Essbase® XTD Analytic Services

Release 7.0

Spreadsheet Add-in User's Guide for Excel

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U.S. Patent Numbers: 5,359,724 and 6,317,750

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Printed in the U.S.A.

Contents

Preface

Purpose

This guide provides all the information that you need to use Essbase® XTD Spreadsheet Add-in (Spreadsheet Add-in) for Microsoft Excel. It explains the features and options and discusses the concepts, processes, procedures, formats, tasks, and examples that you need to use the software.

Essbase XTD Analytic Services (Analytic Services) is an online analytical processing (OLAP) solution that satisfies the complex calculation requirements of financial, accounting, and marketing professionals. Analytic Services operates in a client-server computing environment on a local area network (LAN). In this environment, multiple users can use their desktop computers to retrieve and analyze centralized data.

You can create reports from the data residing on the Essbase XTD Analytic Server (Analytic Server) in several ways:

- Generate database reports through a spreadsheet interface, called Spreadsheet Add-in, as explained in this guide.
- Use the Report Script Editor in Essbase XTD Administration Services to create a report script and run a report. For more information on creating and running report scripts in Report Script Editor, see the Administration Services online help.
- Use Essbase XTD Application Programming Interface (API) to create and run database reports. For more information on creating and running reports, see the Essbase *API Reference*.
- Use reporting tools, such as Hyperion Reporting for Essbase XTD Analytic Services.

Audience

This guide is for Analytic Services end users who are responsible for some or all of the following tasks:

- Starting Analytic Services and connecting and disconnecting from Analytic Services databases
- Retrieving data from a database into a worksheet
- Drilling down, drilling up, and navigating through a worksheet to analyze and arrange data from multiple viewpoints
- Working with linked reporting objects and linked partitions
- Updating data on Analytic Server
- Using the worksheet to load and calculate data in the database
- Creating multiple sheets from data
- Working with currency conversions

Document Structure

The main sections of this guide are structured as tutorials that take you step-by-step through basic and advanced tasks in Spreadsheet Add-in. This document contains the following information:

- "Introduction to Release 7.0" on page xv provides information on migrating from previous versions of Analytic Services to Release 7.0 and lists all new features and enhancements.
- Chapter 1, "Introduction to Essbase XTD Analytic Services," introduces you to basic concepts of retrieving and manipulating data through the spreadsheet interface.
- Chapter 2, "A Basic Tutorial," provides a step-by-step tutorial of basic data navigation, ad hoc retrieval, and reporting techniques.
- Chapter 3, "An Advanced Tutorial," describes advanced reporting and retrieval techniques for users that need special reports or formatted data views.
- Chapter 4, "Using Drill-Through," provides a brief overview of the Essbase XTD Integration Services drill-through product.

- The Index contains a list of terms and their page numbers. Select or look up an index entry to view the page to which the entry refers.

Note: The Spreadsheet Add-in online help provides a comprehensive section on Essbase XTD Spreadsheet Toolkit. This section enables you to customize and automate your use of Analytic Services by using Excelmacros and Visual Basic for Applications (VBA) functions. For more information on the Spreadsheet Add-in online help, see "Accessing Online Help" on page 38.

The *Essbase XTD Spreadsheet Add-in User's Guide for Excel* is provided in `PDF` format in the `\docs\pdf` directory of your documentation installation. The `.pdf` file is named `Essexcel.pdf` for the Excel add-in. Adobe® Acrobat Reader® (Release 3.0.1 or higher) is required for online viewing and printing of this file. You can download Adobe Acrobat Reader from the Analytic Services CD-ROM or from `http://www.adobe.com`. On the CD-ROM, the Acrobat Reader executable file is located in the Adobe directory under the appropriate platform and language-version subdirectories. To install Adobe Acrobat Reader, launch the executable file, follow the prompts, and provide the information requested.

Sample Databases and Files

This book provides tutorial steps that are based on sample databases and files that are provided with the Analytic Server software. You use the Sample Basic database for most tasks in Chapter 2 and Chapter 3. You use a sample Analytic Services currency conversion application to complete the tutorial on currency conversion. See Chapter 3, "An Advanced Tutorial." For information on the Sample Basic database, see Chapter 2, "A Basic Tutorial."

In addition to these sample applications and databases, you also use several sample Spreadsheet Add-in files in the advanced tutorial in Chapter 3. The individual at your organization who installs the server is responsible for making these applications, databases, and files available to you. Contact the Analytic Services system administrator for more information.

Where to Find Hyperion Documentation

All Analytic Services documentation is accessible from the following locations:

- Essbase XTD Analytic Services Information Map provides access to all Analytic Services documentation in both PDF and Windows help formats. The Information Map is located at

  `ARBORPATH/docs/essdocs.htm`

- Online help is accessible from the Spreadsheet Add-in. Start the product and click the Help button in any dialog box in the Spreadsheet Add-in or select Essbase Help from the Help menu.
- The Hyperion Solutions Web site is located at `http://www.hyperion.com`.
- Access to the Hyperion Download Center is through `http://hyperion.subscribenet.com`.

➤ To access the documentation from the Hyperion Solutions Web site:

1. Log on to `http://www.hyperion.com`.
2. Select **Support** from the menu bar.
3. Enter your username and password, and click **Login**.

   Note: If you do not have a username and password, click Register on the login page to request them.

4. Follow the on-screen instructions.

➤ To access documentation from the Hyperion Download Center:

1. Log on to `http://hyperion.subscribenet.com`.
2. In the **Login ID** and **Password** text boxes, enter your assigned login ID name and password. Then click **Login**.
3. If you are a member on multiple Hyperion Download Center accounts, select the account that you want to use for the current session.
4. Follow the on-screen instructions.

➤ To order printed documentation:

- Visit the Hyperion Solutions Web site at `http://www.hyperion.com`.
- In the United States, call Hyperion Solutions Customer Support at 877-901-4975.
- From outside the United States, including Canada, call Hyperion Solutions Customer Support at 203-703-3600. Clients who are not serviced by support from North America should call their local support centers.

Conventions

The following table shows the conventions that are used in this document:

Table i: Conventions Used in This Document

Item	Meaning
➤	Arrows indicate the beginning of a procedure, which consists of one or more sequential steps.
Brackets [ ]	In examples, brackets indicates that the enclosed elements are optional.
Bold	Bold in procedural steps highlights major interface elements.
CAPITAL LETTERS	Capital letters denote commands and various IDs. (Example: CLEARBLOCK command)
Ctrl + 0	Keystroke combinations shown with the plus symbol (+) indicate that you should press the first key and hold it while you press the next key. Do not type the + symbol.
`Example text`	Courier font indicates that the material shown is a code or syntax example.
`Courier italics`	Courier italic text indicates a variable field in command syntax. Substitute a value in place of the variable shown in Courier italics.
Italics	Italics in a product-related term in the body of a book indicates that the term is included in the glossary of the book.

Table i: Conventions Used in This Document (Continued)

Item	Meaning
Ellipses (...)	Ellipsis points indicate that text has been omitted from an example.
Mouse orientation	This document provides examples and procedures using a right-handed mouse. If you are using a left-handed mouse, adjust the procedures accordingly.
Menu options	Options in menus are shown in the following format. Substitute the appropriate option names in the placeholders, as indicated. ***Menu name*** > ***Menu command*** > ***Extended menu command*** For example: **1.** Select **File** > **Desktop** > **Accounts**.
n, *x*	Italic *n* stands for a variable number; italic *x* can stand for a variable number or an alphabet. These variables are sometimes found in formulas.

Additional Support

In addition to providing documentation and online help, Hyperion offers the following product information and support. For details on education, consulting, or support options, visit Hyperion's Web site at `http://www.hyperion.com`.

Education Services

Hyperion offers instructor-led training, custom training, and eTraining covering all Hyperion applications and technologies. Training is geared to administrators, end users, and information systems (IS) professionals.

Consulting Services

Experienced Hyperion consultants and partners implement software solutions tailored to clients' particular reporting, analysis, modeling, and planning requirements. Hyperion also offers specialized consulting packages, technical assessments, and integration solutions.

Technical Support

Hyperion provides enhanced electronic-based and telephone support to clients to resolve product issues quickly and accurately. This support is available for all Hyperion products at no additional cost to clients with current maintenance agreements.

Documentation Feedback

Hyperion strives to provide complete and accurate documentation. We value your opinions on this documentation and want to hear from you. Send us your comments by clicking the link for the Documentation Survey, which is located on the Information Map for your product.

Introduction to Release 7.0

This chapter provides compatibility information for Essbase XTD Analytic Services Release 7.0 and previous releases of Analytic Services, including migration information and new feature descriptions and enhancements. It contains the following topics:

Migration to Release 7.0

As you migrate or upgrade from previous releases of Analytic Services to Release 7.0, keep in mind that Release 7.0 of Essbase XTD Spreadsheet Add-in works with Release 7.0 of Essbase XTD Analytic Server. If the Analytic Services system administrator upgrades Analytic Server to Release 7.0, earlier releases of Spreadsheet Add-in work on only a limited basis. Upgrade to Spreadsheet Add-in for Release 7.0 as soon as possible.

Read the *Essbase XTD Analytic Services Installation Guide* for detailed information about migrating from previous releases of Analytic Services.

New Features in Release 7.0

Release 7.0 includes the following new features and enhancements:

- Metadata Sampling
- Currency Changes in the Sample Applications
- Support for Excel XP

Metadata Sampling

Essbase XTD Analytic Services is a multidimensional database engine that provides support for ad hoc analysis. Such analysis is entirely driven by the intuition of the analyst and can be time-consuming as data volume increases. Large cubes tend to have more dimensions and sometimes more levels, making hierarchical navigation very cumbersome.

Metadata sampling enables you to analyze large cubes with a focus on data trends or to approximate information in the initial stages. Because you query on a "sample" of members, retrieval is quick. Metadata sampling enables you to drill down on a portion of the vast amount of members in an Analytic Services database in a fraction of the time that it usually takes to analyze the whole database. You can view many samples in a small amount of time and make early decisions. Later, you can follow with organized data exploration.

With the introduction of Hybrid Analysis, you can store part of an Analytic Services cube in a relational database. Metadata sampling enables you to drill down on all of the data that you specify, whether it is in Analytic Services or in an underlying relational database.

Currency Changes in the Sample Applications

With the introduction of the euro as the official currency of the countries of the European Union, several currencies that were used in the Analytic Services sample applications no longer exist. In past versions of Analytic Services, portions of the sample applications used the currencies of Germany, France, and Spain. References to these currencies have been replaced by references to the euro (EUR), Swiss franc (CHF), and Swedish Krona (SEK), respectively.

Also, where applicable, the abbreviated names of the currencies used in the sample applications have been changed to reflect international standards for the representation of currency units. Table i is a complete list of the currencies used in the sample application and their respective abbreviation,

Table i: Currency Names and Their Abbreviations

Currency Name	Abbreviation
British Pound	GBP
Canadian Dollar	CAD
European Union Euro	EUR

Table i: Currency Names and Their Abbreviations

Currency Name	Abbreviation
Swedish Krona	SEK
Swiss Franc	CHF
United States Dollar	USD

Support for Excel XP

Essbase XTD Spreadsheet Add-in is now supported on Excel XP, as well as Excel 2000 and Excel 97.

New Feature in Release 6.5.1

Release 6.5.1 included the following new feature:

- Drill-Through Filter Persistence

Drill-Through Filter Persistence

Beginning with Essbase 6.5.1, when you customize a drill-through report in Essbase XTD Spreadsheet Add-in, you can save the drill-through filters that you create in the Select Data Filters dialog box. In prior releases of Analytic Services, users could not save filters that they created when customizing a drill-through report. Users of 6.5.0 and previous releases had to recreate a filter each time they created a drill-through report.

Chapter 1

Introduction to Essbase XTD Analytic Services

Essbase XTD Analytic Services is multidimensional database software that is optimized for planning, analysis, and management-reporting applications. Analytic Services uniquely blends an innovative technical design with an open, client-server architecture. The product enables you to extend decision support systems beyond ad hoc queries and reports on historical performance to dynamic, operational systems that combine historical analysis and future planning.

By consolidating and staging historical and projected data for detailed analysis, you gain perspectives about your business that enable you to take appropriate actions.

Analytic Services provides both power and flexibility. Thus, it can be used for a broad range of online analytical processing (OLAP) applications, including those in the following list:

- Budgeting
- Forecasting and seasonal planning
- Financial consolidations and reporting
- Customer and product profitability analysis
- Price, volume, and mix analysis
- Executive information systems

Analytic Services enables you and others in the organization to share, access, update, and analyze enterprise data from any perspective and at any level of detail without learning new tools, query languages, or programming skills.

Typical Users of Analytic Services

Analytic Services can be used in many different applications. Financial analysts have found the product to be invaluable in budget analysis, currency conversion, and consolidation. Cost accountants apply its powerful capabilities to evaluate allocation and elimination scenarios. Product managers and analysts use it to plan and analyze multiple product lines and distribution channels. You can also use the product as a repository database for spreadsheet data. Anyone who uses a spreadsheet is a potential user of Analytic Services.

Because Analytic Services is applicable to such a broad variety of environments, individuals using it at an organization may fill one or more roles in implementing and running applications. This guide refers to specific roles by three titles. A role may be performed, however, by one person or by several people working collaboratively.

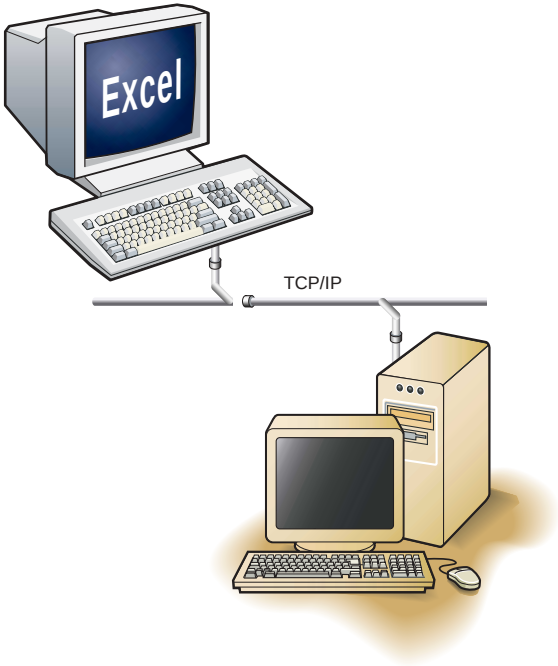
- *System administrator.* The Analytic Services system administrator typically has experience in networking, installing software packages, and administering system functions. In addition to installing the Analytic Services software, the Analytic Services system administrator may also set up Analytic Services user accounts, set up the security system, and maintain the Essbase XTD Analytic Server.
- *Application designer.* The application designer sets up the Analytic Services database, creates the database outline, and develops calculation and report scripts. The responsibilities of the Analytic Services system administrator and the application designer may overlap in some areas. The application designer has probably developed spreadsheet or database applications and understands the operational problems and the tools being employed to solve them.
- *User.* The user interacts with Analytic Services databases through spreadsheets, using Microsoft Excel for Windows. Users are typically analysts and managers who use spreadsheet programs as their primary tool for viewing and analyzing data.

Components of the Client-Server Environment

Client-server computing refers to the architecture in which individual PC workstations are connected to a powerful server by means of a local area network (LAN). The PC workstation acts as a client by requesting data from the server. The server processes the request and returns the desired result to the client.

Analytic Services is built as a client-server system. System performance and multiuser capabilities are greatly enhanced in the Analytic Services client-server environment. Figure 1 illustrates the Analytic Services components and their relationships.

Figure 1: Analytic Services Components



The Server

Analytic Server is a multidimensional database that supports analysis of an unlimited number of data dimensions and an unlimited number of members within these dimensions, developed using a true client-server architecture, All data, the database outline, the calculations, and the data security controls reside on the Analytic Server.

Essbase XTD Spreadsheet Add-in

Essbase XTD Spreadsheet Add-in is a software program that merges seamlessly with Microsoft Excel. After Analytic Services is installed, a special menu is added to the spreadsheet application. The menu provides enhanced commands such as

Connect, Pivot, Drill-down, and Calculate. Users can access and analyze data on Analytic Server by using simple mouse clicks and drag-and-drop operations. Spreadsheet Add-in enables multiple users to access and to update data on Analytic Server simultaneously.

The Network

Analytic Services runs on PC-based LANs that support the TCP/IP protocol.

Note: Supported network environments and technical requirements are discussed in detail in the *Essbase XTD Analytic Services Installation Guide*, which is included with the Analytic Services package.

Analytic Services Application Products

Several optional products, designed to extend and enhance the scope of OLAP applications, can be implemented using Analytic Services. The following sections describe these products.

Essbase XTD Spreadsheet Toolkit

Essbase XTD Spreadsheet Toolkit includes over 20 macro and Visual Basic for Applications (VBA) functions that enable you to build customized Microsoft Excel applications. The applications incorporate Analytic Services commands. Commands such as EssCascade, EssConnect, and EssDisconnect provide all the functionality of their corresponding Essbase menu commands. For more information, see the *Essbase XTD Spreadsheet Add-in Online Help*.

Essbase XTD Partitioning Option

Essbase XTD Partitioning option enables you to define areas of data that are shared or linked between data models. Partitioning can affect the performance and scalability of Analytic Services applications. Partitioning provides more effective response to organizational demands, reduced calculation time, increased reliability and availability, and incorporation of detail and dimensionality. For more information on partitions, see “Ways to Access Linked Partitions” on page 192.

Essbase XTD Structured Query Language Interface

Essbase XTD SQL Interface enables access to PC and structured query language (SQL) relational databases by making Analytic Server operate as an open database connectivity client. Using SQL Interface, data can be moved easily from these diverse corporate data sources into Analytic Server for user access and analysis. For more information SQL Interface, see the *Essbase SQL Interface Guide*.

Essbase XTD Application Programming Interface

Essbase XTD Application Programming Interface (API) enables application developers to create custom applications quickly by using standard tools while taking advantage of the robust data storage, retrieval, and manipulation capabilities of Analytic Services. API supports Visual Basic and C. For more information on application programming, see the *API Reference*.

Essbase Currency Conversion

Essbase currency conversion translates, analyzes, and reports on foreign financial data. Any exchange rate scenario can be modeled, and you can even perform ad hoc currency conversions of data, directly from the spreadsheet. The currency conversion product is compliant with Financial Accounting Standards Board 52 (FASB52). For more information on conversions, see "Working with Currency Conversions" on page 203.

Essbase XTD Integration Services

Essbase XTD Integration Services works with Analytic Services and Microsoft Excel. This product is a suite of tools and data integration services that serve as a bridge between relational data sources and Analytic Server. Integration Server drill-through is one of the tools of Integration Services. Using Integration Server drill-through, you can view and customize spreadsheet reports that display data retrieved from relational databases. For more information on the drill-through tool, see Chapter 4, "Using Drill-Through."

Hyperion Objects

Hyperion Objects are ActiveX controls that enable you to build application programs to access and manipulate data residing in multiple instances of Analytic Server. You can combine objects with other controls in a visual design environment to construct new programs.

The Multidimensional Database

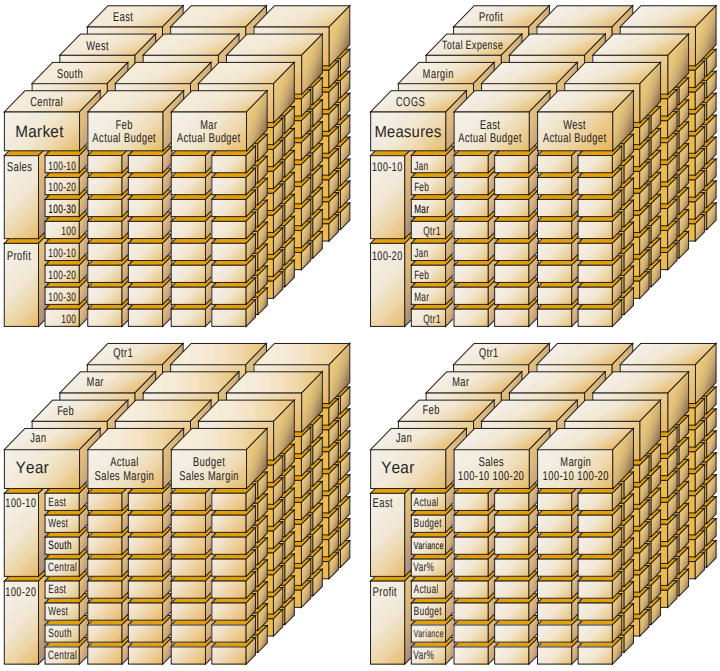
The Analytic Services multidimensional database stores and organizes data. It is optimized to handle applications that contain large amounts of numeric data and that are consolidation-intensive or computation-intensive. In addition, the database organizes data in a way that reflects how the user wants to view the data.

Definition of Multidimensional

A *dimension* is a perspective or view of a specific dataset. A different view of the same data is an *alternate dimension.* A system that supports simultaneous, alternate views of datasets is *multidimensional*. Dimensions are typically categories such as time, accounts, product lines, markets, budgets, and so on. Each dimension contains additional categories that have various relationships one to another.

An Analytic Services application contains an unlimited number of dimensions, so you can analyze large amounts of data from multiple viewpoints. Figure 2 shows four views of multidimensional data. You can retrieve and analyze the multidimensional data with the Spreadsheet Add-in software.

Figure 2: Multiple Views from a Five-Dimensional Database



In contrast to the multidimensional view, worksheets stores data in two dimensions, usually time and accounts, as shown in Figure 3:

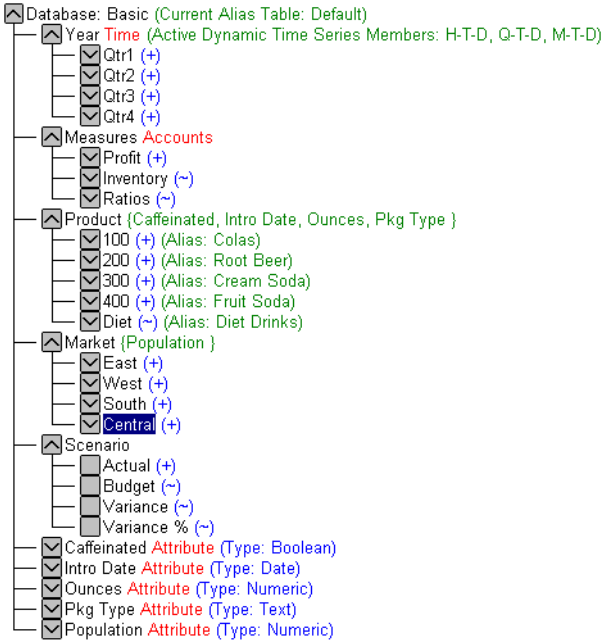
Figure 3: Two-Dimensional Representations of Data in a Worksheet

	A	B	C	D	E	F	G
1		Jan	Feb	Mar	Apr	May	Jun
2	Sales	1212	1421	1354	1178	1254	146
3	COGS	345	392	387	321	320	40
4	Margin	867	1029	967	857	934	106
5							
6	Marketing	46	24	95	11	56	
7	Freight	21	71	93	23	88	2
8	Discounts	2	24	52	14	53	5
9	Total Expenses	69	119	240	48	197	8
10							
11	Gross Profit	798	910	727	809	737	97

Database Outlines

Understanding the *database outline* is the key to understanding Analytic Services. To define a multidimensional database, you design its database outline. The database outline contains the database organization (structure), the database members, and the database rules, as shown in Figure 4:

Figure 4: Analytic Services Database Outline



The application designer or Analytic Services system administrator usually creates the database outline. For more information on creating the database outline, see the *Essbase XTD Analytic Services Database Administrator's Guide*.

The components of the database outline are as follows:

- Dimensions
- Members
- Attributes
- Formulas
- Aliases

- Consolidations

Refer to the following topics for descriptions of the outline components.

Dimensions

Dimensions are the most basic categorical definitions of data within the database outline. You need at least two dimensions to make any meaningful reference to data; for example, a time dimension and an accounts dimension. Other dimensions may categorize products, markets, and scenarios. Using dimensional organization, you can define any consolidation structure or any slice of data that is relevant to the application. Analytic Services supports an unlimited number of dimensions.

Members

Members are the names of the elements within a dimension. A dimension can contain an unlimited number of members. The calculation, reporting, and dimension-building features in Analytic Services use the following terms to describe members.

- *Parents*. A parent is a member with a consolidation branch below it. Figure 5 shows an example of Qtr1 as a parent member because below Qtr1 is a branch containing months as members.

  Figure 5: Relationships Among Database Members

- *Children*. A child is a member with a parent above it. For example, Jan, Feb, and Mar are children of the parent Qtr1.
- *Siblings*. A sibling is a child member of the same parent and on the same branch (same level). For example, Jan, Feb, and Mar are siblings. Apr is not a sibling of Jan, Feb, or Mar, however, because it has a different parent, Qtr2.
- *Descendants*. A descendant is a member at any level below a parent. For example, each member that falls in the Year branch is a descendant of Year. The following members are all descendants of Year: Qtr1, Jan, Feb, Mar; Qtr2, Apr, May, Jun; Qtr3, Jul, Aug, Sep; Qtr4, Oct, Nov, Dec.
- *Ancestors*. An ancestor is a member of a branch above a member. For example, Qtr2 and Year are ancestors of Apr.
- *Generations*. The term *generation* describes the branch number of a member. Generations count from the root of the tree (generation 1, which is the dimension name) toward the leaf node.
- *Levels*. The term *level* describes the branch number of a member. Levels count from the leaf node (level 0) toward the root (the dimension name).

Attributes

Attributes describe characteristics of data, such as the size and color of products. Through attributes, you can group and analyze members of dimensions based on their characteristics. Attribute dimensions must be associated with base dimensions. For more information, see the *Essbase XTD Analytic Services Database Administrator's Guide*.

Formulas

Each database member can be associated with one or more formulas in the database outline. For example, the Variance members of the Scenario dimension, as shown in Figure 4 on page 26, contain formulas. Formulas can be simple or complex. For more information on formulas, see the *Essbase XTD Analytic Services Database Administrator's Guide*.

Aliases

Analytic Services supports alternative names, or aliases, for database members. Aliases are useful when various labels are used for the same member in various worksheets. One worksheet, for example, may refer to Cost_of_Goods_Sold as COGS. Aliases also can be used for reporting in alternative languages or for more formal output name sets, such as account numbers.

Consolidations

Consolidations in Analytic Services applications are defined by member branches. The database outline determines consolidation paths. The determination is based on the location of members within a dimension. Indentation of one member below another indicates a consolidation relationship. Indenting members is important for the drill-down capabilities in Spreadsheet Add-in. As you navigate through data, you can drill down through levels of consolidations. The database outline is the roadmap that determines the levels of data navigation.

