 1 In Workspace Manager, select an item.

- 2 Select **Edit > Item Properties**.

The Item Properties dialog box appears.





3 Click the **General** tab.

4 Type the **Name**.

The name must follow the naming conventions. For information, see the Help.

*Tip:* When you rename an item, notify other users. Otherwise, they might look for a name that no longer exists.

5 Type the **Description**.

6 Click the **Permissions** tab.

*Note:* Permissions are not applicable to shortcuts.

7 Select an **Owner**.

8 In the **Privileges** list, select or clear the boxes that are next to each listed **Role**.

---

## Create a Folder

1 In Workspace Manager, select a folder under which you want to create the new folder.

2 Select **Edit > New Folder**.

The New Folder dialog box appears.

3 Type the **Name**.

---

## Move a Workspace Item

- 1 In Workspace Manager, select an item.
- 2 Drag the item to a new location.

*Note:* You can drag the item only to a new location that is of the same type as the item.

---

## Open a Workspace Item

- 1 In Workspace Manager, select an item.
- 2 Select **File > Open Workspace Item**.



## Working with Models

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### Introduction

This chapter contains task-based information about working with models. For more conceptual information, see Chapter 4, “Models.”

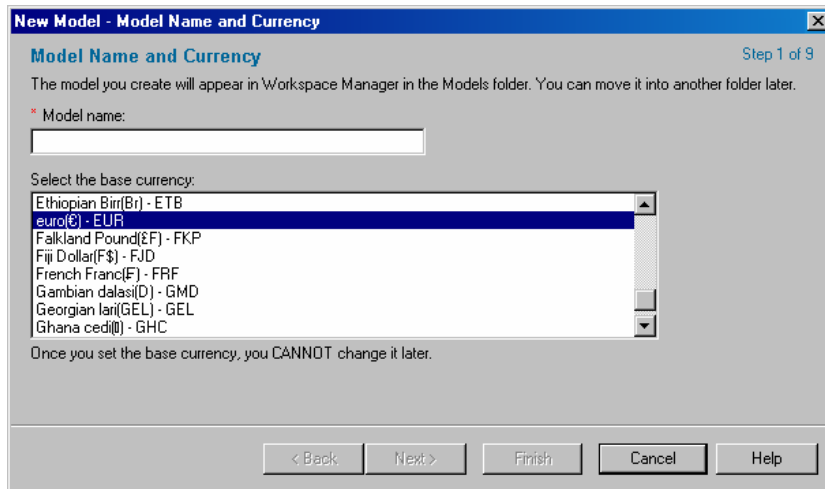
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### Create a Model

To be able to create a model, you must first understand the concepts of periods, scenarios, dimensions, and the modules. For information about periods and scenarios, see Chapter 5, “Periods and Scenarios.” For information about dimensions, see Chapter 6, “Dimensions.” For information about the modules, see Chapter 7, “Modules.”

- 1 Select **File > New > Model**.

The New Model Wizard appears.

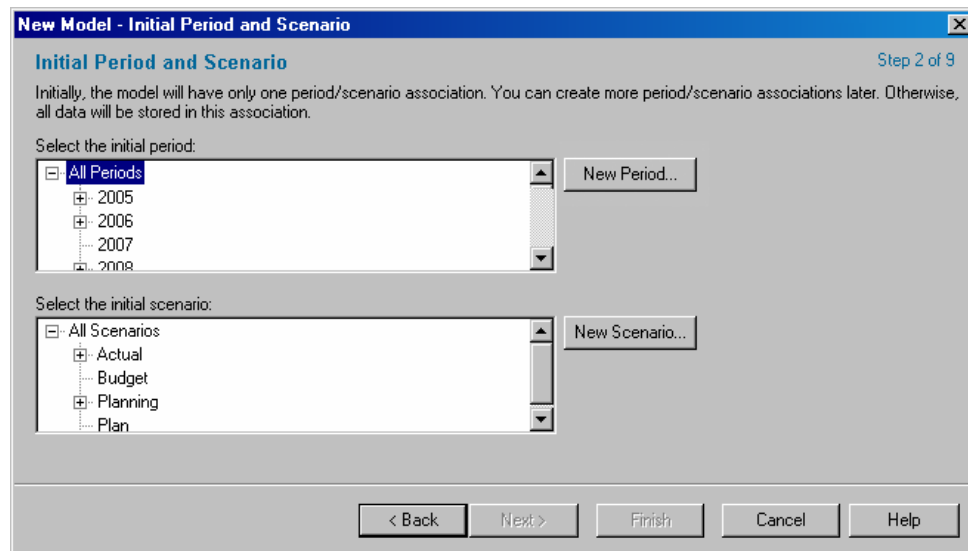


- 2 In the **Name the model** box, type the name.
- 3 From the **Select the base currency** list, select a currency.

Notice that once you select a base currency, you cannot change it later.

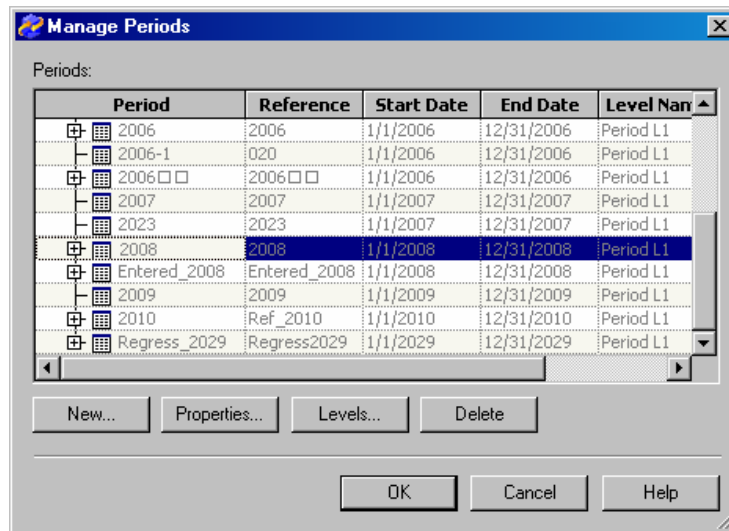
Next, you will specify the initial period/scenario association. You can create additional periods, scenarios, and period/scenario associations later.

- 4 Click **Next**.



- 5 From the **Select the initial period** list, select a period.  
For information about periods, see Chapter 5, “Periods and Scenarios.”
- 6 To create a new period, do the following:
  - a Click **New Period**.

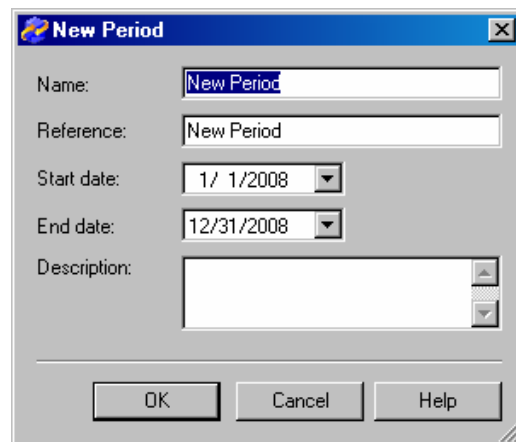
The Manage Periods dialog box appears.



**b** From the **Period** column, select a period under which to create the new period.

**c** Click **New**.

The New Period dialog box appears.



**d** Type the **Name**.

The name must follow the naming conventions. For information, see the Help.

**e** Type the **Reference**.

A default reference is created from the period's name. If you change the reference, the new reference must follow the reference conventions. For information, see the Help.

**f** Type the **Start date** and the **End date**, or select dates from the drop-down calendar.

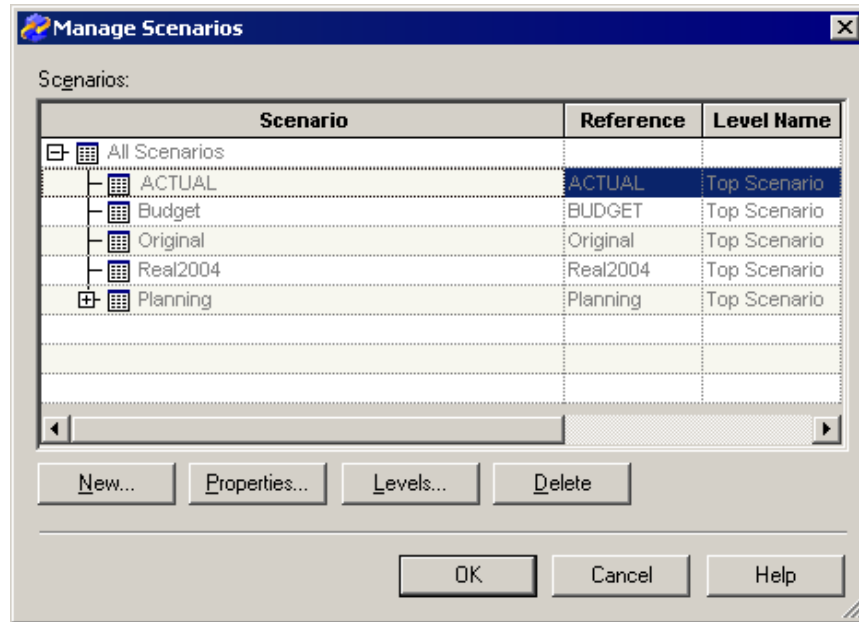
**g** Type the **Description**.

**h** Click **OK**.

- 7 From the **Select the initial scenario** list, select a scenario.  
For information about scenarios, see Chapter 5, “Periods and Scenarios.”
- 8 To create a new scenario, do the following:

- a Click **New Scenario**.

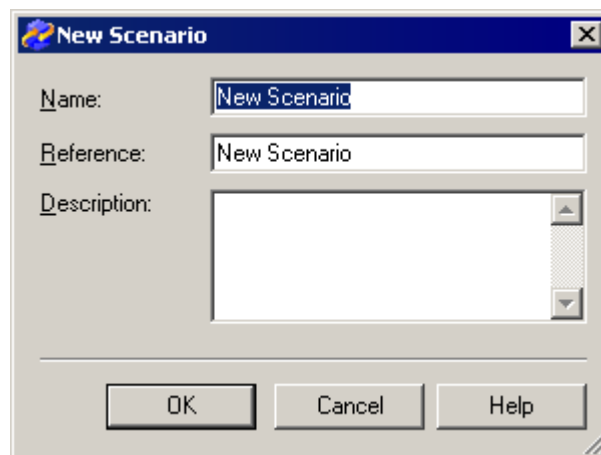
The Manage Scenarios dialog box appears.



- b From the **Scenario** column, select a scenario under which to create the new scenario.

- c Click **New**.

The New Scenario dialog box appears.



- d Type the **Name**.

The name must follow the naming conventions. For information, see the Help.

- e Type the **Reference**.

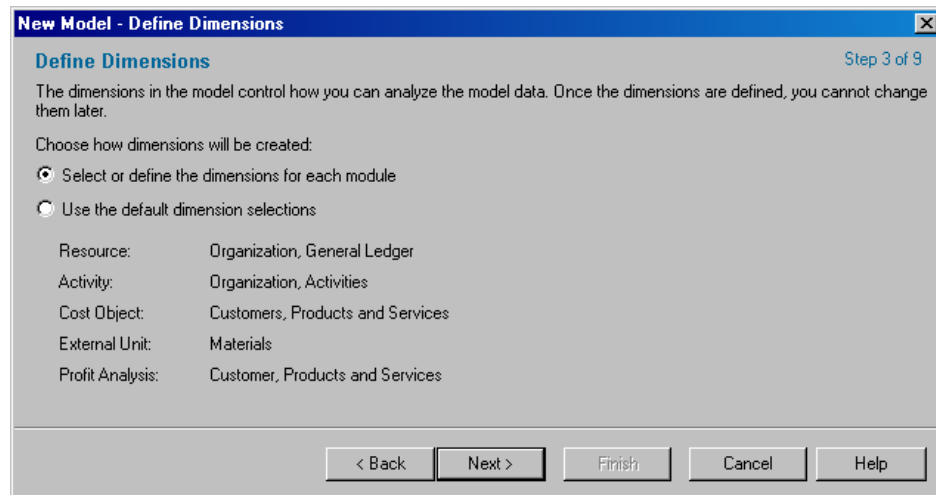
A default reference is created from the scenario's name. If you change the reference, the new reference must follow the reference conventions. For information, see the Help.

**f** Type the **Description**.

**g** Click **OK**.

Next, you will specify the dimensions for each module: the Resource module, the Activity module, the Cost Object module, and the External Units module. In addition, you will specify the dimension for profit analysis.

**9** Click **Next**.



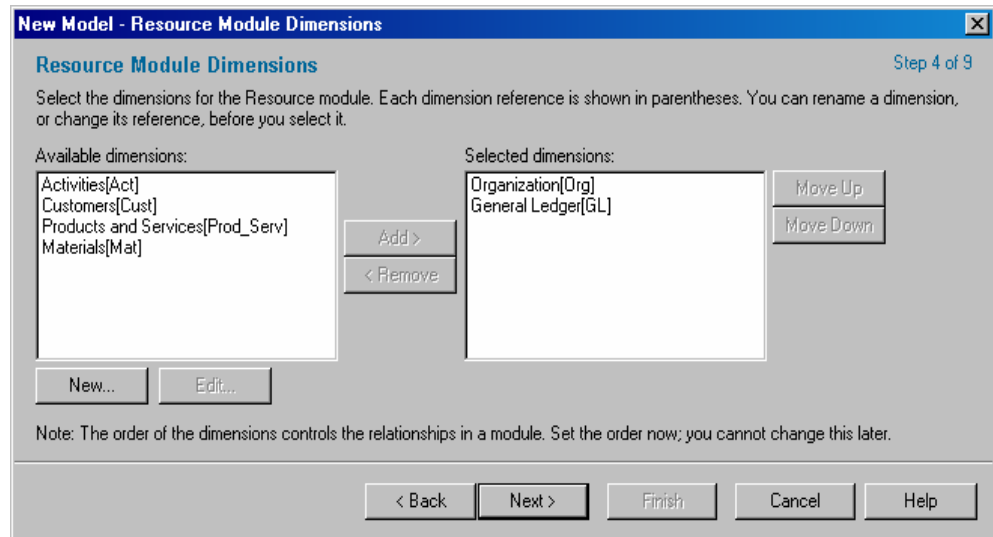
**10** Select either the **Select or define the dimensions for each module** option or the **Use the default dimension selections** option.

The default dimensions for each module are listed. These dimensions are routinely used by a variety of organizations, but they might not be appropriate for your organization or you might want additional dimensions.

For information about dimensions, see Chapter 6, “Dimensions.”

The remainder of this task assumes that you want to create additional dimensions for each of the modules. Each module (and profit analysis) will be presented in the wizard.

**11** Click **Next**.



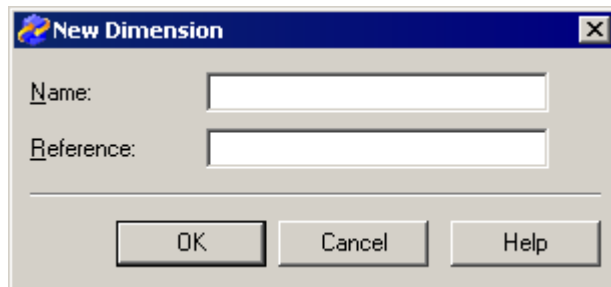
- 12** From the list of **Available dimensions** for the Resource module, select a dimension, and click .

You can select multiple dimensions, but only one dimension at a time.

- 13** To create a new dimension, do the following:

**a** Click **New**.

The New Dimension dialog box appears.



**b** Type the **Name**.

The name must follow the naming conventions. For information, see the Help.

**c** Type the **Reference**.

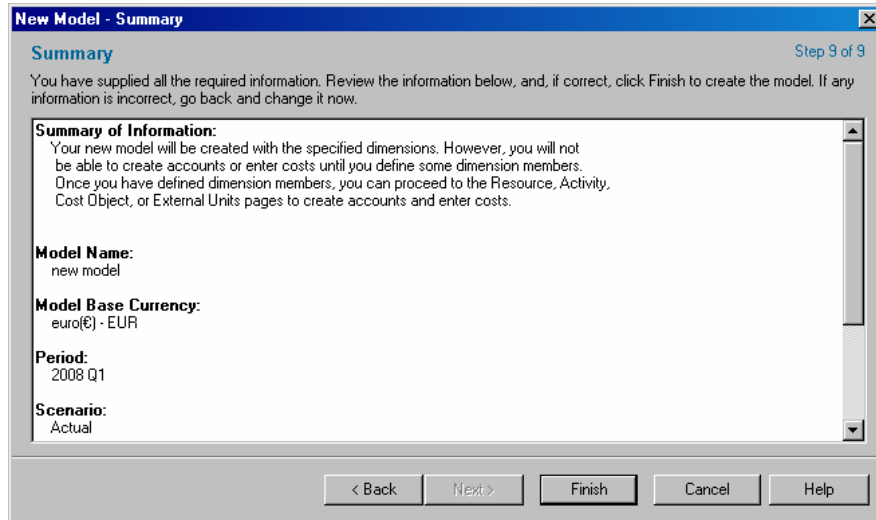
A default reference is created from the dimension's name. If you change the reference, the new reference must follow the reference conventions. For information, see the Help.

The wizard presents each of the remaining modules and profit analysis so that you can specify the dimensions. Each of these pages is identical to the page previously described.

After you have defined the dimensions for profit analysis, you will review the summary of what will be created.

- 14** Click **Next**.





15 Review the summary information.

16 If you need to change any information, click **Back** until you reach the page that you need to change in the wizard.

All the information that you have specified is saved. Click **Next** to advance through the wizard.

17 Click **Finish**.

The model is created and the Dimensions page appears. Next, dimensions must be created. For information about the task of creating dimensions, see Chapter 22, “Working with Dimensions.”

---

## Start Model Mode

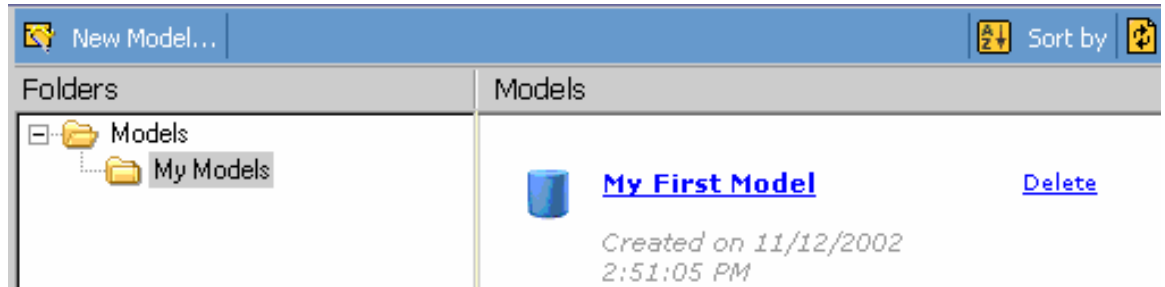
To perform any of the modeling tasks (except creating a model), you must be in Model mode.

Click  at the top of the SAS Activity-Based Management window.

---


## Open a Model without a Model Already Open

If you start Model mode without a model already open, you must open a model from the Model Home page, as shown:



The list of folders and the list of models correspond to the Models branch of the server area in Workspace Manager. For more information, see Chapter 3, “Workspaces and Workspace Manager.”

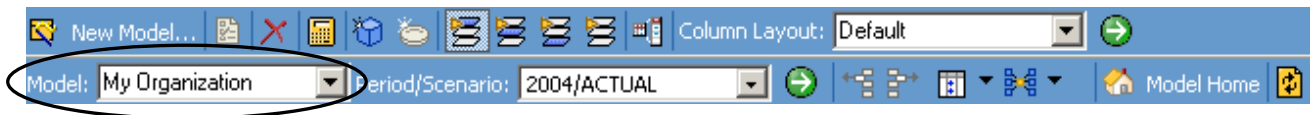
- 1 From the list of **Folders**, select a folder.
- 2 From the list of **Models**, click a model.

*Tip:* Alternatively, you can click .


---

## Open a Model with a Model Already Open

- 1 From the **Model** drop-down list, select a model.



If you do not see the model that you want to use, you probably do not have permission to view it. For information about permissions, see Chapter 3, “Workspaces and Workspace Manager.”

- 2 From the **Period/Scenario** drop-down list, select a period/scenario association.
- 3 Click .

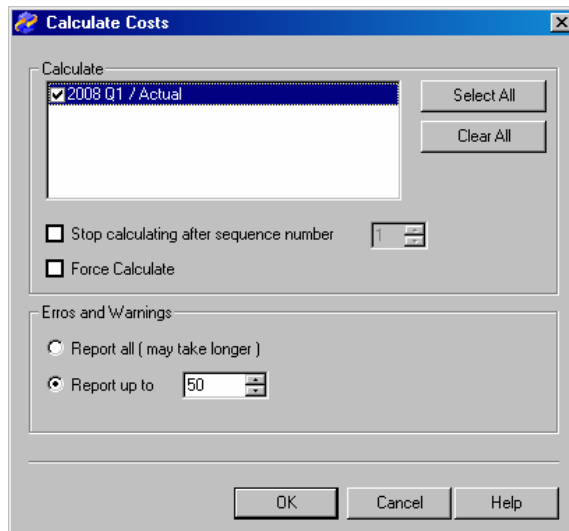
The model opens and the Resource module page is displayed.

---

## Calculate Costs

- 1 Select **Model > Calculate Costs**.

The Calculate Costs dialog box opens.



- 2 Select one or more period/scenario associations.
- 3 Select or clear the **Stop calculating after sequence number** option. If applicable, specify the sequence number.

For information about driver sequencing, see Chapter 9, “Drivers.”

- 4 Select or clear the **Force calculate** option.

You can select **Force Calculate** to perform calculations even if the flag is set that says that calculations are up to date. To speed processing, SAS Activity-Based Management skips calculating if it thinks that calculations are up to date. Use this option to force calculations anyway.

- 5 For **Errors and Warnings**, select an option.

For information about errors, see Chapter 4, “Models.”

- 6 Click **OK**.

You see a message in the status bar, at the bottom of the window, indicating that the calculation is in progress.

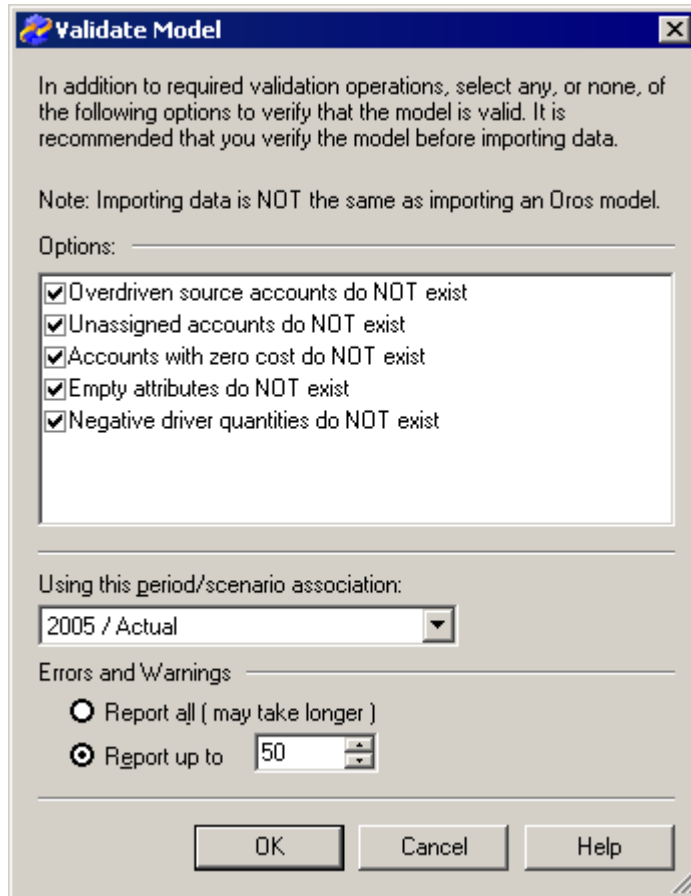
---

## Validate a Model

For information about validating a model, see Chapter 8, “Accounts and Cost Elements.”

- 1 Open a model in Model mode.
- 2 Select **Model > Validate**.

The Validate Model dialog box appears.



- 3 From the list of **Options**, select or clear the options.
- 4 From the **Using this period/scenario association** drop-down list, select either a period/scenario association or **<All>**.
- 5 For **Errors and Warnings**, select an option.

For information about errors, see Chapter 4, “Models.”

# CHAPTER 21

## Working with Periods and Scenarios

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<i>Create a Period</i>	141
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<i>Create a Period/Scenario Association</i>	146
<i>Copy Period/Scenario Data</i>	146
<i>Publish or Unpublish a Period/Scenario Association</i>	147

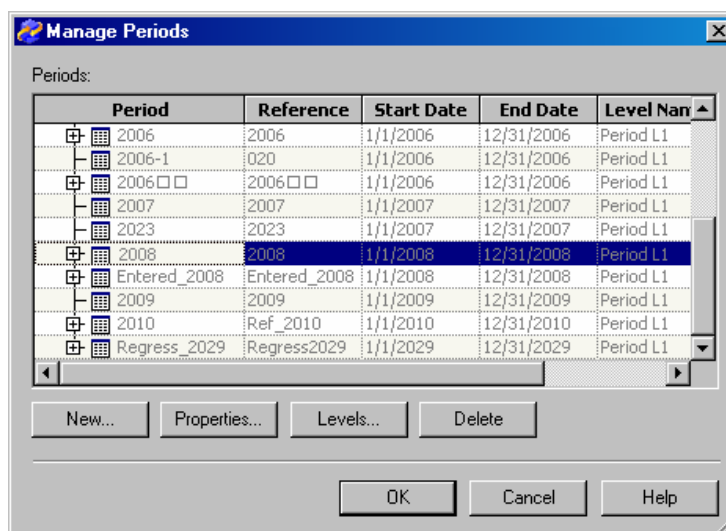
### Introduction

This chapter contains task-based information about working with periods and scenarios. For more conceptual information, see Chapter 5, “Periods and Scenarios.”

### Create a Period

- 1 Select **Tools > Manage Periods**.

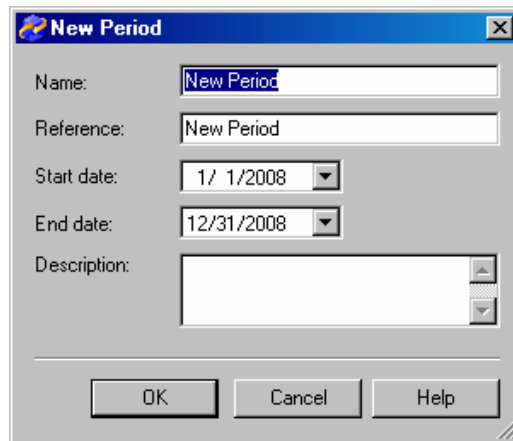
The Manage Periods dialog box appears.



- 2 From the **Period** column, select a period under which to create the new period.

**3 Click New.**

The New Period dialog box appears.

The image shows a 'New Period' dialog box with a blue title bar and a close button. It contains five input fields: 'Name' (text box with 'New Period'), 'Reference' (text box with 'New Period'), 'Start date' (dropdown menu with '1/ 1/2008'), 'End date' (dropdown menu with '12/31/2008'), and 'Description' (text box). At the bottom are three buttons: 'OK', 'Cancel', and 'Help'.**4 Type the Name.**

The name must follow the naming conventions. For information, see the Help.

**5 Type the Reference.**

A default reference is created from the period's name. If you change the reference, the new reference must follow the reference conventions. For information, see the Help.

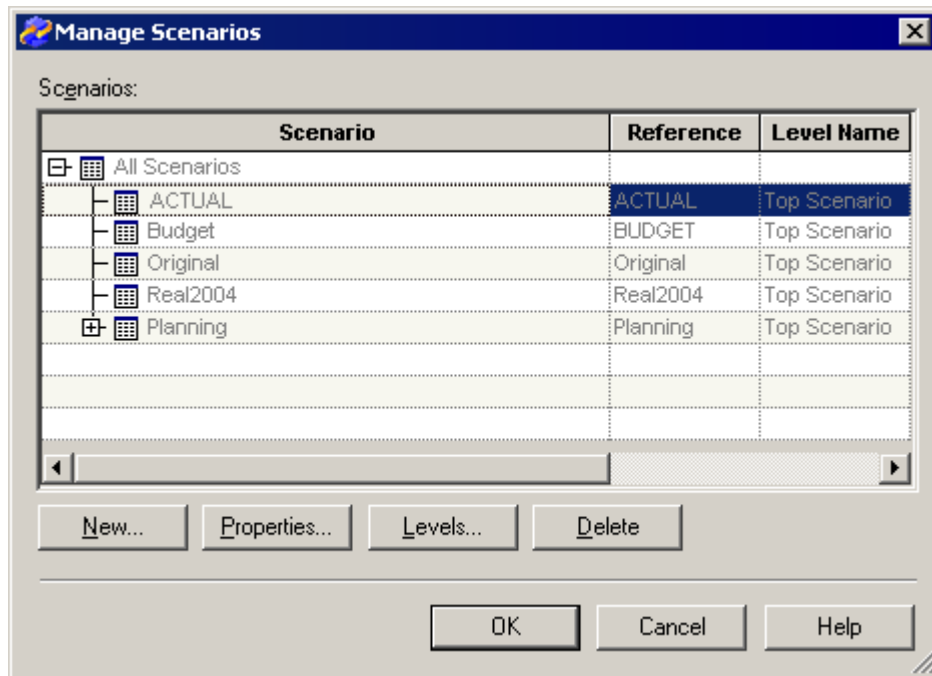
**6 Type the Start date and the End date, or select dates from the drop-down calendar.****7 Type the Description.**

---

## Create a Scenario

**1 Select Tools > Manage Scenarios.**

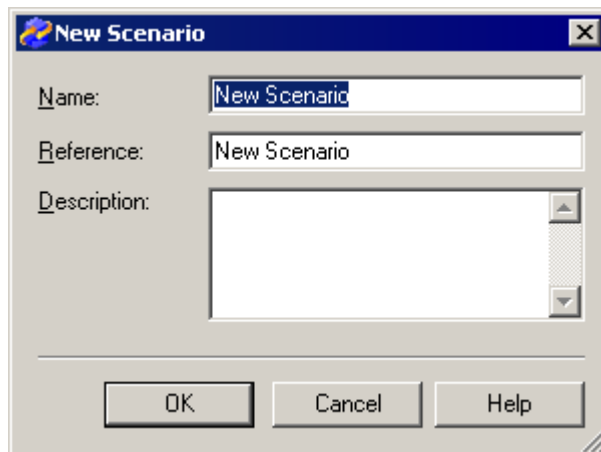
The Manage Scenarios dialog box appears.



- 2 From the **Scenario** column, select a scenario under which to create the new scenario.

- 3 Click **New**.

The New Scenario dialog box appears.



- 4 Type the **Name**.

The name must follow the naming conventions. For information, see the Help.

- 5 Type the **Reference**.

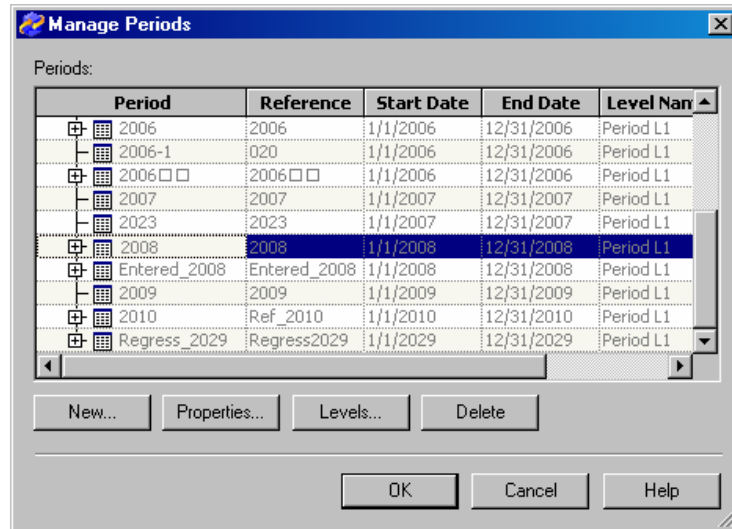
A default reference is created from the scenario's name. If you change the reference, the new reference must follow the reference conventions. For information, see the Help.

- 6 Type the **Description**.

## Manage Period Level Names

- 1 Select **Tools > Manage Periods**.

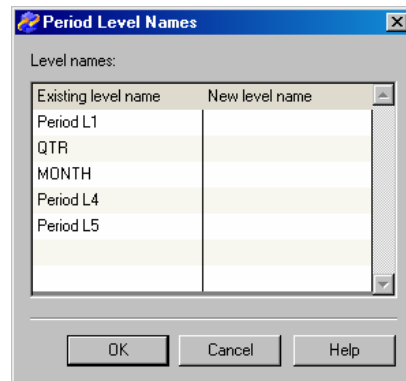
The Manage Periods dialog box appears.



- 2 From the **Period** column, select a period.

- 3 Click **Levels**.

The Period Level Names dialog box appears.



- 4 In the **New level name** column, double-click in a row and type a name.

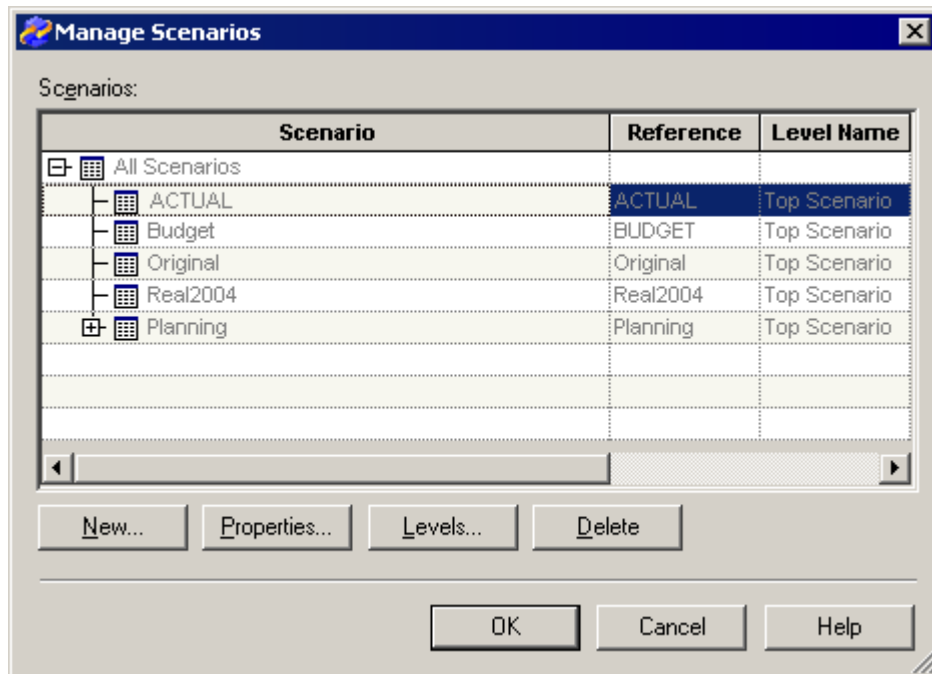
The name must follow the naming conventions. For information, see the Help.

## Manage Scenario Level Names

- 1 Select **Tools > Manage Scenarios**.

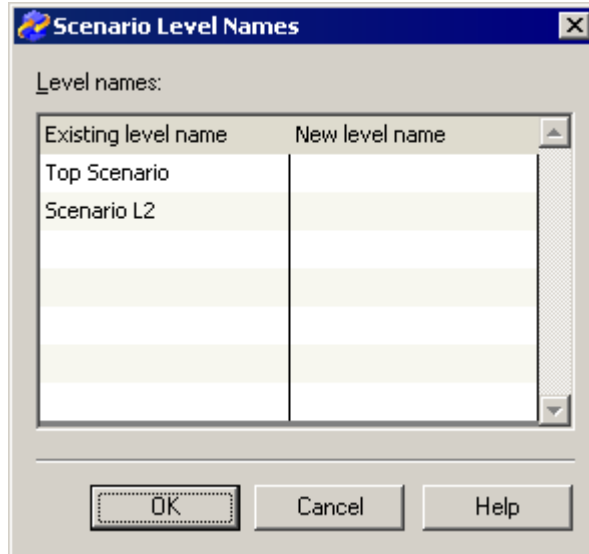
The Manage Scenarios dialog box appears.





- 2 From the **Scenario** column, select a scenario.
- 3 Click **Levels**.

The Scenario Level Names dialog box appears.



- 4 In the **New level name** column, double-click in a row and type a name.

The name must follow the naming conventions. For information, see the Help.

## Create a Period/Scenario Association

- 1 Select **Model > Period and Scenario Associations**.

The Period and scenario associations page appears.

- 2 Select **Edit > New Association**.

The Associate Periods and Scenarios dialog box appears.

- 3 Select the **Period**. To create a new period, do the following:

- a Click **New Period**.

The Manage Periods dialog box appears. Create a new period as described in the “Create a Period” section.

- b Select the **Period**.

- 4 Select the **Scenario**. To create a new scenario, do the following:

- a Click **New Scenario**.

The Manage Scenarios dialog box appears. Create the scenario as described in the “Create a Scenario” section.

- b Select the **Scenario**.

- 5 Type **Notes** for the association.

## Copy Period/Scenario Data

- 1 Select **Model > Copy Period/Scenario Data**.

The Copy Period/Scenario Data dialog box appears.

**Copy Period/Scenario Data - Source and Target Period/Scenario Associations** [X]

**Source and Target Period/Scenario Associations** Step 1 of 5

Specify the source and target period/scenario associations.

