



THE
POWER
TO KNOW.

Getting Started with **SAS[®] Profitability Management 1.3**

The correct bibliographic citation for this manual is as follows: SAS Institute Inc. 2008. *Getting Started with SAS® Profitability Management 1.3*. Cary, NC: SAS Institute Inc.

Getting Started with SAS® Profitability Management 1.3

Copyright © 2008, SAS Institute Inc., Cary, NC, USA

All rights reserved. Produced in the United States of America.

For a hard-copy book: No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, or otherwise, without the prior written permission of the publisher, SAS Institute Inc.

For a Web download or e-book: Your use of this publication shall be governed by the terms established by the vendor at the time you acquire this publication.

U.S. Government Restricted Rights Notice: Use, duplication, or disclosure of this software and related documentation by the U.S. government is subject to the Agreement with SAS Institute and the restrictions set forth in FAR 52.227-19, Commercial Computer Software-Restricted Rights (June 1987).

SAS Institute Inc., SAS Campus Drive, Cary, North Carolina 27513.

1st printing, July 2008

SAS® Publishing provides a complete selection of books and electronic products to help customers use SAS software to its fullest potential. For more information about our e-books, e-learning products, CDs, and hard-copy books, visit the SAS Publishing Web site at support.sas.com/publishing or call 1-800-727-3228.

SAS® and all other SAS Institute Inc. product or service names are registered trademarks or trademarks of SAS Institute Inc. in the USA and other countries. ® indicates USA registration.

Other brand and product names are registered trademarks or trademarks of their respective companies.

Contents

Chapter 1 Introduction 1

Introduction to the Tutorial 1

Technical Support 2

Additional Training and Documentation 2

Business Requirements for Profitability Management 2

Reporting Solutions that SAS Profitability Management Provides 3

Chapter 2 The Baby Bank Model 5

Company Background 5

Baby Bank Sample Model 5

Profitability Management Goals 6

Source Behaviors Model Structure 6

Transaction Data Collection 6

Basic Steps for Building the Model 6

Chapter 3 Populate the Input Directory 9

Retrieve the Tutorial Data 9

Create and Populate the Input Directory 10

Create an Output Directory 10

Chapter 4 Set Up the Environment 11

Add Users 11

Identify Input and Output Directories to Profitability Management 13

Import Tables into the Input Directory 17

Chapter 5 Create a New Profitability Model 21

Introduction 21

Open the Profitability Management Client Application 21

Open the Model Wizard 23

Name the Model and Select the Time Dimension 23

Select the Output Libraries 24

Verify the Data Locations for the Model 25

Select the Behavior Table 26

Identify Dimension Tables 28

Add Report Tables 29

Chapter 6 Define Transaction Table Groups 31

Define Transaction Table Groups 31

Define the ABMCost Group 31

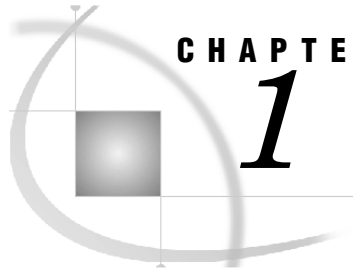
Define the CallCenter Group 37

Define the Revenue Group 42

Chapter 7 Change Analysis Settings 47

Overview 47

Select Periods for the Cube	47
Select Formats for Numeric Measures	48
Chapter 8 Define Rules	51
Introduction	51
Define the First Rule	51
Define Another Rule	55
Import the Remaining Rules	58
Chapter 9 Associate Behaviors With Rules	61
Associate Behaviors with Rules	61
Import the Remaining Associations	62
Chapter 10 Prepare Reports	65
Define a Summary Report	65
Define a Detail Report	68
Chapter 11 Calculate the Model	73
Calculate the Model	73
Calculation – a Conceptual View	76
Chapter 12 View the Reports	83
View the Summary Report	83
View the Detail Report	101
Chapter 13 Summary of Model Elements	105
Data Requirements for the Model	105
Behavior Table	106
Period Dimension	108
Custom Dimensions	109
Rule Definition Table	114
Rule/Behavior Associations	119
Report Hierarchy	121
Report Layout	124
Transaction Tables	127
Chapter 14 Finishing Up	133
Baby Bank Conclusions	133
Additional Features	133
What to Do Next: Useful Links	134



CHAPTER 1 Introduction

Introduction to the Tutorial 1
Technical Support 2
Additional Training and Documentation 2
Business Requirements for Profitability Management 2
Reporting Solutions that SAS Profitability Management Provides 3

Introduction to the Tutorial

This tutorial is intended to familiarize you with the basic business profitability modeling concepts that are used in SAS Profitability Management software. To complete the profitability modeling process, move through this tutorial from beginning to end exactly as it is presented.

Even though you may be familiar with the concepts of SAS Profitability Management and customer detailed profitability reporting, working through this tutorial will make you familiar with the SAS Profitability Management software – the concepts, terminology, commands, dialog boxes, and Web reporting tools.

The key to computing segment profitability is the ability to accurately associate costs with business segments. The heart of the problem is the difference in how revenue and costs are managed and tracked in accounting systems. Revenue is generated by the customer. It is usually automatically associated with business segments by sales order, invoicing, or funds transfer systems. This makes it relatively easy to perform business segment analysis using revenue alone. In contrast, costs are not as easily associated with business segments. IT, operations, support, distribution, and administration functions generally support many business segments simultaneously.

These shared and indirect costs should ideally be tracked based on logical cause-and-effect relationships to products, services, channels and customers. Traditional cost systems violate this process by using arbitrary cost allocations with broad averages (such as the number of customers).

SAS Profitability Management is a highly flexible analysis tool that provides the ability to associate a cost and revenue with individual business transactions. Using the software, you can calculate profit and loss based on individual transactions. SAS Profitability Management provides the level of reporting detail that allows business managers to actively manage profit as a performance metric. The product enables business managers to track the profit performance of customer groups or individual customers, product groups or individual Stock-keeping units (SKU), channels or specific branches or combinations of these dimensions, or others as defined by the customer.

Technical Support

If you encounter problems that you cannot solve by reading the online help or this tutorial, refer to the SAS technical support home page at:

<http://support.sas.com/techsup/intro.html>.

Our support goal is to provide you with the resources you need to answer any questions or solve any problems you encounter when using SAS software. We provide a variety of tools to help you solve problems on your own and a variety of ways to contact our technical support staff when you need help. Free technical support is available to all sites licensing SAS software. This includes unlimited telephone support for customers in North America. Customers outside of North America should contact their local SAS office.

Additional Training and Documentation

Additional training and tutorials can be found at www.sas.com and www.bettermanagement.com. Bettermanagement.com offers in-depth domain content about selected management concepts that are aimed at improving an organization's performance. The Web site is a comprehensive source for performance management information and resource including Web casts, white papers, training, and tutorial materials. Topics that are covered on the Web include value-based management, profitability analysis, strategic enterprise management, activity-based costing and management, business intelligence, analytic analysis, scorecarding, and performance measurement.

The documentation for SAS Profitability Management can be found at <http://support.sas.com/documentation/onlinedoc/pm/>.

Business Requirements for Profitability Management

Profitability management is the most significant issue for any corporation. Profitability is derived from both analyzing the revenue performance for a given business dimension (customer, product, region, channel, customer segment), and analyzing the costs directly associated with serving those customers and providing those products. The critical challenge for business is to appropriately correlate revenue and costs into a meaningful profit and loss statement at the level of detail.

In the growing level of corporate complexity and detailed transactional information tracing corporate and customer interactions, detailed data analysis can be overwhelming. Business managers need a clear tool to deal with millions of detailed transactions and to produce an actionable profit and loss statement at a customer detailed level. Businesses with millions of customer transactions have the most to gain from implementing SAS Profitability Management. This solution is most crucial in the telephone and banking industries, where customer differentiation can be most decisive to overall corporate profitability.

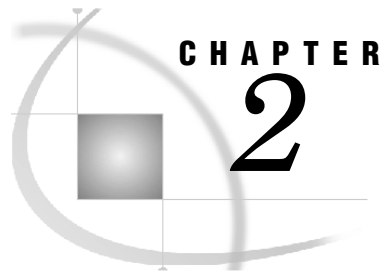
With SAS Profitability Management, decision makers can define the segmentation reports that they need on the fly. SAS enables business managers to drill-down into revenue and cost categories so they can manage profit as a performance metric.

Reporting Solutions that SAS Profitability Management Provides

SAS Profitability Management matches cost and revenue behaviors to detailed transactions. The association of the behaviors to the transactions is based upon a wizard-driven rules engine. The resulting calculated detailed transaction tables are then used as source content for a profit and loss statement.

The web-deployed profit and loss statement that SAS Profitability Management provides:

- ❑ Is based upon a custom-defined report layout and can support complex calculation logic to present your company's reporting needs
- ❑ Is drillable for increasing level of details (revenue breakdowns or contributing costs details)
- ❑ Is drillable based upon dimensional hierarchies
- ❑ A summary cube report that can be:
 - Created to include only specific dimensions
 - Summarized by depths noted in any dimension
- ❑ A detailed cube report that can be:
 - Defined with filter logic for a single dimension member
 - Run on the fly.



The Baby Bank Model

Retrieve the Tutorial Data 9
Create and Populate the Input Directory 10
Create an Output Directory 10

Company Background

The Baby Bank is a small sample model focused on the banking industry. The company has branches and also services customers through call centers. It performs both retail and corporate banking. They are trying to produce customer profitability so that the banking managers can view the details of a customer's behavior and profitability value to Baby Bank. By having this detailed profit and loss information at the managers' fingertips, they can make better management decisions on how to service the existing customers and what specific types of customers to focus on.

Baby Bank Sample Model

The Baby Bank model consists of the following:

- ❑ Five dimensions
 1. Channel (3 members: ATM, branch, and call center)
 2. Customer (101 members: 50 individuals and 51 businesses)
 3. Customer type (4 members: corporate banking, private banking, retail consumer banking, and small business banking)
 4. Product (14 members: credit products, credit-unsecured, credit-secured, deposit products, term, savings, recurring, checking, fee-based products, other products, revolving credit products, overdrafts, credit cards, and third-party products)
 5. Regions (204 members: by area, country, state, and city)
- ❑ Two periods (three levels each: year, quarter, and scenario)
 1. 2006_q4_actual
 2. 2006_q4_budget
- ❑ Six transaction tables with a total of 4,180 records
 - ABMCost:
 1. Load_Trans_q4a
 2. Load_Trans_q4b
 - CallCenter:
 3. CallCenter_q4a
 4. CallCenter_q4b
 - Revenue:
 5. Revenue_q4a
 6. Revenue_q4b

Profitability Management Goals

Baby Bank is constantly growing its customer base. They have been very effective with their new marketing campaign. But it has not been growing in profitability, so the previous goals for increasing revenue as the primary goal for Baby Bank are being re-evaluated. The new focus for Baby Bank is on controlled profitable growth. So the profitability of all customers will be evaluated on a detailed basis. Once Baby Bank can determine what are the characteristics of profitable customers, internal controls can be implemented to decrease the costs associated with high cost activities. The ultimate goal is to move existing customers to profitability through behavior changes or increased fees. Recruiting more profitable new customers will be keyed on marketing efforts to target new customers with behaviors that will be profitable to Baby Bank.

Source Behaviors Model Structure

In the Baby Bank example model, the source content for the behaviors came from an activity-based costing model. This ABC model started with general ledger expenses and assigned the costs to activities based upon staff efforts required and capital employed. Then the activities were traced to cost objects by channel (ATM, branch, call center), by product supported (savings, checking, mortgage), and by transaction type (open account, check balance, make deposit). These cost objects from ABM by channel, product, and transaction type are the source behaviors feeding into the SAS Profitability Management model.

In implementing SAS Profitability Management, behavior costs can come from any source. ABC is not a required source for SAS Profitability Management. As long as the appropriate costs are traced for each behavior at an appropriate level of granularity and an appropriate cost basis unit or total has been reliably calculated, it will be a good source feed for behaviors into SAS Profitability Management.

Transaction Data Collection

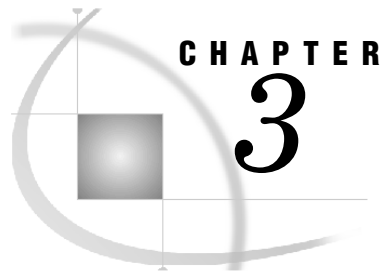
Operational transaction data tracing customer interactions with the company are critical to the effectiveness of the SAS Profitability Management model. This transaction detail can come from a multitude of source systems within your corporation. For the Baby Bank model, there are three sources for the transactional costs. The first is the transaction register for all interactions on an account basis (ATM and branch transactions). The second is a register for all call center interactions on a customer and product basis. The third source system is a register for all customer revenue tracing fees for credit cards and interest payments.

Basic Steps for Building the Model

Using SAS Profitability Management involves the following tasks:

1. Populate the input directory

2. Set up the environment
3. Create a new profitability model
4. Define transaction table groups
5. Define rules and associate them with behaviors
6. Calculate the model
7. Prepare reports
8. View the reports



Populate the Input Directory

Retrieve the Tutorial Data 9
Create and Populate the Input Directory 10
Create an Output Directory 10

Retrieve the Tutorial Data

The sample SAS tables for this tutorial are on the CD as part of the middle-tier install files. Follow the instructions in the SAS Profitability Management 1.3 Installation Instructions to install the tutorial data on a machine that your workspace has access to.

The following files are provided on the installation CD for use with this tutorial:

association.sas7bdat	Holds the relationships between the behaviors (where costs reside) and the rules (which define the assignment logic to transactions).
behavior.sas7bdat	Holds all of the transactions and costs (total or unit)
callcenter_q4a.sas7bdat	Call center transaction details for the 4 th quarter actual
callcenter_q4b.sas7bdat	Call center transaction details for the 4 th quarter budget
dim_channel.sas7bdat	Hierarchy definition for the channel dimension
dim_customer.sas7bdat	Hierarchy definition for the customer dimension
dim_custtype.sas7bdat	Hierarchy definition for the customer type dimension
dim_period.sas7bdat	Hierarchy definition for the time period dimension
dim_product.sas7bdat	Hierarchy definition for the product dimension
dim_region.sas7bdat	Hierarchy definition for the region dimension
load_trans_q4a.sas7bdat	ABMCost transaction details 4 th quarter actual
load_trans_q4b.sas7bdat	ABMCost transaction details 4 th quarter budget
reportHierarchy.sas7bdat	Report hierarchy defining the drill-down detail
reportLayout.sas7bdat	Report layout defining the profit and loss calculations
revenue_q4a.sas7bdat	Revenue transaction details 4 th quarter actual
revenue_q4b.sas7bdat	Revenue transaction details 4 th quarter budget
rules.sas7bdat	Definition of the assignment rules logic

For additional details describing the source tables required for SAS Profitability Management, please refer to “Summary of Model Files” on page 105.

Create and Populate the Input Directory

You must create a directory on your SAS Profitability Management server to hold the source files for the tutorial. These are the files that you just extracted from tutorial.zip.

- 1 Create a directory on the SAS Profitability Management server.

You can place the directory where you like and name it what you like. For purposes of illustration, we assume that you create and name it as follows:

C:\SAS\ProfitabilityManagement\Bank_In

- 2 Give yourself (or whoever is doing the tutorial) read, modify, and write access to the directory. If you have an access problem in doing the tutorial, that this permission has probably not been granted.
- 3 Copy the files from your local machine to the directory that you just created on the SAS Profitability Management server.

Create an Output Directory

You must also create a directory on your SAS Profitability Management server to hold the calculated transaction tables. This is where SAS OLAP cube generation gets its source content for generating cubes. Do not put anything into the output directory.

- 1 Create a directory on the SAS Profitability Management server.

You can place the directory where you like and name it what you like. For purposes of illustration, we assume that you create and name it as follows:

C:\SAS\ProfitabilityManagement\Bank_Out

- 2 Give yourself (or whoever is doing the tutorial) read, modify, and write access to the directory. If you have an access problem in doing the tutorial, this permission has probably not been granted.

CHAPTER 4

Set Up the Environment

Add Users 11

Identify Input and Output Directories to Profitability Management 13

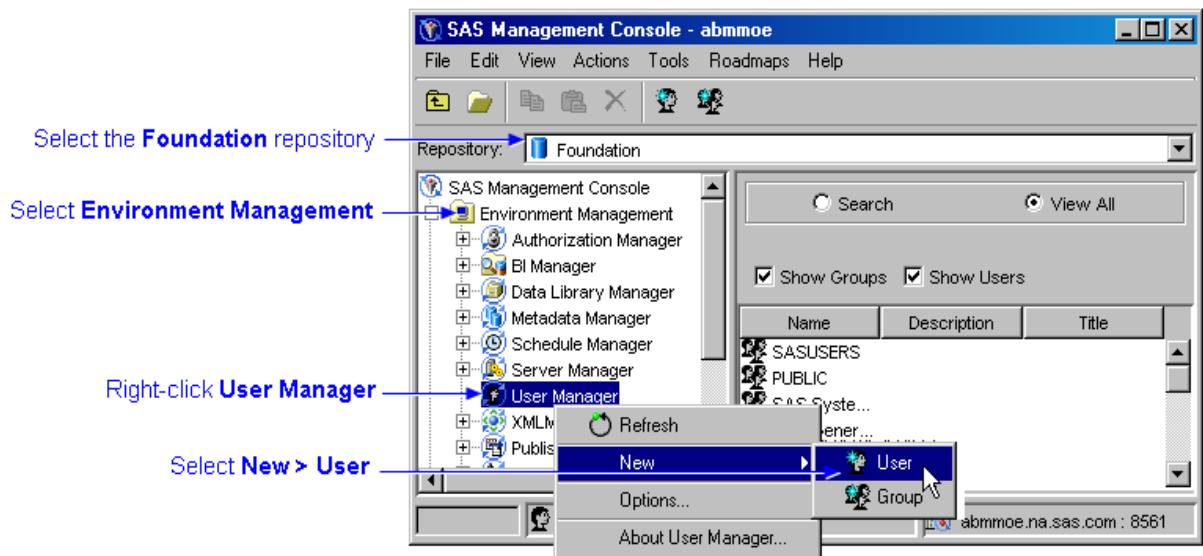
Saving Output Tables in a Database 15

Import Tables into the Input Directory 17

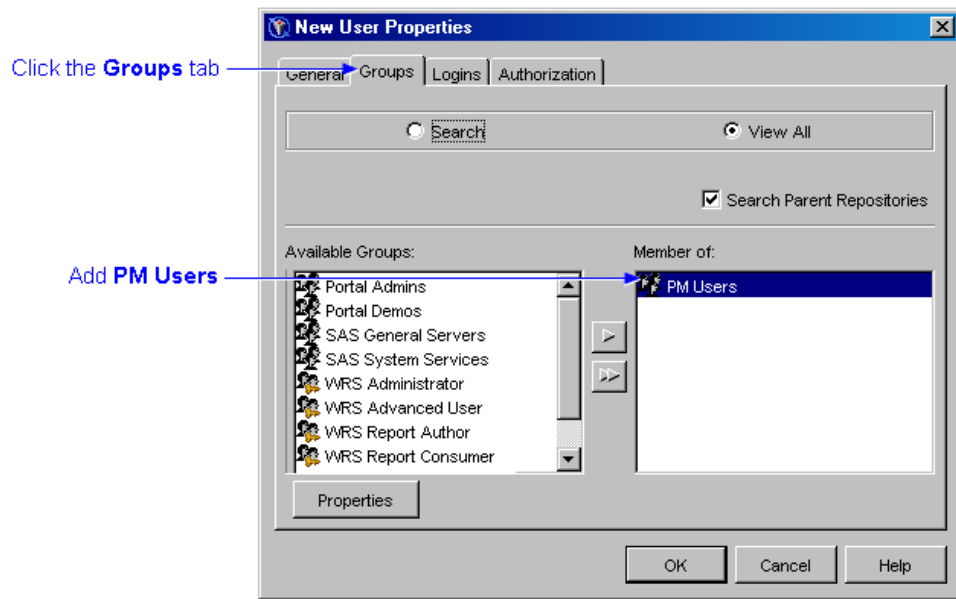
Add Users

Before anyone can begin using SAS Profitability Management, you must use the SAS Management Console as an administrator to add a Profitability Management user account.

- 1 Log on to the SAS Management Console as an administrator.
- 2 Select the **Foundation** repository.
- 3 Select **Environment Management**.
- 4 Right-click **User Manager**, and select **New > User**.

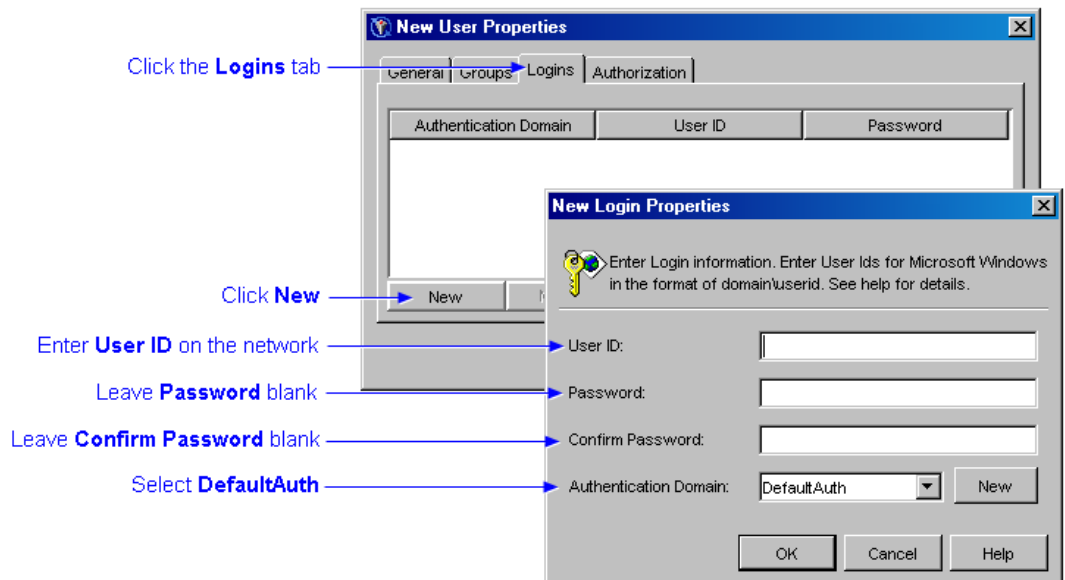


- 5 Name the new user, and enter other user information on the **General** tab.
- 6 Click the **Groups** tab, and add **PM Users** to the list of groups that the user is a member of.



7 Click the **Logins** tab, and then click **New**.

- Enter the new user's **User ID**, including domain, on the network.
- Leave the **Password** field blank (it comes from the Profitability Management logon).
- Leave the **Confirm Password** field blank (it comes from the Profitability Management logon).
- Select **DefaultAuth** for the authentication domain.



8 Leave the **Authorization** tab blank.

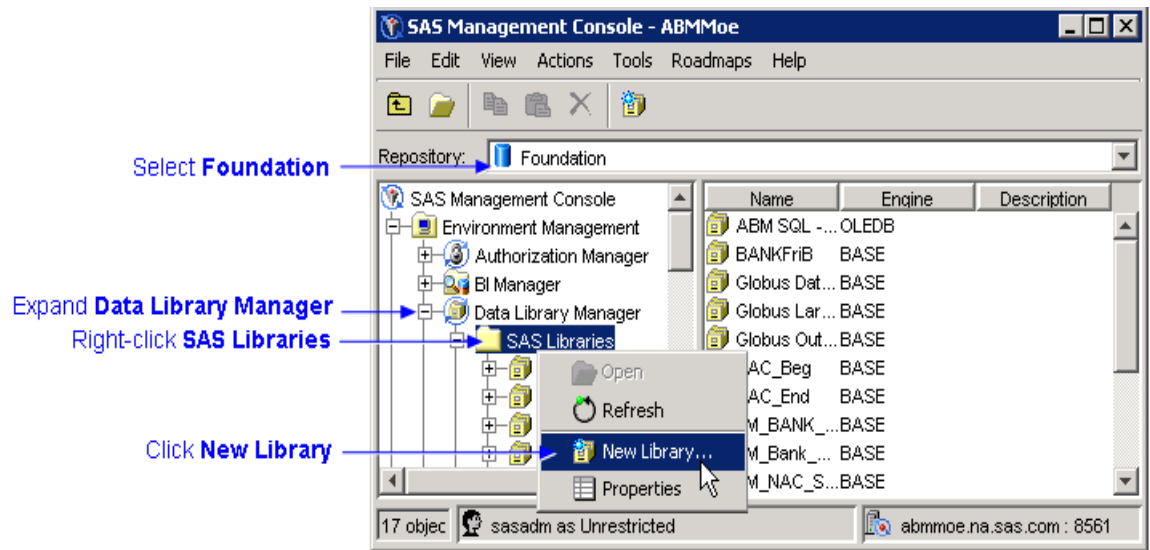
9 Click **OK**.

The user is created. You can log off the SAS Management Console as administrator.

Identify Input and Output Directories to Profitability Management

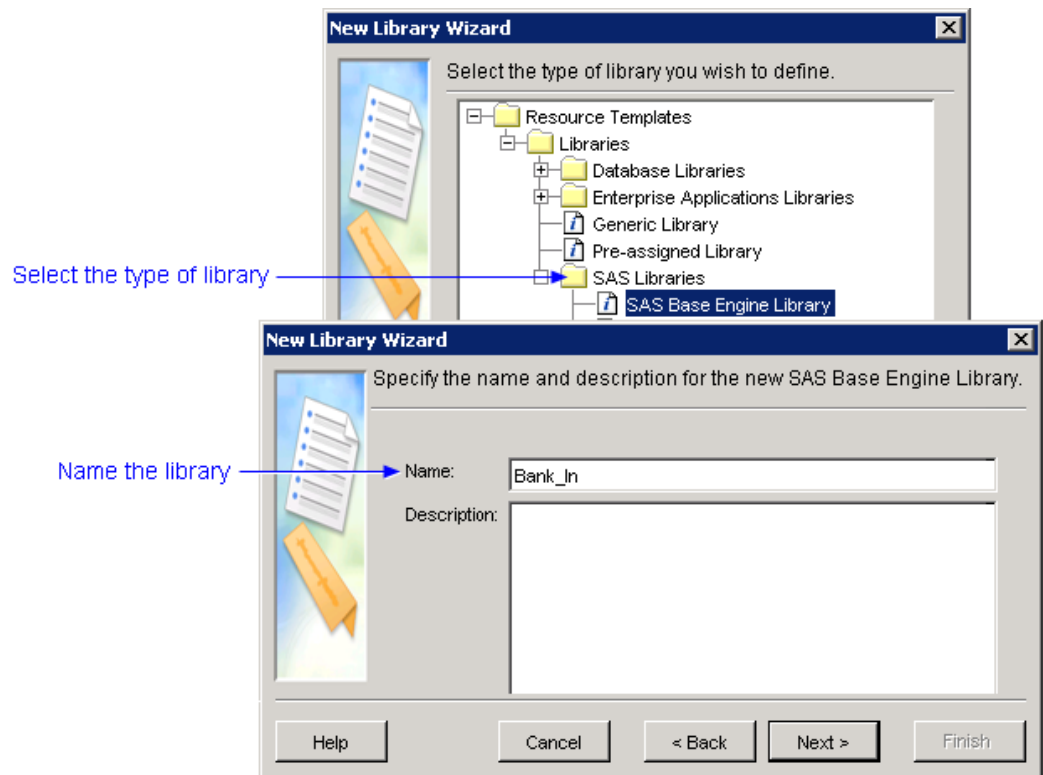
Having created an input and output directory on the server, you must let SAS Profitability Management know where they are located. To do so, you use the SAS Management Console:

- 1 Log on to the SAS Management Console with the user account that you just created.
- 2 Select the **Foundation** repository.
- 3 Expand **Data Library Manager**.
- 4 Right-click **SAS Libraries**.
- 5 Click **New Library**.



- 6 Select **SAS Base Engine Library** as the type of library to be created, and then click **Next**.
- 7 Name the library **Bank_In**, and then click **Next**.

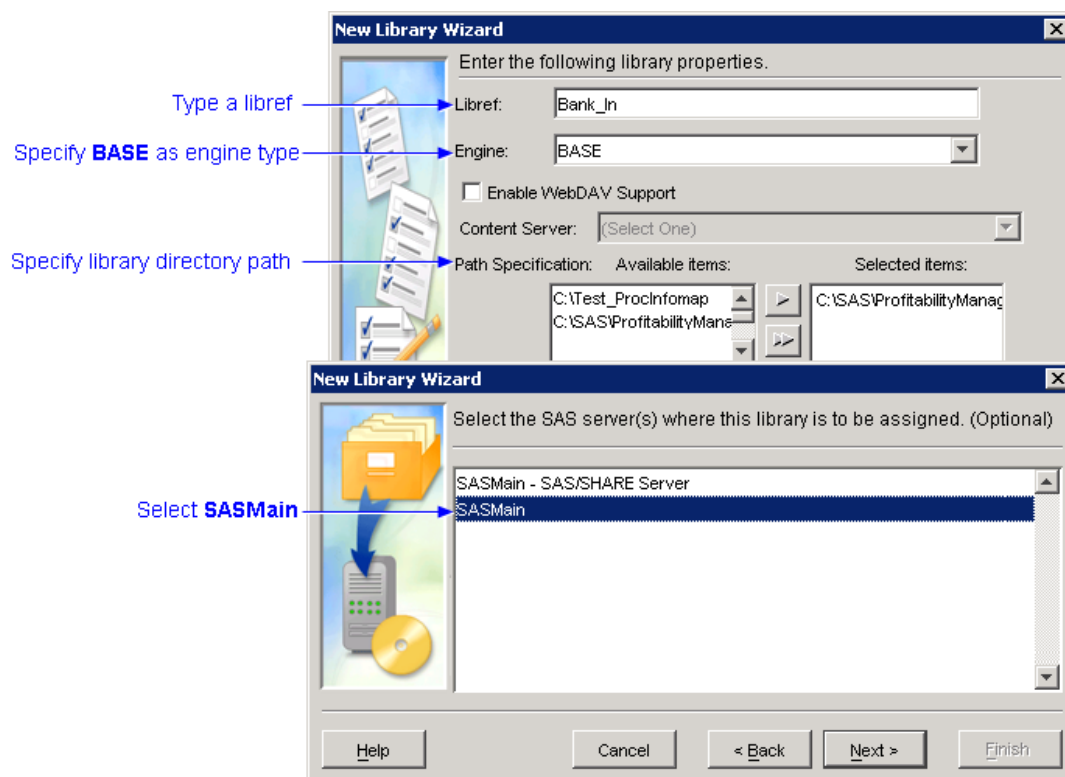
You can give the library any name you want (eight characters maximum). For convenience, we give it the same name as the directory.



- 8 Type **Bank_In** as the Libref name. For convenience, again, we use the name of the directory.
- 9 Specify **BASE** as the engine type.
- 10 Specify the library directory path, and then click Next.

Note: If the path does not exist to be selected in the list-box of available paths, then click **New** to create the path.

The directory can be anywhere on the server, but we have assumed that you created it at: C:\SAS\ProfitabilityManagement\Bank_In.



11 Click **Next**, and then click **Finish**.

12 Click **View > Refresh** from the menu bar to see the library listed.

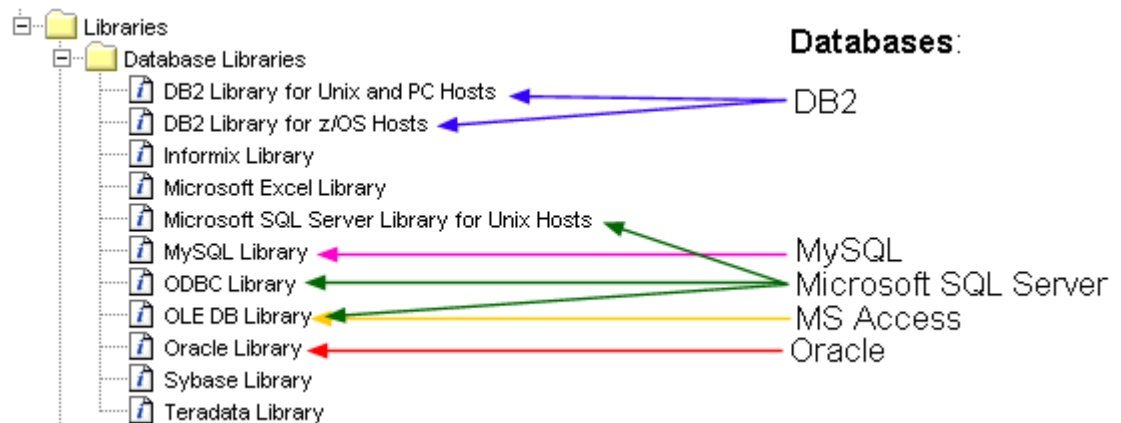
Repeat this process for the output library. Be sure to give it a different name and libref, such as **Bank_Out**, and specify a different directory path – where your output directory is located.

Note: You can choose to save the output tables in a database rather than in SAS data sets. For information, see the following section.

Saving Output Tables in a Database

If you want to save your output tables in a database library, then do the following to create your output library:

- 1 Log on to the SAS Management Console with the user account that you just created.
- 2 Select the **Foundation** repository.
- 3 Expand **Data Library Manager**.
- 4 Right-click **SAS Libraries**.
- 5 Click **New Library**.
- 6 Select among the Database Libraries for the type of library to be created, and then click **Next**.



The following table shows the appropriate choices of Database Library for each of the possible types of database.

Database	Appropriate Database Library
DB2	DB2 Library for Unix and PC Hosts DB2 Library for z/OS Hosts
Microsoft SQL Server	ODBC Library (Windows) OLE DB Library (Windows) Microsoft SQL Server Library for Unix Hosts
MySQL	MySQL Library
Oracle	Oracle Library
MS Access	OLE DB Library (Windows)

- 7 Name the library, and then click **Next**.

You can give the library any name you want (eight characters maximum).

- 8 Type a **Libref** name, and then click **Next**.

- 9 Specify the **Database Server** and Login information, and then click **Next**.

- 10 Optionally, select the SAS server where this library is to be assigned, and then click **Next**.

- 11 Review the library information, and then click **Finish**.

- 12 Click **View > Refresh** from the menu bar to see the library listed.

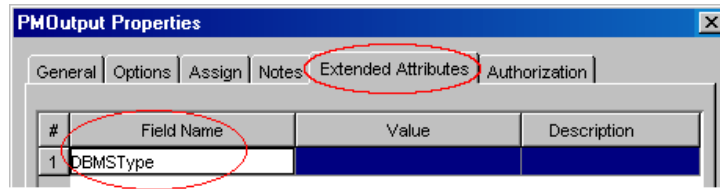
- 13 Right-click the newly created library and select **Properties**.

The Properties window opens.

- 14 Select the **Extended Attributes** tab.

- 15 Click **New**.

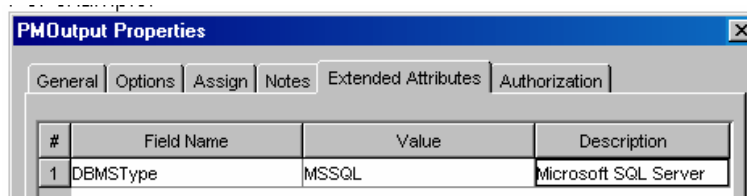
- 16 In the **Field Name** column, type **DBMSType**.



17 In the **Value** and **Description** columns, type one of the following pairs depending upon your database (the Description is optional).

Value	Description
MSSQL	Microsoft SQL Server
Oracle	Oracle
DB2	DB2
MySql	MySql
Jet	MS Access

For example, as shown in the following graphic:

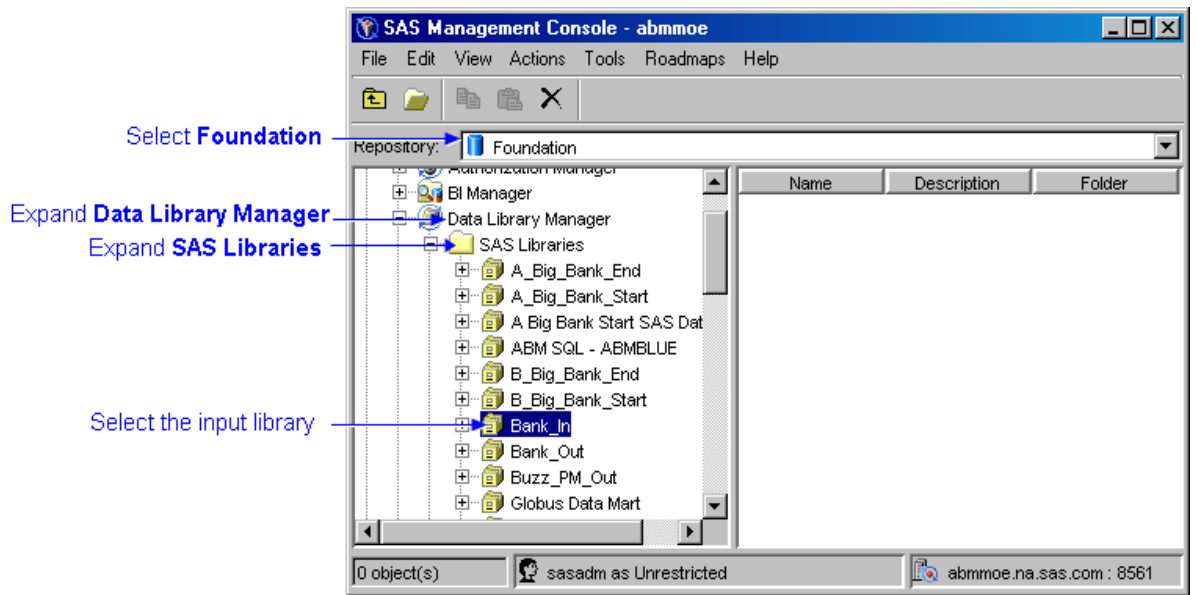


Import Tables into the Input Directory

Even though you used the operating system to copy source files into the input directory, SAS does not yet know about them. Use the SAS Management Console to store metadata regarding the files by importing them (only structural metadata is imported, and not the actual content of the files).

Note: If you modify the input tables, you must **reimport** them so that the metadata that is maintained by SAS Management Console is updated (column names and data types).

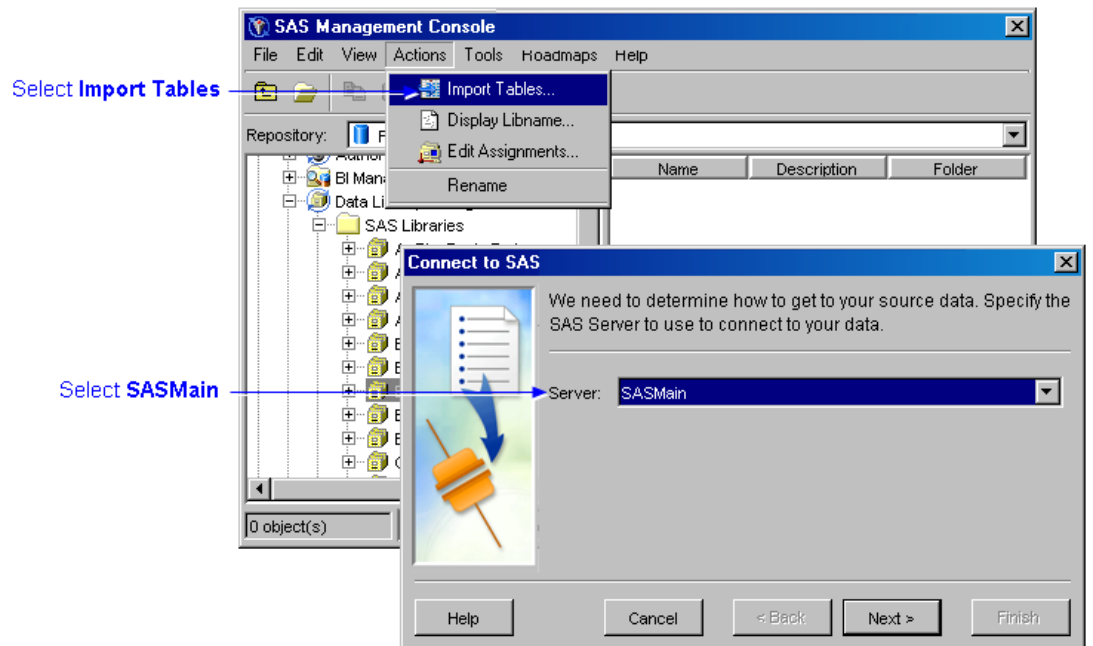
- 1 Log on to the SAS Management Console with the user account that you just created.
- 2 Select the **Foundation** repository.
- 3 Expand **Data Library Manager**.
- 4 Expand **SAS Libraries**.
- 5 Select the input library, **Bank_In**.



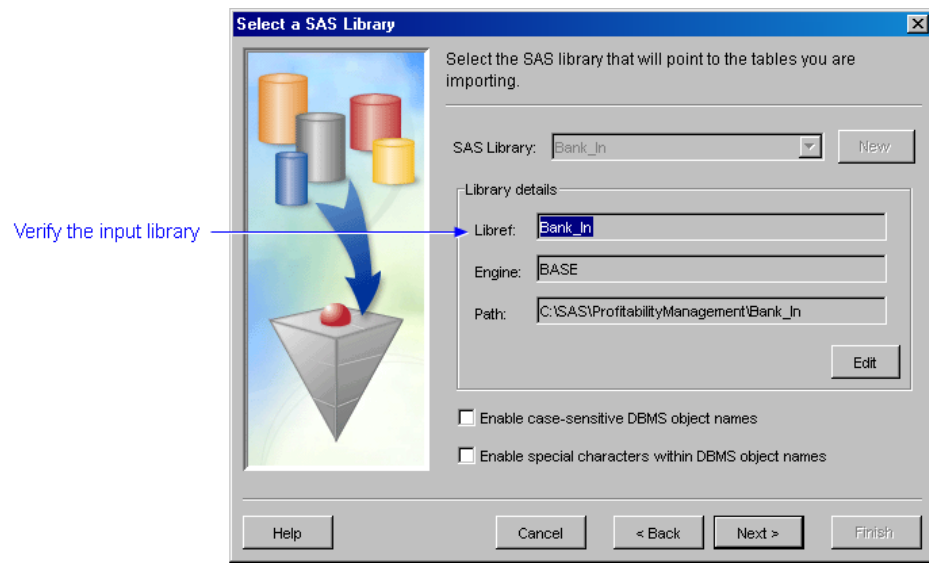
6 Select **Actions > Import Tables**.

The Connect to SAS window opens.