Chapter 2

A Basic Tutorial

When you add Essbase XTD Spreadsheet Add-in to Microsoft Excel, most spreadsheet operations remain unchanged; Spreadsheet Add-in simply adds a new menu, an Essbase toolbar, and mouse shortcuts with which you can access Essbase XTD Analytic Services.

The tasks described in this tutorial are basic tasks. That is, these are tasks that you probably use often when working with Analytic Services. Chapter 3 describes more advanced tasks.

This tutorial chapter contains the following topics:

Notice that each tutorial task builds upon the previous task. Therefore, tasks must be completed in succession.

The examples used in this tutorial are based on the sample database (called Sample Basic) that is included with the Analytic Services installation. Contact the Analytic Services system administrator for information about accessing the Sample Basic database or about accessing other databases on Analytic Server.

Getting Acquainted with Spreadsheet Add-in

This following topics will help you to get acquainted with Spreadsheet Add-in:

Adding Spreadsheet Add-in

If you manually update your environment settings or if you have removed Spreadsheet Add-in from the Microsoft Excel environment, you must use the spreadsheet's add-in tool to add Spreadsheet Add-in to Excel. The Essbase menu is added to the spreadsheet's menu bar and points Excel to the Essbase XTD Spreadsheet Add-in file in the `\Essbase\bin` directory. This file is on the local drive of your computer, if that is where you installed Spreadsheet Add-in, or on the network drive if that is where you set up your computer operating environment to run Spreadsheet Add-in.

➤ To add Spreadsheet Add-in to Excel:

1. In Excel, select **Tools** > **Add-Ins**.

   Excel displays the Add-Ins dialog box.

2. Click the **Browse** button.

   Excel displays the Browse dialog box.

3. Select the `essexcln.xll` file.

The file is in the `bin` directory where you installed Spreadsheet Add-in on your PC hard disk drive (if you installed Spreadsheet Add-in there) or in the `bin` directory where the Analytic Services system administrator installed Spreadsheet Add-in on a network drive (if you set up your PC operating environment to run Spreadsheet Add-in there).

4. Click **OK** twice to close the dialog boxes.

   Adding Essbase XTD Spreadsheet Add-in to Excel modifies the Windows Registry to point to where the Spreadsheet Add-in file is installed.

5. Start Spreadsheet Add-in.

   After the Excel startup screen goes away, the Essbase XTD Spreadsheet Add-in startup screen is displayed.

   If you do not see the Essbase XTD startup screen or if your system does not list the Essbase Spreadsheet Add-in menu options, see the *Essbase XTD Analytic Services Installation Guide* for troubleshooting information.

Starting Spreadsheet Add-in

You must start Excel to use Spreadsheet Add-in software.

You must open a worksheet before attempting to connect to an instance of Analytic Server. An attempt to connect to the server without opening a worksheet results in an error message.

➤ To begin an Analytic Services session:

1. Start Excel.

   After the startup screen goes away, the Essbase XTD Spreadsheet Add-in startup screen is displayed.

   The Essbase menu should be displayed in the spreadsheet menu bar. If you do not see the Essbase menu, you may need to use the add-in tool to add Essbase XTD Spreadsheet Add-in. For more information, see “Adding Spreadsheet Add-in” on page 32.

   In Excel, the Essbase toolbar should also be visible. If you do not see the Essbase toolbar, see “Installing the Essbase Toolbar for Excel” on page 34 and “Using the Essbase Toolbar” on page 35.

2. From the spreadsheet application menu bar, select **Essbase**.

   The Essbase menu is displayed.

Installing the Essbase Toolbar for Excel

In Excel, Spreadsheet Add-in provides a convenient toolbar that displays buttons for accessing most of the common Analytic Services commands without having to open the Essbase menu.

Prior to using the Essbase toolbar for Excel, you must install the toolbar by opening an Excel file that is provided as part of the default Analytic Services installation. For more information on using the toolbar, see "Using the Essbase Toolbar" on page 35.

➤ To install the Essbase toolbar:

1. Start Excel.
2. Select **File** > **Open**.
3. From the `\essbase\client\sample` directory, open the `esstoolb.xls` file.

   A blank worksheet opens.

   Depending on how software is installed on your PC, the file may not be available or may be located in a different directory. Contact the Analytic Services system administrator for more information.

   Note: Upon using Excel, two dialog boxes may be displayed warning that the `esstoolb.xls` file may contain macros. If so, click the Enable Macros button on the first dialog box, and click OK on the second dialog box. The macros must be enabled for the Essbase toolbar to work.

4. Select **File** > **Close** to close the `esstoolb.xls` file.

   You do not need to modify or save the file.

You should not have to perform the toolbar installation procedure again unless you delete the Essbase toolbar from the Toolbars dialog box in Excel. If you delete the toolbar, perform the installation procedure again.

Note: If you have toolbars turned off in Excel, you do not see the Essbase toolbar immediately. You must first enable toolbars. For information on enabling the Essbase toolbar, see "Using the Essbase Toolbar" on page 35.

Using the Essbase Toolbar

Spreadsheet Add-in for Excel features a convenient toolbar that displays buttons for accessing most of the common Analytic Services commands without having to open the Essbase menu. You can view a short description of a button in a pop-up window on the toolbar by moving your cursor over the button.

Note: Before you can view the Essbase toolbar, you must install it. See "Installing the Essbase Toolbar for Excel" on page 34.

Table 1 lists the buttons on the toolbar. To view the Essbase toolbar, select View > Toolbars > Essbase from the Excel menu bar. A check box must be displayed next to Essbase in the menu.

Note: If you select the Essbase check box and click Delete, you must reinstall the toolbar. See "Installing the Essbase Toolbar for Excel" on page 34 for instructions.

Table 1: Essbase Toolbar Buttons

Button	Purpose	Description
	Connect	Enables you to connect to an instance of Analytic Server. Click the Connect button on the toolbar to display the Essbase System Login dialog box.
	Navigate with or without data	Toggles the Navigate Without Data feature, which tells Analytic Services to retrieve or not to retrieve data when you perform navigational operations, such as pivot, drill down, drill up, keep only, and remove only. This button serves the same function as the Navigate Without Data check box in the Essbase Options dialog box (Global tab).

Table 1: Essbase Toolbar Buttons (Continued)

Button	Purpose	Description
	Retrieve	Retrieves data into the active worksheet. A retrieve request places data at the beginning of the active worksheet. When you click the Retrieve button, if you are not already connected to an instance of Analytic Server, the Essbase System Login dialog box is displayed. **Tip:** If you have mouse actions enabled, you can retrieve data by double-clicking the primary mouse button in any empty cell in the worksheet. To enable double-click support, select Essbase > Options, select the Global tab, and select the Enable Double-Clicking option. For more information, see "Enabling Mouse Actions" on page 39.
	Keep only	Retains only the selected member (the active cell) or member range in the worksheet. When you click the Keep Only button, all unselected members are removed from the worksheet.
	Remove only	Removes the selected member (the active cell) or member range from the worksheet. When you click the Remove Only button, all unselected members are retained in the worksheet.
	Zoom in	Retrieves and expands data from Analytic Services according to the options specified in the Essbase Options dialog box. When sampling is enabled (Essbase > Sample Data (Zoom In)), an approximate percentage members of the Analytic Services database that you specify is queried when you retrieve and expand data. **Tip:** If you have mouse actions enabled, you can drill down on data by double-clicking the primary mouse button in the cell that contains the member you want to expand. To enable double-click support, select Essbase > Options, select the Global tab, and select the Enable Double-Clicking option. For more information, see "Enabling Mouse Actions" on page 39.

Table 1: Essbase Toolbar Buttons (Continued)

Button	Purpose	Description
	Zoom out	Collapses the view according to the options specified in the Essbase Options dialog box in the cell that contains the member that you want to collapse. To enable double-click support for drilling up, select Essbase > Options, select the Global tab, and select the Enable Double-Clicking option.
	Open Essbase Query Designer	Opens the Essbase Query Designer, which makes it easy to define a page orientation for dimensions and selected database members. You can also save queries for later use. Essbase Query Designer is designed to create report queries, view attributes, and perform calculations based on attributes.
	FlashBack	Restores the previous worksheet view.
	Set options	Enables you to set display, zoom, mode, style, and global options for the active worksheet to customize the behavior of Essbase XTD Spreadsheet Add-in software. Click the Options button to display the Essbase Options dialog box.
	Select members	Enables you to select members from the multidimensional database outline. Click the Member Selection button to display the Essbase Member Selection dialog box.
	Attach linked objects	Enables you to attach comments or files to data cells. Click the linked objects button to display the linked objects browser dialog box.

Accessing Online Help

Essbase XTD Spreadsheet Add-in includes a context-sensitive online help system. You access the Spreadsheet Add-in online help in one of three ways. Which way you choose depends on the type of information that you need.

- Access the entire online help system for browsing or searching for information.

  To access the entire help system, select Help > Essbase Help in Excel. After you access online help, you can browse or search through the system to view general information on Spreadsheet Add-in, Essbase command descriptions, procedural information for completing tasks, Spreadsheet Toolkit macros, and Visual Basic for Applications (VBA) function descriptions.

- Access context-specific information from dialog boxes in Spreadsheet Add-in.

  Each dialog box in Spreadsheet Add-in features a Help button that accesses online help topics that are specific to the particular dialog box. The Help buttons enable you to find the information that you need without having to search through the entire help system.

  Note: The Spreadsheet Add-in online help also provides a comprehensive section on Essbase Spreadsheet Toolkit, which enables you to customize and automate your use of Analytic Services by using macros and VBA functions.

- Access information on a specific Essbase Query Designer function.

  Click the What's This? Help button, in the Essbase Query Designer dialog box, and then click an item in the dialog box to access information on that item.

  You can also click the Help button in the navigation pane, shown in Figure 6, to access the Essbase Query Designer tutorial and all online help topics.

  Figure 6: EQD Help Button

Enabling Mouse Actions

The following terms are used throughout this guide to describe mouse operations:

- *Primary mouse* button and *secondary mouse* button describe the buttons on a two- or three-button mouse.

  Usually, right-handed users configure the left mouse button as the primary button and the right mouse button as the secondary mouse button. The primary mouse button is the one that you use to start Windows applications, the secondary mouse button is used for auxiliary operations. The term *click* refers to use of the primary mouse button. The term *right-click* refers to use of the secondary mouse button.

- *Select* chooses the object that is under the cursor when you press and release the primary mouse button.

  You can select a worksheet cell, for example, by moving the cursor to the cell and pressing and releasing the primary mouse button.

- *Click* (that is, both *click* and *right-click*) describes a quick press-and-release action on a command object.

  You can click a button, for example, to execute a command.

- *Double-click* describes two quick press-and-release actions that are executed in rapid succession.

  You can double-click an application icon, for example, to start a Windows application.

- *Drag* describes a press, hold, and move action.

  You place the cursor on an object, press a mouse button, hold the mouse button down as you move the object, and release the mouse button when you reach your goal. For example, you can highlight a range of cells in a worksheet by dragging the cursor over the cells.

  Note: Analytic Services uses a drag operation called a *pivot*. A pivot requires use of the secondary mouse button. To execute a pivot, you must press and hold the secondary, rather than the primary, mouse button while dragging the selection.

Analytic Services offers enhanced mouse actions in Excel. You can use the mouse to perform any of the following tasks:

- Retrieve data

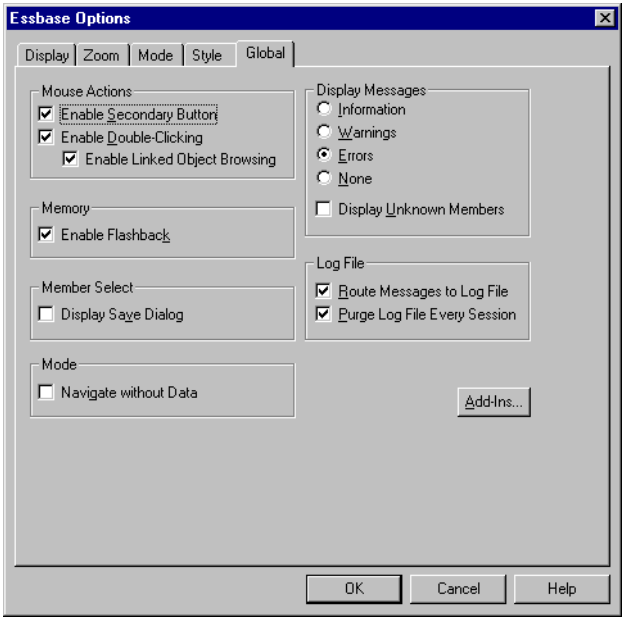
- Drill down and drill up on database members
- Pivot (move or transpose) data rows and columns
- Access linked reporting objects
- Access linked partitions

➤ To enable double-clicking to retrieve, drill down, and drill up on Analytic Services data:

1. Select **Essbase > Options**.
2. In the **Essbase Options** dialog box, select the **Global** tab.
3. Select the **Enable Double-Clicking** check box.

   When the Enable Double-Clicking check box is selected, as shown in Figure 7, you can retrieve and drill down to more detailed data (primary mouse button) and drill up to less detailed data (secondary mouse button). When the double-clicking option is enabled, the in-cell editing feature is overridden.

   Figure 7: Essbase Options Dialog Box—Global Tab



4. Click **OK** to return to the worksheet.

For information about setting the primary mouse button to display the Linked Objects Browser dialog box when you double-click a data cell, see the Essbase XTD Spreadsheet Add-in online help.

Preparing to Begin the Tutorial

Before you begin the basic tutorial, read the following important topics:

- "Setting Essbase Options" on page 41
- "Following Guidelines During the Tutorial" on page 45
- "Reviewing the Sample Basic Database" on page 46

Setting Essbase Options

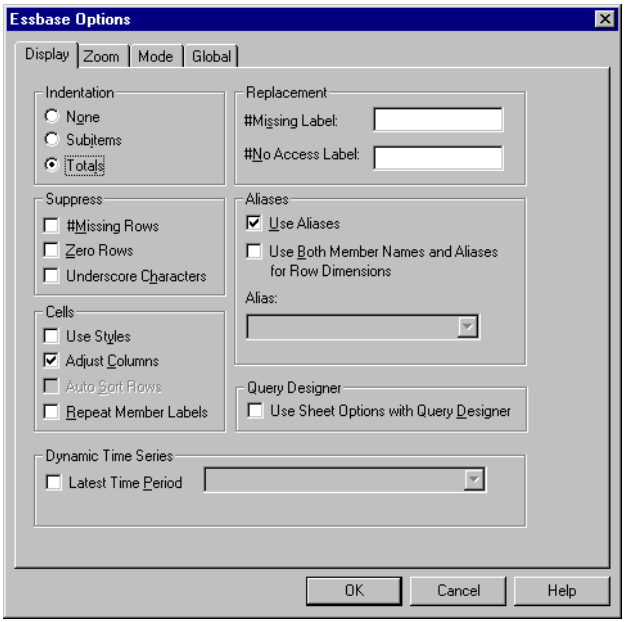
Before you begin the tutorial steps, make sure that the worksheet options are set to the initial settings as illustrated in Figure 8 through Figure 11. If the option settings are different, the illustrations presented in this chapter may not match the worksheet view.

Note: For information about each option in the Essbase Options dialog box, see the Essbase XTD Spreadsheet Add-in online help.

1. Select **Essbase** > **Options**.
2. In the **Essbase Options** dialog box, select the **Display** tab.

3. Select the appropriate check boxes and option buttons so that your display of the Display tab matches the illustration shown in Figure 8.

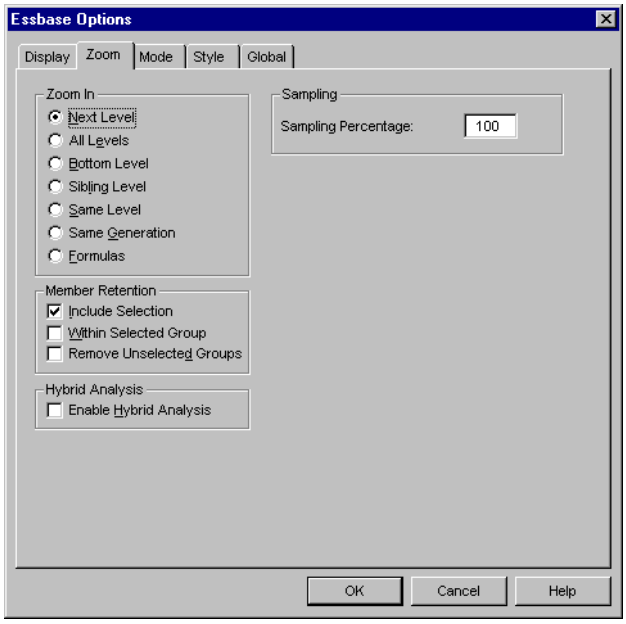
Figure 8: Initial Settings for Display Options



4. Select the **Zoom** tab.

5. Select the appropriate check boxes and option buttons so that your display of the **Zoom** tab matches the illustration shown in Figure 9:

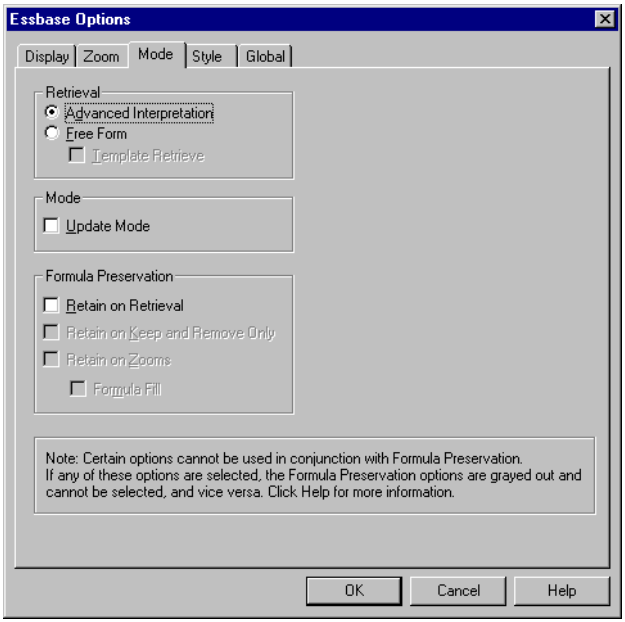
Figure 9: Initial Settings for Zoom Options



6. Select the **Mode** tab.

7. Select the appropriate check boxes and option buttons so that your display of the **Mode** tab matches the illustration shown in Figure 10.

Figure 10: Initial Settings for Mode Options

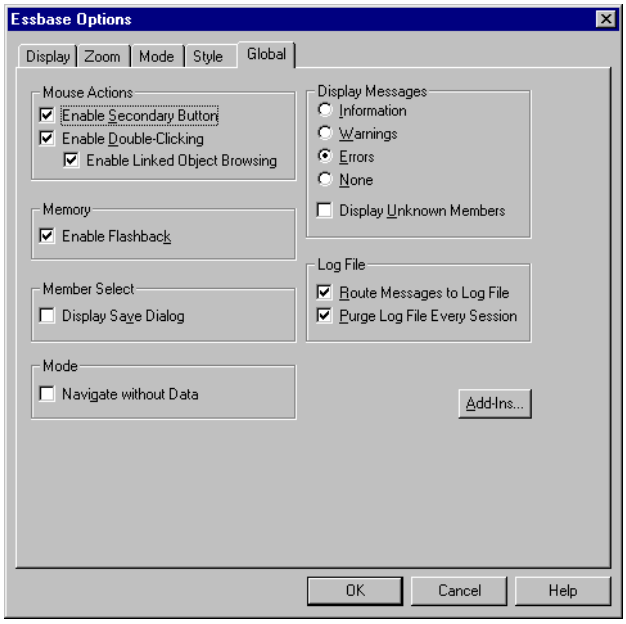


Note: If you are already connected to an Analytic Services database, the Essbase Options dialog box also displays a Style tab. You can skip this tab for now.

8. Select the **Global** tab.

9. Select the appropriate check boxes and option buttons so that your display of the **Global** tab matches the illustration shown in Figure 11.

Figure 11: Initial Settings for Global Options



Note: You should have already selected the appropriate boxes for Mouse Actions, as described in "Enabling Mouse Actions" on page 39.

10. Click **OK** to save the settings for this session and close the **Essbase Options** dialog box.

Following Guidelines During the Tutorial

Keep in mind the following guidelines during this tutorial:

- Optional tasks that should *not* be performed as part of the tutorial are displayed in light-shaded boxes. These tasks are included only for your future reference. You can find more information on these tasks in the Essbase XTD Spreadsheet Add-in online help.
- You must be connected to the Sample Basic database during the tutorial. If you are not connected to this database, the illustrations presented in this chapter will not match the worksheet view.

- You can access many Essbase commands in any one of these ways:
  - By selecting the command from the Essbase menu
  - By clicking the appropriate button on the Essbase toolbar
  - For the Zoom In and Zoom Out commands, by double-clicking either the primary mouse or the secondary mouse button
- You must set the options in the Essbase Options dialog box as described in "Setting Essbase Options" on page 41. If the option settings are different, the illustrations presented in this chapter may not match the worksheet view.
- After you change a worksheet option in the Essbase Options dialog box, you must perform a retrieval or a drill-down operation to have the new setting take effect.
- Be sure to follow each step in the tutorial. Each tutorial task builds upon the previous task. Do not skip the final steps at the end of sections, because these steps are often necessary to prepare you for the next tutorial task.
- If you make a mistake during the tutorial, you can select Essbase > FlashBack to return to the previous worksheet view.
- The values in the Sample Basic database that represent ratios or percentages are calculated to a very high level of precision (for example, 55.26162826). You can apply a cell format to control the number of decimal places that are displayed in data values. For details on applying cell formats, see the Excel documentation.
- The numeric values that are shown in the illustrations used throughout this tutorial may not match the values stored in your database. The values shown in these illustrations reflect a freshly loaded database.
- Some worksheet columns have been adjusted for clarity in the illustrations. You do not need to change the width of columns in the worksheet to follow the tutorial steps. The Adjust Columns option in the Display tab of the Essbase Options dialog box adjusts columns for you.

Reviewing the Sample Basic Database

The Sample Basic database that you use for the tutorial is based on a hypothetical company in the beverage industry. The major products of the company are various kinds of sodas. These products are sold in U.S. markets, which are categorized by state and region. Financial data for the company is collected monthly and is summarized by quarter and by year. The company uses Analytic Services to

calculate financial and accounting data, such as sales, cost of goods sold, and payroll. The company tracks both actual and budget data, as well as the variance and percent variance between the two.

Retrieving Data

Now that you are more familiar with the Analytic Services environment, you can connect to an instance of Analytic Server and start using Analytic Services and Essbase XTD Spreadsheet Add-in. The following section guides you through a typical Analytic Services session where you connect to a database and retrieve data in various ways.

This topic outlines the following basic retrieval tasks:

Make sure that you followed the steps in "Setting Essbase Options" on page 41. If the settings in the Essbase Options dialog box are different from the settings previously illustrated, the worksheet view will differ from the illustrations shown in this chapter.

Remember that you can perform common data retrieval tasks in any of the following ways:

- Select commands from the Essbase menu on the Excel menu bar
- Double-click the primary or the secondary mouse button in the appropriate cell (for Retrieve, Zoom In, and Zoom Out commands)
- In Excel, click the appropriate buttons on the Essbase toolbar

Connecting to a Database

To access Analytic Services data, you must first connect to a database on an instance of Analytic Server. This tutorial assumes that you have the appropriate privileges to connect to a server, an application, and a database.

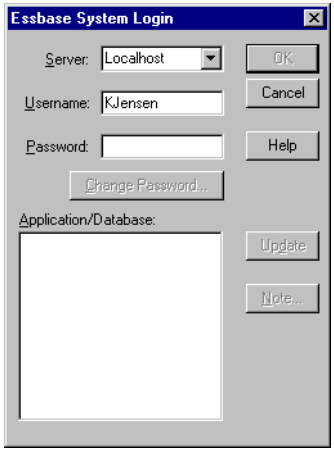
To complete the steps that follow, you need to know the name of the server to which you want to connect, your username, and your password. If you do not have this information, contact the Analytic Services system administrator.

Note: Analytic Services does not support multiple instances of Excel.

1. Select **Essbase > Connect.**

   The Essbase System Login dialog box is displayed, as shown in Figure 12.

   Figure 12: Essbase System Login Dialog Box



2. From the **Server** list box, select the server that you want to access.

   If the server name that you want is not displayed in the list, you can type in the name of the server that you want to access.

3. Press **Tab** to move to the **Username** text box; type your username in the text box.

4. Press **Tab** to move to the **Password** text box; type your password in the text box.

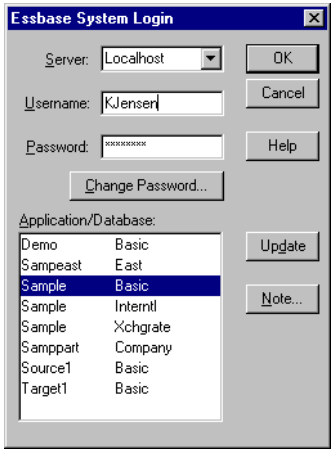
   Note: You can change your password when you are connected to a server. To change your password, see "Changing a Password" on page 50.

5. Click **OK** to connect to the server.

   A list of available application/database pairs is displayed in the Application/Database list box. Figure 13 shows an example of a list of application/database pairs. A single instance of Analytic Server enables simultaneous access to multiple applications. An application can contain multiple databases. Only the databases to which you have security access are shown in the list.

   For this tutorial, you use the Sample Basic database. If the Sample Basic database was installed as part of the Analytic Services installation, it is shown in the list. If Sample Basic is not shown in the Application/Database list box, ask the Analytic Services system administrator to install it.

   Figure 13: Available Application and Database Pairs



6. In the **Application/Database** list box, double-click **Sample Basic**. You can also select **Sample Basic** from the list box and click **OK**.

If the application is not already running, Analytic Services automatically starts it. There may be a brief pause as the application loads. The time required to start an application depends on the number of databases, the sizes of the databases, and the sizes of the indexes of the databases contained within the application.

Changing a Password

You can change your password only if you are connected to a server.

This task is optional. Optional tasks do *not* need to be performed as part of the tutorial. They are provided for information only.

To change your password:

1. In the **Essbase System Login** dialog box, select the **Change Password** button.
2. In the **Change Password** dialog box in the **New Password** text box, type your new password.
3. In the **Confirm Password** text box, type the password again.

   The passwords must be identical.
4. Click **OK** to change your password.
5. Click **OK** again to close the **Essbase System Login** dialog box.

Retrieving Data from a Database

Each time you retrieve information from an instance of Analytic Server, the following actions occur:

- Spreadsheet Add-in requests data from the server.
- The server processes the request and prepares the data.
- The server transmits the data to Spreadsheet Add-in.
- The spreadsheet application receives the data from Analytic Services and organizes it in a worksheet.