Source period/scenario association:

2008 Q1 / Actual

Target period/scenario association:

☒ Existing:

2008 Q1 / Actual

☐ New:

Period: 2008 Q1 Scenario: Actual

< Back Next > Finish Cancel Help

- 2 Select a **Period/scenario**.
- 3 To copy data to an existing period/scenario association, do the following:
  - a Select the **Existing period/scenario association** option.
  - b From the drop-down list on the right, select a period/scenario association.
- 4 To copy data to a new period/scenario association, do the following:
  - a Select the **New period/scenario association** option.
  - b Select a **Period** and a **Scenario**.

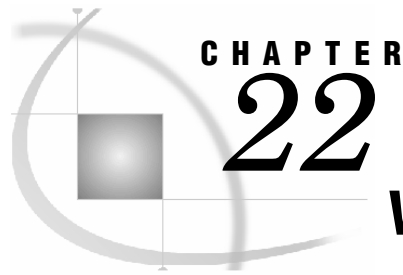
---

## Publish or Unpublish a Period/Scenario Association

- 1 Select **Model > Period and Scenario Associations Page**.

The Period and scenario associations page appears.
- 2 Select a period/scenario association.
- 3 Select **Edit > Publish/Unpublish**.





## Working with Dimensions

---

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<i>Delete a Dimension Member</i>	151

---

### Introduction

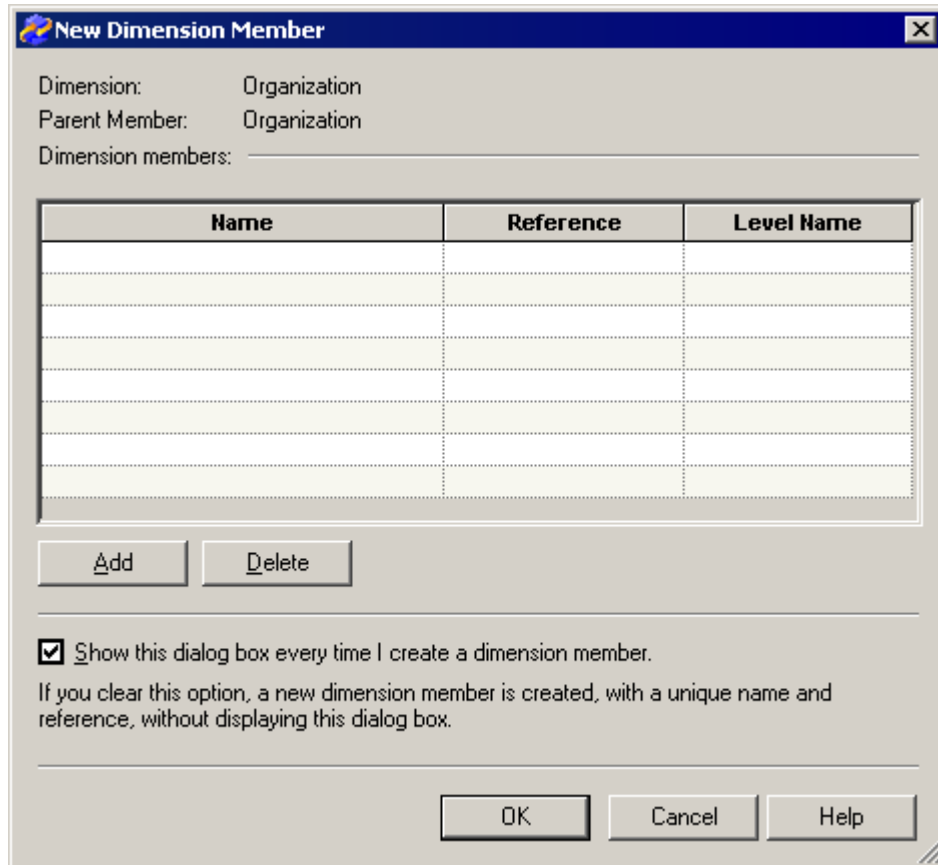
This chapter contains task-based information about working with dimensions. For more conceptual information, see Chapter 6, “Dimensions.”

---

### Create a Dimension Member

- 1 On the Dimensions page, select a dimension or a dimension member within which to create the new dimension member.
- 2 Select **Edit > New Dimension Member**.

The New Dimension Member dialog box appears.



**New Dimension Member**

Dimension: Organization  
 Parent Member: Organization  
 Dimension members: \_\_\_\_\_

Name	Reference	Level Name

☒ Show this dialog box every time I create a dimension member.  
 If you clear this option, a new dimension member is created, with a unique name and reference, without displaying this dialog box.

**3 Click Add.**

A new row is added to the **Dimension members** list. The row contains default information.

**4 Click in the **Name** column and type the name of the new dimension member.**

The name must follow the naming conventions. For information, see the Help.

**5 Click in the **Reference** column and type the reference.**

A default reference is created from the dimension member's name. If you change the reference, the new reference must follow the reference conventions. For information, see the Help.

**6 Click in the **Level Name** column and select a level name.**

**7 Select or clear the **Show this dialog box every time I create a dimension member** option.**

**8 Click Add.**

**9 On a module page, create the account that corresponds to the dimension member.**

---

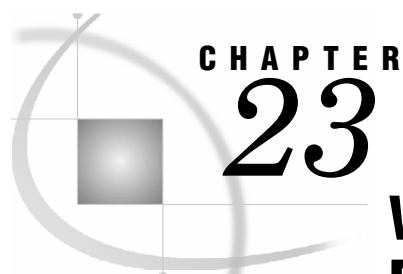
## Delete a Dimension Member

For information about deleting accounts, see Chapter 8, “Accounts and Cost Elements.”

- 1** On a module page, delete the account that corresponds to the dimension member.
- 2** On the Dimensions page, select the dimension member.
- 3** Select **Edit > Delete**.







# CHAPTER 23

## Working with Accounts and Cost Elements

---

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<i>Create Cost Elements When an Account Is First Created</i>	157
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---

### Introduction

This chapter contains task-based information about working with accounts and cost elements. For more conceptual information, see Chapter 8, “Accounts and Cost Elements.”

---

### Create an Account

---

#### Provide Minimal Information

This task describes the minimal amount of information needed to create an account.

- 1 If the underlying dimension member does not exist, then create the dimension member.
- 2 Open a model in Model mode, and select **Model > <name of module>**. For example, **Model > Resource Module**.
- 3 Select a roll-up account or an account.
- 4 Select **Edit > New Account**.

The New Account Wizard appears.

**New Account - Create Accounts at Dimension Intersections** Step 1 of 3

**Define Accounts**

Please choose at least one dimension member from each dimension. Accounts are created at the intersection of those dimension members.

Create accounts using:  
leaf dimension members only

**Dimensions:**

- ☒ Region
  - ☐ USA
  - ☐ No <Region>
- ☒ Activities
  - ☐ Personnel Intensive Activities
  - ☐ Local Collection
  - ☐ Local Processing
  - ☐ Regional Distribution
  - ☐ No <Activities>

**Accounts:**

Add >  
< Remove

Find ...

< Back   Next >   Finish   Cancel   Help

- 5 From the list of **Dimensions**, select at least two dimensions.
- 6 From the **Create accounts using** drop-down list, select a value.

The effect of each value follows:

Selecting **leaf dimension members only** creates accounts only for the intersections of the lowest dimension members in each dimension, as shown:

Create accounts using: **leaf dimension members only**

Dimensions:

- ☐ Organization
  - ☒ Northeast
    - ☒ New York
    - ☒ Maine
    - ☒ Rhode Island
    - ☐ Southeast
    - ☐ Midwest
    - ☐ West Coast
    - ☐ No <Organization>
  - ☒ General Ledger
    - ☒ Salaries
      - ☒ Base
      - ☒ Overtime
    - ☐ Benefits
    - ☐ Rent
    - ☐ Utilities

Accounts:

- New York x Base
- New York x Overtime
- Maine x Base
- Maine x Overtime
- Rhode Island x Base
- Rhode Island x Overtime

Add > < Remove

Selecting **all intersections** creates accounts for the intersections of all the dimension members in each dimension, as shown:

Create accounts using: **all intersections**

Dimensions:

- ☐ Organization
  - ☒ Northeast
    - ☒ New York
    - ☒ Maine
    - ☒ Rhode Island
    - ☐ Southeast
    - ☐ Midwest
    - ☐ West Coast
    - ☐ No <Organization>
  - ☒ General Ledger
    - ☒ Salaries
      - ☒ Base
      - ☒ Overtime
    - ☐ Benefits
    - ☐ Rent
    - ☐ Utilities

Accounts:

- Northeast x Salaries
- Northeast x Base
- Northeast x Overtime
- New York x Salaries
- New York x Base
- New York x Overtime
- Maine x Salaries
- Maine x Base
- Maine x Overtime
- Rhode Island x Salaries
- Rhode Island x Base
- Rhode Island x Overtime

Add > < Remove

Selecting **parent dimension members only** creates accounts only for the intersections of the highest dimension members, as shown:

Create accounts using: parent dimension members only

Dimensions:

Organization	
<input checked="" type="checkbox"/> Northeast	
<input checked="" type="checkbox"/> New York	
<input checked="" type="checkbox"/> Maine	
<input checked="" type="checkbox"/> Rhode Island	
<input type="checkbox"/> Southeast	
<input type="checkbox"/> Midwest	
<input type="checkbox"/> West Coast	
<input type="checkbox"/> No <Organization>	
General Ledger	
<input checked="" type="checkbox"/> Salaries	
<input checked="" type="checkbox"/> Base	
<input checked="" type="checkbox"/> Overtime	
<input type="checkbox"/> Benefits	
<input type="checkbox"/> Rent	
<input type="checkbox"/> Utilities	

Add >  
< Remove

Accounts:

Northeast x Salaries
----------------------

*Note:* The name shown in the list of **Accounts** is displayed in a module in the **Display Name** column. The display name uniquely identifies an item and is created by SAS Activity-Based Management; you cannot change the display name. However, you can change the account name. You will have the opportunity to change the account name in the next step of the wizard.

At this point, you have specified the minimal information needed to create an account using default information.

- 7 If you do not want to change an account name, change an account reference, or create cost elements, click **Finish**.

## Provide Optional Information

- 8 Click **Next** (assuming that you did not click **Finish** in step 7).

**New Account - Cost Elements** Step 2 of 3

**Define Cost Elements**

Add the cost associated with each account. You can add one or more cost elements per account.

The account name and reference cannot be blank. The name and reference are automatically created by the system, however, you can change them. These names appear in reports and in the summaries for operations such as calculate.

Name	Reference	Cost
Resolve Customer C x Non	Resolve Customer C x None_9001	
Expedite Package S x None	Expedite Package S x None_9002	
None x None_9003	None x None_9003	

Add Cost Element Delete Cost Element

< Back Next > Finish Cancel Help

- 9 To change the name of an account, click in the **Name** column and type a new name.

The name must follow the naming conventions. For information, see the Help.

- 10 To change the reference of an account, click in the **Reference** column and type a new reference.

The reference must follow the reference conventions. For information, see the Help.

*Note:* At this point in the New Account Wizard, you can create cost elements.

- 11 Click **Finish**.

## Create Cost Elements When an Account Is First Created

- 1 On the second page of the New Account Wizard, click **Add Cost Element**.

A new entered cost element with default information appears.

Name	Reference	Cost
Northeast x Salaries_1021	Northeast x Salaries_1021	
Salaries_1021-1	Salaries_1021_1021-1	

- 2 To change the name of the cost element, click in the **Name** column and type a new name.

The name must follow the naming conventions. For information, see the Help.

- 3 To change the reference of the cost element, click in the **Reference** column and type a new reference.

The reference must follow the reference conventions. For information, see the Help.

- 4 To enter the cost of the cost element, click in the **Cost** column and type a cost.

---

## Create an Entered Cost Element on a Module Page

- 1 In a module, select an account (not a roll-up account).
- 2 Select **Edit > New Entered Cost Element**.

The New Entered Cost Element dialog box appears.

**New Entered Cost Element**

Account: Eugene x Move to Warehouse\_2024

Entered cost elements:

Name	Reference	Cost

Add Cost Element    Delete Cost Element

This dialog is displayed whenever one or more cost elements exist in other periods and have not yet been activated in this period.

☒ Show this dialog box every time I create an entered cost element.

If you clear this option, a new entered cost element is created, with a unique name and reference, without displaying this dialog box.

OK    Cancel    Help

- 3 Click **Add Cost Element**.

A new row is added to the **Entered cost elements** list. The new row contains default information.

- 4 Click in the **Name** column and type the name.

The name must follow the naming conventions. For information, see the Help.

- 5 Click in the **Reference** column and type the reference.

A default reference is created from the cost element's name. If you change the reference, the new reference must follow the reference conventions. For information, see the Help.

- 6 Click in the **Cost** column and type the cost.

- 7** To delete a cost element, do the following:
  - a** From the list of **Entered cost elements**, select an element.
  - b** Click **Delete Cost Element**.







## Working with Drivers

---

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*Create a Driver* 161

*Specify the Default Driver* 164

*Specifying the Weights for a Weighted Driver* 170

*Associate a Driver Using an Account's Item Properties* 166

*Associate a Driver Using a Module's Grid* 167

---

### Introduction

This chapter contains task-based information about working with drivers. For more conceptual information, see Chapter 9, “Drivers.”

---

### Create a Driver

- 1 Open a model in Model mode, and select **Model > Drivers Page**.

The Drivers page appears.

- 2 Select **DRIVERS**.

- 3 Select **Edit > New Driver**.

The New Driver dialog box appears.

**New Driver**

General | Advanced

Drivers are the method for assigning costs between accounts.

Name:

Driver type:

Basic

☒ This driver's quantities are unique

☒ Allow fixed driver quantities for this driver

☐ Allow variable driver quantities for this driver

☐ Allow weighted driver quantities for this driver

Equation:

Equation Editor...

OK Cancel Create Help

4 Type the **Name**.

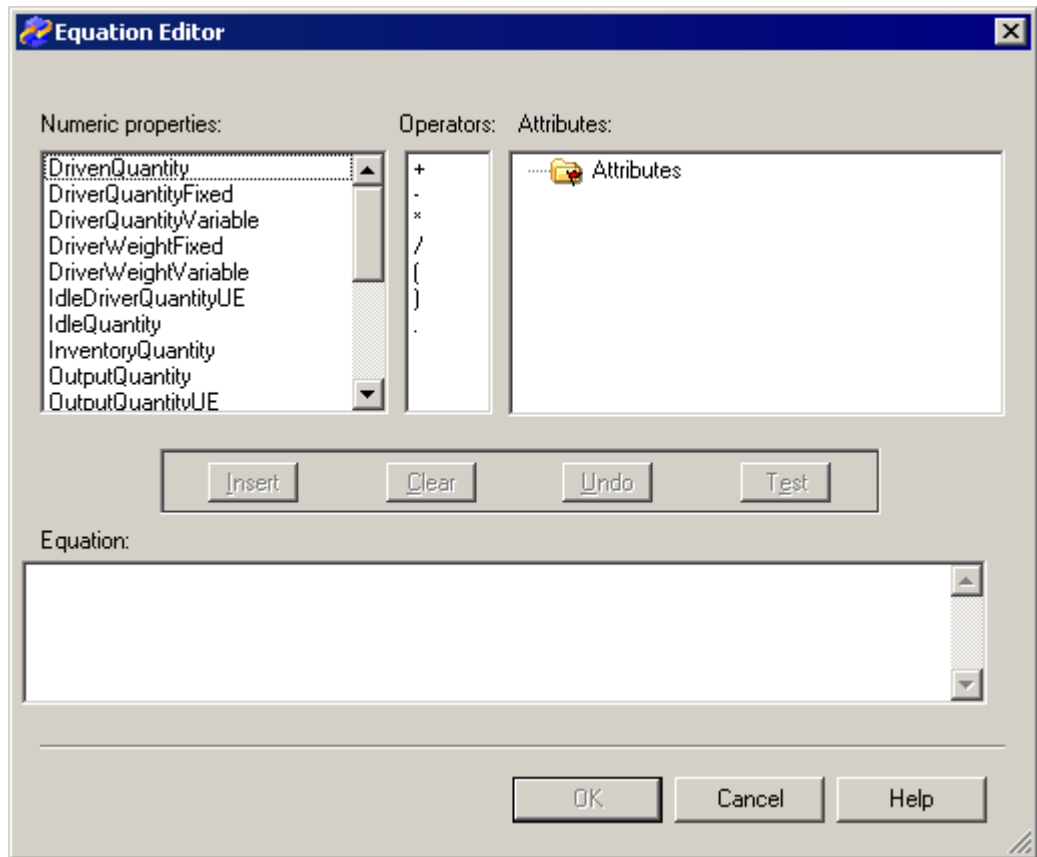
The name must follow the naming conventions. For information, see the Help.

5 Select the **Driver type**.

6 If you selected a driver type that supports unique driver quantities, then either select or clear the **This driver's quantities are unique** option.

7 If this is a calculated driver, then click **Equation Editor**.

The Equation Editor dialog box appears.



*Tip:* You can also modify the equation in the **Equation** box.

For information about equations, see Chapter 12, “Using Equations with Calculated Drivers and Calculated Attributes.”

**8** Define an equation:

**a** Select an item from the list of **Numeric properties**, from the list of **Operators**, or from the list of **Attributes**.

**b** Click **Insert**.

The item is added to the equation.

*Tip:* You can also type the equation.

**c** Continue to insert items until you have built the entire equation.

**d** To remove the last item that you inserted, click **Undo**.

**e** To delete the entire equation, click **Clear**.

**f** Click **Test**.

If no errors are displayed, the syntax of the equation is valid.

**9** Click the **Advanced** tab.

The screenshot shows a software window with two tabs: 'General' and 'Advanced'. The 'Advanced' tab is selected. It contains the following options:

- Idle Cost Assignment**
  - ☐ Assign idle quantities using this method: [Not Assigned]
- Driver Sequencing**
  - ☐ Use this sequence number: [1]
  - ☐ Replace fixed quantity with: [ ]
  - ☐ Replace variable quantity with: [ ]
- User Cost Allocation**
  - ☐ Allow user-entered cost allocation

- 10 To specify how idle quantities are handled, select or clear the **Assign idle quantities using this method** option. If you select this option, then select a method from the drop-down list.
- 11 Specify driver sequencing:
  - a Either select or clear the **Use this sequence number** option. If you select this option, then specify the sequence number in the box provided.
  - b To specify how fixed quantities are handled, select or clear the **Replace fixed quantity with** option. If you select this option, then select a numeric property from the drop-down list on the right.
  - c To specify how variable quantities are handled, select or clear the **Replace variable quantity with** option. If you select this option, then select a numeric property from the drop-down list on the right.
- 12 To specify how user-entered cost allocation is handled, select or clear the **Allow user-entered cost allocation** option.

---

## Specify the Weights for a Weighted Driver

- 1 Open the module that contains the destination accounts for the source account that uses a weighted driver.
- 2 For a weighted driver that uses fixed driver quantities, add a column to contain the property Driver Weight Fixed.
- 3 For a weighted driver that uses variable driver quantities, add a column to contain the property Driver Weight Variable.
- 4 Click in the Driver Weight Fixed (**DWF**) column or the Driver Weight Variable (**DWV**) column for a destination account, and type a value.

Display Name	Cost	DWF	DWV
ACTIVITY (PRIMARY PANE)	\$9,000.00		
No<Organization>	\$9,000.00		
Stamping Parts	\$7,333.33	1.00	2.50
Chroming Parts	\$1,000.00	3.00	5.00
Attaching Bumper	\$666.67	2.00	4.00

If you are prevented from entering these values, verify that the following are correct:

- ☐ The source account's driver is a weighted driver.
- ☐ The weighted driver allows fixed driver quantities, variable driver quantities, or both.

## Specify the Default Driver

- 1 Select **Model > Properties**.

The Model Properties dialog box appears.

**Model Properties**

General | Cube | Attributes in Cubes | Model Dimensions

Model Currency: \_\_\_\_\_

This model's base currency is:

Output Quantity Options: \_\_\_\_\_

Use  as the default output quantity

Module Default Driver Options: \_\_\_\_\_

You can specify which driver each module automatically uses.

Resource module's driver:

Activity module's driver:

Cost Object module's driver:

External Unit module's driver:

OK Cancel Apply Help

- 2 Click the **General** tab.
- 3 In the **Module Default Driver Options** section, select a default driver for each module.

The drivers that are available for the External Units module include all drivers of type Bill of Cost.

## Associate a Driver Using an Account's Item Properties

- 1 In the Resource module, Activity module, or Cost Object module, select an account.
- 2 Select **Edit > Item Properties**.

The Item Properties dialog box appears.

Name	Value
Allocated Cost	
Assigned Cost	\$163.46
Assigned Idle Cost	
Assigned Idle Quantity	
Assigned Non-Reciprocal Cost	\$163.46
Assigned Reciprocal Cost	\$0.00
Calculate Error	
Cost	\$96.15
Dimension Level Name	Level1
Dimension Level Number	1
Dimension Member Name	Take Orders
Dimension Member Reference	Take Orders

- 3 From the **Properties** list, locate the **Driver Name** property.
- 4 Click in the **Value** column and select a driver.

Properties	Value
Driver Name	Basic Fixed
Driver Rate	Alloc User Entered
Driver Sequence Number	Basic Fixed
Driver Type	Basic Fixed and Variable
Entered Cost	Basic Non-Unique
Has Assignments	Basic Unique
Has Attributes	Basic Variable
Has BOC	Bill of Cost
	BOC Fixed
	BOC Fixed and Variable
	BOC Variable
	Evenly Assigned
	Percentage

## Associate a Driver Using a Module's Grid

- 1 In the Resource module, Activity module, or Cost Object module, add a column to display the **Driver Name** property.
- 2 Click in the **DrvName** column and select a driver.

Display Name	Display Reference	Cost	DrvName
[-]  ACTIVITY (PRIMARY PA		\$100.00	
[-]  New York	New York	\$100.00	
[+]  Take Orders	Take Orders	\$96.15	Alloc User Entered
[+]  Process Orders	Process Orders	\$3.85	Alloc User Entered
			Basic Fixed
			Basic Fixed and Variable
			Basic Non-Unique
			Basic Unique
			Basic Variable
			Bill of Cost
			BOC Fixed
			BOC Fixed and Variable
			BOC Variable
			Evenly Assigned
			Percentage







# CHAPTER 25

## Working with Assignments

---

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*Create an Assignment* 169

*Show Only the Source Accounts for an Account* 171

*Show Only the Destination Accounts for an Account* 171

*Show the Source Accounts and the Destination Accounts for an Account* 171

*Go to an Account* 172

---

### Introduction

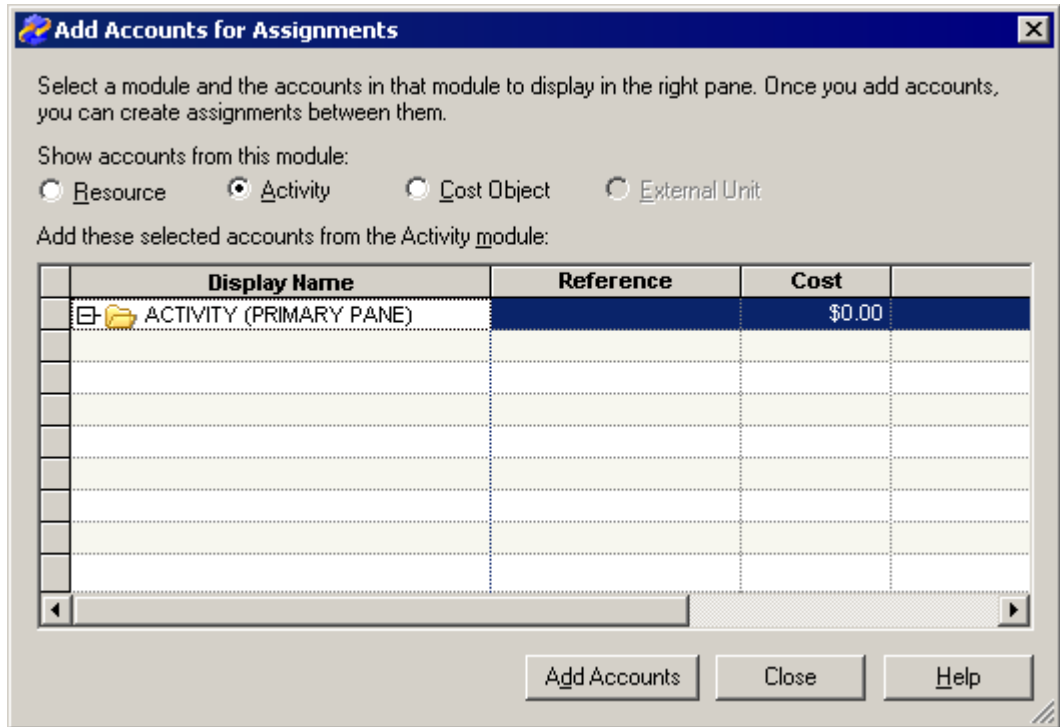
This chapter contains task-based information about working with assignments. For more conceptual information, see Chapter 10, “Assignments.”

---

### Create an Assignment

- 1 Decide which assignments panes to show.
- 2 Select **Model > Assignments > Add Accounts in Left Pane** (or **Add Accounts in Right Pane**).

The Add Accounts for Assignments dialog box appears.



3 From **Show accounts from this module**, select an option.

4 From the list of accounts, select an account.

You can select multiple accounts by using standard Microsoft Windows selection techniques.

If you select a roll-up account, all accounts within that roll-up account are added.

*Note:* You cannot select the module roll-up and add all accounts within it.

5 Click **Add Accounts**.

The accounts are added to the grid.

*Note:* You can leave this dialog box open to add more accounts individually.

6 Click **Close**.

7 Select the destination account.

8 To assign the cost to an account in the right assignments pane, click the arrowhead to the left of the account.



An arrow connects the two accounts.

Display Name		IntsctnName
RESOURCE (PRIMARY PANE)		New York x Process Orders
New York		New York x Take Orders
Salary		

To assign the cost from an account in the left assignments pane, click the arrowhead to the right of the account.

IntsctnName		Display Name
New York x Salary		ACTIVITY (PRIMARY PANE)
		New York
		Take Orders
		Process Orders

*Tip:* To quickly create assignments to many accounts, select **Model > Assignments > Assign All Left, Assign All Right, or Assign All Left and Right.**

---

## Show Only the Source Accounts for an Account

- 1 Select **Model > Assignments > Show Left Assignments Pane.**

The view is split to include an empty left assignments pane. The selected module is displayed in the primary pane on the right.

- 2 Expand the module hierarchy and select an account.
- 3 Select **Model > Assignments > Show Left.**

Arrows indicate the accounts that contribute costs to the selected account.

---

## Show Only the Destination Accounts for an Account

- 1 Select **Model > Assignments > Show Right Assignments Pane.**

The view is split to include an empty right assignments pane. The selected module is displayed in the primary pane on the left.

- 2 Expand the module hierarchy and select an account.
- 3 Select **Model > Assignments > Show Right.**

Arrows indicate the accounts that receive costs from the selected account.

---

## Show the Source Accounts and the Destination Accounts for an Account

- 1 Select **Model > Assignments > Show Left and Right Assignments Panes.**

The view is split to include empty left and right assignments panes. The selected module is displayed in the primary pane in the center.

- 2 Expand the module hierarchy and select an account.
- 3 Select **Model > Assignments > Show Left and Right**.

Arrows indicate the accounts that contribute costs to the selected account, as well as to the accounts that receive costs from the selected account.

---

## Go to an Account

You can quickly go to an account that is displayed in the left assignments pane or the right assignments pane.

- 1 Select an account in the left assignments pane or the right assignments pane.
- 2 Select **Edit > Go To Account**.

The selected account is displayed in the primary pane. You can display the source accounts and the destination accounts for the selected account.

# CHAPTER 26

## Working with Attributes

---

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---

### Introduction

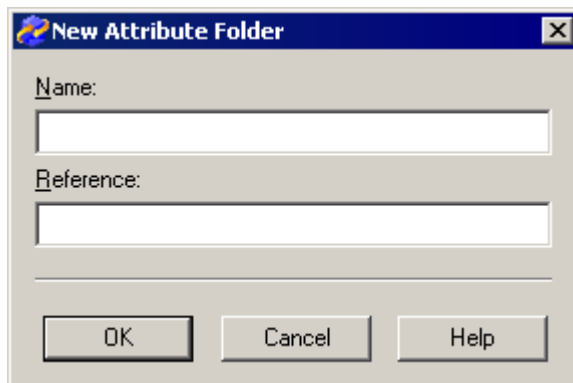
This chapter contains task-based information about working with attributes. For more conceptual information, see Chapter 11, “Attributes.”

---

### Create an Attribute Folder

- 1 Open a model in Model mode, and select **Model > Attributes Page**.  
The Attributes page appears.
- 2 Select an attribute folder (other than a dimension attribute folder) within which to create the new folder.
- 3 Select **Edit > New Folder**.

The New Attribute Folder dialog box appears.



4 Type the **Name**.

The name must follow the naming conventions. For information, see the Help.

5 Type the **Reference**.

A default reference is created from the name. If you change the reference, the new reference must follow the reference conventions. For information, see the Help.

## Create an Attribute

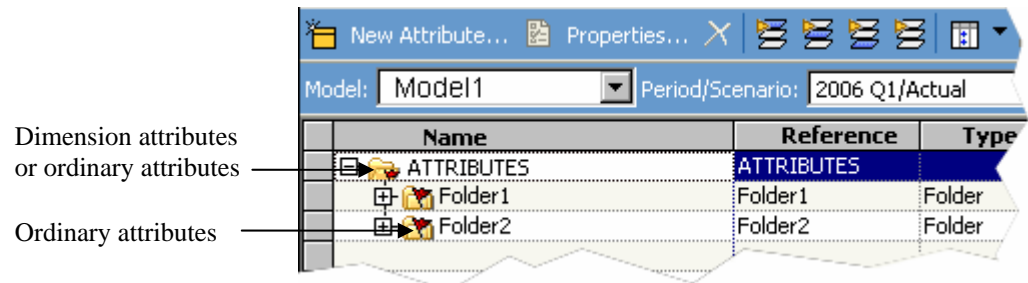
1 Open a model in Model mode, and select **Model > Attributes Page**.

The Attributes page appears.

2 Select the folder in which the attribute is to go.

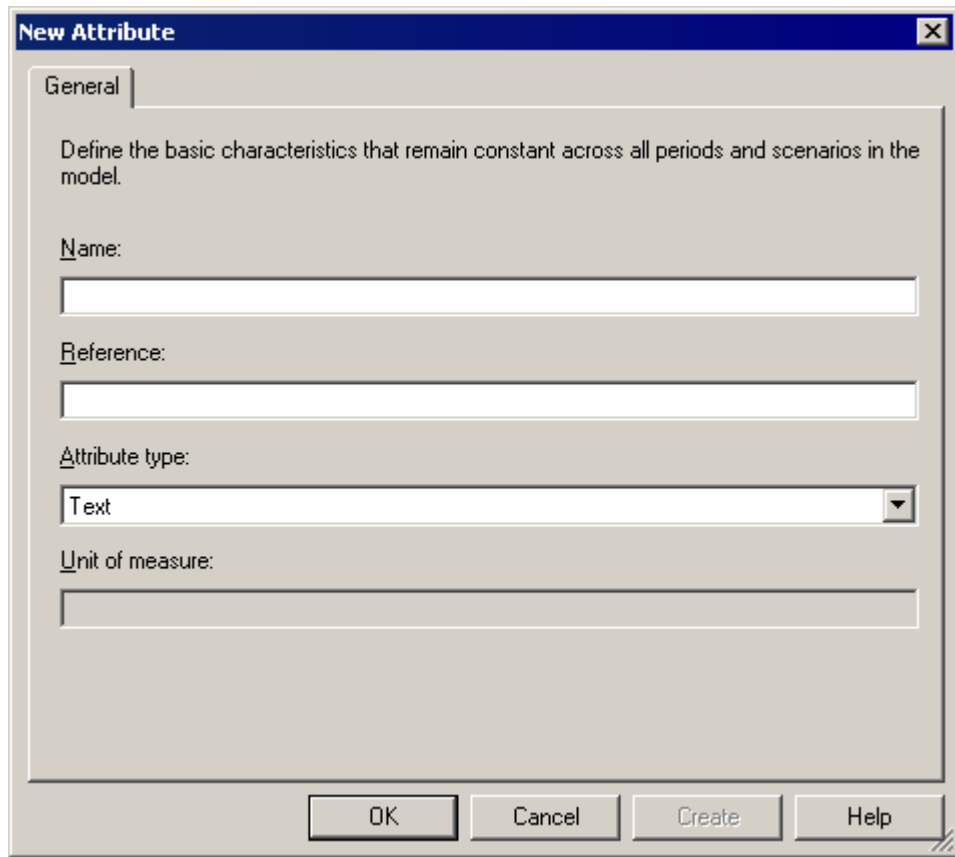
A dimension attribute can go in the **ATTRIBUTES** folder or in an existing dimension attribute.

Other attributes can go in the **ATTRIBUTES** folder or in another attribute folder.



- 3 Select **Edit > New Attribute**.

The New Attribute dialog box appears.



**New Attribute**

General

Define the basic characteristics that remain constant across all periods and scenarios in the model.

Name:

Reference:

Attribute type:

Text

Unit of measure:

OK Cancel Create Help

- 4 Type the **Name**.

The name must follow the naming conventions. For information, see the Help.

- 5 Type the **Reference**.

A default reference is created from the name. If you change the reference, the new reference must follow the reference conventions. For information, see the Help.

- 6 Select the **Attribute type**.

*Note:* If you select **Dimension** when either **ATTRIBUTES** or an existing dimension attribute is selected, you will create a dimension attribute folder, not a dimension attribute.

**For a numeric attribute only**

7 Type the **Unit of measure**.

8 Click the **Advanced** tab.

The screenshot shows a dialog box with two tabs: 'General' and 'Advanced'. The 'Advanced' tab is selected. The text inside the dialog reads: 'Define the characteristics that are specific to the selected period and scenario.' Below this, there is a label 'Using this period/scenario association:' followed by a drop-down menu showing '2005 / Actual'. Underneath is a label 'Default value:' followed by an empty text input field. Below that is a checkbox labeled 'Calculated', which is currently unchecked. At the bottom left is a label 'Equation:' followed by a large empty text area with a vertical scrollbar on the right. To the right of the 'Equation:' label is a button labeled 'Equation Editor...'. The 'General' tab is visible but not selected.

9 From the **Using this period/scenario association** drop-down list, select a period/scenario association.

10 Type the **Default value**.

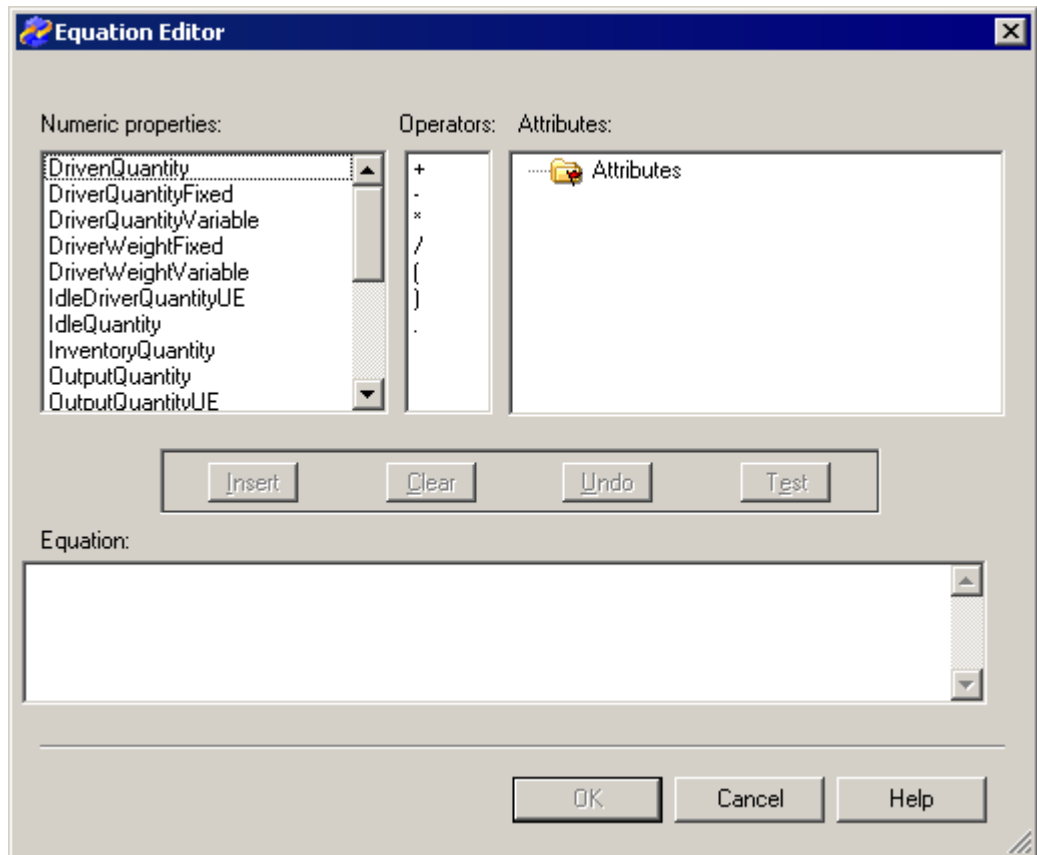
11 If this is a calculated attribute, perform the following steps:

a Select the **Calculated** option.

b Click **Equation Editor**.

The Equation Editor dialog box appears.





*Tip:* You can also modify the equation in the **Equation** box. For information about equations, see Chapter 12, “Using Equations with Calculated Drivers and Calculated Attributes.”

**c** Select an item from the list of **Numeric properties**, from the list of **Operators**, or from the list of **Attributes**.

**d** Click **Insert**.

The item is added to the equation.

*Tip:* You can also type the equation.