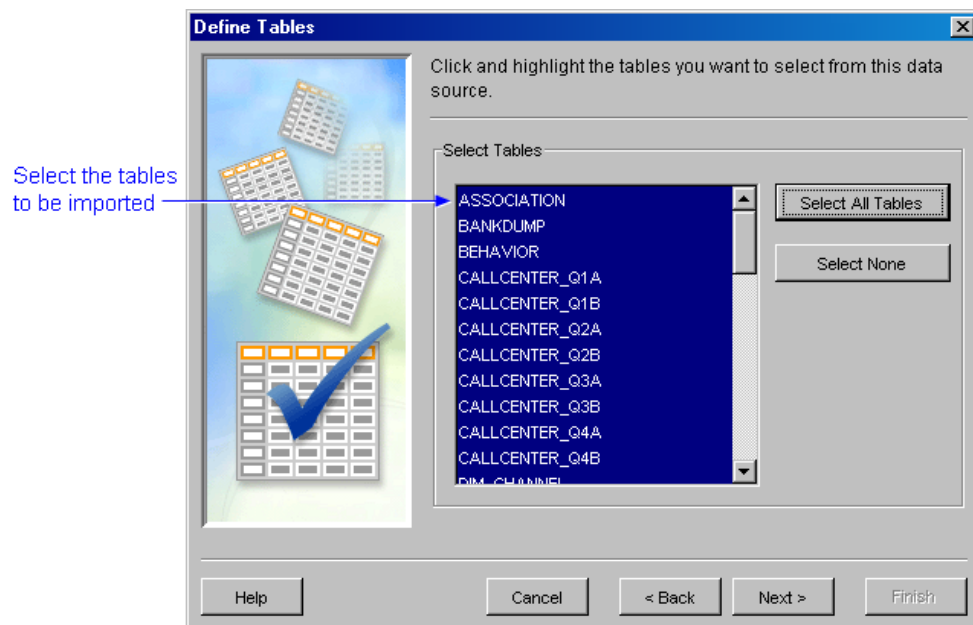
7 Select **SASMain** as the SAS server, and click **Next** to log on to SASMain.



8 Verify that the input library is correct, and then click **Next**.

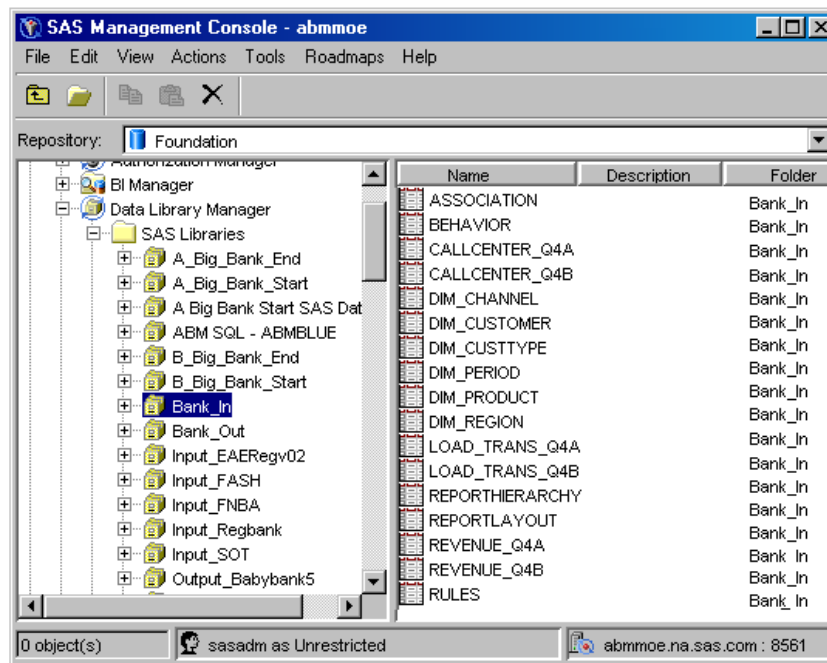


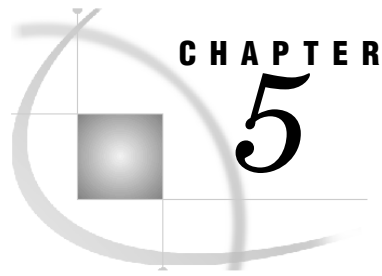
9 Select the tables to be imported, and then click **Next**.



10 View the summary of which tables are to be imported, and then click **Finish**.

After the tables have been imported, the SAS library should look like the following:





Create a New Profitability Model

Introduction 21
Open the Profitability Management Client Application 21
Open the Model Wizard 23
Name the Model and Select the Time Dimension 23
Select the Output Libraries 24
Verify the Data Locations for the Model 25
Select the Behavior Table 26
What is a Behavior Table? 27
Identify Dimension Tables 28
Add Report Tables 29

Introduction

Creating a new profitability model involves the following steps:

- 1 Naming the model and identifying its time dimension
- 2 Specifying libraries for model output
- 3 Verifying the location for the model definition
- 4 Identifying the behavior table for the model
- 5 Identifying custom dimension tables for the model
- 6 Identifying the report hierarchy and report layout tables

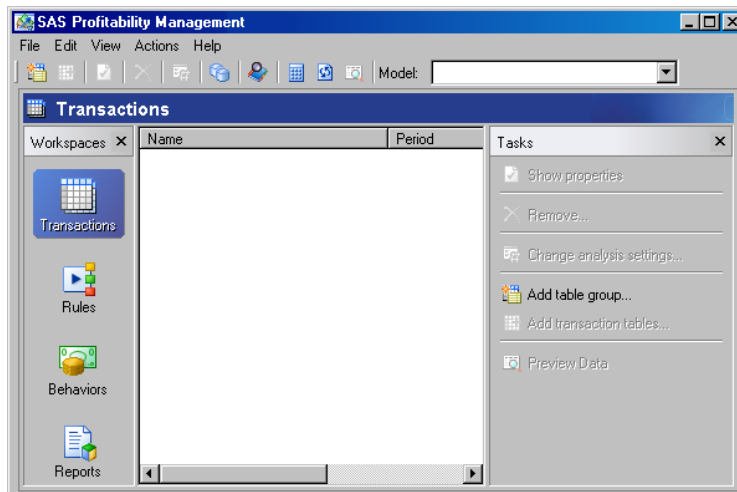
Open the Profitability Management Client Application

Open the SAS Profitability Management rich client application.



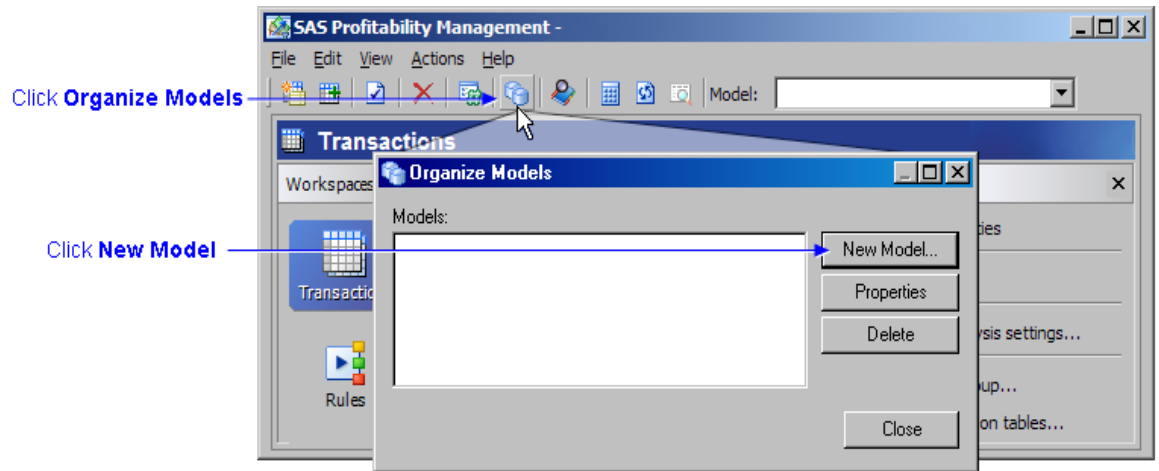
- 1 Specify the user ID and password that you created in the SAS Management Console.
- 2 Specify the SAS Profitability Management server. This is dependent on your installation.
- 3 Specify the port. 8561 is the default for the the SAS Metadata Server.
- 4 Click **Log On**.

The SAS Profitability Management rich client application opens.



Open the Model Wizard

- 1 Select **File > Organize Models** (or click the Organize Models icon).
- 2 Click **New Model**.



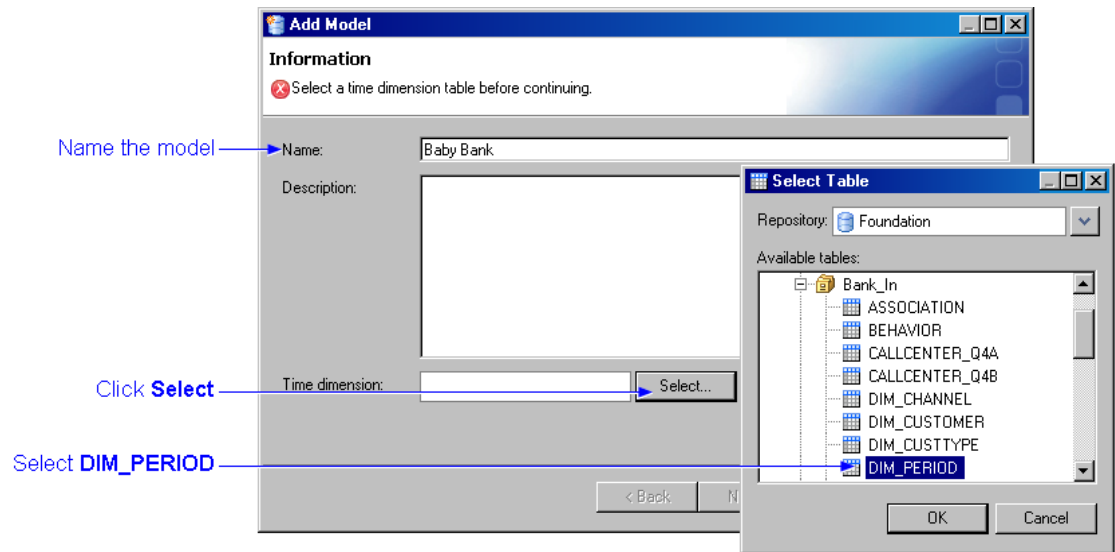
The Model wizard opens.

Note: If this is the first time that the SAS Profitability Management client has ever been invoked, the Model wizard opens automatically.

Name the Model and Select the Time Dimension

- 1 Name the model, for example **Baby Bank**.
- 2 Click **Select** to select the time dimension table.
- 3 Select **DIM_PERIOD** as the time dimension table.

We are assuming that the library in which you placed the input files is named Bank_In.



4 Click **OK**.

The time dimension table defines the time periods in the model. The number of periods in a model varies with the reporting needs of a business. The sample time dimension table, DIM_PERIOD, is shown in the following graphic (you can click the **Preview** button in the Model wizard to see the table).

ID	L1_Scenario	L2_Year	L3_Quarter
2006_Q4_Actual	Actual	2006	2006_Q4
2006_Q4_Budget	Budget	2006	2006_Q4

5 Click **Next**.

Select the Output Libraries

1 Specify the **Analysis view name**.

The analysis view name is used as the name of the database view that is created to join the transaction output tables into a single virtual fact table that the OLAP cube is built from. By default, the analysis view name is the same as the model name.

2 Specify the **Analysis view library**.

For this tutorial, we have created a single output directory, Bank_Out. You can select this directory to store the analysis view in.

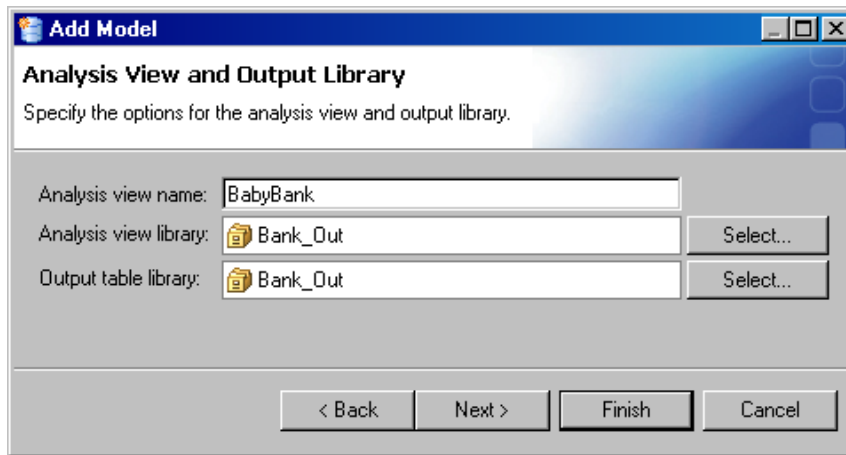
Note: The Analysis view library must be a SAS Base Engine Library.

3 Select the **Output table library**.

While it can be helpful to have separate directories to hold the analysis view and calculated transaction tables, for this tutorial we have created a single output directory, Bank_Out.

Note: The output table library can be either a SAS Base Engine Library or a Database Library. If it is a Database Library, then it must be separate from the Analysis View Library, which is required to be a SAS Base Engine Library. For information on using a Database Library, see “Saving Output Tables in a Database” on page 15.

Assuming, for this tutorial, that you choose the same directory to hold all your tutorial output, the page appears as follows:

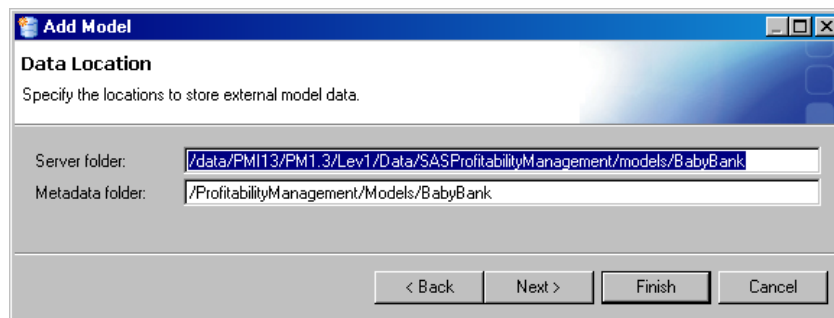


- 4 Click **Next**.

Verify the Data Locations for the Model

- 1 Verify the **Server folder** where data associated with the model is stored.
- 2 Verify the **Metadata folder** where model metadata is stored.

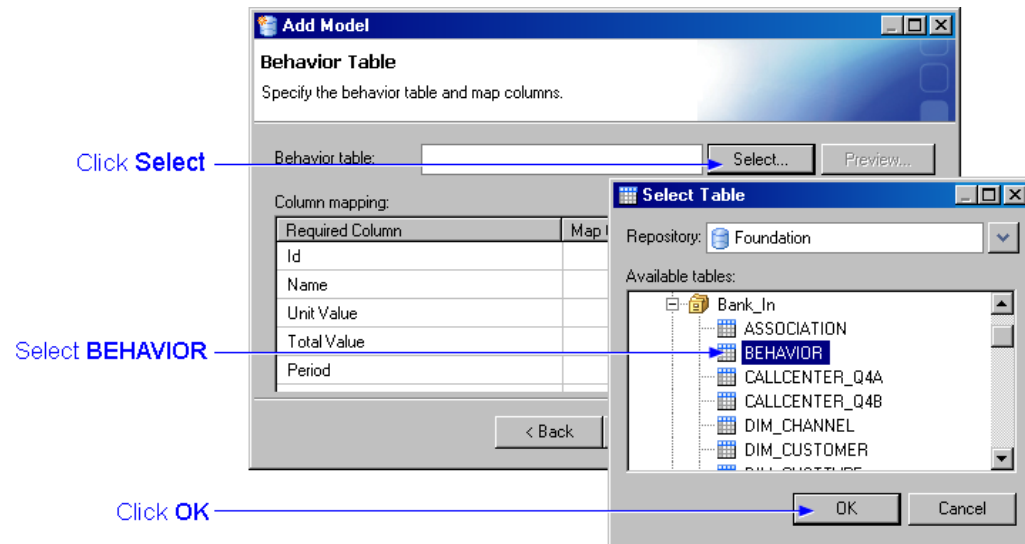
Note: Both storage locations were established during installation. Do not change them now. At this point, the dialog box is informational only.



- 3 Click **Next**.

Select the Behavior Table

- 1 Click **Select** to select the behavior table for the model.
- 2 Select **BEHAVIOR** from the available tables.



- 3 Click **OK**.
- 4 Identify fields in the behavior table.

A behavior table must contain a field for each of the following: ID, Name, Unit Value, Total Value, and Period. You must identify which field is which in the table selected.

By default, SAS Profitability Management assumes that these fields are named as follows: “ID”, “Name”, “UnitValue”, “TotalValue”, and “Time”. If fields with those names exist in the behavior table, then they are automatically mapped. If the fields are named differently, then you must match them manually.

The sample behavior table, BEHAVIOR, contains these fields, so they are mapped automatically.

Add Model

Behavior Table
Specify the behavior table and map columns.

Behavior table:

Column mapping:

Required Column	Map to Source Column
Id	ID
Name	Name
Unit Value	UnitValue
Total Value	TotalValue
Period	Time

< Back Next > Finish Cancel

A behavior table must contain a field for each of these

Which field is it in the source table?

5 Click **Next**.

What is a Behavior Table?

Behaviors, typically, are things that your customers do. For example, the customers of a bank can check their balance, make deposits, transfer funds, and make withdrawals.

The following graphic shows part of the sample behavior table, BEHAVIOR. Notice the following:

- ❑ Each behavior (each row of the behavior table) has either a non-zero UnitValue, or a non-zero TotalValue, but not both.
- ❑ The table contains an extra column named “AssignmentRule”. All of your source tables can have extra columns. This particular field is an extra column containing a character string that is used in filtering the table to select a subset of behaviors.

One or the other, but not both

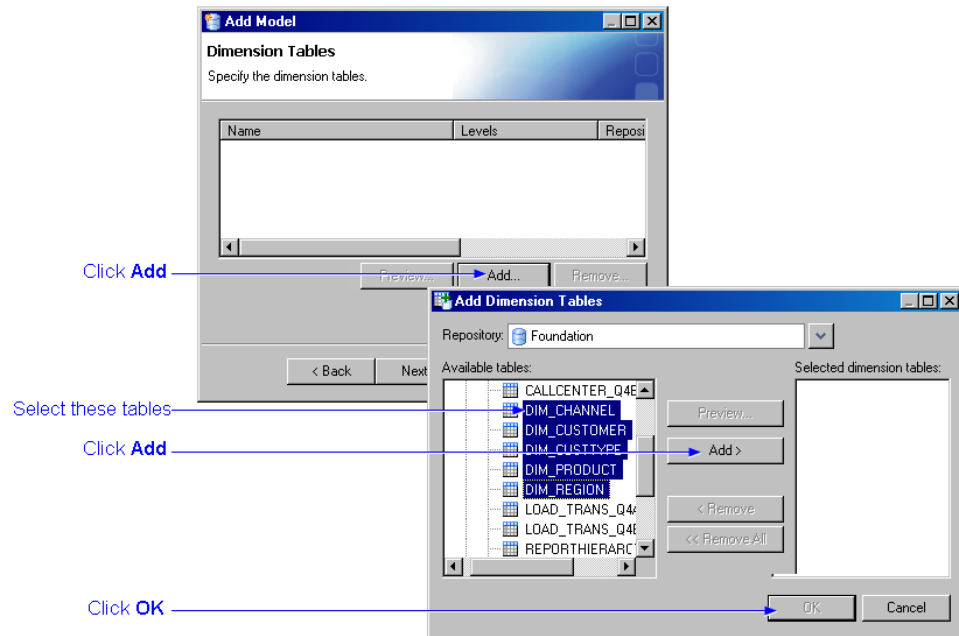
Extra field for filtering

Time	ID	Name	AssignmentRule	TotalValue	UnitValue
2006_Q4_Actual	20003	ATM_CHK_Check balance	ATM_CHK_Check balance	0.0	0.0017787911310794572
2006_Q4_Actual	20004	ATM_CHK_Deposits	ATM_CHK_Deposits	0.0	2.1850842356574995E-4
2006_Q4_Actual	20005	ATM_CHK_Fund Transfer	ATM_CHK_Fund Transfer	0.0	9.832989430989614E-4
2006_Q4_Actual	20006	ATM_CHK-Withdrawals	ATM_CHK-Withdrawals	0.0	0.00468238417853818
2006_Q4_Actual	20007	ATM_CRC-Withdrawals	ATM_CRC-Withdrawals	0.0	0.0018701935080753186
2006_Q4_Actual	20009	ATM_REC_Deposits	ATM_REC_Deposits	0.0	1.3059913604501237E-4
2006_Q4_Actual	20010	ATM_SAV_Check balance	ATM_SAV_Check balance	0.0	0.002613492307100113
2006_Q4_Actual	20011	ATM_SAV_Deposits	ATM_SAV_Deposits	0.0	3.577399102893854E-4
2006_Q4_Actual	20012	ATM_SAV_Fund Transfer	ATM_SAV_Fund Transfer	0.0	0.0014447167682623832
2006_Q4_Actual	20013	ATM_SAV-Withdrawals	ATM_SAV-Withdrawals	0.0	0.0070761576843764015
2006_Q4_Actual	20014	ATM_TRM_Deposits	ATM_TRM_Deposits	0.0	7.436121552686411E-5
2006_Q4_Actual	20015	ATM_TRM-Withdrawals	ATM_TRM-Withdrawals	0.0	0.0015935121106617832
2006_Q4_Actual	20058	None_None_None	None_None_None	6152.4220541...	0.0
2006_Q4_Actual	21001	BRH_CHK_Inquiry	BRH_CHK_Inquiry	2238.3197977...	0.0
2006_Q4_Actual	21002	BRH_CRC_Inquiry	BRH_CRC_Inquiry	6651.4938345...	0.0
2006_Q4_Actual	21003	BRH_FBP_Inquiry	BRH_FBP_Inquiry	12508.491287...	0.0
2006_Q4_Actual	21004	BRH_OVD_Inquiry	BRH_OVD_Inquiry	4213.9720396...	0.0
2006_Q4_Actual	21005	BRH_REC_Inquiry	BRH_REC_Inquiry	769.31380737...	0.0
2006_Q4_Actual	21006	BRH_SAV_Inquiry	BRH_SAV_Inquiry	6325540...	0.0
2006_Q4_Actual	21007	BRH_SCB_Inquiry	BRH_SCB_Inquiry	81.500...	0.0
2006_Q4_Actual	21009	BRH_SCD_Inquiry	BRH_SCD_Inquiry	...	0.0

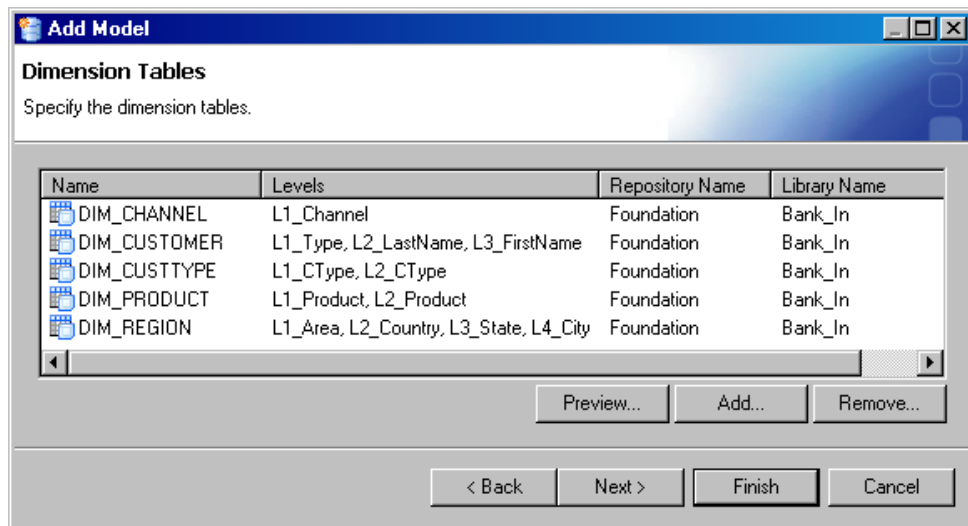
Identify Dimension Tables

- 1 Click **Add** to select the custom dimension tables that make up the cube.
- 2 Select the following dimension tables, and click **Add**:
 - DIM_CHANNEL
 - DIM_CUSTOMER
 - DIM_CUSTYPE
 - DIM_PRODUCT
 - DIM_REGION

Note: You can select multiple dimensions by using the Shift or Ctrl key.
- 3 Click **OK**.



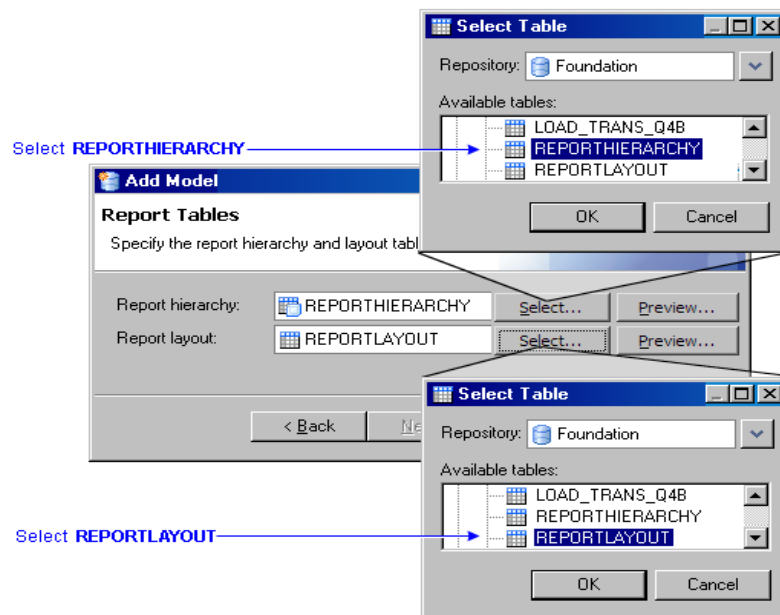
The dimension tables are added to the model as shown in the following graphic.



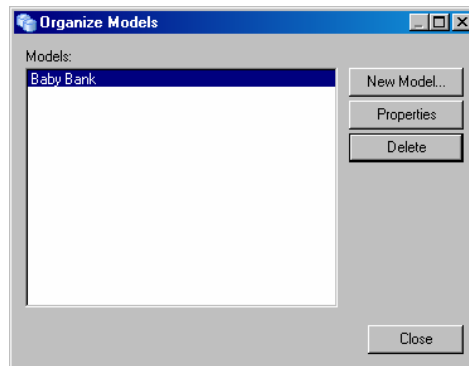
- 4 Click **Next**.

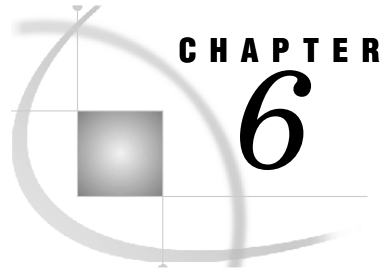
Add Report Tables

- 1 Click **Select** for the Report hierarchy, and select **REPORTHIERARCHY**.
- 2 Click **Select** for the Report layout, and select **REPORTLAYOUT**.



- 3 Click **Finish**, and verify that the new model, **Baby Bank**, is added to the list of models.





Define Transaction Table Groups

Define transaction table groups 31
Define the ABMCost Group 31
 Define the Transaction Table Group 32
 Add Tables to the Group 34
 Transaction Table LOAD_TRANS_Q4A 36
Define the CallCenter Group 37
 Define the Transaction Table Group 37
 Add Tables to the Group 39
 Transaction Table CALLCENTER_Q4A 41
Define the Revenue Group 42
 Define the Transaction Table Group 42
 Add Tables to the Group 43
 Transaction Table REVENUE_Q4A 45

Define Transaction Table Groups

Transaction tables that share the same column structure are organized into table groups. A single Profitability Management model is likely to have multiple table groups. Multiple rules likely use the same source table group.

Note: There is one transaction table for each period in a model.

For the Baby Bank model, you define three transaction table groups:

- ☐ **ABMCost** holds the transaction costs that relate to the ATM activities and the detailed branch activities.
- ☐ **CallCenter** holds the details of the activities performed at the call center.
- ☐ **Revenue** holds the detailed revenue for all of the customers noted.

Enter these table group names exactly because they must match the names in a pre-defined rules definition table.

Define the ABMCost Group

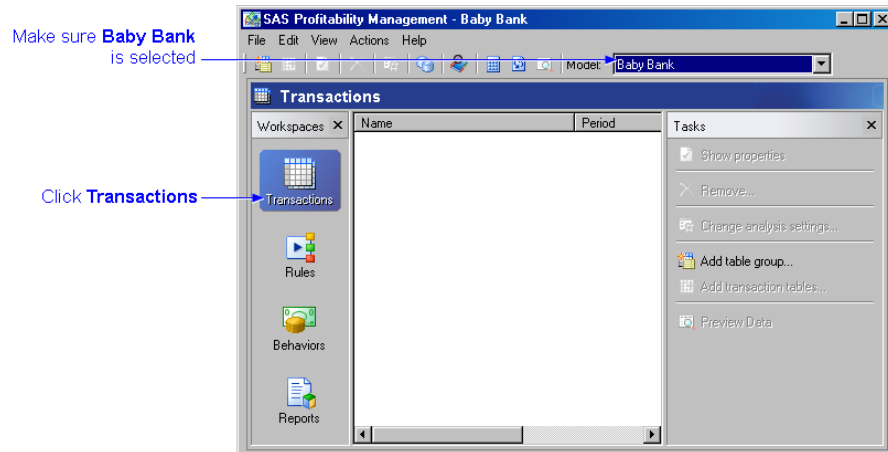
Defining transaction table groups is a two-part process:


- ☐ Define the transaction table group.
- ☐ Add transaction tables to the group (and associate each transaction table with a time period).

Define the Transaction Table Group

- 1 Select the **Transaction** workspace.

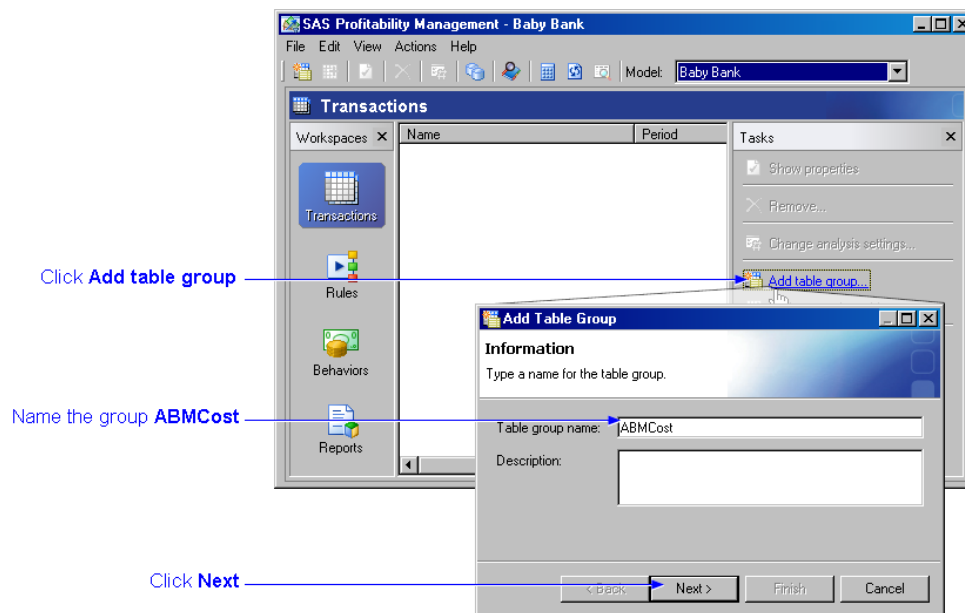
Make sure that the **Baby Bank** model is selected.



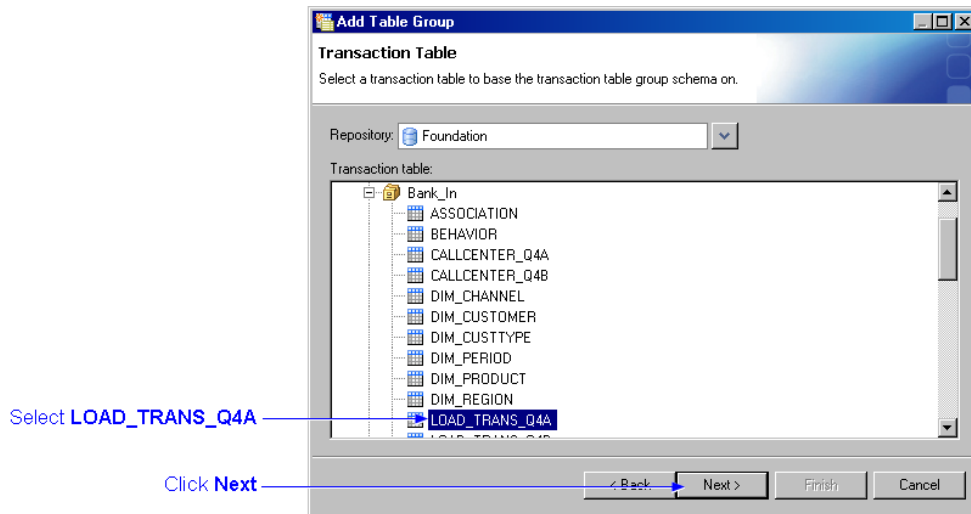
- 2 Click **Add table group** (or the Add table group icon ).

The Add Table Group window opens.

- 3 Name the group **ABMCost**, and then click **Next**.



- 4 Select **LOAD_TRANS_Q4A** as the table whose schema serves as the schema for the table group.



Note: All the tables in a table group share the same schema, and each table is associated with a different time period.

5 Click **Next**.

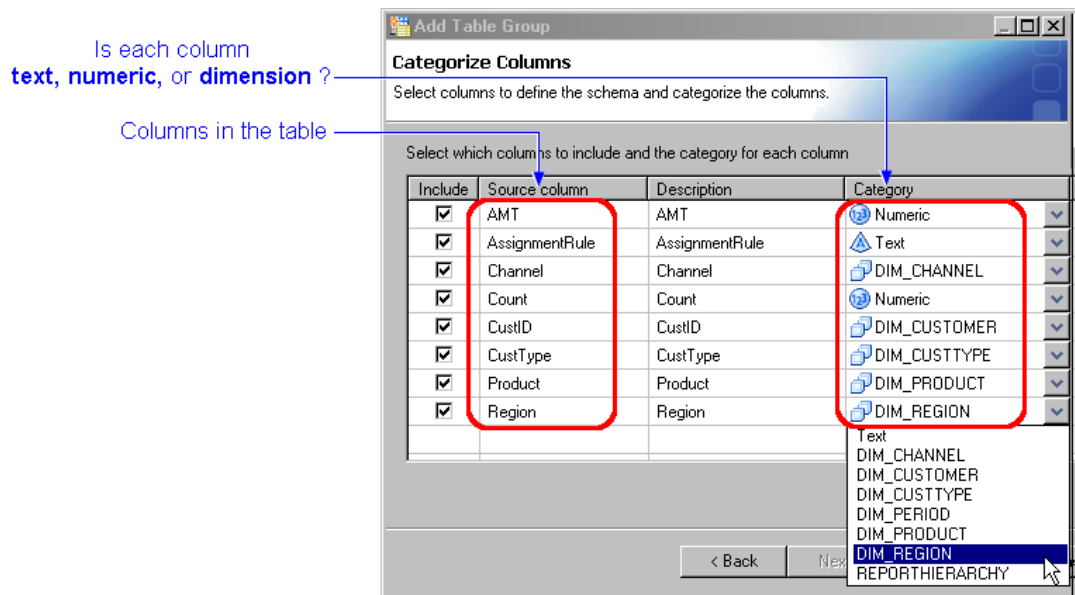
6 Specify whether each column in the table is

☐ Text

☐ Numeric

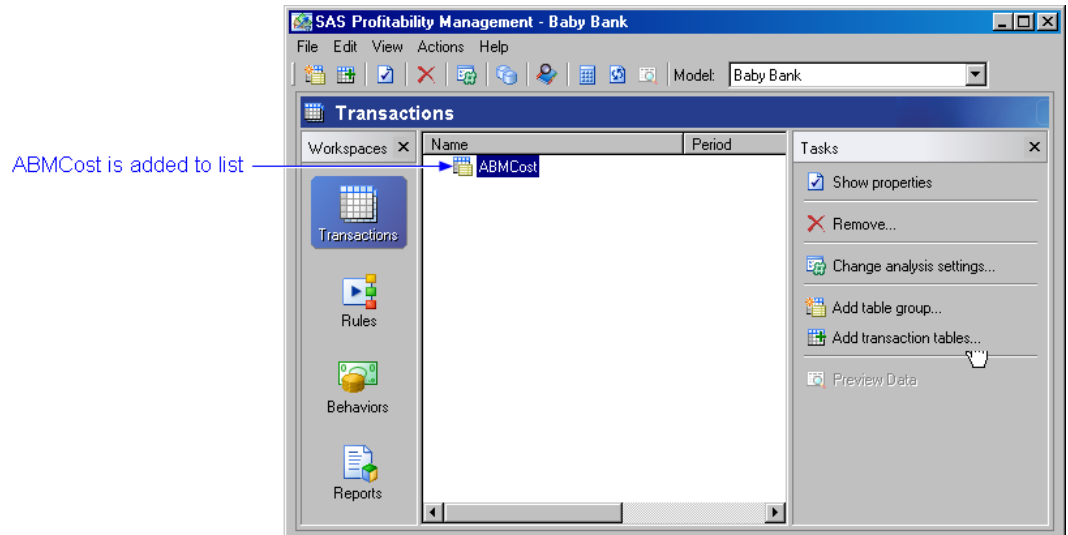
☐ Dimension member (if a dimension member, specify which one).

The specifications for LOAD_TRANS_Q4A should look like those in the following graphic:



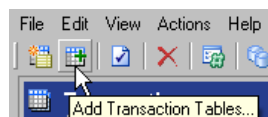
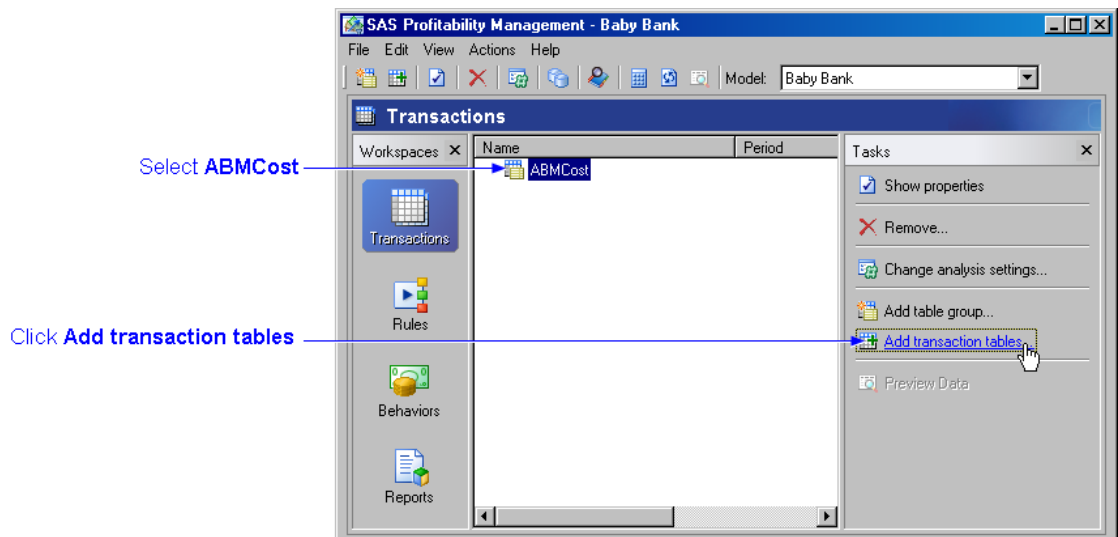
7 Click **Finish**.

The table group, ABMCost, is added to the list.



Add Tables to the Group

- 1 Click **Add transaction tables** (making sure that **ABMCost** is selected).

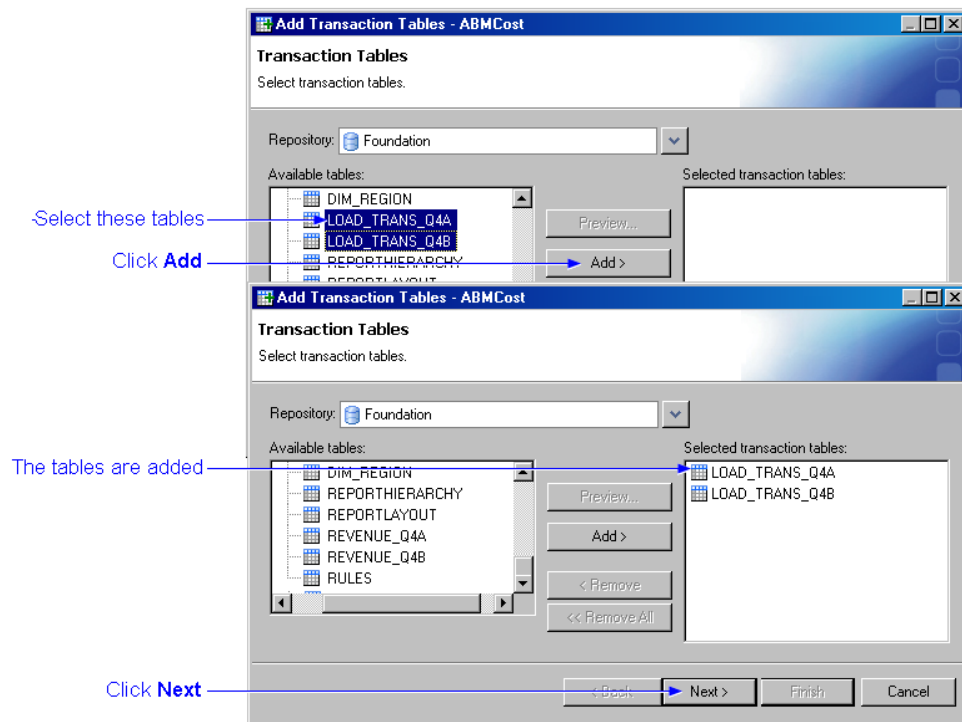


Or click the icon.

The Add Transaction Tables window opens.

- 2 Select **LOAD_TRANS_Q4A** and **LOAD_TRANS_Q4B**.
- 3 Click **Add**.

The tables are added.

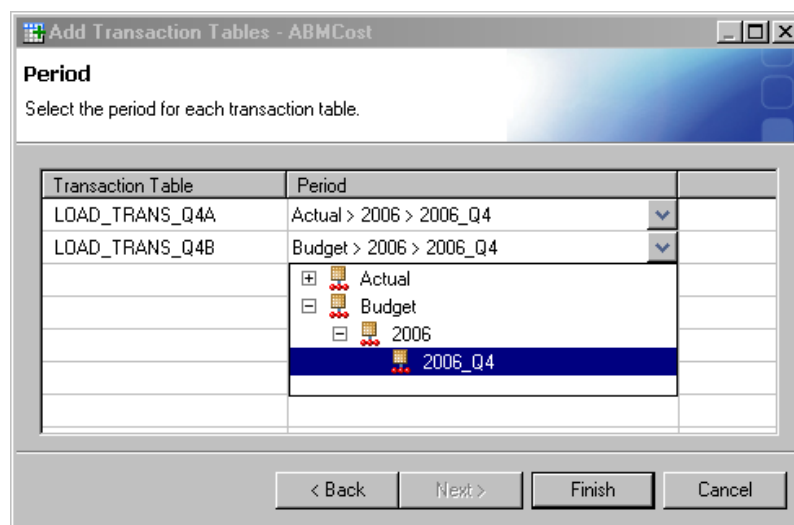


4 Click **Next**.

The Period window opens.