To help you monitor these operations, Analytic Services uses three custom cursors, as described in Table 2.

Table 2: Essbase Custom Cursor

Cursor	When Displayed
	Spreadsheet Add-in requests information from Analytic Server.
	The server is processing the request.
	The server returns the data.

Note: Small retrieval actions display the cursors very quickly; you may not notice changes in the direction of the arrow when retrieving small amounts of data.

➤ To retrieve data into an empty worksheet:

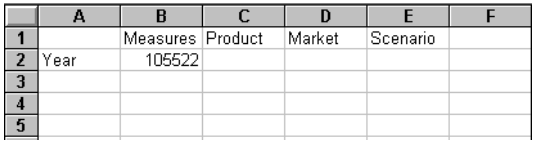
1. Select **File** > **New** or click  to open a new worksheet.

   Note: You should be connected to the Sample Basic database. If you are not connected, follow the steps in "Connecting to a Database" on page 48.

2. Select **Essbase** > **Retrieve**.

   Analytic Services retrieves data into the worksheet.

   Figure 14: Initial Data Retrieval from Sample Basic



	A	B	C	D	E	F
1		Measures	Product	Market	Scenario	
2	Year	105522				
3						
4						
5						

   Because you selected the Enable Double-Clicking box in the Essbase Options dialog box (Global tab) in step 9 on page 45, you can double-click in an empty cell to retrieve data. You can also click the Retrieve button on the Essbase toolbar.

When you retrieve data into an empty worksheet, Analytic Services returns data from the top levels of each database dimension. The top level is used as a starting point to navigate, or drill down, into levels of detailed data. In the Sample Basic database, the following five dimensions are retrieved: Measures, Product, Market, Scenario, and Year.

Tip: You can retrieve data by double-clicking in a data cell, selecting Essbase > Retrieve, or by clicking the Retrieve button on the Essbase toolbar.

Canceling a Data Retrieval Request

Occasionally, you may want to cancel a retrieval request. For instance, you may want to stop a request if a retrieval is taking longer than expected or if you mistakenly double-click.

Because Analytic Services returns data so quickly to the worksheet, you may not be able to cancel a retrieval before the retrieval is complete. The cancel feature is most useful when you need to stop a large retrieval request.

To cancel data retrievals, press the Esc key during a retrieval action.

Note: You can cancel a retrieval *only* while Analytic Services is processing in Spreadsheet Add-in. You cannot cancel a retrieval when Analytic Services is processing from Analytic Server.

Restoring the Previous Database View

The FlashBack command restores the previous database view. A database view is what you see in the worksheet after a retrieval or navigation operation. FlashBack is similar to the Edit > Undo command, which reverses the last action, with the following difference. If you modify member information between retrieves and then perform a FlashBack, Essbase still flashes back to the spreadsheet data as it was prior to the last retrieve, in spite of any changes you may have made to members between retrieves. The FlashBack command uses the memory of your computer to store the current view before processing an Analytic Services retrieval request. You can use FlashBack to undo only the most recent operation. FlashBack cannot undo multiple operations.

Throughout this tutorial, you should follow all steps in the order that they are presented. If you make a mistake or find yourself out of step with the tutorial, you can use the FlashBack command from the Essbase menu or toolbar to undo the last

command and return to the previous database view. If you want to start the tutorial over from the beginning, select the entire worksheet and select Edit > Clear > All. Then press Enter or click OK to empty the worksheet and start again.

You can disable FlashBack during normal operations to conserve memory on your local machine. Do not disable FlashBack for this tutorial.

> This task is optional. Optional tasks do *not* need to be performed as part of the tutorial. They are provided for information only.
>
> To disable Flashback:
>
> 1. Select **Essbase > Options** and click the **Global** tab.
> 2. Clear the **Enable FlashBack** check box.

Drilling Down to More Detail

You can drill down to various levels of multidimensional data in the worksheet. For example, if you want to view data for a specific quarter or month rather than an aggregate data value for the whole year, you can drill down on the Year dimension to see more detailed data.

You have three options for drilling down on a member:

- Select the member and select Essbase > Zoom In.
- Select the member and double-click the primary mouse button.
- Select the member and click the Zoom In button on the Essbase toolbar.

➤ To drill down to lower levels of the Year dimension:

1. On Year in cell A2, double-click the primary mouse button.

   The drill-down action retrieves data for the level below (the children of) Year: Qtr1, Qtr2, Qtr3, and Qtr4, as shown in Figure 15.

   Figure 15: Result of Drilling Down on the Year Dimension

	A	B	C	D	E	F
1		Measures	Product	Market	Scenario	
2	Qtr1	24703				
3	Qtr2	27107				
4	Qtr3	27912				
5	Qtr4	25800				
6	Year	105522				

   Note: For a discussion of the relationships among Analytic Services database members, see "Database Outlines" on page 26.

   With Analytic Services, you can retrieve members into columns or rows that are grouped or nested. Row groups containing more than one level of data are nested within single-member row groups. For example, a row group containing Qtr1, Qtr2, Qtr3, and Qtr4 may be nested within a single-member row for a specific region, such as East (see Figure 16). Drilling down to lower levels of database members is one way to retrieve data into nested groups.

2. In cell D1, double-click to drill down on Market and create nested groups of rows down the worksheet.

   Figure 16: Result of Drilling Down on the Market Dimension (Nested Rows)

	A	B	C	D	E	F
1			Measures	Product	Scenario	
2	East	Qtr1	5380			
3		Qtr2	6499			
4		Qtr3	6346			
5		Qtr4	5936			
6		Year	24161			
7	West	Qtr1	7137			
8		Qtr2	7515			
9		Qtr3	7939			
10		Qtr4	7270			
11		Year	29861			

Because worksheets can accommodate more rows than columns, Analytic Services is preset to retrieve data into rows when you drill down on a member. You can change this default behavior and display the results of a drill-down across columns. Drilling across columns applies only to the top-level member of a dimension (for example, Market or Scenario).

➤ To drill down on Scenario and retrieve its respective members into columns rather than rows:

1. Press and hold down the **Alt** key.
2. Double-click Scenario (in cell E1).
3. Release the **Alt** key.

   Analytic Services displays the data in columns across the worksheet, as shown in Figure 17.

   Figure 17: Result of Drilling-Down on the Scenario Dimension (Nested Columns)

	A	B	C	D	E	F	G
1			Measures	Product			
2			Actual	Budget	Variance	Variance %	Scenario
3	East	Qtr1	5380	6500	-1120	-17.23076923	5380
4		Qtr2	6499	7550	-1051	-13.9205298	6499
5		Qtr3	6346	7550	-1204	-15.94701987	6346
6		Qtr4	5936	6790	-854	-12.57731959	5936
7		Year	24161	28390	-4229	-14.89609017	24161
8	West	Qtr1	7137	8960	-1823	-20.34598214	7137
9		Qtr2	7515	9290	-1775	-19.1065662	7515
10		Qtr3	7939	9870	-1931	-19.56433637	7939
11		Qtr4	7270	9060	-1790	-19.75717439	7270
12		Year	29861	37180	-7319	-19.68531469	29861

4. Keep this worksheet open, but do not save it yet.

   You use this worksheet again in "Drilling Up to Less Detail" on page 57.

   You will open a new worksheet to complete the steps in "Drilling Down on Attribute Members" on page 55 and "About Drilling Down on Level 0 Attribute Members" on page 56.

Drilling Down on Attribute Members

You can use the Analytic Services attribute feature to retrieve and analyze in terms of characteristics, or attributes, of dimensions. For example, you can analyze product profitability based on the attributes of size or packaging. Attribute dimensions are associated with base dimensions.

You can use an attribute dimension to drill down on the base dimension with which it is associated. In the Sample Basic database, the Product base dimension is associated with several attribute dimensions, such as Caffeinated, Ounces, and Pkg_Type. Each attribute dimension consists of level 0 attribute members. Level

0 attribute members are the lowest level attributes that are associated with members of a base dimension. The Pkg_Type attribute dimension, for instance, has two level 0 members, Bottle and Can.

You can extract information on all products sold in a can by entering manually the name Can in the worksheet. You can also use Essbase Query Designer or the Essbase Member Selection dialog box to select the attribute and display it in the worksheet.

➤ To drill down on an attribute dimension:

1. Open a worksheet.
2. Connect to the Sample Basic database.
3. Select **Essbase > Retrieve**.
4. Select Product and replace it with Can by typing Can manually.
5. Click anywhere outside of cell C1 and select Essbase > Retrieve again.

   Figure 18 displays the results:

   Figure 18: An Attribute Member in a Report

	A	B	C	D	E
1		*Measures*	Can	*Market*	*Scenario*
2	*Year*	39578			

6. Drill down to all products sold in a can by double-clicking Can in cell C1.

   Cola, Diet Cola, and Diet Cream are the members of Product that have the Can attribute. Figure 19 displays the results:

   Figure 19: Result of Drilling Down on an Attribute Member

	A	B	C	D	E	F
1				*Measures*	*Market*	*Scenario*
2	*Year*	Can	Cola	22777		
3			Diet Cola	5708		
4			Diet Cream	11093		

About Drilling Down on Level 0 Attribute Members

The following description is of the general behavior of Spreadsheet Add-in when you drill down on a level 0 attribute member:

- If the level 0 attribute member is in a column, a drill-down pivots the attribute to the innermost row of the worksheet.

- If the level 0 attribute member is in a row, a drill-down does not change the position of the attribute in the worksheet.
- A drill-down on a level 0 attribute member displays the associated base members to the right of the level 0 attribute.
- If there is more than one level 0 attribute member in a worksheet, a drill-down on one attribute displays other attributes to the left of the level 0 attribute member. Level 0 attribute members in columns pivot to rows, and level 0 attribute members already in rows remain in rows.
- A drill-down on non-level 0 attribute members is the same as the current drill-down behavior for other types of members.

The drill-down behavior for non-level 0 attribute members is the same as the current drill-down behavior for other types of members. See the Spreadsheet Add-in online help for examples of drilling down on level 0 attribute members. For more information on attributes, refer to the *Essbase XTD Analytic Services Database Administrator's Guide*.

Drilling Up to Less Detail

With Analytic Services, you can drill up to higher levels in the multidimensional database outline by collapsing the current member tree. For example, if you previously drilled down on a dimension, such as Scenario, to view data for Actual and Budget, you may need to drill up to view aggregate data for the Scenario dimension.

Three options are available for drilling up on a member:

- Select the member and select Essbase > Zoom Out.
- Select the member and double-click the secondary mouse button.
- Select the member and click the Zoom Out button on the Essbase toolbar.

➤ To drill up on the Scenario dimension in the current worksheet:

1. Return to the worksheet that you kept open in step 4 on page 55
2. On any member of the Scenario dimension (that is, cell C2, D2, E2, F2, or G2), double-click the secondary mouse button.

Analytic Services collapses the members of the Scenario dimension. The result is shown in Figure 20:

Figure 20: Result of Drilling Up on the Scenario Dimension

	A	B	C	D	E	F
1			Measures	Product		
2			Scenario			
3	East	Qtr1	5380			
4		Qtr2	6499			
5		Qtr3	6346			
6		Qtr4	5936			
7		Year	24161			

3. In cell A3, double-click the secondary mouse button to drill up on East.

   Analytic Services collapses East, West, South, and Central into the single Market dimension and keeps the dimension in the A column, as shown in Figure 21.

Figure 21: Result of Drilling Up on East

	A	B	C	D	E	F
1			Measures	Product		
2			Scenario			
3	Market	Qtr1	24703			
4		Qtr2	27107			
5		Qtr3	27912			
6		Qtr4	25800			
7		Year	105522			

Customizing Drill-Down and Drill-Up Behavior

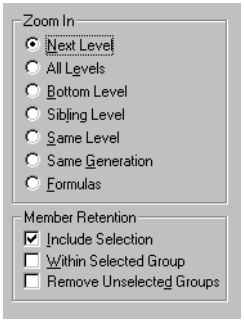
You can customize the behavior of the Zoom In and Zoom Out commands in the Essbase Options dialog box. The following steps illustrate some drill-down and drill-up techniques.

➤ To retrieve *all* members of a dimension with a single drill-down operation:

1. Select **Essbase** > **Options** and select the **Zoom** tab.

   Analytic Services displays the Zoom Tab. A portion of the Zoom tab is shown in Figure 22.

   Figure 22: Zoom In and Member Retention Option Settings

   The Zoom In option group contains items that enable you to customize drilling behavior. You can specify which members are returned to the worksheet during a drill-down operation. For example, if you select Bottom Level, Analytic Services retrieves data for the lowest level of members in a dimension. With this option, a drill-down on Year retrieves Jan, Feb, Mar, Apr, May, Jun, Jul, Aug, Sep, Oct, Nov, and Dec.

   The Member Retention option group contains items that enable you to customize drilling retention characteristics. The default selection, Include Selection, retains the selected member along with the other members retrieved as a result of a drill down. For example, if you drill down on Qtr1, Analytic Services retrieves data for Jan, Feb, and Mar, as well as for Qtr1. When this option is disabled, Analytic Services retrieves data only for Jan, Feb, and Mar; Qtr1 is eliminated.

   For more information on the Zoom In and Member Retention option groups, see the Spreadsheet Add-in online help.

2. In the **Zoom In** option group, select the **All Levels** option and click **OK** to save the setting.
3. In cell A3, drill down (double-click) on Market.
4. In cell C2, drill down (double-click) on Scenario.

Analytic Services retrieves all members of Market and Scenario, as shown in Figure 23. For the Market dimension, Analytic Services drilled down two levels to get to the bottom-most members, which are individual states. The Scenario dimension contains only one member level, so the members of Scenario would also be retrieved if you selected Next Level in the Zoom In option group.

Figure 23: Result of Drilling Down to All Member Levels

	A	B	C	D	E	F	G
1			Measures	Product			
2			Actual	Budget	Variance	Variance %	Scenario
3	New York	Qtr1	1656	2000	-344	-17.2	1656
4		Qtr2	2363	2610	-247	-9.46360153	2363
5		Qtr3	1943	2290	-347	-15.1528384	1943
6		Qtr4	2240	2320	-80	-3.44827586	2240
7		Year	8202	9220	-1018	-11.0412148	8202
8	Massachusetts	Qtr1	1532	1690	-158	-9.34911243	1532
9		Qtr2	1750	1900	-150	-7.89473684	1750
10		Qtr3	1936	2100	-164	-7.80952381	1936
11		Qtr4	1494	1610	-116	-7.20496894	1494
12		Year	6712	7300	-588	-8.05479452	6712

5. Select **Essbase > Options** and select the **Zoom** tab.
6. Return the **Zoom In** option setting to **Next Level**.

If you want to drill up on only one quarter of the year, select Within Selected Group in the Member Retention option group.

➤ To drill up only on Qtr1:

1. In the **Member Retention** option group on the **Zoom** tab, click the **Within Selected Group** check box and click **OK**.

   Make sure that Include Selection is also still checked.

2. Double-click the secondary mouse button to drill up on Qtr1 in cell B3.

Figure 24 shows that drilling up to the Year dimension affects only New York. All other states show data for all four quarters.

Figure 24: Result of Drilling Up Within a Selected Group

	A	B	C	D	E	F	G
1			Measures	Product			
2			Actual	Budget	Variance	Variance %	Scenario
3	New York	Year	8202	9220	-1018	-11.04121475	8202
4	Massachusetts	Qtr1	1532	1690	-158	-9.349112426	1532
5		Qtr2	1750	1900	-150	-7.894736842	1750
6		Qtr3	1936	2100	-164	-7.80952381	1936
7		Qtr4	1494	1610	-116	-7.204968944	1494
8		Year	6712	7300	-588	-8.054794521	6712
9	Florida	Qtr1	1070	1300	-230	-17.69230769	1070
10		Qtr2	1339	1570	-231	-14.7133758	1339
11		Qtr3	1495	1730	-235	-13.58381503	1495
12		Qtr4	1125	1300	-175	-13.46153846	1125

3. Before moving on with the tutorial, disable the **Within Selected Group** option:
   a. Select **Essbase > Options** and select the **Zoom** tab.
   b. In the **Member Retention** option group, clear the **Within Selected Group** check box, and click **OK**.
4. Select **File > Close** to close the worksheet.

   You do not need to save the worksheet.

Pivoting, Retaining, and Suppressing Data

After you retrieve data into the worksheet, you may want to manipulate the data in various ways. For example, you may want to move rows and columns to different positions in the worksheet, or you may want to tell Analytic Services to suppress or to retain specific data during data retrievals.

To help you manipulate worksheet data, this section steps you through the following procedures:

- “Pivoting Rows and Columns” on page 62
- “Retaining a Data Subset” on page 66
- “Removing a Data Subset” on page 68
- “Navigating Through the Worksheet Without Retrieving Data” on page 69
- “Suppressing Missing Values, Zero Values, and Underscore Characters” on page 73

Pivoting Rows and Columns

With the Pivot command, you can change the orientation of worksheet data. Use the Pivot command to perform any of the following tasks:

- Move a row group to a column group
- Move a column group to a row group
- Change the order of row groups
- Change the order of column groups

You can execute the Pivot command in two ways:

- Select the member cell that you want to pivot, and select Essbase > Pivot. This method applies only to moving a row group to a column group or a column group to a row group.
- Click in the center of the member cell that you want to pivot, press and hold down the secondary mouse button, and drag the group to the desired location. This method applies to swapping row and column groups and to changing the order within groups.

➤ To pivot Year data from a row group to a column group:

1. Select **File > New** or click  to open a new worksheet.

   Note: You should already be connected to the Sample Basic database. If you are not connected, follow the steps in "Connecting to a Database" on page 48.

2. Select **Essbase > Retrieve**.
3. Drill down (double-click) on Measures and Product (in cells B1 and C1, respectively).

4. Press and hold down the **Alt** key, and, in cell E1, drill down (double-click) on Scenario.

   Figure 25 shows the spreadsheet view before pivoting.

   Figure 25: View Before Pivoting

	A	B	C	D	E	F	G	H
1						Market		
2				Actual	Budget	Variance	Variance %	Scenario
3	100	Profit	Year	30468	41940	-11472	-27.35336195	3046
4		Inventory	Year	29448	31590	2142	6.780626781	2944
5		Ratios	Year	57.27288145	57.6240049	-0.351123447	-0.609335377	57.2728814
6		Measures	Year	30468	41940	-11472	-27.35336195	3046
7	200	Profit	Year	27954	35950	-7996	-22.24200278	2795
8		Inventory	Year	33000	31090	-1910	-6.143454487	3300
9		Ratios	Year	55.53966595	57.46674162	-1.927075664	-3.353375551	55.5396659
10		Measures	Year	27954	35950	-7996	-22.24200278	2795
11	300	Profit	Year	25799	29360	-3561	-12.12874659	2579
12		Inventory	Year	28865	27140	-1725	-6.355932203	2886
13		Ratios	Year	54.23795671	57.13950487	-2.901548161	-5.078007182	54.2379567
14		Measures	Year	25799	29360	-3561	-12.12874659	2579
15	400	Profit	Year	21301	22130	-829	-3.746046091	2130

5. In cell C3, select Year and select **Essbase > Pivot**.

   Analytic Services pivots the Year dimension to a column group next to Market (above the Scenario members), as shown in Figure 26.

   Figure 26: Result of Pivoting a Row Group to a Column Group

	A	B	C	D	E	F
1			Year	Market		
2			Actual	Budget	Variance	Variance %
3	100	Profit	30468	41940	-11472	-27.35336195
4		Inventory	29448	31590	2142	6.780626781
5		Ratios	57.27288145	57.6240049	-0.351123447	-0.609335377
6		Measures	30468	41940	-11472	-27.35336195
7	200	Profit	27954	35950	-7996	-22.24200278
8		Inventory	33000	31090	-1910	-6.143454487
9		Ratios	55.53966595	57.46674162	-1.927075664	-3.353375551
10		Measures	27954	35950	-7996	-22.24200278
11	300	Profit	25799	29360	-3561	-12.12874659
12		Inventory	28865	27140	-1725	-6.355932203
13		Ratios	54.23795671	57.13950487	-2.901548161	-5.078007182
14		Measures	25799	29360	-3561	-12.12874659

6. As another example, in cell C2, select Actual.
7. Right click and drag Actual to product 100 in cell A3.

As Figure 27 shows, the member label box is displayed under the cursor during the pivot operation, and it displays the names of the members that you are pivoting. The *orientation* of the member label box, however, does not determine the orientation of the pivot result. Analytic Services determines the data orientation by the location of the destination cell.

Figure 27: Pivoting a Column Group to a Row Group

	A	B	C	D	E	F
1			Year	Market		
2			Actual	Budget	Variance	Variance %
3	100	Actual Budget Variance Variance% Scenario			-11472	-27.35336195
4		Inventory	29448	31590	2142	6.780626781
5		Ratios	57.27288145	57.6240049	-0.351123447	-0.609335377
6		Measures	30468	41940	-11472	-27.35336195
7	200	Profit	27954	35950	-7996	-22.24200278
8		Inventory	33000	31090	-1910	-6.143454487
9		Ratios	55.53966595	57.46674162	-1.927075664	-3.353375551
10		Measures	27954	35950	-7996	-22.24200278
11	300	Profit	25799	29360	-3561	-12.12874659
12		Inventory	28865	27140	-1725	-6.355932203
13		Ratios	54.23795671	57.13950487	-2.901548161	-5.078007182
14		Measures	25799	29360	-3561	-12.12874659

Figure 28 shows the result of Analytic Services pivoting the Scenario members (Actual, Budget, Variance, and Variance%) from a column group to a row group that is displayed to the left of the Product members.

Figure 28: Result of Pivoting a Column Group to a Row Group

	A	B	C	D	E
1				Year	Market
2	Actual	100	Profit	30468	
3			Inventory	29448	
4			Ratios	57.27288145	
5			Measures	30468	
6		200	Profit	27954	
7			Inventory	33000	
8			Ratios	55.53966595	
9			Measures	27954	
10		300	Profit	25799	
11			Inventory	28865	
12			Ratios	54.23795671	
13			Measures	25799	
14		400	Profit	21301	

➤ To transpose the order of row groups:

1. In cell A2, select Actual.
2. Right-click and drag Actual to Profit in cell C2.

Figure 29 shows the spreadsheet before the pivot operation.

Figure 29: Pivoting the Order of Row Groups

	A	B	C	D	E	F	G
1				Year	Market		
2	Actual	100	Profit	Actual Budget Variance Variance% Scenario			
3			Inventory	29448			
4			Ratios	57.27288145			
5			Measures	30468			
6		200	Profit	27954			
7			Inventory	33000			
8			Ratios	55.53966595			
9			Measures	27954			
10		300	Profit	25799			
11			Inventory	28865			
12			Ratios	54.23795671			
13			Measures	25799			
14		400	Profit	21301			
15			Inventory	26092			
16			Ratios	53.59966758			

The pivot changes the order of the row groups. The result is shown in Figure 30

Figure 30: Result of Pivoting the Order of Row Groups

	A	B	C	D	E	F
1				Year	Market	
2	100	Profit	Actual	30468		
3			Budget	41940		
4			Variance	-11472		
5			Variance %	-27.35336195		
6			Scenario	30468		
7		Inventory	Actual	29448		
8			Budget	31590		
9			Variance	2142		
10			Variance %	6.780626781		
11			Scenario	29448		
12		Ratios	Actual	57.27288145		
13			Budget	57.6240049		
14			Variance	-0.351123447		
15			Variance %	-0.609335377		
16			Scenario	57.27288145		

In this example, notice that both the source cell and the destination cell are now members. Whenever the source cell and the destination cell are members of different row groups, Analytic Services exchanges the member

groups. You must select a destination cell that contains a member name to exchange row members. You can also exchange column members by choosing a destination cell in another column that contains a member name.

Retaining a Data Subset

The Keep Only command retains only selected member rows or columns and removes all other data from the worksheet view. This command provides a powerful way to remove dimensional slices without having to delete individual cells.

➤ To keep only Actual and Budget data in the current worksheet:

1. In cell C2, select Actual, and in cell C3, select Budget, as shown in Figure 31.

Figure 31: Selecting Members for the Keep Only Command

	A	B	C	D	E	F
1				Year	Market	
2	100	Profit	Actual	30468		
3			Budget	41940		
4			Variance	-11472		
5			Variance %	-27.35336195		
6			Scenario	30468		
7		Inventory	Actual	29448		
8			Budget	31590		
9			Variance	2142		
10			Variance %	6.780626781		
11			Scenario	29448		
12		Ratios	Actual	57.27288145		
13			Budget	57.6240049		
14			Variance	-0.351123447		
15			Variance %	-0.609335377		
16			Scenario	57.27288145		

2. Select **Essbase > Keep Only**.

Analytic Services removes the Variance, Variance%, and Scenario rows from the worksheet and retains only Actual and Budget data, as shown in Figure 32.

Figure 32: Result of Retaining a Data Subset (Adjacent Cells)

	A	B	C	D	E	F
1				Year	Market	
2	100	Profit	Actual	30468		
3			Budget	41940		
4		Inventory	Actual	29448		
5			Budget	31590		
6		Ratios	Actual	57.27288145		
7			Budget	57.6240049		
8		Measures	Actual	30468		
9			Budget	41940		
10	200	Profit	Actual	27954		
11			Budget	35950		
12		Inventory	Actual	33000		
13			Budget	31090		
14		Ratios	Actual	55.53966595		
15			Budget	57.46674162		
16		Measures	Actual	27954		

Occasionally, the data that you want to remove from the worksheet does not lie in an adjacent range of cells.

➤ To select and retain nonadjacent cells:

1. Press and hold down the **Alt** key, and, in cell D1, zoom in (double-click) on Year.
2. Select Qtr2 in cell E2.
3. Press and hold down the **Ctrl** key and select Qtr4 in cell G2 (see Figure 33).

Figure 33: Selecting Nonadjacent Members for the Keep Only Command

	A	B	C	D	E	F	G
1						Market	
2				Qtr1	Qtr2	Qtr3	Qtr4
3	100	Profit	Actual	7048	7872	8511	7037
4			Budget	9790	10660	11440	10050
5		Inventory	Actual	29448	29860	36461	35811
6			Budget	31590	29950	34830	32340
7		Ratios	Actual	57.40178857	57.28473167	57.39559978	56.99467561
8			Budget	57.7376566	57.39041794	57.45231167	57.96344648
9		Measures	Actual	7048	7872	8511	7037
10			Budget	9790	10660	11440	10050
11	200	Profit	Actual	6721	7030	7005	7198
12			Budget	8480	8840	8830	9800
13		Inventory	Actual	33000	31361	35253	32760
14			Budget	31090	28040	30260	26460
15		Ratios	Actual	55.38738874	55.49797453	55.06764011	56.21773123
16			Budget	57.36255286	57.40395375	57.11143695	57.9954955
17		Measures	Actual	6721	7030	7005	7198

4. Select **Essbase > Keep Only**.

   Analytic Services retains only Qtr2 and Qtr4 data and deletes the other Year members, as shown in Figure 34.