**e** Continue to insert items until you have built the entire equation.

**f** To remove the last item that you inserted, click **Undo**.

**g** To delete the entire equation, click **Clear**.

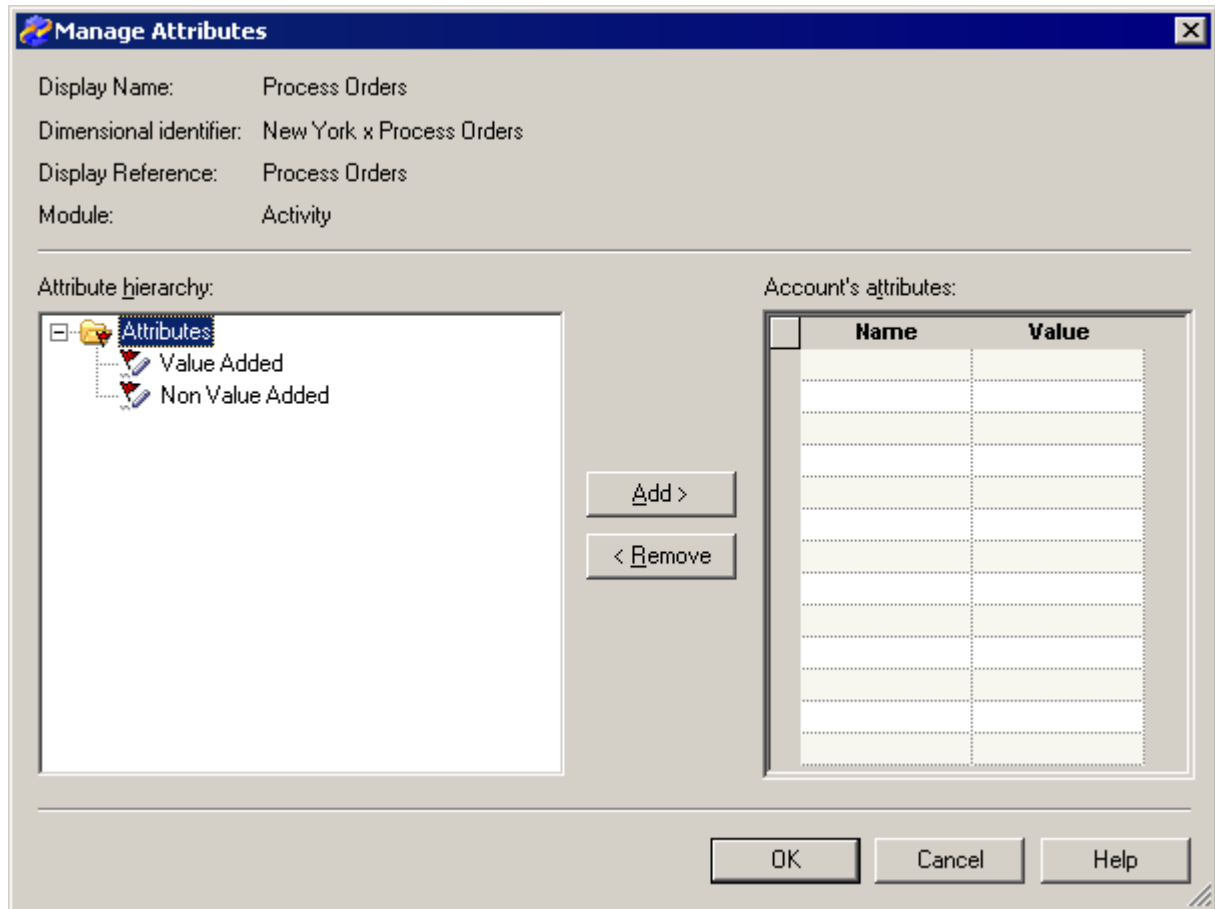
**h** Click **Test**.

If no errors are displayed, the syntax of the equation is valid.

## Add an Attribute to an Account

- 1 On a module page, select an account, and select **Edit > Manage Attributes**.

The Manage Attributes dialog box appears.



- 2 From the **Attribute hierarchy** list, select an attribute.
- 3 Click **Add >**.

The attribute is added to the **Account's attributes** list.

## Specify an Attribute's Value

- 1 On a module page, select an account, and select **Edit > Manage Attributes**.

The Manage Attributes dialog box appears.

- 2 From the **Account's attributes** list, select an attribute.
- 3 Set the **Value**.

The type of value that you can specify depends on the type of attribute.

## Show the Accounts To Which an Attribute Has Been Added

You can divide the Attributes page to see the accounts to which an attribute has been added.

- 1 Select **Model > Attributes Page**.

The Attributes page appears.

- 2 Select **Model > Assignments > Show Right Assignments Pane**.

The right assignments pane is displayed.

- 3 Select an attribute.

- 4 Select **Model > Assignments > Show Right**.

If the attribute has been added to any accounts, then those accounts are displayed.

Name	Reference	Type		Name
ATTRIBUTES	ATTRIBUTES			
Value Added	Value Added	Text		New York x Take Orders_1021
Non Value Added	Non Value Added	Text		New York x Process Orders_1022

## Remove an Attribute from an Account

- 1 On a module page, select an account, and select **Edit > Manage Attributes**.

The Manage Attributes dialog box appears.

- 2 From the **Account's attributes** list, select an attribute.

- 3 Click **< Remove**.

The attribute is removed from the **Attribute hierarchy** list.





# CHAPTER 27

## Working with Currencies

---

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<i>Remove a Currency</i>	183
<i>Set Up an Exchange Rates Table</i>	184
<i>Add Euro Exchange Rates</i>	184
<i>Copy an Exchange Rates Table</i>	184

---

### Introduction

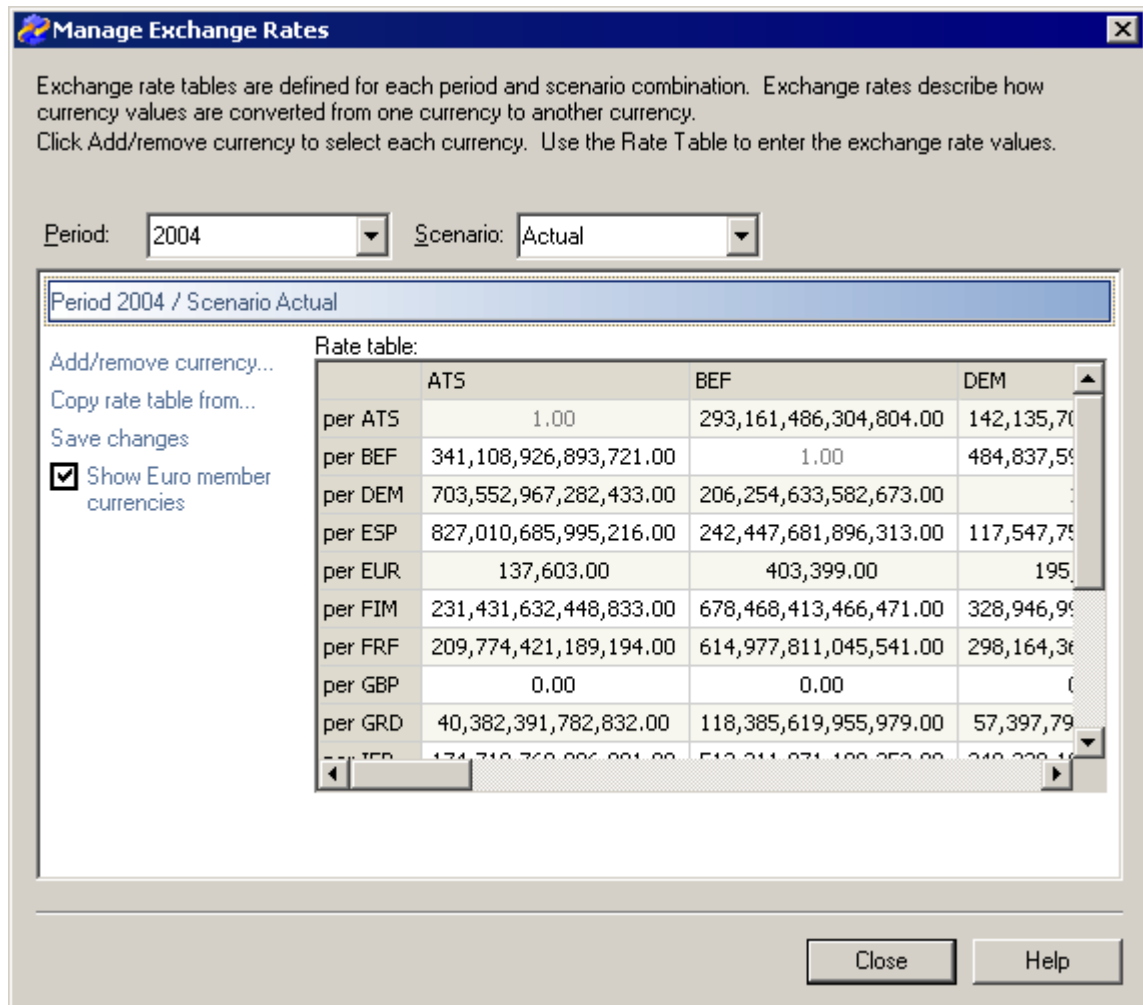
This chapter contains task-based information about working with currencies and exchange rates. For more conceptual information, see Chapter 16, “Currencies and Exchange Rates.”

---

### Add a Currency

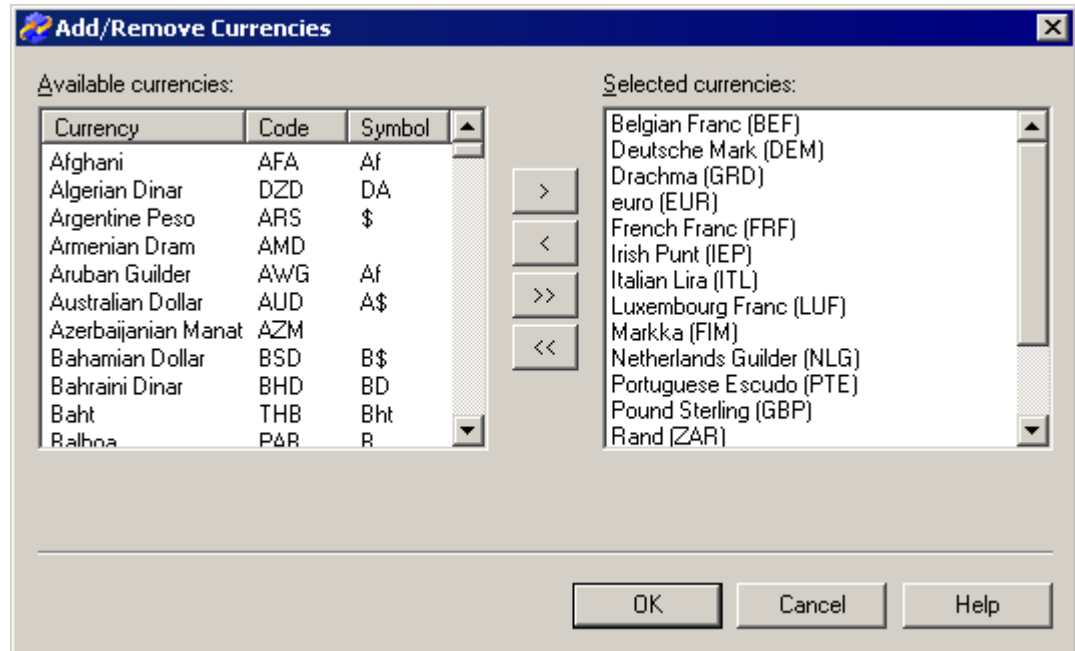
- 1 Select **Tools > Manage Exchange Rates**.

The Manage Exchange Rates dialog box appears.



- 2 Click the **Add/remove currency** link.

The Add/Remove Currencies dialog box appears.



- 3 In the **Available currencies** list, select one or more currencies.

To select more than one currency, use standard Microsoft Windows selection techniques.

- 4 Click >.

The currency is added to the **Selected currencies** list.

*Note:* To add all currencies, click >>.

---

## Remove a Currency

- 1 Select **Tools > Manage Exchange Rates**.

The Manage Exchange Rates dialog box appears.

- 2 Click the **Add/remove currency** link.

The Add/Remove Currencies dialog box appears.

- 3 In the **Selected currencies** list, select one or more currencies.

To select more than one currency, use standard Microsoft Windows selection techniques.

- 4 Click <.

The currency is removed from the **Available currencies** list.

*Note:* To remove all currencies, click <<.

---

## Set Up an Exchange Rates Table

- 1 Select **Tools > Manage Exchange Rates**.  
The Manage Exchange Rates dialog box appears.
- 2 Select a **Period**.
- 3 Select a **Scenario**.
- 4 Click the **Add/remove currency** link.  
The Add/Remove Currencies dialog box appears.
- 5 In the **Rate table**, click on the intersection between two currencies, and type an exchange rate.
- 6 Repeat the previous step for each exchange rate.

---

## Add Euro Exchange Rates


- 1 Select **Tools > Manage Exchange Rates**.  
The Manage Exchange Rates dialog box appears.
- 2 Click the **Save changes** link.  
Before you can add euro exchange rates, you must save any changes to the exchange rates table.
- 3 Add the currency named **euro**:
  - a Click the **Add/remove currency** link.  
The Add/Remove Currencies dialog box appears.
  - b Select the currency named **euro**.
- 4 Select the **Show Euro member currencies** option.

---

## Copy an Exchange Rates Table

- 1 Select **Tools > Manage Exchange Rates**.  
The Manage Exchange Rates dialog box appears.
- 2 Click the **Copy rate table from** link.  
The Copy Rates From dialog box appears.



 **Copy Rates From** [X]

Select a Period and Scenario below. The exchange rates for that period will appear in the preview box. Select OK to copy these rates.

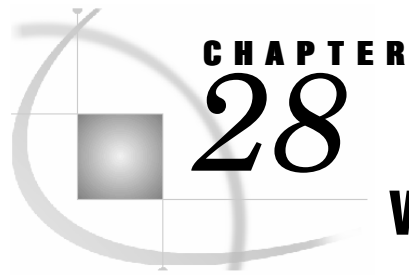
Period/Scenario: 2004 - Actual

Preview

	ATS	BEF	DEM
per ATS	1.00	293,161,486,304,804.00	142
per BEF	341,108,926,893,721.00	1.00	484
per DEM	703,552,967,282,433.00	206,254,633,582,673.00	
per ESP	827,010,685,995,216.00	242,447,681,896,313.00	117
per EUR	137,603.00	403,399.00	
per FIM	231,431,632,448,833.00	678,468,413,466,471.00	328

- 3 Select the **Period/Scenario** association that has the exchange rates table that you want to copy.





## Working with Column Layouts

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<i>Order Columns</i>	189
<i>Remove a Column</i>	190
<i>Format a Column</i>	190
<i>Save a Column Layout</i>	191
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---

### Introduction

This chapter contains task-based information about working with columns and column layouts. For more conceptual information, see Chapter 15, “Column Layouts.”

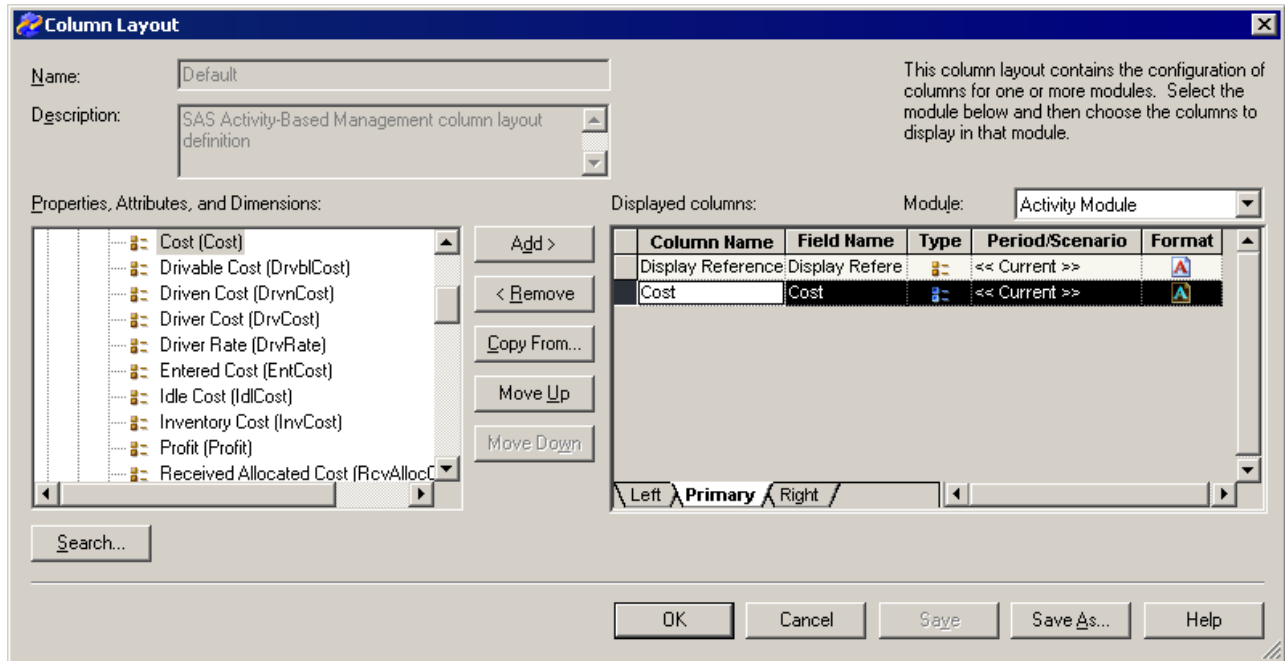
---

### Add a Column

- 1 On a module page, select **Model > Column Layout**.

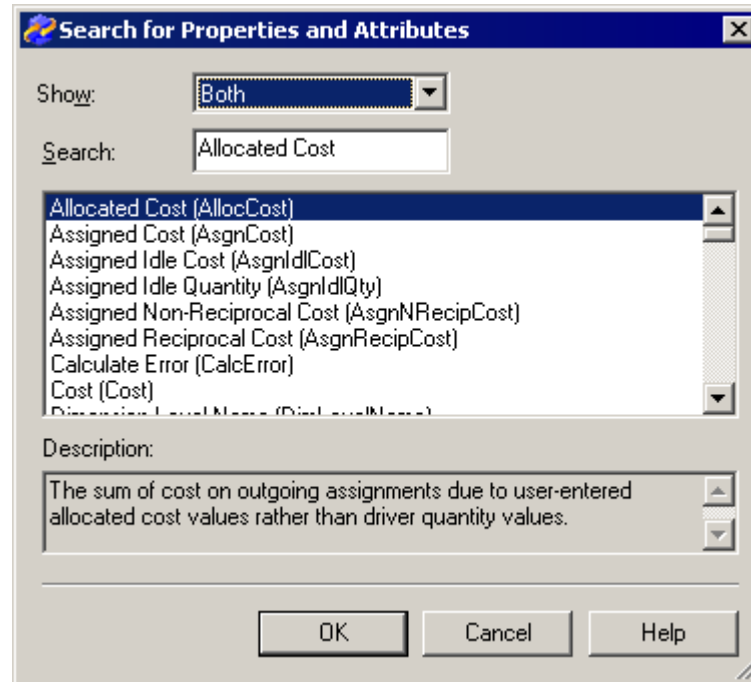
*Tip:* Alternatively, you can double-click a column heading.

The Column Layout dialog box appears.



- 2 Select the **Module** to which this column layout applies.
- 3 From the list of **Displayed columns**, select the pane from the appropriate tab (**Left**, **Primary**, or **Right**) to which you want to add the column.
- 4 From the list of **Properties, Attributes, and Dimensions**, select an item.
- 5 To search for an item, do the following:
  - a Click **Search**.

The Search for Properties and Attributes dialog box appears.



- b** From the **Show** drop-down list, select the items to display.
  - c** To rapidly move through the list of items, type a phrase in the **Search** box.  
As you type text, the item that most closely matches the text is selected.
  - d** Select an item from the list.  
The **Description** of the item is displayed.  
*Note:* Some items, such as attributes, might not have a description.
  - e** Click **OK**.
- 6** Click **Add >**.
  - 7** To rename the column, click the **Column Name** of the new row, and type a new name.  
This text is displayed in the column heading of the column layout.
  - 8** To select a different period/scenario association, click in the **Period/Scenario** column, and select a period/scenario association.

---

## Order Columns

- 1** On a module page, select **Model > Column Layout**.  
The Column Layout dialog box appears.
- 2** Select the **Module** to which this column layout applies.

- 3 From the list of **Displayed columns**, select the pane from the appropriate tab (**Left**, **Primary**, or **Right**) that you want to order.
- 4 Select a row (which represents a column in the view).
- 5 To move the row up, click **Move Up**.  
The column will be moved to the left.
- 6 To move the row down, click **Move Down**.  
The column will be moved to the right.

*Tip:* You can drag columns on the following pages: the Resource module page, the Activity module page, the Cost Object module page, and the External Units module page.


---

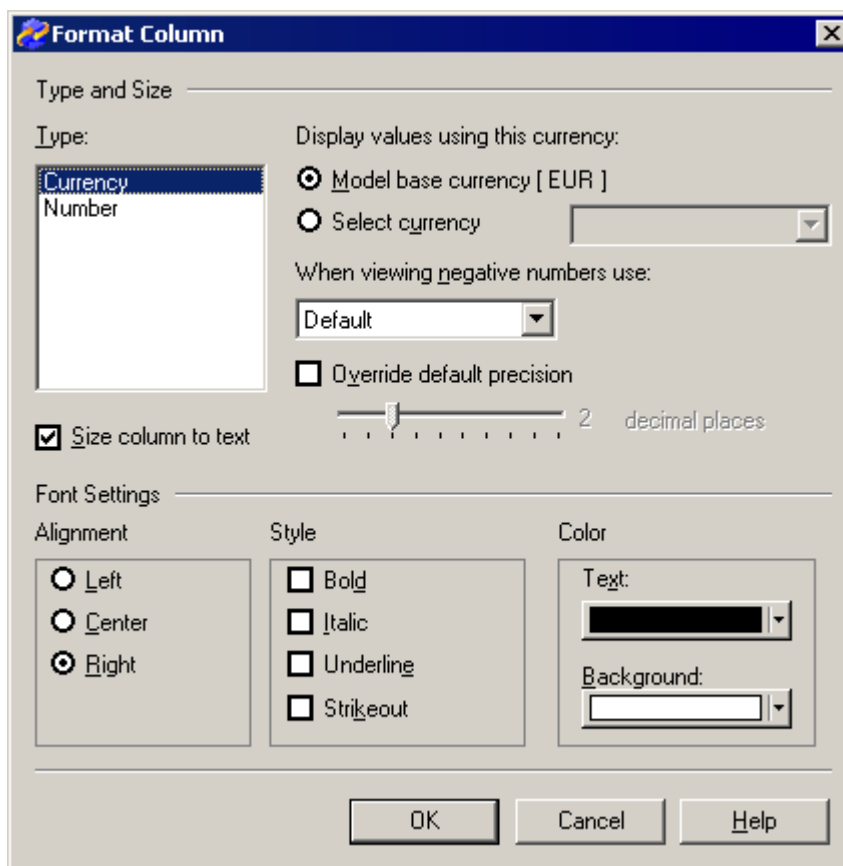
## Remove a Column

- 1 On a module page, select **Model > Column Layout**.  
The Column Layout dialog box appears.
- 2 Select the **Module** to which this column layout applies.
- 3 From the list of **Displayed columns**, select the pane from the appropriate tab (**Left**, **Primary**, or **Right**) from which you want to remove the column.
- 4 Select a row (which represents a column in the view).
- 5 Click **< Remove**.  
The row (column) is removed from the list of **Displayed columns**.

---

## Format a Column

- 1 On the Resource module page, the Activity module page, the Cost Object module page, or the External Units module page, select **Model > Column Layout**.  
The Column Layout dialog box appears.
- 2 In a row that represents the column that you want to format, click .  
The Format Column dialog box appears.



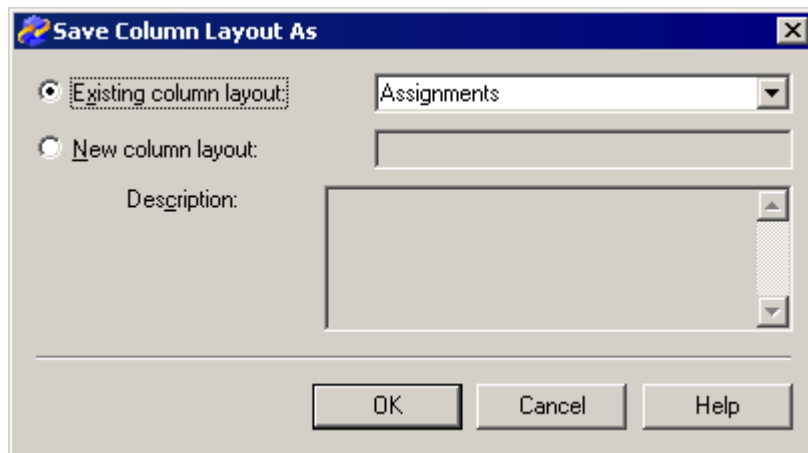
- 3 In the **Type and Size** section, select the **Type** of data.
- 4 For **Display values using this currency**, select or clear an option.
- 5 From the **When viewing negative numbers use** drop-down list, select or clear an option.
- 6 Specify the precision:
  - a Select or clear the **Override default precision** option.
  - b Set a value for the number of **decimal places**.
- 7 To quickly set the width of a column so that the column is wide enough to display all data, select the **Size column to text** option.
- 8 In the **Font settings** section, select or clear options for **Alignment**, **Style**, and **Color**.

---

## Save a Column Layout

- 1 To save a column layout on a module page using its current name, select **Model > Column Layout > Save**.
- 2 To save a column layout using another name, select **Model > Column Layout > Save As**.

The Save Column Layout As dialog box appears.



- 3 To replace an existing column layout, do the following:
  - a Select the **Existing column layout** option.
  - b From the drop-down list on the right, select a column layout.
- 4 To create a new column layout, do the following:
  - a Select the **New column layout** option.
  - b In the box on the right, type the name of the new column layout.
  - c Type the **Description**.

---

## Copy a Column Layout to another Module

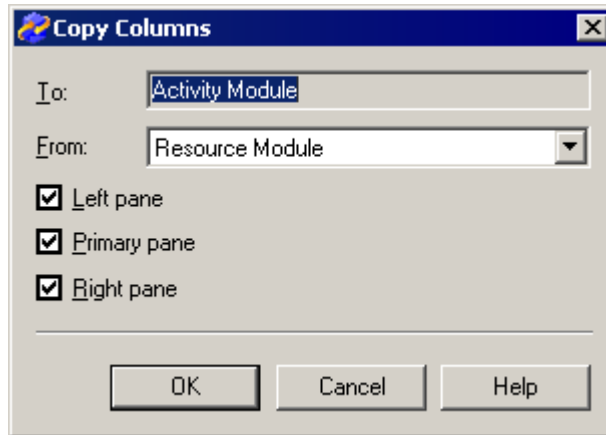
- 1 On the page to which you want to copy a column layout (the Resource module page, the Activity module page, the Cost Object module page, or the External Units module page), select **Model > Column Layout**.

The Column Layout dialog box appears.

- 2 Click **Copy From**.

The Copy Columns dialog box appears.





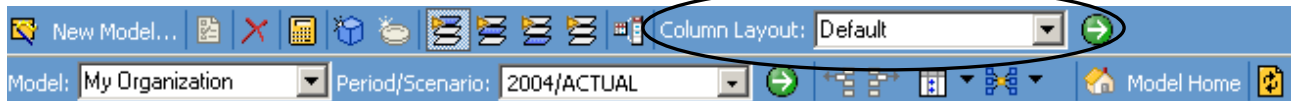
- 3 Select the module to copy **From**.
- 4 Select the assignments panes to copy from.

---

## Apply a Saved Column Layout

*Note:* You can apply a saved column layout to only module pages.

- 1 From the **Column Layout** drop-down list, select a column layout.



- 2 Click .



# CHAPTER 29

## Working with Querying Contributions

*Introduction* 195  
*Some Key Things to Know* 196  
*Query Contributions from Resource to Cost Object* 197  
*Query Contributions Via the Activity Module* 198  
*Query Contributions from Resource to Activity Module* 199  
*Drilling Down to a Lower Level* 200  
*Using the ABC Procedure* 201

### Introduction

The Contributions page provides the fastest and easiest method to view cost flows throughout a model. To query a model on the Contributions page, the model must have been calculated. However, you do not have to generate a cube. Queries are fast because there is no cube to navigate.

To open the Contributions page, do one of the following:

- ❑ Click the Contributions icon, then click **New Query**.

**Note:** The Contributions icon appears only if the Contributions Server has been installed.



- ❑ Or, select **File > New > Contribution Query**.

The Contributions page opens as seen in the following picture.

**Note:** Apache Tomcat must be running on the server.

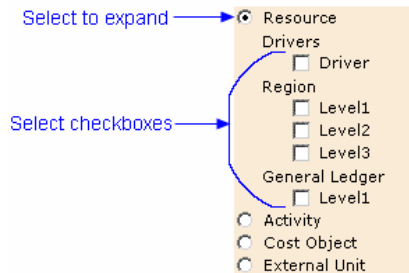
 A screenshot of the SAS ABM Cost Flow Viewer interface. The title bar says "SAS ABM Cost Flow Viewer". Below the title bar, there are three tabs: "Parcel Express Tutorial", "2008 Q1", and "ACTUAL". The main area contains three panels for selecting source, via, and destination modules/stages. Each panel has radio buttons for Resource, Activity, Cost Object, and External Unit. Below the panels are three buttons: "Drill Up", "Get Results", and "Gen Proc Stmt".
 

Select Source Module/Stage:	Select Via Module/Stage(s):	Select Destination Module/Stage:
<input type="radio"/> Resource	<input type="checkbox"/> Resource	<input type="radio"/> Resource
<input type="radio"/> Activity	<input type="checkbox"/> Activity	<input type="radio"/> Activity
<input type="radio"/> Cost Object	<input type="checkbox"/> Cost Object	<input type="radio"/> Cost Object
<input type="radio"/> External Unit	<input type="checkbox"/> External Unit	<input type="radio"/> External Unit

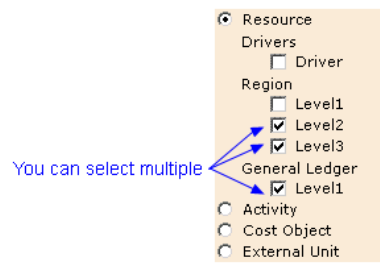
Drill Up      Get Results      Gen Proc Stmt

## Some Key Things to Know

- ❑ Select a module (Resource, Activity, Cost Object, or External Unit) to expand it. Expanding a module does *not* select any dimensions in it. Select checkboxes to select dimensions in the module.

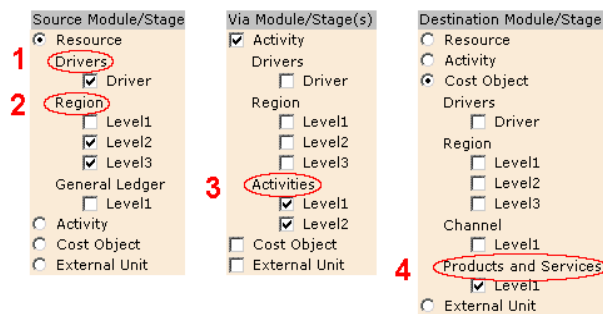


- ❑ You can choose only one module for a query, but you can select multiple dimensions in a module.



**Note:** Only one module is active at a time. Although checkboxes remain selected when a module is collapsed, if a module is collapsed, then it is not active.

- ❑ You can select as many as 10 dimensions. You can select any number of levels within a dimension (For the Contributions page, Drivers is considered a dimension). The following picture illustrates how the system counts dimensions. In this picture four dimensions are selected and six dimension levels:



You must select at least one source level and at least one destination level.

- ❑ You do not have to select anything in **Via Module/Stage(s)**. If you do not select anything, then *all* paths from source to destination are included in calculations. Select something in **Via Module/Stage(s)** to *restrict* the paths that are included.

## Query Contributions from Resource to Cost Object

The following example uses data from the Parcel Express Tutorial model to illustrate a typical query using the Contributions page. The particular data is not important. The query shows, by region, the contributions of level 1 General Ledger items (wages, operating expenses, and equipment expenses) to each of the three products by region and channel.

- 1 For Source Module, the following levels are selected under the **Resource** module:
  - ☐ **Level3** (Beaverton, Eugene) under **Region**
  - ☐ **Level1** (Wages, Operating Expenses, Equipment Expenses) under **General Ledger**
- 2 For Destination Module, the following levels are selected under the **Cost Object** module:
  - ☐ **Level3** (Beaverton, Eugene) under **Region**
  - ☐ **Level1** (Drop Box, Walk In, Commercial Channel) under **Channel**
  - ☐ **Level1** (2nd Day Guaranteed, Overnight Express, Standard Ground) under **Products and Services**

The image displays three side-by-side screenshots of a query configuration interface, each with a title bar and a list of options.

- Select Source Module/Stage:** This panel shows the 'Resource' module selected. Under 'Region', 'Level3' is checked. Under 'General Ledger', 'Level1' is checked. 'Activity' and 'Cost Object' are unselected.
- Select Via Module/Stage(s):** This panel shows 'Resource', 'Activity', 'Cost Object', and 'External Unit' as unselected options.
- Select Destination Module/Stage:** This panel shows the 'Cost Object' module selected. Under 'Region', 'Level3' is checked. Under 'Channel', 'Level1' is checked. Under 'Products and Services', 'Level1' is checked. 'Driver' is unselected.

Red circles highlight the selected 'Level3' and 'Level1' options in the Source and Destination panels.

- 3 After clicking **Get Results**, the resulting table shows the contributions of general ledger (wages, operating expenses, and equipment expenses) to each of the three products by region and channel. (The following picture shows the table split in pieces, with one piece on top of the other, to fit better on the page.)

		3:Beaverton	3:Beaverton	3:Beaverton	3:Beaverton	3:Beaverton
		1:None	1:None	1:None	1:Drop Box	1:Drop Box
		1:2nd Day Guarant	1:Overnight Expre	1:Standard Grounc	1:None	1:2nd Day Guarant
3:Beaverton	1:Wages	334096.90	450652.53	733953.01	14387.71	54837.86
3:Beaverton	1:Operating Expen	48498.77	77840.48	105372.13	754.63	7614.15
3:Beaverton	1:Equipment Exper	10740.49	17585.06	23259.46	325.80	1727.42
3:Eugene	1:Wages	0.00	0.00	0.00	0.00	0.00
3:Eugene	1:Operating Expen	0.00	0.00	0.00	0.00	0.00
3:Eugene	1:Equipment Exper	0.00	0.00	0.00	0.00	0.00

		3:Beaverton	3:Beaverton	3:Beaverton	3:Beaverton	3:Beaverton
		1:Drop Box	1:Drop Box	1:Walk In	1:Walk In	1:Walk In
		1:Overnight Expre	1:Standard Grounc	1:None	1:2nd Day Guarant	1:Overnight Expre
3:Beaverton	1:Wages	28432.91	132294.68	81530.34	186752.70	271523.56
3:Beaverton	1:Operating Expen	4711.49	18173.92	4276.26	25503.97	44293.78
3:Beaverton	1:Equipment Exper	1082.30	4111.16	1846.20	5839.10	10240.37
3:Eugene	1:Wages	0.00	0.00	0.00	0.00	0.00
3:Eugene	1:Operating Expen	0.00	0.00	0.00	0.00	0.00
3:Eugene	1:Equipment Exper	0.00	0.00	0.00	0.00	0.00

		3:Beaverton	3:Beaverton	3:Beaverton	3:Beaverton	3:Beaverton
		1:Walk In	1:Commercial Pick	1:Commercial Pick	1:Commercial Pick	1:Commercial Pick
		1:Standard Grounc	1:None	1:2nd Day Guarant	1:Overnight Expre	1:Standard Grounc
3:Beaverton	1:Wages	459698.70	23979.51	119556.03	181816.30	203687.27
3:Beaverton	1:Operating Expen	62121.46	1257.72	16799.40	30467.46	28314.35
3:Beaverton	1:Equipment Exper	14183.29	543.00	3786.49	6967.08	6362.79
3:Eugene	1:Wages	0.00	0.00	0.00	0.00	0.00
3:Eugene	1:Operating Expen	0.00	0.00	0.00	0.00	0.00
3:Eugene	1:Equipment Exper	0.00	0.00	0.00	0.00	0.00

## Query Contributions Via the Activity Module


The following example shows the selection of cost flows from a source to a target *via an intermediary module or stage*. The query shows the general ledger contributions by activity to each of the three products by channel.

- For Source Module, the following levels are selected under the **Resource** module:
  - ☐ **Level3** (Beaverton, Eugene) under **Region**
  - ☐ **Level1** (Wages, Operating Expenses, and Equipment Expenses) under **General Ledger**
- For Via Module, the following level is selected under the **Activity** module:
  - ☐ **Level2** (Expedite Package Shipments, Move to Warehouse, and so on) under **Activities**
- For Destination Module, the following levels are selected under the **Cost Object** module:
  - ☐ **Level1** (Drop Box, Walk In, Commercial Channel) under **Channel**
  - ☐ **Level1** (2nd Day Guaranteed, Overnight Express, Standard Ground) under **Products and Services**

Select Source Module/Stage:	Select Via Module/Stage(s)	Select Destination Module/Stage:
<input checked="" type="radio"/> Resource Drivers <input type="checkbox"/> Driver Region <input type="checkbox"/> Level1 <input type="checkbox"/> Level2 <input checked="" type="checkbox"/> Level3 General Ledger <input checked="" type="checkbox"/> Level1 <input type="radio"/> Activity <input type="radio"/> Cost Object	<input checked="" type="checkbox"/> Activity Drivers <input type="checkbox"/> Driver Region <input type="checkbox"/> Level1 <input type="checkbox"/> Level2 <input type="checkbox"/> Level3 Activities <input type="checkbox"/> Level1 <input checked="" type="checkbox"/> Level2 <input type="checkbox"/> Cost Object	<input checked="" type="radio"/> Cost Object Drivers <input type="checkbox"/> Driver Region <input type="checkbox"/> Level1 <input type="checkbox"/> Level2 <input type="checkbox"/> Level3 Channel <input checked="" type="checkbox"/> Level1 Products and Services <input checked="" type="checkbox"/> Level1

- 4 After clicking **Get Results**, the resulting table shows the general ledger contributions by activity (activities in the *via* column are shown in yellow) to each of the three products by channel. (Because it is large, only part of the table is shown here.)