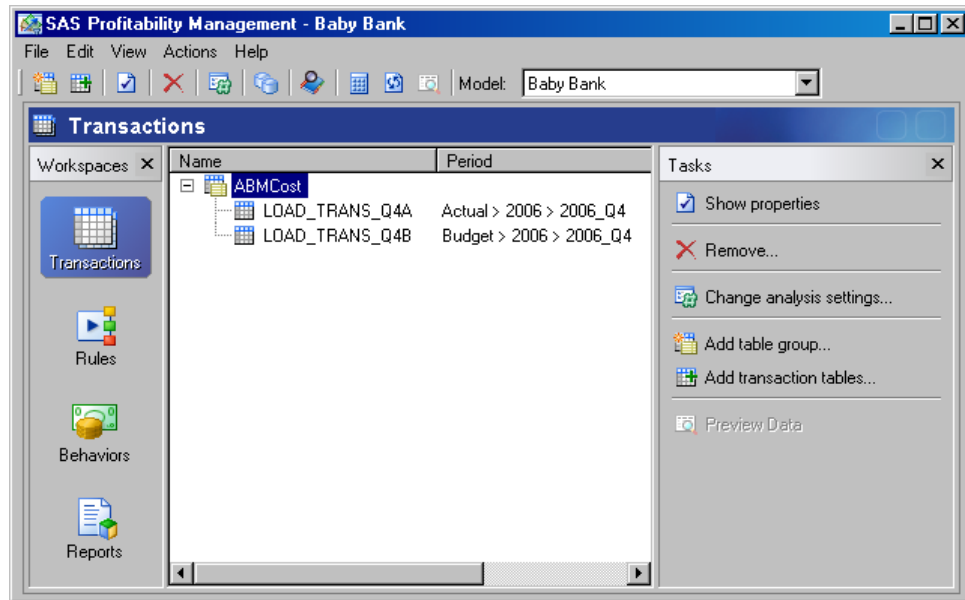
5 Associate each of the tables with a period as follows:

Table	Period
LOAD_TRANS_Q4A	Actual > 2006 > 2006_Q4
LOAD_TRANS_Q4B	Budget > 2006 > 2006_Q4



6 Click **Finish**.

The tables are added to the group.



Transaction Table LOAD_TRANS_Q4A

The following graphic shows the transaction table, LOAD_TRANS_Q4A, and how each of its columns is identified as either text, numeric, or a dimension member. You can see that each column that is identified as a dimension member contains values that correspond to values in the ID field of the corresponding dimension table.

LOAD_TRANS_Q4A

dim.	dim.	dim.	dim.	dim.	optional text	num.	num.
CustID	Product	CustType	Region	Channel	AssignmentRule	Count	AMT
00005	CHK	PRB	Reg_849	ATM	ATM_CHK_Check balan...	1	18209
00008	CHK	PRB	Reg_281	BRH	ATM_CHK_Check balan...	1	39530
00025	CHK	PRB	Reg_523	ATM	ATM_CHK_Check balan...	1	13507
00028	CHK	RCB	Reg_12	ATM	ATM_CHK_Check balan...	1	62248
00030	CHK	PRB	Reg_1078	ATM	ATM_CHK_Check balan...	1	58522
00032	CHK	PRB	Reg_853	BRH	BRH_CHK_Check balan...	1	60183
00037	CHK	PRB	Reg_853	CCT	Call Center	1	60183
00048	CHK	RCB	Reg_849	USA_SE	USA	North Carolina	Chapel Hill
00049	CHK	RCB	Reg_281	USA_NE	USA	Illinois	Joliet
05798	CHK	CRB	Reg_281	USA_NE	USA	Illinois	Monee
05799	CHK	CRB	Reg_281	USA_NE	USA	North Carolina	Jax
05800	CHK	RCB	Personal	Retail Consumer...	North Carolina	Monroe	
05817	CHK	SBB	Business	Small Business...	Britain	Hampshire	Denmead
05819	CHK	PRB	Personal	Private Banking	North Carolina	New Pinner	
05826	CHK	PRB	Personal	Private Banking	North Carolina	New Pinner	
05830	CHK	Deposit Products	Checking	Banki...	Britain		
05834	REC	Deposit Products	Recurring				
05835	SAV	Deposit Products	Savings				
05842	SAV	Deposit Products	Savings				
ID	L1_Type	L2_LastName	L3_FirstName				
00005	Personal	Pennise	Alana				
00006	Personal	Gilbert	Vicki				
00007	Personal	Ellison	David				
00008	Personal	Butler	Edward				
00009	Personal	Shipley	Terri				
00010	Personal	Carpp	Jim				
00011	Personal						

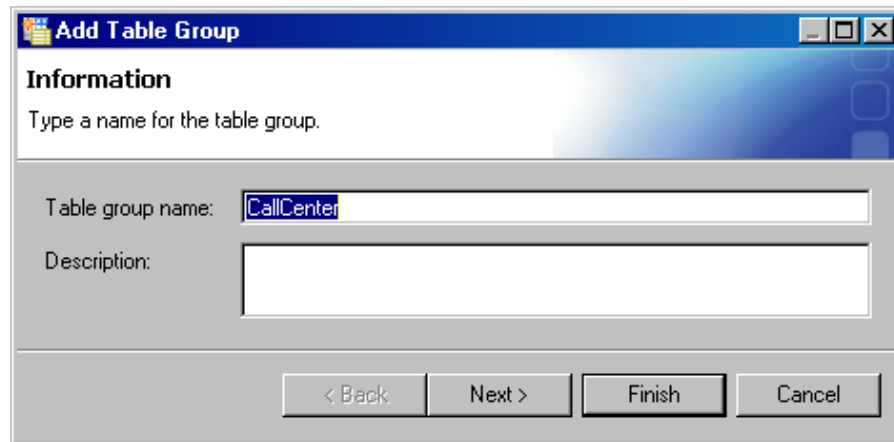
Define the CallCenter Group

Repeat the same general process to define a transaction table group named CallCenter:

- ❑ Define the transaction table group
- ❑ Add transaction tables to the group (and associate each transaction table with a time period).

Define the Transaction Table Group

- 1 Select the **Transaction** workspace.
- 2 Click **Add table group**.
- 3 Name the group **CallCenter**, and then click **Next**.



Add Table Group

Information

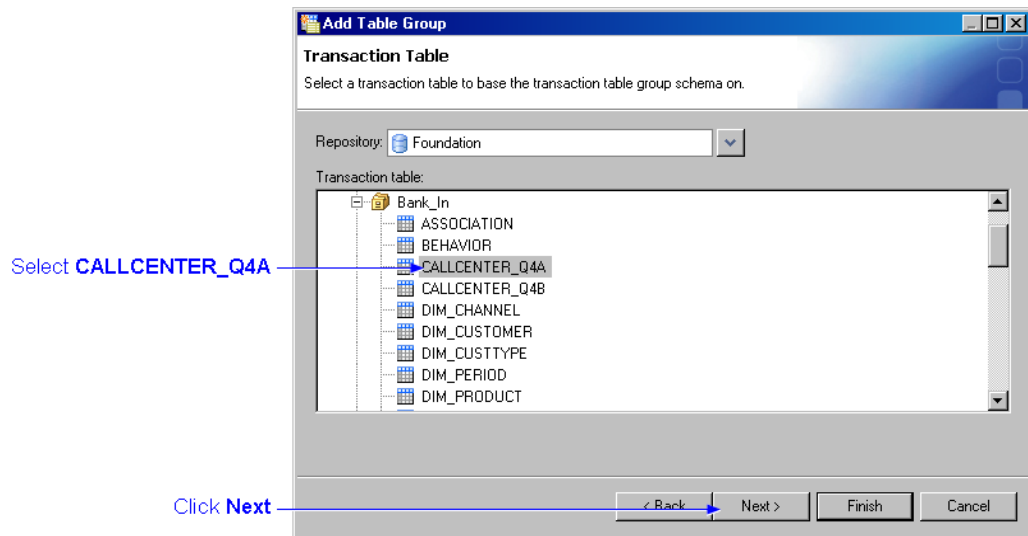
Type a name for the table group.

Table group name:

Description:

< Back Next > Finish Cancel

- 4 Select **CALLCENTER_Q4A** as the table whose schema serves as the schema for the table group.



Add Table Group

Transaction Table

Select a transaction table to base the transaction table group schema on.

Repository:

Transaction table:

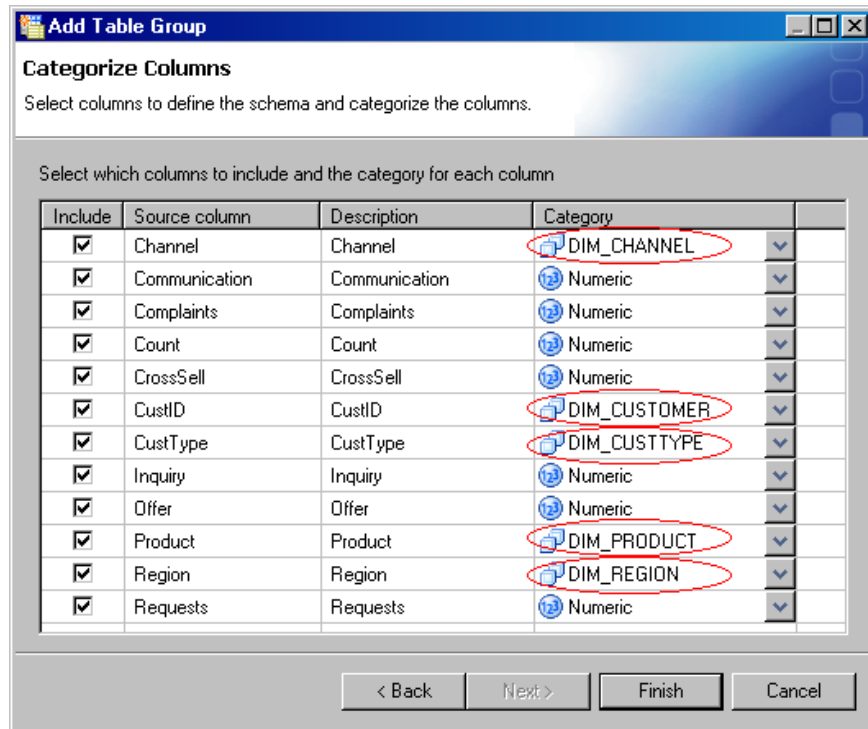
- Bank_In
 - ASSOCIATION
 - BEHAVIOR
 - CALLCENTER_Q4A**
 - CALLCENTER_Q4B
 - DIM_CHANNEL
 - DIM_CUSTOMER
 - DIM_CUSTTYPE
 - DIM_PERIOD
 - DIM_PRODUCT

Select **CALLCENTER_Q4A**

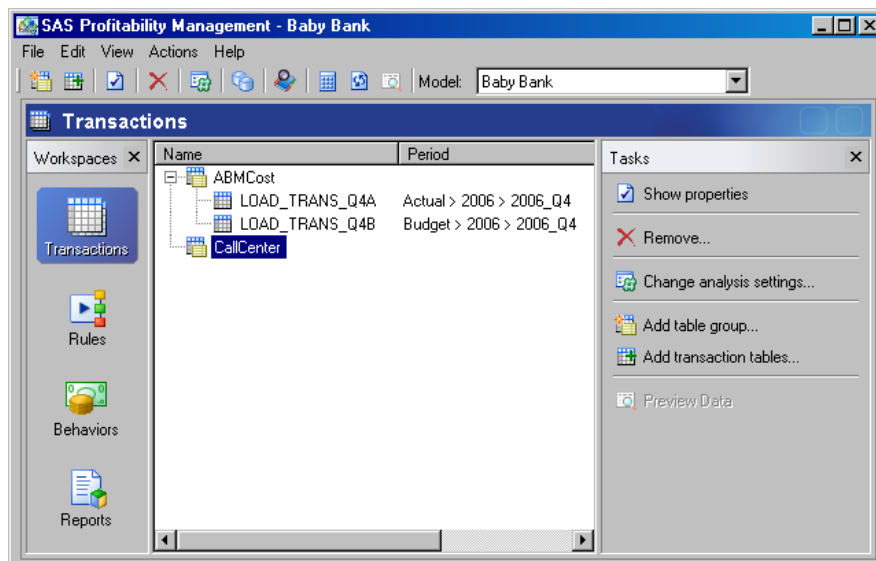
Click **Next**

< Back Next > Finish Cancel

- 5 Click **Next**.
- 6 Specify whether each column in the table is text, numeric, or a dimension member as shown in the following graphic, and then click **Finish**.

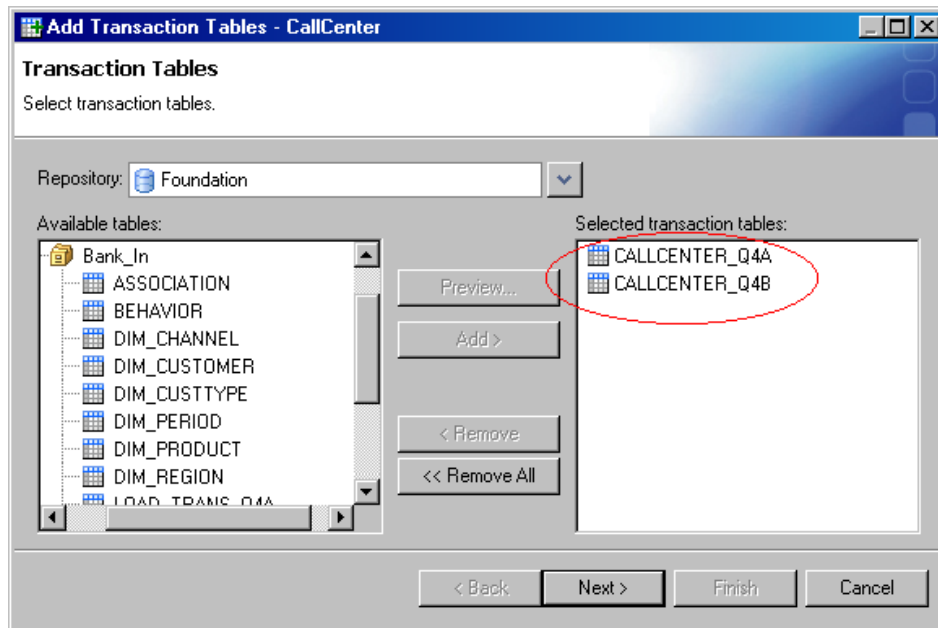


The table group, CallCenter, is added to the list.

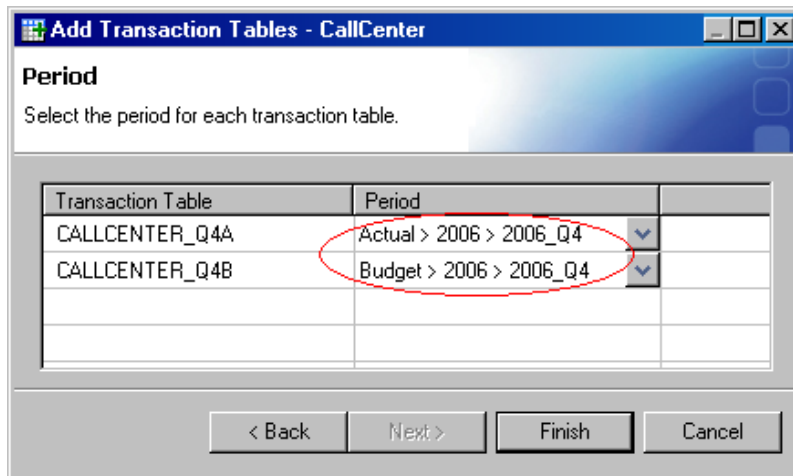


Add Tables to the Group

- 1 Click **Add transaction tables** (making sure that **CallCenter** is selected).
- 2 Add **CALLCENTER_Q4A** and **CALLCENTER_Q4B** to the list, and then click **Next**.

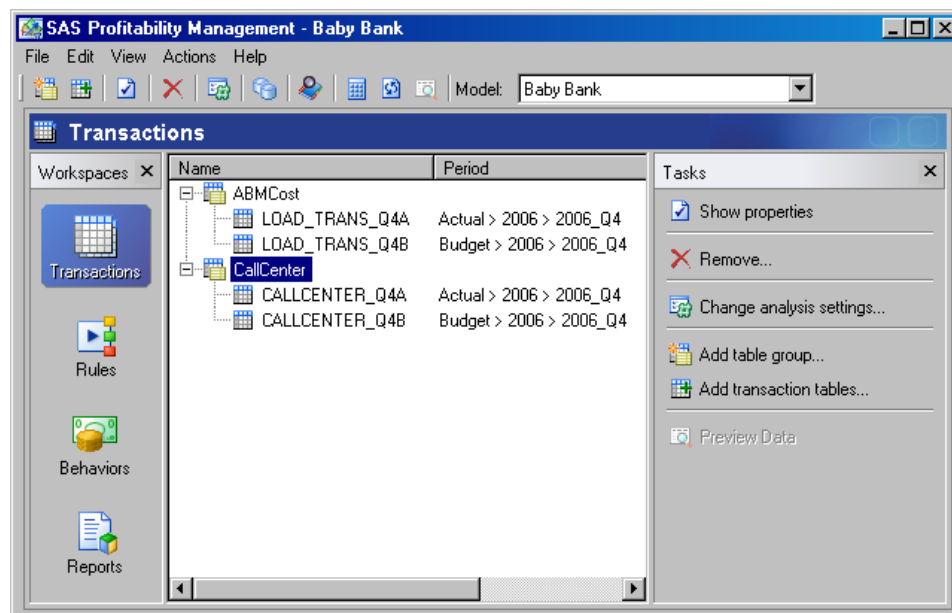


3 Associate each of the tables with a period as shown:



4 Click **Finish**.

The tables are added to the group.



Transaction Table CALLCENTER_Q4A

The following graphic shows a portion of the contents of the transaction table CALLCENTER_Q4A.

CALLCENTER_Q4A

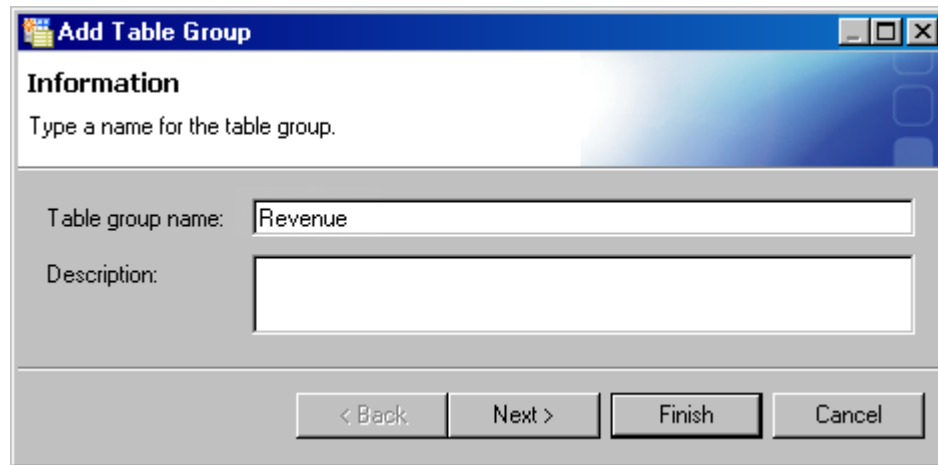
dim.	dim.	dim.	dim.	num.	num.	num.	num.	num.	num.	num.
Product	CustType	Region	Channel	Communication	Complaints	Inquiry	Requests	CrossSell	Offer	Count
CHK	PRB	Reg_87	CCT	2	0	1	0	1	0	1
CHK	PRB	Reg_87	CCT	298	15	149	49	74	30	1
CHK	PRB	Reg_768	CCT	99	5	50	16	25	10	1
CHK	PRB	Reg_768	CCT	461	23	231	76	115	46	1
CHK	PRB	Reg_70	CCT	6	0	3	1	2	1	1
CHK	PRB	Reg_70	CCT	180	9	90	30	45	18	1
CHK	PRB	Reg_528	CCT	91	5	46	15	23	9	1
CHK	RCB	Reg_202	CCT	155	8	78	26	39	16	
CHK	RCB	Reg_870	CCT	186	9	93	31			
CHK	PRB	Reg_1101	CCT	456	23	228			46	1
CHK	PRB	Reg_218	CCT	313				78	31	1
CHK						156	52	78	31	1
					4	15	5	7	7	1
		Reg_135	CCT	122	18	61	20	31	31	1
UCR	PRB	Reg_1080	CCT	126	19	63	21	31	31	1
UCR	CRB	Reg_59	CCT	144	22	72	24	36	36	1
UCR	SBB	Reg_1090	CCT	72	11	36	12	18	18	1
UCR	SBB	Reg_1131	CCT	25	4	13	4	6	6	1
UCR	CRB	Reg_768	CCT	20	3	10	3	5	5	1
UCR	CRB	Reg_413	CCT	133	20	66	22	33	33	1
UCR	CRB	Reg_696	CCT	119	18	60	20	30	30	1
UCR	CRB	Reg_1003	CCT	5	1	2	1	1	1	1
UCR	SBB	Reg_1093	CCT	145	22	73	24	36	36	1

Define the Revenue Group

Repeat the same general process to define a transaction table group named Revenue.

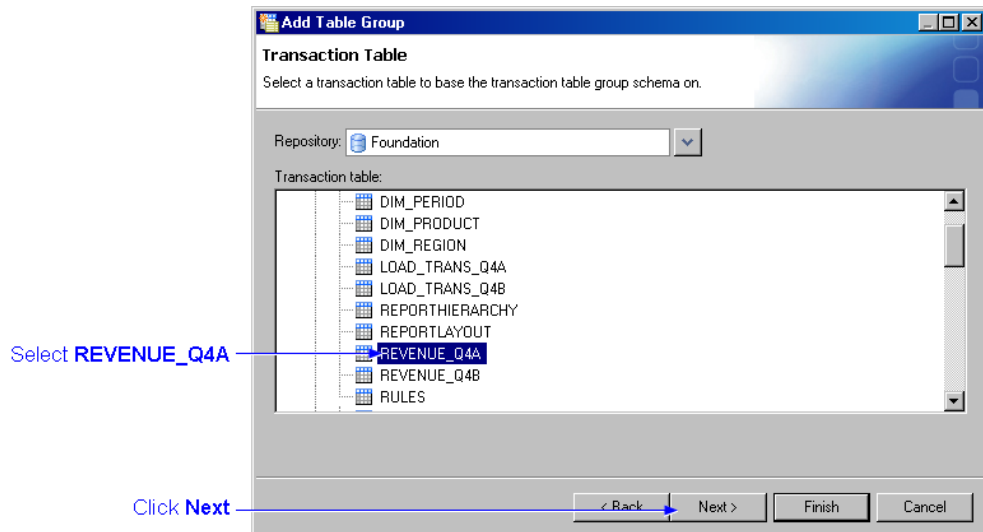
Define the Transaction Table Group

- 1 Click **Add table group**.
- 2 Name the group **Revenue**, and then click **Next**.



The screenshot shows the 'Add Table Group' dialog box with the 'Information' tab selected. The title bar reads 'Add Table Group'. Below the title bar, the text 'Information' is displayed, followed by the instruction 'Type a name for the table group.' There are two input fields: 'Table group name:' which contains the text 'Revenue', and 'Description:' which is empty. At the bottom of the dialog, there are four buttons: '< Back', 'Next >', 'Finish', and 'Cancel'.

- 3 Select **REVENUE_Q4A** as the table whose schema serves as the schema for the table group.



The screenshot shows the 'Add Table Group' dialog box with the 'Transaction Table' tab selected. The title bar reads 'Add Table Group'. Below the title bar, the text 'Transaction Table' is displayed, followed by the instruction 'Select a transaction table to base the transaction table group schema on.' There is a 'Repository:' dropdown menu set to 'Foundation'. Below this is a list box titled 'Transaction table:' containing the following items: DIM_PERIOD, DIM_PRODUCT, DIM_REGION, LOAD_TRANS_Q4A, LOAD_TRANS_Q4B, REPORTHIERARCHY, REPORTLAYOUT, **REVENUE_Q4A** (highlighted with a blue selection bar), REVENUE_Q4B, and RULES. A blue arrow points from the text 'Select REVENUE_Q4A' to the highlighted item in the list. At the bottom, there are four buttons: '< Back', 'Next >', 'Finish', and 'Cancel'. A blue arrow points from the text 'Click Next' to the 'Next >' button.

- 4 Click **Next**.
- 5 Specify whether each column in the table is text, numeric, or a dimension member as shown in the following graphic, and then click **Finish**.

Add Table Group

Categorize Columns

Select columns to define the schema and categorize the columns.

Select which columns to include and the category for each column

Include	Source column	Description	Category
<input checked="" type="checkbox"/>	AMT	AMT	Numeric
<input checked="" type="checkbox"/>	Channel	Channel	DIM_CHANNEL
<input checked="" type="checkbox"/>	CustID	CustID	DIM_CUSTOMER
<input checked="" type="checkbox"/>	CustType	CustType	DIM_CUSTTYPE
<input checked="" type="checkbox"/>	ID	ID	Text
<input checked="" type="checkbox"/>	Product	Product	DIM_PRODUCT
<input checked="" type="checkbox"/>	Region	Region	DIM_REGION

< Back Next > Finish Cancel

The table group, Revenue, is added to the list.

SAS Profitability Management - Baby Bank

File Edit View Actions Help

Model: Baby Bank

Transactions

Workspaces x

Transactions

Rules

Behaviors

Reports

Name	Period
ABMCost	
LOAD_TRANS_Q4A	Actual > 2006 > 2006_Q4
LOAD_TRANS_Q4B	Budget > 2006 > 2006_Q4
CallCenter	
CALLCENTER_Q4A	Actual > 2006 > 2006_Q4
CALLCENTER_Q4B	Budget > 2006 > 2006_Q4
Revenue	

Tasks x

Show properties

Remove...

Change analysis settings...

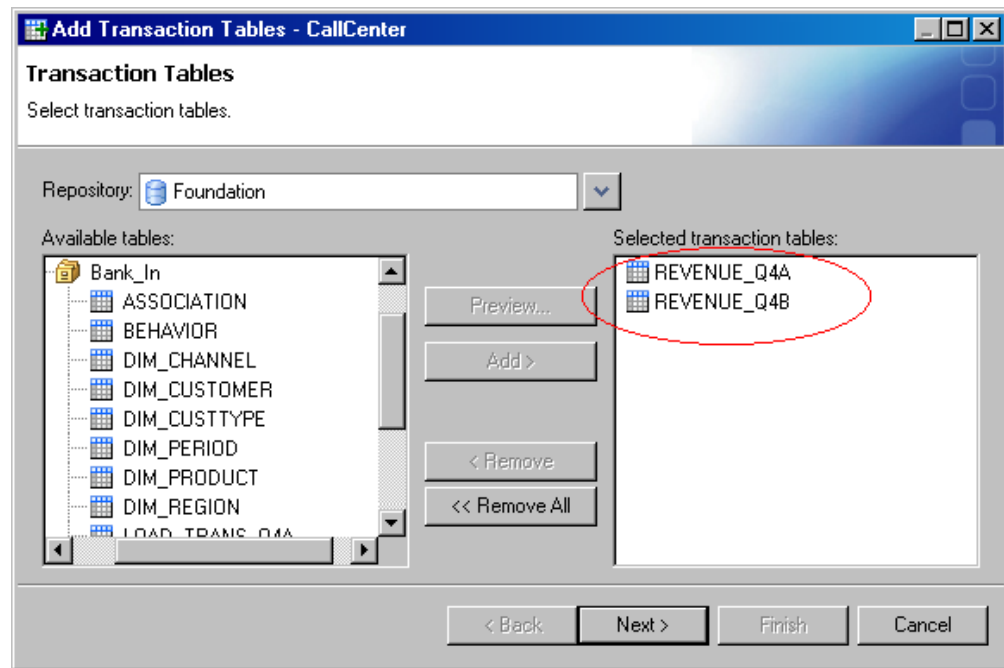
Add table group...

Add transaction tables...

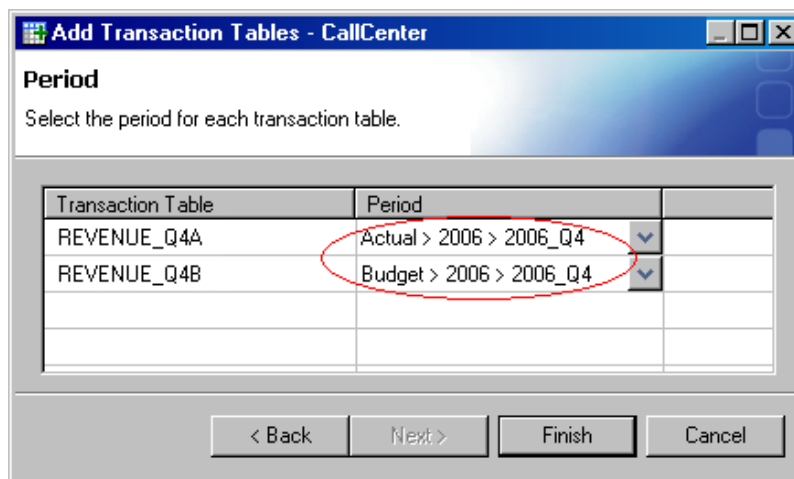
Preview Data

Add Tables to the Group

- 1 Click **Add transaction tables** (making sure that **Revenue** is selected).
- 2 Add **REVENUE_Q4A** and **REVENUE_Q4B** to the list, and then click **Next**.

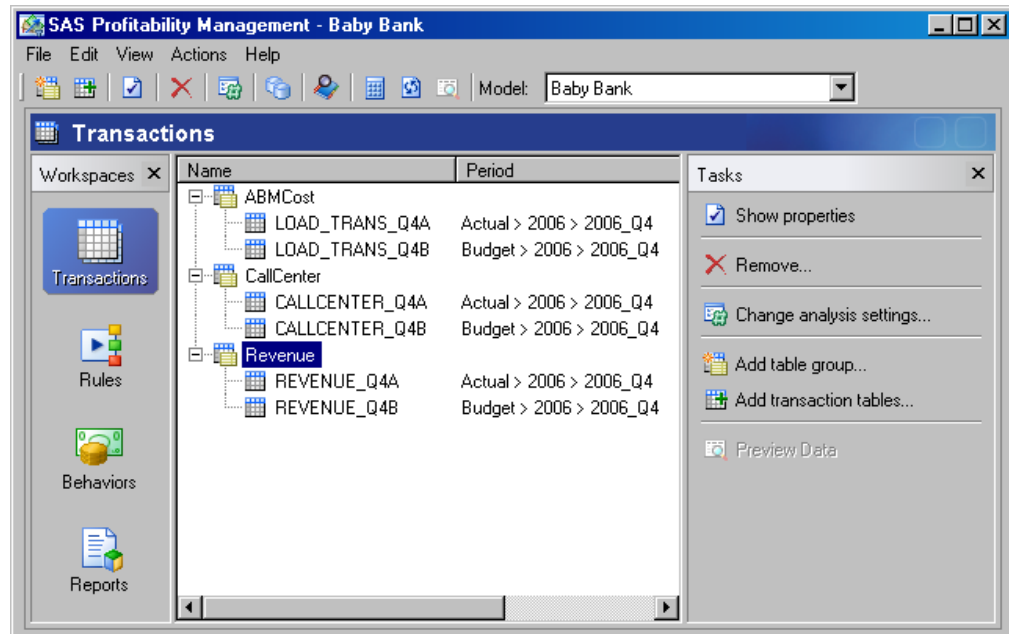


3 Associate each of the tables with a period as shown:



4 Click **Finish**.

The tables are added to the group.

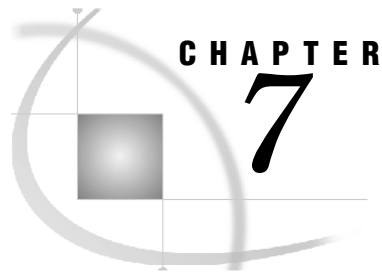


Transaction Table REVENUE_Q4A

The following graphic shows a portion of the contents of the transaction table REVENUE_Q4A.

REVENUE_Q4A

dim.	dim.	dim.	dim.	dim.	num.	text
Channel	CustID	Product	CustType	Region	AMT	ID
ATM	00001	OVD	PRB	Reg_67	399.3	10002
ATM	00001	OVD	PRB	Reg_67	8.16	12002
ATM	00001	OVD	PRB	Reg_67	20.47	13001
ATM	00001	OVD	PRB	Reg_67	25.59	13002
ATM	00001	OVD	PRB	Reg_67	5.12	14001
ATM	00002	CRC	PRB	Reg_188	4359.35	10001
ATM	00002	CRC	PRB	Reg_188	1744.98	12001
ATM	00002	CRC	PRB	Reg_188	134.25	13002
ATM	00002	CRC	PRB	Reg_188	221.31	13001
ATM	00002	CRC	PRB	Reg_188	276.64	13002
CCT	05845	FBP	CRB	Reg_795	55.33	14001
CCT	05845	OTP	CRB	Reg_194	23.38	13001
CCT	05845	OTP	CRB	Reg_194	29.22	13002
CCT	05845	OTP	CRB	Reg_194	5.84	14001
CCT	05846	UCR	SBB	Reg_1093	6478.6	10002
CCT	05846	UCR	SBB	Reg_1093	332.17	13001
CCT	05846	UCR	SBB	Reg_1093	415.22	13002
CCT	05846	UCR	SBB	Reg_1093	83.04	14001
CCT	05847	FBP	SBB	Reg_269	21.04	13001
CCT	05847	FBP	SBB	Reg_269	26.3	13002
CCT	05847	FBP	SBB	Reg_269	5.26	14001
CCT	05847	OVD	CRB	Reg_448	3208.39	10002
CCT	05847	OVD	CRB	Reg_448	164.5	13001
CCT	05847	OVD	CRB	Reg_448	205.63	13002
CCT	05847	OVD	CRB	Reg_448	41.13	14001



Change Analysis Settings

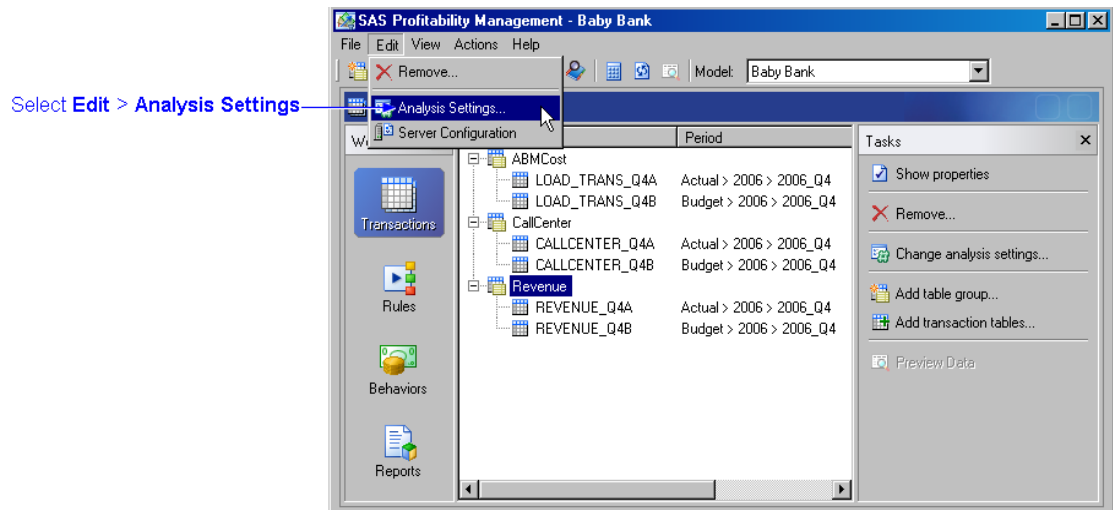
Overview 47
 Select Periods for the Cube 47
 Select Formats for Numeric Measures 48

Overview

Analysis settings control the formatting of numbers in cube reports. The value field is particularly critical to be correctly formatted. The value field displays revenue and cost in the profit and loss reporting on the web.

- 1 Select **Edit > Analysis Settings**.

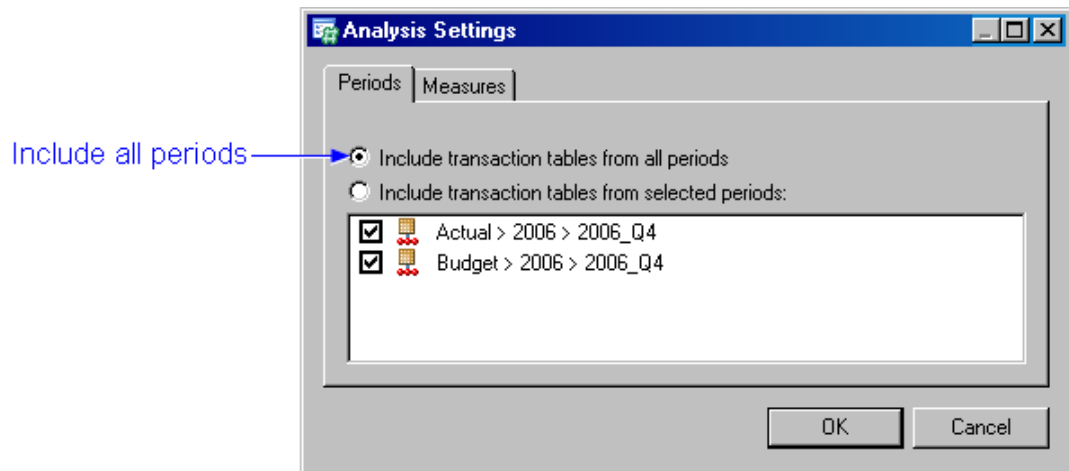
The Analysis Settings window opens.



Select Periods for the Cube

- 1 Check **Include transaction tables from all periods**.

The view is created with a join across all available calculated transaction tables.



The selected periods are included in the view that is used as the source for the OLAP cubes and, thus, the reporting.

If you want the cubes and reporting produced to include only a selected set of periods, use this dialog box to select the periods and, thus, define the table joins in the view.

Each transaction table represents a single period. These calculated transaction tables are stored in the output table library. The cubes represent results across multiple periods, but the cubes do not need to include every calculated period.

Note: The periods that you select for inclusion in a cube must also be chosen for calculation when you calculate the model. Unless a period has been calculated, it cannot be included in a cube.

Select Formats for Numeric Measures

1 Click the **Measures** tab.

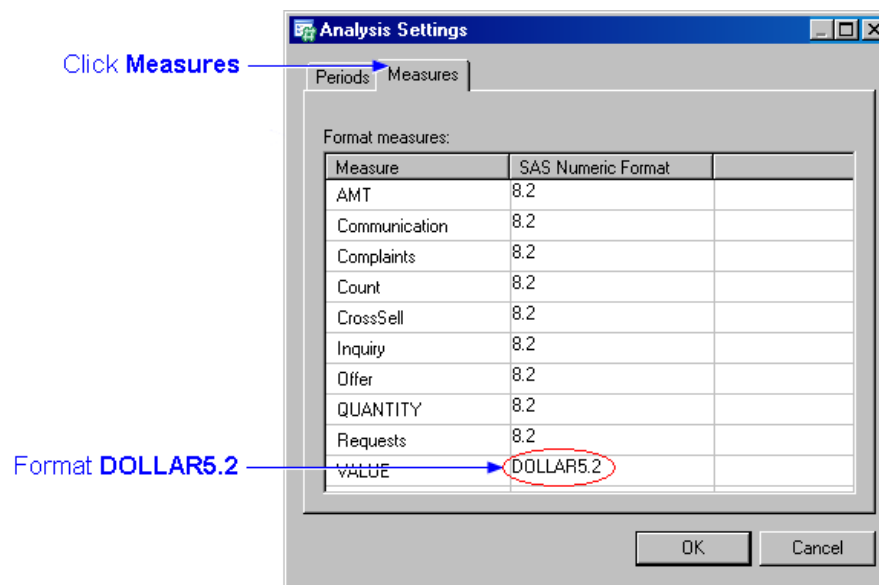
The Measures tab lists all numeric properties available to the model. All numerical properties are available to be included in profit and loss reporting. This includes:

- ☐ all entered numeric properties from the transaction tables
- ☐ all the calculated properties:
 - Quantity – a numeric value based upon the rules driver formula
 - Value – the calculated behavior amounts (revenue or cost)

2 For the **VALUE** measure, specify **DOLLAR5.2**.

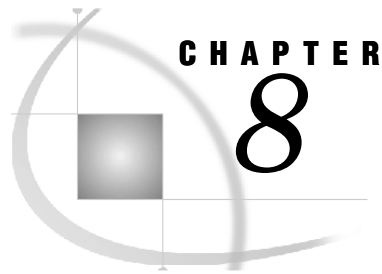
Value is the calculated cost or revenue for a transaction. The method of its calculation depends upon whether the behavior table row that is accessed by an assignment rule contains a unit value or a total value. See “Calculation – a Conceptual View” on page 76.

Default number formats are all 8.2 (eight characters with two of them after the decimal).