   Figure 34: Result of Retaining a Data Subset (Nonadjacent Cells)

	A	B	C	D	E	F
1				Market		
2				Qtr2	Qtr4	
3	100	Profit	Actual	7872	7037	
4			Budget	10660	10050	
5		Inventory	Actual	29860	35811	
6			Budget	29950	32340	
7		Ratios	Actual	57.28473167	56.99467561	
8			Budget	57.39041794	57.96344648	
9		Measures	Actual	7872	7037	
10			Budget	10660	10050	
11	200	Profit	Actual	7030	7198	
12			Budget	8840	9800	
13		Inventory	Actual	31361	32760	
14			Budget	28040	26460	
15		Ratios	Actual	55.49797453	56.21773123	
16			Budget	57.40395375	57.9954955	
17		Measures	Actual	7030	7198	

Removing a Data Subset

The Remove Only command is the counterpart to the Keep Only command. With Remove Only, you can remove selected member rows or columns and retain all other data in the worksheet view.

➤ To remove a data subset from the current worksheet view:

1. In cell B7, select Ratios.
2. Press and hold **Ctrl**, and, in cell B9, select Measures.
3. Select **Essbase > Remove Only**.

Analytic Services removes data for Ratios and Measures but retains data for Profit and Inventory. The result is shown in Figure 35.

Figure 35: Result of Removing a Data Subset

	A	B	C	D	E	F
1				Market		
2				Qtr2	Qtr4	
3	100	Profit	Actual	7872	7037	
4			Budget	10660	10050	
5		Inventory	Actual	29860	35811	
6			Budget	29950	32340	
7	200	Profit	Actual	7030	7198	
8			Budget	8840	9800	
9		Inventory	Actual	31361	32760	
10			Budget	28040	26460	
11	300	Profit	Actual	6769	6403	
12			Budget	7680	7000	
13		Inventory	Actual	30334	38142	
14			Budget	28460	35460	

Navigating Through the Worksheet Without Retrieving Data

With the Navigate Without Data feature, you can perform navigational operations, such as pivot, zoom in, zoom out, keep only, and remove only, without retrieving any data into the worksheet.

This feature is especially useful when dealing with dynamic calculation members, which are usually specified by the application designer. By activating Navigate Without Data, you are effectively telling Analytic Services *not* to calculate values dynamically (that is, calculate the database at retrieval time) while you are creating the spreadsheet report. Dynamic calculation is discussed in more detail in "Retrieving Dynamic Calculation Members" on page 160.

➤ To navigate through the worksheet without retrieving data:

1. Select **Essbase** > **Navigate Without Data**.

   Analytic Services displays a check mark next to the menu item.

   You can also disable Navigate Without Data by clearing the appropriate option in the Global tab of the Essbase Options dialog box or by clicking the Navigate Without Data button on the Essbase toolbar.

2. In cell D2, double-click the secondary mouse button to drill up on Qtr2.

Analytic Services shows the collapsed Year dimension but withholds retrieving any data that is changed as a result of drilling up. The cells where data would usually be displayed are blank. The result is shown in Figure 36.

Figure 36: Result of Zooming Out (Navigate Without Data Enabled)

	A	B	C	D	E
1				Market	
2				Year	
3	100	Profit	Actual		
4			Budget		
5		Inventory	Actual		
6			Budget		
7	200	Profit	Actual		
8			Budget		
9		Inventory	Actual		
10			Budget		
11	300	Profit	Actual		
12			Budget		
13		Inventory	Actual		
14			Budget		

3. In cell D2, drill down (double-click) on Year by pressing and holding down the **Alt** key.

   Analytic Services drills down without retrieving data.

4. In cell C3, select Actual and select **Essbase > Pivot**.

   Analytic Services executes the pivot but does not retrieve data. The result is shown in Figure 37.

   Note: You get the same result by pivoting any of the other Scenario members.

Figure 37: Result of Pivoting (Navigate Without Data Enabled)

	A	B	C	D	E	F	G	H	I	J	K	L
1							Market					
2					Actual					Budget		
3			Qtr1	Qtr2	Qtr3	Qtr4	Year	Qtr1	Qtr2	Qtr3	Qtr4	Year
4	100	Profit										
5		Inventory										
6	200	Profit										
7		Inventory										
8	300	Profit										
9		Inventory										
10	400	Profit										
11		Inventory										
12	Diet	Profit										
13		Inventory										
14	Product	Profit										

5. In cell G1, click the secondary mouse button on Market and drag Market to product 100 (cell A4).

Analytic Services executes the pivot without retrieving data. The result is shown in Figure 38.

Figure 38: Result of Pivoting (Navigate Without Data Enabled)

	A	B	C	D	E	F	G	H	I	J	K	L
1						Actual					Budget	
2				Qtr1	Qtr2	Qtr3	Qtr4	Year	Qtr1	Qtr2	Qtr3	Qtr4
3	Market	100	Profit									
4			Inventory									
5		200	Profit									
6			Inventory									
7		300	Profit									
8			Inventory									
9		400	Profit									
10			Inventory									
11		Diet	Profit									
12			Inventory									
13		Product	Profit									
14			Inventory									

Navigating without data also works with the Keep Only and Remove Only commands.

➤ To navigate without data when using the Keep Only or Remove Only command:

1. Select Qtr1 (cell D2) and Qtr2 (cell E2) and select **Essbase > Keep Only**.

   Analytic Services retains only the selected members and does not retrieve data, as shown in Figure 39.

   Figure 39: Result of Keep Only (Navigate Without Data Enabled)

	A	B	C	D	E	F	G	H
1				Actual		Budget		
2				Qtr1	Qtr2	Qtr1	Qtr2	
3	Market	100	Profit					
4			Inventory					
5		200	Profit					
6			Inventory					
7		300	Profit					
8			Inventory					
9		400	Profit					
10			Inventory					
11		Diet	Profit					
12			Inventory					
13		Product	Profit					

2. Select products 300 (cell B7), 400 (cell B9), and Diet (cell B11) and select **Essbase > Remove Only**.

Analytic Services executes the Remove Only command without actually querying the database for information, as shown in Figure 40.

Figure 40: Result of Remove Only (Navigate Without Data Enabled)

	A	B	C	D	E	F	G	H
1				Actual		Budget		
2				Qtr1	Qtr2	Qtr1	Qtr2	
3	Market	100	Profit					
4			Inventory					
5		200	Profit					
6			Inventory					
7		Product	Profit					
8			Inventory					
9								

➤ To turn off Navigate Without Data when you are ready to retrieve data:

1. Select **Essbase > Navigate Without Data**.

   Analytic Services removes the check mark next to the menu item.

   You can also disable Navigate Without Data by clearing the appropriate option in the Essbase Options dialog box (Global tab) or by clicking the Navigate Without Data button on the Essbase toolbar.

2. In cell A3, drill down (double-click) on Market.

   Analytic Services drills down on the Market dimension and also retrieves data into the worksheet. The result is shown in Figure 41.

   Figure 41: Result of Drilling down (Navigate Without Data Disabled)

	A	B	C	D	E	F	G	H
1				Actual		Budget		
2				Qtr1	Qtr2	Qtr1	Qtr2	
3	East	100	Profit	2747	3352	2880	3480	
4			Inventory	5384	4490	5200	3530	
5		200	Profit	562	610	960	1070	
6			Inventory	5957	6442	5610	5910	
7		Product	Profit	5380	6499	6500	7550	
8			Inventory	25744	26214	24710	24030	
9	West	100	Profit	1042	849	2350	2130	
10			Inventory	8592	9656	10250	10950	
11		200	Profit	2325	2423	2570	2720	
12			Inventory	11755	11643	11070	10900	
13		Product	Profit	7137	7515	8960	9290	
14			Inventory	38751	41574	39020	42820	

Note that if you want to retrieve data without changing the current worksheet view, you can also retrieve data by simply double-clicking in any data cell or by selecting Essbase > Retrieve (after disabling Navigate Without Data).

Suppressing Missing Values, Zero Values, and Underscore Characters

Several types of data can be returned to a worksheet view:

- Numeric data values
- #NoAccess strings, which are displayed when you do not have the proper security access to view a data value
- #Missing strings, which indicate that no data exists for that member intersection
- Zero data values

A missing value is not the same as a zero value that is loaded into the Analytic Services database. When data does not exist for a data cell in Analytic Services, a value of #Missing is returned to the worksheet. If any cell in a row contains a value, that row is not suppressed on a retrieval.

Using Analytic Services, you can suppress missing and zero values from the display in the worksheet. In addition, you can tell Analytic Services to suppress underscore characters that are in some member names.

➤ To suppress rows that contain missing values from being displayed in the worksheet:

1. In cell C3, double-click the secondary mouse button to drill up on Profit.
2. Pivot Measures (in cell C3) to Actual (in cell D1).
3. In cell B4, drill down (double-click) on product 100.

In the South member group, the product 100-30 row contains all missing values, indicating that this product is not sold in the South, as shown in Figure 42. You may need to scroll down the worksheet to see this row.

Figure 42: Worksheet View Displaying Missing Data Values

	A	B	C	D	E	F	G
1				Measures			
2			Actual		Budget		
3			Qtr1	Qtr2	Qtr1	Qtr2	
4	East	100-10	2461	2940	2550	3050	
5		100-20	212	303	220	300	
6		100-30	74	109	110	130	
7		100	2747	3352	2880	3480	
8		200	562	610	960	1070	
9		Product	5380	6499	6500	7550	
10	West	100-10	1047	1189	1720	1900	
11		100-20	-67	-177	320	200	
12		100-30	62	-163	310	30	
13		100	1042	849	2350	2130	
14		200	2325	2423	2570	2720	
15		Product	7137	7515	8960	9290	
16	South	100-10	745	835	1160	1280	
17		100-20	306	363	570	660	
18		100-30	#Missing	#Missing	#Missing	#Missing	

4. Select **Essbase > Options**, and select the **Display** tab.
5. In the **Suppress** option group, select the **#Missing Rows** check box and click **OK**.

   The Suppress #Missing Rows and Zero Rows options are not available when any of the Formula Preservation options are selected in the Mode tab of the Essbase Options dialog box.

   For more information on Formula Preservation, see "Preserving Formulas When Retrieving Data" on page 149.
6. Select **Essbase > Retrieve** to update the worksheet.

Note: After you change a worksheet option in the Essbase Options dialog box, you must perform a retrieval or drill operation to put the new setting into effect.

Analytic Services suppresses product 100-30 from the South member group, as shown in Figure 43.

Figure 43: Result of Suppressing Missing Data Values

	A	B	C	D	E	F	G
4	East	100-10	2461	2940	2550	3050	
5		100-20	212	303	220	300	
6		100-30	74	109	110	130	
7		100	2747	3352	2880	3480	
8		200	562	610	960	1070	
9		Product	5380	6499	6500	7550	
10	West	100-10	1047	1189	1720	1900	
11		100-20	-67	-177	320	200	
12		100-30	62	-163	310	30	
13		100	1042	849	2350	2130	
14		200	2325	2423	2570	2720	
15		Product	7137	7515	8960	9290	
16	South	100-10	745	835	1160	1280	
17		100-20	306	363	570	660	
18		100	1051	1198	1730	1940	
19		200	1465	1540	1640	1700	
20		Product	3077	3267	4180	4410	
21	Central	100-10	843	928	1080	1180	

7. Select **File > Close** to close the worksheet.

   You do not need to save the worksheet.

After you enable the Suppress #Missing Rows feature in the Essbase Options dialog box, any missing values suppressed during a data retrieval are not retrieved again by disabling the feature. If you disable the feature in the Essbase Options dialog box, missing values are retrieved *from only that point on.* For example, in this tutorial task, Analytic Services could not go back and return the missing values for product 100-30. To return these missing values to the worksheet, you disable the Suppress #Missing Rows feature, drill up on a Product member, and then drill down again.

You can also suppress zeros and underscore characters as described in this tutorial task by clicking the appropriate options in the Suppress option group in the Essbase Options dialog box (Display tab).

In addition to suppressing specific values and characters during retrieval, Analytic Services enables you to define a label for missing values (#Missing) or for data to which you do not have access (#NoAccess). If you define a replacement label for these values, Analytic Services displays the replacement labels instead of the default labels. For more information on defining replacement labels for the #Missing and #NoAccess labels, see the Spreadsheet Add-in online help.

Formatting the Worksheet

Analytic Services provides you with various ways to customize the worksheet view. For example, you may want to apply visual cues, or styles, to certain member names or to data cells in the worksheet. You may want to display alternative names, or aliases, for member names. This topic steps you through the following formatting procedures:

- “Formatting Text and Cells” on page 76
- “Displaying Aliases for Member Names” on page 85
- “Displaying Both Member Names and Aliases” on page 87
- “Repeating Member Labels” on page 88

This section of the tutorial starts with a new worksheet.

Formatting Text and Cells

In a spreadsheet report, many hierarchical levels of database information are displayed. By defining and applying visual cues, or styles, to the text and cells in the worksheet, you can easily keep track of specific database members, dimensions, and cell functions. Styles are an effective way of viewing and distinguishing data in Spreadsheet Add-in.

Keep in mind that applying styles requires additional processing during a retrieval request. If you need to remove styles, see “Removing Styles” on page 84.

This portion of the tutorial describes the following tasks:

- “Applying Styles to Parent Members” on page 77
- “Applying Styles to Dimension Members” on page 80
- “Applying Styles to Data Cells” on page 82
- “Precedence of Overlapping Styles” on page 83
- “Removing Styles” on page 84

For a discussion of the relationships among Analytic Services database members, see “Database Outlines” on page 26.

Applying Styles to Parent Members

Each dimension in a database may contain a large number of hierarchical levels. As you view data in the worksheet, you may not be familiar with all the hierarchical levels of the database outline. To indicate which members have underlying children, you can apply formatting styles to parent members, including those with attributes.

➤ To apply styles to parent members:

1. Select **File** > **New** or click  to open a new worksheet.
2. Select **Essbase** > **Retrieve**.

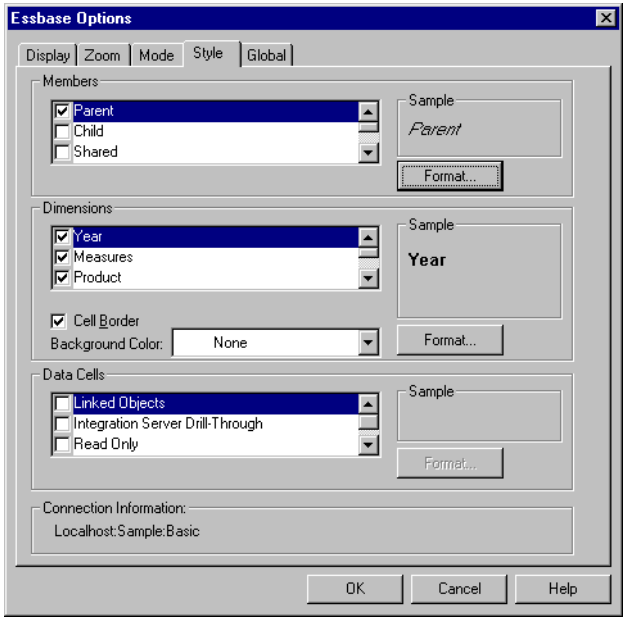
   Note: You should still be connected to the Sample Basic database. If you are not connected, follow the steps in "Connecting to a Database" on page 48.

3. In cell A2, drill down (double-click) on Year.
4. Select **Essbase** > **Options**.
5. In the **Essbase Options** dialog box, select the **Style** tab.

   The Style tab is available only when you are connected to a database.

Analytic Services displays the Style tab, as shown in Figure 44.

Figure 44: Essbase Options Dialog Box, Style Tab



In the Members group box, you can define styles for various types of database members, such as parent, child, and shared members.

6. In the **Members** group box, select the **Parent** check box.

   Clicking this box defines a font and color style for parent member names. Analytic Services defines a default color of navy for all parent members. You can select a font format by clicking the Format button to the right of the Members group box and using the Font dialog box.

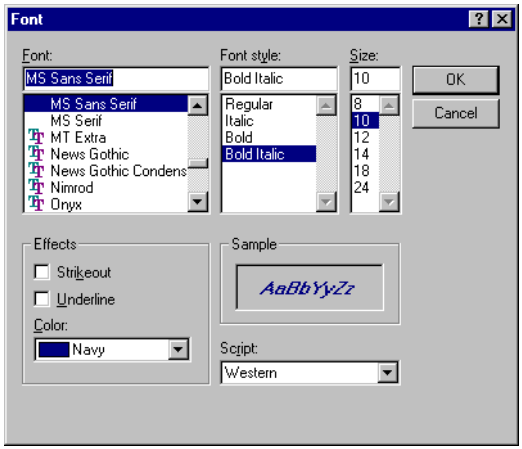
7. Click the **Format** button that is to the right of the **Members** group box.

   Analytic Services displays the Font dialog box.

8. In the **Font style** list box, select **Bold Italic** and then click **OK**.

Analytic Services displays an example of the selected style in the Sample box, as shown in Figure 45.

Figure 45: Font Dialog Box



9. Click **OK** again.

   Even though you have defined styles, they are not enabled until you select the Use Styles check box from the Essbase Options dialog box and refresh the worksheet.

10. Select **Essbase** > **Options**, and select the **Display** tab.

11. In the **Cells** option group, select the **Use Styles** check box to enable the styles, and then click **OK**.

12. Select **Essbase** > **Retrieve** to refresh the worksheet and apply the styles.

    Analytic Services displays parent member names in bold, navy font.

13. In cell A2, drill down (double-click) on Qtr1.

Analytic Services displays Jan, Feb, and Mar in a regular font, because these members do not have underlying children.

Figure 46: Styles Applied to Parent Members

	A	B	C	D	E
1		***Measures***	***Product***	***Market***	***Scenario***
2	Jan	8024			
3	Feb	8346			
4	Mar	8333			
5	***Qtr1***	24703			
6	***Qtr2***	27107			
7	***Qtr3***	27912			
8	***Qtr4***	25800			
9	*Year*	105522			

Applying Styles to Dimension Members

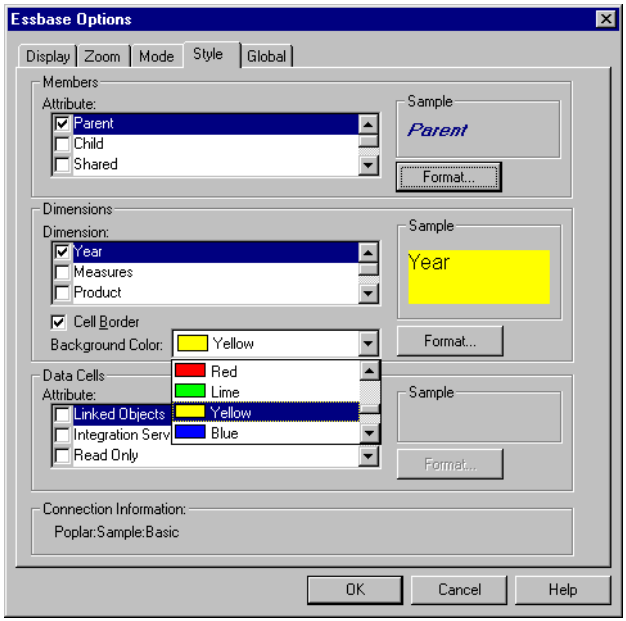
In addition to applying styles to parent members, as you did in the previous exercise, you can also apply styles to members of a dimension in a database. Applying styles to dimensions makes it easy to view the various dimension members in Spreadsheet Add-in.

➤ To apply styles to dimensions:

1. Select **Essbase** > **Options** and select the **Style** tab.
2. In the **Dimensions** group box, select the **Year** check box.
3. Select the **Cell Border** check box to create a border around each cell that contains a member from the selected dimension.

4. From the **Background Color** drop-down list, select **Yellow**.

Figure 47: Selecting a Background Color from the Style Tab



5. Click the **Format** button that is to the right of the **Dimensions** group box.

   Analytic Services displays the Font dialog box.

6. From the **Font style** list box, select **Bold**, and then click **OK**.

   Analytic Services displays an example of the selected style in the Sample box.

7. From the list of dimensions, select the **Measures** dimension, and from the **Background Color** drop-down list, select **Fuschia**.

8. From the list of dimensions, select **Product**, and clear the **Cell Border** check box.

9. From the **Background Color** drop-down list, select **Aqua**.

10. Scroll down the list of dimensions, and select **Market**.

11. Select the **Cell Border** check box, and click the **Format** button that is to the right of the **Dimensions** list.

12. When the **Font** dialog box is displayed, from the **Font style** list box select **Italic**, and then click **OK**.

13. From the list of dimensions, select **Scenario**, and from the **Background Color** drop-down list, select **Red**.
14. Click the **Format** button, and from the **Background Color** list box, select **White**.
15. Click **OK** twice to return to the worksheet.

    Note: When you define styles, your choices are saved to the Windows Registry on your local computer. You can define one set of styles per database.

16. In cell D1, drill down (double-click) on Market.
17. Press and hold down the **Alt** key and drill down (double-click) on Scenario in cell E1.
18. Select **Essbase > Retrieve** to refresh the worksheet.

    Analytic Services redisplays the worksheet and implements the newly defined styles. For example, members of the Scenario dimension are displayed with a red background.

Figure 48: Dimensions with Styles Applied

	A	B	C	D	E	F	G
1			Measures	Product			
2			Actual	Budget	Variance	Variance %	Scenario
3	East	Jan	1732	2080	-348	-16.7308	173
4		Feb	1843	2230	-387	-17.3543	184
5		Mar	1805	2190	-385	-17.5799	180
6		Qtr1	5380	6500	-1120	-17.2308	538
7		Qtr2	6499	7550	-1051	-13.9205	649
8		Qtr3	6346	7550	-1204	-15.947	634
9		Qtr4	5936	6790	-854	-12.5773	593
10		Year	24161	28390	-4229	-14.8961	2416
11	West	Jan	2339	2980	-641	-21.5101	233
12		Feb	2394	2990	-596	-19.9331	239
13		Mar	2404	2990	-586	-19.5987	240
14		Qtr1	7137	8960	-1823	-20.346	713

Applying Styles to Data Cells

You can apply styles to data cells, such as read-only cells, read/write cells, linked object cells, and Essbase XTD Integration Server drill-through cells to distinguish them from other cells in the worksheet. The Sample Basic database that you are

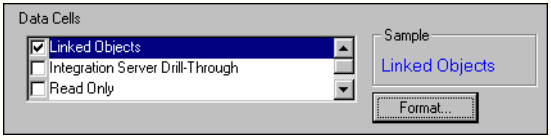
using for this tutorial does not contain data cells with any of these characteristics. In the advanced tutorial presented in Chapter 3, you attach a linked reporting object to a data cell and apply a style to the cell.

This task is optional. Optional tasks do *not* need to be performed as part of the tutorial. They are provided for information only.

In general, to apply styles to data cells, follow these steps:

1. Select **Essbase** > **Options**, and select the **Style** tab.
2. In the **Data Cells** option group, select the **Linked Objects**, **Integration Server Drill-Through**, **Read Only**, or **Read/Write** check box.
3. Click **Format**.
4. In the **Font** dialog box, specify the font, font size, font style, color, and effects, and click **OK**.

   Essbase displays an example of the selected style in the **Sample** box.



5. Repeat step 2 through step 4 to set styles for other data cells.
6. Select the **Display** tab and select the **Use Styles** check box to apply styles to the worksheet.
7. Click **OK** to close the **Essbase Options** dialog box.
8. Select **Essbase** > **Retrieve** to display the new styles in the worksheet.

Precedence of Overlapping Styles

Analytic Services uses the following order of precedence when applying multiple text styles:

- Linked object cells
- Integration Server Drill-Through cells
- Read-only cells

- Read/write cells
- Parent member cells
- Child member cells
- Shared member cells
- Cells containing formulas
- Dynamic calculation member cells
- Attribute cells
- Dimension cells

The only way you can apply a background color to data is to define a style for dimensions. If dimension styles are defined and the Use Styles setting is turned on, a background color is always defined for members of a dimension.

The text styles that you can apply to members, dimensions, and data cells are hierarchical and determine which characteristics are applied. Member styles are at the top of the hierarchy. Thus, member styles are always applied if styles are turned on. Notice that in Figure 48 on page 82, the Qtr1 label in cell B6 is in bold italic navy font, and has a yellow background. The navy font comes from the style defined for parent members, and the yellow background comes from the style defined for Year.

If you want to see a child member style, make sure that the parent member style is turned off. If you want to see a shared member style, make sure that both parent and child member styles are turned off.

Removing Styles

Styles can be very helpful tools for keeping track of data in Spreadsheet Add-in. Applying styles, however, involves additional processing time during a retrieval request. This additional processing has a slight impact on the speed of Analytic Services retrievals.

If you do not want to apply styles to the worksheet view, you can clear them. You can also turn off styles so that they are not displayed when you refresh the view (by selecting Essbase > Retrieve, for example). So that the worksheet matches the illustrations presented in the following tasks, *do not* remove styles if you are going through the tutorial.

If styles are applied to the worksheet and you execute the FlashBack command, these styles are temporarily removed from the current view. The styles are reapplied whenever you initiate a retrieval.

This task is optional. Optional tasks do *not* need to be performed as part of the tutorial. They are provided for information only.

To remove all styles from a worksheet:

1. Select all cells in the worksheet.
2. From the Excel menu bar, select **Edit** > **Clear** > **Formats**.

To turn off styles:

1. Select **Essbase** > **Options** and, select the **Display** tab.
2. In the **Cells** option group, clear the **Use Styles** check box, and click **OK**.

Note: If you turn styles off without clearing them from the worksheet, the styles remain in the current worksheet view when you refresh the view. The styles remain to avoid removing any styles that you may apply to individual cells using native worksheet formatting options.

Displaying Aliases for Member Names

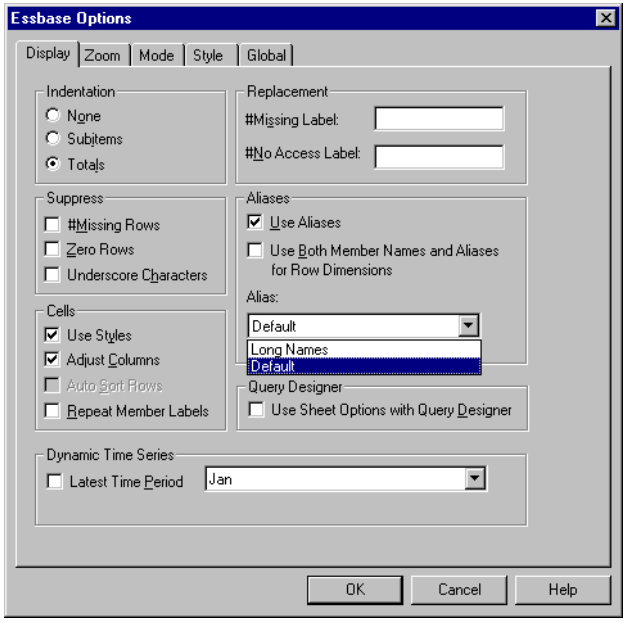
An alias is alternate name for a database member. You can create reports that use the database member name, which is often a stock number or a product code, or an alias name, which can be more descriptive. Aliases are defined by the Analytic Services application designer. Each database can contain one or more alias tables.