Via these activities



			1:Drop Box 1:None	1:Drop Box 1:2nd Day Guarant	1:Drop Box 1:Overnight Expre	1:Drop Box 1:Standard Grounc	1:Walk In
3:Beaverton	1:Wages	2:Expedite Package	0.00	5696.76	765.91	5005.55	0.00
3:Beaverton	1:Wages	2:Move to Warehouse	0.00	9858.22	6344.05	24945.94	0.00
3:Beaverton	1:Wages	2:Sort	0.00	17881.67	11112.45	45957.64	0.00
3:Beaverton	1:Wages	2:Inspect	0.00	5548.67	4079.04	13128.73	0.00
3:Beaverton	1:Wages	2:Air Distribution	0.00	18765.40	18950.16	41221.29	0.00
3:Beaverton	1:Wages	2:Land Distribution	0.00	26080.27	6077.78	76768.05	0.00
3:Beaverton	1:Operating Expenses	2:Resolve Customer	754.63	195.92	87.07	471.64	42.00
3:Beaverton	1:Operating Expenses	2:Expedite Package	0.00	551.62	74.16	484.69	0.00
3:Beaverton	1:Operating Expenses	2:Move to Warehouse	0.00	447.46	287.95	1132.28	0.00
3:Beaverton	1:Operating Expenses	2:Sort	0.00	2551.19	1585.42	6556.80	0.00
3:Beaverton	1:Operating Expenses	2:Inspect	0.00	1670.25	1227.87	3951.99	0.00
3:Beaverton	1:Operating Expenses	2:Air Distribution	0.00	3468.91	3503.06	7620.03	0.00
3:Beaverton	1:Operating Expenses	2:Land Distribution	0.00	3229.11	752.51	9504.97	0.00
3:Beaverton	1:Equipment Expenses	2:Resolve Customer	325.80	84.58	37.59	203.62	16.00
3:Beaverton	1:Equipment Expenses	2:Expedite Package	0.00	116.10	15.61	102.01	0.00
3:Beaverton	1:Equipment Expenses	2:Move to Warehouse	0.00	117.20	75.42	296.56	0.00
3:Beaverton	1:Equipment Expenses	2:Sort	0.00	821.04	510.23	2110.16	0.00
3:Beaverton	1:Equipment Expenses	2:Inspect	0.00	434.18	319.18	1027.31	0.00
3:Beaverton	1:Equipment Expenses	2:Air Distribution	0.00	781.31	789.00	1716.27	0.00
3:Beaverton	1:Equipment Expenses	2:Land Distribution	0.00	701.60	163.50	2065.19	0.00
3:Eugene	1:Wages	2:Resolve Customer	42029.85	1.00	4849.41	2625.72	5379.00
3:Eugene	1:Wages	2:Expedite Package	0.00	0.00	110.74	0.00	0.00

## Query Contributions from Resource to Activity Module

The destination module does not need to be a cost object. The query shows the contributions, by region, of general ledger items to activities

- For Source Module, the following levels are selected under the **Resource** module:
  - ☐ **Level3** (Beaverton, Eugene) under **Region**
  - ☐ **Level1** (Wages, Operating Expenses, and Equipment Expenses) under **General Ledger**
- For Destination Module, the following level is selected under the **Activity** module:
  - ☐ **Level2** (Expedite Package Shipments, Move to Warehouse, and so on) under **Activities**

Select Source Module/Stage:	Select Via Module/Stage(s)	Select Destination Module/Stage:
<input checked="" type="radio"/> Resource Drivers <input type="checkbox"/> Driver Region <input type="checkbox"/> Level1 <input type="checkbox"/> Level2 <input checked="" type="checkbox"/> Level3 General Ledger <input checked="" type="checkbox"/> Level1 <input type="radio"/> Activity <input type="radio"/> Cost Object	<input type="checkbox"/> Resource <input type="checkbox"/> Activity <input type="checkbox"/> Cost Object <input type="checkbox"/> External Unit	<input checked="" type="radio"/> Activity Drivers <input type="checkbox"/> Driver Region <input type="checkbox"/> Level1 <input type="checkbox"/> Level2 <input type="checkbox"/> Level3 Activities <input type="checkbox"/> Level1 <input checked="" type="checkbox"/> Level2 <input type="radio"/> Cost Object

- After clicking **Get Results**, the resulting table shows the contributions, by region, of general ledger items to activities.

		2:Resolve Custom	2:Expedite Packag	2:Move to Wareho	2:Sort	2:Inspect	2:Air Distribution	2:Land Distribution
3:Beaverton	1:Wages	119897.56	79931.71	319726.83	577517.64	183084.68	687030.62	729769.95
3:Beaverton	1:Operating Expen	6288.62	7739.84	14512.20	82394.70	55111.93	127002.26	90355.85
3:Beaverton	1:Equipment Exper	2715.00	1629.00	3801.00	26516.86	14326.19	28604.80	19632.06
3:Eugene	1:Wages	112640.00	56320.00	281600.00	546512.59	150186.67	0.00	1222352.59
3:Eugene	1:Operating Expen	7452.50	8710.71	66782.14	152727.86	65330.36	0.00	247577.86
3:Eugene	1:Equipment Exper	1900.00	760.00	3040.00	19039.41	9905.33	0.00	34239.41

## Drilling Down to a Lower Level

The table that is generated by a query is not static. If you display a dimension level that has additional levels under it, you can click the generated table to display the next level of detail.

- For Source Module, the following levels are selected under the **Activity** module:
  - ☐ **Level3** (Beaverton, Eugene) under **Region**
  - ☐ **Level1** (Personnel Intensive Activities, Local Collection, Local Processing, and Regional Distribution) under **Activities**
- For Destination Module, the following level is selected under the **Cost Object** module:
  - ☐ **Level1** (2nd Day Guaranteed, Overnight Express, and Standard Ground) under **Products and Services**

- After clicking **Get Results**, the resulting table shows the contributions of activities, by region, to products and services. Note that the Activities column is highlighted.

Activities column is highlighted

		1:None	1:2nd Day Guarant	1:Overnight Expre	1:Standard Ground
3:Beaverton	1:Personnel Intens	128901.18	70690.53	47860.50	99650.69
3:Beaverton	1:Local Collection	0.00	68142.46	112902.70	156994.87
3:Beaverton	1:Local Processing	0.00	144003.74	245052.30	327675.90
3:Beaverton	1:Regional Distribu	0.00	346676.12	508947.70	826771.72
3:Eugene	1:Personnel Intens	121992.50	37063.51	83653.93	67065.77
3:Eugene	1:Local Collection	0.00	110632.90	42951.60	197837.65
3:Eugene	1:Local Processing	0.00	233086.95	92671.34	417568.50
3:Eugene	1:Regional Distribu	0.00	475001.01	180952.76	848216.08

Click →

- Click **1:Local Processing** in the Activities column to go to the next level of detail.

Initially, activities were displayed at Level1. By clicking, you drill down to Level2 activities. Notice that the entire table is replaced by the Level2 activities. Also notice that the roll-up account **1:Local Processing** is displayed.



Drill Up      Get Results      Gen Proc Stmt

Roll-up account →

		1:None	1:2nd Day Guarant	1:Overnight Expre	1:Standard Ground
3:Beaverton	1:Local Processing	0.00	144003.74	245052.30	327675.90
3:Beaverton	2:Sort	0.00	138953.28	222325.25	325150.67
3:Beaverton	2:Inspect	0.00	50034.27	94701.16	107787.36

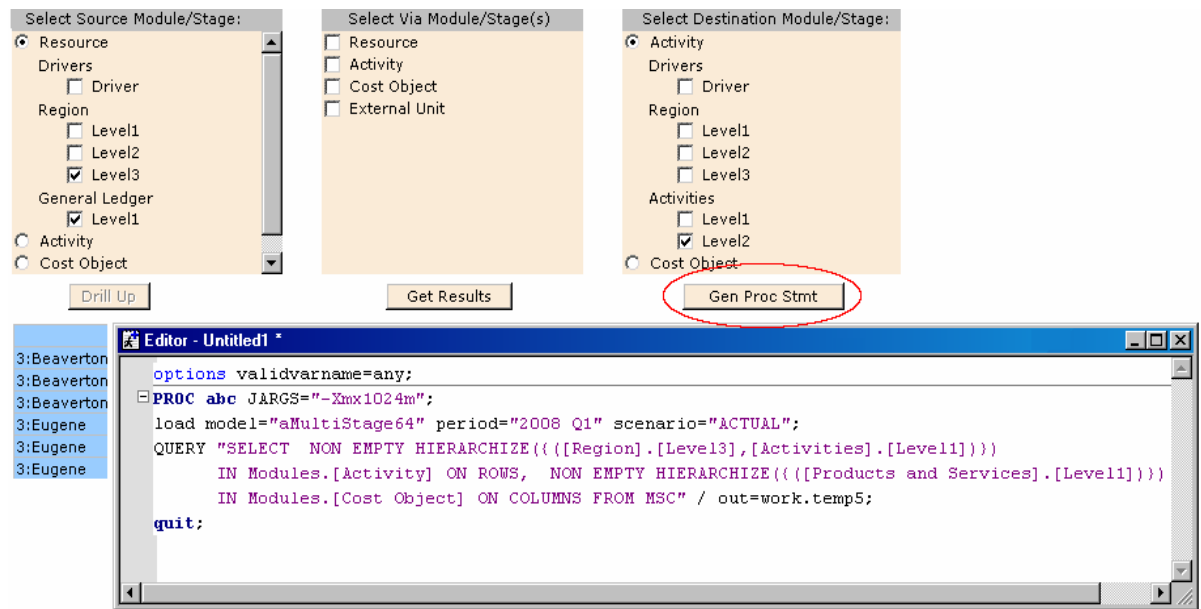
5 Click **Drill Up** to return to the previous table.

		1:None	1:2nd Day Guarant	1:Overnight Expre	1:Standard Ground
3:Beaverton	1:Personnel Intens	128901.18	70690.53	47860.50	99650.69
3:Beaverton	1:Local Collection	0.00	68142.46	112902.70	156994.87
3:Beaverton	1:Local Processing	0.00	144003.74	245052.30	327675.90
3:Beaverton	1:Regional Distribu	0.00	346676.12	508947.70	826771.72
3:Eugene	1:Personnel Intens	121992.50	37063.51	83653.93	67065.77
3:Eugene	1:Local Collection	0.00	110632.90	42951.60	197837.65
3:Eugene	1:Local Processing	0.00	233086.95	92671.34	417568.50
3:Eugene	1:Regional Distribu	0.00	475001.01	180952.76	848216.08

## Using the ABC Procedure

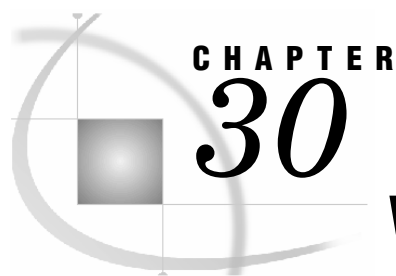
SAS Activity-Based Management has externalized, in the form of the ABC procedure, the processing that it uses internally to calculate a model and query a cube. The ABC procedure allows you to create SAS programs to query model data outside of SAS Activity-Based Management.

The easiest method to create a program that uses the ABC procedure is to use the Contributions page to perform a query. Then click **Gen Proc Stmt** to copy (to the clipboard) the PROC ABC statement that the Contributions page itself used for the query. For example, assuming that you have performed the query described above, click **Gen Proc Stmt** and paste into the SAS editor (or any ASCII editor). You will see results similar to the following:



You can modify the program in any way that you want before you run it.

**Note:** The statement that is copied to the clipboard is the last query that you executed – not any query that you are in the process of formulating. After formulating a query, you must click **Get Results** before clicking the **Gen Proc Stmt** button to copy the new query to the clipboard.



# CHAPTER 30

## Working with Reports

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*Delete a Report Configuration* 216

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### Introduction

This chapter contains task-based information about working with reports. For more conceptual information, see Chapter 14, “Reporting Model Data.”

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### Start Reports Mode

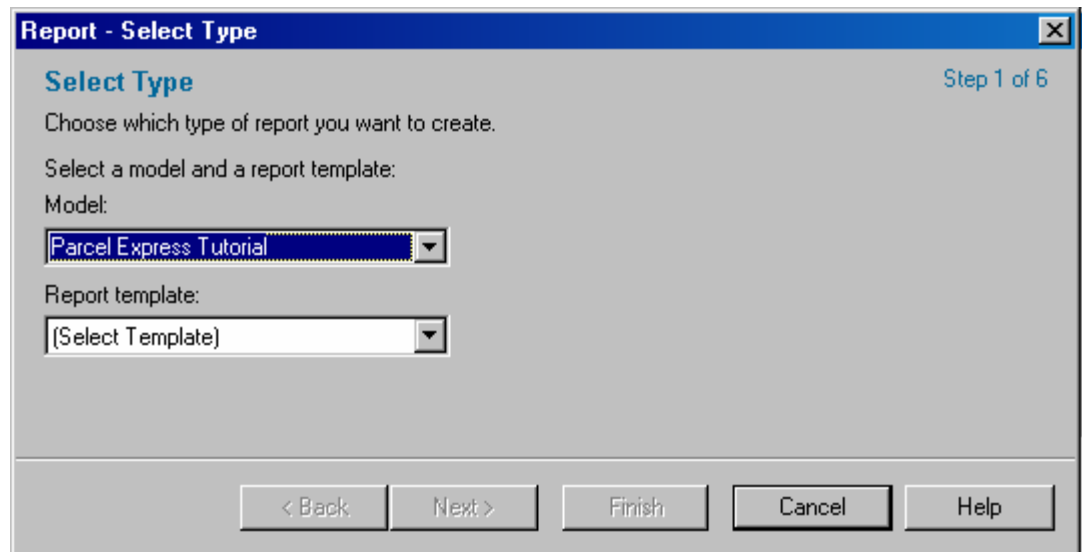
Click  **Reports** at the top of the SAS Activity-Based Management window.

---

### Create a Report

- 1 Select **File > New > Report**.

The Report Wizard appears.



**Report - Select Type** [X] Step 1 of 6

**Select Type**

Choose which type of report you want to create.

Select a model and a report template:

Model:

Parcel Express Tutorial [v]

Report template:

[Select Template] [v]

< Back Next > Finish Cancel Help

**Note:** To create a report you do not have to generate a cube. However, to create the following reports you must have already generated the Fact table for the model:

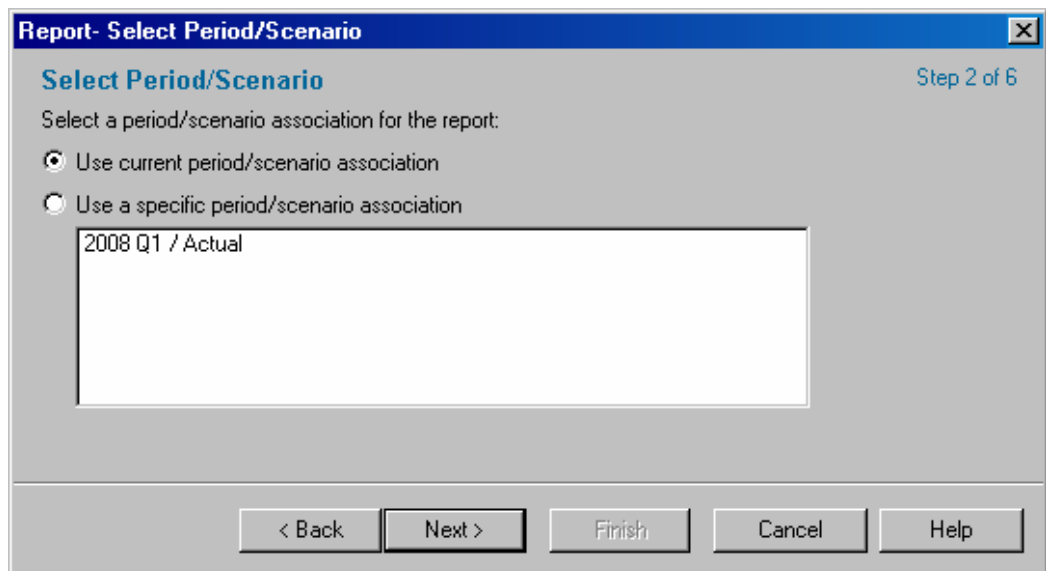
- Resource Contributions
- Destination Furthest
- Profit and Loss (Resource Contribution)

2 Select a **Model**.

3 Select a **Report template**.

For information about what data each report template contains, see the Help.

4 Click **Next**.



**Report- Select Period/Scenario** [X] Step 2 of 6

**Select Period/Scenario**

Select a period/scenario association for the report:

☒ Use current period/scenario association

☐ Use a specific period/scenario association

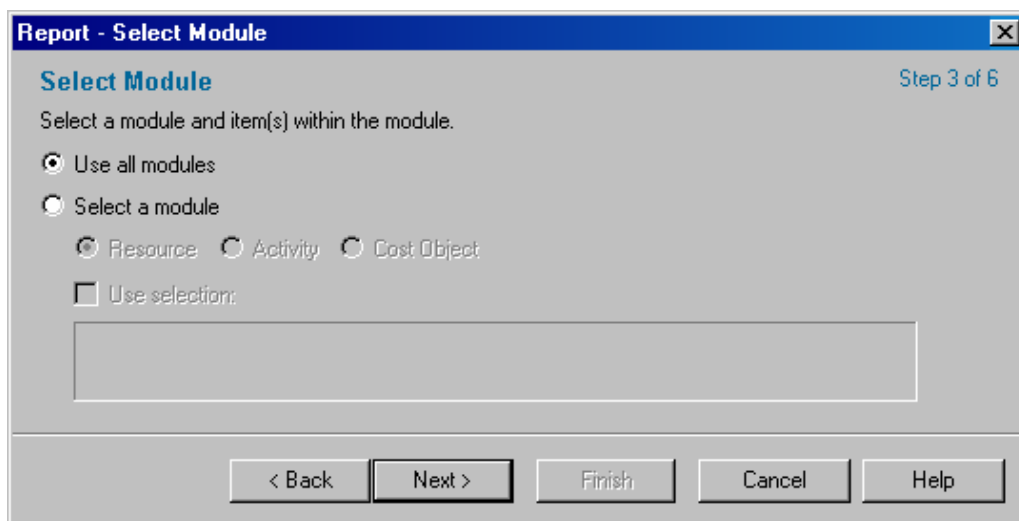
2008 Q1 / Actual

< Back Next > Finish Cancel Help

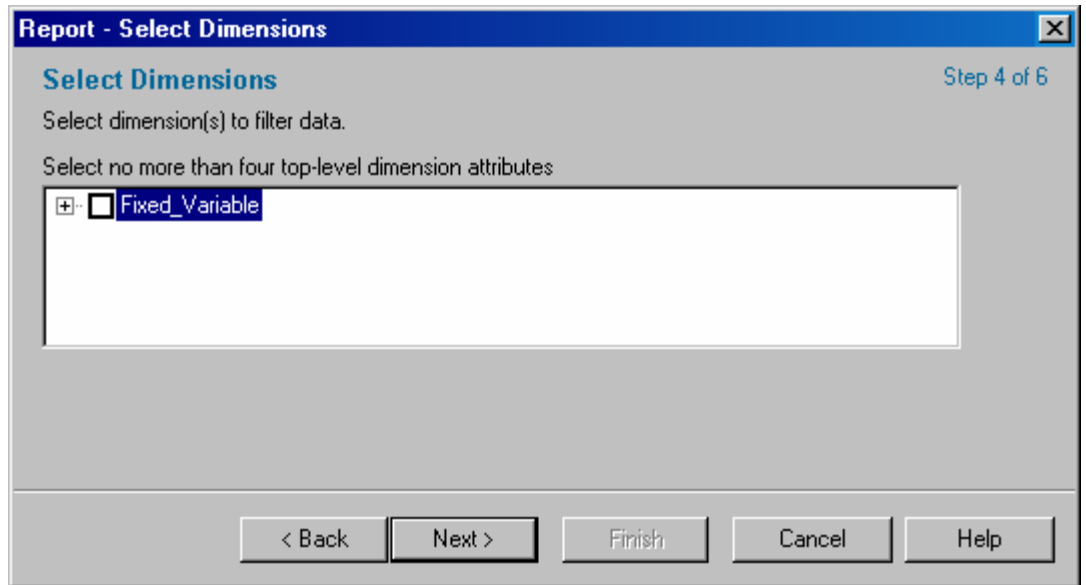
- 5 To use the data in the period/scenario association for a model that is open, select the **Use current period/scenario association** option.

If you select this option and a model is not open, you will be prompted to select a period/scenario association at the end of the wizard.

- 6 To use the data in another period/scenario association, select the **Use a specific period/scenario association** option, and select the period/scenario association from the list.
- 7 Click **Next**.

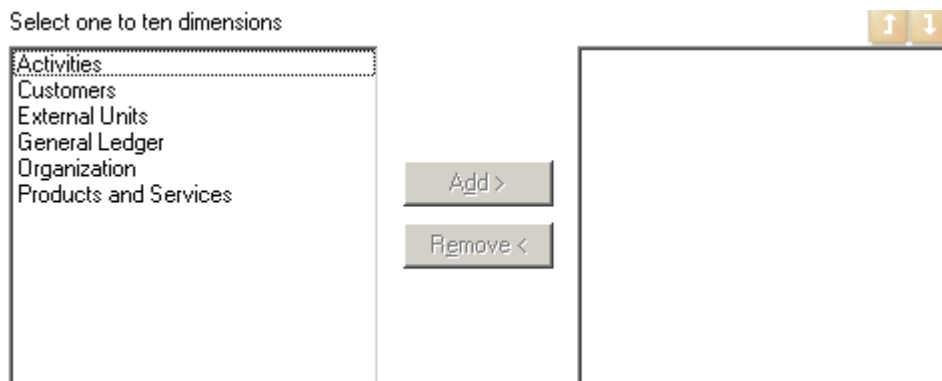


- 8 To include data from all the modules and all the accounts, select the **Use all modules** option.
- 9 To limit data to a specific module, select the **Select a module** option, and select a module.
- 10 To limit data to specific accounts, select the **Use selection** check box, then select one or more accounts from the list.
- 11 Click **Next**.



*Note:* The content of this step varies depending on the report you are creating. However, in each variation of content, you are selecting dimensions to include in the report.

- 12 From the list, expand the hierarchy and select the check box next to each dimension to include in the report.
- 13 If the wizard presents the dimension attributes as shown, do the following:



**a** From the left list, select a dimension.

**b** Click **Add >**.

The dimension moves to the right list.

The order that you select dimensions affects the order of the results in the report.

**c** To reorder the dimensions in the right list, select a dimension and click  or .

**d** To remove a dimension from the right list, select the dimension and click **Remove <**.

Next, you will select other options for the report. The available options depend on the report.

14 Click **Next**.

**Report Wizard - Select Options** Step 5 of 6

**Select Options**

Select display options for the report:

☐ Suppress zero costs:

☐ Hide cost elements:

Currency information:

☒ Single currency ☐ Two currencies

First currency:

US Dollar

Second currency:

US Dollar

< Back   Next >   Finish   Cancel   Help

15 To exclude accounts that contain zero costs, select the **Suppress zero costs** option.

16 To exclude cost elements, select the **Hide cost elements** option.

17 To include a single currency, select the **Single currency** option, and select the **First currency**.

18 To include a second currency, select the **Two currencies** option, and select the **Second currency**.

Next, you will review the report summary and create the report.

19 Click **Next**.

**Report Data - Summary**

**Report Data Wizard** 3

View the summary:

**Report:**  
Module Hierarchy

**Model(s):**  
Parcel Express Tutorial

**Period/Scenario:**  
Use Current Period/Scenario

**Module(s):**  
Use All Modules

**Selected Dimension(s):**  
- Fixed\_Variable

**Display Options:**  
First Currency: US Dollar

☒ Save configuration as: ☐ Save without running:

Name: Description:

< Back Next > Finish Cancel Help

- 20** Review the report summary.
- 21** If you need to change any information, click **Back** until you reach the page that you need to change in the wizard.

All of the information that you have specified is saved. Click **Next** to advance through the wizard.

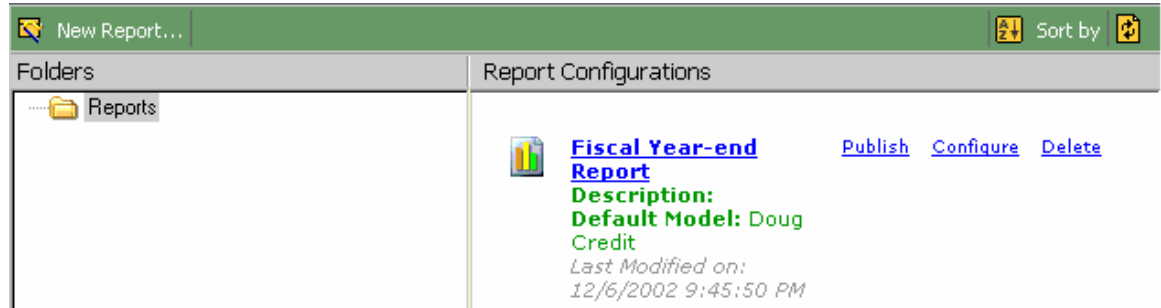
- 22** To save the report configuration so that the report can be easily run again, do the following:
- a** Select the **Save configuration as** option.
  - b** Type the **Name**.
  - c** Type the **Description**.
- 23** To rename an existing report configuration, do the following:
- a** Select the **Update existing configuration** option.
  - b** Type the new **Name**.
  - c** Type the **Description**.
- 24** Click **Finish**.

If you selected the option to use the current period/scenario association in the second step of the Report Wizard and the model is not open, you will be prompted to select a period/scenario association now.




## Open a Report without a Report Already Open

If you start Reports mode without a report already open, you must open a report from the Reports home page, as shown:



The lists of **Folders** and **Report Configurations** correspond to the Reports branch of the server area in Workspace Manager.

- 1 From the list of **Folders**, select a folder.
- 2 From the list of **Report Configurations**, click a configuration.

*Tip:* Alternatively, you can click .

## Open a Report with a Report Already Open

- 1 From the **Report Configuration** drop-down list, select a configuration.



- 2 Click .

## Change a Report Configuration

- 1 Open a report configuration.
- 2 Select **Reports > Configure**.  
The settings you selected the last time that you used the Report Wizard for this report configuration appear.
- 3 Move through the pages of the Report Wizard to change the report configuration.

*Note:* If you are a Designer, but your role permission is Read-only, you do not have the ability to configure.

---

## Save a Report Configuration

- 1 Open a report configuration.
- 2 Select **Reports > Save Configuration**.

The last page of the Report Wizard appears, in which you specify the name of the report configuration.

- 3 Select the **Save configuration as** option.
- 4 Type the **Name**.
- 5 Type the **Description**.
- 6 Click **Finish**.

---

## Export a Report

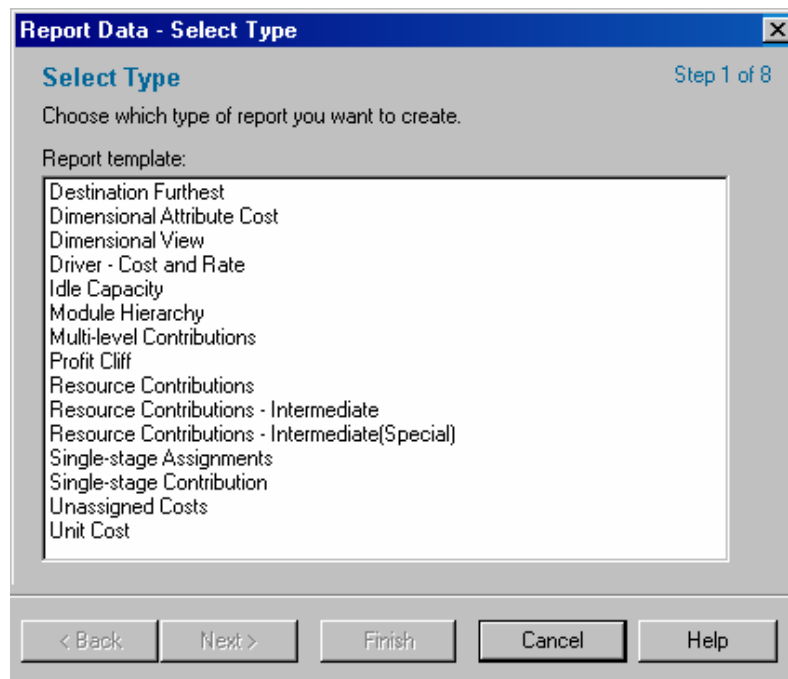
You can export report data from within SAS Activity-Based Management or from inside SAS Enterprise Guide. For information about how to use SAS Enterprise Guide, see the SAS Enterprise Guide Help.

The report data will be exported to a database.

- 1 Select **File > Export Report Data**.

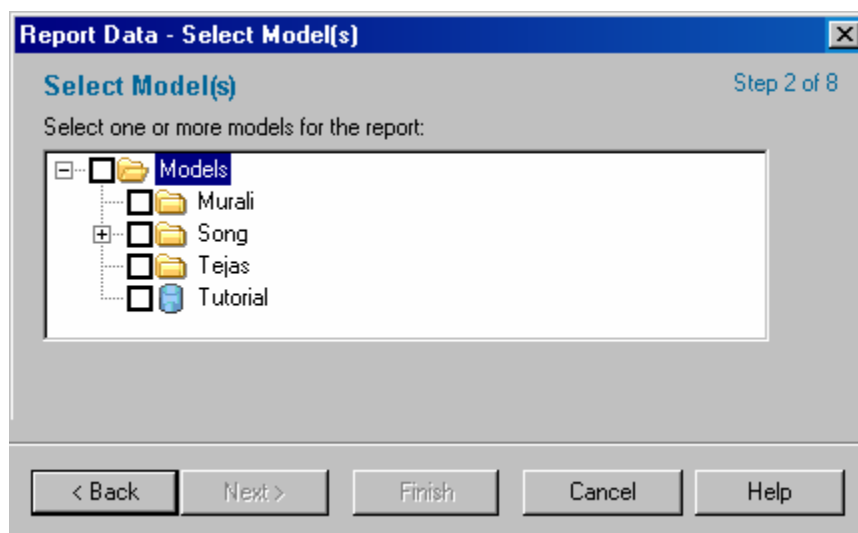
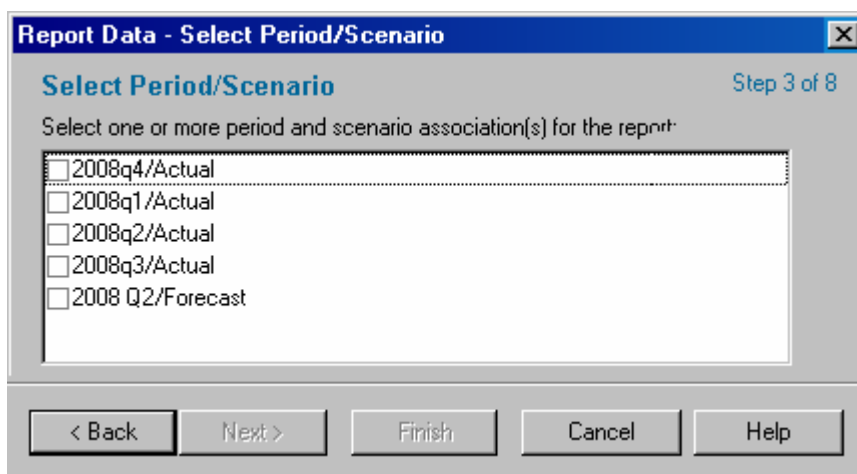
You do not need to start Reports mode; you can export report data in any mode.

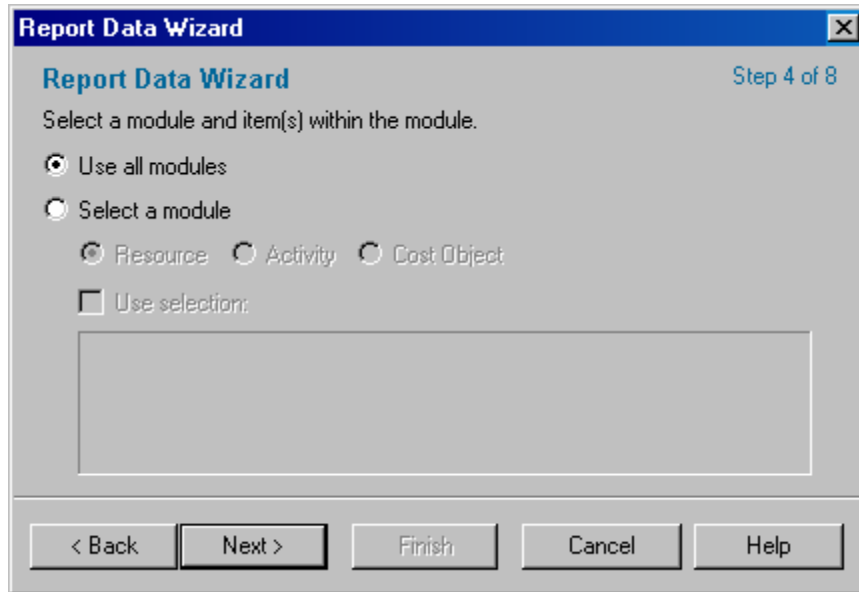
The Report Data Wizard appears.



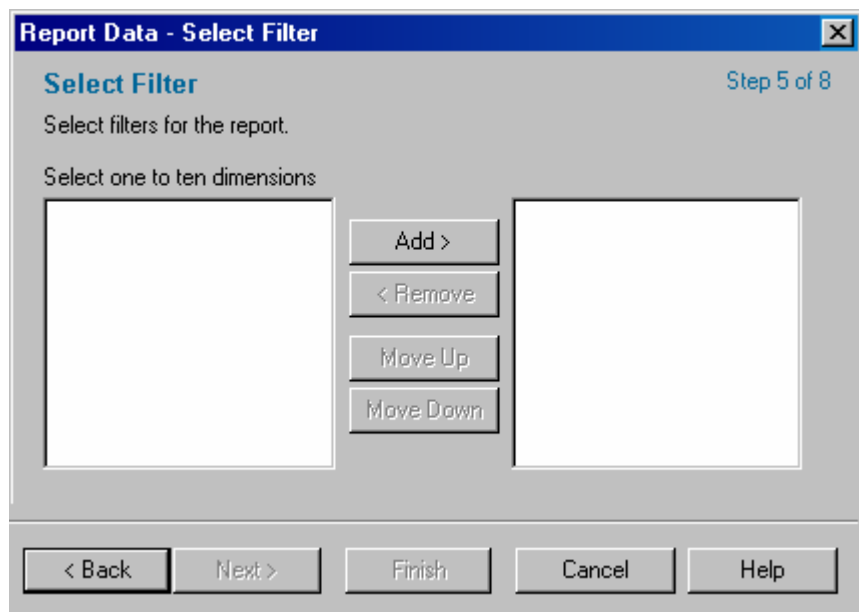
**2 Select a Report template.**

For information about what data each report template contains, see the Help.

**3 Click Next.****4 Select one or more Models.****5 Click Next.****6 Select one or more Period(s)/Scenario(s).****7 Click Next.**

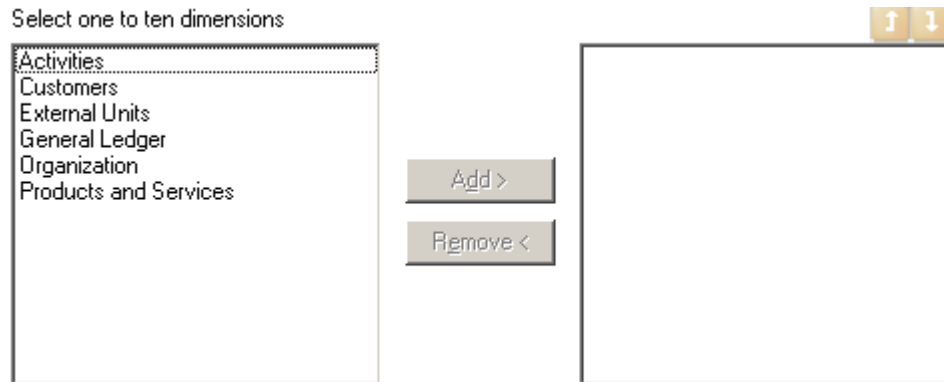


- 8 To include data from all the modules and all the accounts, select the **Use all modules** option.
- 9 To limit data to a specific module, select the **Select a module** option, and select a module.
- 10 To limit data to specific accounts, select the **Use selection** check box, then select one or more accounts from the list.
- 11 Click **Next**.



**Note:** The content of this step varies depending on the report you are creating. However, in each variation of content, you are selecting dimensions to include in the report.

- 12 If the wizard presents a list, then expand the hierarchy and select the check box next to each dimension to include in the report.
- 13 If the wizard presents the dimensions as shown, do the following:



**a** From the left list, select a dimension.

**b** Click **Add >**.

The dimension moves to the right list.