The following SAS formats are available:

<i>BESTw</i>	Best available format with width=w
<i>COMMAw.d</i>	Comma and decimal points with width=w and decimal=d
<i>COMMAXw.d</i>	Comma and decimal points with width=w and decimal=d (switches the role of comma and decimal points)
<i>DOLLARw.d</i>	Dollar signs, comma, and decimal points with width=w and decimal=d
<i>DOLLARXw.d</i>	Dollar signs, comma, and decimal points with width=w and decimal=d (switches the role of comma and decimal points)
<i>EUROW.d</i>	Euro signs, comma, and decimal points with width=w and decimal=d
<i>EUROXw.d</i>	Euro signs, comma, and decimal points with width=w and decimal=d (switches the role of comma and decimal points)
<i>PERCENTw.d</i>	Percentage with width=w and decimal=d and a percentage sign
<i>Zw.d</i>	Prefixed with zero to get width=w and decimal=d
<i>w.d</i>	width=w and decimal=d



Define Rules

Introduction 51
Define the First Rule 51
 How Rules Work 55
Define Another Rule 55
Import the Remaining Rules 58
 Import Table for Rules 60

Introduction

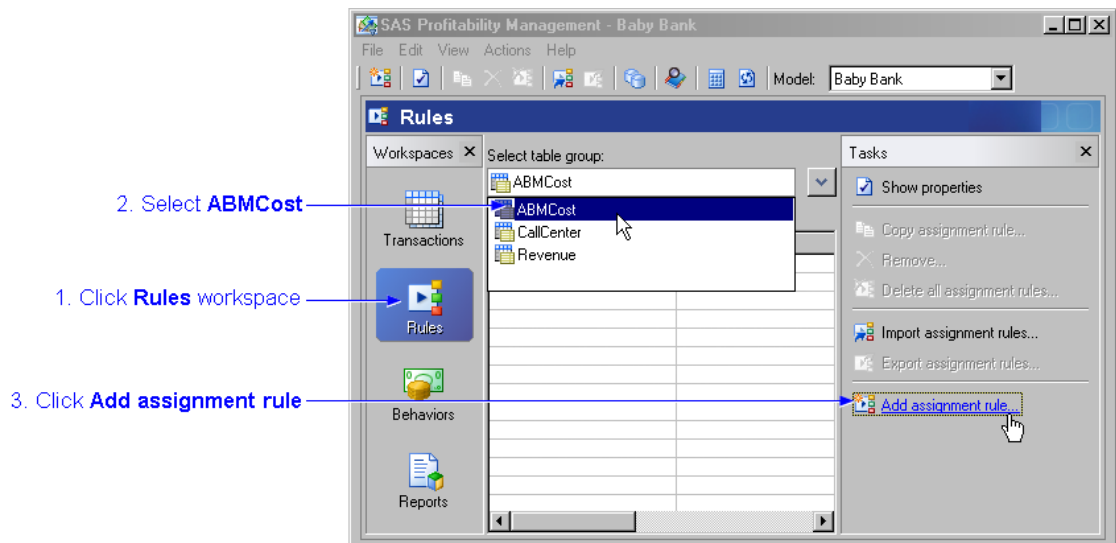
An assignment rule associates rows in a transaction table with a behavior. An assignment rule:

- ☐ is associated with one or more rows in a behavior table
- ☐ specifies which rows in a transaction table group to include in a calculation
- ☐ specifies what quantity to include in the calculation.

An assignment rule is implicitly associated with a single transaction table in a table group — namely, the transaction table whose period is specified in the behavior table row with which the rule is associated.

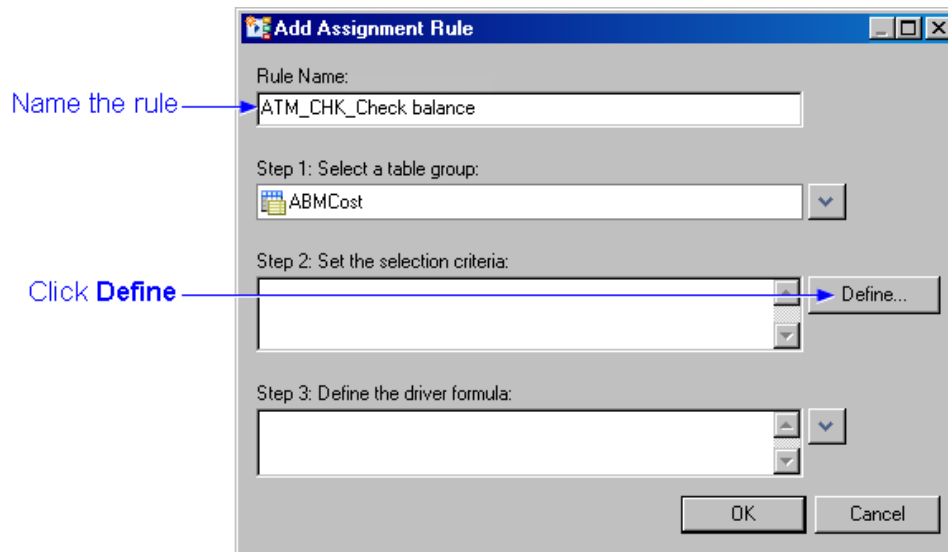
Define the First Rule

- 1 Click the **Rules** workspace.
- 2 Select **ABMCost** as the table group to use the rule.
- 3 Click **Add assignment rule**.



The Add Rule window opens.

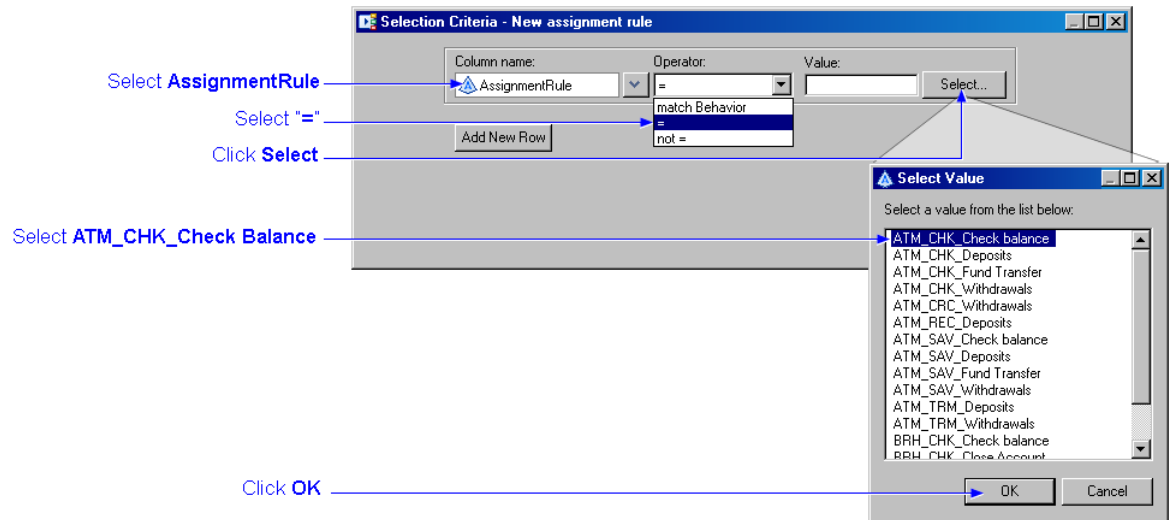
- 4 Name the rule **ATM_CHK_Check balance**.
- 5 Click **Define**.



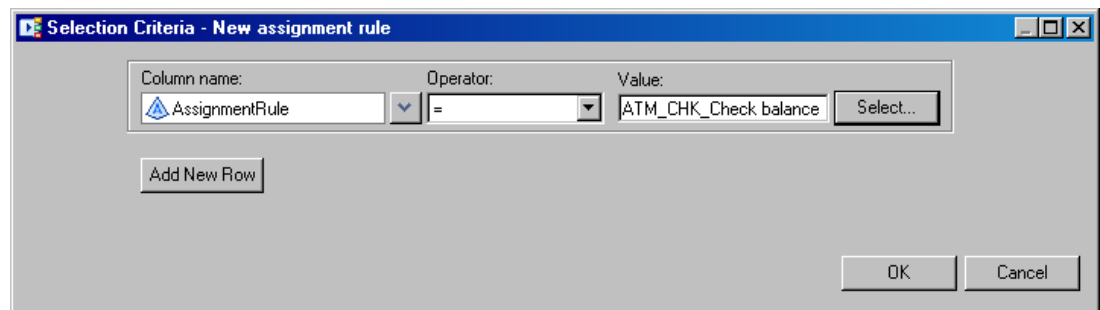
The Selection Criteria window opens.

- 6 Select **AssignmentRule** from the drop-down list of column names to select.
- 7 Select **=** from the drop-down list of operators.
- 8 Click **Select**, and select **ATM_CHK_Check balance** from the dialog box of possible text strings.

The dialog box shows all the possible text strings in the AssignmentRule column of the ABMCost table group. (Remember that you selected ABMCost as the table group to which this rule applies.)



After making your selections, the Selection Criteria window should look like the following:



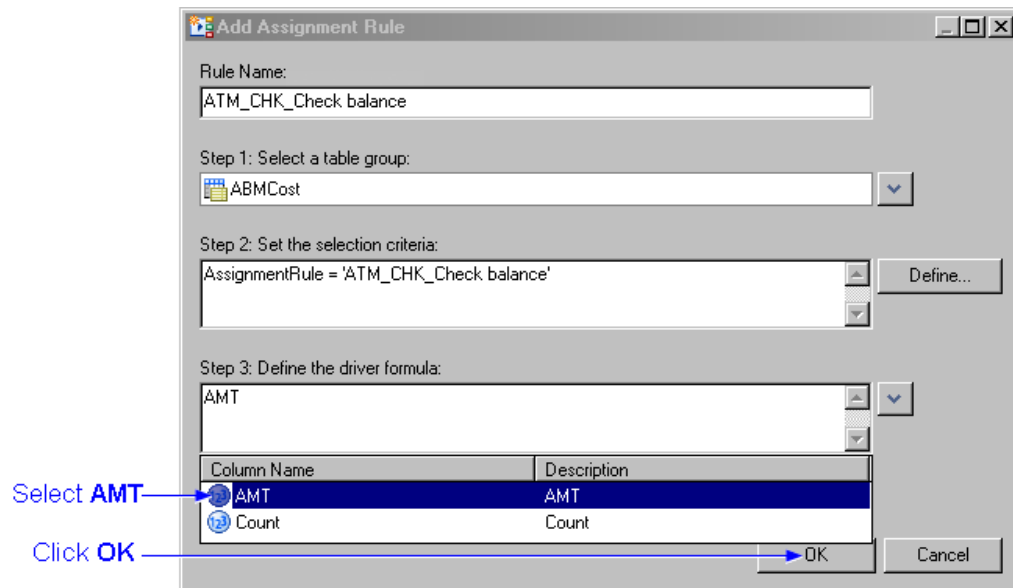
9 Click OK.

You return to the Add Assignment Rule window.

10 Select **AMT from the drop-down list of values for the driver formula.**

The formula uses the value of the AMT column to calculate a value for every row picked out by the selection criterion:

AssignmentRule ='ATM_CHK_Check balance'

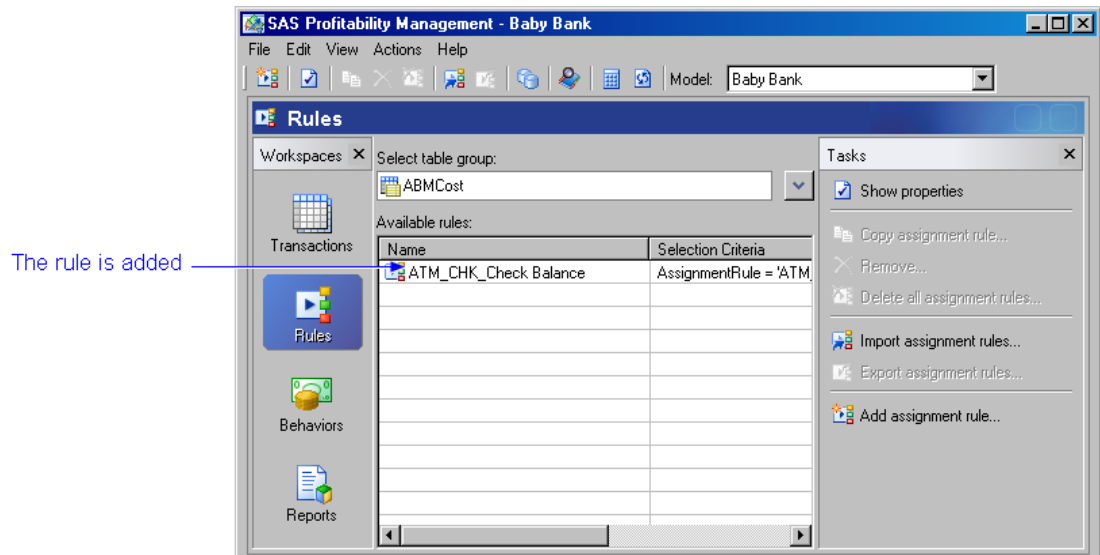


AMT represents the number of times a transaction (such as checking one's balance) occurred.

Count holds a value of 1 for every transaction. If you need to know, for example, how many customers used a specific product, you can filter by product and use the Count property to calculate.

11 Click **OK**.

The rule is added to the list of rules for the table group ABMCost.



How Rules Work

An assignment rule associates rows in a transaction table with a behavior. An assignment rule:

- ❑ is associated with one or more rows in a behavior table
- ❑ includes selection criteria that specify which rows in a transaction table group to include in a calculation
- ❑ includes a driver formula that specifies what quantity to include in the calculation.

An assignment rule is implicitly associated with a single transaction table in a table group — namely, the transaction table whose period is specified in the behavior table row with which the rule is associated.

Rule - ATM_CHK_Check Balance

Transaction table - LOAD_TRANS_Q4A

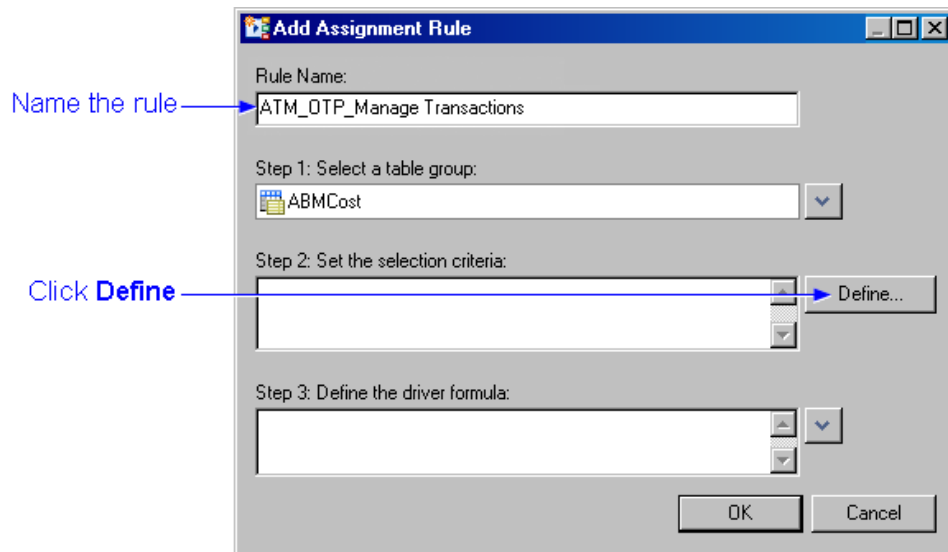
CustID	Product	CustType	Reg on	Channel	AssignmentRule	Count	AMT
00002	SAV	PRB	Reg_188	BRH	BRH_SAV_Deposits	1	75915
00003	SAV	PRB	Reg_939	BRH	BRH_SAV_Deposits	1	65541
00005	CHK	PRB	Reg_849	ATM	ATM_CHK_Check balance	1	18209
00008	CHK	PRB	Reg_281	ATM	ATM_CHK_Check balance	1	39530
00025	CHK	PRB	Reg_523	ATM	ATM_CHK_Check balance	1	13507
00030	CHK	PRB	Reg_1078	ATM	ATM_CHK_Deposits	1	66167
00032	CHK	PRB	Reg_858	ATM	ATM_CHK_Deposits	1	68044
00037	CHK	PRB	Reg_935	ATM	ATM_CHK_Deposits	1	23162
00048	CHK	RCB	Reg_1080	ATM	ATM_CHK_Deposits	1	61055
00049	CHK	RCB	Reg_699	ATM	ATM_CHK_Deposits	1	26483
05798	CHK	CRB	Reg_450	ATM	ATM_CHK_Deposits	1	19270
05799	CHK	CRB	Reg_450	ATM	ATM_CHK_Deposits	1	30919

Define Another Rule

- 1 Make sure you are in the **Rules** workspace.
- 2 Make sure that **ABMCost** is selected as the table group to use the rule.
- 3 Click **Add assignment rule**.

The Add Rule window opens.

- 4 Name the rule **ATM_OTP_Manage Transactions**.
- 5 Click **Define**.



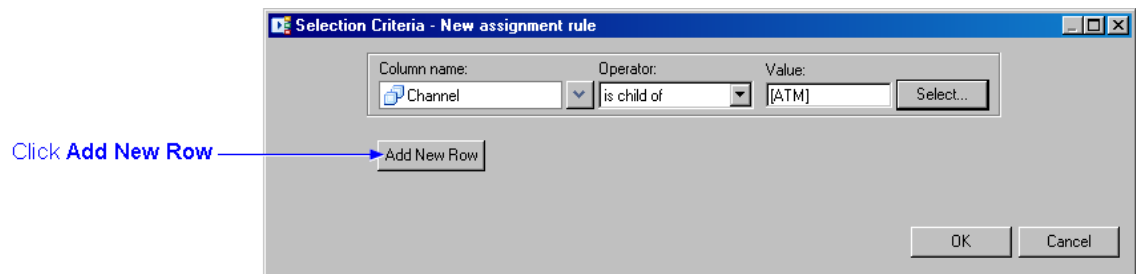
The Selection Criteria window opens.

- 6 Select the dimension **Channel** from the drop-down list of column names to select.
- 7 Select **“is child of”** from the drop-down list of operators.

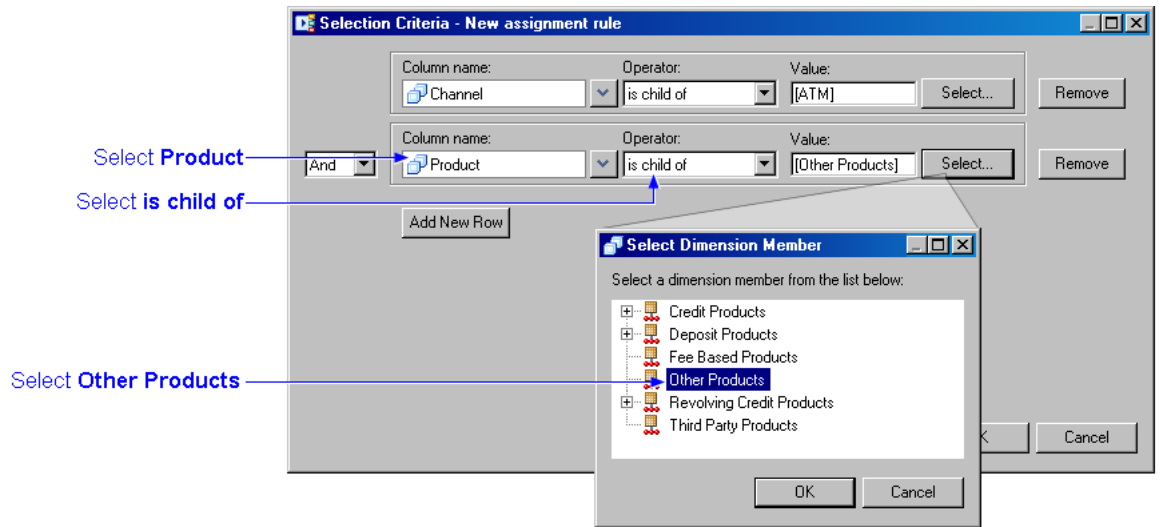
The ‘child of’ operator is hierarchically driven. By selecting a member of a dimension at a point in the hierarchy, you are actually including that specific member and all of its children in the dimensional hierarchy.

- 8 Click **Select**, and select **[ATM]** from the dialog box of possible values.

After making your selections, the Selection Criteria window should look like the following:



- 9 Click **Add New Row**.
- 10 Select the dimension **Product** as the column to filter on.
- 11 Select **“is child of”** from the drop-down list of operators.
- 12 Select **Other Products** from the dialog of possible values.

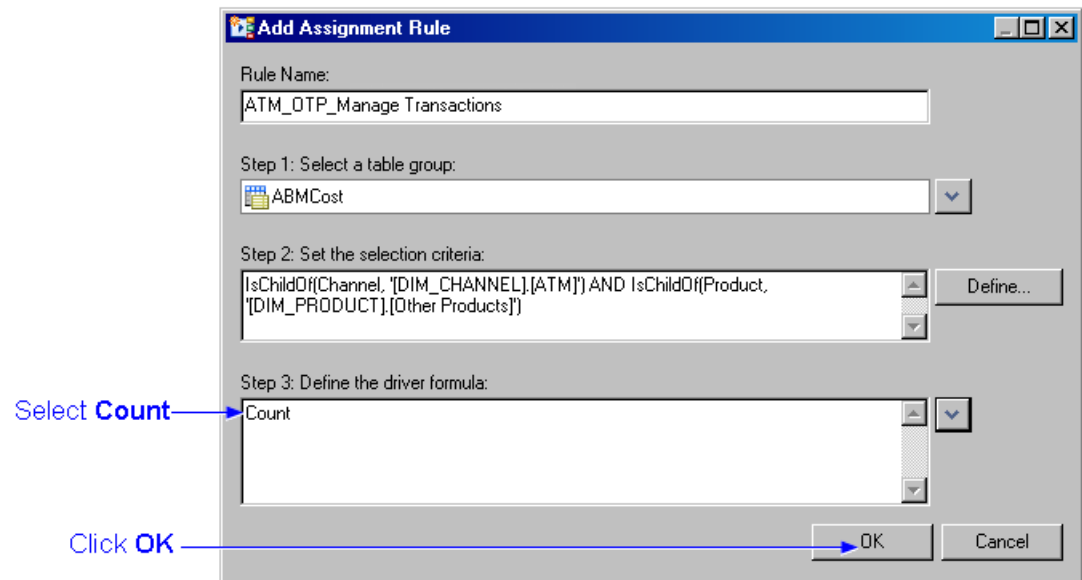


13 Click **OK**.

You return to the Add Assignment Rule window.

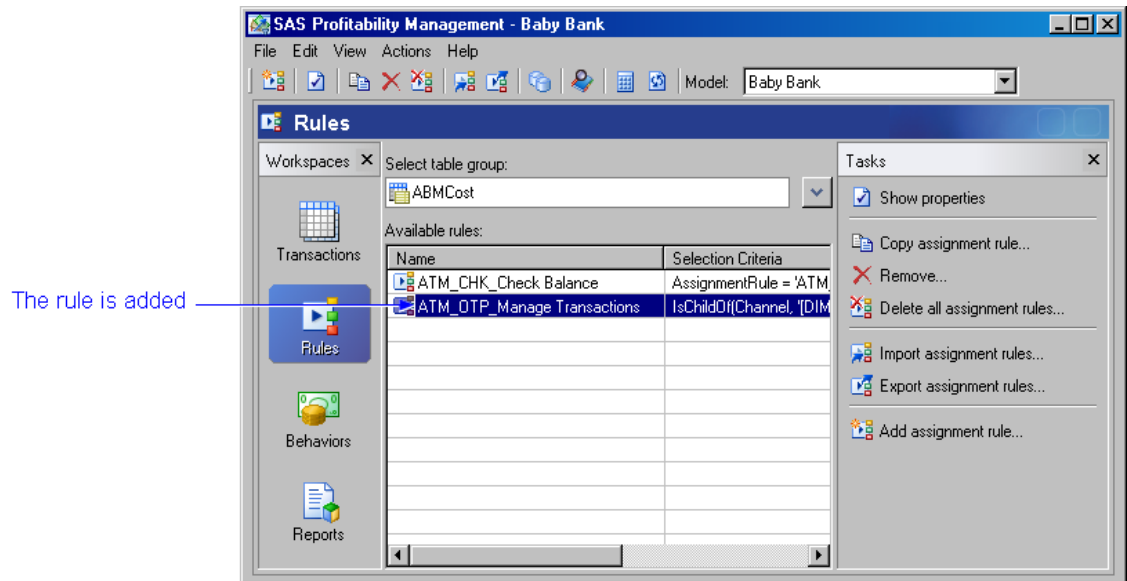
14 Select **Count** from the drop-down list of values for the driver formula.

The formula uses the value of the Count column in calculating a value for every row picked out by the selection criteria.



15 Click **OK**.

The rule is added to the list of rules for the table group ABMCost.



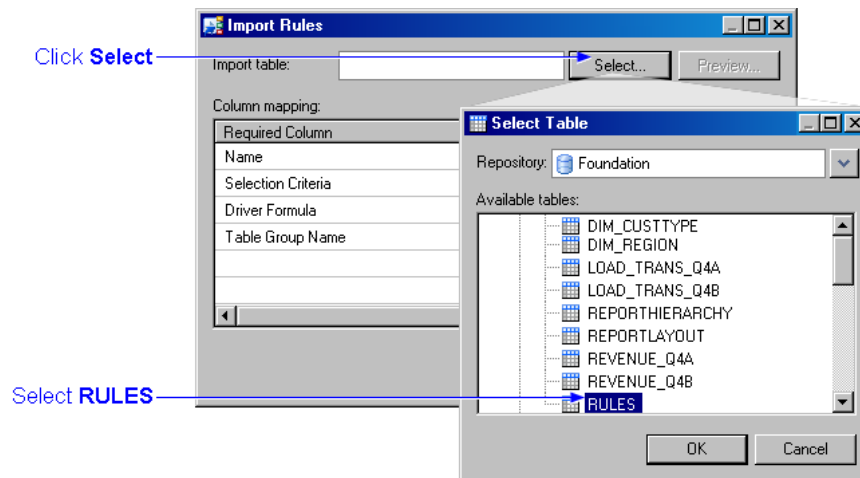
Import the Remaining Rules

Instead of defining rules one by one, you can put the rule definitions in a file and import the file into SAS Profitability Management.

- 1 Click **Import assignment rules**.

The Import Rules window opens.

- 2 Click **Select**, and select **RULES** as the table to import.

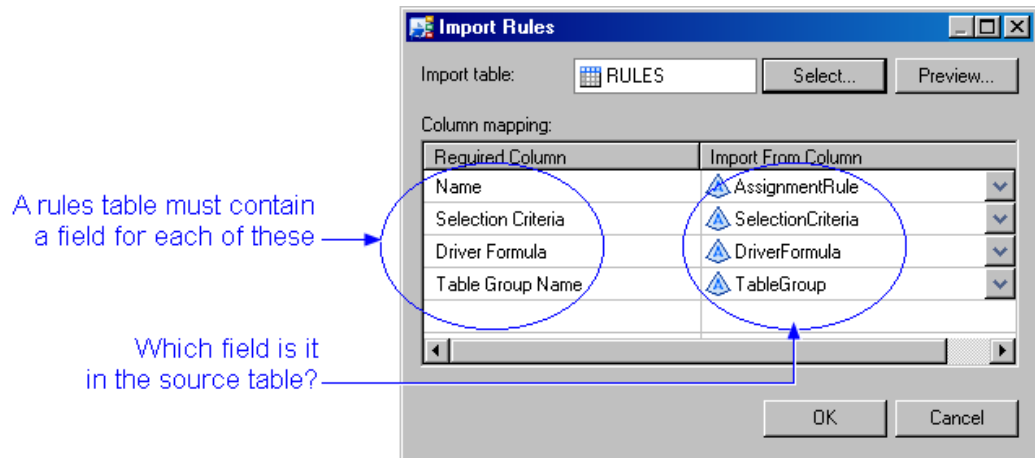


- 3 Identify fields in the rules table.

A rules import table must contain a field for each of the following: Name, Selection Criteria, Driver Formula, and Table Group Name.

By default, SAS Profitability Management assumes that these fields are named as follows: “AssignmentRule”, “SelectionCriteria”, “DriverFormula”, and “TableGroup”. If fields with those names exist in the rules table, then they are automatically mapped. If the fields are named differently, then you must match them up manually.

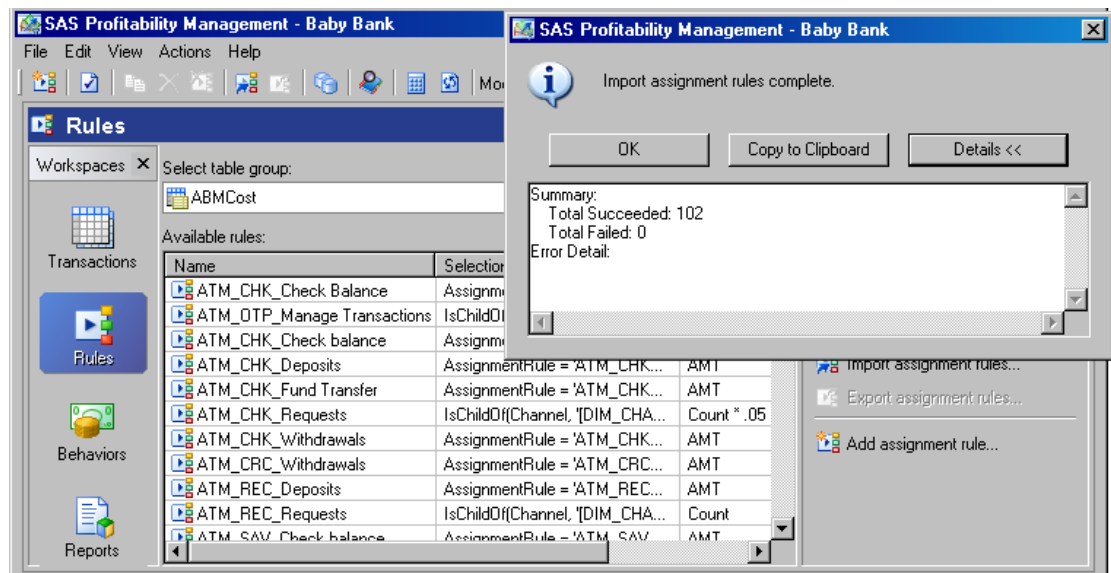
The sample rules table, RULES, contains these fields, so they are mapped automatically.



4 Click **OK**.

The rules are imported.

Note: It is considered an error if a rule already exists. It is not overwritten.



Import Table for Rules

The following is a portion of the import table – RULES. Notice that it contains rules operating upon all three table groups in the Baby Bank model – ABMCost, CallCenter, and Revenue. It is not necessary to create a separate table of rules for each table group.

TableGroup	AssignmentRule	SelectionCriteria	DriverFormula
ABMCost	ATM_CHK_Check balance	AssignmentRule = 'ATM_CHK_Check balance'	AMT
ABMCost	ATM_CHK_Deposits	AssignmentRule = 'ATM_CHK_Deposits'	AMT
ABMCost	ATM_CHK_Fund Transfer	AssignmentRule = 'ATM_CHK_Fund Transfer'	AMT
ABMCost	ATM_CHK_Requests	IsChildOf(Channel, '[DIM_CHANNEL].[ATM]') AND IsChildOf(Product, '[DIM_PRODUCT].[De...]	Count * .05 + AMT * .01
ABMCost	ATM_CHK_Withdrawals	AssignmentRule = 'ATM_CHK_Withdrawals'	AMT
ABMCost	ATM_CRC_Withdrawals	AssignmentRule = 'ATM_CRC_Withdrawals'	AMT
ABMCost	ATM_REC_Deposits	AssignmentRule = 'ATM_REC_Deposits'	AMT
ABMCost	ATM_REC_Requests	IsChildOf(Channel, '[DIM_CHANNEL].[ATM]') AND IsChildOf(Product, '[DIM_PRODUCT].[De...]	Count
ABMCost	ATM_SAV_Check balance	AssignmentRule = 'ATM_SAV_Check balance'	AMT
ABMCost	ATM_SAV_Deposits	AssignmentRule = 'ATM_SAV_Deposits'	AMT
ABMCost	ATM_SAV_Fund Transfer	AssignmentRule = 'ATM_SAV_Fund Transfer'	AMT
ABMCost	ATM_SAV_Requests	IsChildOf(Channel, '[DIM_CHANNEL].[ATM]') AND IsChildOf(Product, '[DIM_PRODUCT].[De...]	Count
ABMCost	ATM_SAV_Withdrawals	AssignmentRule = 'ATM_SAV_Withdrawals'	AMT
ABMCost	ATM_TRM_Deposits	AssignmentRule = 'ATM_TRM_Deposits'	AMT
ABMCost	ATM_TRM_Requests	IsChildOf(Channel, '[DIM_CHANNEL].[ATM]') AND IsChildOf(Product, '[DIM_PRODUCT].[De...]	Count
ABMCost	ATM_TRM_Withdrawals	AssignmentRule = 'ATM_TRM_Withdrawals'	AMT
ABMCost	BRH_CHK_Check balance	AssignmentRule = 'BRH_CHK_Check balance'	AMT
ABMCost	BRH_CHK_Deposits	AssignmentRule = 'BRH_CHK_Deposits'	AMT
ABMCost	BRH_CHK_Fund Transfer	AssignmentRule = 'BRH_CHK_Fund Transfer'	AMT
ABMCost	BRH_CHK_Requests	IsChildOf(Channel, '[DIM_CHANNEL].[ATM]') AND IsChildOf(Product, '[DIM_PRODUCT].[De...]	Count
ABMCost	BRH_CHK_Withdrawals	AssignmentRule = 'BRH_CHK_Withdrawals'	AMT
CallCenter	CCT_SCR_Inquiry	IsChildOf(Channel, '[DIM_CHANNEL].[Call Center]') AND IsChildOf(Product, '[DIM_PRODUC...]	Inquiry
CallCenter	CCT_SCR_Requests	IsChildOf(Channel, '[DIM_CHANNEL].[Call Center]') AND IsChildOf(Product, '[DIM_PRODUC...]	Requests
CallCenter	CCT_TPP_Cross_Up Sell	IsChildOf(Channel, '[DIM_CHANNEL].[Call Center]') AND IsChildOf(Product, '[DIM_PRODUC...]	CrossSell
CallCenter	CCT_TRM_Complaints	IsChildOf(Channel, '[DIM_CHANNEL].[Call Center]') AND IsChildOf(Product, '[DIM_PRODUC...]	Complaints
CallCenter	CCT_TRM_Inquiry	IsChildOf(Channel, '[DIM_CHANNEL].[Call Center]') AND IsChildOf(Product, '[DIM_PRODUC...]	Inquiry
CallCenter	CCT_TRM_Requests	IsChildOf(Channel, '[DIM_CHANNEL].[Call Center]') AND IsChildOf(Product, '[DIM_PRODUC...]	Requests
CallCenter	CCT_UCR_Complaints	IsChildOf(Channel, '[DIM_CHANNEL].[Call Center]') AND IsChildOf(Product, '[DIM_PRODUC...]	Complaints
CallCenter	CCT_UCR_Cross_Up Sell	IsChildOf(Channel, '[DIM_CHANNEL].[Call Center]') AND IsChildOf(Product, '[DIM_PRODUC...]	CrossSell
CallCenter	CCT_UCR_Inquiry	IsChildOf(Channel, '[DIM_CHANNEL].[Call Center]') AND IsChildOf(Product, '[DIM_PRODUC...]	Inquiry
CallCenter	CCT_UCR_Requests	IsChildOf(Channel, '[DIM_CHANNEL].[Call Center]') AND IsChildOf(Product, '[DIM_PRODUC...]	Requests
Revenue	ATM Fees	ID = '12002'	AMT
Revenue	Certificates of Deposit Pay...	ID = '11002'	AMT
Revenue	Charge For Funds	ID = '13002'	AMT
Revenue	Checking Account Fees	ID = '12004'	AMT
Revenue	Credit Card Fees	ID = '12001'	AMT
Revenue	Credit Card interest Income	ID = '10001'	AMT
Revenue	Credit for Funds	ID = '13001'	AMT
Revenue	Investment Account Fees	ID = '12003'	AMT
Revenue	Investment Securities Pay...	ID = '11003'	AMT
Revenue	Loan Interest Income	ID = '10002'	AMT
Revenue	Mortgages Income	ID = '10003'	AMT
Revenue	Provision For Losses	ID = '14001'	AMT
Revenue	Savings Interest Payments	ID = '11001'	AMT

CHAPTER 9

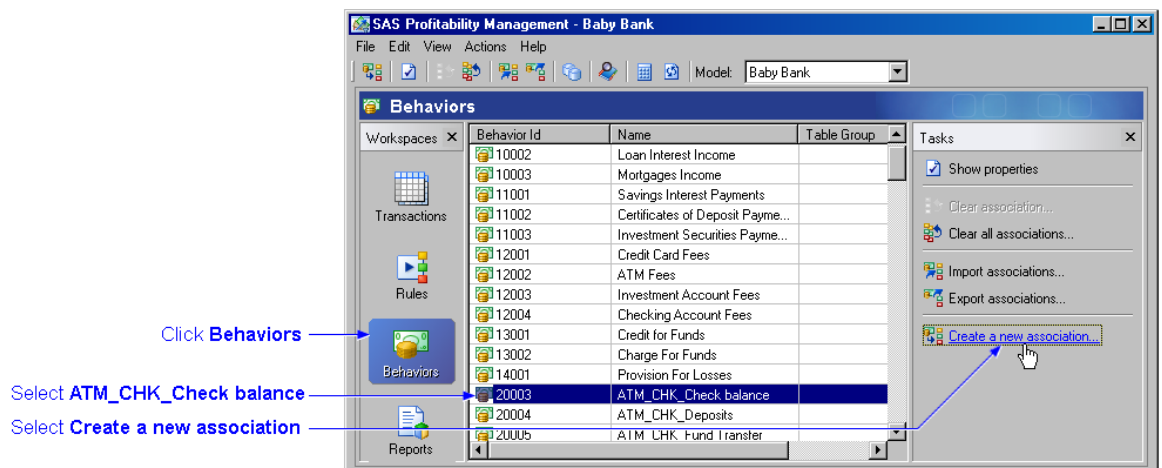
Associate Behaviors With Rules

Associate Behaviors with Rules 61
Import the Remaining Associations 62

Associate Behaviors with Rules

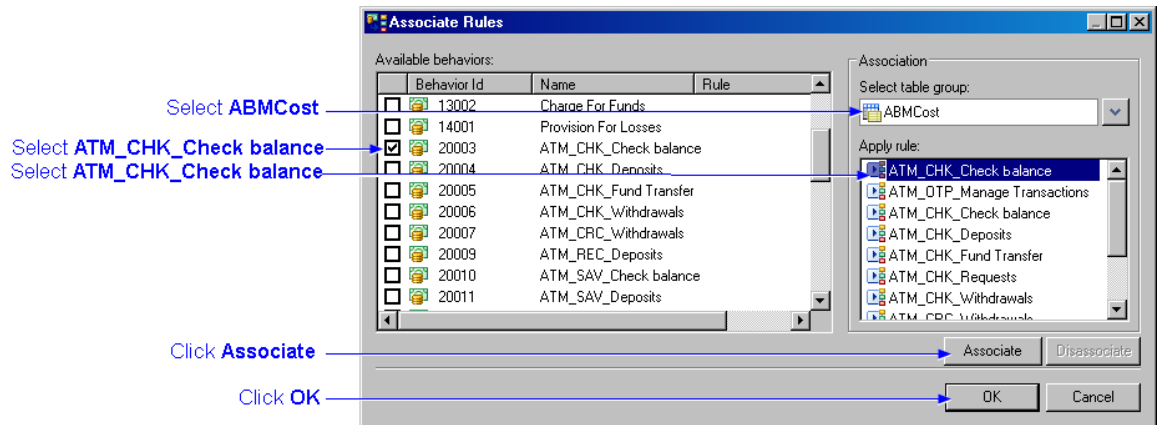
Each behavior must be associated with only one rule. Multiple behaviors can be associated with the same rule.

- 1 Click the **Behaviors** workspace.
- 2 Select the behavior **20003 ATM_CHK_Check balance**.
- 3 Click **Create a new association**.

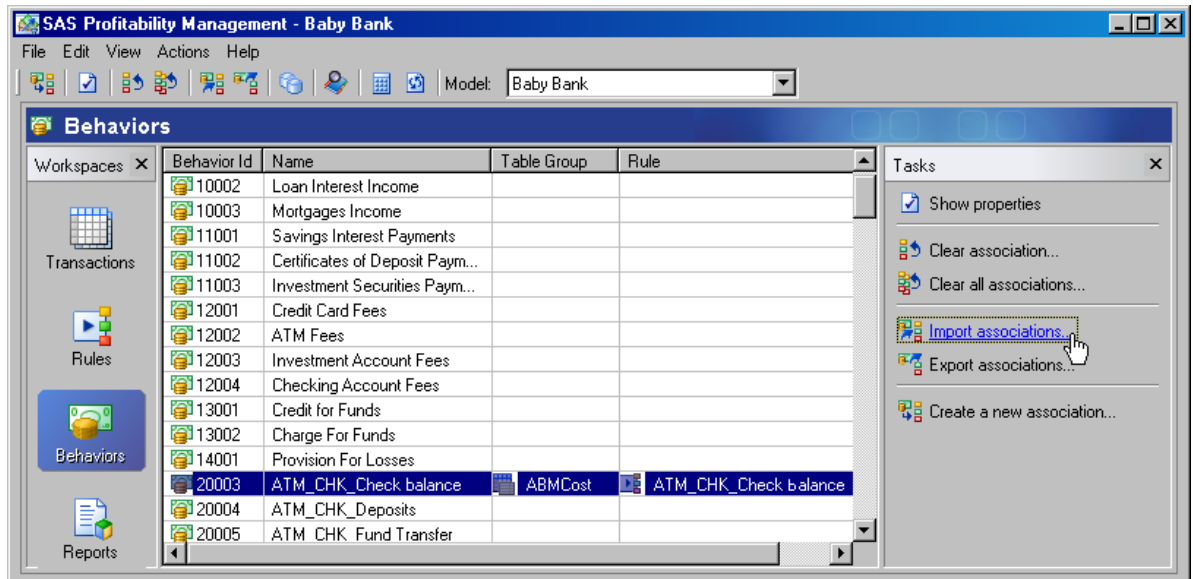


The Associate Rules window opens.

- 4 Select the **ABMCost** table group – the table group to which the rule is applied.
- 5 Make sure that the behavior **ABM_CHK_Check balance** is selected.
- 6 Select the rule **ABM_CHK_Check balance**.
- 7 Click **Associate**.
- 8 Click **OK**.



The rule is associated with the behavior, as shown in the behaviors workspace.



Import the Remaining Associations

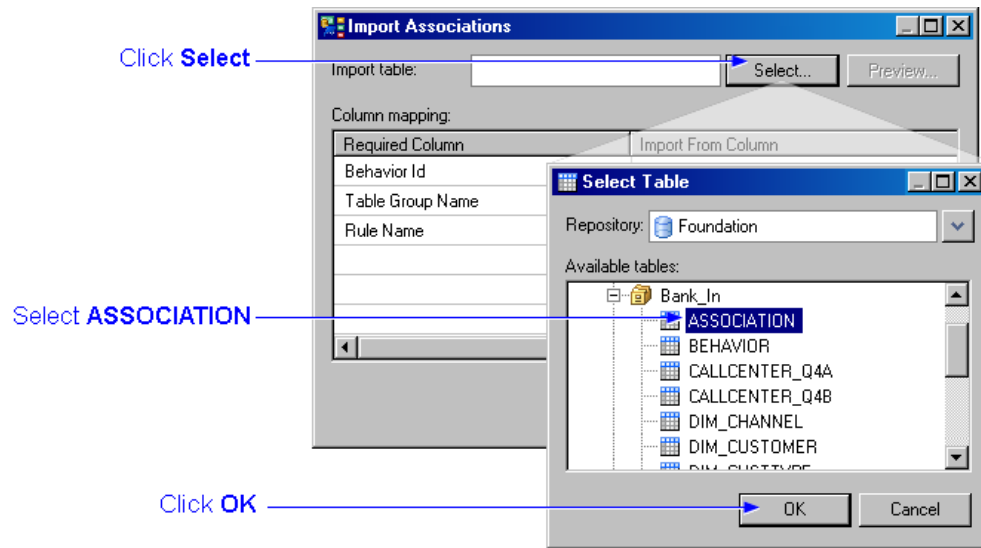
- 1 Click **Import associations**.