For example, members of Product in the Sample Basic database are defined as codes, such as 100 and 200. A descriptive alias for each member of Product, such as Colas and Root Beer, is defined in an alias table. In some cases, alias names may vary depending on the combination of other database members. For example, a Product member may have a different alias for each market in which it is sold. For more details about member names and aliases, see the Spreadsheet Add-in online help or the *Essbase XTD Analytic Services Database Administrator's Guide*.

➤ To display the alias of a member rather than its database name:

1. In cell C2, double-click the secondary mouse button to drill up on Actual.
2. Press and hold down the **Alt** key and drill down (double-click) on Product in cell D1.
3. Select **Essbase > Options**, and select the **Display** tab.
4. In the **Aliases** option group, select the **Use Aliases** check box to display member aliases.
5. Select **Default** from the **Alias** drop-down list, as shown in Figure 49.

Figure 49: Enabling Aliases in the Essbase Options Display Tab



6. Click **OK**.
7. Select **Essbase > Retrieve** to refresh the worksheet and display the alias names.

The result is shown in Figure 50. Analytic Services changes the Product codes (100, 200, and so forth) to their predefined aliases (Colas, Root Beer, Cream Soda, and so forth). In the Sample Basic database, Product is the only dimension with predefined aliases.

Figure 50: Result of Displaying Aliases

	A	B	C	D	E	F	G
1					Measures		
2			Colas	Root Beer	Cream Soda	Fruit Soda	Diet Drink
3			Scenario	Scenario	Scenario	Scenario	Scenario
4	East	Jan	924	158	184	466	18
5		Feb	888	242	200	513	18
6		Mar	935	162	207	501	18
7		Qtr1	2747	562	591	1480	55
8		Qtr2	3352	610	922	1615	65
9		Qtr3	3740	372	522	1712	64
10		Qtr4	2817	990	592	1537	55
11		Year	12656	2534	2627	6344	240
12	West	Jan	378	752	755	454	66
13		Feb	337	781	797	479	68
14		Mar	327	792	811	474	67

Notice that Analytic Services is still displaying the styles that you created and applied in the previous sections.

Displaying Both Member Names and Aliases

In addition to displaying aliases for database members, you can also configure Analytic Services to display both aliases and database member names in Spreadsheet Add-in.

➤ To display the name and alias of a member:

1. In cell B8, double-click the secondary mouse button to drill up on Qtr2.
2. In cell C2, select Colas, and then select **Essbase > Pivot**.
3. In cell C3. select Year, and then select **Essbase > Pivot**.
4. Select **Essbase > Options**, and select the **Display** tab.
5. In the **Aliases** option group, select the check box for **Use Both Member Names** and **Aliases for Row Dimensions**.

   Be sure that Use Aliases is already checked.
6. Click **OK** to return to the worksheet, and select **Essbase > Retrieve**.

The result is shown in Figure 51. Analytic Services displays both member names and their aliases for row dimensions. Because the only row dimension in this example that has preassigned aliases is Product, only the Product members display their aliases. Region members simply repeat the member name instead of displaying an alias.

Figure 51: Result of Displaying Both Member Names and Aliases

	A	B	C	D	E	F
1					Year	Measures
2					Scenario	
3	100	Colas	East	East	12656	
4			West	West	3549	
5			South	South	4773	
6			Central	Central	9490	
7			Market	Market	30468	
8	200	Root Beer	East	East	2534	
9			West	West	9727	
10			South	South	6115	
11			Central	Central	9578	
12			Market	Market	27954	
13	300	Cream Soda	East	East	2627	
14			West	West	10731	
15			South	South	2350	

Repeating Member Labels

By default, Analytic Services displays member labels only once for each nested row and column group. If you are connected to a large database when using Spreadsheet Add-in, you may have to scroll down or across the worksheet to see additional data rows and columns.

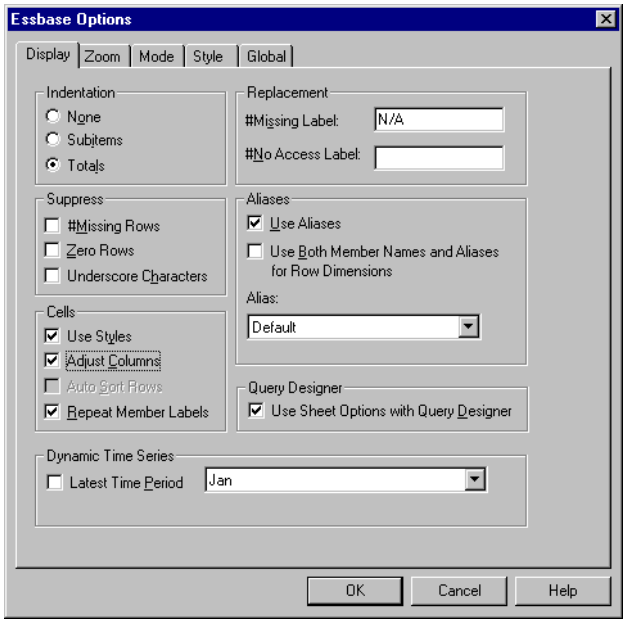
In some cases, as you scroll down or across, member labels disappear from view. Analytic Services provides a feature for repeating member labels in each row or column cell that represents a data point, so that you can always see a member label in the worksheet view.

➤ To repeat member labels down and across the worksheet:

1. Select **Essbase > Options**, and select the **Display** tab.
2. In the **Aliases** option group, clear the **Use Both Member Names and Aliases for Row Dimensions** check box, as shown in Figure 52.

3. In the **Cells** option group, select the **Repeat Member Labels** check box, and then click **OK**.

Figure 52: Enabling the Repeat Member Labels Option



4. In cell E1, drill down (double-click) on Year.

Analytic Services displays a member label in every column and row cell, as shown in Figure 53. For the Sample Basic database that you are using for this tutorial, repeating member labels is probably not necessary because the database is relatively small. This feature is particularly helpful for keeping track of member labels when scrolling through large worksheets.

Figure 53: Result of Repeating Member Labels

	A	B	C	D
1				Measures
2				Scenario
3	Qtr1	Colas	East	2747
4	Qtr1	Colas	West	1042
5	Qtr1	Colas	South	1051
6	Qtr1	Colas	Central	2208
7	Qtr1	Colas	Market	7048
8	Qtr1	Root Beer	East	562
9	Qtr1	Root Beer	West	2325
10	Qtr1	Root Beer	South	1465
11	Qtr1	Root Beer	Central	2369
12	Qtr1	Root Beer	Market	6721
13	Qtr1	Cream Soda	East	591
14	Qtr1	Cream Soda	West	2363
15	Qtr1	Cream Soda	South	561
16	Qtr1	Cream Soda	Central	2414

You may notice that even if you clear the Repeat Member Labels check box in the Essbase Options dialog box, Analytic Services retains the repeated member labels in the worksheet view. To remove the repeated labels, you need to perform one of these tasks:

- Clear the check box and open a new worksheet
- Clear the check box and pivot the row group to a column group and then pivot it back to a row group (or the reverse, from a column group to a row group, and back)
- Select **Essbase > FlashBack** and clear the check box

5. Before returning to the tutorial, complete the following actions:

   a. Select **Essbase > Options**, and select the **Display** tab.

   b. In the **Cells** option group, clear the **Repeat Member Labels** check box, and then click **OK**.

   c. Select **File > Close** to close the worksheet.

      You do not need to save the worksheet.

Creating Queries Using Essbase Query Designer

So far, you have discovered how to retrieve data and navigate through Essbase Spreadsheet Add-in in an ad hoc fashion. Analytic Services also provides a query designer so that you can define a database query for retrieving dimensions and database members into the worksheet. Essbase Query Designer (EQD) replaces is used to define queries in previous versions of Spreadsheet Add-in.

Before Analytic Services actually retrieves data, Essbase Query Designer provides a series of panels so that you can request the data that you want to view in the worksheet. It is particularly helpful when you know exactly which data you want to retrieve from the server. In addition, you can save a query and use it again.

The Essbase Query Designer window (shown in Figure 54 on page 94) consists of the following panels:

- The navigation panel at the left of the window provides access to the various features in Essbase Query Designer. You can display all the dimensions used in a particular query and access the various properties of each dimension member.
- The hint panel at the top right of the window provides a brief description of the feature that is selected from the navigation panel.
- The properties panel at the bottom right of the window provides access to the following functions:
  - *Layout:* Design the layout of the spreadsheet report. To change the default layout, select a dimension tile and drag it to one of the other dimension boxes. To access the member select panel and to define a member for a query, double-click a dimension tile.
  - *Member Select:* Select members that you want to display in the rows of the spreadsheet report. To select a member, right-click the member, and select Add to Selection Rules. You can also double-click a member to add it to the selection rules.

- *Member Filter:* Filter the member selection by attribute, generation name, level name, pattern string, or UDA.
- *Data Filter:* Retrieve rows of data. The retrieval is based on the ranking of the rows within certain columns. Use this panel to access the data restriction panel.
- *Data Restriction:* Filter data by comparing it to a fixed data value (including a negative value), a set of data values, or #Missing data values.
- *Data Sort:* Sort rows in ascending or descending order. The sort is based on column data values.
- *Messages and Confirmation:* Turn on and turn off certain messages from Essbase Query Designer.
- *Help:* Access documentation about Essbase Query Designer.

See "About Creating and Changing Queries" on page 93 for an overview of Essbase Query Designer. The portions of the tutorial that follow step you through the following query design procedures:

- "Creating Queries" on page 94
- "Saving Queries" on page 101
- "Applying Queries" on page 103
- "Deleting Queries" on page 104
- "Viewing Messages and Confirmations" on page 104
- "Accessing Help" on page 106

Note: Excel query functionality is not supported in Spreadsheet Add-in. Use the Essbase Query Designer to define database queries.

About Creating and Changing Queries

To access any of the Essbase Query Designer panels, select the appropriate feature listed in the navigation panel.

As you create a query or make changes to an existing query, the changes are reflected in the navigation panel. To view a dimension or a member of an open query, click on the specific dimension or member in the query outline that is displayed in the navigation panel. Selected members are displayed in the member selection panel on the right.

You can also revise an existing query in the member selection panel. For example, you can delete a member or add a member to the query by selecting a member in the navigation panel and making the appropriate changes in the properties panel.

Note: Files created using the obsolete Retrieval Wizard feature can be opened in Essbase Query Designer. If, however, a query contains more than two member filters per selection rule or more than two data restrictions, the member filters may be out of order. To ensure correct results, rearrange the member filters in the navigation panel, if necessary.

For complete information on Essbase Query Designer options, see the Spreadsheet Add-in online help.

CAUTION: Manipulation of worksheets in VBA such as naming worksheets or moving worksheets may not work when EQD is running.

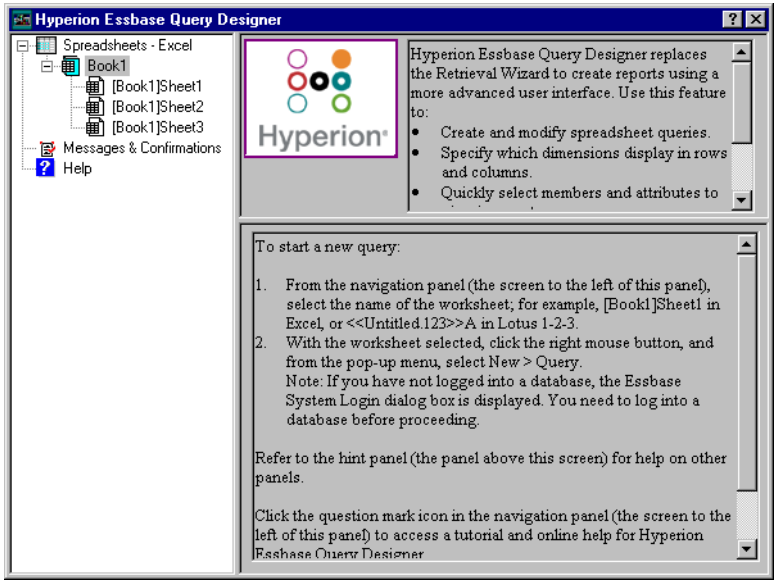
Creating Queries

➤ To create a query using Essbase Query Designer:

1. Select **Essbase > Query Designer**.

   Analytic Services displays the Essbase Query Designer welcome panel, as shown in Figure 54.

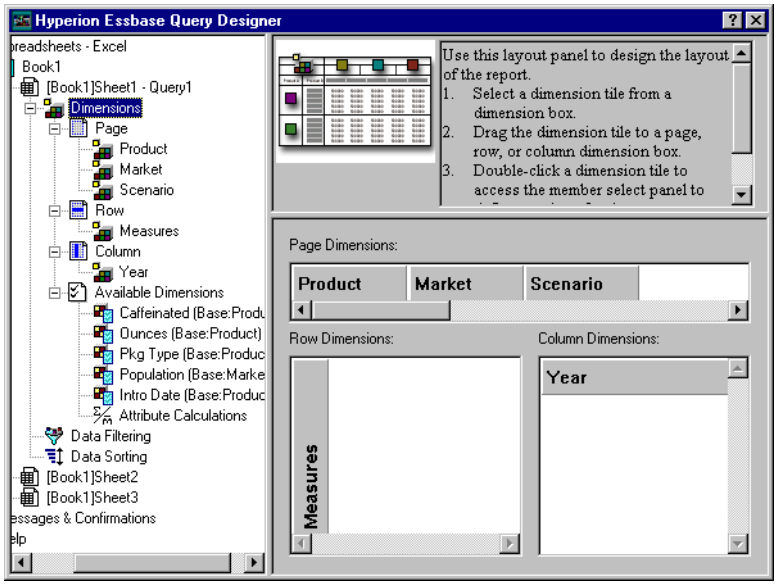
   Figure 54: Essbase Query Designer Displaying Welcome Panel



2. In the navigation panel, select [Book1]Sheet1, right-click, and select **New > Query**.

The layout panel of Essbase Query Designer is displayed, as shown in Figure 55.

Figure 55: Essbase Query Designer Displaying Layout Panel



3. Define the worksheet layout by dragging the dimension tiles in the properties panel as follows:

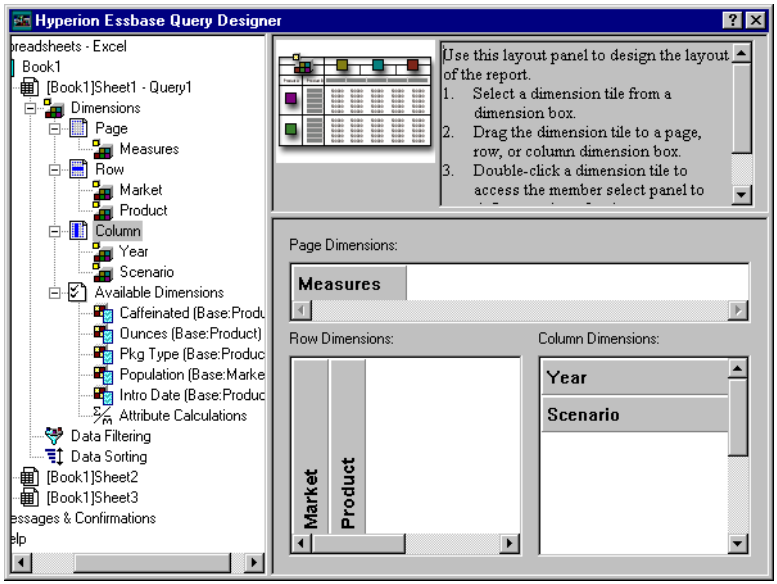
   a. Drag Market and Product to the **Row** location.

   b. Drag Measures to the **Page** location.

   c. Drag Scenario below Year (in the **Column** location).

Figure 56 shows the results of dragging the dimension tiles in the properties panel.

Figure 56: Changing the Worksheet Layout



4. In the navigation panel, select the Measures dimension by selecting the Measures icon. Alternatively, double-click the Measures tile in the layout panel.

   The member select properties panel, where you can select a member from the Measures dimension, is displayed.

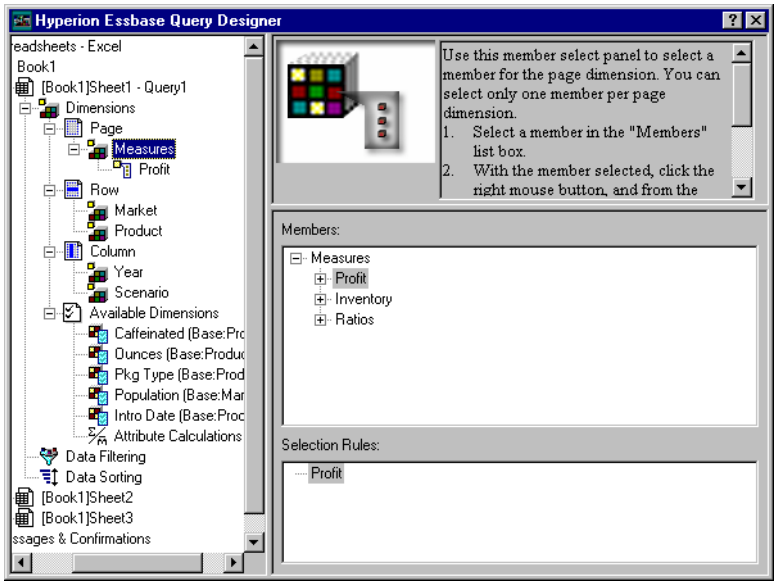
   Note: You can select only one member from the dimension in the Page location.

5. In the **Members** list box, select Profit, right-click, and select **Add to Selection Rules**.

   Alternatively, double-click Profit to add it to the selection rules.

Profit is displayed in the Selection Rules list box.

Figure 57: Essbase Query Designer Displaying the Member Select Panel



Note: In Essbase Query Designer, after you make your selections, you do not need to confirm them; for example, you do not have to click OK. If you do not select members from any given dimension, Analytic Services uses the top member of the dimension.

6. Select members of the Year dimension as follows:

   a. In the navigation panel, click the Year icon. Alternatively, double-click the Year tile in the layout panel.

      The member select properties panel for the Year dimension is displayed.

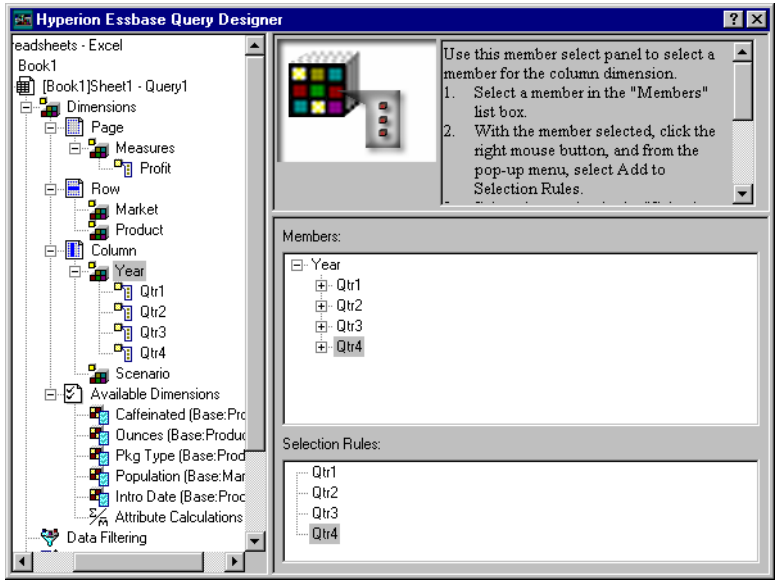
   b. In the Members list box, select Qtr1, right-click, and select **Add to Selection Rules**.

   c. Add Qtr2, Qtr3, and Qtr4 to the selection rules in the same manner.

      Because Year is in a Column location, you can select one or more members.

      The result is shown in Figure 58.

      Figure 58: Adding Members to the Selection Rules



7. Select members of the Scenario dimension as follows:

   a. In the navigation panel, select Scenario. Alternatively, double-click the Scenario tile in the layout panel.

      The members of the Scenario dimension are displayed in the member select properties panel.

   b. Select Actual, right-click, and select **Add to Selection Rules**.

      Actual is added to the Selection Rules list box.

   c. In the same manner, add Budget to the **Selection Rules** list box.

8. Select members of the Product dimension as follows:

   a. In the navigation panel, select Product. Alternatively, double-click the Product tile in the layout panel.

      The members of the Product dimension are displayed in the member select properties panel.

   b. Select product code 100, right-click, and select **Add to Selection Rules**.

   c. Repeat the process for product codes 200, 300, and 400.

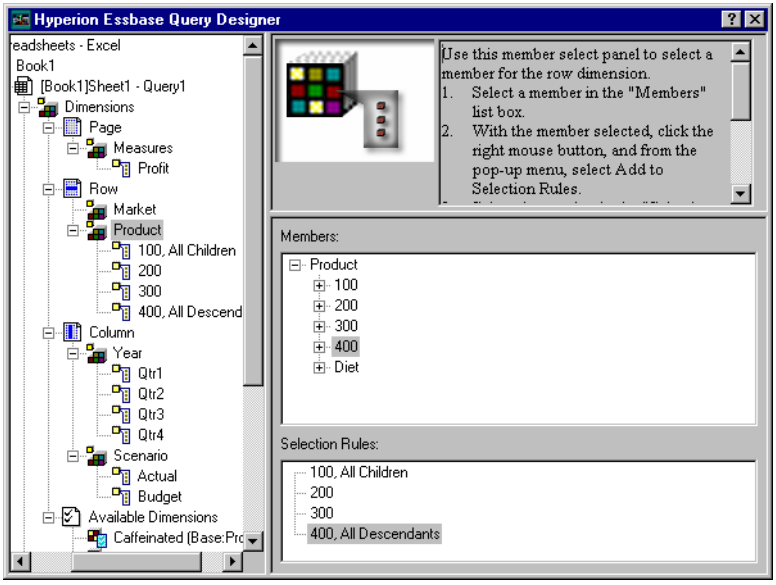
   d. In the **Selection Rules** list box, select product code 100, right-click, and then, from the popup menu, choose **Select > Children**.

This action selects all children of 100. Analytic Services displays All Children next to 100 in the Selection Rules list box, as shown in Figure 59

e. In the **Selection Rules** list box, select product code 400, right-click, and choose **Select > Descendants**.

Analytic Services displays All Descendants next to 400 in the Selection Rules list box.

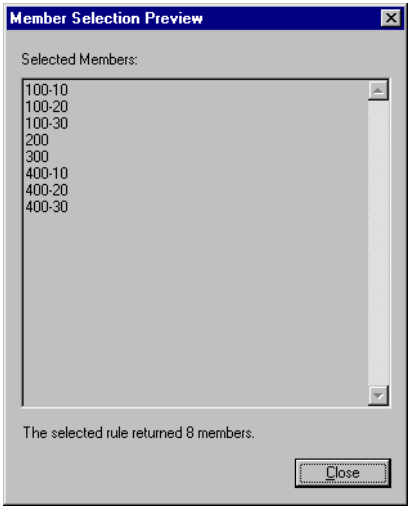
Figure 59: Selecting Members of Product



f. To view the list of all product codes that will be retrieved into the worksheet, select any of the entries in the **Selection Rules** list box (for example, 200), right-click, and select **Preview**.

Analytic Services displays the Member Selection Preview dialog box, as shown in Figure 60, with the selected product dimensions listed.

Figure 60: Selected Members of Product Dimension



g. Click **Close** to close the **Member Selection Preview** dialog box.

9. Select members of the Market dimension as follows:

   a. In the navigation panel, select Market. Alternatively, double-click the Market tile in the layout panel.

      The members of the Market dimension are displayed in the member select properties panel.

   b. In the **Members** list box, select East, right-click, and select **View by > Generation**.

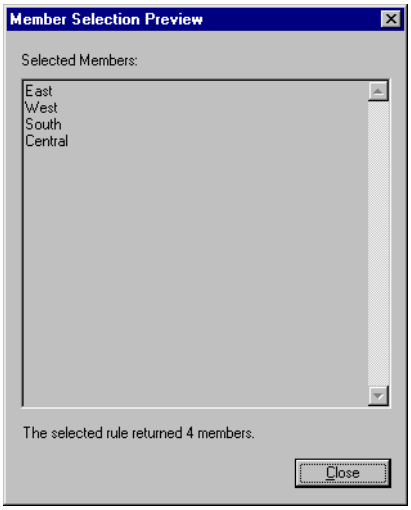
   c. To pick the second generation of the Market dimension, in the **Member** list box, select Region, right-click, and select **Add to Selection Rules**. Alternatively, double-click Region to add it to the selection rules.

      Region is displayed in the Selection Rules list box.

   d. To view the list of members that will be retrieved into the worksheet, in the **Selection Rules** list box, select Region, right-click, and select **Preview**.

As shown in Figure 61, Analytic Services displays East, West, South, and Central, which are members of generation two in Market, in the Member Selection Preview dialog box.

Figure 61: Generation Name Selection



e. Click **Close** to close the **Member Selection Preview** dialog box.

You have now defined a basic query. The outline of the query is displayed in the navigation panel.

The next topic describes how to save this query.

Saving Queries

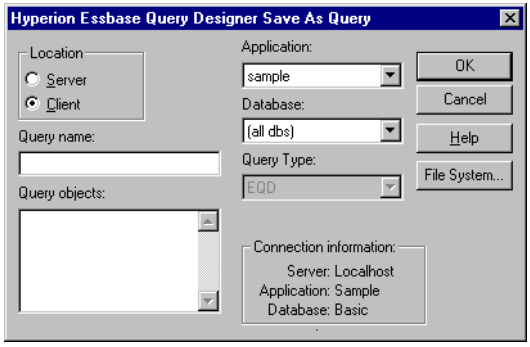
➤ To save a query in Essbase Query Designer:

1. In the navigation panel, select [Book1]Sheet1, Query1\, and then right-click and select **Save Query**.

   The Essbase Query Designer Save As Query dialog box is displayed, as shown in Figure 62. You can save your query to the server or to your own client machine. To save to the server, you must have a security level of database designer or higher. Contact the Analytic Services system administrator for more information.