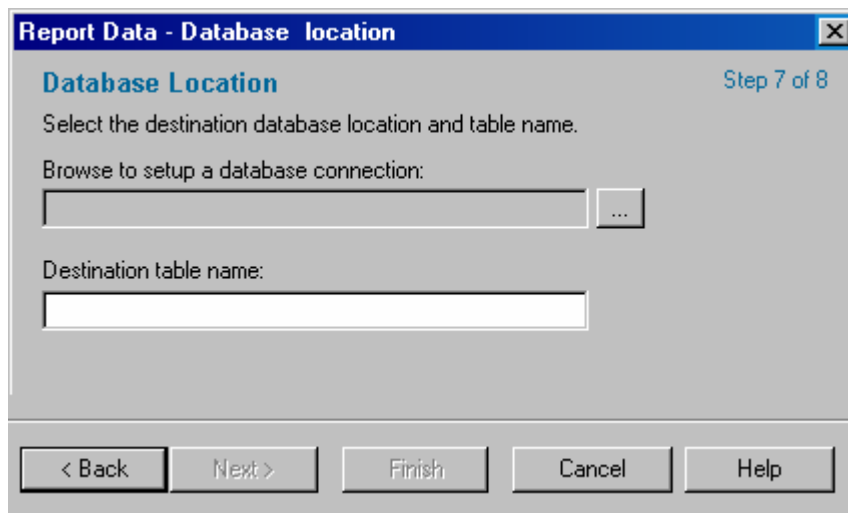
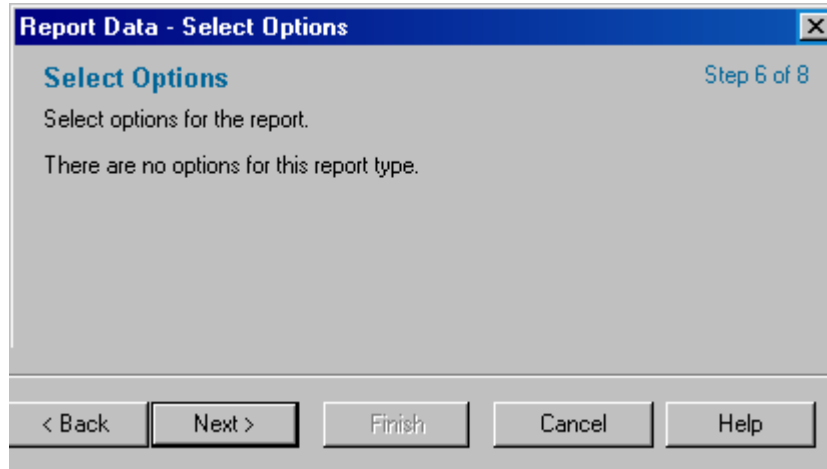
The order that you select dimensions affects the order of the results in the report.

**c** To reorder the dimensions in the right list, select a dimension and click  or .

**d** To remove a dimension from the right list, select the dimension and click **Remove <**.

Next, you will select other options for the report. The available options depend on the report.

- 14 Click **Next**.



15 Click ....

The Data Link Properties dialog box appears. For information about this dialog box, see the Microsoft Help.

16 Type the **Destination table name**.

17 Click **Next**.

**Report Data Wizard** Step 8 of 8

View the summary:

**Report:**  
Driver - Cost and Rate

**Model(s):**  
FM39  
PM04  
Susan Tutorial

**Period/Scenario:**  
2008 Q2/Forecast

☐ Save configuration as: ☐ Save without running:

Name:  Description:

< Back Next > Finish Cancel Help

- 18 Review the export summary.
- 19 If you need to change any information, click **Back** until you reach the page that you need to change in the wizard.  
  
All of the information that you have specified is saved. Click **Next** to advance through the wizard.
- 20 To save the export configuration so that the export can be easily run again, do the following:
  - a Select the **Save configuration as** option.
  - b Type the **Name**.
  - c Type the **Description**.
- 21 To rename an existing export configuration, do the following:
  - a Select the **Update existing configuration** option.
  - b Type the new **Name**.
  - c Type the **Description**.
- 22 Click **Finish**.

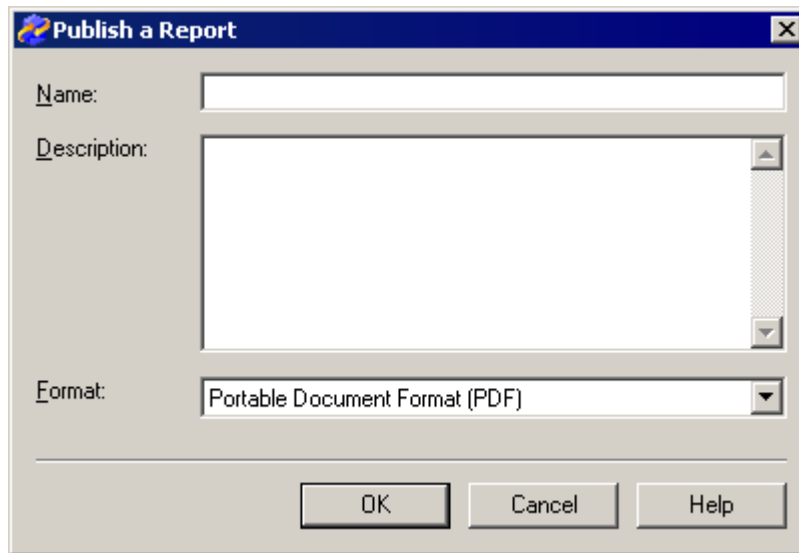
---

## Publish a Report

- 1 Open a report in Reports mode.

- 2 Open a report configuration.
- 3 Select **Reports > Publish**.

The Publish a Report dialog box appears.

The image shows a 'Publish a Report' dialog box with a blue title bar. It contains three input fields: 'Name' (a single-line text box), 'Description' (a multi-line text area), and 'Format' (a dropdown menu currently showing 'Portable Document Format (PDF)'). At the bottom are three buttons: 'OK', 'Cancel', and 'Help'.

- 4 Type the **Name**.
- 5 Type the **Description**.
- 6 Select a **Format**.

*Note:* If you are a Designer, but your role permission is Read-only, you do not have the ability to publish.

---

## Delete a Report Configuration

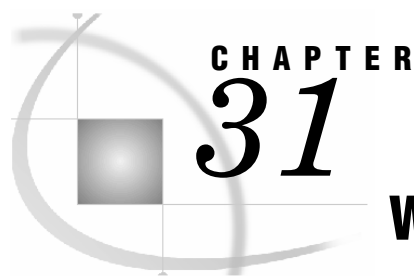
- 1 Do one of the following:
  - ☐ If no report configuration is open, click the **Report** link.
  - ☐ If a report configuration is open, click the **Report Home** link.

The Reports home page appears.

- 2 To the right of a report configuration, click the **Delete** link.

*Note:* If you are a Designer, but your role permission is Read-only, you do not have the ability to delete.





## Working with Cube Generation

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*Cube Configuration for a Single-Stage Contribution Cube 221*

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*Select Cost Flow: In or Out 234*

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---

### Overview of Cube Generation

Generating a cube involves two tasks:

#### **Task 1: Create a cube configuration**

From a single model you can generate multiple cubes. A cube configuration remembers your choices for a particular cube. A model can have multiple cube configurations, each one specifying a single cube, a fact table, or both.

#### **Task 2: Generate a cube**

You generate cubes by specifying which of the cube configurations belonging to a model you want to use, and which periods you want to include. If a period has not already been calculated, you are asked if you want to calculate it as part of cube generation. For each cube configuration that you select, a cube and a fact table are generated, or only a fact table.

---

## Task 1. Create a Cube Configuration

You must create a cube configuration before you can generate a cube. A cube configuration holds the options that you select for generating a cube and a fact table. After creating a cube configuration, you use it to generate a cube and a fact table, or a fact table only.

When creating a multi-stage contribution cube, you can choose what to include in the cube so that you can create custom cubes for specialized purposes. From a single model, you can create multiple multi-stage contribution cubes. By selecting what to include in a cube, you can create smaller and faster customized cubes. A cube configuration remembers your choices for a particular cube.

---

## Types of Cube Configurations

You can create cube configurations to generate each of the four types of cubes:

- ☐ Single-Stage Contribution Cube
- ☐ Resource Contribution Cube
- ☐ 6.3 Compatible Multi-Stage Contribution Cube
- ☐ Custom Multi-Stage Contribution Cube

In the following summaries, each step represents a dialog box of the cube configuration wizard that you use to create a cube configuration for each of the four types of cube. You click **Next** to advance between steps. Complete descriptions follow at the end of the summaries.

---

### For a Single-Stage Contribution Cube

For a complete description, see “Cube Configuration for a Single-Stage Contribution Cube” on page 221.

#### Step 1

- ☐ Select a model.
- ☐ Specify the cube-configuration name.
- ☐ Specify whether to generate both a cube and a fact table, or a fact table only.
- ☐ Specify a pre-aggregation percentage (Microsoft Analysis Services only).

#### Step 2 Confirm selections.

---

## For a Resource Contribution Cube

For a complete description, see “Cube Configuration for a Resource Contribution Cube” on page 223.

### Step 1

- ☐ Select a model.
- ☐ Specify the cube-configuration name.
- ☐ Specify whether to generate both a cube and a fact table, or a fact table only.
- ☐ Specify a pre-aggregation percentage (Microsoft Analysis Services only).

**Step 2** Select numeric attributes for inclusion in the cube.

**Step 3** Confirm selections.

---

## For a 6.3 Compatible Multi-Stage Contribution Cube

For a complete description, see “Cube Configuration for a 6.3 Compatible Multi-Stage Contribution Cube” on page 226.

### Step 1

- ☐ Select a model.
- ☐ Specify the cube-configuration name.
- ☐ Specify whether to generate both a cube and a fact table, or a fact table only.
- ☐ Specify a pre-aggregation percentage (Microsoft Analysis Services only).

### Step 2

- ☐ Select which modules or stages to include in the generated cube.
- ☐ For the selected modules or stages, select whether to include cost flows into or out of the module or stage. See “Select Cost Flow: In or Out” on page 234.

**Step 3** Select numeric attributes for inclusion in the cube.

**Step 4** Confirm selections.

---

## For a Custom Multi-Stage Contribution Cube

For a complete description, see “Cube Configuration for a Custom Multi-Stage Contribution Cube” on page 230.

### Step 1

- ☐ Select a model.
- ☐ Specify the cube-configuration name.
- ☐ Specify whether to generate both a cube and a fact table, or a fact table only.
- ☐ Specify the cube and fact table name.

**Note:** Because you can generate different multi-stage contribution cubes from the same model, you must assign a name to each cube to identify it.

**Note:** The name is also assigned to the fact table. If you are generating only a fact table, then it is the fact table name.

- ☐ Specify whether to suppress zero costs.
- ☐ Specify a pre-aggregation percentage (Microsoft Analysis Services only).

### Step 2

- ☐ Select which modules, dimensions, stage dimensions, and levels to include in the generated cube.
- ☐ For selected modules or stages, select whether to include cost flows into or out of the module or stage. See “Select Cost Flow: In or Out” on page 234.
- ☐ For selected modules or stages that have dimensions with multiple levels, specify how many levels you want included in the cube for drill down.

**Step 3** Select numeric attributes for inclusion in the cube.

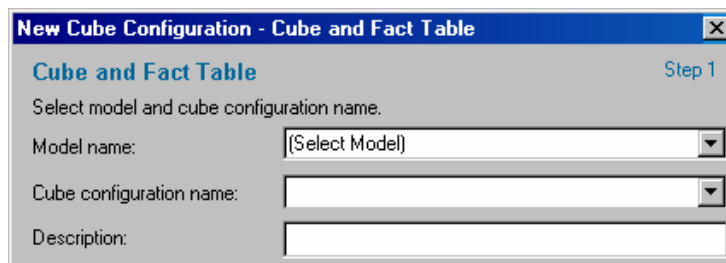
**Step 4** Confirm selections.

## Cube Configuration for a Single-Stage Contribution Cube

To create a cube configuration for a single-stage contribution cube, go to the Home page. Select **File > New > Cube Configuration**, and then perform the following steps (click **Next** after each step):

### Step 1

#### A. Select a model, and name the cube configuration.



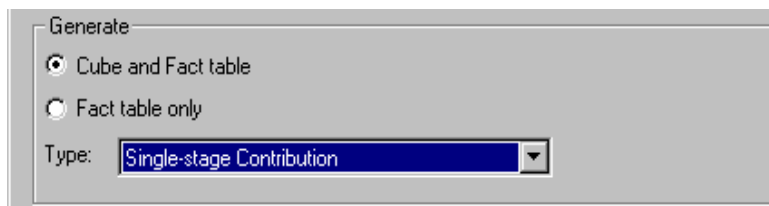
##### Model name

Select the model whose cube and fact table, or fact table only, you want to generate. A model can have more than one cube configuration because you can generate different cubes from the same model.

##### Cube configuration name

You will use the cube configuration later to generate cubes. In this step of the wizard, you assign a name to the cube configuration.

#### B. Select the type of cube, and select whether to generate both a cube and a fact table, or only a fact table.



##### Cube and Fact table or Fact table only

You can choose to generate both a cube and a fact table, or to generate only a fact table. You can use the fact table to generate a customized cube in another application, such as SAS OLAP Cube Studio or Microsoft Analysis Services.

**Type**

Choose **Single-Stage Contribution**. A single-stage contribution cube analyzes the cost contributions from one assignment-level back.

**Note:** When you select single-stage contribution, you can generate only a 6.3 compatible cube because the option to generate a custom cube is disabled.

**C. Choose whether to pre-aggregate.**

Pre-Aggregation Percentage

Pre-aggregation Percentage: 20

Note: Pre-aggregation percentage is applicable to Microsoft Analysis Services only.

< Back   Next >   Finish   Cancel   Help

**Pre-aggregation Percentage**

Pre-aggregating numeric data results in faster performance when you work with a cube in the OLAP analyzer. But, for large models, pre-aggregating data can take a long time, which increases cube-generation time. Therefore, the more pre-aggregation you do, the faster you can navigate a cube, but the longer it takes to generate it. This option allows you to trade generation time for execution speed.

---

**Step 2**

Review your selections, and then click **Finish** to create the cube configuration.

---

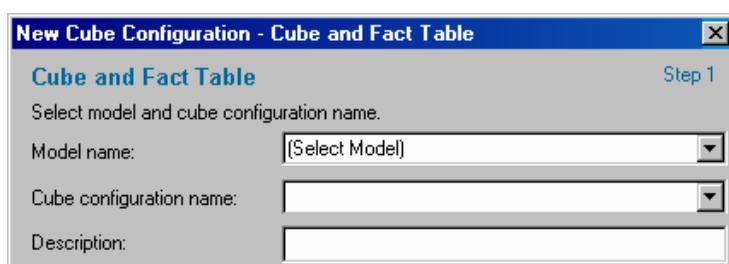
## Cube Configuration for a Resource Contribution Cube

To create a cube configuration for a resource contribution cube, go to the Home page. Select **File > New > Cube Configuration** and perform the following steps (click **Next** after each step):

---

### Step 1

#### A. Select a model, and name the cube configuration.



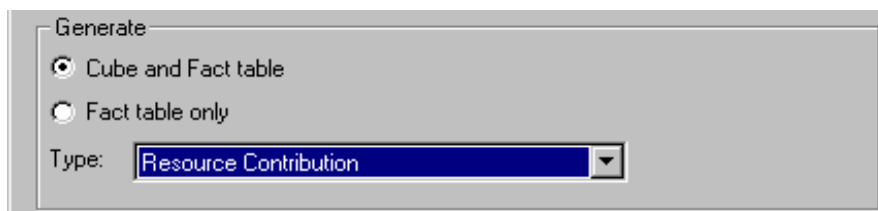
##### Model name

Select the model whose cube and fact table, or fact table only, you want to generate. A model can have more than one cube configuration because you can generate different cubes from the same model.

##### Cube configuration name

You will use the cube configuration later to generate cubes. In this step of the wizard, assign a name to the cube configuration.

#### B. Select the type of cube, and select whether to generate both a cube and a fact table, or only a fact table.



##### Cube and Fact table or Fact table only

You can choose to generate both a cube and a fact table, or to generate only a fact table. You can use the fact table to generate a customized cube in another application, such as SAS OLAP Cube Studio or Microsoft Analysis Services.

## Type

Choose **Resource Contribution**. A resource contribution cube analyzes the cost contributions from original accounts in which costs were entered for final accounts that do not assign costs to other accounts.

**Note:** When you select resource contribution, you can generate only a 6.3 compatible cube because the option to generate a custom cube is disabled.

## C. Choose whether to pre-aggregate.



## Pre-aggregation Percentage

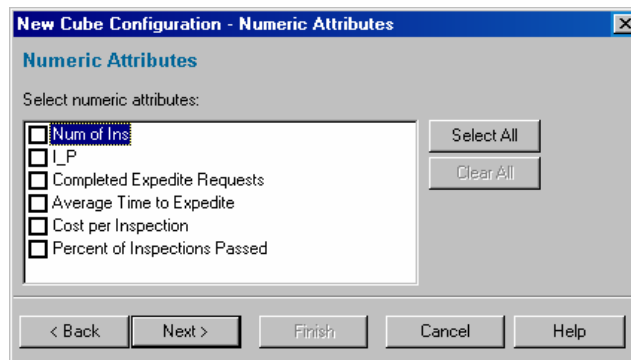
Pre-aggregating numeric data results in faster performance when you work with a cube in the OLAP analyzer. But, for large models, pre-aggregating data can take a long time, which increases cube-generation time. Therefore, the more pre-aggregation you do, the faster you can navigate a cube, but the longer it takes to generate it. This option allows you to trade generation time for execution speed.

---

## Step 2

## Select numeric attributes that you want to include in the cube

**Note:** The following picture is only a sample. The attributes listed depend on the attributes in your model.



**Note:** To select the numeric attributes that are included by default in the cube configurations for a model:

- 1 In model mode, select **Model > Properties**.
- 2 Select the **Attributes in Cube** tab.



- 3**    Select the attributes that you want to include by default in a cube configuration for that model.

Attributes that you select in the Model Properties dialog are automatically checked in the cube configuration to be included in the generated cube. However, you can uncheck the attributes in the cube configuration and select others.

---

## **Step 3**

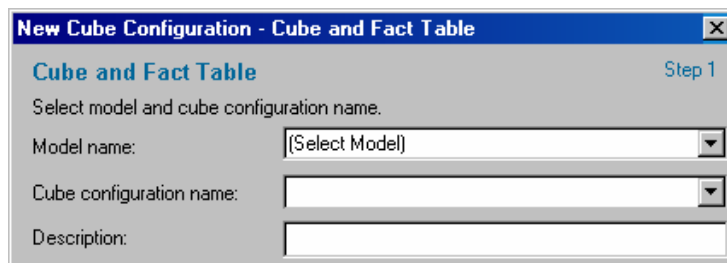
Review your selections, and then click **Finish** to create the cube configuration.

## Cube Configuration for a 6.3 Compatible Multi-Stage Contribution Cube

To create a cube configuration for a 6.3 compatible multi-stage contribution cube, go to the Home page. Select **File > New > Cube Configuration** and perform the following steps (click **Next** after each step):

### Step 1

#### A. Select a model, and name the cube configuration.



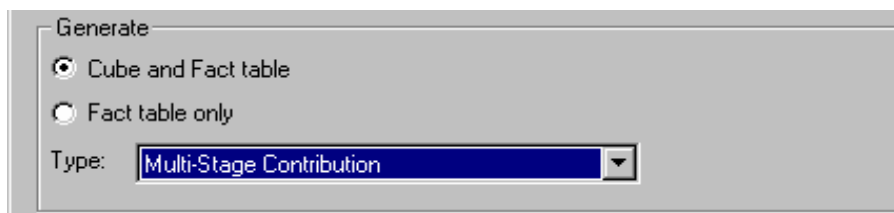
##### Model name

Select the model whose cube and fact table, or fact table only, you want to generate. A model can have more than one cube configuration because you can generate different cubes from the same model.

##### Cube configuration name

You will use the cube configuration later to generate cubes. In this step of the wizard, assign a name to the cube configuration.

#### B. Select the type of cube, and select whether to generate both a cube and a fact table, or a fact table only.



##### Cube and Fact table or Fact table only

You can choose to generate both a cube and a fact table, or to generate only a fact table. You can use the fact table to generate a customized cube in another application, such as SAS OLAP Cube Studio or Microsoft Analysis Services.

**Type**

Choose **Multi-Stage Contribution**. A multi-stage contribution cube analyzes the cost contributions to or from accounts that have a *Stages* attribute.

**C. Select to create a 6.3 compatible cube and fact table.**

Cube and Fact Table Information

☒ Create custom cube and fact table:

Cube and Fact table name:

☐ Suppress zero cost

☒ Create SAS Activity-Based Management 6.3 compatible cube and fact table.

Cube and Fact table name: Multi-Stage Contribution

When you select this option for a multi-stage contribution cube, you do not have as many choices for what to include in the cube as you do for a custom cube. SAS Activity-Based Management makes the choices for you and the cube is generated exactly as it was in the previous release. The name of the cube is automatically assigned as: *Multi-Stage Contribution*.

**Note:** You can have only one 6.3-compatible cube configuration of a given type—for example, multi-stage contribution—per model. This is because you can have only one 6.3-compatible *cube* of a given type per model. If you create a second cube configuration for a 6.3-compatible cube, then the first cube configuration is de-activated (detached from the model). You are issued an informational message when this happens.

**D. Choose whether to pre-aggregate.**

Pre-Aggregation Percentage

Pre-aggregation Percentage: 20

Note: Pre-aggregation percentage is applicable to Microsoft Analysis Services only.

< Back    Next >    Finish    Cancel    Help

**Pre-aggregation Percentage**

Pre-aggregating numeric data results in faster performance when you work with a cube in the OLAP analyzer. But, for large models, pre-aggregating data can take a long time, which increases cube-generation time. Therefore, the more pre-aggregation you do, the faster you can navigate a cube, but the longer it takes to generate it. This option allows you to trade generation time for execution speed.

## Step 2

### Select modules and stages.

**Edit Cube Configuration - Modules and Stages** Step 2 of 4

Select the module and stages.

Modules and Stages:

☒ Modules  
☐ Stages

Include	Modules or Stages	Cost Flow
<input checked="" type="checkbox"/>	ExternalUnit	Out
<input checked="" type="checkbox"/>	Resource	In
<input checked="" type="checkbox"/>	Activity	In
<input checked="" type="checkbox"/>	CostObject	Out

< Back   Next >   Finish   Cancel   Help

#### Modules and Stages

**Modules:** Each module defines a single stage (one stage per module) in the following order:

1. External Units
2. Resource
3. Activity
4. Cost Object

**Stages:** Each stage is defined by a dimension member attribute in a dimension attribute named Stages.

#### Include

Check this box to include the module or stages in the cube.

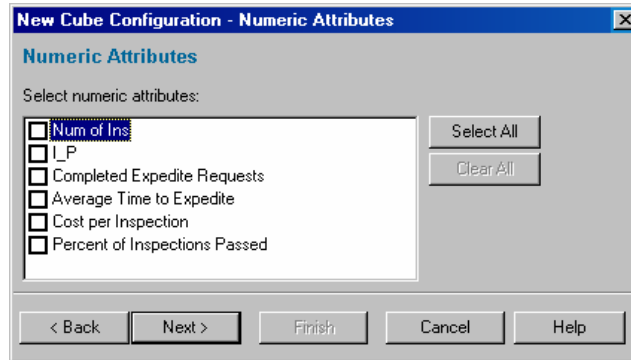
#### Cost Flow

Select whether to include cost flows into or out of the selected module or stage. For information on this topic, see “Select Cost Flow: In or Out” on page 234.

## Step 3

### Select numeric attributes that you want to include in the cube.

**Note:** The following picture is only a sample. The attributes listed depend on the attributes in your model.



**Note:** You can select the numeric attributes that are included by default in the cube configurations for a model.

- 1 In model mode, select **Model > Properties**.
- 2 Select the **Attributes in Cube** tab.
- 3 Select the attributes that you want to have included by default in a cube configuration for that model.

Attributes that you select in the Model Properties dialog are automatically checked in the cube configuration for inclusion in the generated cube. However, you can uncheck the attribute in the cube configuration and select other attributes.

---

## Step 4

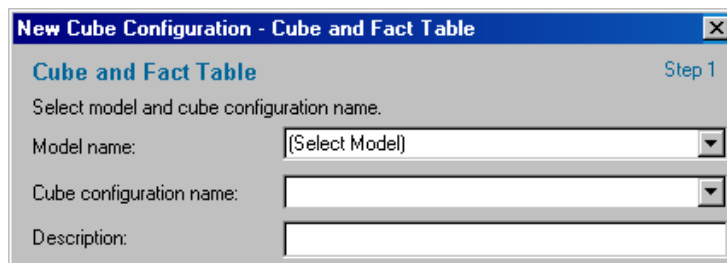
Review your selections, and then click **Finish** to create the cube configuration.

## Cube Configuration for a Custom Multi-Stage Contribution Cube

To create a cube configuration for a custom multi-stage contribution cube, go to the Home page. Select **File > New > Cube Configuration** and perform the following steps (click **Next** after each step):

### Step 1

#### A. Select a model and name the cube configuration.



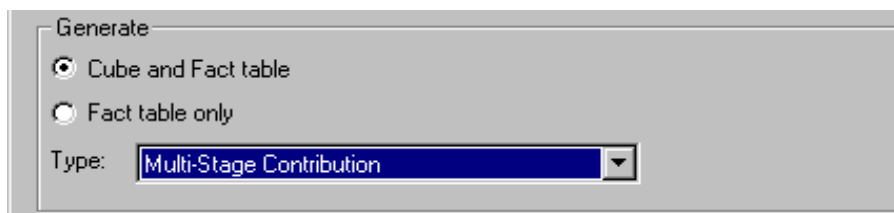
##### Model name

Select the model whose cube and fact table, or fact table only, you want to generate. A model can have more than one cube configuration because you can generate different cubes from the same model.

##### Cube configuration name

You will use the cube configuration later to generate cubes. In this step of the wizard, assign a name to the cube configuration.

#### B. Select the type of cube, and select whether to generate both a cube and a fact table, or only a fact table.



##### Cube and Fact table or Fact table only

You can choose to generate both a cube and a fact table, or only a fact table. You can use the fact table to generate a customized cube in another application, such as SAS OLAP Cube Studio or Microsoft Analysis Services.

**Type**

Choose **Multi-Stage Contribution**. A multi-stage contribution cube analyzes the cost contributions to or from accounts that have a *Stage* attribute.

**C. Select the option to create a custom cube and fact table.**

Cube and Fact Table Information

☒ Create custom cube and fact table:

Cube and Fact table name:

☐ Suppress zero cost

☐ Create SAS Activity-Based Management 6.3 compatible cube and fact table.

Cube and Fact table name: None

**Cube and Fact table name**

Because you can generate different multi-stage contribution cubes from the same model, you must assign a name to each cube to identify it.

**Note:** The name is also assigned to the fact table. If you generate only a fact table, then it is the fact table name.

**Note:** The name that you specify here is for display purposes inside SAS Activity-Based Management. Custom, multi-stage contribution cubes are automatically assigned an internal name, such as *M1000\_C3*, on your OLAP server. You do not see this internal name unless you go outside of SAS Activity-Based Management.

**D. Choose whether to pre-aggregate.**

Pre-Aggregation Percentage

Pre-aggregation Percentage: 20

Note: Pre-aggregation percentage is applicable to Microsoft Analysis Services only.

< Back   Next >   Finish   Cancel   Help

**Pre-aggregation Percentage**

Pre-aggregating numeric data results in faster performance when you work with a cube in the OLAP analyzer. But, for large models, pre-aggregating data can take a long time, which increases cube-generation time. Therefore, the more pre-aggregation you do, the faster you can navigate a cube, but the longer it takes to generate it. This option allows you to trade generation time for execution speed.

## Step 2

### Select modules, dimensions, stage dimensions, and levels.

**New Cube Configuration - Modules, Dimensions, Stage Dimensions and Levels** Step 2 of 4

**Modules, Stages, Dimensions and Levels**

Select the modules or stages dimensions and levels you want to be able to drill to.

Modules and Stages Dimensions:

☒ Modules  
☐ Stages

Select All	Modules/Stages and Dimensions	Include	Cost Flow	Include to Level
<input checked="" type="checkbox"/>	ExternalUnit		Out	
<input checked="" type="checkbox"/>	Resource		In	
<input checked="" type="checkbox"/>	Activity		In	
<input checked="" type="checkbox"/>	CostObject		Out	
	Region	<input checked="" type="checkbox"/>		Level2
	Chnnl	<input checked="" type="checkbox"/>		Level1
	Prod_Serv	<input checked="" type="checkbox"/>		Level1

Expand All Collapse All Refresh List

< Back Next > Finish Cancel Help

#### Modules and Stages

**Modules:** Each module defines a single stage (one stage per module) in the following order:

1. External Units
2. Resource
3. Activity
4. Cost Object

**Stages:** Each stage is defined by a dimension member attribute in a dimension attribute named Stages.

#### Select All

If you select **Modules**, then check this box to select all dimensions in a module for inclusion in the cube. Selecting this check box turns on the Include flag for each individual dimension.

If you select **Stages**, then check this box to include the stages in the cube.

#### Include

If you selected **Modules**, then check this box to include the selected dimension in the cube.

If you selected **Stages**, then this column is not applicable.

#### Cost Flow

Select whether to include cost flows into or out of the selected module or stage. For information on this topic, see “Select Cost Flow: In or Out” on page 234.



### Include to Level

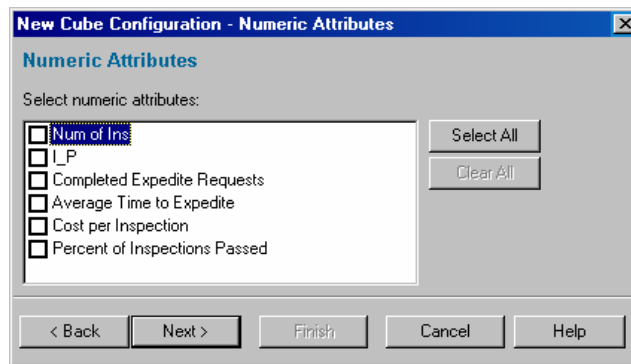
For dimensions with multiple levels, specify how many levels you want to include in the cube for drill down.

---

## Step 3

### Select numeric attributes to include in the cube.

**Note:** The following picture is only a sample. The attributes that are listed depend on the attributes in the model.



**Note:** To select the numeric attributes that are included by default in a model's cubes:

- 1 In model mode, select **Model > Properties**.
- 2 Select the **Attributes in Cube** tab.
- 3 Select the attributes that you want to include by default in a cube configuration for that model.

Attributes that you select in Model Properties are automatically checked in the cube configuration to be included in the generated cube. However, you can uncheck the attributes in the cube configuration and select other attributes.

---

## Step 4

Review your selections, and then click **Finish** to create the cube configuration.

## Select Cost Flow: In or Out

With some models, it makes a difference in cube generation whether you choose to show costs flowing into a module/stage or out of a module/stage. It makes a difference when the model has assignments from accounts within one module/stage to other accounts within the *same* module/stage. In the Parcel Express Tutorial model, for example, there are assignments from activities to activities. One such example is shown in the following figure.

Resource module

IntsctnName	Display Name	IntsctnName	Cost
Eugene x Wages	ACTIVITY (PRIMARY PANE)	Eugene x Sort	\$718,279.86
Eugene x Operating Expenses	USA	Eugene x Inspect	\$225,422.36
Eugene x Equipment Expenses	Oregon		
	Eugene		
	Local Processing		
	Personnel Intensive Acti		
	Local Collection		
	Move to Warehouse		
	Regional Distribution		
	Beaverton		
Beaverton x Wages	ACTIVITY (PRIMARY PANE)	Beaverton x Sort	\$686,429.20
Beaverton x Operating Expense	USA	Beaverton x Inspect	\$252,522.79
Beaverton x Equipment Expense	Oregon		
	Eugene		
	Beaverton		
	Personnel Intensive Acti		
	Local Processing		
	Regional Distribution		
	Local Collection		
	Move to Warehouse		

When you generate a cube, you must specify what cost assignments you want to appear in the cube for each module/stage. In the case of the current example, you must choose assignments into the Activity module (Move to Warehouse), or out of the Activity Module (Sort and Inspect). You cannot choose both because that would result in double-counting final costs (part of Sort and Inspect costs are Move to Warehouse costs).

The following figure shows the results of showing costs flowing *into* the Activity module. Notice that Move to Warehouse has non-zero cost because it receives assignments from the Resource module. Inspect and Sort also have non-zero costs because they also receive assignments from the Resource module.

All_Products_and_Services		+ All
MeasuresLevel		Cost
Level1	Level2	
+ All		.
Local Collection	<b>Local Collection</b>	689,462.17
	Local Collection (direct)	.
	Move to Warehouse	689,462.17
Local Processing	<b>Local Processing</b>	770,596.55
	Inspect	364,282.53
	Local Processing (direct)	.
	Sort	406,314.02
+ None		208,393.20
+ Personnel Intensive Activities		405,984.94
+ Regional Distribution		1,781,856.34

By contrast, the following figure illustrates the results of showing costs flowing *out of* the Activity module. Notice that Move to Warehouse now has zero cost because it has no assignments out of the Activity module into the Cost Object module. Its assignments are entirely within the Activity module.

All_Products_and_Services		+ All
MeasuresLevel		Cost
Level1	Level2	
+ All		.
Local Collection	<b>Local Collection</b>	.
	Local Collection (direct)	.
	Move to Warehouse	.
Local Processing	<b>Local Processing</b>	55,349.66
	Inspect	55,349.66
	Local Processing (direct)	.
	Sort	.
+ None		208,393.20
+ Personnel Intensive Activities		405,984.94
+ Regional Distribution		3,186,565.40

If a model has no cost assignments from accounts within a module/stage to other accounts within the same module/stage, then it makes no difference whether you show costs flowing into or out of a module/stage. (Every cost into a module/stage is also a cost out of the module/stage). If you define multiple stages so that there are no assignments within a single stage, you do not have to make the choice of showing cost flows in or out.

You might, however, in some cases want to make assignments within a single stage or module. One common reason is to consolidate cost assignments. For example, suppose a model has a Human Resources dimension member with three cost accounts: Hire, Fire, and Promote. Although for some purposes you want to know how much expense is devoted to each HR activity, for other purposes you care about only the total HR expense. To see the total expense, you can create an account whose sole purpose is to consolidate all of the HR expenses as shown in the following figure. Here, the HR consolidation activity receives assignments from each individual HR activity: Hire, Fire, Promote. And, in turn, the HR consolidation activity assigns its costs to all of the products.

Activity module: Parcel Express Tutorial New

Model: Parcel Express Tutorial Period/Scenario: 2008 Q1/Actual

IntsctnName	Display Name	DrvName	IntsctnName	Cost
Beaverton x Hire	ACTIVITY (PRIMARY PANE)		Beaverton x No <Channel> x Overnight Express	\$564,408.05
Beaverton x Fire	USA		Beaverton x No <Channel> x 2nd Day Guaranteed	\$401,573.75
Beaverton x Promote	Oregon		Beaverton x Commercial Pick Up x No <Products and Se	\$25,780.24
	Beaverton		Beaverton x Commercial Pick Up x Standard Ground	\$283,249.36
	Personnel Intensive Activ		Beaverton x Commercial Pick Up x Overnight Express	\$226,329.11
	Local Collection		Beaverton x Commercial Pick Up x 2nd Day Guaranteed	\$142,941.92
	Local Processing		Beaverton x Walk In x No <Products and Services>	\$87,652.80
	Regional Distribution		Beaverton x Walk In x Standard Ground	\$632,770.10
	Human Resources		Beaverton x Walk In x Overnight Express	\$336,220.46
	Hire	Evenly Assigned	Beaverton x Walk In x 2nd Day Guaranteed	\$222,273.37
	Hire_9007-1		Beaverton x Drop Box x No <Products and Services>	\$15,468.14
	Fire	Evenly Assigned	Beaverton x Drop Box x Standard Ground	\$183,182.03
	Fire_9008-1		Beaverton x Drop Box x Overnight Express	\$35,315.67
	Promote	Evenly Assigned	Beaverton x Drop Box x 2nd Day Guaranteed	\$65,439.43
	Promote_9009-1		Beaverton x No <Channel> x Standard Ground	\$1,032,838.4
	HR consolidation	Number of Headc		
	Beaverton x Hire	Evenly Assigned		
	Beaverton x Fire	Evenly Assigned		
	Beaverton x Promote	Evenly Assigned		
	Eugene			

The following figure illustrates the results of choosing cost flows into the Activity module. Notice that Human Resources has costs coming in, but HR Consolidation has zero costs because it has assignments going out of the module only.

All_Products_and_Services		All
Measures/Level		Cost
Level1	Level2	
All		3 856 893.20
HR Consolidation		.
Human Resources	Human Resources	600.00
	Fire	200.00
	Hire	200.00
	Human Resources (direct)	.
	Promote	200.00
Local Collection		689,462.17
Local Processing		770,596.55
None		208,393.20
Personnel Intensive Activities		405,984.94
Regional Distribution		1,781,856.34

By contrast, the following figure illustrates the results of choosing cost flows out of the Activity module. Notice that HR Consolidation now has costs flowing out of the module, and Human Resources doesn't show costs because all of its costs are consolidated under HR Consolidation.