The Import Associations window opens.

- 2 Click **Select**.

The Select Table dialog opens.

- 3 Select the **ASSOCIATIONS** table to import.

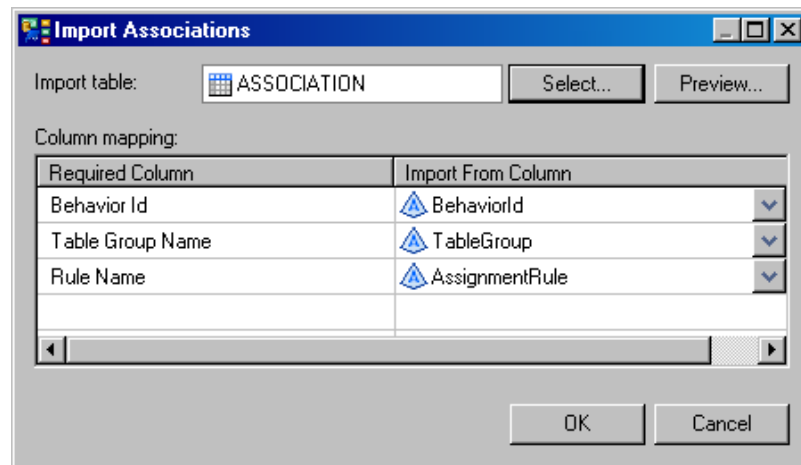


- 4 Click **OK**.
- 5 Identify fields in the ASSOCIATIONS table.

A rules association table must contain a field for each of the following: Behavior Id, Table Group Name, and Rule Name.

By default, SAS Profitability Management assumes that these fields are named as follows: “BehaviorId”, “TableGroup”, and “AssignmentRule”. If fields with those names exist in the associations table, then they are automatically mapped. If the fields are named differently, then you must match them up manually.

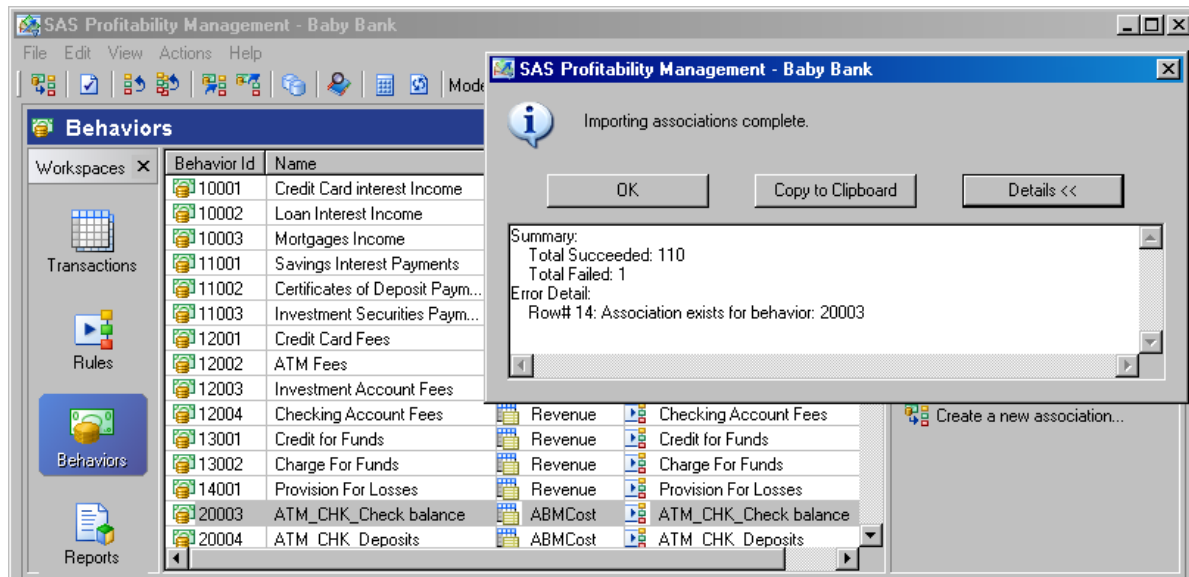
The sample table, ASSOCIATIONS, contains these fields, so they are mapped automatically.



- 6 Click **OK**.

The behaviors are associated with rules.

Note: If a behavior is already associated with a rule, an error message is issued and the association is not replaced.



CHAPTER 10

Prepare Reports

Define a Summary Report 65
Define a Detail Report 68

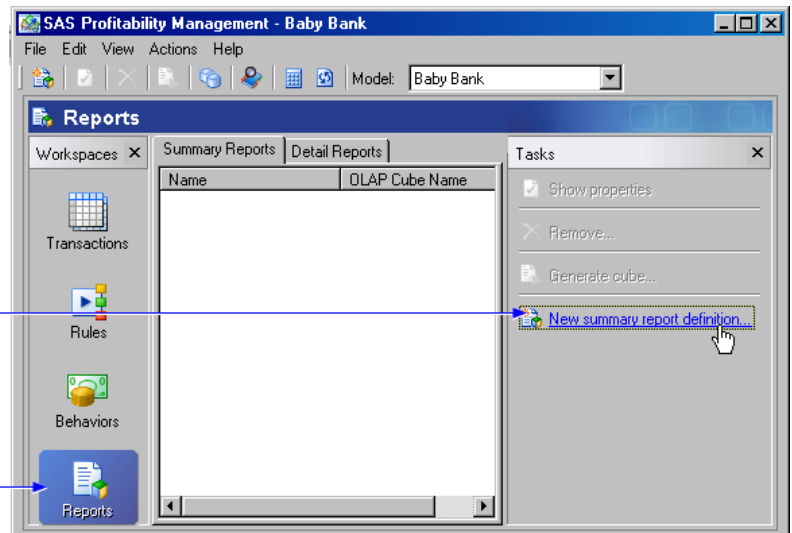
Define a Summary Report

A summary report in SAS Profitability Management represents an OLAP cube. In defining a summary report, you define the attributes of a cube.

- 1 Select the **Reports** tab.
- 2 Click **New summary report definition**.

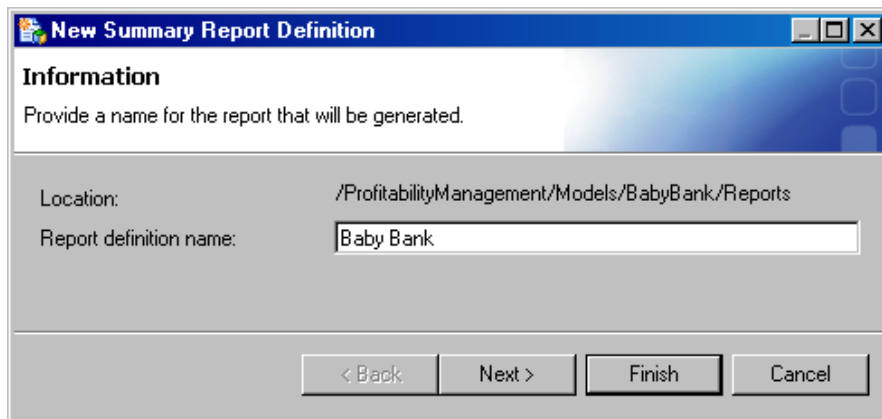
Click
New Summary report definition

in the **Reports** workspace



The New Summary Report Definition window opens.

- 3 Name the report, for example **Baby Bank**, and click **Next**.



New Summary Report Definition

Information

Provide a name for the report that will be generated.

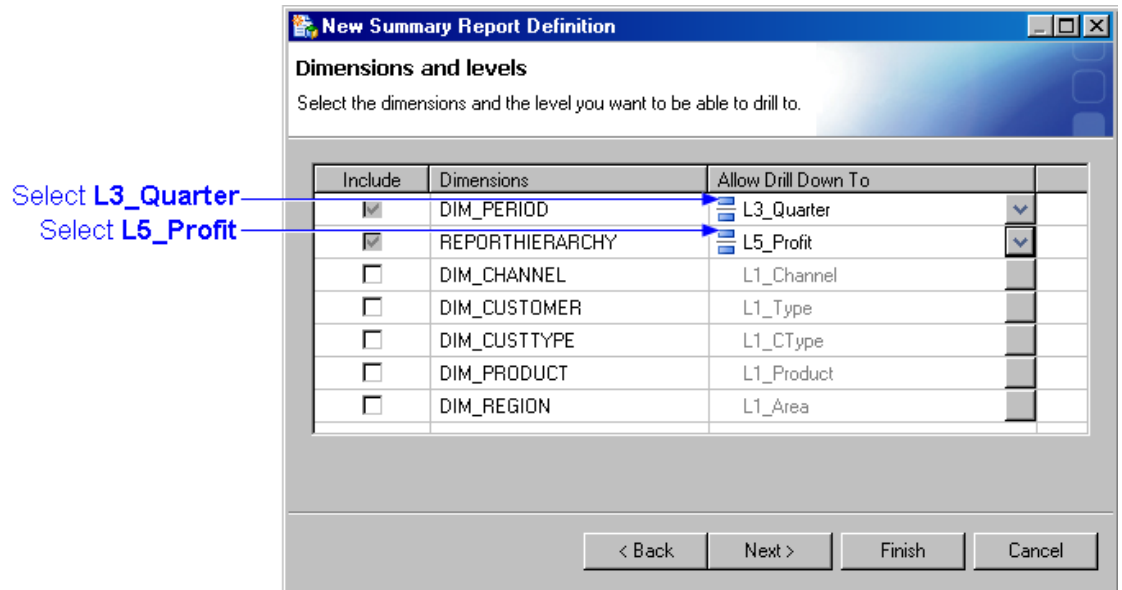
Location: /ProfitabilityManagement/Models/BabyBank/Reports

Report definition name: Baby Bank

< Back Next > Finish Cancel

4 Select the dimensions and dimension levels to be included in the report.

- ☐ Select **L3_Quarter** for the DIM_PERIOD dimension.
- ☐ Select **L5_Profit** for the REPORTHIERARCHY dimension.



New Summary Report Definition

Dimensions and levels

Select the dimensions and the level you want to be able to drill to.

Include	Dimensions	Allow Drill Down To
<input checked="" type="checkbox"/>	DIM_PERIOD	L3_Quarter
<input checked="" type="checkbox"/>	REPORTHIERARCHY	L5_Profit
<input type="checkbox"/>	DIM_CHANNEL	L1_Channel
<input type="checkbox"/>	DIM_CUSTOMER	L1_Type
<input type="checkbox"/>	DIM_CUSTTYPE	L1_CType
<input type="checkbox"/>	DIM_PRODUCT	L1_Product
<input type="checkbox"/>	DIM_REGION	L1_Area

< Back Next > Finish Cancel

Select L3_Quarter
Select L5_Profit

For each dimension to be included in the summary cube, specify the level of drill-down allowed.

The default drill-down depth is always the top of the dimension. In this case the top of the time dimension is 2006. If no additional drill-down was selected, the summary report would hold totaled values for 2006, with no additional detail available to drill down.

You can select to include any level of depth defined in your dimensional hierarchy to include in your report.

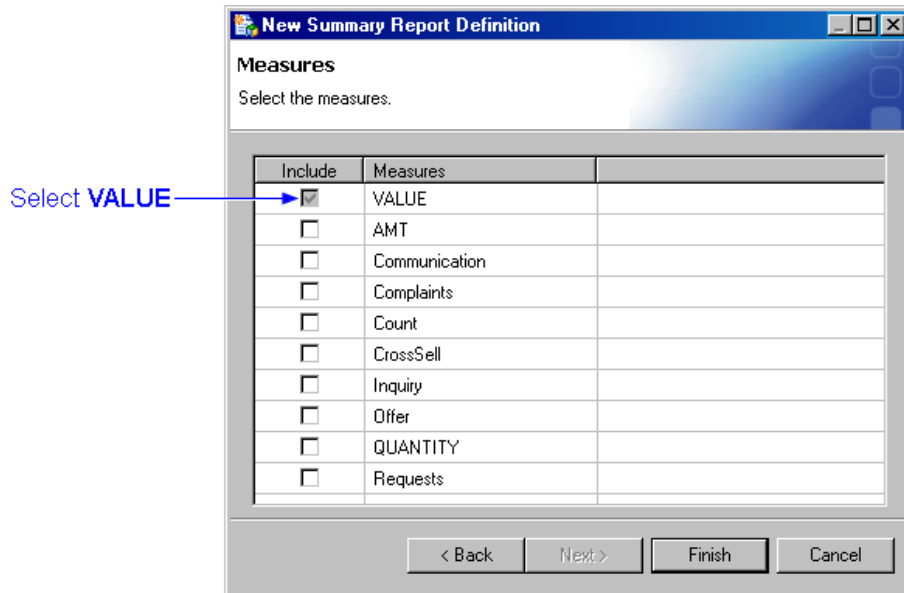
All decisions on the number of dimensions and the depth of drill-down in any selected dimension have a dramatic impact on the reporting performance. It is wise to limit summary reports to specific areas where business decisions will be made.

It is also wise to produce lots of individual summary reports meeting specific managers' needs focused upon specific dimensions rather than creating an all-encompassing summary report that has all dimensions and all drill-down levels.

5 Click **Next**.

6 Select **VALUE** as a measure to be included in the report.

The VALUE property is the default. It is the calculated cost for a transaction.

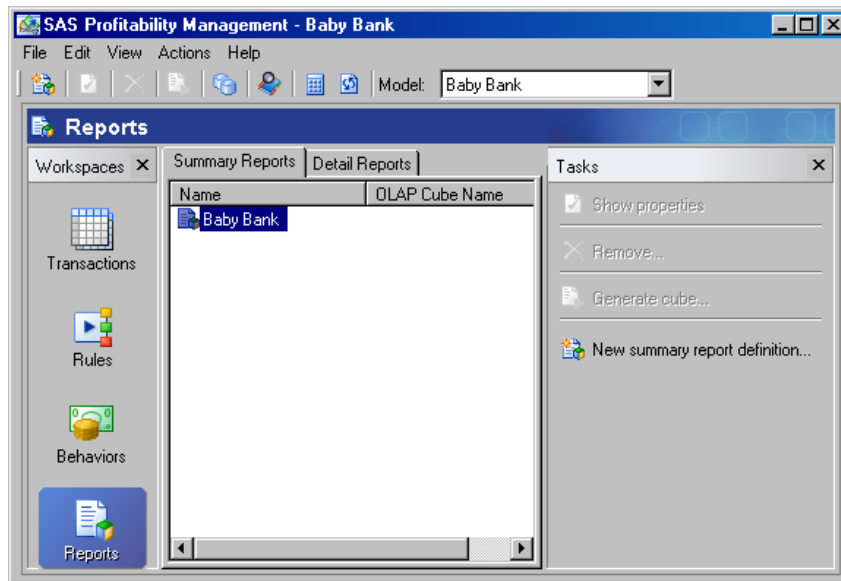


All numeric properties are available for inclusion in a summary report. The following are available:

- ❑ Source table transactions numeric properties, by source table group:
 - ABMCost (AMT, Count)
 - CallCenter (communication, complaints, count, crossSell, inquiry, offer, requests)
 - Revenue (AMT)
- ❑ Calculated results
 - Quantity – the result of the rules driver formula noted on each row of the transaction tables based on behaviors.
 - Value – the calculated result for the behavior source (revenue and costs) applied to the transaction details based on the rules defined. The method of its calculation depends upon whether the behavior table row that is accessed by an assignment rule contains a unit value or a total value, as we shall see in greater length in “Calculation – a Conceptual View” on page 76.

7 Click **Finish**.

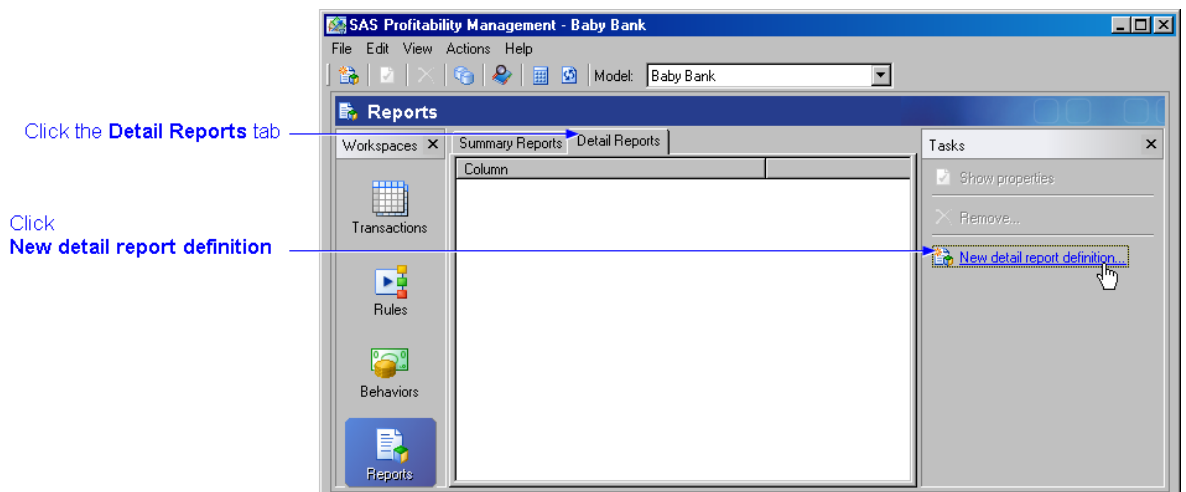
The report definition is added.



Define a Detail Report

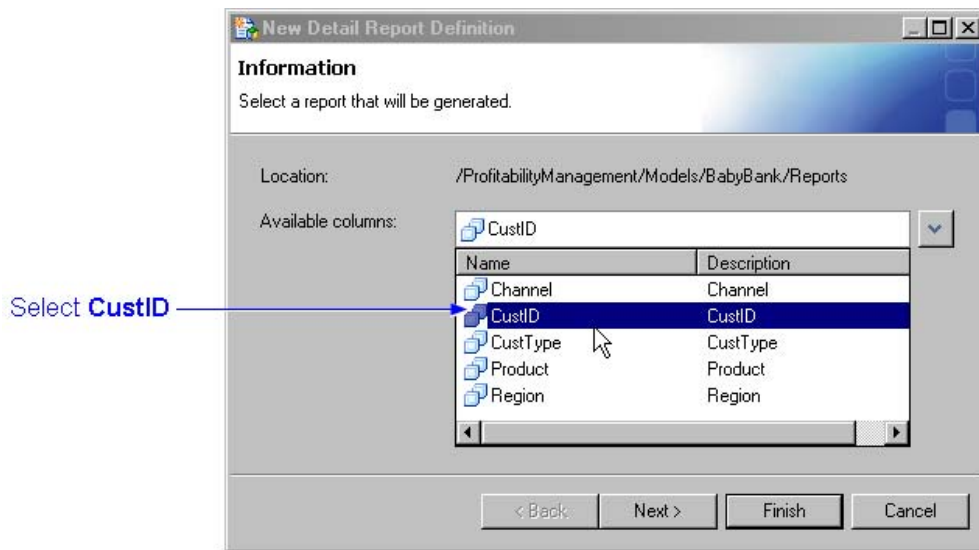
Detail reports produce a report based on a single dimension and by filtering a single value in that dimension. Detail reports are run from the SAS Profitability Management Web Client and create a cube on the fly.

- 1 Click the **Detail Reports** tab.
- 2 Click **New detail report definition**.



The New Detail Report Definition window opens.

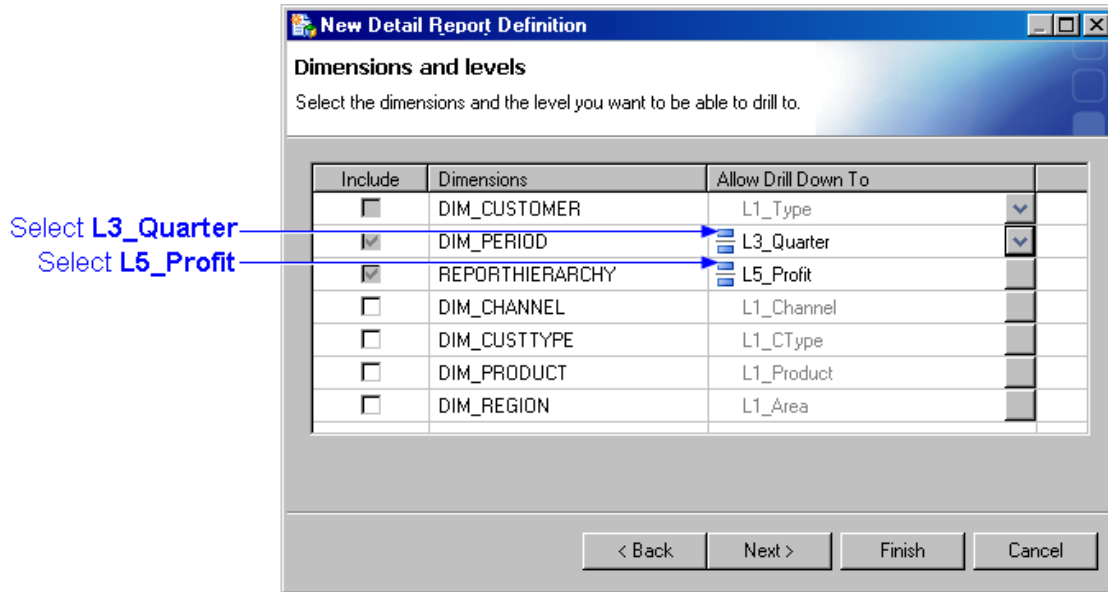
- 3 Select **CustID** as the column to be featured in the detail report, and then click **Next**.



When defining a detail report, you should choose the dimension that will most uniquely filter the result. A detail report results in a cube created on the fly. Selection logic is processed to filter the starting transactional content to the single customer selected.

The goal for quick reporting response time is to try to filter your result such that the selected answer has fewer than 1,000 records. So, while there are other dimensions in the model, it would be unwise to select any dimension other than customer, because the filtered results would be more than 1,000 records.

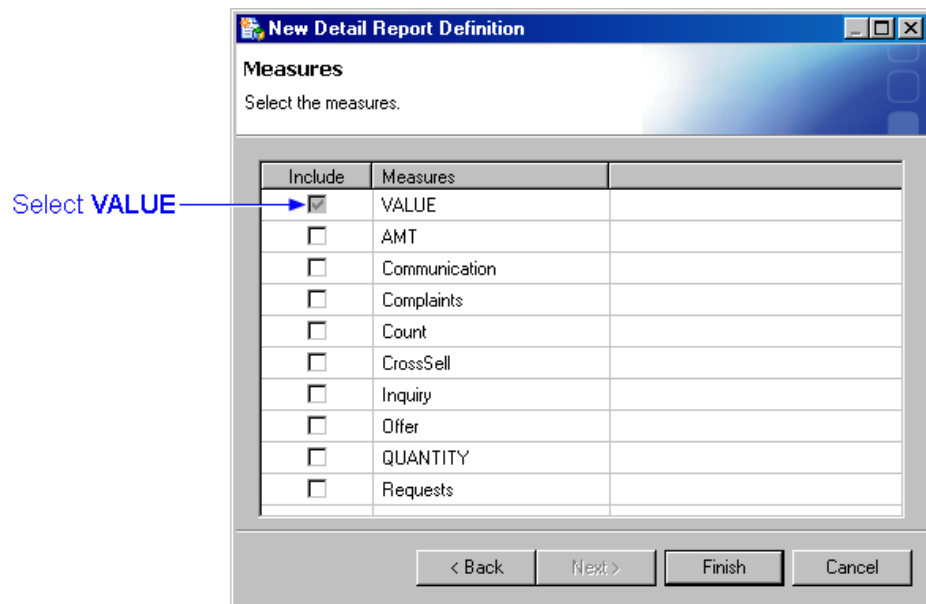
- 4 Click **Next**.
- 5 Select the dimensions and dimension levels to be included in the report.
 - ❑ Select **L3_Quarter** for the DIM_PERIOD dimension.
 - ❑ Select **L5_Profit** for the REPORTHIERARCHY dimension.



6 Click **Next**.

7 Select **VALUE** as a measure to be included in the report.

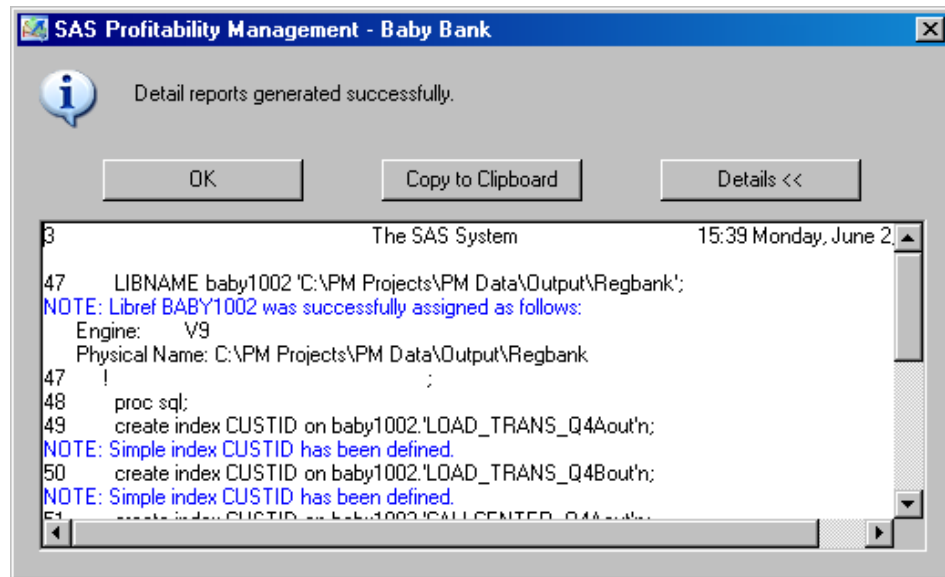
The VALUE property is the default. It is the calculated cost for a transaction.



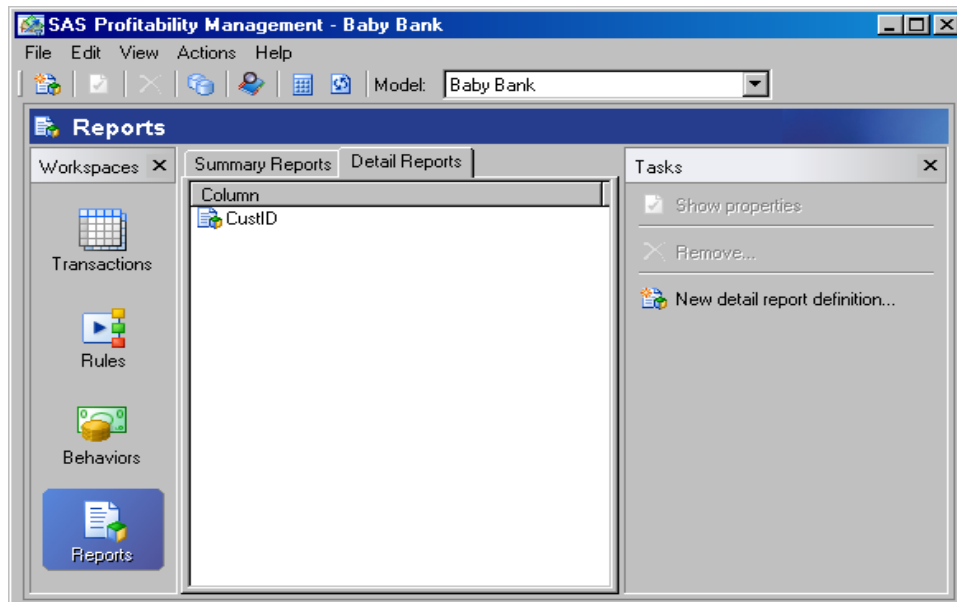
All of the numeric properties are available to be included in a report.

8 Click **Finish**.

The system processes all of the calculated transaction tables and adds an index for the dimension you have selected for detailed reporting. The SAS log notes that a simple index has been created. A dialog box displays the results.



And, the report definition is added to the list of available detail reports. The list of detail reports is the same list that will be available in the Web Report client.



CHAPTER 11

Calculate the Model

Calculate the Model 73

Calculation – a Conceptual View 76

Calculation Using a Unit Value 77

Calculation Using a Total Value 79

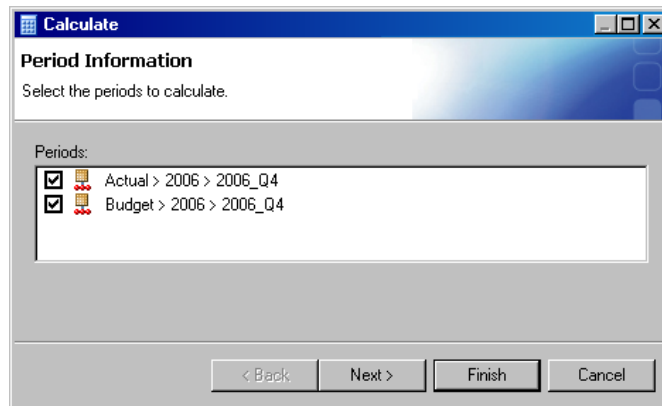
Output Tables Grow in Length 81

Calculate the Model

- 1 Select **Actions > Calculate Model**.

The Calculate window opens.

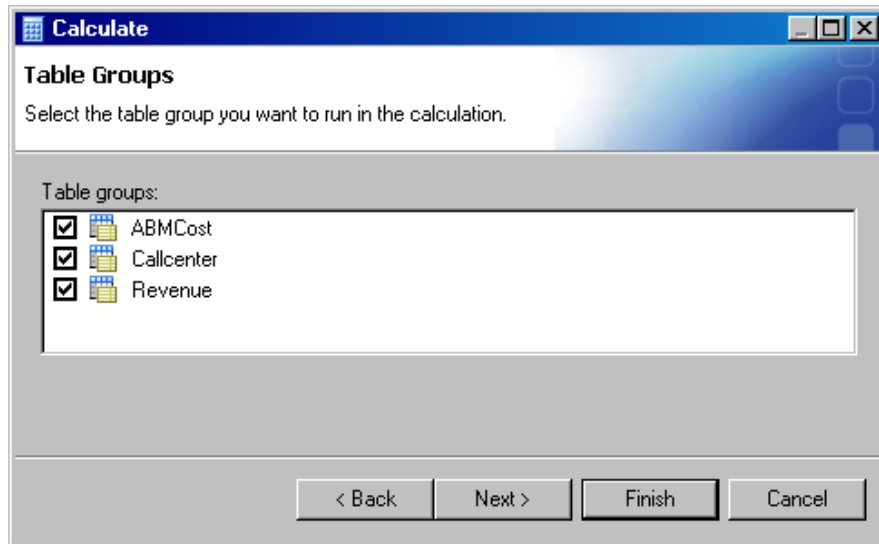
- 2 Select both periods to be calculated for the model, and then click **Next**.



Each transaction table represents a single period. When you are calculating a model, you do not need to recalculate all of the transaction tables. This is ideal for calculations for incremental periods. You can calculate January, for example, and then calculate February as a separate calculation. You never need to process a single period's transactions more than once as the months proceed through the year.

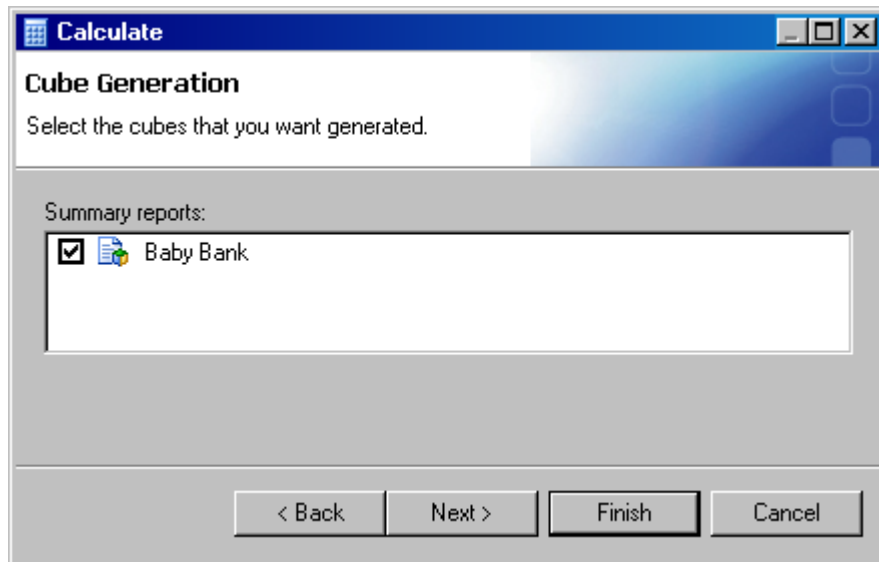
The summary reports and detail reports reflect transaction tables for time periods that have been calculated and that have been selected for cube inclusion in the analysis settings (see "Select Periods for the Cube" on page 47). So the generated cubes contain the complete details for calculated transaction tables across periods.

- 3 Select all three table groups to be calculated for the model, and then click **Next**.



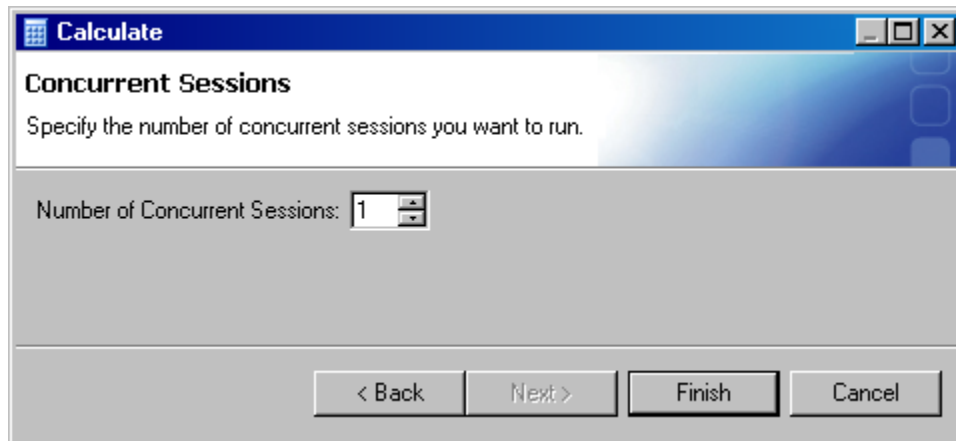
- 4 Select the cubes (summary reports) to be generated and then click **Next**.

The window shows **Baby Bank**, which is the name you assigned to your summary report.

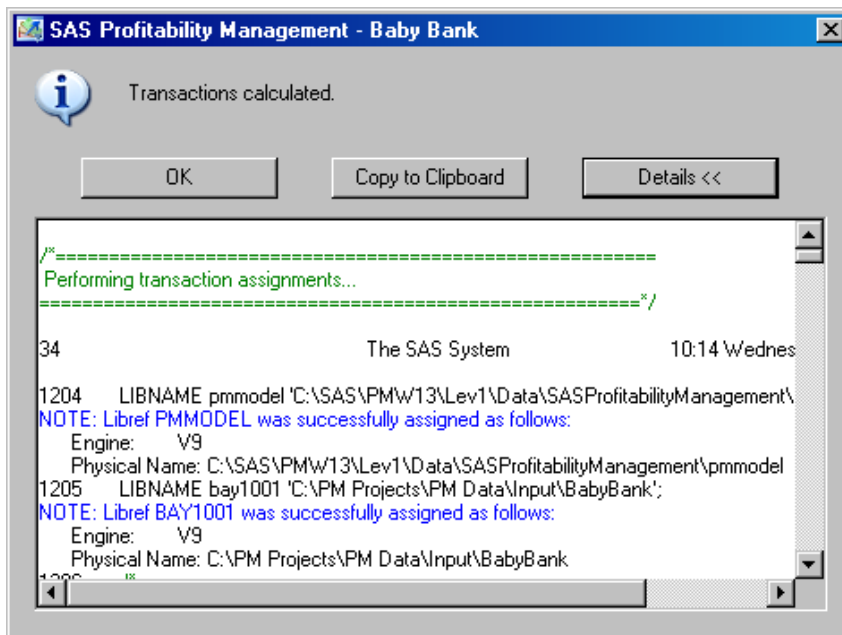


- 5 Select the number of concurrent sessions, and then click **Finish**.

SAS Profitability Management can start concurrent sessions to distribute the workload across multiple CPUs. One transaction is allocated to each session.



When the calculation and cube generation completes, you can view the SAS log.



- 6 Select **File > Exit** to close the application.

You are now finished working with the SAS Profitability Management rich client.

- 7 Verify the calculation process by reviewing the files created on the server.

Calculation result tables are stored in the directory where you defined the target destination LIBNAME. If you remember, we assumed that you created a directory on the server for this purpose named

C:\SAS\ProfitabilityManagement\Bank_Out.

Log on to the server and view the output files. In addition to creating the calculated transaction tables, the generation process creates **babybank.sas7bvew**. The analysis view name is used as the name of the

database view that is created to join the transaction output tables into a single virtual fact table that the OLAP cube is built from.

Name	Size	Type
babybank.sas7bview	13 KB	SAS Data Set View
callcenter_q4aout.sas7bdat	161 KB	SAS Data Set
callcenter_q4aout.sas7bndx	21 KB	SAS Data Set Index
callcenter_q4bout.sas7bdat	161 KB	SAS Data Set
callcenter_q4bout.sas7bndx	21 KB	SAS Data Set Index
load_trans_q4aout.sas7bdat	1,265 KB	SAS Data Set
load_trans_q4aout.sas7bndx	65 KB	SAS Data Set Index
load_trans_q4bout.sas7bdat	1,265 KB	SAS Data Set
load_trans_q4bout.sas7bndx	65 KB	SAS Data Set Index
revenue_q4aout.sas7bdat	801 KB	SAS Data Set
revenue_q4aout.sas7bndx	49 KB	SAS Data Set Index
revenue_q4bout.sas7bdat	801 KB	SAS Data Set
revenue_q4bout.sas7bndx	49 KB	SAS Data Set Index

Calculation – a Conceptual View

The following graphic shows a sample transaction table before and after a calculation. The calculation has added three new columns to the transaction table in the output directory:

Driver Quantity

is the number of units calculated by the driver formula. The calculation is based on whether the behavior-table row that is accessed by an assignment rule contains a unit value or a total value.

Calculated Value

is the calculated cost for a transaction. The method of its calculation depends upon whether the behavior table row that is accessed by an assignment rule contains a unit value or a total value.

Behavior

is the ID of the row from the Behavior table that is used in the calculation for a transaction.

Transaction table before calculation
(in the input directory)

Transaction table after calculation
(in the output directory)

These columns are new
as a result of calculate

Time	CustID	Product	CustType	Region	Channel	AMT	Count	AssignmentRule
2006_Q1_Actual	00005	CHK	WEM	Reg_849	ATM	51	1	ATM_CHK_Check balance
2006_Q1_Actual	00008	CHK	EBP	Reg_281	ATM	24	1	ATM_CHK_Check balance

Time	CustID	Product	CustType	Region	Channel	Count	AMT	AssignmentRule	Driver Quantity	Calculated Value	Behavior
2006_Q1_Actual	00005	CHK	WEM	Reg_849	ATM	1	51	ATM_CHK_Check balance	51	73.903605028	20003
2006_Q1_Actual	00008	CHK	EBP	Reg_281	ATM	1	24	ATM_CHK_Check balance	0.56	48.692101732	21066
2006_Q1_Actual	00005	CHK	WEM	Reg_849	ATM	1	51	ATM_CHK_Check balance	51	1.8941557562	20008
2006_Q1_Actual	00005	CHK	WEM	Reg_849	ATM	1	51	ATM_CHK_Check balance	1	84.952040189	23061
2006_Q1_Actual	00005	CHK	WEM	Reg_849	ATM	1	127.42806028	ATM_CHK_Check balance	1	127.42806028	21116
2006_Q1_Actual	00005	CHK	WEM	Reg_849	ATM	1	169.90408038	ATM_CHK_Check balance	1	169.90408038	22021
2006_Q1_Actual	00005	CHK	WEM	Reg_849	ATM	1	42.476020094	ATM_CHK_Check balance	1	42.476020094	20058
2006_Q1_Actual	00008	CHK	EBP	Reg_281	ATM	1	24	ATM_CHK_Check balance	0.29	25.215552682	21066
2006_Q1_Actual	00008	CHK	EBP	Reg_281	ATM	1	0.891367417	ATM_CHK_Check balance	24	0.891367417	20008
2006_Q1_Actual	00008	CHK	EBP	Reg_281	ATM	1	84.952040189	ATM_CHK_Check balance	1	84.952040189	23061
2006_Q1_Actual	00008	CHK	EBP	Reg_281	ATM	1	127.42806028	ATM_CHK_Check balance	1	127.42806028	21116
2006_Q1_Actual	00008	CHK	EBP	Reg_281	ATM	1	169.90408038	ATM_CHK_Check balance	1	169.90408038	22021
2006_Q1_Actual	00008	CHK	EBP	Reg_281	ATM	1	42.476020094	ATM_CHK_Check balance	1	42.476020094	20058
2006_Q1_Actual	00025	WEB	CHK	Reg_523	ATM	20	28.981805893	ATM_CHK_Check balance	20	28.981805893	20003
2006_Q1_Actual	00025	WEB	CHK	Reg_523	ATM	0.25	21.737545416	ATM_CHK_Check balance	0.25	21.737545416	21066
2006_Q1_Actual	00025	WEB	CHK	Reg_523	ATM	20	0.7428061789	ATM_CHK_Check balance	20	0.7428061789	20008
2006_Q1_Actual	00025	WEB	CHK	Reg_523	ATM	1	84.952040189	ATM_CHK_Check balance	1	84.952040189	23061
2006_Q1_Actual	00025	WEB	CHK	Reg_523	ATM	1	127.42806028	ATM_CHK_Check balance	1	127.42806028	21116
2006_Q1_Actual	00025	WEB	CHK	Reg_523	ATM	1	169.90408038	ATM_CHK_Check balance	1	169.90408038	22021
2006_Q1_Actual	00025	WEB	CHK	Reg_523	ATM	1	42.476020094	ATM_CHK_Check balance	1	42.476020094	20058
2006_Q1_Actual	00028	MRT	CHK	Reg_12	ATM	381	552.10340227	ATM_CHK_Check balance	381	552.10340227	20003
2006_Q1_Actual	00028	MRT	CHK	Reg_12	ATM	3.86	335.627770122	ATM_CHK_Check balance	3.86	335.627770122	21066
2006_Q1_Actual	00028	MRT	CHK	Reg_12	ATM	381	14.150457708	ATM_CHK_Check balance	381	14.150457708	20008
2006_Q1_Actual	00030	WEB	CHK	Reg_1078	ATM	99	143.45993917	ATM_CHK_Check balance	99	143.45993917	20003
2006_Q1_Actual	00030	WEB	CHK	Reg_1078	ATM	1.04	90.42818893	ATM_CHK_Check balance	1.04	90.42818893	21066
2006_Q1_Actual	00030	WEB	CHK	Reg_1078	ATM	99	3.6768905855	ATM_CHK_Check balance	99	3.6768905855	20008
2006_Q1_Actual	00030	WEB	CHK	Reg_1078	ATM	1	84.952040189	ATM_CHK_Check balance	1	84.952040189	23061
2006_Q1_Actual	00030	WEB	CHK	Reg_1078	ATM	1	127.42806028	ATM_CHK_Check balance	1	127.42806028	21116
2006_Q1_Actual	00030	WEB	CHK	Reg_1078	ATM	1	169.90408038	ATM_CHK_Check balance	1	169.90408038	22021
2006_Q1_Actual	00030	WEB	CHK	Reg_1078	ATM	1	42.476020094	ATM_CHK_Check balance	1	42.476020094	20058
2006_Q1_Actual	00032	WEB	CHK	Reg_858	ATM	142	205.77082184	ATM_CHK_Check balance	142	205.77082184	20003

Calculation Using a Unit Value

When a behavior table row contains a unit value, the driver formula calculates the number of units that are involved in each transaction that is picked out by the selection criteria. The number of units appears in the **DriverQty** field. Then, the cost for that transaction (Value) is determined by multiplying the number of units (driver quantity) by the unit cost (in the behavior table) of the transaction.