2. In the **Location** group box, select **Client**.

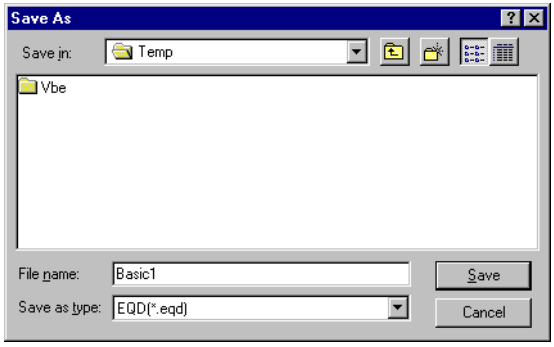
Figure 62: Essbase Query Designer Save As Query Dialog Box



3. Click the **File System** button.

Analytic Services displays the Save As dialog box, as shown in Figure 63.

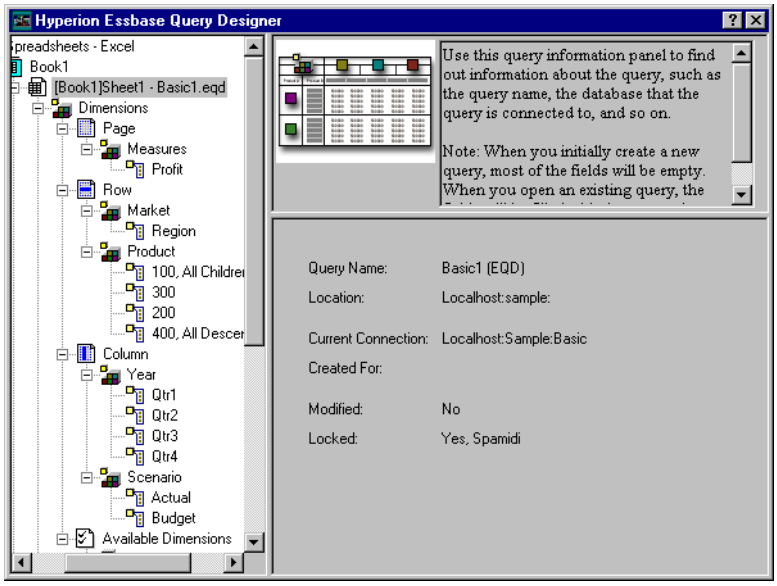
Figure 63: Save As Dialog Box



4. Select a location, in the **File name** text box, type `Basic1` and then click **Save**.

As shown in Figure 64, Essbase Query Designer displays information about the query that you just saved. You will use the Basic1 query again in Chapter 3.

Figure 64: Essbase Query Designer Displaying Query Information Panel



The next topic describes how to apply this query.

Applying Queries

➤ To apply a query in Essbase Query Designer:

1. In the navigation panel, select [Book1]Sheet1, Basic1.
2. Right-click the Basic1 query, and select **Apply Query**.

The result of the query is displayed in the worksheet, as shown in Figure 65.

Figure 65: Results of an Essbase Query Designer Query

	A	B	C	D	E	F	G	H	I	J
1						Profit				
2			Qtr1		Qtr2		Qtr3		Qtr4	
3			Actual	Budget	Actual	Budget	Actual	Budget	Actual	Budget
4	East	Cola	2461	2550	2940	3050	3298	3440	2430	2410
5		Diet Cola	212	220	303	300	312	310	287	290
6		Caffeine Free Cola	74	110	109	130	130	190	100	150
7		Root Beer	562	960	610	1070	372	830	990	1500
8		Cream Soda	591	770	922	1010	522	660	592	530
9		Grape	645	840	676	860	710	920	618	800
10		Orange	290	350	327	380	377	420	394	440
11		Strawberry	545	700	612	750	625	780	525	670
12	West	Cola	1047	1720	1189	1900	1339	2120	1018	1780
13		Diet Cola	-67	320	-177	200	-154	250	-136	320
14		Caffeine Free Cola	62	310	-163	30	-286	-130	-123	70
15		Root Beer	2325	2570	2423	2720	2540	2820	2439	2840
16		Cream Soda	2363	2620	2739	2970	2937	3230	2692	2850
17		Grape	1143	920	1167	960	1271	1020	1219	920
18		Orange	1002	810	1120	890	1192	1000	940	680
19		Strawberry	-738	-310	-783	-380	-900	-440	-779	-400
20	South	Cola	745	1160	835	1280	1031	1490	965	1510
21		Diet Cola	306	570	363	660	281	570	247	550

In the Display tab under Essbase > Options, if you select Use Styles and Use Sheet Options with Query Designer, the styles you selected for dimension members will be applied to the initial query results. If you do not select Use Sheet Options with Query Designer, even if you have selected Use Styles, they will not be applied to the initial query results. To apply styles, select Essbase > Retrieve. When Analytic Services returns the data to the worksheet, you are free to further investigate the data by performing Zoom, Keep Only, Remove Only, and Pivot operations.

Deleting Queries

You can delete a query only from the location where you saved that query. For example, if you save a query in the `/essbase/client/sample` directory, you can delete the query from within the `sample` directory. You cannot delete the query from within Essbase Query Designer.

Viewing Messages and Confirmations

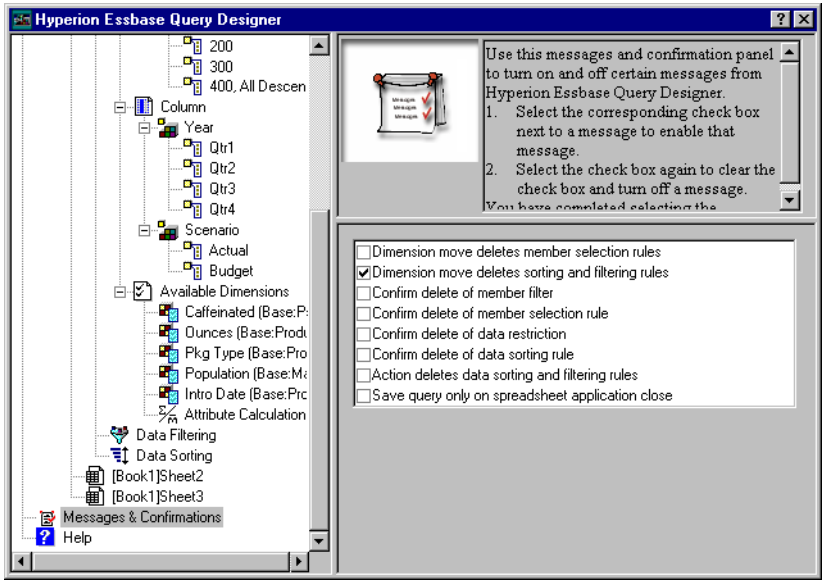
Essbase Query Designer displays messages and confirmations about certain actions, such as moves and deletes, in the messages and confirmations panel.

➤ To turn on or turn off messages and confirmations:

1. Select the **Messages and Confirmations** icon in the navigation panel.
2. Select the check box that is displayed next to that message to turn on (enable) a message.
3. Select the check box again to turn off (make it inaccessible) a message.

   This action clears the check box.

Figure 66: Messages and Confirmations Panel

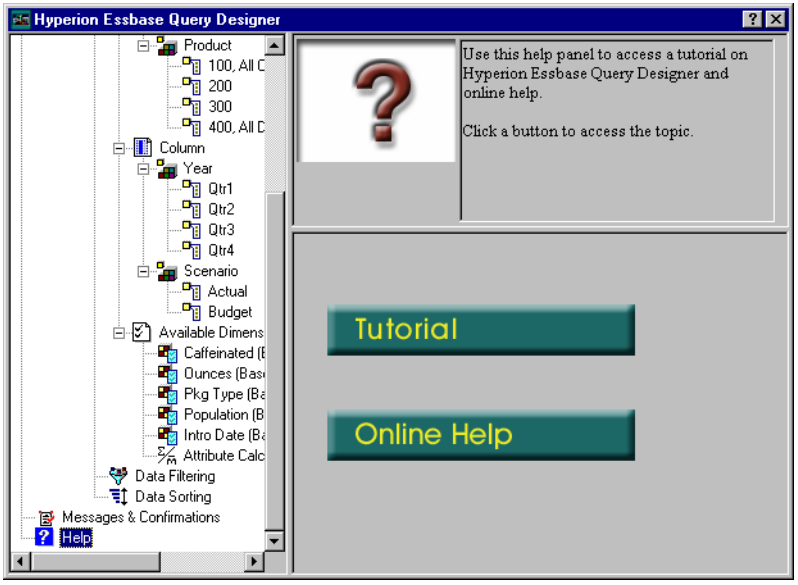


Accessing Help

Access online help or the tutorial for Essbase Query Designer by using the help panel. To access the help panel, in the navigation panel, select Help. For more information on a particular topic, click the Online Help button in the properties panel. To access the online tutorial, click the Tutorial button in the properties panel (shown in Figure 67).

Note: The Tutorial button launches `ssxleqd.pdf`, which links to the tutorial for Essbase Query Designer. The tutorial is part of this guide, *Essbase XTD Spreadsheet Add-in User's Guide for Excel*, and is located in the `essexcel.pdf` file. To access the `ssxleqd.pdf` and `essexcel.pdf` files from Essbase Query Designer, they should be installed in `$ARBORPATH/docs/pdf` and Adobe Acrobat Reader must be installed. You can obtain Acrobat Reader at `www.adobe.com`.

Figure 67: Essbase Query Designer Help Panel



Connecting to Multiple Databases from Essbase Query Designer

You can connect to several databases and create separate queries on each database from Essbase Query Designer.

➤ To connect to multiple databases from Essbase Query Designer:

1. Log on to Analytic Services and connect to the server that you want to access.
2. Select **Essbase > Query Designer** to open **Essbase Query Designer**.
3. Select [Book1]Sheet1, right-click, and select **Connect**.

   The Essbase System Login dialog box is displayed.

   Note: The book may be a number other than 1. For example, it may be [Book5], if four worksheets are already open.

4. Type your password, and click **OK**. Select Sample Basic, and click **OK**.
5. Select [Book1]Sheet2 (or Sheet3), right-click, and select **Connect**.

   The Essbase System Login dialog box is displayed.

6. Type your password, and click **OK**. Select Samppart Company, and click **OK**.

   Note: You are restricted to one connection per worksheet. The connection information is displayed in the query information panel of the Essbase Query Designer only when you open an existing query or create a new query.

7. Select [Book1]Sheet1, right click, and select **New > Query** to create a new query based on Sample Basic.
8. Select [Book1]Sheet2, right-click, and select **New > Query** to create a new query based on Samppart Company,
9. To open an existing query, right click, and select **Open Query**.

You are now ready to create queries or to open existing queries.

Applying Worksheet Options to Essbase Query Designer Results

You can apply any of the worksheet options that you previously set from the Essbase Options dialog box to the results of a query created in Essbase Query Designer.

➤ To enable Essbase Query Designer to use your previously set worksheet options:

1. Select **Essbase > Options**.
2. In the **Essbase Options** dialog box, select the **Display** tab.

3. Select the **Use Sheet Options with Query Designer** check box, and select **OK**.

4. Select **Essbase > Retrieve** to refresh the worksheet.

   Analytic Services displays the results of the query that you created in Essbase Query Designer and implements your previously set worksheet options. For example, in Figure 68, aliases, instead of the numeric codes, are now displayed for the Product dimension.

   Figure 68: Results of Query with Options Applied

	A	B	C	D	E	F	G	H	I	J
1						Profit				
2			Qtr1		Qtr2		Qtr3		Qtr4	
3			Actual	Budget	Actual	Budget	Actual	Budget	Actual	Budget
4	East	Cola	2461	2550	2940	3050	3298	3440	2430	2410
5		Grape	645	840	676	860	710	920	618	800
6		Cream Soda	591	770	922	1010	522	660	592	530
7		Root Beer	562	960	610	1070	372	830	990	1500
8		Strawberry	545	700	612	750	625	780	525	670
9		Orange	290	350	327	380	377	420	394	440
10		Diet Cola	212	220	303	300	312	310	287	290
11		Caffeine Free Cola	74	110	109	130	130	190	100	150
12	West	Cream Soda	2363	2620	2739	2970	2937	3230	2692	2850
13		Root Beer	2325	2570	2423	2720	2540	2820	2439	2840
14		Grape	1143	920	1167	960	1271	1020	1219	920
15		Cola	1047	1720	1189	1900	1339	2120	1018	1780
16		Orange	1002	810	1120	890	1192	1000	940	680
17		Caffeine Free Cola	62	310	-163	30	-286	-130	-123	70
18		Diet Cola	-67	320	-177	200	-154	250	-136	320
19		Strawberry	-738	-310	-783	-380	-900	-440	-779	-400
20	South	Root Beer	1465	1640	1540	1700	1612	1710	1498	1330

5. Select **File > Close** to close the worksheet.

   You do not need to save the worksheet.

Selecting Members

An Analytic Services database may contain hundreds or even thousands of members, making it difficult to remember each member name. You can use the Essbase Member Selection dialog box to find and select members and to define the layout of members in the worksheet. In addition, you can use Boolean operators, such as AND, OR, and NOT, or other search parameters to specify criteria and conditions that members must meet for the member selection. Member selection is an important method of creating a spreadsheet report for the data that you want to retrieve.

For complete information on the Essbase Member Selection dialog box, see the Spreadsheet Add-in online help.

➤ To view specific members from the Product dimension:

1. Select **File** > **New** or click  to open a new worksheet,

   Note: You should be connected to the Sample Basic database. If you are not connected, follow the steps in "Connecting to a Database" on page 48.

2. Select **Essbase** > **Retrieve**.
3. Select Product and select Essbase > Pivot to display Product as a row, rather than a column, dimension.

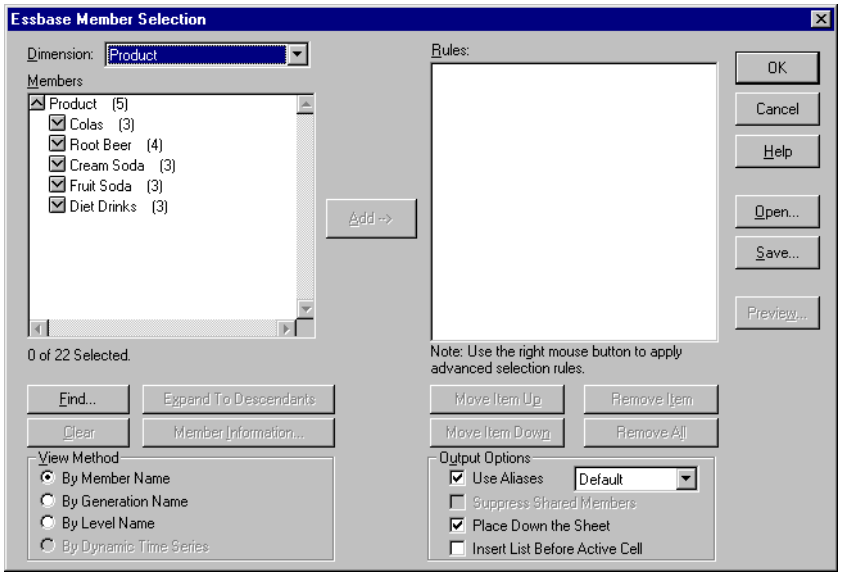
   Figure 69: Initial Worksheet for Member Selection

	A	B	C	D	E	F
1			Measures	Market	Scenario	
2	Product	Year	105522			
3						
4						
5						

4. Select Product again, and select **Essbase** > **Member Selection**.

Analytic Services displays the Essbase Member Selection dialog box, as shown in Figure 70. In the Essbase Member Selection dialog box, Analytic Services displays the Product dimension in the Dimension drop-down list and its children, Colas, Root Beer, Cream Soda, Fruit Soda, and Diet Drinks, in the Members list box.

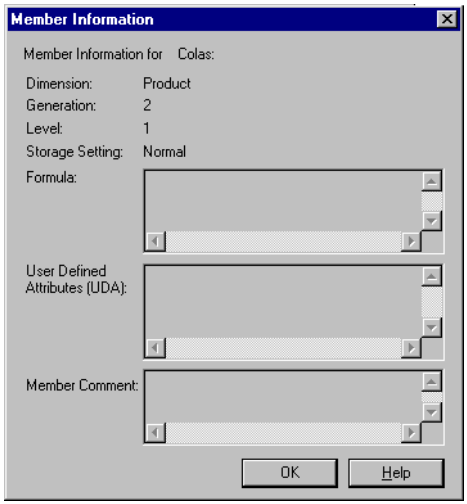
Figure 70: Essbase Member Selection Dialog Box



5. Select Colas and click the **Member Information** button.

Analytic Services displays the Member Information dialog box, as shown in Figure 71. The dialog box provides information about the selected member, such as dimension, generation, level, storage setting, formula, UDAs, and member comments.

Figure 71: Member Information Dialog Box



6. Click **OK** to close the **Member Information** dialog box.
7. In the **Essbase Member Selection** dialog box, click **Add** to add Colas to the **Rules** list box.

   Alternatively, you can double-click an item in the Members list box to add the item.
8. Select Product, and click the **Find** button.

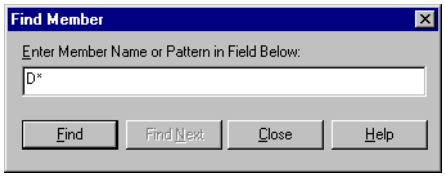
   Analytic Services displays the Find Member dialog box (see Figure 72).

   In the Find Member dialog box, you can do pattern-match searches for members in the selected dimension. You can use wildcard patterns—trailing asterisk *, and single-character match, ?. Analytic Services locates the members that match the text string and groups them in outline order, so that they can be selected as a group.

   Note: You can use the trailing asterisk wildcard and single-character wildcard in the text string. The * wildcard replaces a string of characters, and the ? wildcard replaces a single character. J?n and 100* are examples of valid wildcard strings; *-10 and J*n are examples of invalid wildcard strings.

9. In the **Find Member** dialog box, type D* in the text box, as shown in Figure 72.

   Figure 72: Find Member Dialog Box

10. Click **Find** to locate all members that match D*.

    Essbase selects the first descendent in the dimension whose name begins with the letter D.

11. Click **Find Next**.

    The next member in the Product dimension whose name begins with the letter D is selected.

12. Continue to click **Find Next** until all members and descents of the Product dimension whose names begin with the letter D are selected.

13. Click **Close** to close the **Find Member** dialog box.

14. Click Diet Cream once to clear all other selected members and descendants and then click **Add**.

    Analytic Services displays Colas and the new selection, Diet Cream, in the Rules list box.

15. In the **Essbase Member Selection** dialog box, select Colas in the **Rules** list box, right-click, and from the pop-up menu, select **All Children and Member**.

    Analytic Services displays All Children and Member next to Colas in the Selection Rules list box.

16. In the **Selection Rules** list box, select Colas, All Children and Member, and then right-click again.

17. From the pop-up menu, select **Subset**.

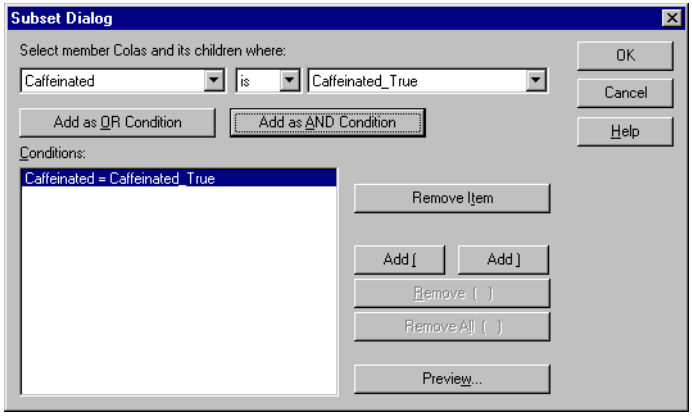
    Analytic Services displays the Subset Dialog box, where you can further define conditions for the selected member (see Figure 73). You can define a maximum of 50 conditions in the Subset Dialog box.

18. In the **Subset Dialog** box, in the first drop-down list, select Caffeinated. In the second drop-down list, select Is. In the third drop-down list, select Caffeinated_True.

19. Click the **Add as AND Condition** button.

    Analytic Services displays Caffeinated = Caffeinated_True in the Conditions list box, as shown in Figure 73.

    Figure 73: Subset Dialog Box (Before Adding Conditions)



    When you use Add as AND Condition, the subsetting condition in the Conditions list box is evaluated using AND logic. AND logic means that the selection must meet the current condition and the condition that follows it in the Conditions list box.

20. In the first drop-down list, select Ounces. In the second drop-down list, select the logical operator “=”. In the third drop-down list, select Ounces_12.

21. Click the **Add as AND Condition** button.

    Analytic Services displays Ounces = Ounces_12 in the Conditions box.

22. In the first drop-down list, select Ounces. In the second drop-down list, select the logical operator “<=”. In the third drop-down list, select Ounces_32.

23. Click the **Add as OR Condition** button.

    Analytic Services displays Ounces <= Ounces_32 in the Conditions box.

When you use Add as OR Condition, the subsetting condition in the Conditions list box is evaluated using OR logic. OR logic means that the selection must meet the current condition *or* the condition that follows it in the Conditions list box.

24. In the first drop-down list, select Pkg Type. In the second drop-down list, select Is. In the third drop-down list, select Bottle.

25. Click the **Add as AND Condition** button.

    Analytic Services displays Pkg Type = Bottle in the Conditions list box.

26. In the **Conditions** box, select Ounces <= Ounces_32, and then click the **Add (** button.

27. Select Pkg Type = Bottle, and click the **Add)** button.

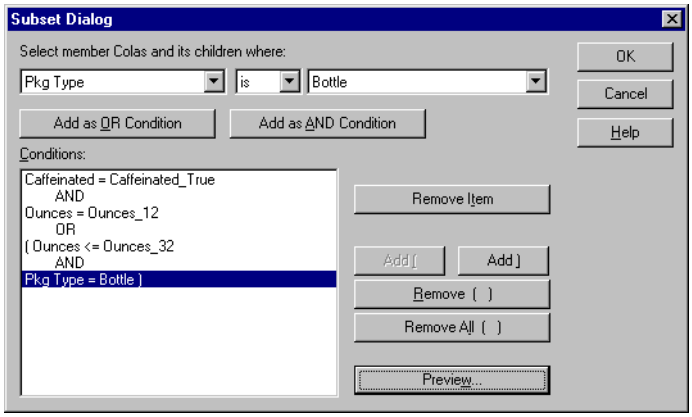
    The Add (and Add) buttons add a left parenthesis and right parenthesis, respectively, to selected items. Use parentheses for grouping multiple subsetting conditions to determine the order of priority for analyzing the conditions.

    Each item in the Conditions list box can have either the left or right parenthesis, but not both. In this example, Analytic Services first evaluates members that are less than or equal to 32 ounces and are packaged in a bottle. Analytic Services then evaluates the results from this condition against members that are 12 ounces.

    Note: Use the Remove ( ) button to remove an individual group of parentheses from a selected item in the Conditions list box. Use the Remove All ( ) button to remove all parenthetical groupings from the Conditions list box.

The Subset Dialog box is displayed as shown in Figure 74.

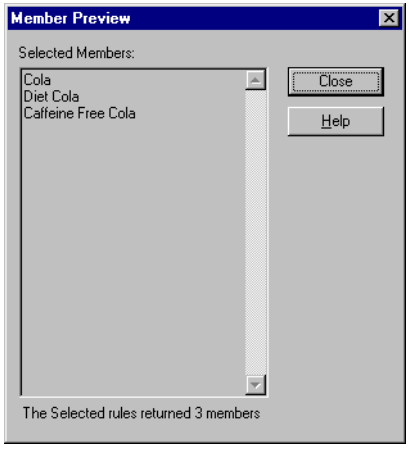
Figure 74: Subset Dialog Box (After Adding Conditions)



28. Click **Preview** to open the **Member Preview** dialog box.

In the Member Preview dialog box, as shown in Figure 75, you can view the resulting member selection from the conditions that you defined.

Figure 75: Member Selection That Results from Subsetting Conditions



29. Click **Close** to close the **Member Preview** dialog box.

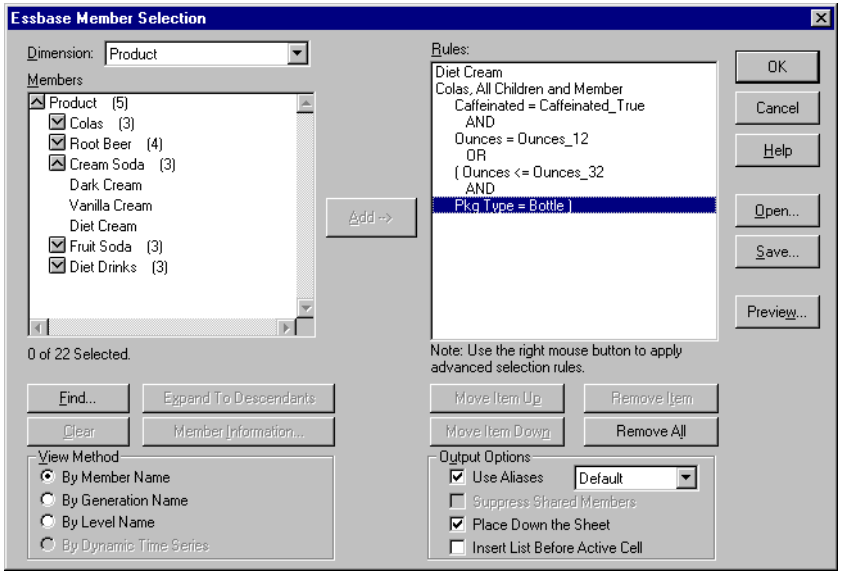
30. Click **OK** to close the **Subset** dialog box and return to the **Essbase Member Selection** dialog box.

The conditions that you set in the Subset dialog box are displayed in the Rules list box.

31. Select Diet Cream and click the **Move Item Up** button to change the order in which Diet Cream is displayed in the worksheet.

Each time you click the Move Item Up or Move Item Down button, the selected item and its associated subset conditions move up or down one position in the Rules list box. You can move only the top-level item (the item you added from the Members list box), not the individual subset conditions.

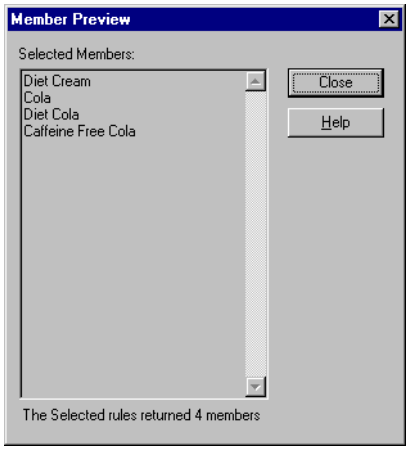
Figure 76: Selecting Members Completed



32. Click **Preview** to preview the members that will be retrieved in the worksheet.

Analytic Services displays the Member Preview dialog box, as shown in Figure 77.