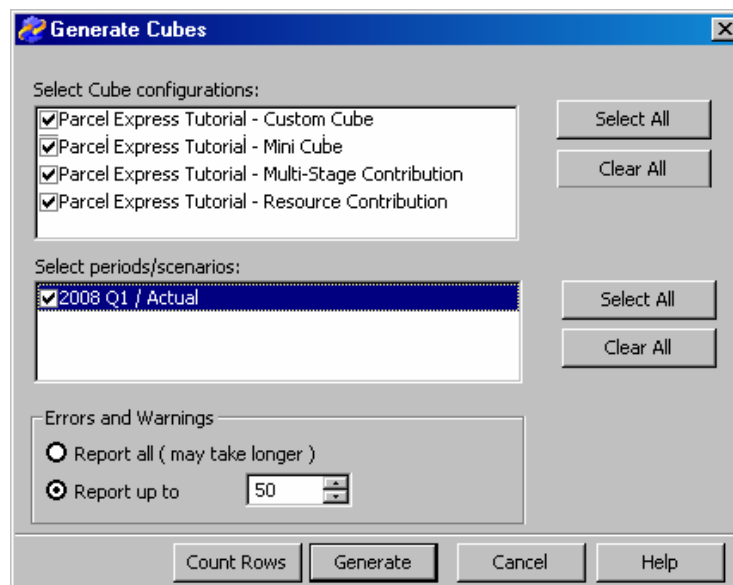
<i>All_Products_and_Services</i>		All
<i>MeasuresLevel</i>		Cost
<i>Level1</i>	<i>Level2</i>	
All		3 856 893,20
HR Consolidation	<b>HR Consolidation</b>	600,00
	HR Consolidation (direct)	600,00
Human Resources		.
Local Collection		.
Local Processing		55,349.66
None		208,393.20
Personnel Intensive Activities		405,984.94
Regional Distribution		3,186,565.40

## Task 2. Generate Cubes

After you create cube configurations, you can use them to generate cubes.

- 1 In Model mode, select **Model > Generate Cubes**.

The Generate Cubes dialog box opens. The dialog box lists all of the cube configurations for the model (the following picture is just a sample).



- 2 Select the cube configurations that you want to use. Each cube configuration that you choose generates a cube and a fact table, or only a fact table.
- 3 Select the periods and scenarios that you want to include in the cube.
- 4 Click **Generate**.



# CHAPTER 32

## Working with OLAP

---

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*Start OLAP Mode 239*  
*Create an OLAP View 239*  
*Save an OLAP View 240*  
*Change the Appearance of an OLAP Window 240*  
*Open an OLAP View without an OLAP View Already Open 241*  
*Open an OLAP View with an OLAP View Already Open 241*  
*Delete an OLAP View 242*

---

### Introduction

This chapter contains task-based information about working with OLAP. For more conceptual information, see Chapter 13, “Analyzing Model Data with OLAP.”

---

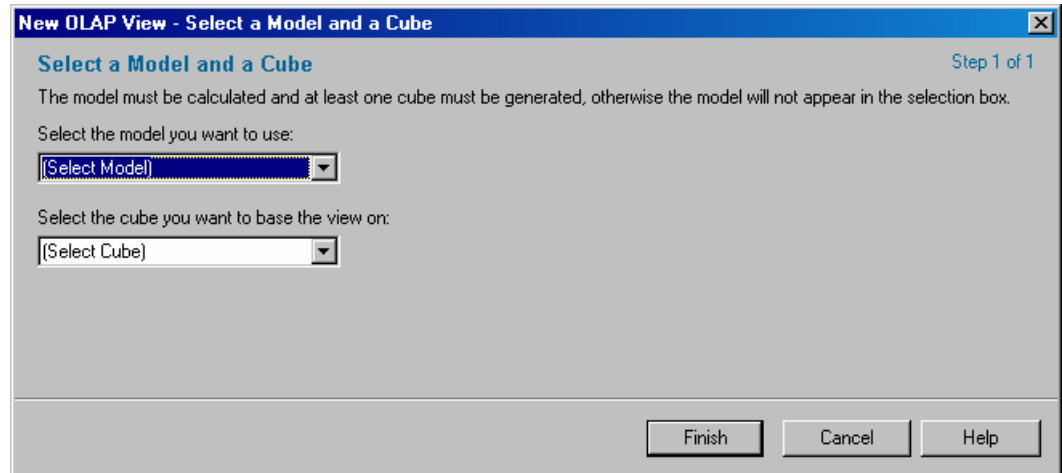
### Start OLAP Mode

Click  OLAP at the top of the SAS Activity-Based Management window.

---

### Create an OLAP View

- 1 Select **File > New > OLAP View**.  
The New OLAP View Wizard appears.



- 2 From the **Select the model you want to use** drop-down list, select a model.
- 3 From the **Select the cube you want to base the view on** drop-down list, select a cube.  
  
The list contains only those cubes that have been generated.
- 4 If the cube contains a large amount of data and you want to quickly create the OLAP view, select the **Do not select any dimensions by default** option.

---

## Save an OLAP View

- 1 On the OLAP page, select **OLAP > Save View**.  
The Save OLAP View As dialog box appears.
- 2 Type the **Name**.  
The name must follow the naming conventions. For information, see the Help.
- 3 Type the **Description**.

---

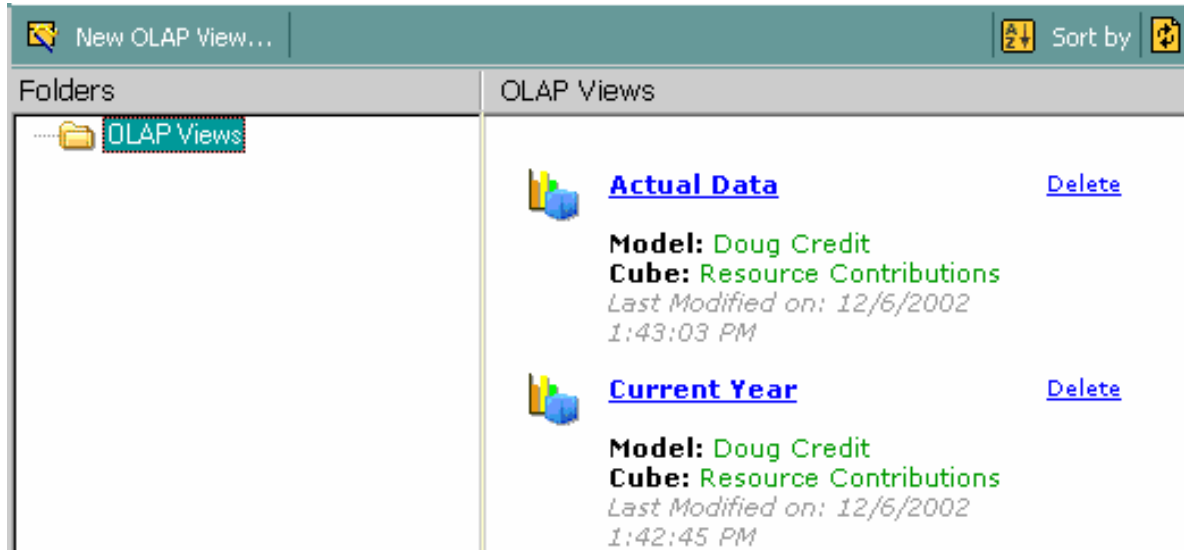
## Change the Appearance of an OLAP Window

- 1 Open an OLAP view on the OLAP home page.
- 2 First, click a window's title bar.
  - a To display a grid, select **OLAP > Grid**.
  - b To display a chart, select **OLAP > Chart > <type of chart>**.
  - c To display a Decomposition Tree, select **OLAP > Decomposition Tree**.
  - d To display a perspective view, select **OLAP > Perspective**.




## Open an OLAP View without an OLAP View Already Open

If you start OLAP mode without an OLAP view open, you must open an OLAP view from the OLAP home page, as shown:




The list of **Folders** and **OLAP Views** corresponds to the OLAP branch of the server area in Workspace Manager.

- 1 From the list of **Folders**, select a folder.
- 2 From the list of **OLAP Views**, click a view.

*Tip:* Alternatively, you can click .

## Open an OLAP View with an OLAP View Already Open

*Note:* If an OLAP view is not already open, open an OLAP view from the OLAP home page.

- 1 From the **OLAP View** drop-down list, select a saved OLAP view.
- 2 Click .

---

## Delete an OLAP View

- 1 Do one of the following:
  - ❑ If no OLAP view is open, click the **OLAP** link.
  - ❑ If an OLAP view is open, click the **OLAP Home** link.

The OLAP home page appears.

- 2 Click the **Delete** link that is next to the OLAP view.

*Note:* If you are a Designer, but your role permission is Read-only, you do not have the ability to delete.



# CHAPTER 33

## Working with Importing and Exporting Data

---

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---

### Introduction

This chapter contains task-based information about working with importing data and exporting data. For more conceptual information, see Chapter 17, “Importing Data and Exporting Data.”

---

### Import Model Data from a Database with the Import Data Wizard

Before attempting to import data from a database, see the “Connect to a Database” section at the end of this chapter, which provides information about preparing to connect to the most common databases.

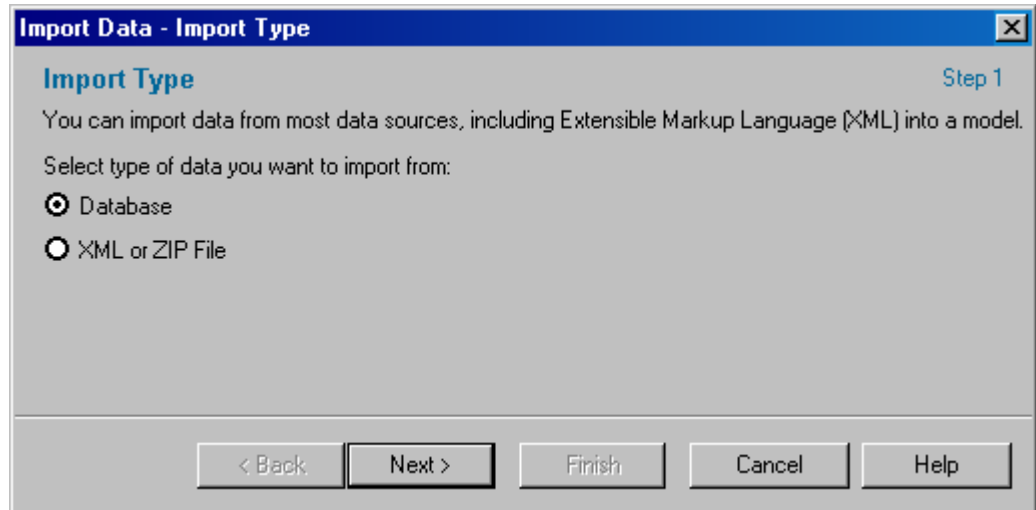
*Note:* You can perform this task without first opening a model.

- 1 Create a database or a database view that matches the data schema.

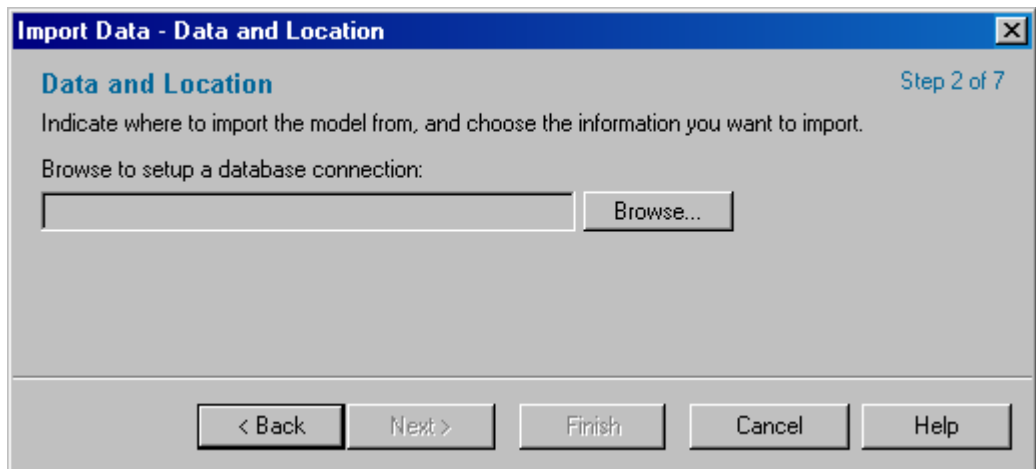
For information about the data schema, see the Help.

- 2 In SAS Activity-Based Management, verify or create the period/scenario associations.
- 3 Select **File > Import > Model Data**.

The Import Data Wizard appears.



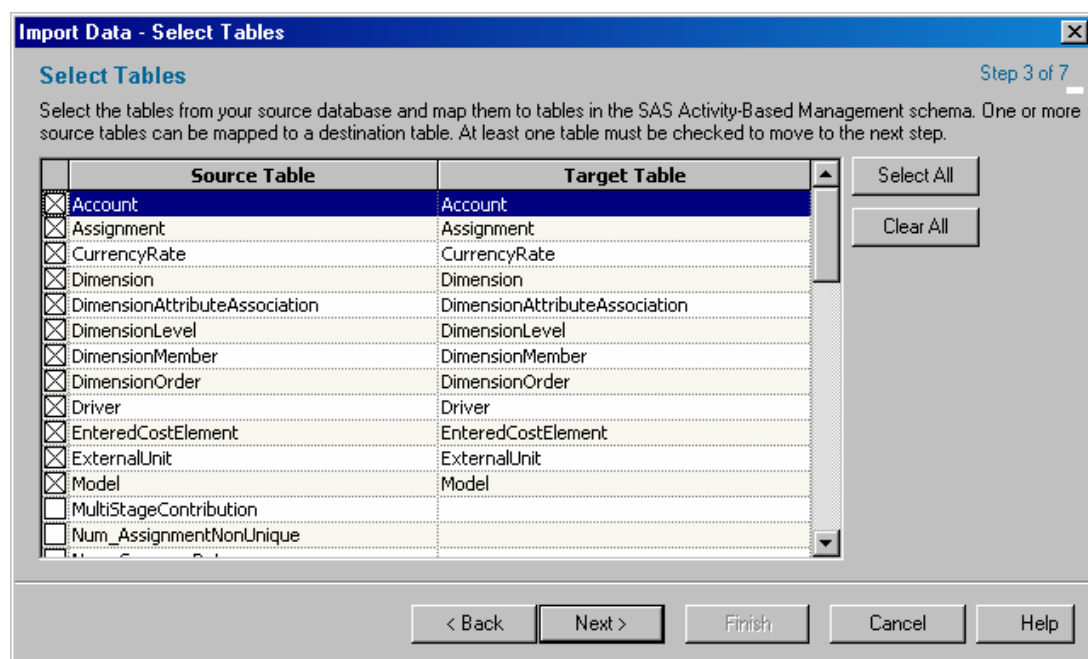
- 4 Select the **Database** option.
- 5 Click **Next**.



- 6 Click .

The Data Link Properties dialog box appears. For information about this dialog box, see the Microsoft Help. For information about the task of creating a connection string to a specific database, see the appropriate section at the end of this chapter.

Next you will specify which tables to import. You will specify which imported tables (source tables) map to which tables in SAS Activity-Based Management.

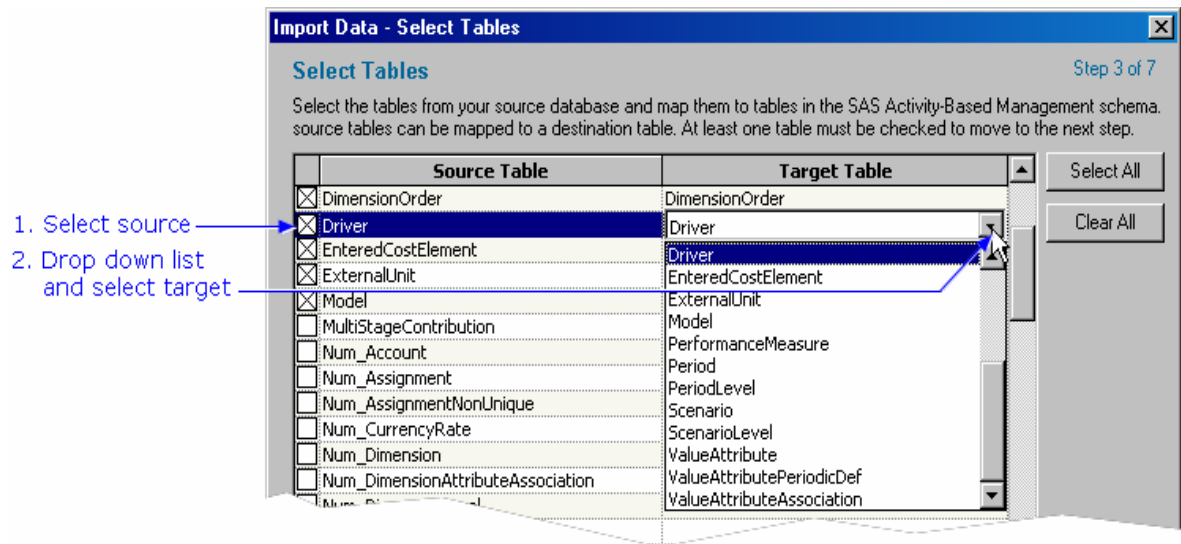
7 Click **Next**.

If you have named the source tables with the same names that are used in SAS Activity-Based Management, the wizard automatically creates the mappings and selects the tables to be imported. If you have not used the same names, then you must specify which source table maps to which SAS Activity-Based Management table.

- 8 To select a table to import, select the check box to the left of the table name in the **Source Table** column.

You can select as many tables as needed.

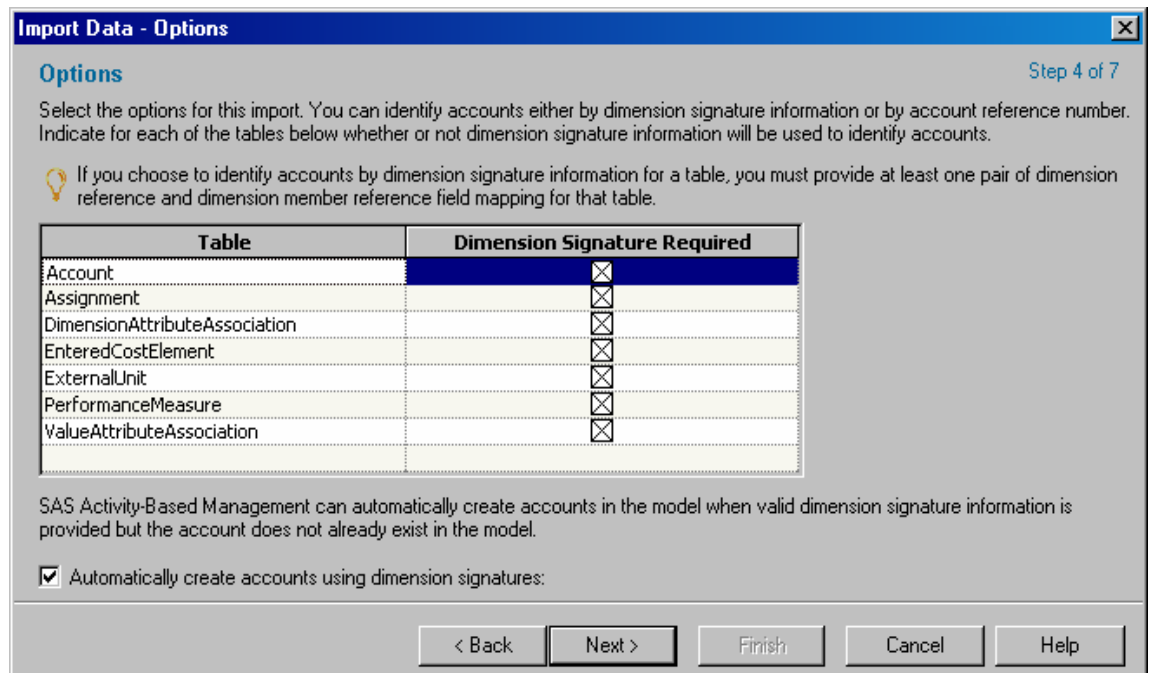
- 9 To map a **Source Table**, click in the **Target Table** column to the right of the source table, and select a SAS Activity-Based Management table from the drop-down list.



- 10 Repeat steps 8 and 9 to map every table that you want to import.

Next, you will specify how accounts will be identified in source tables that contain accounts. You can identify each account by a dimension signature or by reference number. You can choose to have the wizard create accounts for all valid dimension signatures, even if accounts have not been created for those intersections.

- 11 Click **Next**.



- 12 To identify accounts by the dimension signature, select the check box in the **Dimension Signature Required** column to the right of each source **Table**.

If you clear the check box, accounts will be identified by their references.

- 13 To have the wizard automatically create accounts for all valid dimension signatures, select the **Automatically create accounts using dimension signatures** option.

Next, you will specify which table columns to import. You will specify which imported table columns map to which table columns in SAS Activity-Based Management.

- 14 Click **Next**.

**Import Data - Map Columns** Step 5 of 7

**Map Columns**

Select the fields from the input tables and map them to fields in the output tables. You may also add default values for fields which are not included in the input tables.

Select a column from the source table and a column from the staging table to create a mapping. All required fields are marked with an asterisk (\*) and must be mapped. When applicable, select the number of required dimensions.

Dimensions:

Source	Target Column Name	Default
<input checked="" type="checkbox"/> ModuleType	*ModuleType	
<input checked="" type="checkbox"/> Period	*Period	
<input checked="" type="checkbox"/> Scenario	*Scenario	
<input checked="" type="checkbox"/> Reference	*Reference	
<input checked="" type="checkbox"/> DriverName	DriverName	
<input checked="" type="checkbox"/> Name	Name	
<input checked="" type="checkbox"/> OutputQuantityUE	OutputQuantityUE	
<input checked="" type="checkbox"/> PeriodicNote	PeriodicNote	
<input checked="" type="checkbox"/> PublishName	PublishName	
<input checked="" type="checkbox"/> Revenue	Revenue	
<input checked="" type="checkbox"/> SoldQuantity	SoldQuantity	

You can add a mapping for a column which does not exist by clicking on the Add button. You can specify a default value for this column.

If you have named the source table columns with the same column names that are used in SAS Activity-Based Management, the wizard automatically creates the mappings and selects the columns to be imported. If you have not used the same names, then you must specify which source table column maps to which SAS Activity-Based Management table column.

- 15 To select a table column to import, select the check box to the left of the table name in the **Source** column.

You can select as many table columns as needed, but you must import those columns that are required. Required columns are denoted by an asterisk (\*).

- 16 If you chose in the last step to identify accounts by their dimension signatures, specify the number of **Dimensions** that are contained in the source table.

The **Dimensions** option appears only when you choose to identify accounts by their dimension signatures. You must specify the number of dimensions so that the interface displays the correct column names that you must map. For each dimension in the source table, there must be two columns that can be mapped to the SAS Activity-Based Management table columns; these two columns are named DimRef<number> and DimMemberRef<number>. For example, a source table that

contains two dimensions must contain columns that must be mapped to DimRef1, DimMemberRef1, DimRef2, and DimMemberRef2.

- 17 To map a **Source** table column, click in the **Target Column Name** column to the right of the **Source** table column, and select a SAS Activity-Based Management table column from the drop-down list.

The drop-down list contains the values DimRef<number> and DimMemberRef<number> only if you chose to identify accounts by their dimension signatures, which is the only situation in which these values are needed.

- 18 If a source table does not contain a column that you want to create in the model, and you want to assign a value to this column, do the following:

**a Click Add.**

A new row appears.

**b Click in the Source column, and select a column name from the drop-down list.**

**c Type a Default value.**

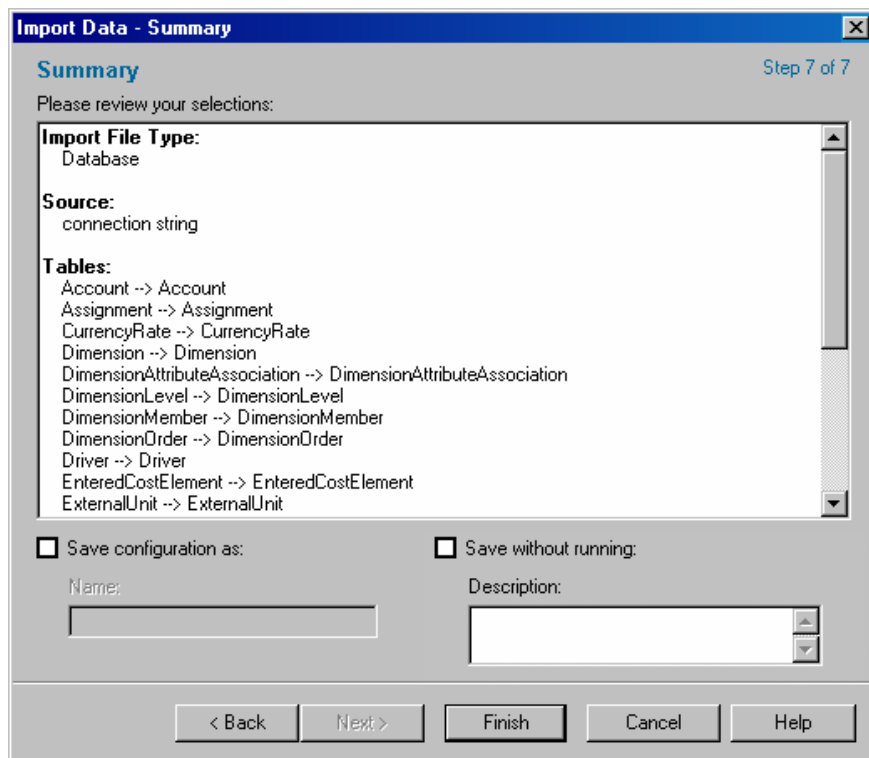
For example, if the source table does not contain a column to map to the Period column in SAS Activity-Based Management, and you want to create a period named MyPeriod in the model, then add a column named <None>. Map this new column to the **Target Column Name** Period, and specify the **Default** value as MyPeriod.

- 19 Repeat steps 15 through 18 for every table column that you want to import.
- 20 Click the appropriate tab at the bottom of the grid to map the columns for another table.
- 21 Click **Next**.

- 22 If you want to import the database into a new model, do the following:



- a Select the **New model** option.
  - b Type the **Model name**.
- 23** If you want to import the database into an existing model, do the following:
- a Select the **Existing model** option.
  - b From the drop-down list, select a model.
  - c To append the imported data to the existing model data, select the **Update all data in the model, then import new data** option.
  - d To remove all existing data, select the **Remove all data in the model, then import new data** option.
- 24** Click **Next**.



- 25** Review the import summary.
- 26** If you need to change any information, click **Back** until you reach the step that you need to change in the wizard.
- All of the information that you have specified is saved. Click **Next** to advance through the wizard.
- 27** To save the import configuration so that the import can be easily run again, do the following:
- a Select the **Save configuration as** option.
  - b Type the **Name**.

- c** Type the **Description**.
- 28** To rename an existing import configuration, do the following:
  - a** Select the **Update existing configuration** option.
  - b** Type the new **Name**.
  - c** Type the **Description**.
- 29** Click **Finish**.

---

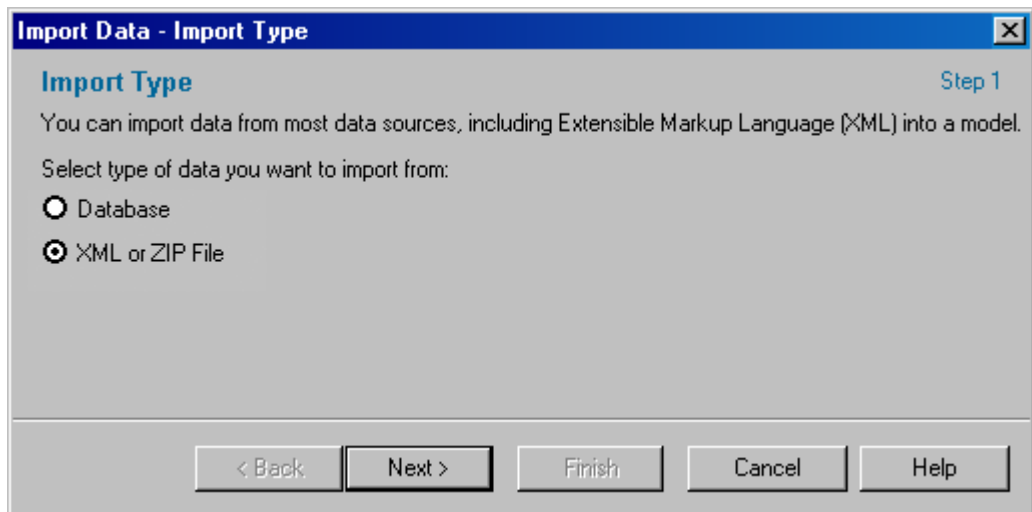
## Import Model Data from an XML File with the Import Data Wizard

*Note:* You can perform this task without first opening a model.

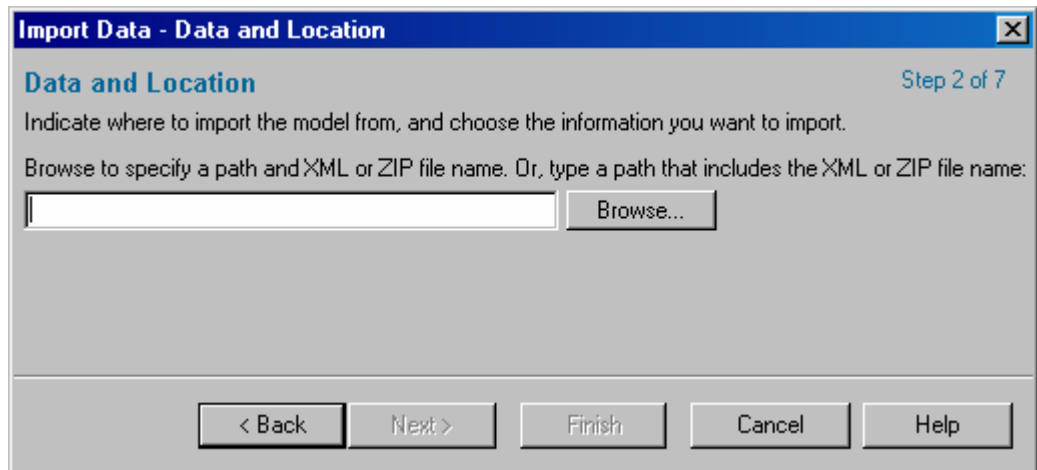
When you import model data from an XML file, a new model is created. You can choose to give the model a new name or you can reuse the name of an existing model. You cannot import model data from an XML file to incrementally update an existing model or to combine several models into a single model. Whatever data is contained by an existing model is removed and replaced by the model data in the imported XML file.

- 1** Select **File > Import > Model Data**.

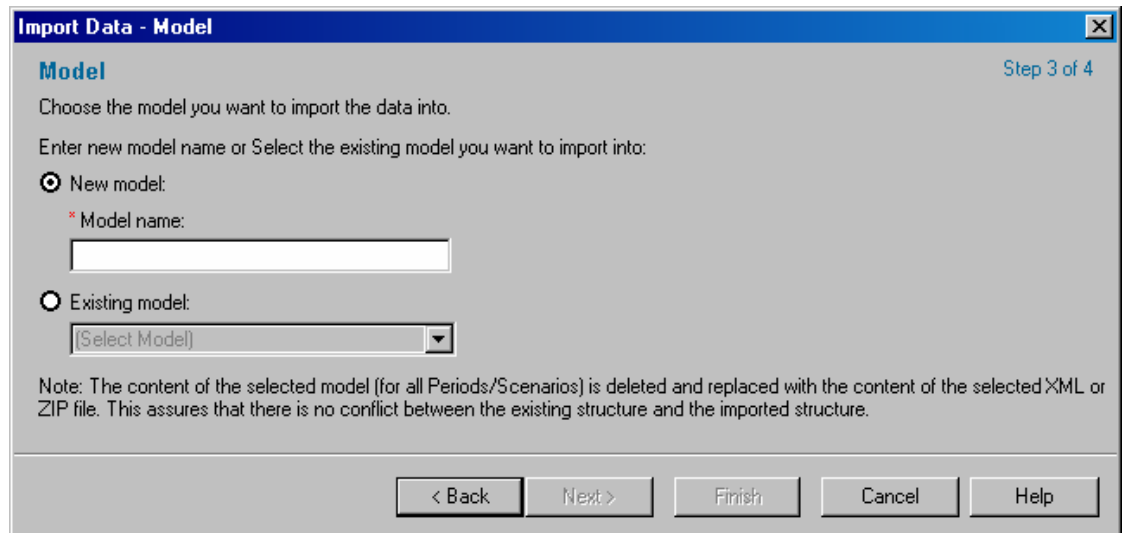
The Import Data Wizard appears.



- 2** Select the **XML File** option.
- 3** Click **Next**.



- 4 Type the absolute pathname to the XML file. Or, click ....
- 5 Click **Next**.



- 6 If you want to import the XML file into a new model, do the following:
  - a Select the **New model** option.
  - b Type the **Model name**.
- 7 If you want to import the XML file into an existing model, do the following:
  - a Select the **Existing model** option.
  - b From the drop-down list, select a model.
- 8 Click **Next**.

**Import Data - Summary** Step 4 of 4

Please review your selections:

**Import File Type:**  
XML/Zip File

**Source:**  
C:\Program Files\SAS\Activity-Based Management Solution\Client\Samples\Models\Native\ParcelExpressTutorial.xml

**Tables:**

**Model:**  
Type: Import in a new model  
Name: xaasa

☐ Save configuration as: ☐ Save without running:

Name:  Description:

< Back Next > Finish Cancel Help

- 9 Review the import summary.
- 10 If you need to change any information, click **Back** until you reach the step that you need to change in the wizard.  
  
All of the information that you have specified is saved. Click **Next** to advance through the wizard.
- 11 To save the import configuration so that the import can be easily run again, do the following:
  - a Select the **Save configuration as** option.
  - b Type the **Name**.
  - c Type the **Description**.
- 12 To rename an existing import configuration, do the following:
  - a Select the **Update existing configuration** option.
  - b Type the new **Name**.
  - c Type the **Description**.
- 13 Click **Finish**.

---

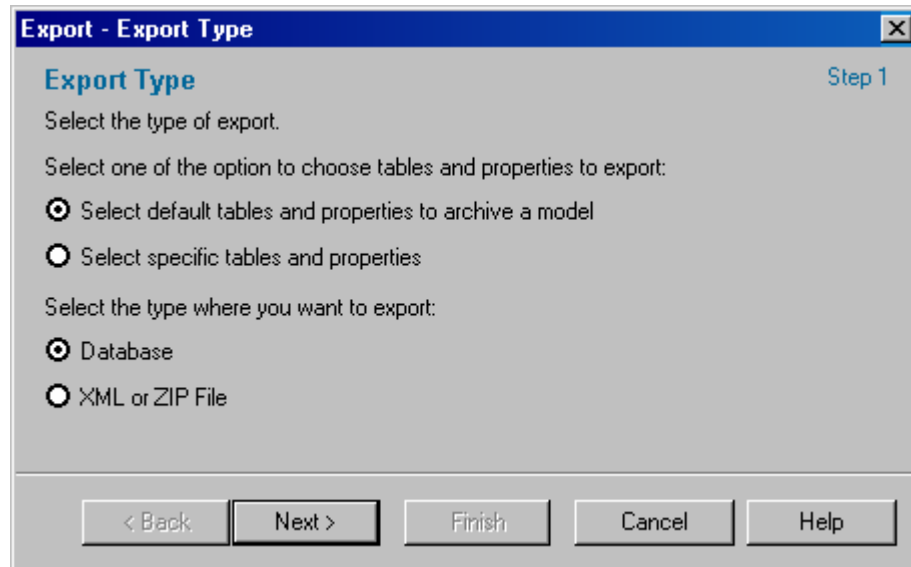
## Archive a Model to a Database with the Export Wizard

Before attempting to archive a model to a database, see the “Connect to a Database” section at the end of this chapter, which provides information about preparing to connect to the most common databases.

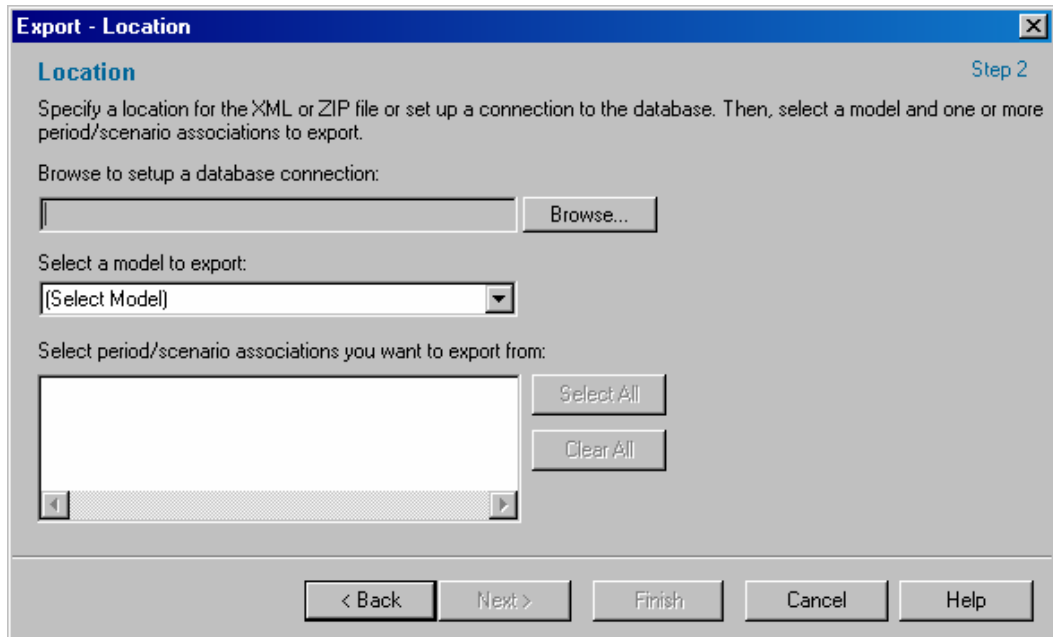
*Note:* You can perform this task without first opening a model.

- 1 Verify that the model and an empty database are ready.
- 2 Select **File > Export Model Data**.

The Export Wizard appears.



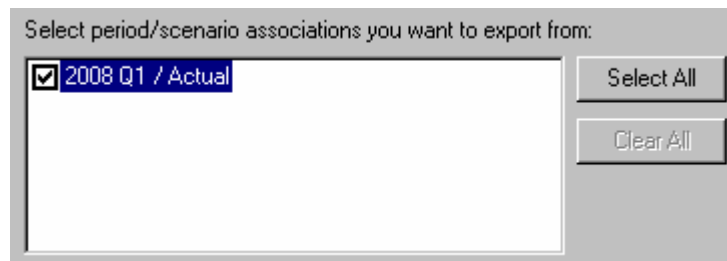
- 3 Select the **Select default tables and properties to archive a model** option.
- 4 Select the **Database** option.
- 5 Click **Next**.