The following graphic shows a conceptual example of a calculation using a unit value from the behavior table.

1. Select the periods and table groups to calculate.

Time Dimension

ID	Year	Quarter
Q1	2008	1
Q2	2008	2

Transaction Table Group 2

Q1 table

CustID	Amount
1	\$4

Q2 table

CustID	Amount
3	\$2
3	\$3
5	\$4

Behavior Table

Time	ID	Name	TotalValue	UnitValue
Q1	Bx	Balance	-	\$1
Q1	By	Deposit	\$9	-
Q1	Bz	Transfer	\$2	-
Q2	Bx	Balance	-	\$2
Q2	By	Deposit	\$10	-
Q2	Bz	Transfer	\$3	-

2. In the behavior table, find all the behaviors for this period.

Rule Association Table

RuleName	Behavior	TableGroup
R1	By	1
R2	Bx	2

3. Using the behavior ID (Bx in this example), find the rule associated with that ID in the rule association table.
Behavior Bx is associated with rule R2.

Rules

Name	TableGroup	Criteria	Formula
R1	1	CustID=1	AMT
R2	2	CustID=3	AMT + 1

$$\begin{aligned} \$2 \times 3 &= \$6 \\ \$2 \times 4 &= \$8 \end{aligned} \quad \text{UnitValue} \times \text{Quantity} = \text{Value}$$

Q2 table (input for calculation)

CustID	AMT
3	\$2
3	\$3
5	\$4

Calculated transaction table

CustID	AMT	DriverQty	Value	Behavior
3	\$2	3	\$6	Bx
3	\$3	4	\$8	Bx
5	\$4			(not yet calculated)

$$\text{Quantity} = \text{AMT} + 1.$$

4. The criteria for rule R2 select all rows in the transaction table where **CustID=3**. The formula specifies that **DriverQuantity = AMT + 1**.
5. Because the behavior contains a **UnitValue**, the **Value** for the two rows is calculated as follows:
- UnitValue (\$2) times DriverQuantity (by the Formula $\text{AMT}+1 = 3$) equals Value (\$6)
 - UnitValue (\$2) times DriverQuantity (by the Formula $\text{AMT}+1 = 4$) equals Value (\$8)

Calculation Using a Total Value

When a behavior table row contains a total value, the driver formula is used to calculate the number of units involved in each transaction that is picked out by the selection criteria. Then, the cost for that transaction is determined in the following way:

- 1 The **total number of units** for all transactions (picked out by the selection criteria) is calculated by adding the number of units (as determined by the driver formula) for all the transactions picked out by the selection criteria.
- 2 The **cost per unit** is calculated by dividing the total value (in the behavior table row) by the total number of units.
- 3 The **cost for each transaction (Value)** is calculated by multiplying the cost per unit times the number of units (as determined by the driver formula) for that transaction.

The following graphic shows a conceptual example of a calculation using a total value from the behavior table.

1. Select the periods and table groups to calculate.

Calculate
Period Information
Select the periods to calculate.

Periods:

☐ Q1
☒ Q2

< Back Next > Finish Cancel

Calculate
Table Groups
Select the table group you want to run in the calculation.

Table groups:

☐ Table Group 1
☒ Table Group 2

< Back Next > Finish Cancel

Time Dimension

ID	Year	Quarter
Q1	2008	1
Q2	2008	2

Transaction Table Group 2

Product	Count	AMT
TRM	2	4
CHK	6	2
CHK	4	2

Behavior Table

Time	ID	Name	TotalValue	UnitValue
Q1	Bx	Balance	-	\$1
Q1	By	Deposit	-	\$9
Q1	Bz	Transfer	-	\$2
Q2	Bx	Balance	\$100	-
Q2	By	Deposit	-	\$10
Q2	Bz	Transfer	-	\$3

Rule Association Table

RuleName	Behavior	TableGroup
R1	By	1
R2	Bx	2

Rules

Name	TableGroup	Criteria	Formula
R1	1	Product=TRM	AMT
R2	2	Product=CHK	Count/Amt

Q2 table (input for calculation)

Product	Count	AMT
TRM	2	4
CHK	6	2
CHK	4	2

$$6 / 2 = 3 \text{ units}$$

$$+ 4 / 2 = 2 \text{ units}$$

$$10 / 2 = 5 \text{ total units}$$

$$(\text{TotalValue } \$100) / (\text{total units } 5) = \$20 \text{ per unit}$$

$$(3 \text{ units}) * (\$20 \text{ per unit}) = \$60$$

$$(2 \text{ units}) * (\$20 \text{ per unit}) = \$40$$

Calculated transaction table

Product	Count	AMT	DriverQty	Value	Behavior
TRM	2	4			
CHK	6	2	3	\$60	Bx
CHK	4	2	2	\$40	Bx

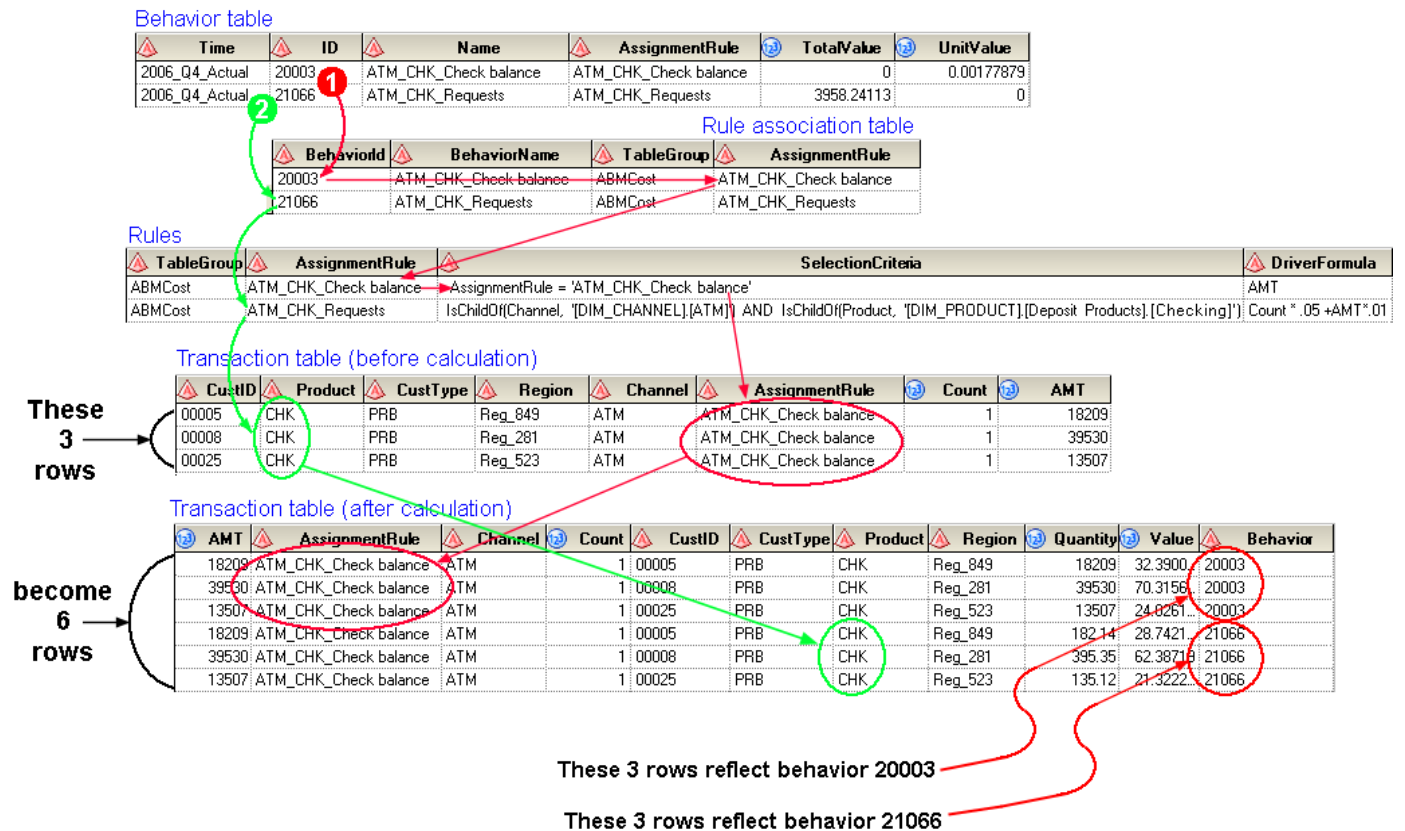
2. In the behavior table, find all the behaviors for this period.

3. Using the behavior ID (Bx in this example), find the rule associated with that ID in the rule association table.
Behavior Bx is associated with rule R2.

4. The criteria for rule R2 select all rows in the transaction table where Product=CHK.
The formula specifies that DriverQuantity = Count / AMT.

Output Tables Grow in Length

Something important to understand about calculation is that the number of rows in the calculated transaction table will generally increase. It will increase when multiple rules access the same rows in the input transaction table. In that case, an additional row is created in the output table each time a new rule accesses the same row in the input table. For example, the following graphic shows the second rule (ATM_CHK_Requests) picking out the same three rows in the input table as the first rule (ATM_CHK_Check balance). The second rule, therefore, adds three more rows to the output table – in addition to the three rows added by the first rule.



CHAPTER 12

View the Reports

View the Summary Report 83
Open the Baby Bank Report 83
See More Columns of Data 85
See More Rows of Data 86
Customize the View 88
Filter Data 89
Change the Appearance 92
Format Numbers 93
Add a Bar Chart to the Report 96
Customize the Bar Chart 97
Save the Report 100
View the Detail Report 101

View the Summary Report

After using the SAS Profitability Management rich client to calculate a model and generate reports, you use the SAS Profitability Management Web Report client to view the reports. Anyone with a browser and access to the Web can view the reports – provided, of course, that they have permission.

Open the Baby Bank Report

- 1 Log onto the SAS Web Report client.

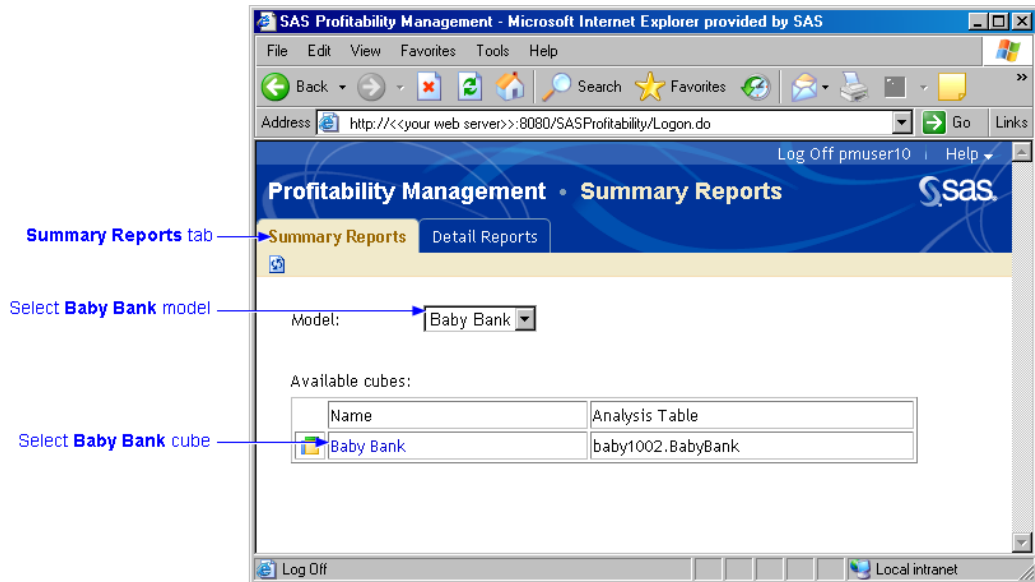
Access it with the URL: **http://<your web server>:8080/SASProfitability/**.



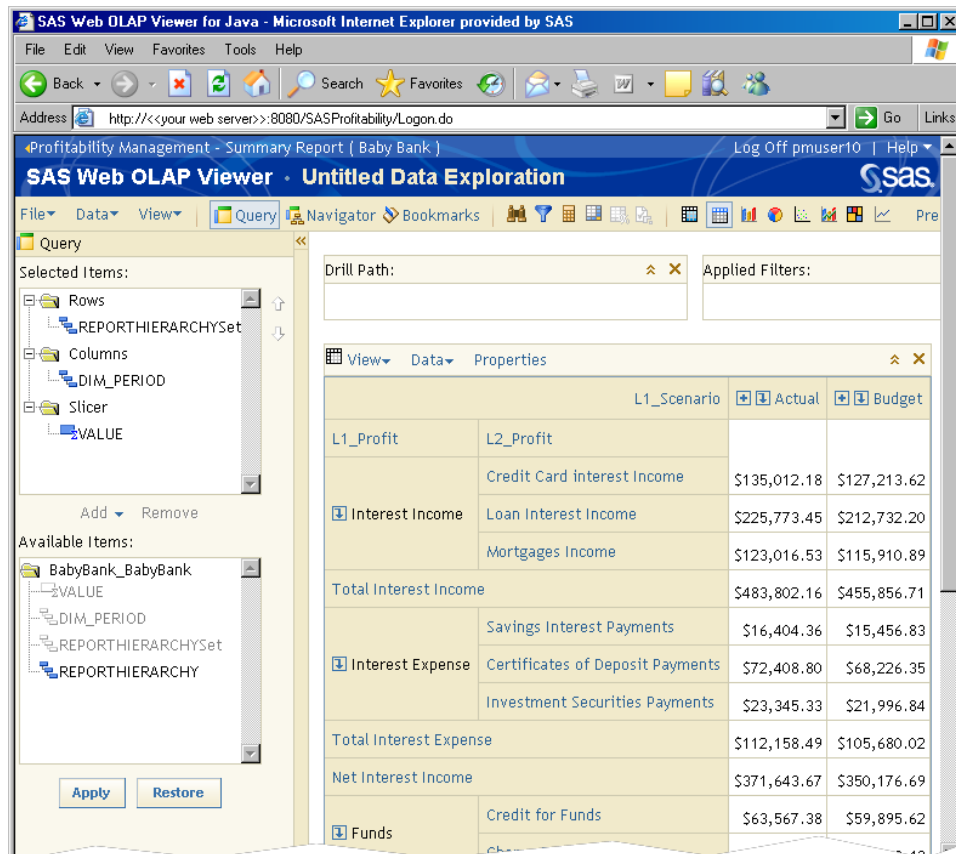
The user name and password are what you defined earlier using the SAS Management Console – the same user name you have used up to now in accessing the SAS Profitability Management rich client.

The SAS Web Report client opens at the **Summary Report** tab.

- 2 Select the **Baby Bank** model and click the **Baby Bank** cube.



The Baby Bank summary report opens in the SAS Web OLAP viewer.



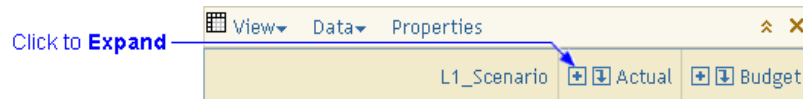
The profit and loss statement is displayed in table format. By default, the display shows:

- ❑ Rows: determined by the combination of the report layout table and the report hierarchy table.
- ❑ Columns: the time period dimension.
- ❑ Slicer: the Value property as calculated by the application of rules to the transaction tables.

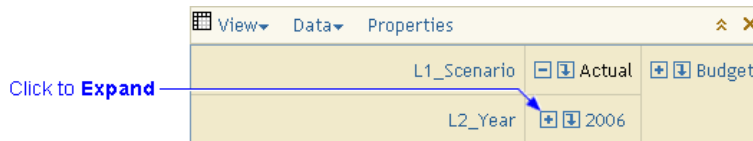
See More Columns of Data

See more detail in the time dimension by expanding the columns.

- 1 Click the plus sign next to **Actual** to expand the column.



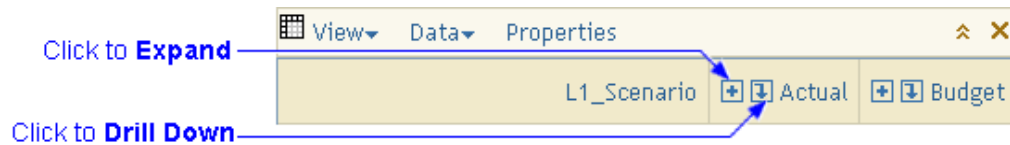
- 2 Click the plus sign next to **2006** to expand the year.



You should see a column for actual and a column for budget, as shown in the following graphic.

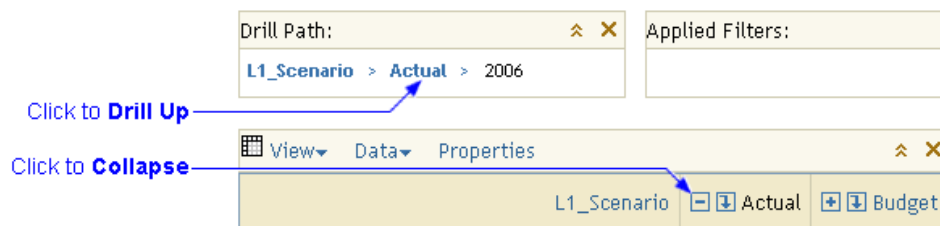
View Data Properties			
L1_Scenario		[-] Actual	[+] Budget
L2_Year		[-] 2006	
L3_Quarter		2006_Q4	
L1_Profit	L2_Profit		
[-] Interest Income	Credit Card Interest Income	\$135,012.18	\$127,213.62
	Loan Interest Income	\$225,773.45	\$212,732.20
	Mortgages Income	\$123,016.53	\$115,910.89
Total Interest Income		\$483,802.16	\$455,856.71
[-] Interest Expense	Savings Interest Payments	\$16,404.36	\$15,456.83
	Certificates of Deposit Payments	\$72,408.80	\$68,226.35
	Investment Securities Payments	\$23,345.33	\$21,996.84
Total Interest Expense		\$112,158.49	\$105,680.02
Net Interest Income		\$371,643.67	\$350,176.69
[-] Funds	Credit funds	\$63,567.45	\$57,421.12

Note: You can click the plus sign to expand, or click the down-arrow to drill down.



- ❑ Drilling down **replaces** the current header with the next lower-level header.
- ❑ Expanding shows the next lower-level header, and leaves the current header **in place**.

After expanding or drilling down, you can navigate in the opposite direction (collapsing or drilling up) by clicking in the appropriate place.



See More Rows of Data

- 1 Click the arrow at the bottom of the table to scroll to the last row of the table.

Click to scroll down

<div> <div></div> <div></div> </div> <div>Direct Product</div>	\$237,710.31	\$245,533.75
<div> <div></div> <div></div> </div> <div>Relationship Management</div>	\$119,697.16	\$93,059.64

Rows 1 - 20 of 24

Scroll to last row

- 2 Click the plus sign next to **Sales and Marketing Effort** to expand the row.

Click to Expand

<div> <div></div> <div></div> </div> <div>Relationship Management</div>	\$119,697.16	\$93,059.64
<div> <div></div> <div></div> </div> <div>Sales and Marketing Effort</div>	\$27,994.72	\$27,940.85
<div> <div></div> <div></div> </div> <div>Servicing Effort</div>	\$105,778.34	\$93,113.06
Total Non Interest Expense	\$507,072.21	\$474,621.11
Net Contribution	\$23,551.47	\$25,352.70

Rows 5 - 24 of 24

Click the plus sign next to **Cost to Retain** to expand it.

Click to Expand

<div><div></div><div></div></div> Relationship Management	\$119,697.16	\$93,059.64	
<div><div></div><div></div></div> Sales and Marketing Effort	<div><div></div><div></div></div> Cost to Retain	\$3,385.03	\$2,961.78
	<div><div></div><div></div></div> Cost to Sustain Business	\$24,609.69	\$24,979.07
<div><div></div><div></div></div> Servicing Effort		\$105,778.34	\$93,113.06
Total Non Interest Expense		\$507,072.21	\$474,621.11

Rows 5 - 24 of 25

- 3 Continue clicking the plus sign to fully expand that branch of the **Sales and Marketing Effort**. Your display should look like the following:

Select Product						\$249,559.64
+ Relationship Management					\$119,697.16	\$93,059.64
- Sales and Marketing Effort	- Cost to Retain	- CCT	- CRC	CCT_CRC_Cross_Up Sell	\$677.00	\$592.35
			- SCR	CCT_SCR_Cross_Up Sell	\$1,015.49	\$888.52
			- TPP	CCT_TPP_Cross_Up Sell	\$169.22	\$148.06
			- UCR	CCT_UCR_Cross_Up Sell	\$1,523.33	\$1,332.85
	+ Cost to Sustain Business				\$24,609.69	\$24,979.07
+ Servicing Effort					\$105,778.34	\$93,113.06
Total Non Interest Expense					\$507,072.21	\$474,621.11
Net Contribution					\$23,551.47	\$25,352.70

Rows 9 - 28 of 28

The levels available to drill to additional detail in the cube depend upon the number of dimension levels in the dimension hierarchy and the number of dimension levels that you select in the definition of the summary cube. This is explained further in “Report Hierarchy” and “Report Layout” starting on page 121.

Customize the View

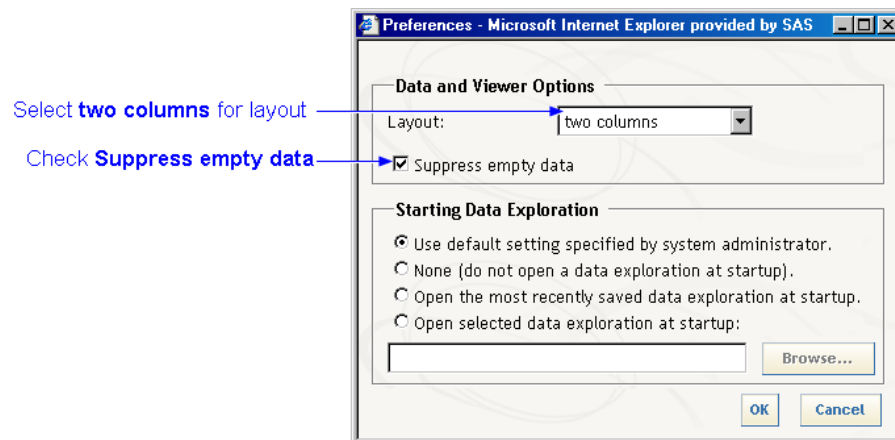
You can remove blank content from the report with the Preferences dialog box.

- 1 Click **Preferences** (near the top of the window).



The Preferences dialog box opens.

- 2 Select **two columns** for the layout.
- 3 Check **Suppress empty data**.



- 4 Click **OK**.

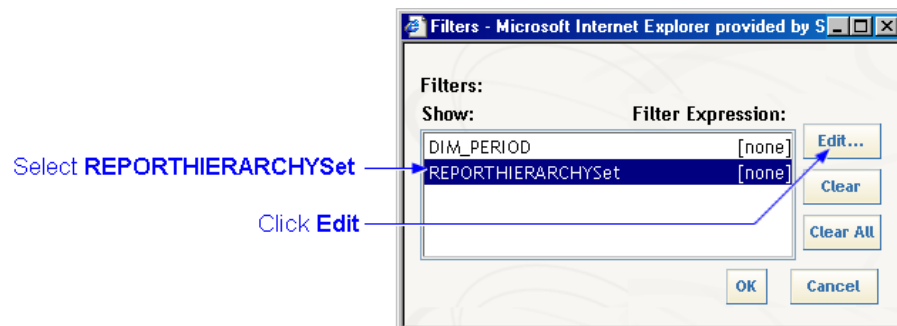
Filter Data

You can select specific values to display using a filter.

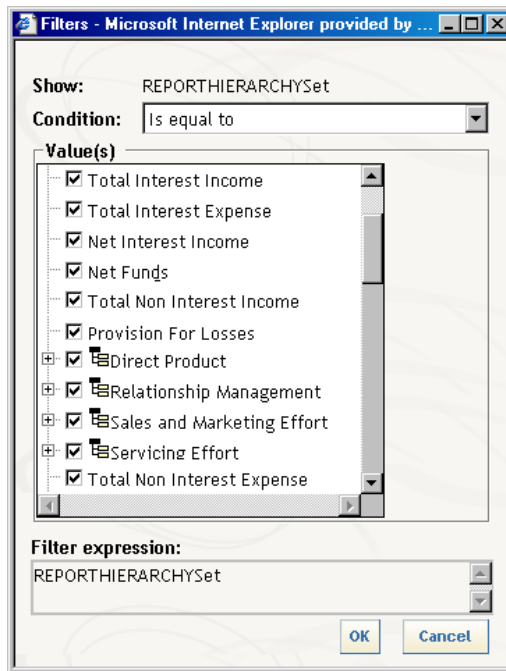
- 1 Click the **Filter** icon on the tool bar.



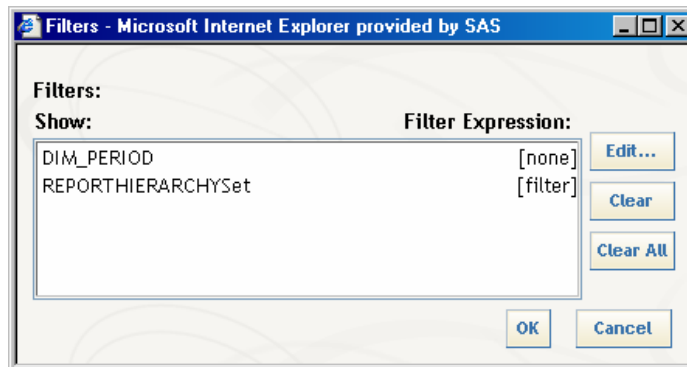
- 2 Select **REPORTHIERARCHY** to filter the report by its rows, and then click **Edit** to pick the rows.



- 3 Select the rows as shown in the following graphic (you will have to scroll to select them all).



After you click **OK**, the filter expression shows that you have set a filter on the REPORTHIERARCHYSet.



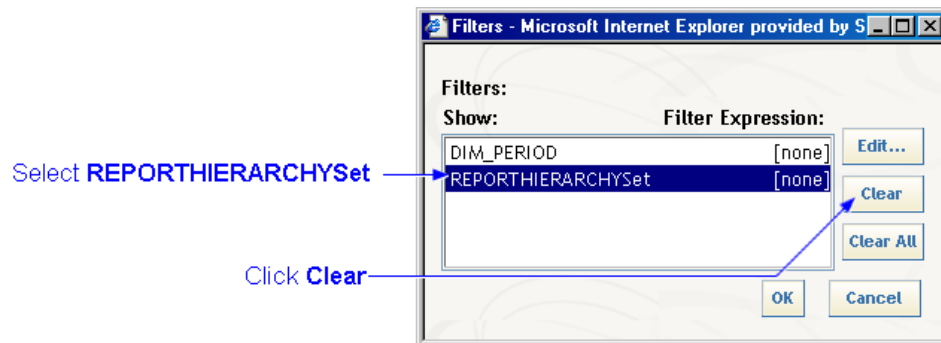
- 4 Click **OK**, and the report is filtered to show only the rows you have selected. Notice that the top of the report shows what filter is applied.

Drill Path:	Applied Filters:
	REPORTHIERARCHYSet: Total Interest Income, Total Interest Expense, Net Interest Income, Net Funds, Total Non Interest Income, Provision For Losses, Direct Product, Relationship Management, Sales and Marketing

View Data Properties		
L1_Scenario	Actual	Budget
L1_Profit		
Total Interest Income	\$483,802.16	\$455,856.71
Total Interest Expense	\$112,158.49	\$105,680.02
Net Interest Income	\$371,643.67	\$350,176.69
Net Funds	\$-15,891.81	\$-14,973.81
Total Non Interest Income	\$174,871.82	\$164,770.93
Provision For Losses	\$15,891.68	\$14,973.81
Direct Product	\$237,710.31	\$245,533.75
Relationship Management	\$119,697.16	\$93,059.64
Sales and Marketing Effort	\$27,994.72	\$27,940.85
Servicing Effort	\$105,778.34	\$93,113.06
Total Non Interest Expense	\$507,072.21	\$474,621.11

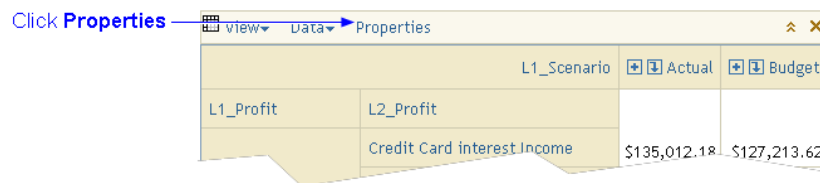
5 Clear the filter by doing the following:

- Click the **Filter** icon.
- Select **REPORTHIERARCHYSet**.
- Click **Clear**.
- Click **OK**.



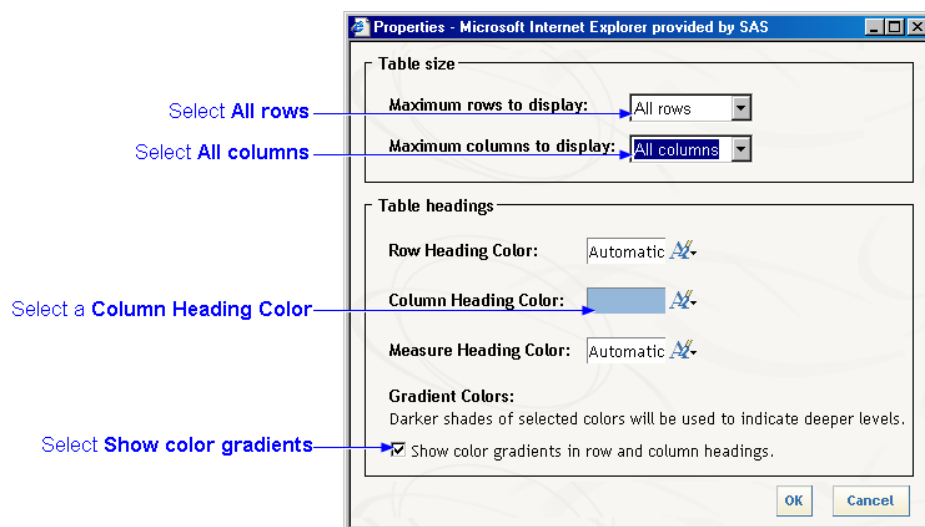
Change the Appearance

- 1 Click **Properties**.



The Properties dialog box opens.

- 2 Select the following properties, and then click **OK**.
 - ❑ Select **All rows** to display on the page.
 - ❑ Select **All columns** to display on the page.
 - ❑ Select a **Column Heading Color**.
 - ❑ Select **Show color gradients in row and column headings** to indicate depth of drilling with colors.



The appearance of the report changes accordingly.

		L1_Scenario	Actual	Budget
		L2_Year	2006	
		L3_Quarter	2006_Q4	
L1_Profit	L2_Profit			
Interest Income	Credit Card interest Income		\$135,012.18	\$127,213.62
	Loan Interest Income		\$225,773.45	\$212,732.20
	Mortgages Income		\$123,016.53	\$115,910.89
Total Interest Income			\$483,802.16	\$455,856.71

Format Numbers

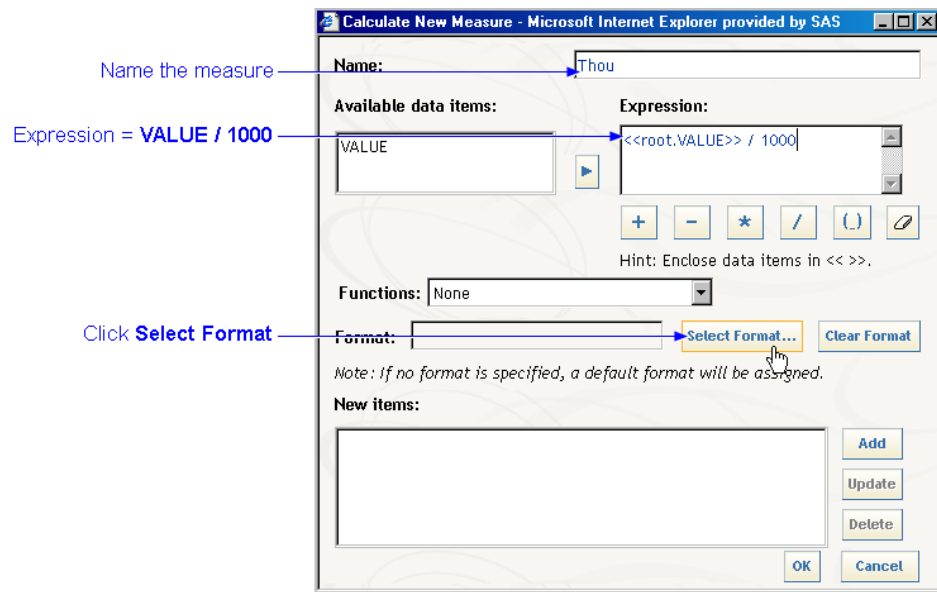
The default format for the numbers can be directly defined in the SAS Profitability Management rich client. You have already edited analysis settings to select the format DOLLAR15.2. If you want to create an additional custom format for your numbers in the SAS Web OLAP viewer (maybe to display values in thousands), you need to create a new calculated measure and apply a custom format to that measure.

- 1 Click the **Calculate New Measure** icon on the tool bar.



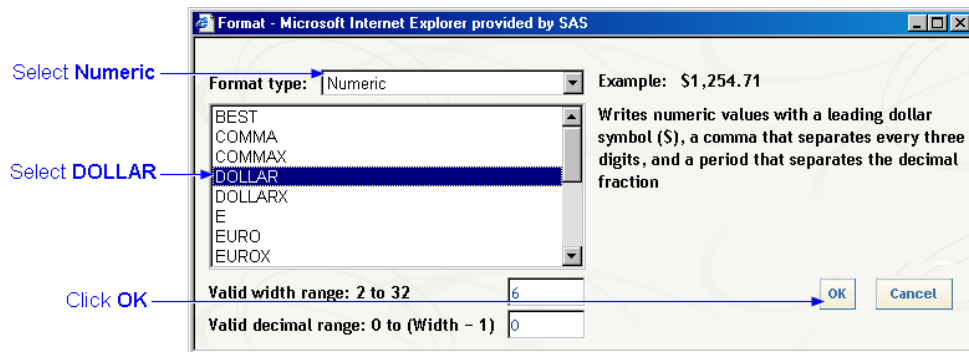
The Calculate New Measure dialog box opens.

- 2 Name the new measure **Thou**.
- 3 Assign the following calculation expression for the measure:
<<root.VALUE>>/1000.
- 4 Click **Select Format**.



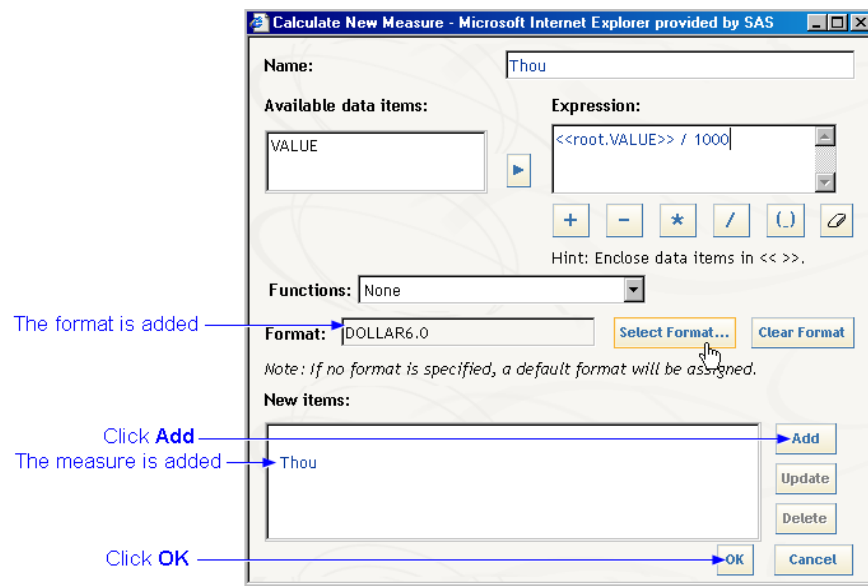
The Format dialog box opens.

- 5 Select **Numeric** as the format type.
- 6 Select **DOLLAR**.



- 7 Click **OK**.

The format is added to the Calculate New Measure dialog box.



- 8 Click **Add**, and then click **OK**.

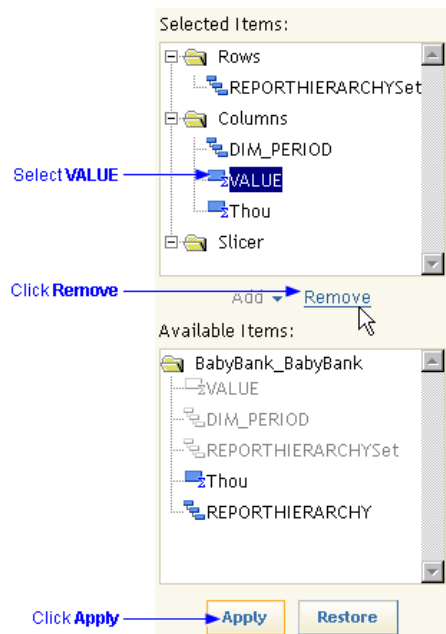
The Thou measure is automatically added to the columns of numbers displayed, as you can see in the following graphic.

Thousands

		Actual		Budget	
		VALUE	Thou	VALUE	Thou
L1_Profit	L2_Profit				
	Credit Card Interest Income	\$135,012.18	\$135	\$127,213.62	\$127
Interest Income	Loan Interest Income	\$225,773.45	\$226	\$212,732.20	\$213
	Income				

If you want only the Thou column to display, then do the following:

- 9 Select **VALUE** from the Selected items panel.
- 10 Click **Remove**.
- 11 Click **Apply**.



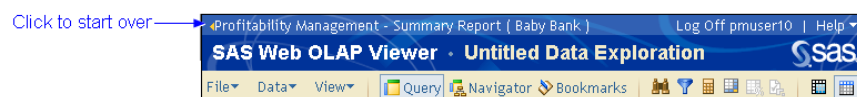
Only the value in thousands is displayed.

		L1_Scenario	Actual	Budget
			Thou	Thou
L1_Profit	L2_Profit			
Interest Income	Credit Card interest Income		\$135	\$127
	Loan Interest Income		\$226	\$213
	Mortgages Income		\$123	\$116
Total Interest Income			\$484	\$456

Add a Bar Chart to the Report

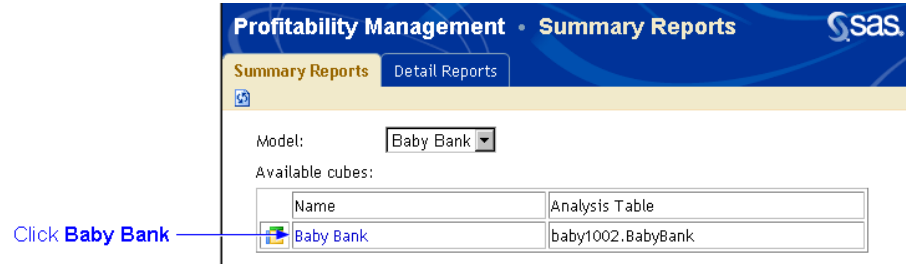
You can add bar charts and other graphs to your report. To illustrate this, let's first start over with a fresh view of the summary report.

- 1 Click **Profitability Management** at the top of the window to start over.



The list of available summary reports appears.

2 Click **Baby Bank**.

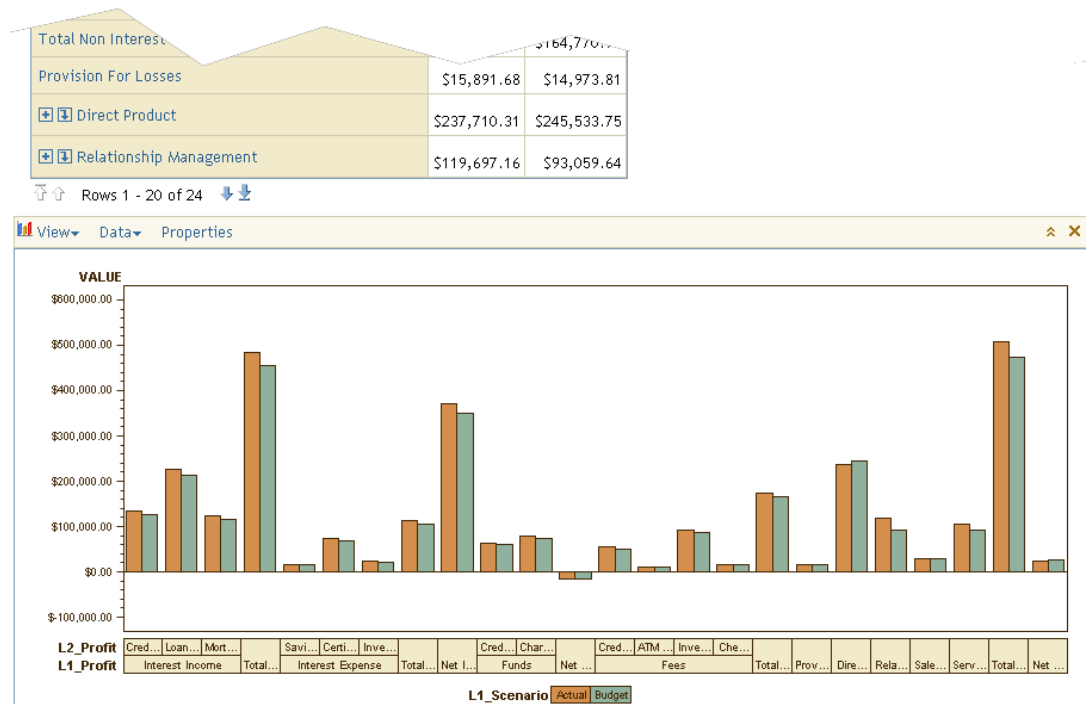


The Baby Bank cube opens.