Figure 77: Members to be Retrieved in the Worksheet



33. After previewing the list, click **Close**.
34. Click **OK** to close the **Essbase Member Selection** dialog box and insert the new members into the worksheet (see Figure 78).

Figure 78: Result of Selecting Members

	A	B	C	D	E
1			Measures	Market	Scenario
2	Diet Cream	Year	105522		
3	Cola				
4	Diet Cola				
5	Caffeine Free Cola				

Note: The FlashBack command cannot undo a Member Selection action.

35. Starting with Diet Cream, type `Year` next to each product (see Figure 79).

You need to perform this step so that every product has a matching Year dimension associated with it in the report.

Figure 79: Worksheet After Adding the Year Dimension to All States

	A	B	C	D	E
1			Measures	Market	Scenario
2	Diet Cream	Year	105522		
3	Cola	Year			
4	Diet Cola	Year			
5	Caffeine Free Cola	Year			

36. Select **Essbase > Retrieve** to update the values in the worksheet.

Analytic Services retrieves data for the members that you selected and also applies the styles that you previously set. The result is shown in Figure 80.

Figure 80: Result After Retrieving with Member Selection

	A	B	C	D	E
1			Measures	Market	Scenario
2	Diet Cream	Year	11093		
3	Cola	Year	22777		
4	Diet Cola	Year	5708		
5	Caffeine Free Cola	Year	1983		

Saving and Disconnecting

After performing basic retrieval, navigation, and formatting tasks, you can save worksheets and disconnect from Analytic Services. This section instructs you in the following procedures:

- “Saving a Worksheet” on page 119
- “Disconnecting from Analytic Services” on page 119
- “Logging Off” on page 120

Saving a Worksheet

At any point during the Analytic Services session, you can save the active worksheet with the commands, File > Save or File > Save As. Thus, you can keep a personal library of database views. You can open the worksheet during a later session and retrieve the latest data values to update the view.

Note: To save the Essbase option settings in a worksheet, you must explicitly go to the Essbase Options dialog box and set the options prior to saving the worksheet. Otherwise, when you open the same worksheet in a new Spreadsheet Add-in session, the options settings for the current session will override any previous settings for the worksheet. Make sure that the worksheet for which you option settings saved is not a protected worksheet. Analytic Services cannot save option settings for a protected worksheet.

Disconnecting from Analytic Services

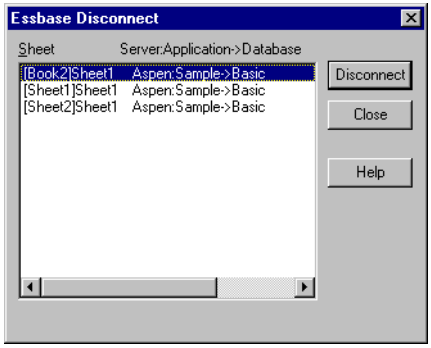
When you finish retrieving and navigating through data, disconnect from the server to decrease user count and to make a port available on the server for other Spreadsheet Add-in users.

➤ To disconnect from the server:

1. Select **Essbase > Disconnect**.

   Analytic Services displays the Essbase Disconnect dialog box, where you can disconnect any worksheet that is connected to a database.

   Figure 81: Essbase Disconnect Dialog Box



2. From the list, select a worksheet name, and then click **Disconnect**.
3. Repeat step 2 until you have disconnected all active sheets.

4. Click **Close** to close the **Essbase Disconnect** dialog box.

Note: You can also disconnect from the server by closing the spreadsheet application. An abnormal shutdown of a Spreadsheet Add-in session, such as a power loss or system failure, does not disconnect your server connection.

Logging Off

Analytic Services provides two administrative features that control user connections:

- *Forced Logout*, where an administrator disconnects users at any point in time. This logout usually occurs when maintenance operations are performed on databases.
- *Auto Logout*, where Analytic Services automatically disconnects users that are inactive for a timed interval specified by an administrator.

On to Advanced Tasks

Now that you have completed the basic tutorial, you are ready to move on to more complex tasks. In the next chapter, you will use the sample spreadsheet files to perform advanced tasks in Essbase XTD Spreadsheet Add-in.

Chapter 3

An Advanced Tutorial

The tutorial that you completed in Chapter 2 teaches basic data retrieval and navigation concepts for Essbase XTD Spreadsheet Add-in. This chapter builds on your basic skills and expands your knowledge of Essbase XTD Analytic Services and Spreadsheet Add-in.

These are the topics covered:

In this advanced tutorial, you use several sample spreadsheet files for Excel that were installed as part of the default Analytic Services installation. These files are stored in the `\Essbase\client\sample` directory. You also reconnect to the Sample Basic database.

Preparing to Begin the Tutorial

Before you begin the advanced tutorial, complete the steps in the next two sections, "Connecting to a Database" on page 122 and "Setting Essbase Options" on page 124. In addition, be sure to read "Following Guidelines During the Tutorial" on page 45 and "Reviewing the Sample Basic Database" on page 46 for important information about what you should expect as you perform the tutorial steps.

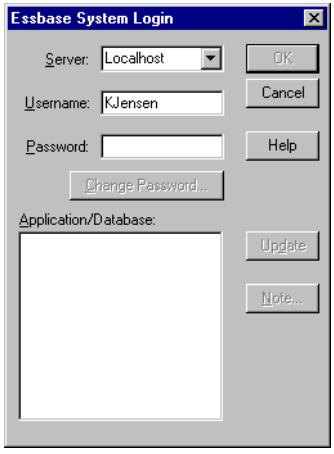
Connecting to a Database

To access Analytic Services data for the advanced tutorial, first connect to the Sample Basic database on the server. This tutorial assumes that you have the appropriate privileges to connect to a server, an application, and a database.

1. Select **Essbase > Connect**.

   The **Essbase System Login** dialog box is displayed, as shown in Figure 82.

   Figure 82: Essbase System Login Dialog Box

   Note: To complete the steps that follow, you need to know the name of the Analytic Services server, your username, and your password. If you do not have this information, contact the Analytic Services system administrator.

2. From the **Server** drop-down list, select the server that you want to access and then press **Tab** to move to the **Username** text box.

If the server name that you want is not shown in the list, type the name of the server that you want to access in the Server text box and press Tab.

3. In the **Username** text box, type your username and then press **Tab** to move to the **Password** text box.
4. In the **Password** text box, type your password.

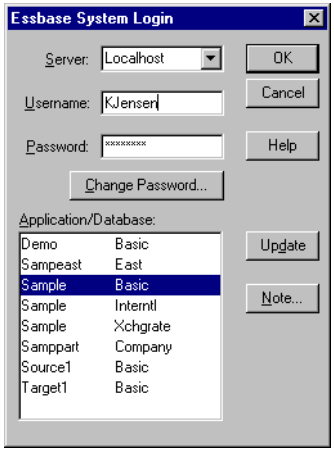
   Note: You can change your password when you are connected to a server. See "Changing a Password" on page 50.

5. Click **OK** to connect to the server.

   Analytic Services displays a list of available application and database pairs in the Application/Database list box. An instance of Analytic Server enables simultaneous access to multiple applications. An application can contain multiple databases. Only the databases to which you have security access are displayed in the list.

   For this tutorial, you use the Sample Basic database. If the Sample Basic database was installed as part of the Analytic Services installation, it is shown in the list. If Sample Basic is not shown in the Application/Database list box, ask the Analytic Services system administrator to install it.

   Figure 83: Available Application and Database Pairs



6. In the **Application/Database** list box, double-click Sample Basic, or select Sample Basic and then click **OK**.

If the application is not already running, Analytic Services automatically starts it. There may be a brief pause as the application loads; the time required to start an application depends on the number of databases, the sizes of the databases, and the sizes of the indexes of the databases that are contained within the applications.

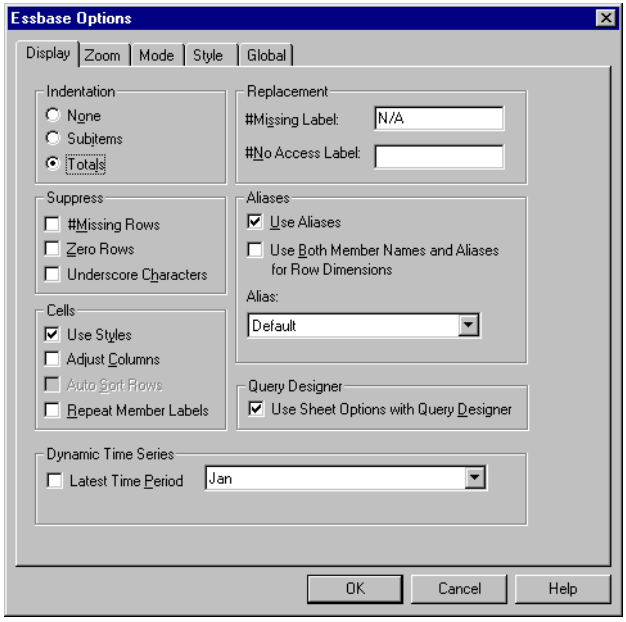
Setting Essbase Options

Before you begin the tutorial, make sure that the worksheet options are set to the initial settings shown in the Figure 84 through Figure 87.

Note: For information on each option in the Essbase Options dialog box, see the Spreadsheet Add-in online help.

1. Select **Essbase** > **Options**.
2. In the **Essbase Options** dialog box, select the **Display** tab.
3. Select the appropriate check boxes and option buttons so that your display matches Figure 84.

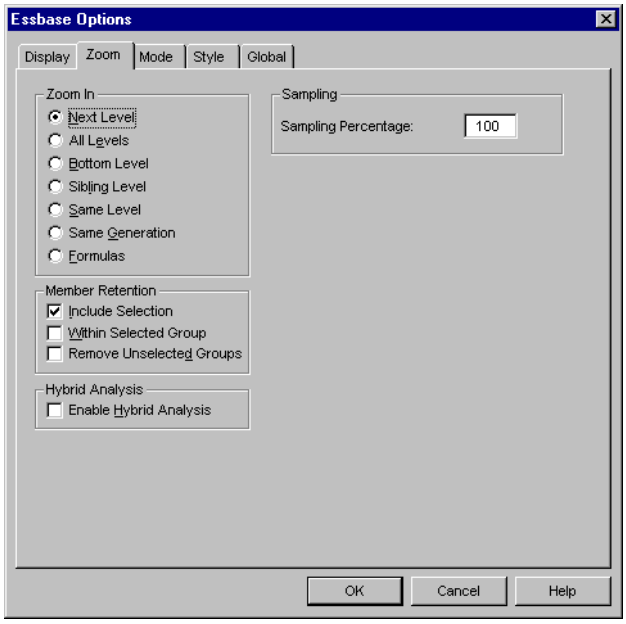
Figure 84: Initial Settings for Display Options



4. Select the **Zoom** tab.

5. Select the appropriate check boxes and option buttons so that your display matches Figure 85.

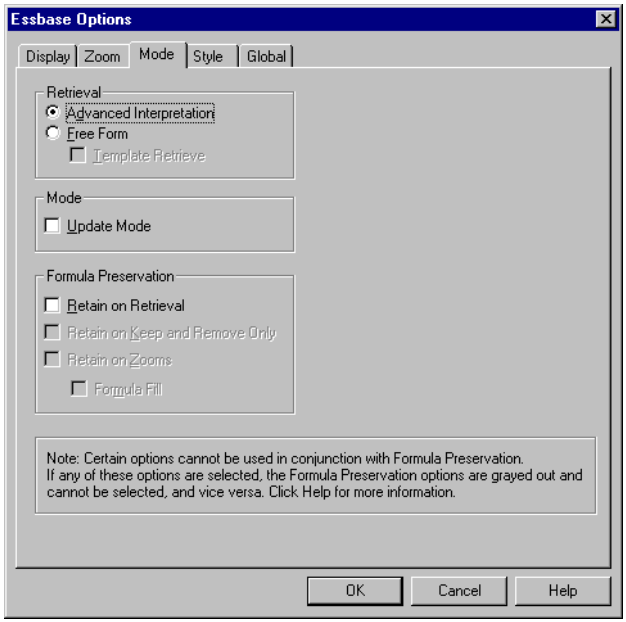
Figure 85: Initial Settings for Zoom Options



6. Select the **Mode** tab.

7. Select the appropriate check boxes and option buttons so that your display matches Figure 86.

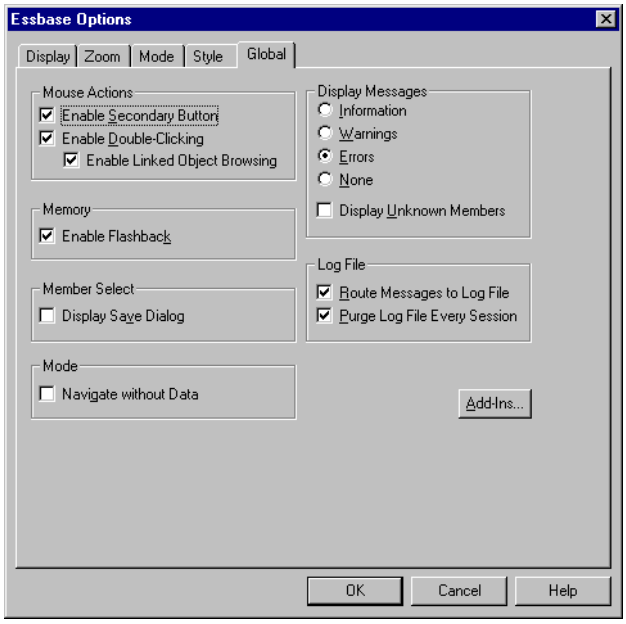
Figure 86: Initial Settings for Mode Options



8. Skip the **Style** tab and select the **Global** tab.

9. Select the appropriate check boxes and option buttons so that your display matches Figure 87.

Figure 87: Initial Settings for Global Options



10. Select **OK** to save the settings for this session and close the **Essbase Options** dialog box.

The settings in the Essbase Options dialog box may change as you access the various sample spreadsheet files as part of the tutorial. Leave the settings as they are unless the tutorial advises you to change them. If you have different option settings, the illustrations presented in this chapter may not match the worksheet view.

Performing Advanced Retrieval Tasks

The tutorial in Chapter 2 describes how to perform basic data retrieval and navigation tasks in Spreadsheet Add-in. These are the advanced retrieval tasks discussed in this chapter:

Remember that you can perform common data retrieval tasks in any of the following ways:

- Selecting commands from the Essbase menu on the spreadsheet application menu bar
- Clicking the appropriate buttons on the Essbase toolbar
- Double-clicking the primary or the right-mouse button in the appropriate cell (for Retrieve, Zoom In, and Zoom Out commands only, and the Linked Objects command, if you have enabled that option).

Filtering Data

Despite the ease and speed with which you can navigate through large Hyperion Essbase databases, it is not practical to use the capabilities of the spreadsheet application to filter and sort very large databases; however, Analytic Services includes powerful data filtering and sorting capabilities.

In Chapter 2, you learned to use Essbase Query Designer to define a dimensional layout and to select members to view. Essbase Query Designer also provides a powerful tool to define conditional retrievals.

To become familiar with the capabilities of Essbase Query Designer, work with the query, Basic1, that you saved in Chapter 2, and perform the following steps:

Note: If you skipped the tutorial in Chapter 2, follow the steps in "Creating Queries Using Essbase Query Designer" on page 91 to create and save the Basic1 query.

1. Select **Essbase > Query Designer**.

   The query information panel of Essbase Query Designer is displayed.

2. In the navigation panel, select [Book1]Sheet1.

3. Right-click and select **Open Query**.

   The **Open Query** dialog box is displayed.

4. From the location that you specified in Chapter 2, select the Basic1 file.

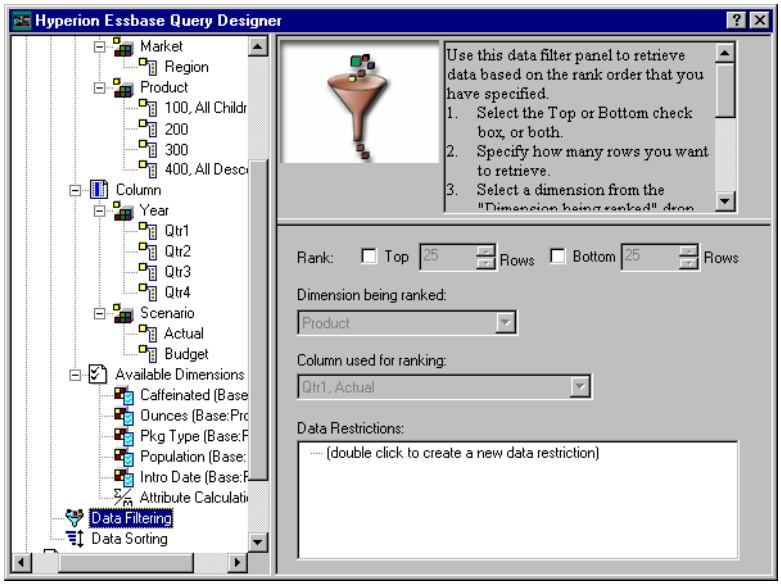
5. Click **OK**.

   The member selection, displayed in the properties panel, remains unaltered from the last Essbase Query Designer session.

6. From the navigation panel, select **Data Filtering**.

Analytic Services displays the data filter settings in the data filter panel, as shown in Figure 88. The filter controls the number of data rows that are retrieved. The number is based on the column criteria that you define. You can define data filtering criteria on data values that reside in one or more columns of the view.

Figure 88: Data Filter Panel



The data filtering panel contains the following items:

- A check box for ranking a specified number of top rows or a specified number of bottom rows of data.

  You can select the highest or lowest rows. Your selection is based on previously selected row dimension members. When using the top or bottom criterion, you specify the number of rows, such as “top 10.” The default is the top 25 rows.

- A “Dimension being ranked” drop-down list box to specify the dimension to which ranking should be applied.

- A “Column used for ranking” drop-down list box to specify the data column on which data values are based.

- A “Data Restrictions” list box to specify standard data comparison operations, such as greater than, less than, and equal to.

  You can apply the comparison operator to data values, including negative data values, in one or more data columns; you can even apply criteria to compare values between two columns.

- Buttons for OR and AND operators.

  If you define more than one criterion for a column, you can use these operators to link the criteria.

7. Select the **Top** check box, and enter a value of 30 in the **Rows** text box.

   When you apply the query, Analytic Services retrieves the top thirty rows of the dimension.

8. From the **Dimension being ranked** drop-down list, select **Product**.

   Product is the dimension to which ranking should be applied.

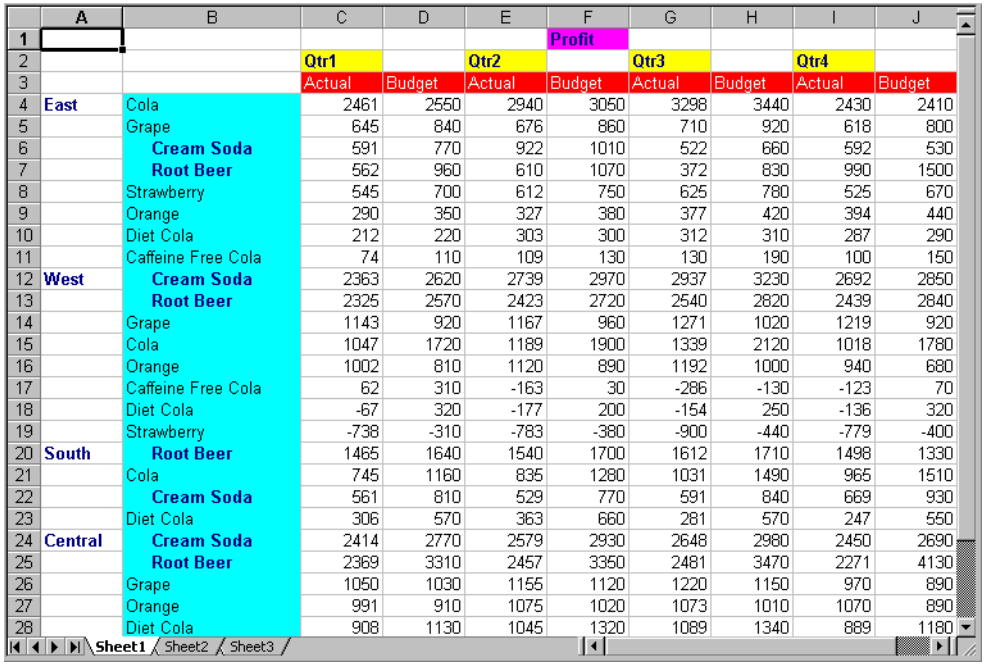
9. From the **Column used for ranking** drop-down list, select **Qtr1, Actual**.

   Qtr1, Actual is the column on which data values are based.

10. In the navigation panel, select the **Data Filtering** icon. Right-click and select **Apply Query**.

Your query results should look like Figure 89.

Figure 89: Data Filtering Query Results



	A	B	C	D	E	F	G	H	I	J
1						Profit				
2			Qtr1		Qtr2		Qtr3		Qtr4	
3			Actual	Budget	Actual	Budget	Actual	Budget	Actual	Budget
4	East	Cola	2461	2550	2940	3050	3298	3440	2430	2410
5		Grape	645	840	676	860	710	920	618	800
6		Cream Soda	591	770	922	1010	522	660	592	530
7		Root Beer	562	960	610	1070	372	830	990	1500
8		Strawberry	545	700	612	750	625	780	525	670
9		Orange	290	350	327	380	377	420	394	440
10		Diet Cola	212	220	303	300	312	310	287	290
11		Caffeine Free Cola	74	110	109	130	130	190	100	150
12	West	Cream Soda	2363	2620	2739	2970	2937	3230	2692	2850
13		Root Beer	2325	2570	2423	2720	2540	2820	2439	2840
14		Grape	1143	920	1167	960	1271	1020	1219	920
15		Cola	1047	1720	1189	1900	1339	2120	1018	1780
16		Orange	1002	810	1120	890	1192	1000	940	680
17		Caffeine Free Cola	62	310	-163	30	-286	-130	-123	70
18		Diet Cola	-67	320	-177	200	-154	250	-136	320
19		Strawberry	-738	-310	-783	-380	-900	-440	-779	-400
20	South	Root Beer	1465	1640	1540	1700	1612	1710	1498	1330
21		Cola	745	1160	835	1280	1031	1490	965	1510
22		Cream Soda	561	810	529	770	591	840	669	930
23		Diet Cola	306	570	363	660	281	570	247	550
24	Central	Cream Soda	2414	2770	2579	2930	2648	2980	2450	2690
25		Root Beer	2369	3310	2457	3350	2481	3470	2271	4130
26		Grape	1050	1030	1155	1120	1220	1150	970	890
27		Orange	991	910	1075	1020	1073	1010	1070	890
28		Diet Cola	908	1130	1045	1320	1089	1340	889	1180

Sheet1 Sheet2 Sheet3

You can further filter the data output by specifying data comparison operations in the **Data Restrictions** list box.

11. In the navigation panel, select the **Data Filtering** icon.

The data filters that you specified are displayed in the properties panel.

12. In the **Data Restrictions** list box, double-click.

The data restriction settings are displayed in the properties panel.

13. Select the **A value of** option and type `500` in the **value** text box.

Observe that the “is” option in the Data drop-down list box changed to =.

14. Click the down arrow of the **Data** drop-down list box and select <=.

15. Click the down arrow of the **Column used for filter** drop-down list box and select **Qtr1, Actual**.

16. In the navigation panel, select the **Data Filtering** icon, right-click, and select **Apply Query**.

    Notice that the query results now reflect only Actual and Budget data that are less than or equal to 500.

17. In the navigation panel, select the **Data Filtering** icon to display the data filter setting in the properties panel.

18. In the **Data Restrictions** list box, select **Qtr1, Actual <= 500**, right-click, and select **New Data Restriction**.

19. In the **Data** drop-down list box, click the down arrow and select <.

20. Select the option, **the data values in**, and from the drop-down list, select **Qtr2, Actual**.

21. Under **Combined With Other Restrictions,** select the **Or** option.

22. In the navigation panel, click the **Data Filtering** icon to access the data filter panel.

23. In the **Data Restrictions** list box, double-click to create a new data restriction.

24. In the **Data** drop-down list box, click the down arrow and select **is not**.

25. Click the button for the **#Missing Value** option.

    This option instructs Analytic Services to discard data that have #Missing values.

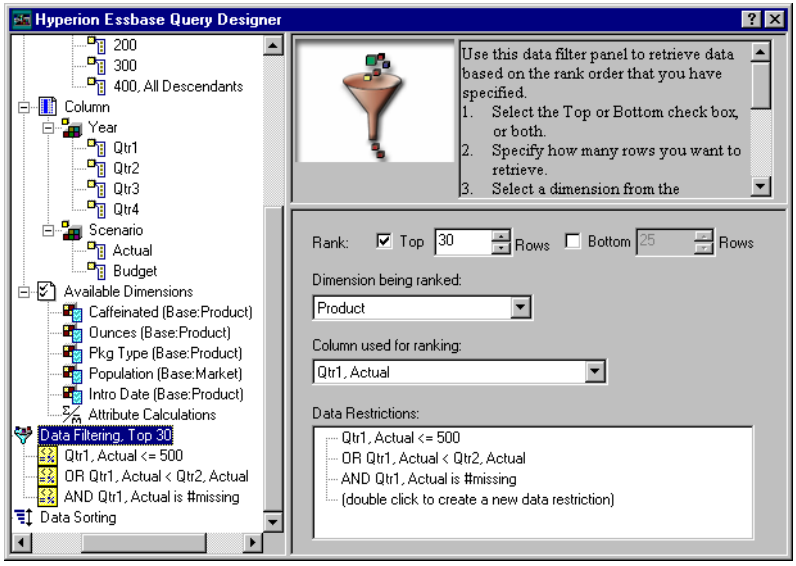
26. In the **Column used for filter** drop-down list, select **Qtr1, Actual**.