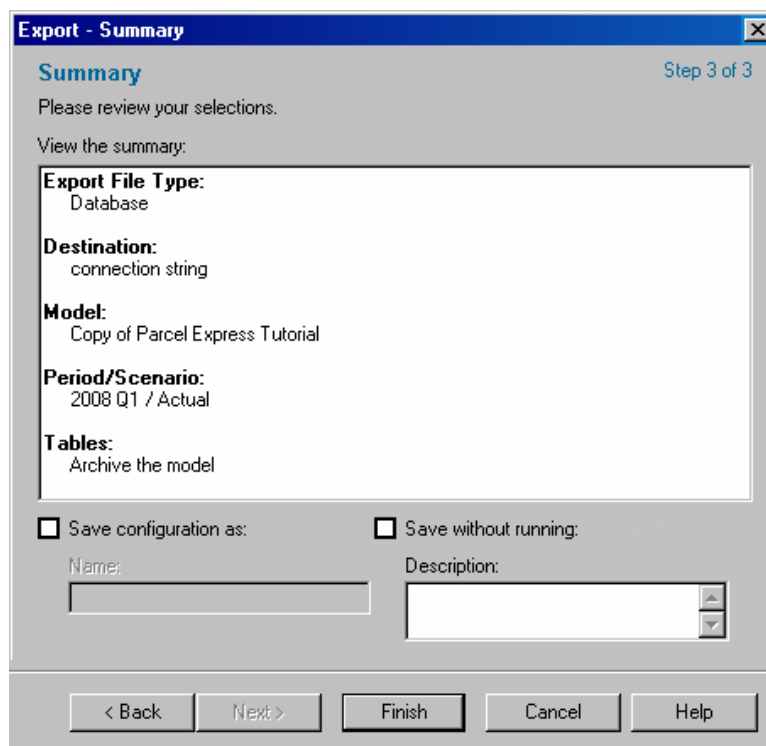
- 6 Click **Browse...**.

The Data Link Properties dialog box appears. For information about this dialog box, see the Microsoft Help. For information about the task of creating a connection string to a specific database, see the appropriate section at the end of this chapter.

- 7 From the **Select a model to export** drop-down list, select a model.
- 8 From the **Select period/scenario associations you want to export from** list, select the check box next to one or more period/scenario associations.



- 9 Click **Next**.



- 10 Review the export summary.
- 11 If you need to change any information, click **Back** until you reach the step that you need to change in the wizard.

All of the information that you have specified is saved. Click **Next** to advance through the wizard.

- 12 To save the export configuration so that the export can be easily run again, do the following:

- a Select the **Save configuration as** option.
  - b Type the **Name**.
  - c Type the **Description**.
- 13 To rename an existing export configuration, do the following:
- a Select the **Update existing configuration** option.
  - b Type the new **Name**.
  - c Type the **Description**.
- 14 Click **Finish**.

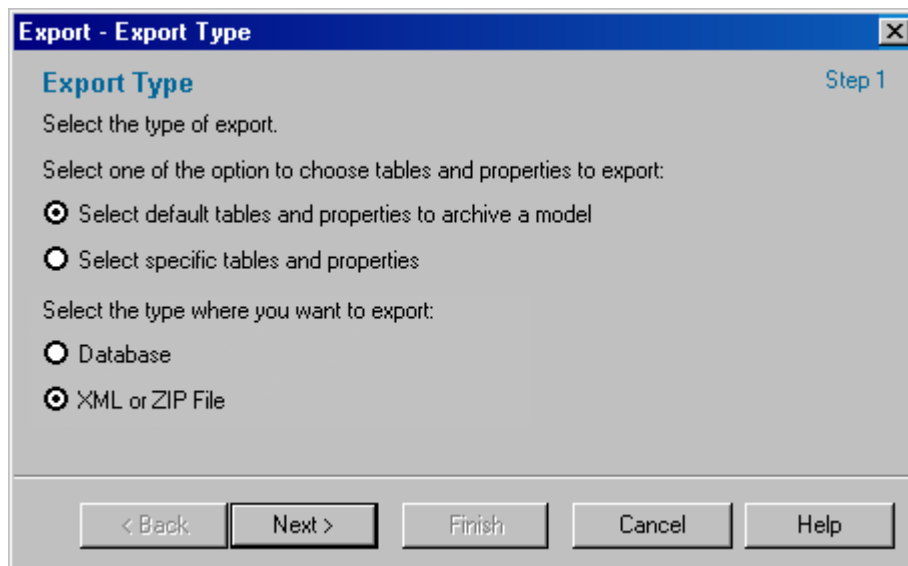
---

## Archive a Model to an XML File with the Export Wizard

*Note:* You can perform this task without first opening a model.

- 1 Verify that the model is ready.
- 2 Select **File > Export Model Data**.

The Export Wizard appears.



- 3 Select the **Select default tables and properties to archive a model** option.
- 4 Select the **XML File** option.
- 5 Click **Next**.

**Export - Location** Step 2

**Location**

Specify a location for the XML or ZIP file or set up a connection to the database. Then, select a model and one or more period/scenario associations to export.

Browse to specify a path and XML or ZIP file name. Or, type a path that includes the XML or ZIP file name:

Browse...

Select a model to export:

[Select Model] ▼

Select period/scenario associations you want to export from:

Select All  
Clear All

< Back   Next >   Finish   Cancel   Help

- 6 Type the absolute pathname to the XML file. Or, click Browse....
- 7 From the **Select a model to export** drop-down list, select a model.
- 8 From the **Select period/scenario associations you want to export from** list, select the check box next to one or more period/scenario associations.

Select period/scenario associations you want to export from:

☒ 2008 Q1 / Actual Select All  
Clear All

- 9 Click **Next**.



**Export - Summary** Step 3 of 3

**Summary**

Please review your selections.

View the summary:

**Export File Type:**  
XML/Zip File

**Destination:**  
C:\Program Files\SAS\Activity-Based Management Solution\Client\Samples\Models\Native\ParcelExpress2.xml

**Model:**  
Parcel Express Tutorial

**Period/Scenario:**  
2008 Q1 / Actual

**Tables:**  
Archive the model

☐ Save configuration as: ☐ Save without running:

Name:  Description:

- 10 Review the export summary.
- 11 If you need to change any information, click **Back** until you reach the step that you need to change in the wizard.  
  
All of the information that you have specified is saved. Click **Next** to advance through the wizard.
- 12 To save the export configuration so that the export can be easily run again, do the following:
  - a Select the **Save configuration as** option.
  - b Type the **Name**.
  - c Type the **Description**.
- 13 To rename an existing export configuration, do the following:
  - a Select the **Update existing configuration** option.
  - b Type the new **Name**.
  - c Type the **Description**.
- 14 Click **Finish**.

---

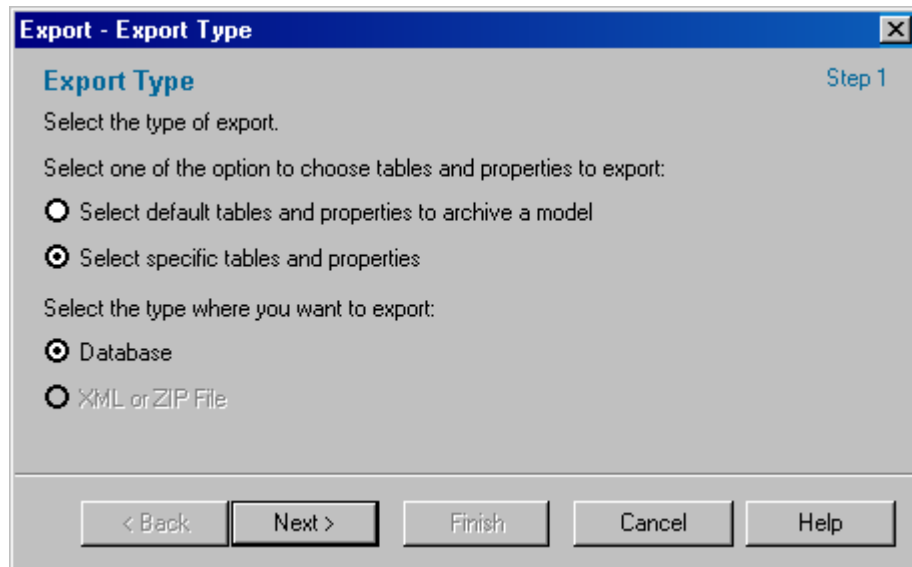
## Export Model Data to a Database with the Export Wizard

Before attempting to export data to a database, see the “Connect to a Database” section at the end of this chapter, which provides information about preparing to connect to the most common databases.

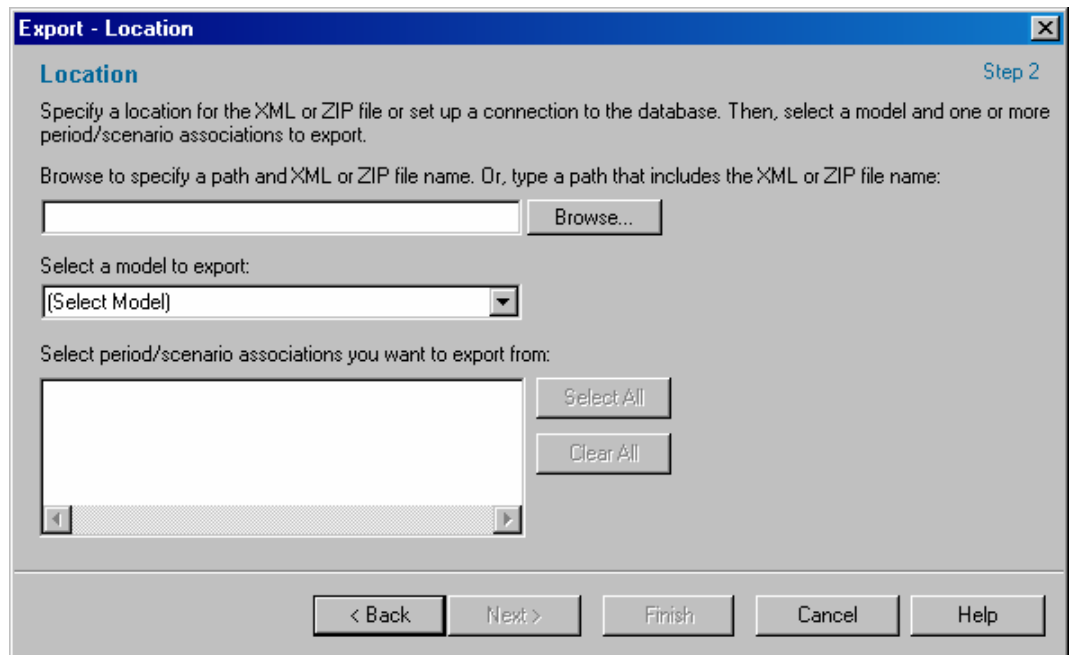
*Note:* You can perform this task without first opening a model.

- 1 Verify that the model is ready.
- 2 Select **File > Export Model Data**.

The Export Wizard appears.



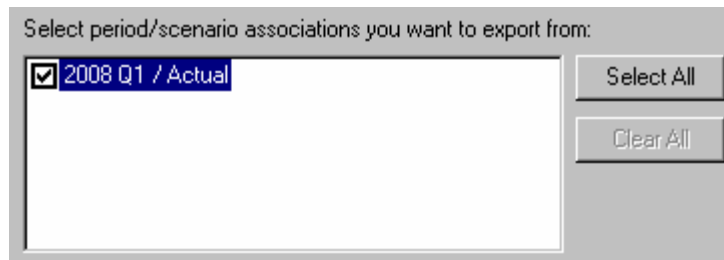
- 3 Select the **Select specific tables and properties** option.  
Notice that the only export type available is **Database**.
- 4 Click **Next**.



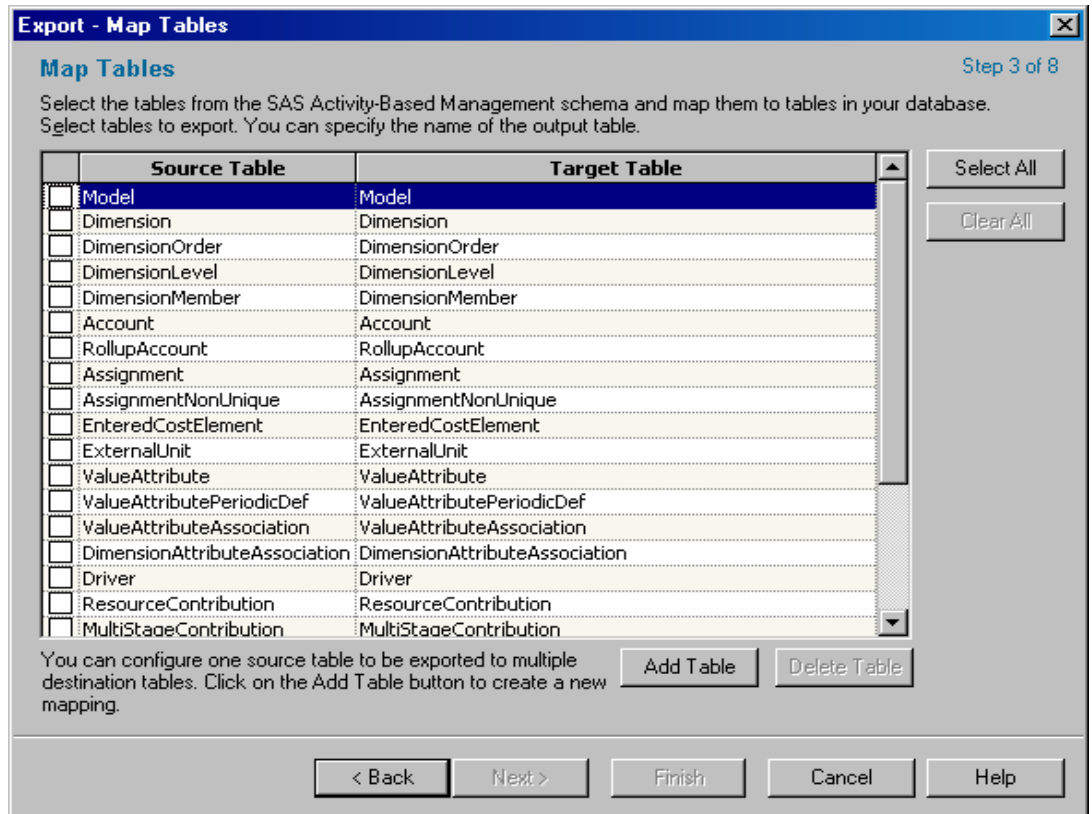
- 5 Click **Browse...**.

The Data Link Properties dialog box appears. For information about this dialog box, see the Microsoft Help. For information about the task of creating a connection string to a specific database, see the appropriate section at the end of this chapter.

- 6 From the **Select a model to export** drop-down list, select a model.
- 7 From the **Select period/scenario associations you want to export from** list, select the check box next to one or more period/scenario associations.



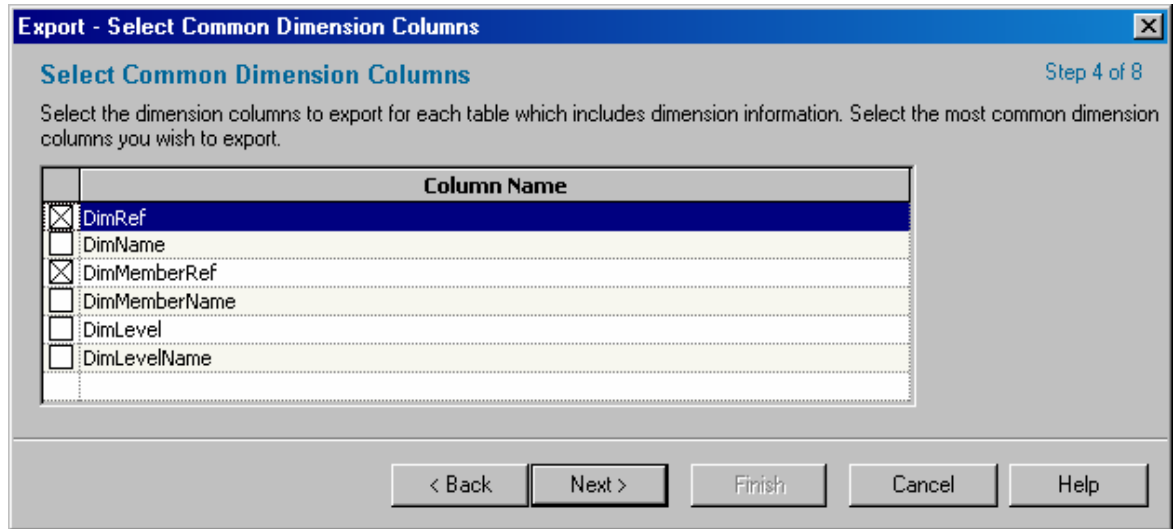
- 8 Click **Next**.



- 9 To select a table to export, select the check box to the left of the table in the **Source Table** column.  
You can select as many tables as needed.
- 10 To change the name of an exported table, click in the **Target Table** column to the right of a source table and type a new name.
- 11 To map a source table to more than one target table, do the following:
  - a Click **Add Table**.  
A new row is added with default information.
  - b Click in the **Source Table** column, and select a SAS Activity-Based Management table from the drop-down list.
- 12 Repeat steps 9 and 10 for every table that you want to export.

Next, you will select dimensions to export for each table that contains dimension information.

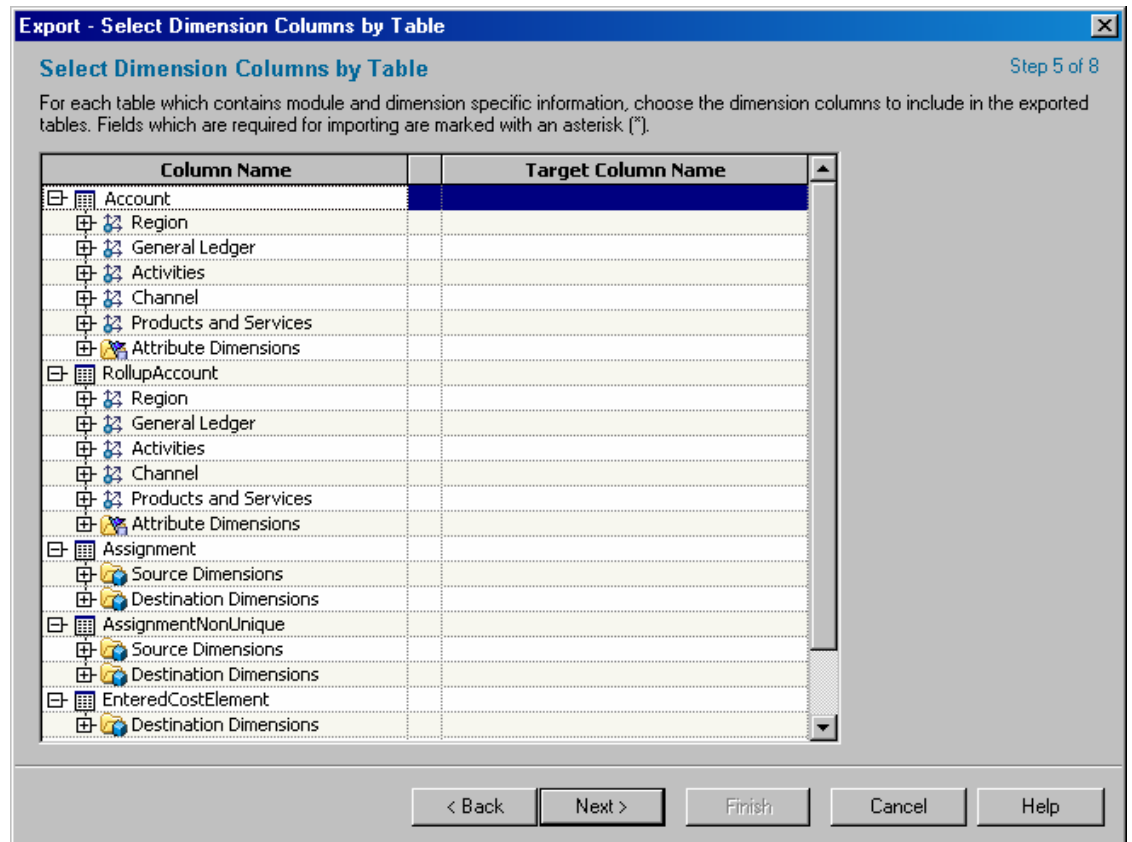
- 13 Click **Next**.



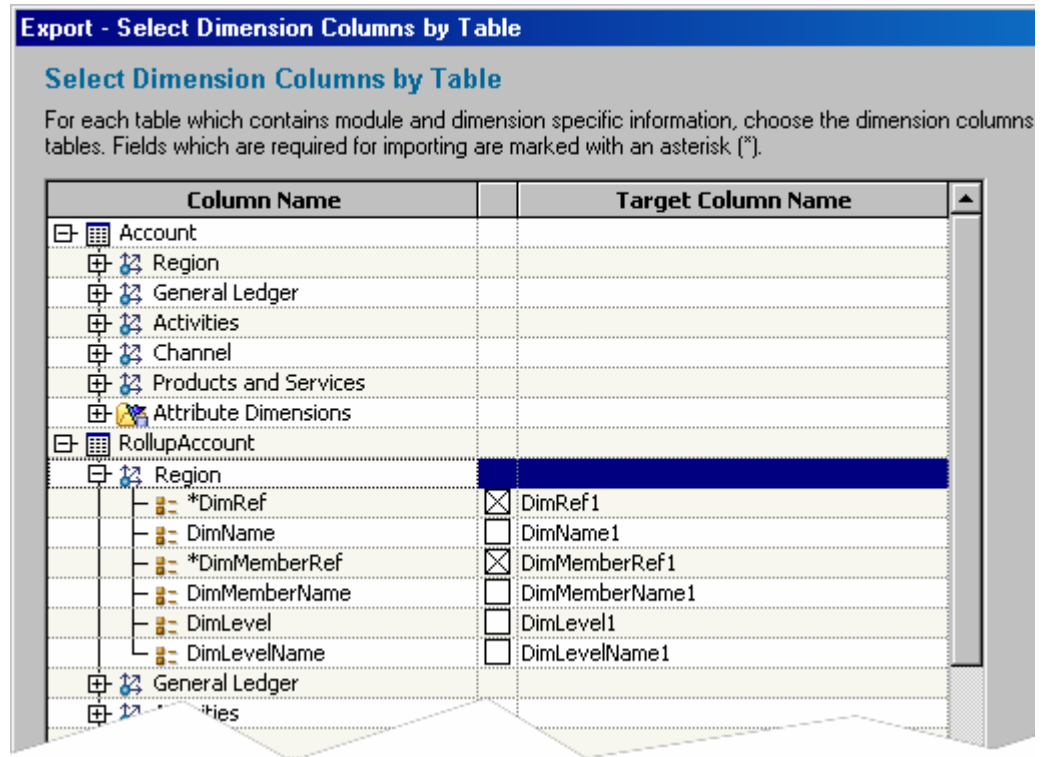
- 14 To select dimensions within tables to export, select the check box to the left of the dimension in the **Column Name** column.

Next, you will select dimensions and module information to export for each table that contains dimension information or module information.

- 15 Click **Next**.



- 16 Expand each table to review which columns are automatically selected to export.



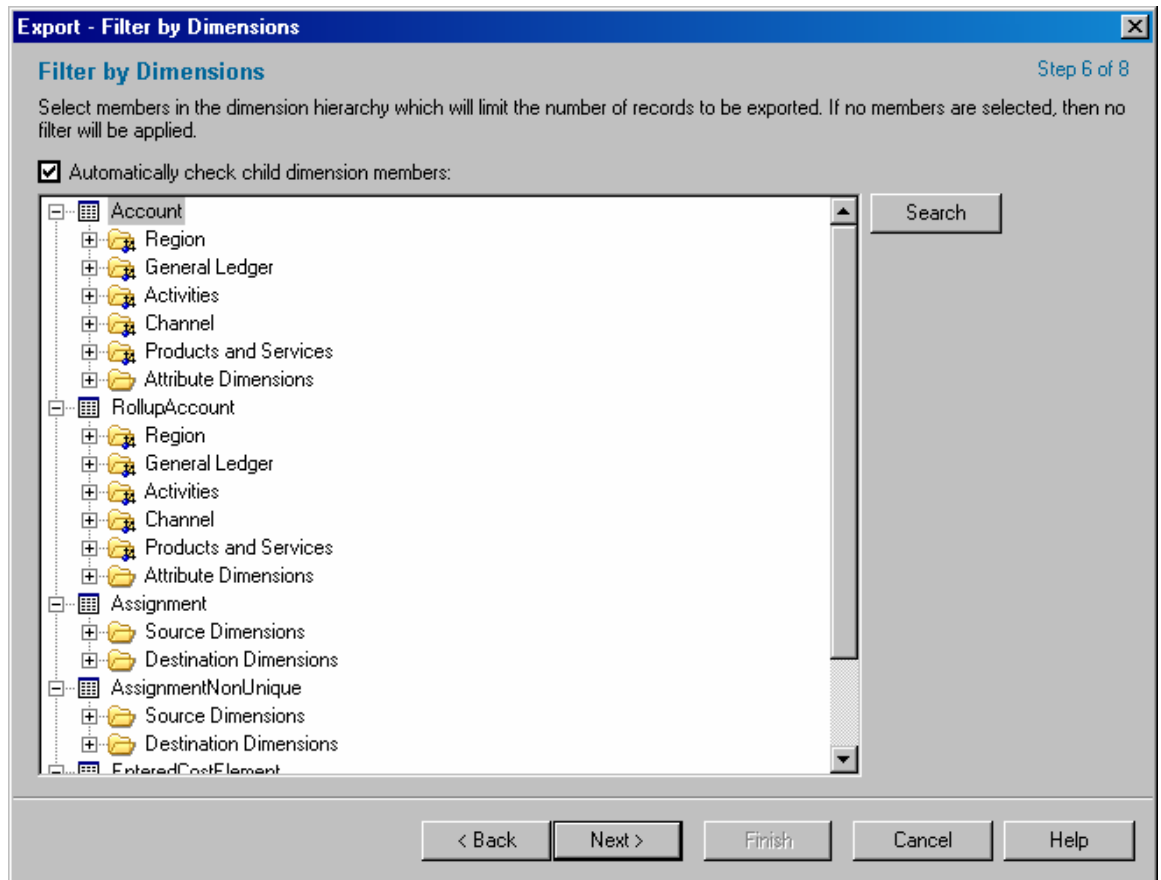
- 17 To select a column to export, select the check box to the left of the **Target Column Name**.

Notice that columns marked with an asterisk (\*) must be exported.

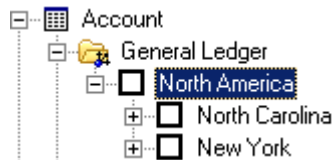
- 18 To change the name of an exported column, click in the **Target Column Name** column to the right of a column name, and type a new name.

Next, you will select dimension members to export. By default, all data will be exported. By selecting dimension members, you can limit the amount of data that is exported.

- 19 Click **Next**.

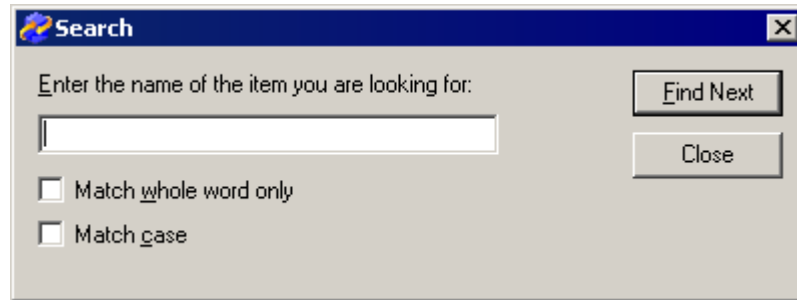


- 20 Expand each table to view the dimension members.



- 21 If you want to select all dimension members when a dimension is selected, select the **Automatically check child dimension members** option.
- 22 To select a dimension member, select the check box to the left of the dimension member.
- 23 To search for a dimension member, do the following:
- a Click **Search**.

The Search dialog box appears.



**b** In the **Enter the name of the item you are looking for** box, type the name of the item.

You can search for a table, a dimension, or a dimension member.

**c** Select the **Match whole word only** option and the **Match case** option.

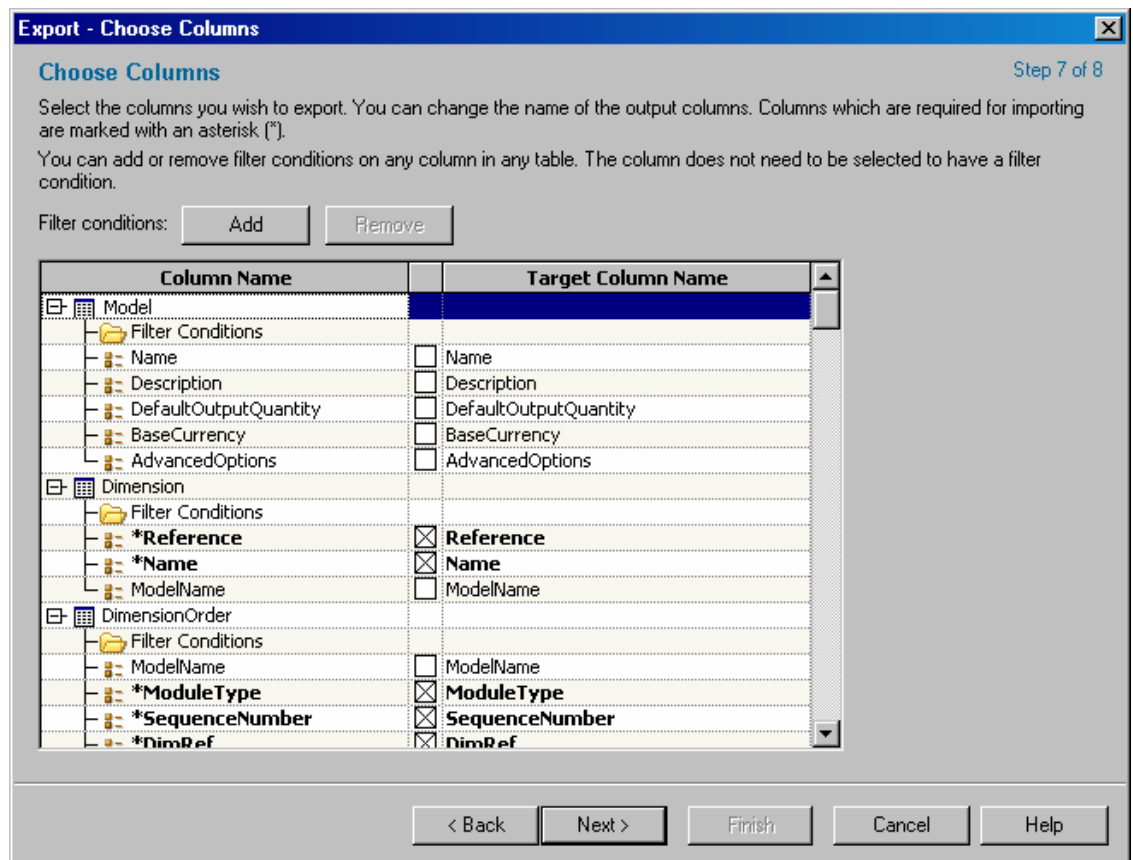
**d** Click **Find Next**.

The next occurrence of the item is found.

**24** Repeat steps 20 through 22 for each dimension member that you want to export.

Next, you will select columns to export. You can limit which data to export by creating filters.

**25** Click **Next**.





- 26** To select a column, select the check box to the left of the target column name.

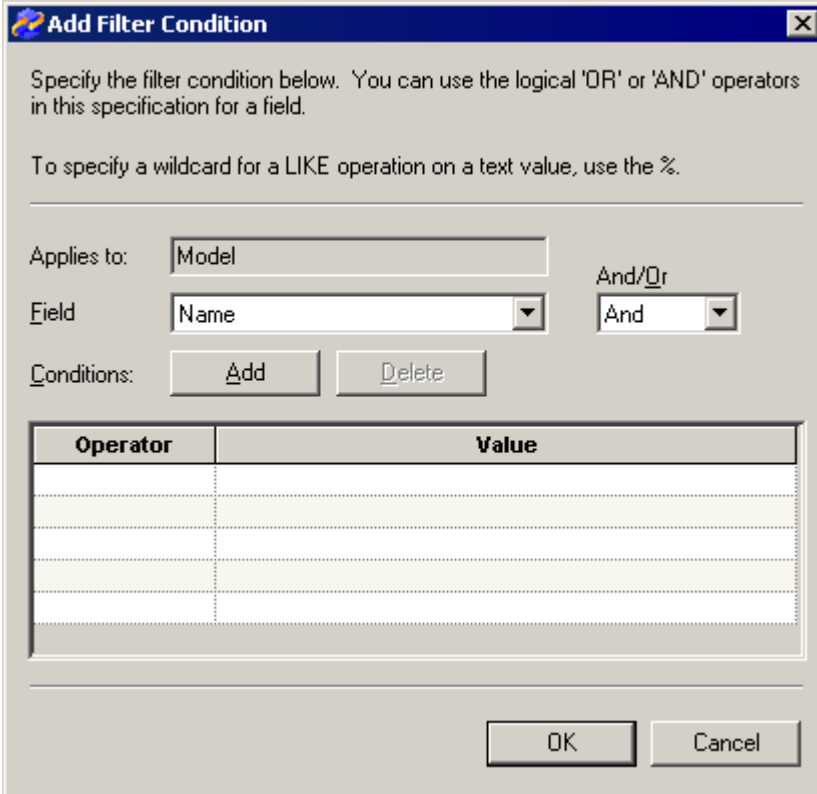
Notice that columns marked with an asterisk (\*) must be exported.

- 27** To change the name of an exported column, click in the **Target Column Name** column to the right of a column name, and type a new name.

- 28** To add a filter condition to a table, do the following:

- a** Click **Add**.

The Add Filter Condition dialog box appears.



The dialog box is titled "Add Filter Condition". It contains the following elements:

- Instructions: "Specify the filter condition below. You can use the logical 'OR' or 'AND' operators in this specification for a field." and "To specify a wildcard for a LIKE operation on a text value, use the %."
- Fields: "Applies to:" with a text box containing "Model", "Field:" with a dropdown menu containing "Name", and "And/Or:" with a dropdown menu containing "And".
- Buttons: "Add" and "Delete" under the "Conditions:" label.
- Table: A table with two columns, "Operator" and "Value". The table is currently empty.
- Buttons: "OK" and "Cancel" at the bottom right.

- b** Select a database **Field** on which to base the filter condition.

- c** From the **And/Or** drop-down list, select a logical operator.

- d** Click **Add**.

The field appears in the list.

- e** Select an **Operator** from the drop-down list.

- f** Type a **Value** for the operator.

You can create as many filter conditions as needed, but each filter condition can specify only one field. For example, if you need to limit the export to a model named Headquarters with a base currency of United States Dollars, you would have to open the Add Filter Condition dialog box twice. The first time, you would

need to create the filter condition for the model name Headquarters. The second time, you would need to create the filter condition for the base currency United States Dollars. The completed filter conditions would look like the following:

Column Name	Target Column Name
Model	
Filter Conditions	
Name = 'Headquarters'	
BaseCurrency = 'USD'	

29 Click **Next**.

**Export - Summary** Step 8 of 8

**Summary**  
Please review your selections.

View the summary:

**Export File Type:**  
Database

**Destination:**  
connection string

**Model:**  
Parcel Express Tutorial

**Period/Scenario:**  
2008 Q1 / Actual

**Tables:**  
 - Model [Model]  
 - Dimension [Dimension]  
 - DimensionOrder [DimensionOrder]  
 - DimensionLevel [DimensionLevel]  
 - DimensionMember [DimensionMember]  
 - Account [Account]

☐ Save configuration as:  
Name:

☐ Save without running:  
Description:

< Back   Next >   Finish   Cancel   Help

30 Review the export summary.

31 If you need to change any information, click **Back** until you reach the step that you need to change in the wizard.

All of the information that you have specified is saved. Click **Next** to advance through the wizard.

32 To save the export configuration so that the export can be easily run again, do the following:

a Select the **Save configuration as** option.

b Type the **Name**.

- c** Type the **Description**.
- 33** To rename an existing export configuration, do the following:
  - a** Select the **Update existing configuration** option.
  - b** Type the new **Name**.
  - c** Type the **Description**.
- 34** Click **Finish**.