3 Click the **Bar Chart** icon on the tool bar.

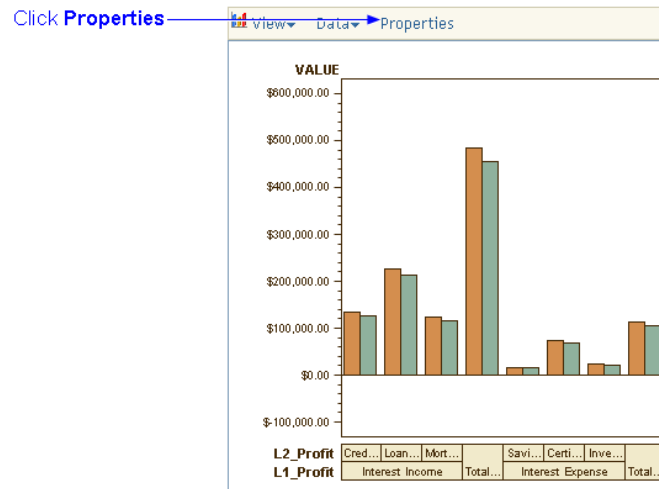


A bar chart is added to the bottom of your report.



Customize the Bar Chart

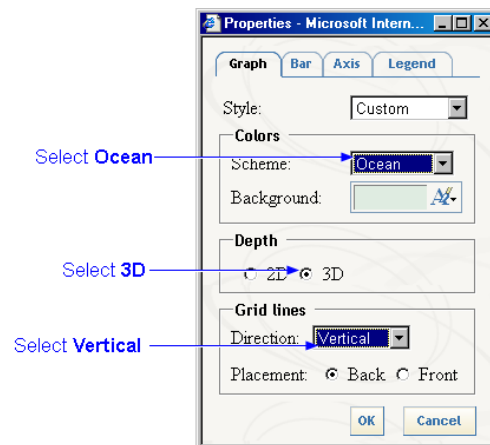
1 Click **Properties** above the bar chart.



The Properties window opens.

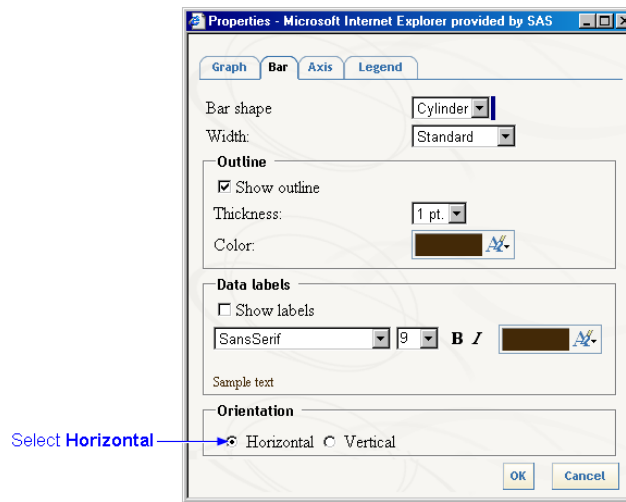
2 On the **Graph** tab, select the following:

- ☐ Select **Ocean** for style.
- ☐ Select **3D** for depth.
- ☐ Select **Vertical** for grid lines.



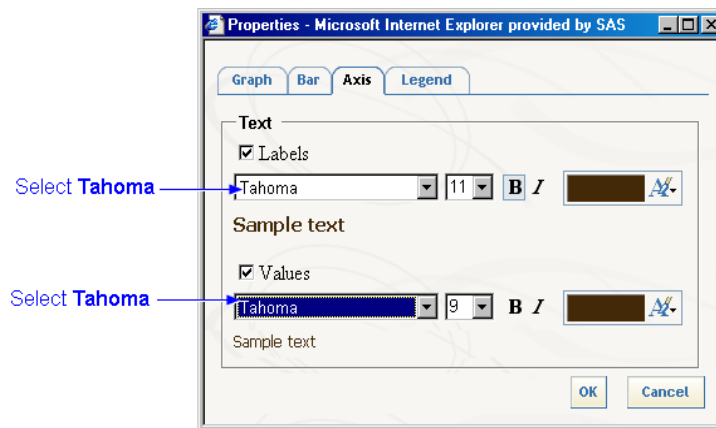
3 On the **Bar** tab, select the following:

- ☐ Select **Horizontal** for orientation.



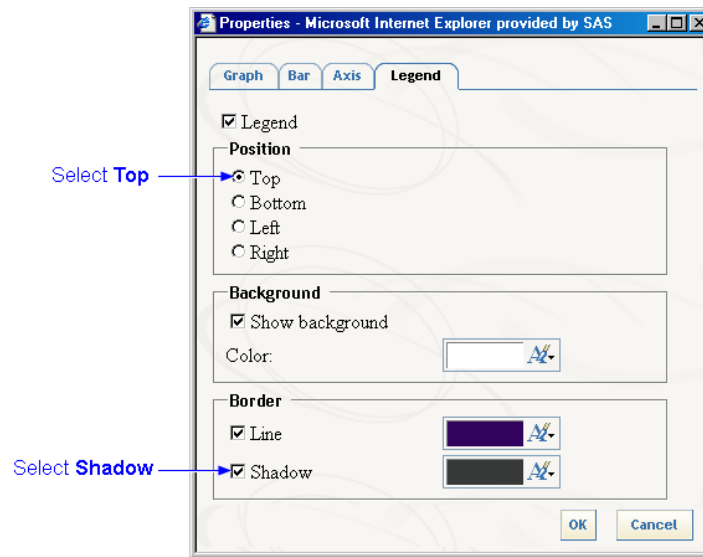
4 On the **Axis** tab, select the following:

- ☐ Select **Tahoma** for labels.
- ☐ Select **Tahoma** for values.



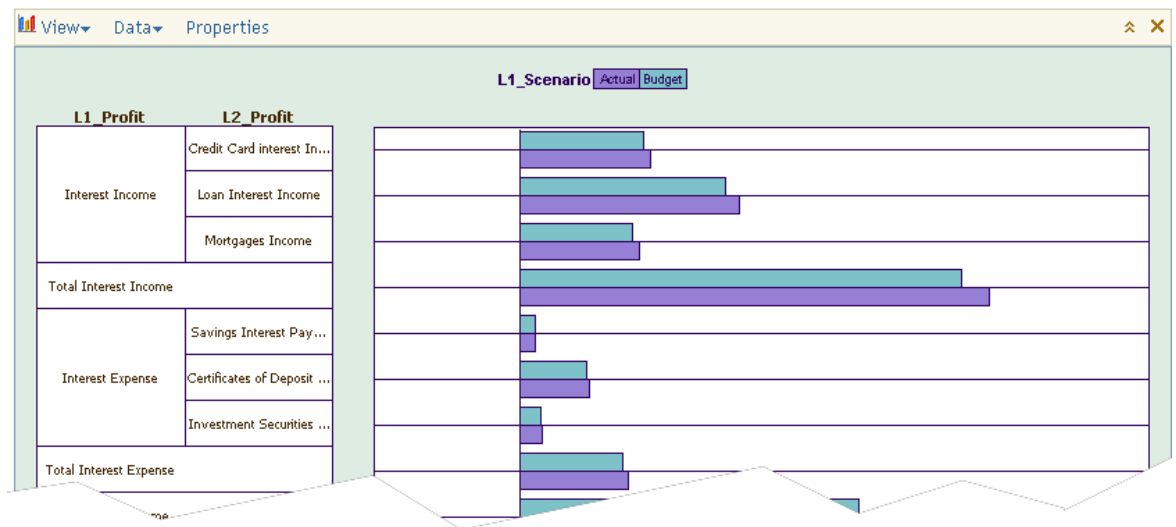
5 On the **Legend** tab, select the following:

- ☐ Select **Top** for position.
- ☐ Select **Shadow** for border.



6 Click **OK**.

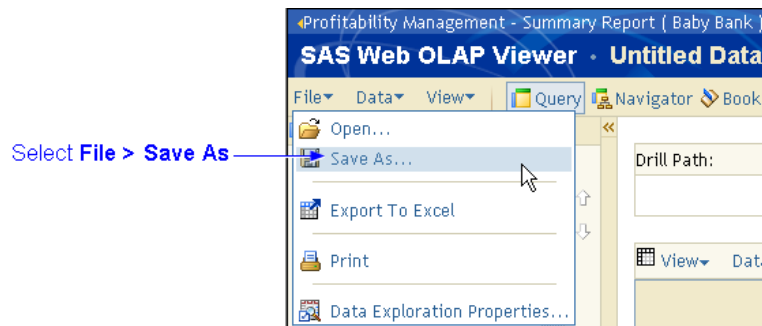
The bar chart is redrawn to your specifications.



Save the Report

When you have a report layout that you believe is useful, save it.

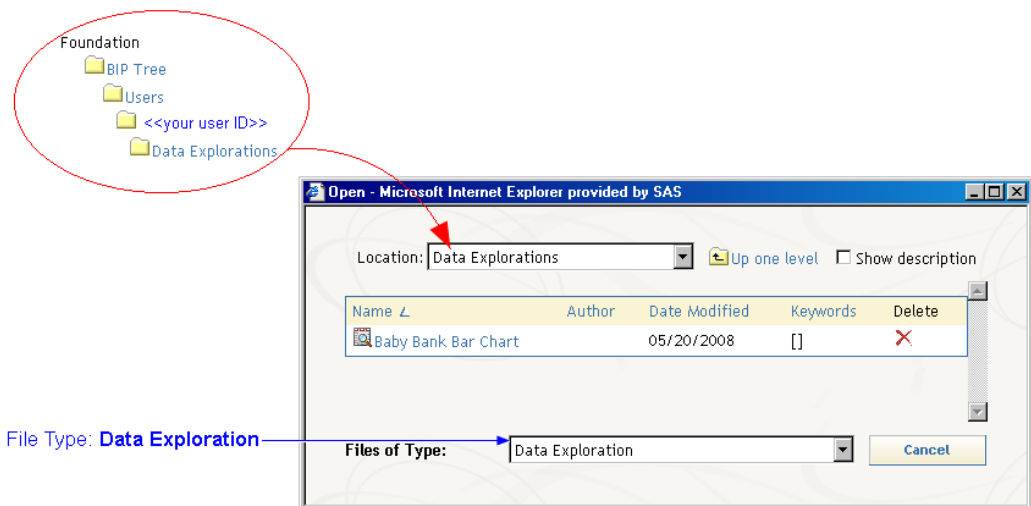
1 Select **File > Save As**.



- 2 Name the view, for example **Baby Bank Bar Chart**, and click **OK**.

The view is saved as a data exploration and can be opened again and shared with others for review. It is saved under your user profile in the BIP tree.

Foundation\BIP Tree\Users\<<your user ID>>\Data Explorations



Note: If the cube for your summary report is regenerated in the SAS Profitability Management rich client, then your saved data exploration views must be refreshed to display the new content.

View the Detail Report

- 1 Click **Profitability Management** at the top of the window to return to the SAS Profitability Management Web workspace.



- 2 Click the **Detail Reports** tab.

- 3 Select the **CustID** detail report that you defined previously (for the Baby Bank model).
- 4 Type **00018** in the **Search For** field to report on that customer, and then click **View**.

Click **Detail Reports**

Select **CustID**

Type **00018**

The report for customer 00018, Lynn York, is displayed.

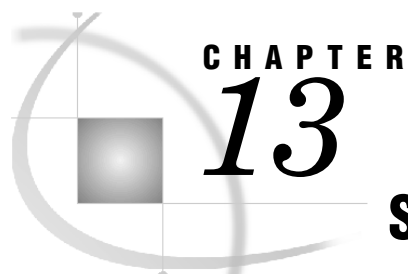
		L1_Scenario	Actual	Budget
L1_Profit	L2_Profit			
Interest Income	Credit Card interest Income		\$546.19	\$514.64
	Loan Interest Income		\$1,552.13	\$1,462.47
	Mortgages Income		.	.
Total Interest Income			\$2,098.32	\$1,977.11
Interest Expense	Savings Interest Payments		.	.
	Certificates of Deposit Payments		.	.
	Investment Securities Payments		.	.
Total Interest Expense			.	.
Net Interest Income			\$2,098.32	\$1,977.11

On review of Lynn York's profit and loss statement, you can see the details of her relationship with Baby Bank.

- ❑ You can notice that she has a credit card and a loan and has been paying a significant amount of credit card interest.
- ❑ You can notice she has also been paying a lot of unsecured loans interest income, but she does not have a mortgage.
- ❑ She might be a prime target for a marketing communication for a second mortgage to consolidate her existing debts.

- ❑ You can also notice that she does not have any interest expense, which indicates that her savings, CDs, and investments are not with Baby Bank. So she may be a prime target for marketing those products.
- ❑ When you scroll to the next page and see the bottom line, you notice that Lynn York is a very profitable customer for Baby Bank.

Net Interest Income		\$2,098.32	\$1,977.11
[-] Funds	Credit for Funds	\$394.78	\$371.97
	Charge For Funds	\$493.48	\$464.96
Net Funds		\$-98.70	\$-92.99
[-] Fees	Credit Card Fees	\$218.63	\$206.00
	ATM Fees	\$138.24	\$130.26
	Investment Account Fees	.	.
	Checking Account Fees	.	.
Total Non Interest Income		\$356.87	\$336.26
Provision For Losses		\$98.69	\$92.99
[+] [-] Direct Product		.	.
[+] [-] Relationship Management		\$97.30	\$102.06
[+] [-] Sales and Marketing Effort		\$10.46	\$9.15
[+] [-] Servicing Effort		.	.
Total Non Interest Expense		\$206.45	\$204.20
Net Contribution		\$2,150.04	\$2,016.18



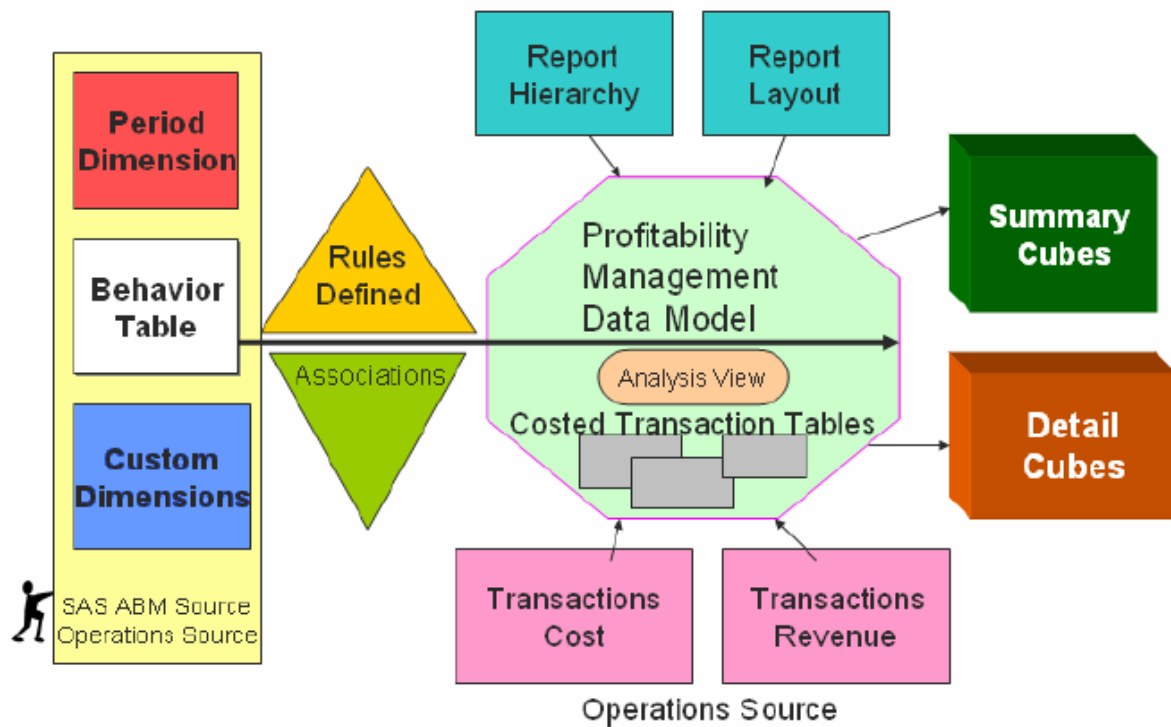
CHAPTER 13

Summary of Model Elements

<i>Data Requirements for the Model</i>	105
<i>Behavior Table</i>	106
<i>Period Dimension</i>	108
<i>Custom Dimensions</i>	109
<i>DIM_CHANNEL</i>	109
<i>DIM_CUSTOMER</i>	110
<i>DIM_CUSTYPE</i>	111
<i>DIM_PRODUCT</i>	112
<i>DIM_REGION</i>	113
<i>Rule Definition Table</i>	114
<i>Rule Selection Criteria</i>	115
<i>Text Values</i>	115
<i>Numerical Properties</i>	116
<i>Dimensional Member Values</i>	116
<i>Matching Fields in the Behavior Table</i>	118
<i>Rule Driver Formula</i>	119
<i>Single Numeric Property</i>	119
<i>Multiple Numeric Properties</i>	119
<i>Single Entered Value</i>	119
<i>SAS Numeric Expression</i>	119
<i>Rule/Behavior Associations</i>	119
<i>Report Hierarchy</i>	121
<i>Report Hierarchy to Resulting Report</i>	122
<i>Behavior Table to Report Hierarchy</i>	124
<i>Report Layout</i>	124
<i>Report Layout to Resulting Report</i>	125
<i>Summary: Behavior to Hierarchy to Layout to Report</i>	127
<i>Transaction Tables</i>	127
<i>ABMCost Group</i>	128
<i>CallCenter Group</i>	130
<i>Revenue Group</i>	130

Data Requirements for the Model

The following graphic shows the development sequence in SAS Profitability Management from the input of various data tables to the output of OLAP cubes. A detailed description of each of the input tables follows in this chapter.



For all data tables, data validation needs to occur before the content is loaded into SAS Profitability Management. Review source tables to eliminate special characters. The following list contains the reserved characters to remove. These characters are not valid in cubes, where profit and loss reporting will be done: . , ; ' ` : ? * & % \$! - + = () [] { } / \.

Behavior Table

The behavior source table holds all of the content to provide the cost and the revenue values that will be assigned to the transactional volumes based upon the defined rules.

The behavior table contains the following fields:

Name	Maximum Length	Description
Time	Char 32	The period for the transaction cost
ID	Char 32	The ID for the behavior
Name	Char 32	The name of the behavior
TotalValue	Num 8	The total source amount to be divided
UnitValue	Num 8	The unit cost for each transaction with this source

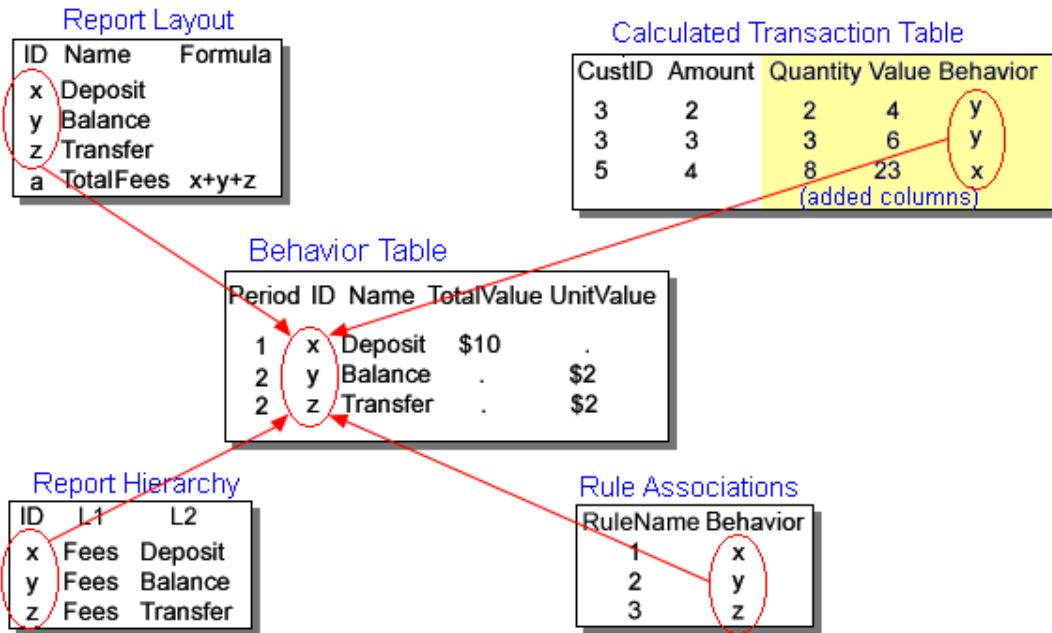
Note:

- ❑ Only one of the UnitValue and TotalValue columns can contain a non-zero value for any row of the behavior table.
- ❑ The order of the columns is arbitrary (you identify the columns during model definition).
- ❑ The name of the columns is arbitrary (but, if you use these names, they are mapped automatically).

The following graphic shows the behavior table, BEHAVIORS, for the Baby Bank model:

Time	ID	Name	AssignmentRule	TotalValue	UnitValue
2006_Q4_Actual	20003	ATM_CHK_Check balance	ATM_CHK_Check balance	0.0	0.0017787911310794572
2006_Q4_Actual	20004	ATM_CHK_Deposits	ATM_CHK_Deposits	0.0	2.1850842356574995E-4
2006_Q4_Actual	20005	ATM_CHK_Fund Transfer	ATM_CHK_Fund Transfer	0.0	9.832989430989614E-4
2006_Q4_Actual	20006	ATM_CHK-Withdrawals	ATM_CHK-Withdrawals	0.0	0.00468238417853818
2006_Q4_Actual	20007	ATM_CRC-Withdrawals	ATM_CRC-Withdrawals	0.0	0.0018701935080753186
2006_Q4_Actual	20009	ATM_REC_Deposits	ATM_REC_Deposits	0.0	1.3059913604501237E-4
2006_Q4_Actual	20010	ATM_SAV_Check balance	ATM_SAV_Check balance	0.0	0.002613492307100113
2006_Q4_Actual	20011	ATM_SAV_Deposits	ATM_SAV_Deposits	0.0	3.577399102893854E-4
2006_Q4_Actual	20012	ATM_SAV_Fund Transfer	ATM_SAV_Fund Transfer	0.0	0.0014447167682623832
2006_Q4_Actual	20013	ATM_SAV-Withdrawals	ATM_SAV-Withdrawals	0.0	0.0070761576843764015
2006_Q4_Actual	20014	ATM_TRM_Deposits	ATM_TRM_Deposits	0.0	7.436121552686411E-5
2006_Q4_Actual	20015	ATM_TRM-Withdrawals	ATM_TRM-Withdrawals	0.0	0.0015935121106617832
2006_Q4_Actual	20058	None_None_None	None_None_None	6152.4220541...	0.0
2006_Q4_Actual	21001	BRH_CHK_Inquiry	BRH_CHK_Inquiry	2238.3197977...	0.0
2006_Q4_Actual	21002	BRH_CRC_Inquiry	BRH_CRC_Inquiry	6651.4938345...	0.0
2006_Q4_Actual	21003	BRH_FBP_Inquiry	BRH_FBP_Inquiry	12508.491287...	0.0
2006_Q4_Actual	21004	BRH_OVD_Inquiry	BRH_OVD_Inquiry	4213.9720396...	0.0
2006_Q4_Actual	21005	BRH_REC_Inquiry	BRH_REC_Inquiry	769.31380737...	0.0
2006_Q4_Actual	21006	BRH_SAV_Inquiry	BRH_SAV_Inquiry	6325540...	0.0
2006_Q4_Actual	21007	BRH_SCB_Inquiry	BRH_SCB_Inquiry	81.5005...	0.0
2006_Q4_Actual	21009	BRH_SCB_Inquiry	BRH_SCB_Inquiry	81.5005...	0.0

The following graphic shows how a behavior table is related to other files:



Period Dimension

The period dimension table defines the time periods used in a model. Depending on your business reporting needs, you may have more or fewer levels in the period hierarchy.

A period dimensions table can contain the following fields:

Name	Maximum Length	Description
ID	Char 32	The identifying value for the period
L1_Scenario	Char 32	Top-level dimension member value (for example, Actual or Budget)
L2_Year	Char 32	Second-level dimension member value (for example, 2008)
L3_Quarter	Char 32	Third-level dimension member value (for example, 2008_Q4)

Note:

- ❑ The order of the columns is significant.
- ❑ The name of the columns is arbitrary.
- ❑ The number of levels is arbitrary.

The following graphic shows the period dimension table, DIM_PERIOD, for the Baby Bank model:

	 ID	 L1_Scenario	 L2_Year	 L3_Quarter
1	2006_Q4_Actual	Actual	2006	2006_Q4
2	2006_Q4_Budget	Budget	2006	2006_Q4

Custom Dimensions

A definition table must be loaded for each dimension used in the SAS Profitability Management model and in your transactional tables. Transaction tables have a column for each custom dimension defining the crossing where transactional values are collected. All dimension names must be a single word.

The Baby Bank model contains the following custom dimensions:



- ☐ Channel
- ☐ Customer
- ☐ CusType
- ☐ Product
- ☐ Region.

DIM_CHANNEL

The following table shows the channel dimension. It is a one-level table that defines the following channels:

L1_Channel
ATM
BRH
Call Center

The following graphic shows the entire table contents:

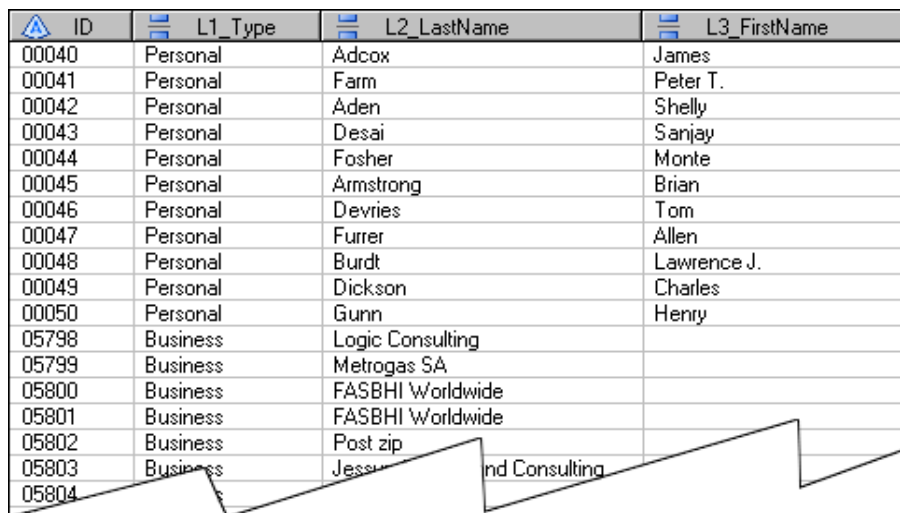
 ID	 L1_Channel
ATM	ATM
BRH	BRH
CCT	Call Center

DIM_CUSTOMER

The following table shows a portion of the contents of the DIM_CUSTOMER dimension. You can see that the table defines two types of customers: personal and business. For personal customers, the table contains both last name and first name. For business customers, the last name contains the name of the business, and the **FirstName** field is blank.

L1_Type	L2_LastName	L3_FirstName
Personal	Adcock	James
	Farm	Peter T.
	Aden	Shelly
Business	Logic Consulting	
	Metrogas SA	
	FASHBI Worldwide	

The following graphic shows part of the contents of the DIM_CUSTOMER table:






ID	L1_Type	L2_LastName	L3_FirstName
00040	Personal	Adcox	James
00041	Personal	Farm	Peter T.
00042	Personal	Aden	Shelly
00043	Personal	Desai	Sanjay
00044	Personal	Fosher	Monte
00045	Personal	Armstrong	Brian
00046	Personal	Devries	Tom
00047	Personal	Furrer	Allen
00048	Personal	Burd	Lawrence J.
00049	Personal	Dickson	Charles
00050	Personal	Gunn	Henry
05798	Business	Logic Consulting	
05799	Business	Metrogas SA	
05800	Business	FASBHI Worldwide	
05801	Business	FASBHI Worldwide	
05802	Business	Post zip	
05803	Business	Jessu	nd Consulting
05804			

DIM_CUSTYPE

The following table represents the contents of DIM_CUSTYPE. It shows the levels in the dimension.

L1_CType	L2_CType
Personal	Retail Consumer Banking
	Small Business Banking
Business	Private Banking
	Corporate Banking

The following graphic shows the entire contents of DIM_CUSTYPE.

 ID	 L1_CType	 L2_CType
RCB	Personal	Retail Consumer Banking
SBB	Business	Small Business Banking
PRB	Personal	Private Banking
CRB	Business	Corporate Banking

DIM_PRODUCT

The follow table represents the contents of DIM_PRODUCT.

L1_Product	L2_Product
Credit Products	Secured/Mortgages
	Unsecured
Deposit Products	Checking
	Recurring
	Savings
	Term
Fee-Based Products	
Other Products	
Revolving Credit Products	Credit Cards
	Overdrafts
Third-Party Products	

The following graphic shows the entire contents of DIM_PRODUCT.

ID	L1_Product	L2_Product
CRP	Credit Products	
DEP	Deposit Products	
FBP	Fee Based Products	
OTP	Other Products	
RCP	Revolving Credit Products	
TPP	Third Party Products	
SCR	Credit Products	Secured/Mortgages
UCR	Credit Products	Un secured
CHK	Deposit Products	Checking
REC	Deposit Products	Recurring
SAV	Deposit Products	Savings
TRM	Deposit Products	Term
CRC	Revolving Credit Products	Credit Cards
OVD	Revolving Credit Products	Overdrafts

DIM_REGION

The following table represents only a portion of the DIM_REGION dimension. It is included here to help you understand the level structure. The region dimension has four levels.

Area	Country	State	City
North America	Canada	Ontario	Don Mills
			Metcalfe
		Quebec	St. Hubert Quebec
			St. Laurent
			Town of Mont Royal
		Saskatchewan	Sheffield
	Mexico	Coahuila	Saltillo
		Mexico	Cuauhtemoc
			Colinia Granada
			Polanco
South America	Brazil	Brazil	Uberlandia - Mg
		Pe Brazil	Itapissuma
		Sao Paulo	Ribeirao Preto
			Sao Paulo
	Costa Rica	Costa Rica	San Jose
	Ecuador	Ecuador	Guayaquil
	Uruguay	Montevideo	Montevideo
	Venezuela	Caracas	Altamira

The following graphic shows the corresponding part of the actual table contents.

ID	L1_Area	L2_Country	L3_State	L4_City
Reg_156	North America	Canada	Ontario	Don Mills
Reg_163	North America	Canada	Ontario	Metcalfe
Reg_183	North America	Canada	Quebec	St. Hubert Quebec
Reg_186	North America	Canada	Quebec	St. Laurent
Reg_188	North America	Canada	Quebec	Town Of Mont Royal
Reg_191	North America	Canada	Saskatchewan	Sheffield
Reg_193	North America	Mexico	Coahuila	Saltillo
Reg_194	North America	Mexico	Mexico	Cuauhtemoc
Reg_196	North America	Mexico	Mexico	Colinia Granada
Reg_202	North America	Mexico	Mexico	Polanco
Reg_215	South America	Brazil	Brazil	Uberlandia - Mg
Reg_218	South America	Brazil	Pe Brazil	Itapissuma
Reg_220	South America	Brazil	Sao Paulo	Ribeirao Preto
Reg_221	South America	Brazil	Sao Paulo	Sao Paulo
Reg_229	South America	Costa Rica	Costa Rica	San Jose
Reg_230	South America	Ecuador	Ecuador	Guayaquil
Reg_236	South America	Uruguay	Montevideo	Montevideo
Reg_237	South America	Venezuela	Caracas	Altamira
Reg_245	USA_NE	USA	Connecticut	Enfield
Reg_246	USA_NE	USA	Connecticut	Hartford
Reg_248	USA_NE	USA	Connecticut	Meriden

Rule Definition Table

A rule provides

- ❑ Selection criteria that determine which rows are selected in the transaction tables for calculation of values (revenue or cost).
- ❑ driver formula that provides the calculation necessary to assign an amount for the source values (cost or revenue) from the behavior table to selected records in the transaction tables.

Rules can be defined through an interactive method in the SAS Profitability Management client user interface, or rules can be imported from a specific source table, using the appropriate rules definitional syntax to provide the selection logic and the driver quantities.

The rule definition table contains the following fields:

Name	Maximum Length	Description
TableGroup	Char 64	The name of the transaction table group to which the assignment rule will be applied
AssignmentRule	Char 64	The name of the assignment rule; this must be unique within the model
SelectionCriteria	Char 1024	The expression defining the filter logic
DriverFormula	Char 1024	The formula defining the calculated quantity

Note:

- ❑ The order of the columns is arbitrary (you identify them during import).
- ❑ The name of the columns is arbitrary (but, if you use these names, they are automatically mapped during import).

The following graphic shows the rule import table, RULES, for the Baby Bank model:

	TableGroup	AssignmentRule	SelectionCriteria	DriverFormula
1	ABMCost	buzz	AssignmentRule = 'buzz'	Count/Amt
2	ABMCost	ATM_CHK_Check balance	AssignmentRule = 'ATM_CHK_Check balance'	AMT
3	ABMCost	ATM_CHK_Deposits	AssignmentRule = 'ATM_CHK_Deposits'	AMT
4	ABMCost	ATM_CHK_Fund Transfer	AssignmentRule = 'ATM_CHK_Fund Transfer'	AMT
5	ABMCost	ATM_CHK_Requests	IsChildOf(Channel, '[DIM_CHANNEL].[ATM]') AND IsChildOf(Product, '[DI... Count * .05 +AMT'.01	
6	ABMCost	ATM_CHK_Withdrawals	AssignmentRule = 'ATM_CHK_Withdrawals'	AMT
7	ABMCost	ATM_CRC_Withdrawals	AssignmentRule = 'ATM_CRC_Withdrawals'	AMT
8	ABMCost	ATM_REC_Deposits	AssignmentRule = 'ATM_REC_Deposits'	AMT
9	ABMCost	ATM_REC_Requests	IsChildOf(Channel, '[DIM_CHANNEL].[ATM]') AND IsChildOf(Product, '[DI... Count	
10	ABMCost	ATM_SAV_Check balance	AssignmentRule = 'ATM_SAV_Check balance'	AMT
11	ABMCost	ATM_SAV_Deposits	AssignmentRule = 'ATM_SAV_Deposits'	AMT
12	ABMCost	ATM_SAV_Fund Transfer	AssignmentRule = 'ATM_SAV_Fund Transfer'	AMT
13	ABMCost	ATM_SAV_Requests	IsChildOf(Channel, '[DIM_CHANNEL].[ATM]') AND IsChildOf(Product, '[DI... Count	
14	ABMCost	ATM_SAV_Withdrawals	AssignmentRule = 'ATM_SAV_Withdrawals'	AMT
15	ABMCost	ATM_TRM_Deposits	AssignmentRule = 'ATM_TRM_Deposits'	Complaints
16	ABMCost	ATM_TRM_Requests	IsChildOf(Channel, '[DIM_CHANNEL].[ATM]') AND IsChildOf(Product, '[DI... CrossSell	
17	ABMCost	ATM_TRM_Withdrawals	AssignmentRule = 'ATM_TRM_Withdrawals'	Inquiry
18	CallCenter	CCT_TRM_Requests	IsChildOf(Channel, '[DIM_CHANNEL].[Call Center]') AND IsChildOf(Product, '[DI... Requests	
19	CallCenter	CCT_TRM_Withdrawals	AssignmentRule = 'CCT_TRM_Withdrawals'	Complaints
20	CallCenter	CCT_TRM_Withdrawals	AssignmentRule = 'CCT_TRM_Withdrawals'	CrossSell
84	CallCenter	CCT_TRM_Complaints	IsChildOf(Channel, '[DIM_CHANNEL].[Call Center]') AND IsChildOf(Product, '[DI... Complaints	
85	CallCenter	CCT_TRM_Inquiry	IsChildOf(Channel, '[DIM_CHANNEL].[Call Center]') AND IsChildOf(Product, '[DI... Inquiry	
86	CallCenter	CCT_TRM_Requests	IsChildOf(Channel, '[DIM_CHANNEL].[Call Center]') AND IsChildOf(Product, '[DI... Requests	
87	CallCenter	CCT_UCR_Complaints	IsChildOf(Channel, '[DIM_CHANNEL].[Call Center]') AND IsChildOf(Product, '[DI... Complaints	
88	CallCenter	CCT_UCR_Cross_Up Sell	IsChildOf(Channel, '[DIM_CHANNEL].[Call Center]') AND IsChildOf(Product, '[DI... CrossSell	
89	CallCenter	CCT_UCR_Inquiry	IsChildOf(Channel, '[DIM_CHANNEL].[Call Center]') AND IsChildOf(Product, '[DI... Inquiry	
90	CallCenter	CCT_UCR_Requests	IsChildOf(Channel, '[DIM_CHANNEL].[Call Center]') AND IsChildOf(Product, '[DI... Requests	
91	Revenue	ATM Fees	ID = '12002'	AMT
92	Revenue	Certificates of Deposit Payme...	ID = '11002'	AMT
93	Revenue	Charge For Funds	ID = '13002'	AMT
94	Revenue	Checking Account Fees	ID = '12004'	AMT
95	Revenue	Credit Card Fees	ID = '12001'	AMT
96	Revenue	Credit Card interest Income	ID = '10001'	AMT
97	Revenue	Credit for Funds	ID = '13001'	AMT
98	Revenue	Investment Account Fees	ID = '12003'	AMT
99	Revenue	Investment Securities Payme...	ID = '11003'	AMT
100	Revenue	Loan Interest Income	ID = '10002'	AMT
101	Revenue	Mortgages Income	ID = '10003'	AMT
102	Revenue	Provision For Losses	ID = '14001'	AMT
103	Revenue	Savings Interest Payments	ID = '11001'	AMT

Rule Selection Criteria

Rule selection criteria filter the transaction table rows that are calculated. You can filter by

- ☐ text values
- ☐ numerical properties
- ☐ dimensional member values
- ☐ matching fields in the behavior table

Text Values

Operators:	=, not = And, Or
Syntax:	text property = 'filter value'
Example:	AssignmentRule = 'ATM_CHK_Check balance'

Numerical Properties

Operators:	=, not =, <, <=, >, >= And, Or
Syntax:	column operator value
Example:	AMT > 1000

Dimensional Member Values

Operators:	IsChildOf And, Or
Syntax:	IsChildOf (source column, [dimension table].[value])
Example:	IsChildOf(channel, '[dim_channel].[ATM]')
Example:	IsChildOf(channel, '[dim_channel].[ATM]') And IsChildOf(product, '[dim_product].[deposit products].[checking]')

The **IsChildOf** operator allows you to select from any point in a dimensional hierarchy tree, and all children of that hierarchy are selected as matching. In the following graphic, these selection criteria pick out Secured Mortgages (SCR) and Unsecured (UCR) because they are both children of Credit Products (and are in the ATM channel):

```
IsChildOf(Product, '[DIM_PRODUCT].[Credit Products]') AND
IsChildOf(Channel, '[DIM_CHANNEL].[ATM]')
```

Note: This rule does not exist in the Baby Bank tutorial model. It is shown here for the purpose of illustration.

Properties - ATM_OTP_Manage Transactions

General

Rule Name:
New assignment rule

Step 1: Select a table group:
ABMCost

Step 2: Set the selection criteria:
IsChildOf(Product, '[DIM_PRODUCT].[Credit Products]') AND IsChildOf(Channel, '[DIM_CHANNEL].[ATM]')

Step 3: Define the driver formula:
Count

OK Cancel

DIM_PRODUCT dimension table

ID	L1_Product	L2_Product
CRP	Credit Products	
DEP	Deposit Products	
FBP	Fee Based Products	
OTP	Other Products	
RCP	Revolving Credit Products	
TPP	Third Party Products	
SCR	Credit Products	Secured/Mortgages
UCR	Credit Products	Un secured
CHK	Deposit Products	Checking
REC	Deposit Products	Recurring
SAV	Deposit Products	Savings
TRM	Deposit Products	Term
CRC	Revolving Credit Products	Credit Cards
OVD	Revolving Credit Products	Overdrafts

DIM_CHANNEL dimension table

ID	L1_Channel
ATM	ATM
BRH	BRH
CCT	Call Center

Transaction table - LOAD_TRANS_Q4A

CustID	Product	CustType	Region	Channel	AssignmentRule	Count	AMT
00005	CHK	PRB	Reg_849	ATM	ATM_CHK_Check balance	1	18209
00007	SCR	PRB	Reg_645	ATM	BRH_SCR_Close Account	1	563
00016	SCR	PRB	Reg_947	ATM	BRH_SCR_Close Account	1	168
00032	SCR	RCB	Reg_858	ATM	BRH_SCR_Close Account	1	858
00038	UCR	PRB	Reg_426	ATM	BRH_UCR_Close Account	1	134
00043	UCR	PRB	Reg_617	ATM	BRH_UCR_Close Account	1	93
05800	UCR	CRB	Reg_798	ATM	BRH_UCR_Close Account	1	59.69
05816	UCR	CRB	Reg_680	BRH	BRH_UCR_Close Account	1	233
05822	UCR	CRB	Reg_116	BRH	BRH_UCR_Close Account	1	99
05798	CHK	PRB	Reg_431	ATM	ATM_CHK_Check balance	1	18209

Matching Fields in the Behavior Table

Operators:	MatchColumns And
Syntax:	MatchColumns(Transaction(column_name), Behavior(column_name))
Example:	MatchColumns(Transaction(Product), Behavior(Product))

The **match Behavior** operator enables you to compare fields between the behavior table and a transaction table. The selection criteria are met when the value of every matching column in the transaction table row equals the value of the corresponding matching column in the behavior table row.

For example, “Product” in a transaction table can have a corresponding matching column “Product” in the behavior table. Note that the “Product” field in the behavior table is not a required field. You can add additional fields to the behavior table for matching purposes.

Both text and numeric column types are supported for matching fields. You can combine multiple match behaviors with the AND operator.

Add Assignment Rule

Rule Name: MatchBehavior

Step 1: Select a table group: ABMCost

Step 2: Set the selection criteria: MatchColumns(Transaction(Product), Behavior(Product))

Step 3: Define the driver formula: Count *.05 + AMT *.01

Transaction table

	CustID	Product	CustType	Region	Channel	AMT	Count
1	00005	CHK	WEM	Reg_849	ATM	51	1
2	00008	CRC	EBP	Reg_281	ATM	24	1
3	00025	SAV	WEB	Reg_523	ATM	20	1
4	00028	MRT		Reg_12	ATM	381	1

Behavior table

Time	ID	Name	TotalValue	UnitValue	Product
2006_Q4_Actual	20004	ATM_CHK_Deposits	0.0	2.1850842356574995E-4	CHK
2006_Q4_Actual	20005	ATM_CHK_Fund Transfer	0.0	9.832989430989614E-4	SAV
2006_Q4_Actual	20006	ATM_CHK-Withdrawals	0.0	0.00468238417853818	CHK
2006_Q4_Actual	20007	ATM_CRC-Withdrawals	0.0	0.0018701935080753186	CRC
2006_Q4_Actual	20009	Deposits	0.0	5.504501237E-4	SAV

Rule Driver Formula

The result of a driver formula is the *driver quantity*. The driver formula can be based on

- ☐ a single numeric property
- ☐ multiple numeric properties
- ☐ a single entered value
- ☐ a SAS numeric expression.