---

## Connect to a Database

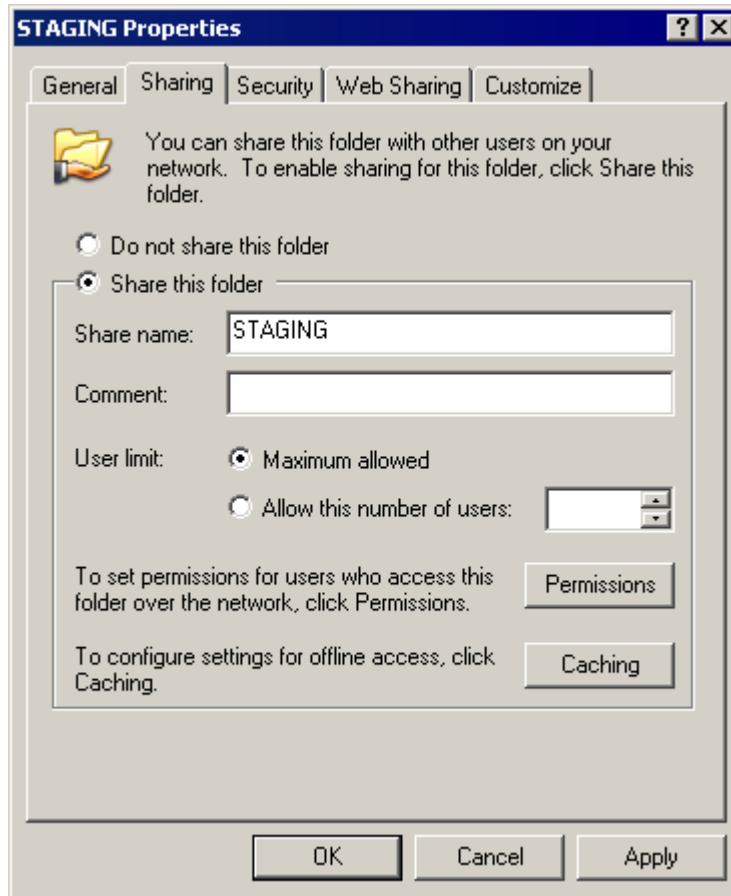
You must perform two major tasks when you connect to a database to import data or export data: preparing to connect and creating a connection string. These tasks can differ for each type of database. The tasks for the most common databases are described in this section.

---

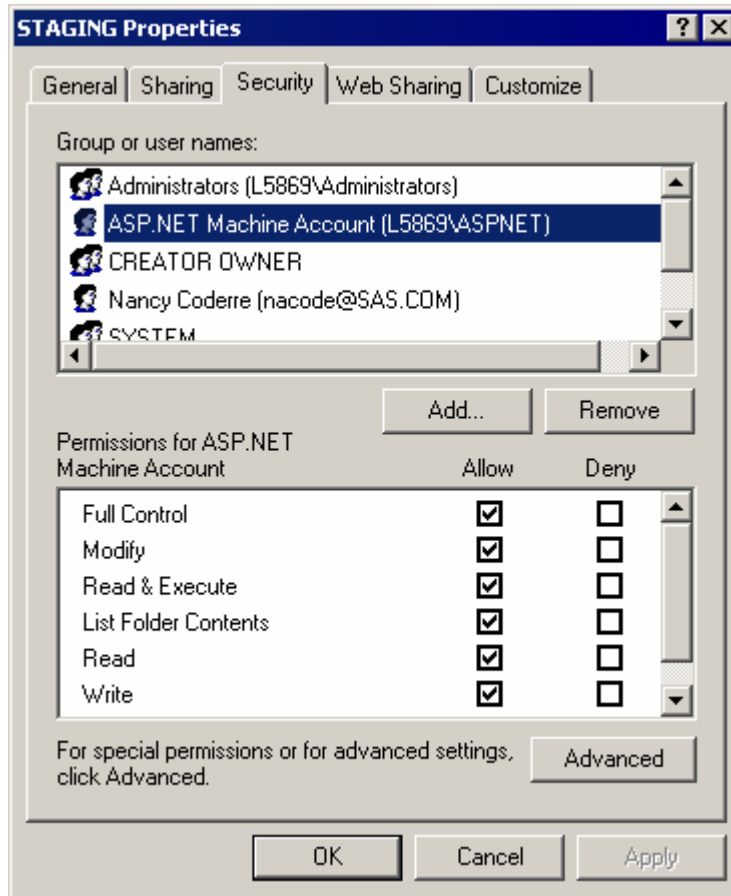
### Microsoft Access Database

#### Prepare to Connect

- 1** In Microsoft Windows Explorer, create a folder on the SAS Activity-Based Management server's file system in which to save the Microsoft Access database.
- 2** Select the folder and select **File > Properties**.  
The Properties dialog box appears.
- 3** Click the **Sharing** tab.
- 4** Select the **Share this folder** option.
- 5** For the **User limit**, select the **Maximum allowed** option.



- 6 Click the **Security** tab.
- 7 From the **Group or user names** list, select **ASP.NET Machine Account**.
- 8 In the list of **Permissions**, select every check box in the **Allow** column.



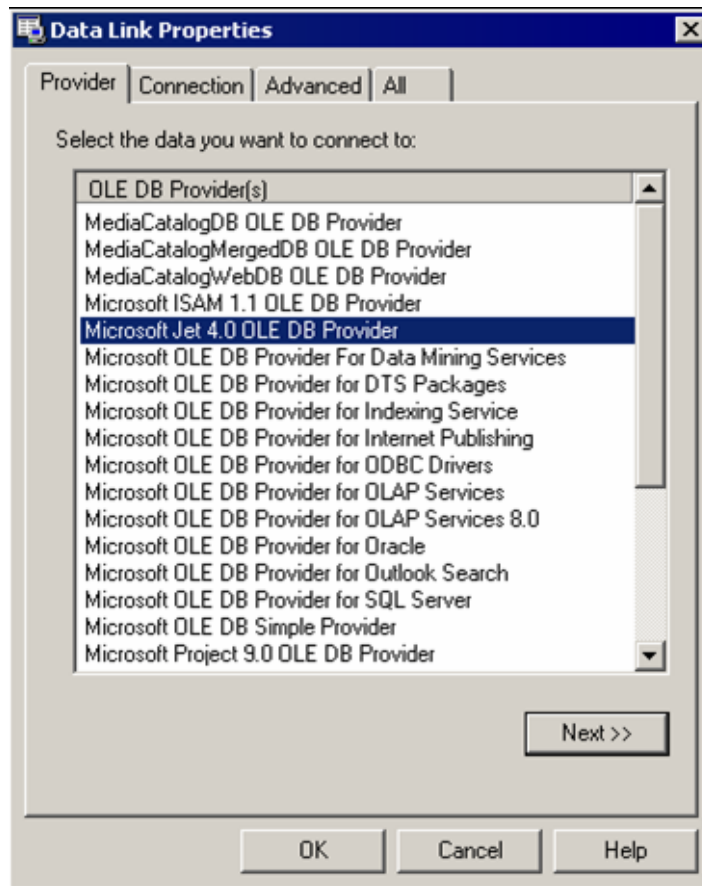
- 9 Repeat steps 7 and 8 for the user account of the person who will be importing data and exporting data.
- 10 Save the Microsoft Access database in the folder you just created on the SAS Activity-Based Management server's file system.
- 11 Display the properties for the Microsoft Access database on the server, and ensure that the ASP.NET Machine Account has the same permissions as the new folder.

You are now ready to import data from or export data to the Microsoft Access database.

## Create a Connection String

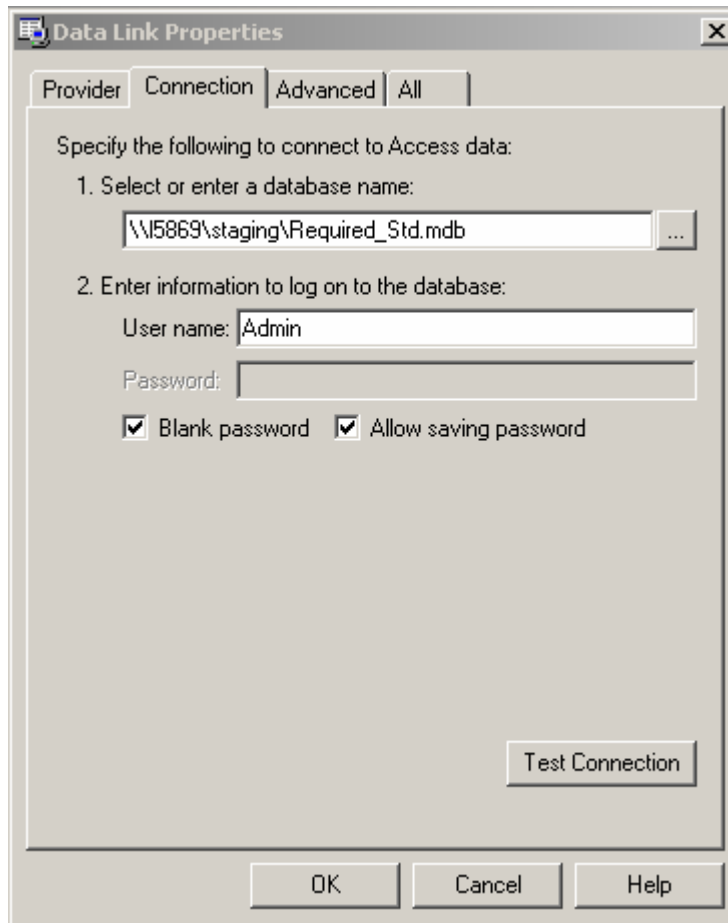
- 1 When you use a wizard to import data or to export data, you are asked to set up a database connection. Click ... in the wizard.

The Data Link Properties dialog box appears.



- 2 On the **Provider** tab, select **Microsoft Jet 4.0 OLE DB Provider**.
- 3 Click **Next**.

The Connection tab appears.



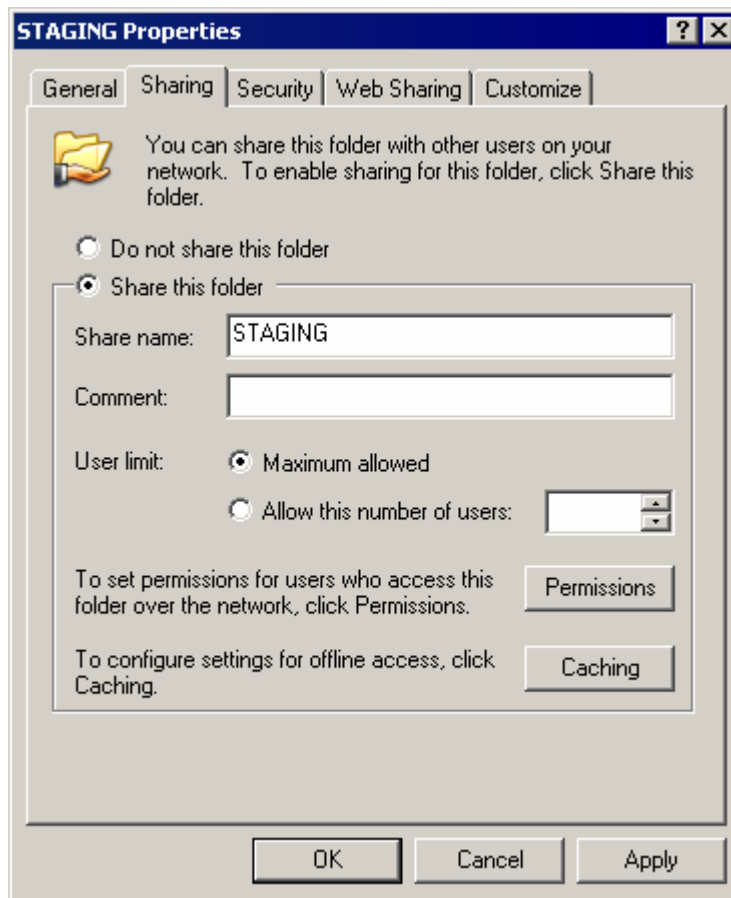
- 4 In the **Select or enter a database name** box, type the Universal Naming Convention (UNC) path to the Microsoft Access database that resides on the SAS Activity-Based Management server. Or, click ... to browse.
- 5 Type the **User name** of the account that can open the Microsoft Access database.
- 6 If the Microsoft Access database requires a password, do the following:
  - a Clear the **Blank password** option, and type the **Password**.
  - b Select the **Allow saving password** option.
- 7 Click **Test Connection**.  
 If you see a message that the test connection failed, review the information that you specified and correct any errors.
- 8 Click **OK**.

You return to the SAS Activity-Based Management wizard to continue importing data or exporting data.

## Microsoft Excel Workbook

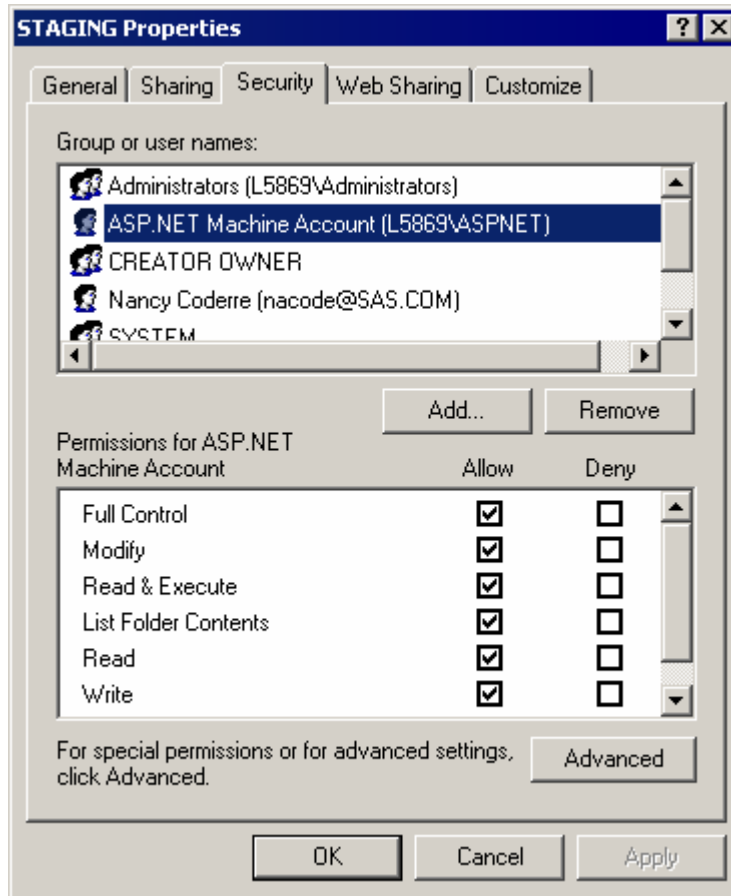
### Prepare to Connect

- 1 In Microsoft Windows Explorer, create a folder on the SAS Activity-Based Management server's file system in which to save the Microsoft Excel workbook.
- 2 Select the folder and select **File > Properties**.  
The Properties dialog box appears.
- 3 Click the **Sharing** tab.
- 4 Select the **Share this folder** option.
- 5 For the **User limit**, select the **Maximum allowed** option.



- 6 Click the **Security** tab.
- 7 From the **Group or user names** list, select **ASP.NET Machine Account**.
- 8 In the list of **Permissions**, select every check box in the **Allow** column.





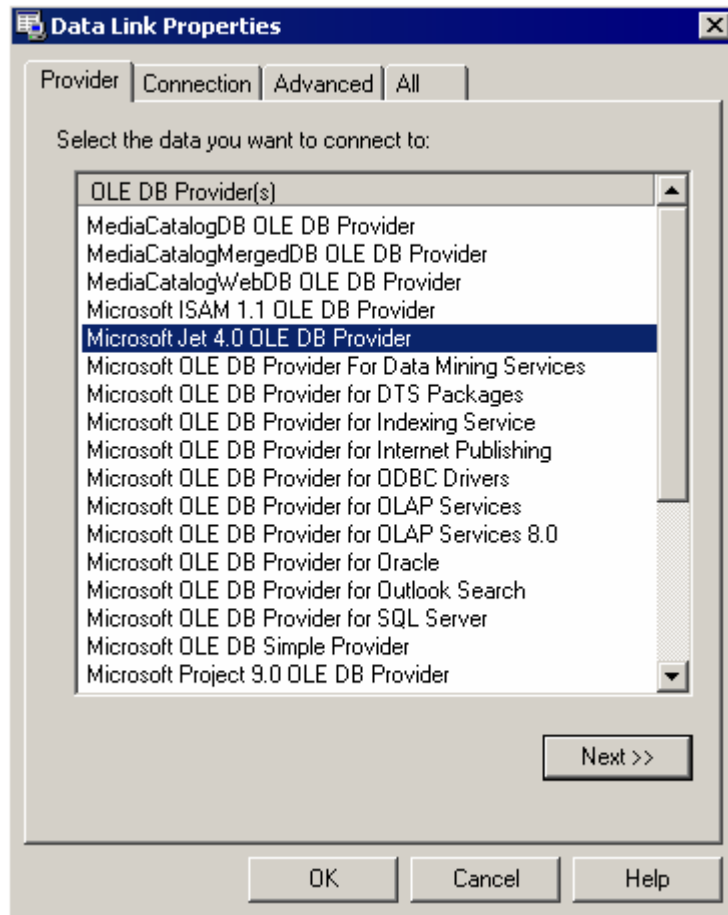
- 9 Repeat steps 7 and 8 for the user account of the person who will be importing data.
- 10 Save the Microsoft Excel workbook in the folder you just created on the SAS Activity-Based Management server's file system.
- 11 Display the properties for the Microsoft Excel workbook on the server, and ensure that the ASP.NET Machine Account has the same permissions as the new folder.

You are now ready to import data from the Microsoft Excel workbook.

## Create a Connection String

- 1 When you use a wizard to import data, you are asked to set up a database connection. Click ... in the wizard.

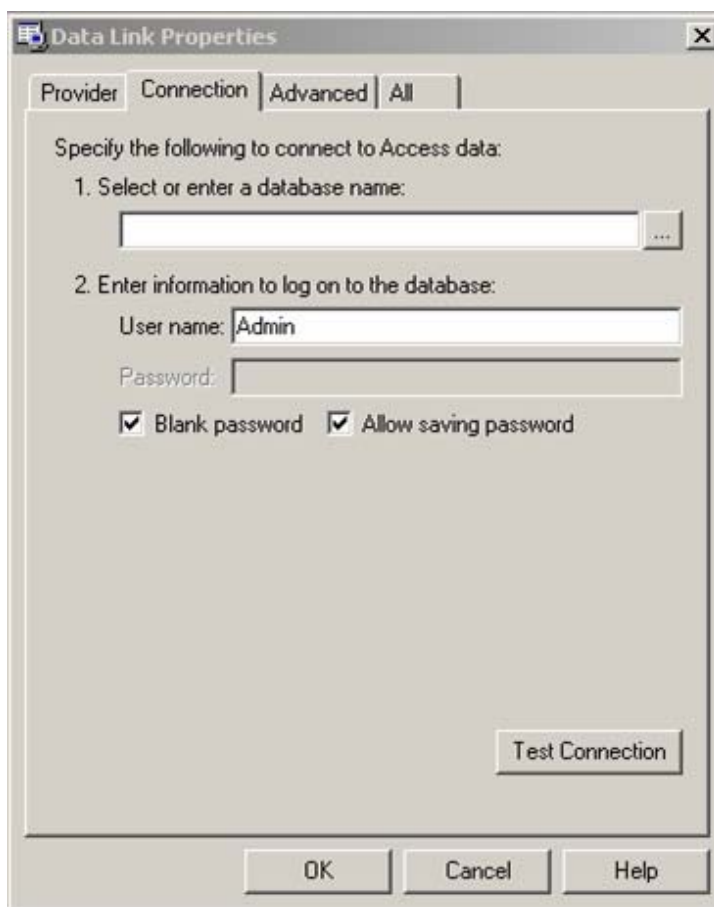
The Data Link Properties dialog box appears.



2 On the **Provider** tab, select **Microsoft Jet 4.0 OLE DB Provider**.

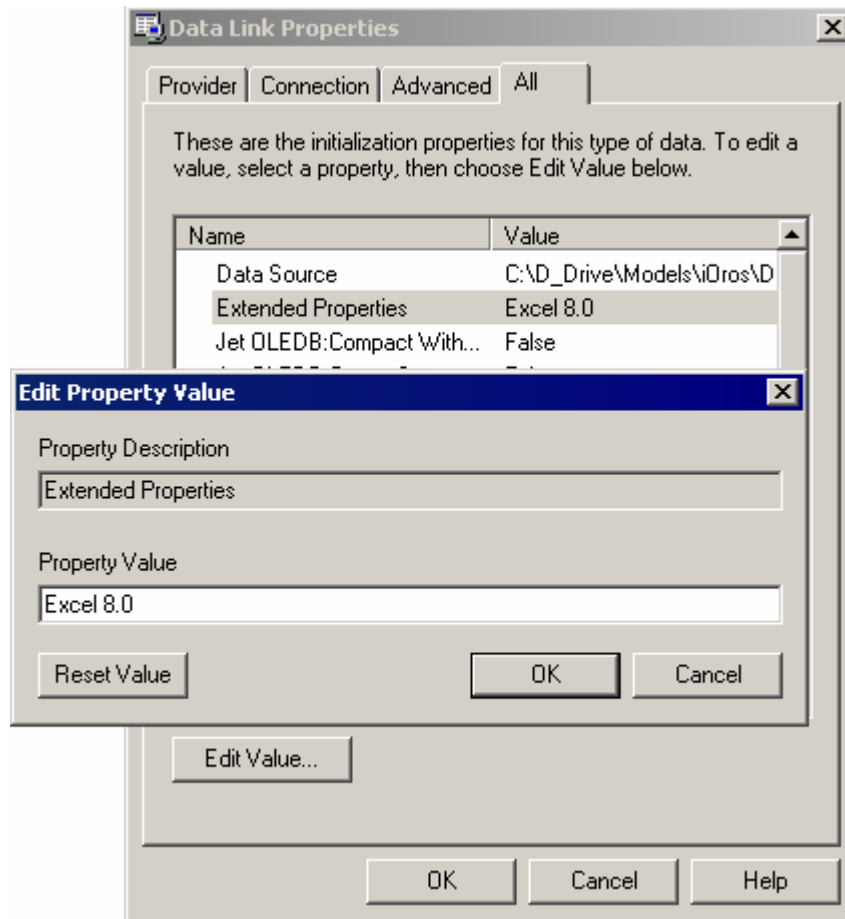
3 Click **Next**.

The Connection tab appears.



- 4 In the **Select or enter a database name** box, type the Universal Naming Convention (UNC) path to the Microsoft Excel workbook that resides on the SAS Activity-Based Management server. Or, click ... to browse.
- 5 If you browse to locate the Microsoft Excel workbook, ensure that you choose to display all file types in the Select Access Database dialog box.  
  
By default, this dialog box displays only Microsoft Access database files.
- 6 Leave the **User name** as Admin.
- 7 If the Microsoft Excel workbook requires a password, do the following:
  - a Clear the **Blank password** option, and type the **Password**.
  - b Select the **Allow saving password** option.
- 8 Click the **All** tab.
- 9 In the **Name** column, select **Extended Properties**.
- 10 Click **Edit Value**.

The Edit Property Value dialog box appears.



- 11 In the **Property Value** box, type **Excel 8.0**.
- 12 Click **OK**.
- 13 Click the **Connection** tab, and click **Test Connection**.

If you see a message that the test connection failed, review the information that you specified and correct any errors.

- 14 Click **OK**.

You return to the SAS Activity-Based Management wizard to continue importing data.

---

## SAS/SHARE

### Prepare to Connect

- 1 Set up a SAS/SHARE server and then configure and test the SAS/SHARE clients.
- 2 Note the server name, the server location, and the library name.

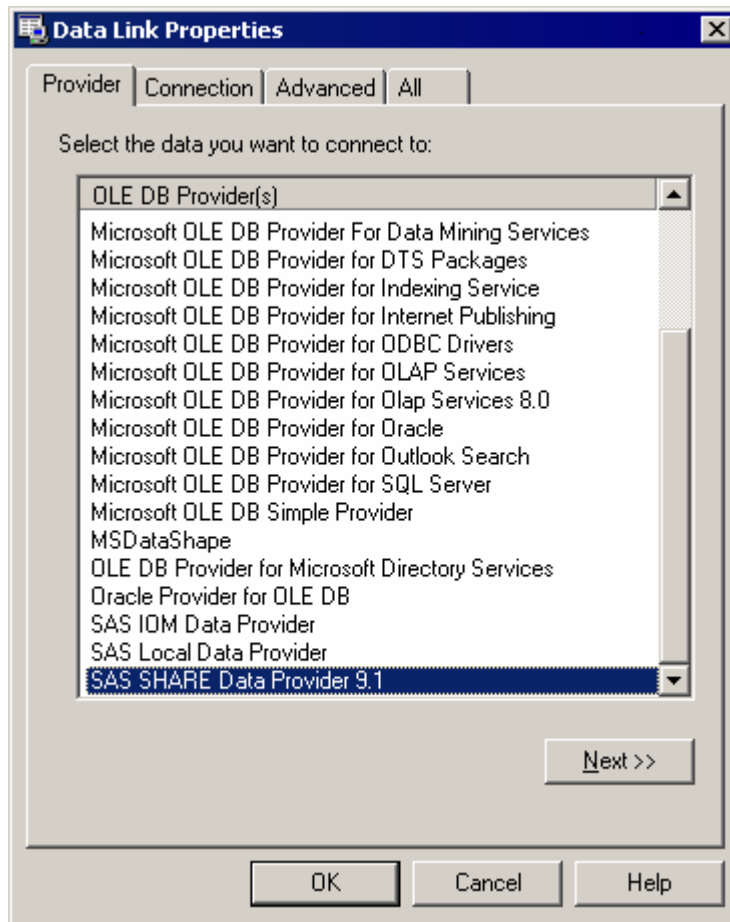
You will need this information later when you create the connection string in SAS Activity-Based Management.

- 3 From the desktop of the computer that will import data or export data, run the command `sasoledb.exe`.

## Create a Connection String

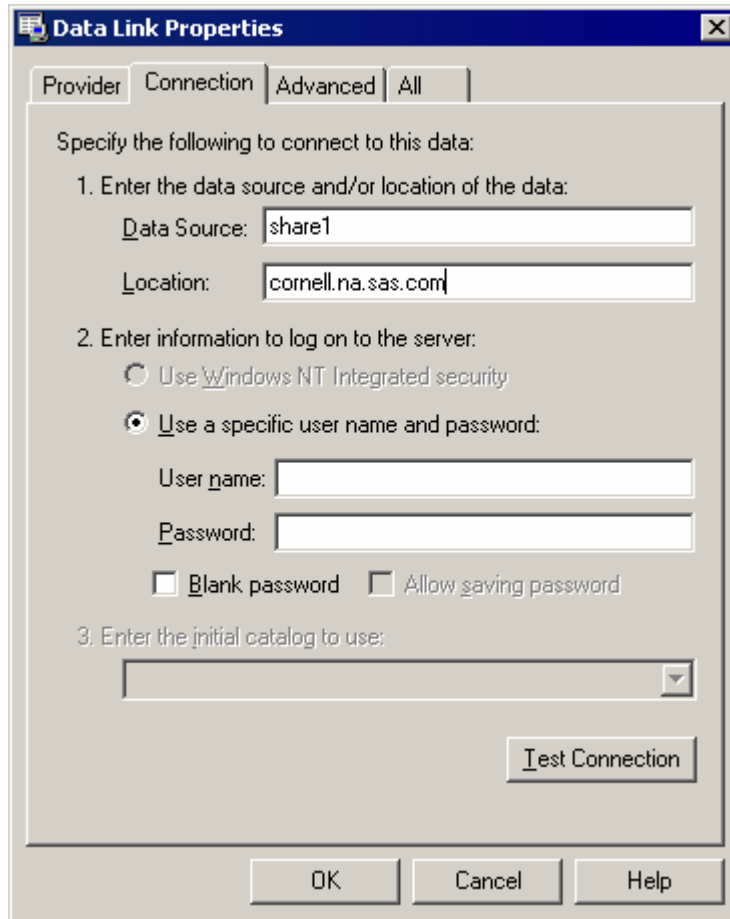
- 1 When you use a wizard to import data or export data, you are asked to set up a database connection. Click ... in the wizard.

The Data Link Properties dialog box appears.



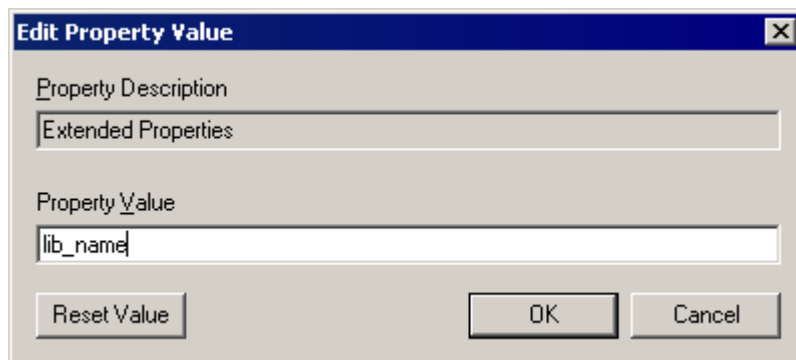
- 2 On the **Provider** tab, select **SAS SHARE Data Provider 9.1**.
- 3 Click **Next**.

The Connection tab appears.



- 4 In the **Data Source** box, type the name of the SAS/SHARE server.
- 5 In the **Location** box, type the location of the SAS/SHARE server.
- 6 Click the **All** tab.
- 7 In the **Name** column, select **Extended Properties**.
- 8 Click **Edit Value**.

The Edit Property Value dialog box appears.



- 9 In the **Property Value** box, type the name of the SAS/SHARE library.

- 10 If you are using SAS Version 8, do the following:
  - a From the **All** tab, select **SAS Server Release**, and click **Edit Value**.
  - b In the Edit Property Value dialog box, type a **Property Value** of **8**.
  - c Click **OK**.
- 11 Click the **Connection** tab, and click **Test Connection**.

If you see a message that the test connection failed, review the information that you specified and correct any errors.
- 12 Click **OK**.

You return to the SAS Activity-Based Management wizard to continue importing data or exporting data.

---

## Oracle Database

### Prepare to Connect

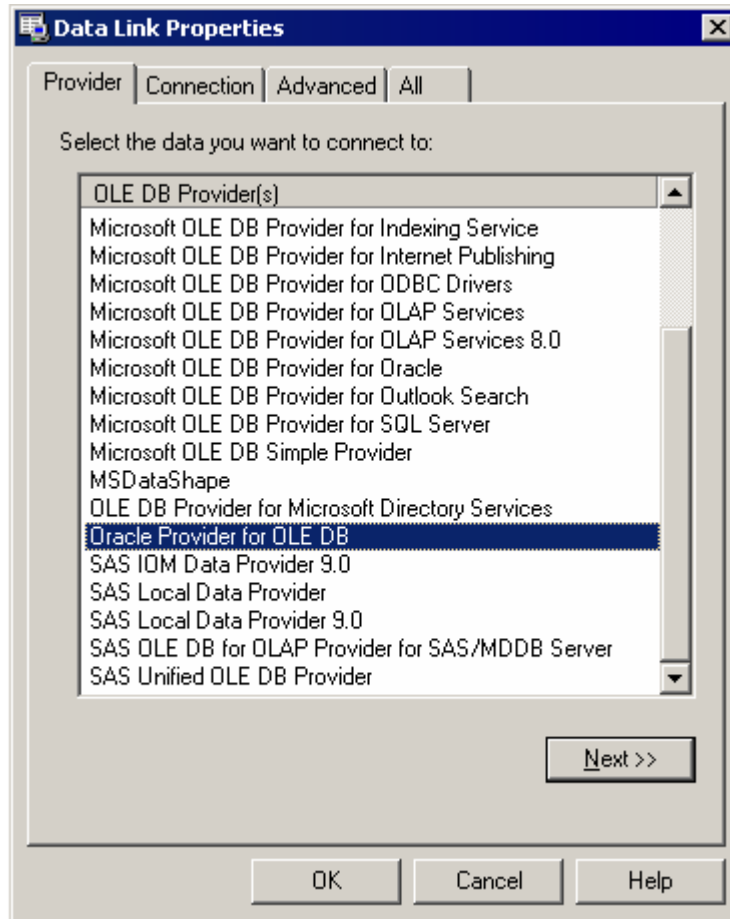
- 1 Obtain the Oracle Service Name (SID) and the Oracle user ID and password from your Oracle database administrator.

You will need this information later when you create the connection string in SAS Activity-Based Management.
- 2 Ensure that the Oracle client software is installed on both the SAS Activity-Based Management server and client with the Administrator option.

### Create a Connection String

- 1 When you use a wizard to import data or to export data, you are asked to set up a database connection. Click **...** in the wizard.

The Data Link Properties dialog box appears.



- 2 On the **Provider** tab, select **Oracle Provider for OLE DB**.

Do not select **Microsoft OLE DB Provider for Oracle** because this provider might not be compatible with your Oracle server.

- 3 Click **Next**.

The Connection tab appears.

- 4 Type the SID in the **Data Source** box.

- 5 Select the **Use a specific user name and password** option, and type the Oracle **User name** and **Password**.

- 6 Select the **Allow saving password** option.

If you fail to select this option, the SAS Activity-Based Management client will not be able to pass the user credentials to the SAS Activity-Based Management server for processing.



The image shows a 'Data Link Properties' dialog box with four tabs: 'Provider', 'Connection', 'Advanced', and 'All'. The 'Connection' tab is selected. The dialog contains the following fields and options:

- Specify the following to connect to this data:**
  - 1. Enter the data source and/or location of the data:**
    - Data Source:
    - Location:
  - 2. Enter information to log on to the server:**
    - ☐ Use Windows NT Integrated security
    - ☒ Use a specific user name and password:
      - User name:
      - Password:
    - ☐ Blank password ☒ Allow saving password
  - 3. Enter the initial catalog to use:**
- Test Connection** button
- OK**, **Cancel**, and **Help** buttons at the bottom.

**7 Click Test Connection.**

If you see a message that the test connection failed, review the information that you specified and correct any errors.

**8 Click OK.**

You return to the SAS Activity-Based Management wizard to continue importing data or exporting data.

---

## Microsoft SQL Server Database

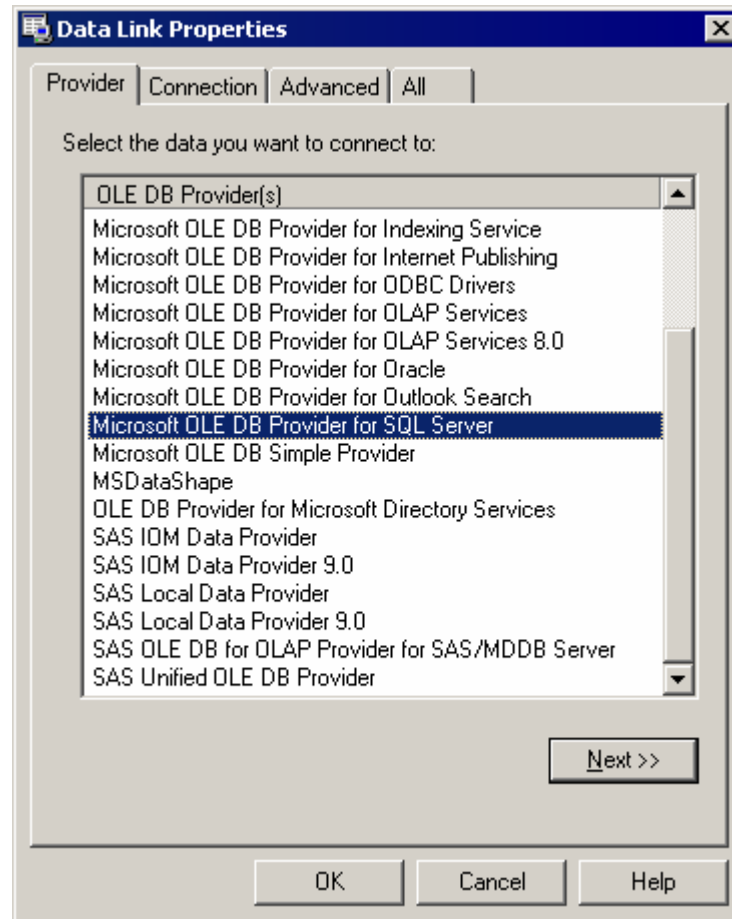
### Prepare to Connect

For any Microsoft SQL Server database that will serve as the source for importing data or as the destination for exporting data, identify or define a Microsoft SQL Server user account that has appropriate permissions to that database. For exporting data, the user account **dbowner** is best. For importing data, public access should be adequate. Do not use a Microsoft Windows user account for this type of access to Microsoft SQL Server.

## Create a Connection String

- 1 When you use a wizard to import data or to export data, you are asked to set up a database connection. Click ... in the wizard.

The Data Link Properties dialog box appears.



- 2 On the **Provider** tab, select **Microsoft OLE DB Provider for SQL Server**.
- 3 Click **Next**.

The Connection tab appears.

- 4 From the **Select or enter a server name** list, select or type the name of the Microsoft SQL Server instance that contains the database.
- 5 Select the **Use a specific user name and password** option, and type the Microsoft SQL Server **User name** you have identified or defined for this purpose and the **Password**.
- 6 Select the **Allow saving password** option.

If you fail to select this option, the SAS Activity-Based Management client will not be able to pass the user credentials to the SAS Activity-Based Management server for processing.

- 7 Select the **Select the database on the server** option, then select or type the name of the database.

The screenshot shows the 'Data Link Properties' dialog box with the 'Connection' tab selected. The dialog is titled 'Data Link Properties' and has four tabs: 'Provider', 'Connection', 'Advanced', and 'All'. The 'Connection' tab is active, showing instructions to 'Specify the following to connect to SQL Server data:'. There are three numbered steps:
 

- 'Select or enter a server name:' with a dropdown menu showing 'DataServer' and a 'Refresh' button.
- 'Enter information to log on to the server:' with two radio buttons. The first is 'Use Windows NT Integrated security' (unselected). The second is 'Use a specific user name and password:' (selected). Below this, there are text boxes for 'User name:' (containing 'dbowner') and 'Password:' (containing 'xxxxxx'). There are also checkboxes for 'Blank password' (unchecked) and 'Allow saving password' (checked).
- 'Select the database on the server:' with two radio buttons. The first is 'Select the database on the server:' (selected), with a dropdown menu showing 'MyData'. The second is 'Attach a database file as a database name:' (unselected), which has a text box and a 'Using the filename:' section with another text box and a browse button ('...').

 At the bottom right of the main area is a 'Test Connection' button. At the very bottom of the dialog are 'OK', 'Cancel', and 'Help' buttons.

- 8 Click **Test Connection**.

If you see a message that the test connection failed, review the information that you specified and correct any errors.

- 9 Click **OK**.

You return to the SAS Activity-Based Management wizard to continue importing data or exporting data.



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