Single Numeric Property

Example:	AMT
-----------------	-----

Multiple Numeric Properties

Example:	COUNT * .05 + AMT * .01
-----------------	-------------------------

Single Entered Value

Example:	15
-----------------	----

SAS Numeric Expression

The driver formula can consist of any SAS numeric expression. Columns referenced in the formula must be in the input transaction table.

Example:	MAX(Requests, Complaints)*.25
Example:	EUROCURR(AMT, 'eur', 'frf')
Example:	IF CustID = 'C00650' THEN (0.54*Distance) ELSE IF CustID = 'C00692' THEN (0.74*Distance) ELSE (0.23*Distance)

Rule/Behavior Associations

The association table is used to correlate rules with behaviors. Each rule can be used by multiple behaviors, but each behavior can only have one rule. The association process can be done interactively in the user interface or the associations can be defined based upon an import table to load.

The rule associations table contains the following fields:

Name	Maximum Length	Description
BehaviorId	Char 32	The ID of the behavior table row
BehaviorName	Char 55	Optional field. The name of the behavior
TableGroup	Char 64	The table group to which the rule is applied
AssignmentRule	Char 64	The name of the associated assignment rule. This name must be unique within the model

Note:

- ❑ The order of the columns is arbitrary (you identify them during import).
- ❑ The name of the columns is arbitrary (but, if you use these names, they are automatically mapped during import).

The following graphic shows the rule associations table, ASSOCIATIONS, for the Baby Bank model:

Associate an assignment rule with a behavior

	BehaviorId	BehaviorName	TableGroup	AssignmentRule
1	10001	Credit Card interest Income	Revenue	Credit Card interest Income
2	10002	Loan Interest Income	Revenue	Loan Interest Income
3	10003	Mortgages Income	Revenue	Mortgages Income
4	11001	Savings Interest Payments	Revenue	Savings Interest Payments
5	11002	Certificates of Deposit Payments	Revenue	Certificates of Deposit Payments
6	11003	Investment Securities Payments	Revenue	Investment Securities Payments
7	12001	Credit Card Fees	Revenue	Credit Card Fees
8	12002	ATM Fees	Revenue	ATM Fees
244	23038	MAL_CHK_Issue statement	ABMCost	MAL_CHK_Issue statement
245	23039	MAL_CRC_Deliver Card and PIN	ABMCost	MAL_CRC_Deliver Card and PIN
246	23040	MAL_CRC_Issue Bill periodically	ABMCost	MAL_CRC_Issue Bill periodically
247	23041	MAL_OVD_Issue statement	ABMCost	MAL_OVD_Issue statement
248	23042	MAL_REC_Issue Debit card	ABMCost	MAL_REC_Issue Debit card
249	23043	MAL_REC_Issue statement	ABMCost	MAL_REC_Issue statement
250	23044	MAL_SAV_Issue check book	ABMCost	MAL_SAV_Issue check book
251	23045	MAL_SAV_Issue Debit card	ABMCost	MAL_SAV_Issue Debit card
252	23046	MAL_SAV_Issue statement	ABMCost	MAL_SAV_Issue statement
253	23047	MAL_SCR_Issue statement	ABMCost	MAL_SCR_Issue statement
254	23048	MAL_TRM_Issue Debit card	ABMCost	MAL_TRM_Issue Debit card
255	23049	MAL_TRM_Issue statement	ABMCost	MAL_TRM_Issue statement
256	23050	MAL_UCR_Issue statement	ABMCost	MAL_UCR_Issue statement
257	23051	INT_CHK_Download Application	ABMCost	INT_CHK_Download Application
258	23052	INT_CRC_Download Application	ABMCost	INT_CRC_Download Application
259	23053	INT_FBP_Download Application	ABMCost	INT_FBP_Download Application
260	23054	INT_OVD_Download Application	ABMCost	INT_OVD_Download Application
261	23055	INT_REC_Download Application	ABMCost	INT_REC_Download Application
262	23056	INT_SAV_Download Application	ABMCost	INT_SAV_Download Application
263	23057	INT_SCR_Download Application	ABMCost	INT_SCR_Download Application
264	23058	INT_TPP_Download Application	ABMCost	INT_TPP_Download Application
265	23059	INT_TRM_Download Application	ABMCost	INT_TRM_Download Application
266	23060	INT_UCR_Download Application	ABMCost	INT_UCR_Download Application
267	23061	None_None_None	ABMCost	Cost to Sustain Business

[Unknown] connected to localhost

Report Hierarchy

The report hierarchy table defines the dimension hierarchy for drilling down in profit and loss reporting. The number of levels in the hierarchy is a critical model design decision, and it is subject to the ultimate reporting needs for the business managers to make decisions.

The report hierarchy table contains the following fields:

Position	Name	Maximum Length	Description
1	ID	Char 32	The ID of the behavior table row for this member
2	L1_Profit	Char 32	1 st level dimension members for the hierarchy
3	L2_Profit	Char 32	2 nd level dimension members for the hierarchy
4	L3_Profit	Char 32	3 rd level dimension members for the hierarchy
5	L4_Profit	Char 32	4 th level dimension members for the hierarchy
5	L5_Profit	Char 32	5 th level dimension members for the hierarchy

Note:

- ❑ The order of the columns is significant.
- ❑ The name of the columns is arbitrary.
- ❑ The number of levels is arbitrary.

The following graphic shows the report hierarchy table for the Baby Bank model:

	△ ID	△ L1_Profit	△ L2_Profit	△ L3_Profit	△ L4_Profit	△ L5_Profit
1	10001	Interest Income	Credit Card interest Inco..			
2	10002	Interest Income	Loan Interest Income			
3	10003	Interest Income	Mortgages Income			
4	11001	Interest Expense	Savings Interest Payments			
5	11002	Interest Expense	Certificates of Deposit Pa..			
6	11003	Interest Expense	Investment Securities Pa...			
7	12001	Fees	Credit Card Fees			
8	12002	Fees	ATM Fees			
9	12003	Fees	Investment Account Fees			
10	12004	Fees	Checking Account Fees			
11	13001	Funds	Credit for Funds			
12	13002	Funds	Charge For Funds			
13	14001	Provision For Losses				
14	20000	Direct Product				
15	20003	Direct Product	Cost to Provide	ATM	CHK	ATM_CHK_Check balance
16	20004	Direct Product	Cost to Provide	ATM	CHK	ATM_CHK_Deposits
17	20005	Direct Product	Cost to Provide	ATM	CHK	
18	20006	Direct Product	Cost to Provide	ATM	CHK	
19	23000	Sales and Marketing Effort	Cost to Retain	TPP	CCT	CCT_TPP_Cross_Up Sell
20	23001	Servicing Effort	Cost to Retain	CCT	UCR	CCT_UCR_Cross_Up Sell
96	23001	Servicing Effort	Cost to Acquire	BRH	CHK	BRH_CHK_Open Account
97	23002	Servicing Effort	Cost to Acquire	BRH	CRC	BRH_CRC_Open Account
98	23003	Servicing Effort	Cost to Acquire	BRH	FBP	BRH_FBP_Open Account
99	23004	Servicing Effort	Cost to Acquire	BRH	OVD	BRH_OVD_Open Account
100	23005	Servicing Effort	Cost to Acquire	BRH	REC	BRH_REC_Open Account
101	23006	Servicing Effort	Cost to Acquire	BRH	SAV	BRH_SAV_Open Account
102	23007	Servicing Effort	Cost to Acquire	BRH	SCR	BRH_SCR_Open Account
103	23008	Servicing Effort	Cost to Acquire	BRH	TRM	BRH_TRM_Open Account
104	23009	Servicing Effort	Cost to Acquire	BRH	UCR	BRH_UCR_Open Account
105	23017	Servicing Effort	Cost to Close	BRH	CHK	BRH_CHK_Close Account
106	23018	Servicing Effort	Cost to Close	BRH	CRC	BRH_CRC_Close Account
107	23019	Servicing Effort	Cost to Close	BRH	REC	BRH_REC_Close Account
108	23020	Servicing Effort	Cost to Close	BRH	SAV	BRH_SAV_Close Account
109	23021	Servicing Effort	Cost to Close	BRH	SCR	BRH_SCR_Close Account
110	23022	Servicing Effort	Cost to Close	BRH	TRM	BRH_TRM_Close Account
111	23023	Servicing Effort	Cost to Close	BRH	UCR	BRH_UCR_Close Account
112	21116	Relationship Management	Cost to Sustain Business	None	None	None_None_None
113	23061	Servicing Effort	Cost to Sustain Business	None	None	None_None_None
114						

The report hierarchy table defines the dimension hierarchy for drilling down into the profit and loss report. The number of levels in the hierarchy is a critical decision in model design and is subject to the ultimate reporting needs of the business managers to make decisions.

Report Hierarchy to Resulting Report

In the following graphic, you can see how the columns in the report hierarchy relate to the columns in the display table of a summary report.

REPORT HIERARCHY

ID	L1_Profit	L2_Profit	L3_Profit	L4_Profit	L5_Profit
10001	Interest Income	Credit Card interest I			
10002	Interest Income	Loan Interest Income			
10003	Interest Income	Mortgages Income			
11001	Interest Expense	Savings Interest Pay			
11002	Interest Expense	Certificates of Dep			
11003	Interest Expense	Investment Securiti			
12001	Fees	Credit Card Fees			
12002	Fees	ATM Fees			
12003	Fees				

22004	Sales and Marke...	Cost to Retain	CTT	TPP	CCT_TPP_Cross_Up Sell
22006	Sales and Marke...	Cost to Retain	CTT	UCR	CCT_UCR_Cross_Up Sell
23000	Servicing Effort				
23001	Servicing Effort	Cost to Acquire	BRH	CHK	BRH_CHK_Open Account
23002	Servicing Effort	Cost to Acquire	BRH	CRC	BRH_CRC_Open Account
23003	Servicing Effort	Cost to Acquire	BRH	FBP	BRH_FBP_Open Account
23004	Servicing Effort	Cost to Acquire	BRH	OVD	BRH_OVD_Open Account
23005	Servicing Effort	Cost to Acquire	BRH	REC	BRH_REC_Open Account
23006	Servicing Effort	Cost to Acquire	BRH	SAV	BRH_SAV_Open Account
23007	Servicing Effort	Cost to Acquire	BRH	SCR	BRH_SCR_Open Account
23008	Servicing Effort	Cost to Acquire	BRH	TRM	BRH_TRM_Open Account
23009	Servicing Effort	Cost to Acquire	BRH	UCR	BRH_UCR_Open Account
23017	Servicing Effort	Cost to Close	BRH	CHK	BRH_CHK_Close Account
23018	Servicing Effort	Cost to Close	BRH	CRC	BRH_CRC_Close Account
23019	Servicing Effort	Cost to Close	BRH	REC	BRH_REC_Close Account
23020	Servicing Effort	Cost to Close	BRH	SAV	BRH_SAV_Close Account
23021	Servicing Effort	Cost to Close	BRH	SCR	BRH_SCR_Close Account
23022	Servicing Effort	Cost to Close	BRH	TRM	BRH_TRM_Close Account
23023	Servicing Effort	Cost to Close	BRH	UCR	BRH_UCR_Close Account
21116	Relationship Ma...	Cost to Sustain...	None	None	None_None_None
23061	Servicing Effort	Cost to Sustain...	None	None	None_None_None

Resulting report

Bookmarks 

L1_Scenario	[-] [v] Actual	
L2_Year	[+] [v] 2006	
	VALUE	AMT






Profit	L4_Profit		
e			

[illegible]

	24610	12216
--	-------	-------

+	↓	CHK	1401	13
+	↓	CRC	9081	4

		9081	6
	FBP	12158	16

	 	OVD	3609	3
 BRH	 	REC	146	4

+	↓	SAV	2802	21
+	↓	SCR	21519	42

+	-	TRM	146	7
+	-	ICR	28704	5

	28/01	5
	13909	12

Business	12305	12216
	473846	94579

	-473846	-94579
--	---------	--------

Behavior Table to Report Hierarchy

Let's take a closer look at the report hierarchy – in particular the relationship between the report hierarchy and the behavior table. In the following graphic you can see that items in the behavior table occur at the lowest level in the report hierarchy table. Because the hierarchy can have different depths at different places, this means that the behavior table items can occur in different columns (different depths) in the report hierarchy table. Also, note that intermediate levels can correspond to custom dimensions (for example, the channel and product dimensions at levels 3 and 4) but they do not have to. For example, interest income and interest expense (in the first six rows of the report hierarchy table) have no existence outside the report hierarchy table itself.

BEHAVIOR

Time	ID	Name	AssignmentRule	TotalValue	UnitValue
2006_Q4_Actual	10001	Credit Card interest Income	Credit Card interest Income	0	1
2006_Q4_Actual	10002	Loan Interest Income	Loan Interest Income	0	1
2006_Q4_Actual	10003	Mortgages Income	Mortgages Income	0	1
2006_Q4_Actual	11001	Savings Interest Payments	Savings Interest Payments	0	1
2006_Q4_Actual	11002	Certificates of Deposit Payments	Certificates of Deposit Pay...	0	1
2006_Q4_Actual	11003	Investment Securities Payments	Investment Securities Paym...	0	1
2006_Q4_Actual	12001	Credit Card Fees			
2006_Q4_Actual	12002	ATM Fees			
2006_Q4_Actual	12003	Investment Account Fees			
2006_Q4_Actual	12004	Checking Account Fees			
2006_Q4_Actual	13001	Credit for Funds			
2006_Q4_Actual	13002	Charge For Funds			
2006_Q4_Actual	14001	Provision For Losses			
2006_Q4_Budget	10001	Credit Card interest Income			
2006_Q4_Actual	23001	BRH_CHK_Open Account			
2006_Q4_Actual	23002	BRH_CRC_Open Account			
2006_Q4_Actual	23003	BRH_FBP_Open Account			
2006_Q4_Actual	23004	BRH_OVD_Open Account			
2006_Q4_Actual	23005	BRH_REC_Open Account			
2006_Q4_Actual	23006	BRH_SAV_Open Account			
2006_Q4_Actual	23007	BRH_SCR_Open Account			
2006_Q4_Actual	23008	BRH_TRM_Open Account			
2006_Q4_Actual	23009	BRH_UCR_Open Account			
2006_Q4_Actual	23017	BRH_CHK_Close Account			
2006_Q4_Actual	23018	BRH_CRC_Close Account			
2006_Q4_Actual	23019	BRH_REC_Close Account			
2006_Q4_Actual	23020	BRH_SAV_Close Account			
2006_Q4_Actual	23021	BRH_SCR_Close Account			
2006_Q4_Actual	23022	BRH_TRM_Close Account			
2006_Q4_Actual	23023	BRH_UCR_Close Account			
2006_Q4_Budget	23061	None_None_None			

REPORT HIERARCHY

ID	L1_Profit	L2_Profit	L3_Profit	L4_Profit	L5_Profit
10001	Interest Income	Credit Card interest Income			
10002	Interest Income	Loan Interest Income			
10003	Interest Income	Mortgages Income			
11001	Interest Expense	Savings Interest Payments			
11002	Interest Expense	Certificates of Deposit Payments			
11003	Interest Expense	Investment Securities Payments			
12001	Fees	Credit Card Fees			
12002	Fees	ATM Fees			
12003	Fees	Investment Account Fees			
12004	Fees	Checking Account Fees			
13001	Funds	Credit for Funds			
13002	Funds	Charge For Funds			
14001	Provision For Losses				
23000	Servicing Effort				
23001	Servicing Effort	Cost to Acquire	BRH	CHK	BRH_CHK_Open Account
23002	Servicing Effort	Cost to Acquire	BRH	CRC	BRH_CRC_Open Account
23003	Servicing Effort	Cost to Acquire	BRH	FBP	BRH_FBP_Open Account
23004	Servicing Effort	Cost to Acquire	BRH	OVD	BRH_OVD_Open Account
23005	Servicing Effort	Cost to Acquire	BRH	REC	BRH_REC_Open Account
23006	Servicing Effort	Cost to Acquire	BRH	SAV	BRH_SAV_Open Account
23007	Servicing Effort	Cost to Acquire	BRH	SCR	BRH_SCR_Open Account
23008	Servicing Effort	Cost to Acquire	BRH	TRM	BRH_TRM_Open Account
23009	Servicing Effort	Cost to Acquire	BRH	UCR	BRH_UCR_Open Account
23017	Servicing Effort	Cost to Close	BRH	CHK	BRH_CHK_Close Account
23018	Servicing Effort	Cost to Close	BRH	CRC	BRH_CRC_Close Account
23019	Servicing Effort	Cost to Close	BRH	REC	BRH_REC_Close Account
23020	Servicing Effort	Cost to Close	BRH	SAV	BRH_SAV_Close Account
23021	Servicing Effort	Cost to Close	BRH	SCR	BRH_SCR_Close Account
23022	Servicing Effort	Cost to Close	BRH	TRM	BRH_TRM_Close Account
23023	Servicing Effort	Cost to Close	BRH	UCR	BRH_UCR_Close Account
23061	Servicing Effort	Cost to Sustain Business	None	None	None_None_None

(Channel) (Product)

Report Layout

The report layout defines the calculation logic for the profit and loss statement.





A report layout table contains the following fields:

Position	Name	Maximum Length	Description
1	ID	Char 32	The ID of the behavior table row for this member
2	Name	Char 32	The name of the behavior for display on the report
3	Formula	Char 255	For calculated rows, the formula for the calculation based on the IDs
4	RowOrder	Numeric 8	The position of the row in the profit-and-loss report

Note:

- ❑ The column names must be exactly as shown.
- ❑ The order of the columns is arbitrary.

The following graphic shows the report layout table for the Baby Bank model:

	 ID	 Name	 Formula	 RowOrder
1	10001	Credit Card interest Income		1
2	10002	Loan Interest Income		2
3	10003	Mortgages Income		3
4	TOT-INT-INC	Total Interest Income	[10001]+[10002]+[10003]	4
5	11001	Savings Interest Payments		5
6	11002	Certificates of Deposit Payments		6
7	11003	Investment Securities Payments		7
8	TOT-INT-EXP	Total Interest Expense	[11001]+[11002]+[11003]	8
9	NET-INT-INC	Net Interest Income	[TOT-INT-INC]-[TOT-INT-EXP]	9
10	13001	Credit for Funds		10
11	13002	Charge For Funds		11
12	NET-FUNDS	Net Funds	[13001]-[13002]	12
13	12001	Credit Card Fees		13
14	12002	ATM Fees		14
15	12003	Investment Account Fees		15
16	12004	Checking Account Fees		16
17	TOT-NON-INT-INC	Total Non Interest Income	[12001]+[12002]+[12003]+[12004]	17
18	14001	Provision For Losses		18
19	20000	Direct Product		19
20	21000	Relationship Management		20
21	22000	Sales and Marketing Effort		21
22	23000	Servicing Effort		22
23	TOT-NON-INT-EXP	Total Non Interest Expense	[14001]+[20000]+[21000]+[22000]+[23000]	23
24	NET_CONTRIB	Net Contribution	[NET-INT-INC]+[NET-FUNDS]+[TOT-NON-INT-INC]-[TOT-NON-INT-EXP]	24

Report Layout to Resulting Report

The report layout controls how the OLAP viewer displays the cube when it is first opened. You can see in the following graphic that the report layout table controls

- ❑ The order in which columns are displayed. REPORTLAYOUT causes income variables display before expense variables.
- ❑ Whether fields are initially displayed expanded or collapsed. You can see in the following graphic that the **Servicing Effort** field is displayed collapsed because it

is included in REPORTLAYOUT without any of its children showing. By contrast, the **Interest Income** field is displayed expanded to level 2 because its children (credit card interest income, loan interest income, mortgage income) are included in REPORTLAYOUT but not the parent – Interest Income.

Note: The OLAP viewer always shows the highest level of a dimension. The report layout determines to what level the highest dimension is expanded when the report is initially opened. A user can navigate the dimension, expanding and collapsing it at will.

- ❑ Totals. For example, line 4 of the report layout displays a total whose formula is: [10001]+[10002]+[10003] – that is line 1 + line 2 + line 3.

REPORTLAYOUT

	ID	Name	Formula
1	10001	Credit Card interest Income	
2	10002	Loan Interest Income	
3	10003	Mortgages Income	
4	TOT-INT-INC	Total Interest Income	[10001]+[10002]+[10003]
5	11001	Savings Interest Payments	
6	11002	Certificates of Deposit Payme...	
7	11003	Investment Securities Payme...	
8	TOT-INT-EXP	Total Interest Expense	[11001]+[11002]+[11003]
9	NET-INT-INC	Net Interest Income	[TOT-INT-INC]-[TOT-INT-EXP]
10	13001	Credit for Funds	
11	13002	Charge For Funds	
12	NET-FUNDS	Net Funds	[13001]-[13002]
13	12001	Credit Card Fees	
14	12002	ATM Fees	
15	12003	Investment Account Fees	
16	12004	Checking Account Fees	
17	TOT-NON-INT-INC	Total Non Interest Income	[12001]+[12002]+[12003]+[12004]
18	14001	Provision For Losses	
19	20000	Direct Product	
20	21000	Relationship Management	
21	22000	Sales and Marketing Effort	
22	23000	Servicing Effort	
23	TOT-NON-INT-EXP	Total Non Interest Expense	[14001]+[20000]+[21000]+[22000]+[23000]
24	NET_CONTRIB	Net Contribution	[NET-INT-INC]-[NET-FUNDS]+[TOT-NON-INT-EXP]

Report

SAS Web OLAP Viewer - Untitled Data Explorer

File Data View Query Navigator Bookmarks

View Data Properties

L1_Scenario

VALUE

L1_Profit L2_Profit

Interest Income

Credit Card Interest Income

Loan Interest Income

Mortgages Income

Total Interest Income

Interest Expense

Savings Interest Payments

Certificates of Deposit Payments

Investment Securities Payments

Total Interest Expense

Investment Acco

Checking Account Fees

Total Non Interest Income

Provision For Losses

Direct Product

Relationship Management

Sales and Marketing Effort

Servicing Effort

Total Non Interest Expense

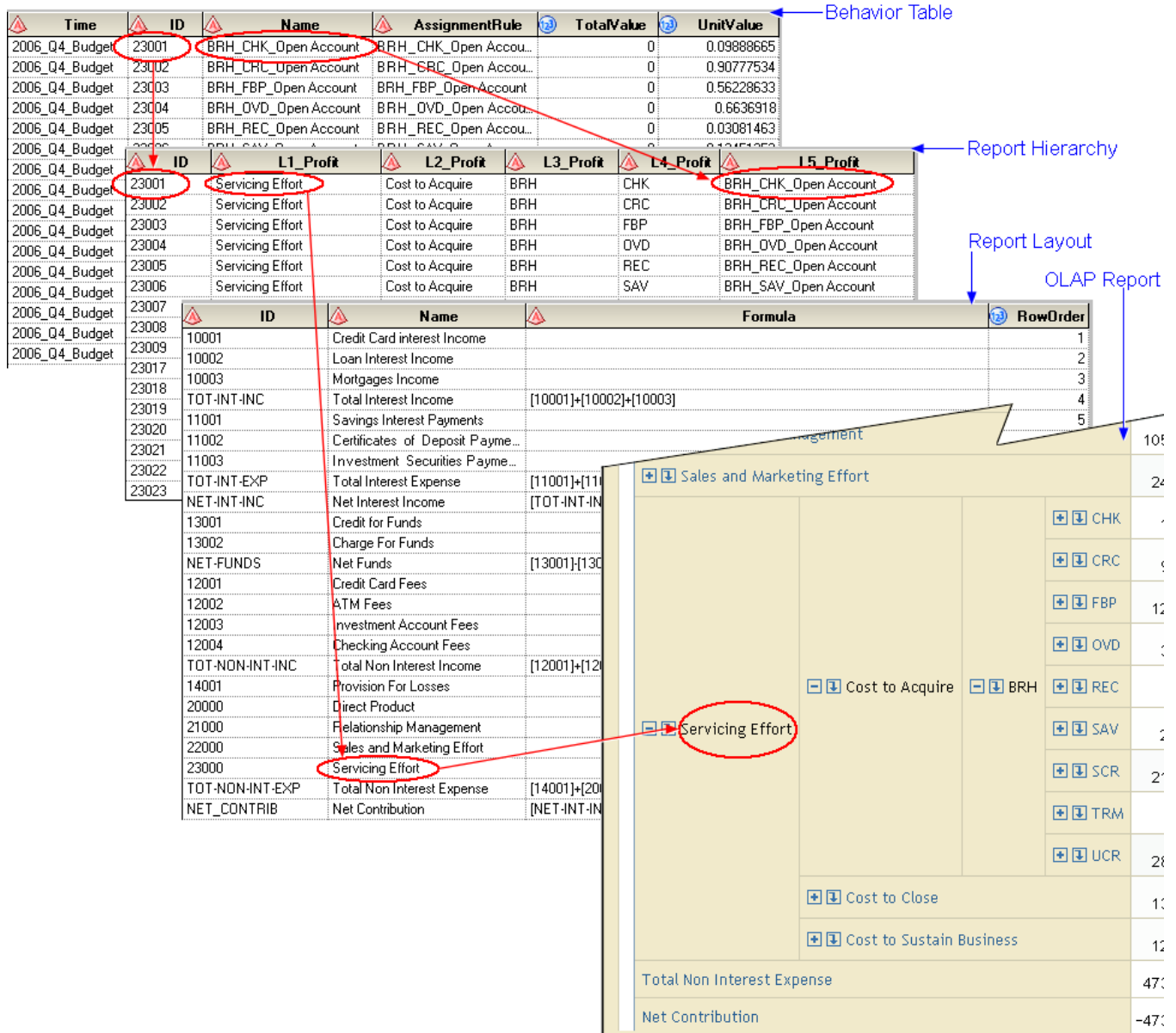
Net Contribution

Interest Income is expanded

Servicing Effort is collapsed

Summary: Behavior to Hierarchy to Layout to Report

The following graphic summarizes the relationships among the behavior table, report hierarchy, report layout, and resulting OLAP report.



Transaction Tables

A single SAS Profitability Management model can have multiple transaction tables, depending upon how the data is collected for your corporation. A *table group* is a set of

tables sharing the same schema (same columns with the same field definitions). In a table group, each table represents one period of the period table.

There must be a separate transaction table for each period in the model. For a single SAS Profitability Management model, multiple table groups will likely be defined. It is also likely that multiple rules will use the same source table group.

Transactional tables layout is affected by the rules definition process (filter logic and driver logic). There are three critical aspects to every transaction table: dimensional signature, filter criteria selection logic, and quantities for calculation.

A transaction table contains the following columns and must conform to the following rules:

- ☐ Each column must have the length shown.
- ☐ The position of columns is arbitrary.
- ☐ The name of columns is arbitrary.
- ☐ The number of columns in a transaction table is arbitrary.
- ☐ A transaction table can contain other columns not specifically used by SAS Profitability Management.

Name	Maximum Length	Description
Dimensions (1 to <i>n</i>)	Char 32	Each value identifies the row (in a custom dimensions table) for this transaction. The number of dimensions is optional (minimum 1).
Driver quantities (1 to <i>n</i>)	Numeric 8	A rule's driver formula uses these values to calculate the driver quantity for a transaction. The number of columns is optional (minimum 1).
Optional columns (0 to <i>n</i>)	optional	You can add any number of optional text or numeric columns of any length to a transaction table. For example, you can use an optional column for matching fields in a behavior table.

ABMCost Group

The ABMCost table group consists of the following two transaction tables:









- ☐ LOAD_TRANS_Q4A – for the 4th quarter actual period
- ☐ LOAD_TRANS_Q4B – for the 4th quarter budget period.

The schema for the ABMCost group consists of the following fields:

Field	Name	Description
1	CustID	ID of customer dimension
2	Product	ID of product dimension
3	CustType	ID of customer type dimension
4	Region	ID of region dimension
5	Channel	ID of channel dimension
6	AssignmentRule	Text string for use in filtering rows with that string. Rows that are selected are assigned the behavior cost
7	Count	Value of 1 used in driver
8	AMT	Number of occurrences, used in driver

The following graphic shows a portion of the contents of LOAD_TRANS_Q4A:

LOAD_TRANS_Q4A

	dim.	dim.	dim.	dim.	dim.	text	num.	num.
	 CustID	 Product	 CustType	 Region	 Channel	 AssignmentRule	 Count	 AMT
1	00005	CHK	PRB	Reg_849	ATM	ATM_CHK_Check b...	1	18209
2	00008	CHK	PRB	Reg_281	ATM	ATM_CHK_Check b...	1	39530
3	00025	CHK	PRB	Reg_523	ATM	ATM_CHK_Check b...	1	13507
4	00028	CHK	RCB	Reg_12	ATM	ATM_CHK_Check b...	1	62248
5	00030	CHK	PRB	Reg_1078	ATM	ATM_CHK_Check b...	1	58522
6	00032	CHK	PRB	Reg_858	ATM	ATM_CHK_Check b...	1	60183
7	00037	CHK	PRB	Reg_935	ATM	ATM_CHK_Check b...	1	20486
8	00048	CHK	RCB	Reg_1080	ATM	ATM_CHK_Check b...	1	54001
9	00049	CHK	RCB	Reg_699	ATM	ATM_CHK_Check b...	1	23424
10	05798	CHK	CRB	Reg_431	ATM	ATM_CHK_Check b...	1	17044
11	05799	CHK	CRB	Reg_551	ATM	ATM_CHK_Check b...	1	27347
12	05800	CHK	CRB	Reg_798	ATM	ATM_CHK_Check b...	1	2488
13	05817	CHK	CRB	Reg_230	ATM	ATM_CHK_Check b...	1	
14	05819	CHK	PRB	Reg_32	ATM	ATM_CHK_Check b...	1	725
15	05826	CHK	CRB	Reg_163	ATM	ATM_CHK_Check b...	1	770
16	05830	CHK	CRB	Reg_1029	BRH	BRH_TRM_Open Ac...	1	-104.75
17	05834	CHK	SBB	Reg_1029	BRH	BRH_TRM_Open Ac...	1	1535
18	05835	CHK	PRB	Reg_635	BRH	BRH_TRM_Open Ac...	1	606
19	05836	CHK	RCB	Reg_842	BRH	BRH_TRM_Open Ac...	1	1339
386	00003	TRM	PRB	Reg_939	BRH	BRH_TRM-Withdra...	1	15762
387	00014	TRM	PRB	Reg_1034	BRH	BRH_TRM-Withdra...	1	16431
388	00021	TRM	PRB	Reg_1035	BRH	BRH_TRM-Withdra...	1	49710
389	00024	TRM	PRB	Reg_434	BRH	BRH_TRM-Withdra...	1	20289
390	00048	TRM	RCB	Reg_1080	BRH	BRH_TRM-Withdra...	1	21561
391	05800	TRM	CRB	Reg_798	BRH	BRH_TRM-Withdra...	1	-2930
392	05801	TRM	SBB	Reg_1029	BRH	BRH_TRM-Withdra...	1	42981
393	05816	TRM	PRB	Reg_635	BRH	BRH_TRM-Withdra...	1	16966
394	05831	TRM	RCB	Reg_842	BRH	BRH_TRM-Withdra...	1	37497
395	00038	UCR	PRB	Reg_426	BRH	BRH_UCR_Close A...	1	134
396	00043	UCR	PRB	Reg_617	BRH	BRH_UCR_Close A...	1	93
397	05800	UCR	CRB	Reg_798	BRH	BRH_UCR_Close A...	1	59.69
398	05816	UCR	CRB	Reg_680	BRH	BRH_UCR_Close A...	1	233
399	05822	UCR	CRB	Reg_116	BRH	BRH_UCR_Close A...	1	99
400	05831	UCR	CRB	Reg_958	BRH	BRH_UCR_Close A...	1	30
401	00038	UCR	PRB	Reg_426	BRH	BRH_UCR_Open Ac...	1	1119
402	00043	UCR	PRB	Reg_617	BRH	BRH_UCR_Open Ac...	1	771
403	05800	UCR	CRB	Reg_798	BRH	BRH_UCR_Open Ac...	1	496.75
404	05816	UCR	CRB	Reg_680	BRH	BRH_UCR_Open Ac...	1	1938
405	05822	UCR	CRB	Reg_116	BRH	BRH_UCR_Open Ac...	1	827
406	05831	UCR	CRB	Reg_958	BRH	BRH_UCR_Open Ac...	1	254

CallCenter Group

The CallCenter table group consists of the following two transaction tables:

- ❑ CALLCENTER_Q4A – for the 4th quarter actual period
- ❑ CALLCENTER_Q4B – for the 4th quarter budget period.

The schema for the CallCenter group consists of the following fields:

Field	Name	Description
1	Product	ID of product dimension
2	CustType	ID of customer-type dimension
3	Region	ID of region dimension
4	Channel	ID of channel dimension
5	Communication	number of calls
6	Complaints	Number of complaints
7	Inquiry	Number of inquiries
8	Requests	Number of requests
9	CrossSell	Number of sales calls
10	Offer	Number of offers
11	Count	A value of 1 indicates an evenly assigned item

The following graphic shows a portion of the contents of CALLCENTER_Q4A:

CALLCENTER_Q4A

dim.	dim.	dim.	dim.	num.	num.	num.	num.	num.	num.	num.
Product	CustType	Region	Channel	Communication	Complaints	Inquiry	Requests	CrossSell	Offer	Count
CHK	PRB	Reg_87	CCT	2	0	1	0	1	0	1
CHK	PRB	Reg_87	CCT	298	15	149	49	74	30	1
CHK	PRB	Reg_768	CCT	99	5	50	16	25	10	1
CHK	PRB	Reg_768	CCT	461	23	231	76	115	46	1
CHK	PRB	Reg_70	CCT	6	0	3	1	2	1	1
CHK	PRB	Reg_70	CCT	180	9	90	30	45	18	1
CHK	PRB	Reg_528	CCT	91	5	46	15	23	9	1
CHK	RCB	Reg_202	CCT	155	8	78	26	39	16	1
CHK	RCB	Reg_870	CCT	186	9	93	31			1
CHK	PRB	Reg_1101	CCT	456	23	228			46	1
CHK	PRB	Reg_218	CCT	313				78	31	1
CHK						156	52	78	31	1
					4	15	5	7	7	1
		Reg_135	CCT	122	18	61	20	31	31	1
UCR	PRB	Reg_1080	CCT	126	19	63	21	31	31	1
UCR	CRB	Reg_59	CCT	144	22	72	24	36	36	1
UCR	SBB	Reg_1090	CCT	72	11	36	12	18	18	1
UCR	SBB	Reg_1131	CCT	25	4	13	4	6	6	1
UCR	CRB	Reg_768	CCT	20	3	10	3	5	5	1
UCR	CRB	Reg_413	CCT	133	20	66	22	33	33	1
UCR	CRB	Reg_696	CCT	119	18	60	20	30	30	1
UCR	CRB	Reg_1003	CCT	5	1	2	1	1	1	1
UCR	SBB	Reg_1093	CCT	145	22	73	24	36	36	1

Revenue Group

The Revenue table group consists of the following two transaction tables:

- ❑ REVENUE_Q4A – for the 4th quarter actual period
- ❑ REVENUE_Q4B – for the 4th quarter budget period.

The schema for the Revenue group consists of the following fields:

Field	Name	Description
1	Channel	ID of channel dimension
2	CustID	ID of customer dimension
3	Product	ID of product dimension
4	CustType	ID of customer type dimension
5	Region	ID of region dimension
6	AMT	Calculated specific revenue
7	ID	Behavior ID for revenue items

The following graphic shows a portion of the contents of REVENUE_Q4A:

REVENUE_Q4A

dim.	dim.	dim.	dim.	dim.	num.	text
Channel	CustID	Product	CustType	Region	AMT	ID
ATM	00001	OVD	PRB	Reg_67	399.3	10002
ATM	00001	OVD	PRB	Reg_67	8.16	12002
ATM	00001	OVD	PRB	Reg_67	20.47	13001
ATM	00001	OVD	PRB	Reg_67	25.59	13002
ATM	00001	OVD	PRB	Reg_67	5.12	14001
ATM	00002	CRC	PRB	Reg_188	4359.35	10001
ATM	00002	CRC	PRB	Reg_188	1744.98	12001
ATM	00002	CRC	PRB	Reg_188	134.22	13001
ATM	00002	CRC	PRB	Reg_188	221.31	13001
ATM	00002	CRC	PRB	Reg_188	276.64	13002
CCT	05845	FBP	CRB	Reg_795	55.33	14001
CCT	05845	OTP	CRB	Reg_194	23.38	13001
CCT	05845	OTP	CRB	Reg_194	29.22	13002
CCT	05845	OTP	CRB	Reg_194	5.84	14001
CCT	05846	UCR	SBB	Reg_1093	6478.6	10002
CCT	05846	UCR	SBB	Reg_1093	332.17	13001
CCT	05846	UCR	SBB	Reg_1093	415.22	13002
CCT	05846	UCR	SBB	Reg_1093	83.04	14001
CCT	05847	FBP	SBB	Reg_269	21.04	13001
CCT	05847	FBP	SBB	Reg_269	26.3	13002
CCT	05847	FBP	SBB	Reg_269	5.26	14001
CCT	05847	OVD	CRB	Reg_448	3208.39	10002
CCT	05847	OVD	CRB	Reg_448	164.5	13001
CCT	05847	OVD	CRB	Reg_448	205.63	13002
CCT	05847	OVD	CRB	Reg_448	41.13	14001



14

Finishing Up

Baby Bank Conclusions 133
Additional Features 133
What to Do Next: Useful Links 134

Baby Bank Conclusions

You have successfully created a SAS Profitability Management model, calculated transaction tables, and generated cubes. You have reviewed profit and loss reports at both a summary and a detail level. You have reviewed those results to draw conclusions about your customers' behavior and the action Baby Bank can take to focus specific attention on customer needs and how they impact the corporate profitability of Baby Bank. Baby Bank can now analyze its customers, channels, products, customer types, and regions to plan for a successful and profitable future.

SAS Profitability Management enables organizations to use more accurate profitability measures to make better decisions for customers, products, and channels. With SAS Profitability Management, decisionmakers can define and redefine the segmentation reports that they need on the fly. SAS Profitability Management enables business managers to track the profit performance of customer groups or individual customers, product groups or individual SKUs, channels or specific branches – presenting drill-down and at-a-glance views into revenue, cost, and other metrics so they can identify and investigate problems that can improve the bottom line.

Additional Features

Enhance your SAS Profitability Management Solution with

- ❑ SAS Activity-Based Management enables strategic and operational decisions that maximize profit, reduce costs, and streamline processes by determining the cost of those processes and the profitability of products, customers, and business segments. In SAS Activity-Based Management, you can mark accounts as behaviors and then publish the behaviors for use in SAS Profitability Management.
- ❑ SAS Customer Profitability for telecommunications is a component of SAS Telecommunications Intelligence Solutions, a Suite of integrated solutions that are built on an enterprise data architecture optimized for telecommunications providers.
- ❑ SAS Customer Intelligence for Banking can help you understand an individual customer's behavior at every touch-point throughout the life cycle of the relationship. By integrating data across channels, product silos, and external data

and market sources, you create a holistic picture of the current, potential, and future value that each customer delivers, as opposed to fragmented facts on customer risk, behavior, account activities, and operational costs. Using predictive analytics, you can forecast customer behaviors such as attrition and credit and load risk so you can devise more effective cross-sell and up-sell strategies.

What to Do Next: Useful Links

- ❑ SAS Worldwide Web for links to everything SAS
<http://www.sas.com/>
- ❑ SAS Worldwide Training
<http://support.sas.com/training/index.html>
- ❑ BetterManagement – for useful business domain white papers and web casts
<http://www.bettermanagement.com/>
- ❑ SAS Solutions – Links to other powerful business solutions from SAS

Focused Solutions for your Business Challenges: To lead with confidence and outpace competitors, you need to make accurate decisions faster than ever. SAS equips your organization for success by helping you answer more questions, for more people, across more departments than any other analytic applications suite provider.

<http://www.sas.com/solutions/index.html>

- ❑ SAS Business Intelligence:
SAS Business Intelligence gives you the information, when you need it, in the format you need. By integrating data from across your enterprise and delivering self-service reporting and analysis, IT spends less time responding to requests, and business users spend less time looking for information – so more time is spent on making better, more informed decisions
<http://www.sas.com/technologies/bi/index.html>
- ❑ SAS Analytics:
SAS Analytics give you THE POWER TO KNOW® how to integrate data from across your enterprise and then quickly transform that data into shared insights. We offer a comprehensive suite of analytics software to help you reduce uncertainty, predict with precision, and optimize performance
<http://www.sas.com/technologies/analytics/index.html>
- ❑ SAS Merchandise Intelligence
Only SAS Merchandise Intelligence provides real intelligence at every step of the merchandising life cycle. With this collection of software and services, you can

maximize the profitability of the merchandising process while improving customer loyalty and satisfaction levels. Retailers get reporting, planning, forecasting, and optimization at critical points through the planning process, which leads to faster and better decisions.

<http://www.sas.com/industry/retail/merchandise/index.html>

❑ SAS Customer Intelligence

Only SAS Customer Intelligence provides the vital knowledge needed to help organizations build an integrated platform for enterprise marketing management. With SAS Customer Intelligence, campaigns and programs implemented across channels will be effective, consistent, and timely. They will target the right customers with the right offers. And with the power of SAS predictive analytics, you can be confident that actual results will match predicted ones, even before you spend anything on a new campaign.

<http://www.sas.com/solutions/crm/index.html>

Your Turn

We welcome your feedback.

- If you have comments about this book, please send them to **yourturn@sas.com**. Include the full title and page numbers (if applicable).
- If you have comments about the software, please send them to **suggest@sas.com**.

SAS® Publishing delivers!

Whether you are new to the workforce or an experienced professional, you need to distinguish yourself in this rapidly changing and competitive job market. SAS® Publishing provides you with a wide range of resources to help you set yourself apart.

SAS® Press Series

Need to learn the basics? Struggling with a programming problem? You'll find the expert answers that you need in example-rich books from the SAS Press Series. Written by experienced SAS professionals from around the world, these books deliver real-world insights on a broad range of topics for all skill levels.

support.sas.com/saspress

SAS® Documentation

To successfully implement applications using SAS software, companies in every industry and on every continent all turn to the one source for accurate, timely, and reliable information—SAS documentation. We currently produce the following types of reference documentation: online help that is built into the software, tutorials that are integrated into the product, reference documentation delivered in HTML and PDF—free on the Web, and hard-copy books.

support.sas.com/publishing

SAS® Learning Edition 4.1

Get a workplace advantage, perform analytics in less time, and prepare for the SAS Base Programming exam and SAS Advanced Programming exam with SAS® Learning Edition 4.1. This inexpensive, intuitive personal learning version of SAS includes Base SAS® 9.1.3, SAS/STAT®, SAS/GRAPH®, SAS/QC®, SAS/ETS®, and SAS® Enterprise Guide® 4.1. Whether you are a professor, student, or business professional, this is a great way to learn SAS.

support.sas.com/LE



**THE
POWER
TO KNOW®**