27. Under **Combined With Other Restrictions,** select the **And** option.

28. In the navigation panel, click the **Data Filtering** icon to access the data filter panel.

The data restrictions should be displayed as shown in Figure 90:

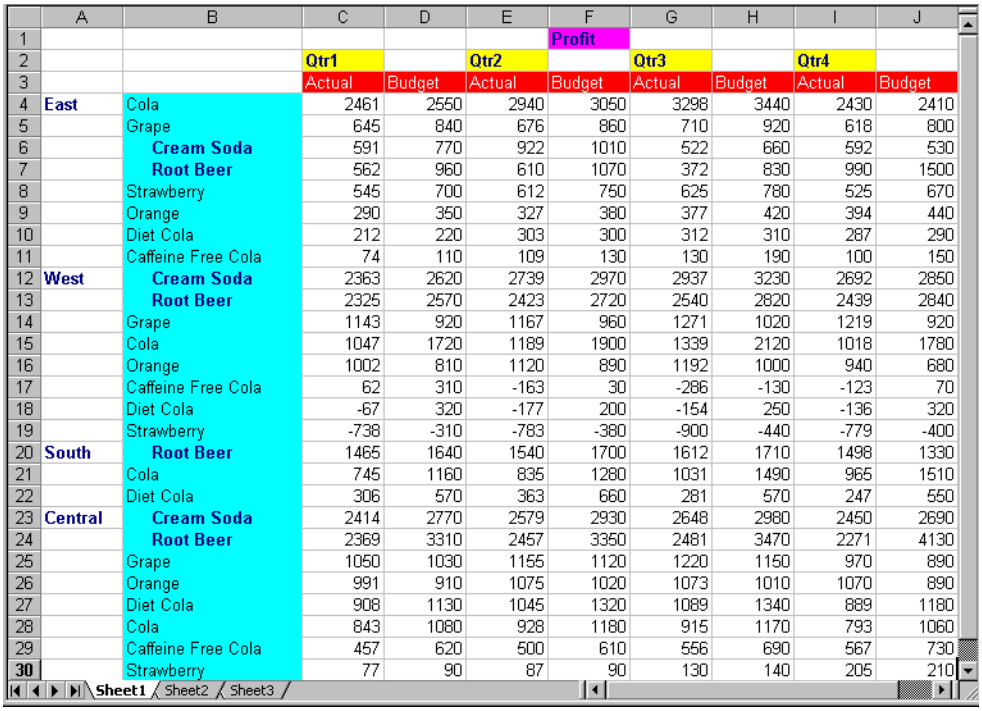
Figure 90: Data Filtering



29. Select the **Data Filtering** icon, right-click, and select **Apply Query**.

Analytic Services retrieves data for all the quarters. Notice that the retrieved data for Qtr1, Actual is less than or equal to 500 or is less than Qtr2, Actual. The results should be displayed as shown in Figure 91:

Figure 91: Data Filtering Results



	A	B	C	D	E	F	G	H	I	J
1						Profit				
2			Qtr1		Qtr2		Qtr3		Qtr4	
3			Actual	Budget	Actual	Budget	Actual	Budget	Actual	Budget
4	East	Cola	2461	2550	2940	3050	3298	3440	2430	2410
5		Grape	645	840	676	860	710	920	618	800
6		Cream Soda	591	770	922	1010	522	660	592	530
7		Root Beer	562	960	610	1070	372	830	990	1500
8		Strawberry	545	700	612	750	625	780	525	670
9		Orange	290	350	327	380	377	420	394	440
10		Diet Cola	212	220	303	300	312	310	287	290
11		Caffeine Free Cola	74	110	109	130	130	190	100	150
12	West	Cream Soda	2363	2620	2739	2970	2937	3230	2692	2850
13		Root Beer	2325	2570	2423	2720	2540	2820	2439	2840
14		Grape	1143	920	1167	960	1271	1020	1219	920
15		Cola	1047	1720	1189	1900	1339	2120	1018	1780
16		Orange	1002	810	1120	890	1192	1000	940	680
17		Caffeine Free Cola	62	310	-163	30	-286	-130	-123	70
18		Diet Cola	-67	320	-177	200	-154	250	-136	320
19		Strawberry	-738	-310	-783	-380	-900	-440	-779	-400
20	South	Root Beer	1465	1640	1540	1700	1612	1710	1498	1330
21		Cola	745	1160	835	1280	1031	1490	965	1510
22		Diet Cola	306	570	363	660	281	570	247	550
23	Central	Cream Soda	2414	2770	2579	2930	2648	2980	2450	2690
24		Root Beer	2369	3310	2457	3350	2481	3470	2271	4130
25		Grape	1050	1030	1155	1120	1220	1150	970	890
26		Orange	991	910	1075	1020	1073	1010	1070	890
27		Diet Cola	908	1130	1045	1320	1089	1340	889	1180
28		Cola	843	1080	928	1180	915	1170	793	1060
29		Caffeine Free Cola	457	620	500	610	556	690	567	730
30		Strawberry	77	90	87	90	130	140	205	210

Sheet1 Sheet2 Sheet3

If you wanted to delete all data restrictions, select the Data Filtering icon in the navigation panel, right-click, and select Delete All Data Restrictions. Alternatively, select any data restriction in the Data Restriction box, right-click, and select Delete All Data Restrictions.

To delete a particular data restriction, select the data restriction in the query outline, right-click, and select Delete Data Restriction. Alternatively, select the data restriction in the Data Restriction box, right-click, and select Delete Data Restriction.

Sorting Data

In the data sort panel, you can sort the output from the Basic1 query in ascending or descending order.

➤ To sort the query:

1. From the navigation panel, select the **Data Sorting** icon.

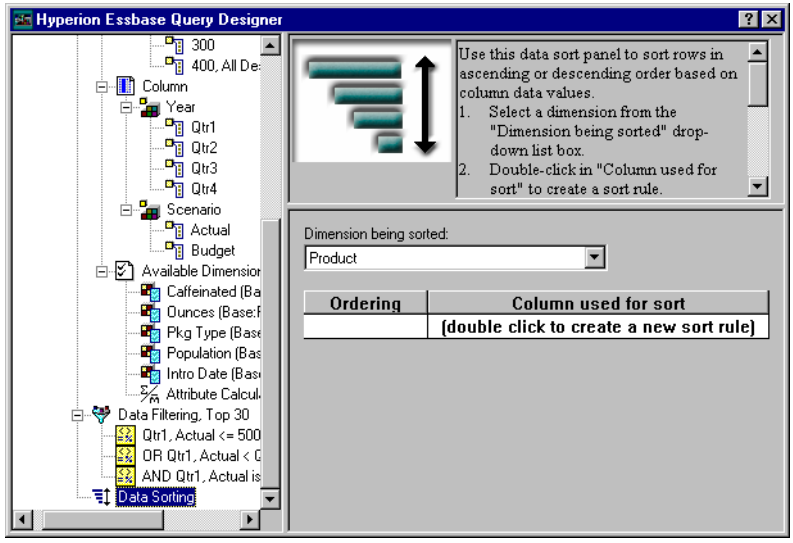
   As shown in Figure 92, the data sorting settings are displayed in the properties panel. You can specify data sorting criteria that affect the order in which the selected rows are retrieved in the data sorting panel.

   The data sorting panel contains the following items:

   - A “Dimension being sorted” drop-down list box that lists the dimensions specified in row format in the query.
   - A “Column used for sort” drop-down list box where you select one or more dimensions to be specified in column format in the query.
   - An Ordering drop-down list box where you apply an ascending or descending sort order for the selected column.

     You can also specify sorting to occur over a specific row dimension group. For example, you can sort by Product or by Market.

   Figure 92: Data Sorting Panel



2. Double-click on the statement **(double click to create a new sort rule)**.

   The selection defaults to Qtr1, Actual. The sort order defaults to Ascending in the Ordering list box.

3. Click **Ascending**.

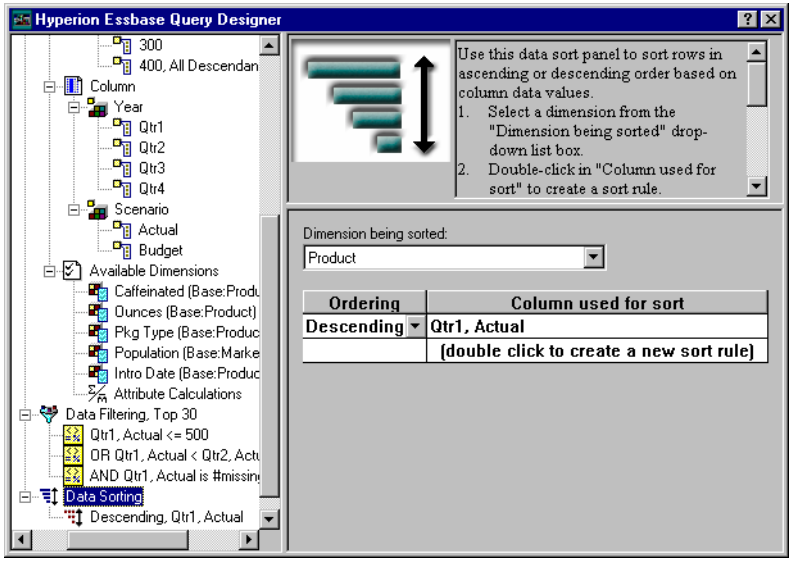
   A down arrow is displayed next to Ascending.

4. Click the down arrow next to **Ascending**.

   Descending is displayed below Ascending, as shown in the properties panel in Figure 93.

5. In the **Ordering** drop-down list, select **Descending**.

   Figure 93: Specifying Data Sorting Order



6. Double-click on the statement **(double click to create a new sort rule)**.

   A new data sorting rule is added. The new selection defaults to “Qtr1, Actual.”

7. Click the down arrow next to **Qtr1, Actual** and select **Qtr1, Budget**.

   Observe that the order in the Ordering list box has defaulted to Ascending.

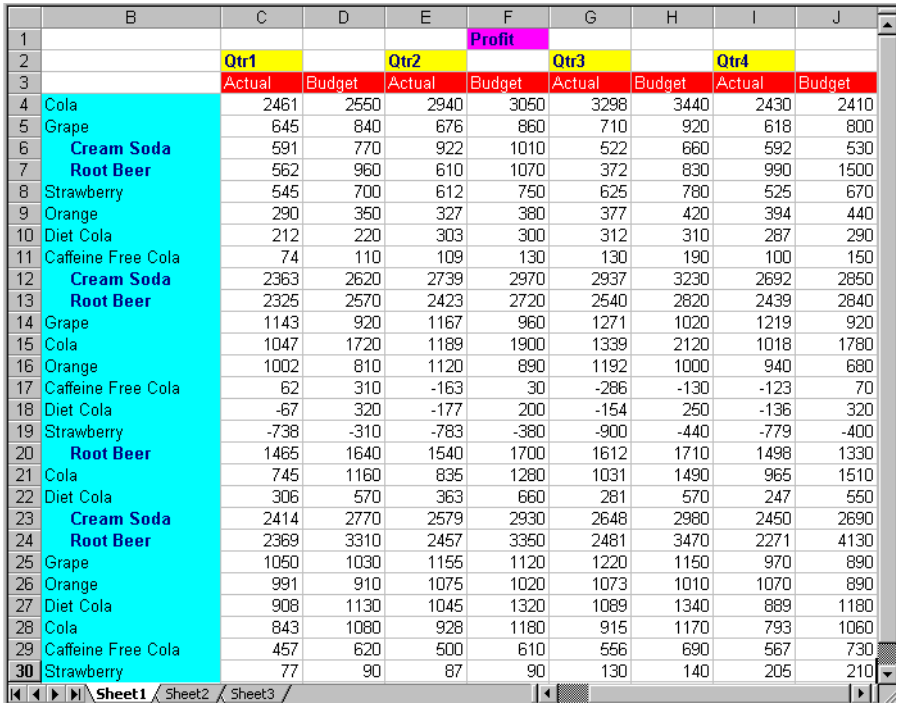
8. In the navigation panel, under **Data Sorting**, select **Ascending, Qtr1, Budget**, right-click, and select **Delete Sorting Rule**.

The “Ascending, Qtr1, Budget” sorting rule is deleted from the query.

9. In the navigation panel, select the **Data Sorting** icon, right-click, and select **Apply Query**.

   Analytic Services returns the results sorted in descending order for each quarter, as shown in Figure 94:

   Figure 94: Result of Filtering and Sorting Data



	B	C	D	E	F	G	H	I	J
1					Profit				
2		Qtr1		Qtr2		Qtr3		Qtr4	
3		Actual	Budget	Actual	Budget	Actual	Budget	Actual	Budget
4	Cola	2461	2550	2940	3050	3298	3440	2430	2410
5	Grape	645	840	676	860	710	920	618	800
6	**Cream Soda**	591	770	922	1010	522	660	592	530
7	**Root Beer**	562	960	610	1070	372	830	990	1500
8	Strawberry	545	700	612	750	625	780	525	670
9	Orange	290	350	327	380	377	420	394	440
10	Diet Cola	212	220	303	300	312	310	287	290
11	Caffeine Free Cola	74	110	109	130	130	190	100	150
12	**Cream Soda**	2363	2620	2739	2970	2937	3230	2692	2850
13	**Root Beer**	2325	2570	2423	2720	2540	2820	2439	2840
14	Grape	1143	920	1167	960	1271	1020	1219	920
15	Cola	1047	1720	1189	1900	1339	2120	1018	1780
16	Orange	1002	810	1120	890	1192	1000	940	680
17	Caffeine Free Cola	62	310	-163	30	-286	-130	-123	70
18	Diet Cola	-67	320	-177	200	-154	250	-136	320
19	Strawberry	-738	-310	-783	-380	-900	-440	-779	-400
20	**Root Beer**	1465	1640	1540	1700	1612	1710	1498	1330
21	Cola	745	1160	835	1280	1031	1490	965	1510
22	Diet Cola	306	570	363	660	281	570	247	550
23	**Cream Soda**	2414	2770	2579	2930	2648	2980	2450	2690
24	**Root Beer**	2369	3310	2457	3350	2481	3470	2271	4130
25	Grape	1050	1030	1155	1120	1220	1150	970	890
26	Orange	991	910	1075	1020	1073	1010	1070	890
27	Diet Cola	908	1130	1045	1320	1089	1340	889	1180
28	Cola	843	1080	928	1180	915	1170	793	1060
29	Caffeine Free Cola	457	620	500	610	556	690	567	730
30	Strawberry	77	90	87	90	130	140	205	210

Sheet1 Sheet2 Sheet3

Note: The values that you are ranking and sorting must be the same. For example, you cannot specify Product in the “Dimension being ranked” drop-down list box and Market in the “Dimension being sorted” drop-down list box. If you specify different values, Essbase Query Designer automatically changes both values to the last specified value.

10. To close the worksheet, select **File > Close**.

    You do not need to save the worksheet.

Retrieving Data into Asymmetric Reports

When you retrieve data into a worksheet, the resulting report can be either *symmetric* or *asymmetric*. Symmetric reports are characterized by repeating identical groups of members. For example, Figure 94 on page 138 shows a symmetric report that contains Actual and Budget members nested below Year members (Qtr1, Qtr2, Qtr3, and Qtr4).

An asymmetric report is characterized by groups of nested members that differ by at least one member. There can be a difference in the number of members or in the names of members.

You can create asymmetric reports in one of the following ways:

- Enter member names into the worksheet in free-form retrieval mode.
- Use a drill action with the Within Selected Group option selected from the Zoom tab of the Essbase Options dialog box.
- Suppress rows that contain missing values, zero values, or underscore characters during data retrievals.

If you retrieve data into an asymmetric report, Analytic Services must perform additional internal processing to maintain the asymmetric layout. This processing may increase the retrieval time on large reports. For more information regarding optimizing reports, see the *Essbase XTD Analytic Services Database Administrator's Guide*.

As part of the default Analytic Services installation, the `Asymm.xlsl` sample file is provided that illustrates how to create asymmetric reports.

➤ To view the sample file, `Asymm.xls`:

1. Select **File** > **Open**.
2. From the `\Essbase\client\sample` directory, open the `Asymm.xls` file.

Depending on how software is installed on your PC, the file may not be available or may be located in a different directory. Contact the Analytic Services system administrator for more information.

Figure 95: Asymmetric Report

	A	B	C	D	E	F	G
1	Sales						
2							
3			*Actual*	*Budget*	*Budget*	*Budget*	
4			**Qtr1**	**Qtr2**	**Qtr3**	**Qtr4**	
5	East	Colas	6292	6760	7300	5570	
6		Root Beer	5726	5650	5600	5780	
7		Fruit Soda	3735	4150	4350	3850	
8							
9	West	Root Beer	8278	7970	8320	7820	
10		Cream Soda	8043	7720	8300	7570	

The sample file row and column dimension groups are asymmetric. Thus, the nested member groups from the Product dimension differ in member content within respective markets. For example, Colas and Fruit Soda are included in East but not in West. In addition, Actual data is displayed for Qtr1, whereas Budget data is displayed for Qtr2, Qtr3, and Qtr4. Also notice that the sample file displays styles for members of the Scenario and Year dimensions.

3. Leave the sample file open for the next tutorial task.

Pivoting in Asymmetric Reports

When you pivot a group of members in an asymmetric report, Analytic Services keeps only unique members from dimensions that are not involved in the pivot.

➤ To use the open `Asymm.xls` file to illustrate this point:

1. Using the right-mouse button, drag East to the cell below Qtr1.

   The result is shown in Figure 96.

Figure 96: Result of Pivoting in an Asymmetric Report

	A	B	C	D	E	F	G	H	I
1					Sales				
2									
3		*Actual*		*Budget*		*Budget*		*Budget*	
4		**Qtr1**		**Qtr2**		**Qtr3**		**Qtr4**	
5		East	West	East	West	East	West	East	West
6	Colas	6292	6950	6760	8800	7300	9100	5570	8430
7	Root Beer	5726	8278	5650	7970	5600	8320	5780	7820
8	Fruit Soda	3735	8403	4150	5840	4350	6070	3850	5280
9	Cream Soda	4868	8043	4030	7720	3850	8300	3170	7570

Analytic Services combines the Product members into all unique members. For example, Root Beer, which is displayed twice in Figure 95 on page 140, is displayed only once in the current view. Colas, which is displayed in only one market in Figure 95, now is displayed in East and West.

Analytic Services also removes the blank line between Product row groups. A pivot action always eliminates any rows or columns in which all cells are empty.

2. Close the sample file without saving the changes.

Drilling Down to a Sample of Members

Analytic Services is a multidimensional database engine that provides support for ad hoc analysis. Such analysis is entirely driven by the intuition of the analyst and can be time-consuming as data volume increases. Large cubes tend to have more dimensions and sometimes more levels, making hierarchical navigation very cumbersome.

By drilling down to a portion of the members in an Analytic Services database, you can quickly analyze a large multidimensional database with a focus on data trends. This type of drilling down is also called “metadata sampling.”

Metadata sampling enables you to analyze on large cubes with a focus on data trends or to approximate information in the initial stages. Because you query on a “sample” of the members, retrieval is quick. Metadata sampling enables you to drill down to a portion of the vast number of members of an Analytic Services database in a fraction of the time that it usually takes to analyze the entire Analytic Services database. You can view many samples in a small amount of time and make early decisions. Later, you can follow up with organized data exploration.

With the introduction of Hybrid Analysis, you can store part of an Analytic Services cube in a relational database. Metadata sampling enables you to drill down on all members that you specify, whether they reside in Analytic Services or in an underlying relational database.

To drill down to a sample of members, you must to connect to a server, an application, and a database. Next, enable sampling in the Spreadsheet Add-in for Excel and set a percentage amount of data to query when drilling down to more detail (performing a Zoom In operation).

This task is optional. Optional tasks do *not* need to be performed as part of the tutorial. They are provided for information only.

In Excel, to drill down to a sample of members:

1. Select **Essbase > Sample Data (Zoom In)** to enable sampling.

   A check mark displayed next to the Sample Data (Zoom In) menu command indicates that sampling is enabled.
2. Select **Essbase > Options**.
3. In the **Essbase Options** dialog box, select the **Zoom** tab.
4. In the **Sampling Percentage** text box, type an integer between 1 and 100 to represent the approximate percentage amount of the Analytic Services cube to query during a Zoom In operation.

   The default value is 100.

   Note: If Hybrid Analysis is enabled and in use, the sampling percentage also applies to queries on the underlying relational database.
5. Click **OK** to save the sampling percentage integer that you entered and any other Zoom options that you have set.

   The Essbase Options dialog box is closed and you are returned to the spreadsheet.
6. In the spreadsheet, select the member on which you want to drill down.
7. Select **Essbase > Zoom In** or double-click the primary mouse button.

   For example, if you typed 50 in the Sampling Percentage text box, approximately 50 percent of the members from your Analytic Services database and, if applicable, from the specified columns of the relational database are queried when you select Essbase > Zoom In.

Notes on Sampling

- When drilling down on Hybrid Analysis, the following limitations apply:
  - Sampling with the All Levels option is not supported with Hybrid Analysis members.
  - Sampling with Same Level and Same Generation options are not supported.

- When sampling is enabled, a combination of the algorithms used by Analytic Services and the sampling percentage you set sometimes makes the following scenarios possible:
  - During a Zoom In operation, no members are retrieved. This can happen in some cases where a dimension is small.
  - During a Zoom In operation, all members are retrieved. This can happen in some cases where the sampling percentage is very small.

Working with Formatted Worksheets

In addition to providing flexible, ad hoc retrievals, Analytic Services supports retrieving data into formatted worksheets. A worksheet can contain the following formats:

- Spaces between rows and columns
- Cell values that contain text or data that is not defined in the database outline
- Member names in noncontiguous locations at the top of a worksheet
- Spreadsheet formulas (see also "Preserving Formulas When Retrieving Data" on page 149)
- Visual cues (styles)

After you format and save a worksheet, you may want to retrieve and navigate through new data in the existing worksheet format. These topics provide the following information on working with formatted worksheets:

- "Observing the Rules for Working with Formatted Worksheets" on page 144
- "Retrieving Data into Formatted Worksheets" on page 145
- "Pivoting Data on Formatted Worksheets" on page 147

Observing the Rules for Working with Formatted Worksheets

Observe the following rules when retrieving data into a formatted worksheet:

Rule 1

In the worksheet, no numeric cells can be located before the first Analytic Services data cell. For example, in Figure 97 on page 145, the first Analytic Services data cell is B6. Neither any cell in rows 1 through 5 nor cell A6 can contain numeric values. Also, these cells cannot contain formulas that resolve to numeric values.

Rule 2

A cell that lies within a row or column of Analytic Services data cannot contain text or numeric values. For example, in Figure 97 on page 145, the cells in columns B, C, D, and F and rows 6 through 9 and 11 through 14 cannot contain any nondata text or numbers, for such values may be overwritten, or emptied, by the retrieved data. These cells can contain formulas, however, if Formula Preservation options are used. For more information on Formula Preservation options, see "Preserving Formulas When Retrieving Data" on page 149.

Tip: If you need to preserve text in a cell, define that text or value as a spreadsheet formula, and use the Formula Preservation options.

Rule 3

The Pivot command is not available when the Retain on Retrieval check box is selected in the Mode tab of the Essbase Options dialog box.

Rule 4

The Pivot command removes all cells that contain text other than database member names.

Retrieving Data into Formatted Worksheets

As part of the default Analytic Services installation, the `P&l.xls` sample file is provided that illustrates how to retrieve data into a formatted worksheet. The sample file illustrates how to retrieve data into a worksheet that contains formatted text, formulas, and protected cells.

➤ To view the `P&l.xls` worksheet:

1. Select **File** > **Open**.
2. From the `\Essbase\client\sample` directory, open the `P&l.xls` file.

   An example of the worksheet is shown in Figure 96.

   Note: Depending on how software is installed on your machine, the file may not be available or may be located in a different directory. Contact the Analytic Services system administrator for more information.

   Figure 97: A Sample Formatted Worksheet

	A	B	C	D	E	F	G	H
1	**Market:** Central					**The Beverage Company**		
2	**Product:** 200					Planning Dept.		
3	**Scenario:** Budget							
4								
5		**Jan**	**Feb**	**Mar**		**Qtr1**	**% Sales**	
6	Misc	5	10	10		25	0.30	
7	Payroll	200	200	200		600	0.07	
8	Marketing	350	350	350		1050	12.47	
9	Total Expenses	555	560	560		1675	19.89	
10								
11	COGS	1170	1180	1200		3550	42.16	
12	Sales	2740	2820	2860		8420	100.00	
13	Margin	1570	1640	1660		4870	57.84	
14	Profit	1015	1080	1100		3195	37.95	
15								
16	**Ratio Analysis**							
17	Markup	57.3%	58.2%	58.0%		57.8%		
18	Marketing %	12.8%	12.4%	12.2%		12.5%		

3. Select **Essbase** > **Options** and select the **Display** tab.
4. In the **Cells** option group, make sure that **Adjust Columns** is checked.
5. Select the **Mode** tab.
6. In the **Formula Preservation** group, select the **Retain on Retrieval** check box to enable Formula Preservation mode.

   Note: When Retain on Retrieval is selected, there may be a slight delay in retrieval time.

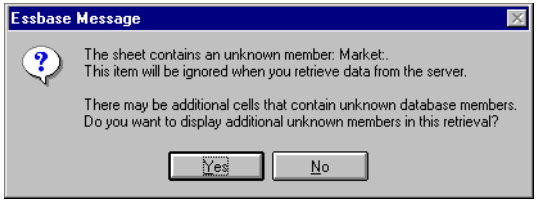
7. Click **OK**.

   By default, an Analytic Services retrieval overwrites the spreadsheet formula with data values in the retrieval area of a worksheet. The retrieval process also eliminates formulas in cells outside the retrieval area. The **Retain on Retrieval** option, however, enables you to define retrievals that do not overwrite formulas in any area of the worksheet.

8. Select **Essbase > Retrieve** to update the worksheet with the latest data values.

   Analytic Services determines that some text cells in the worksheet do not correspond to database member names. When Analytic Services is unable to resolve text in the worksheet, the message shown in Figure 98 is displayed:

   Figure 98: Essbase Unknown Member Message

   In this example, the first unknown member detected is Market: (in cell A1). Analytic Services does not recognize the colon (:) that follows Market in the cell. If you click Yes, Analytic Services displays the next unknown member; if you click No, Analytic Services continues with the retrieval.

   Note: If you work with formatted worksheets often, you may want to configure Analytic Services so that this message is not displayed. For information on configuring to avoid the Essbase message, see "Pivoting Data on Formatted Worksheets" on page 147.

9. Click **No** to close the dialog box and continue with the retrieval.

Analytic Services retrieves new data but retains the formatting and formulas in the worksheet. The result is shown in Figure 99.

Figure 99: Result of Retrieving on a Formatted Worksheet

	A	B	C	D	E	F	G	H
1	**Market:** Central					**The Beverage Company**		
2	**Product:** 200					Planning Dept.		
3	**Scenario:** Budget							
4								
5		Jan	Feb	Mar		Qtr1	% Sales	
6	Misc	#Missing	#Missing	#Missing		0	0.00	
7	Payroll	210	210	210		630	0.07	
8	Marketing	300	310	320		930	11.05	
9	Total Expenses	510	520	530		1560	18.53	
10								
11	COGS	1170	1180	1200		3550	42.16	
12	Sales	2740	2820	2860		8420	100.00	
13	Margin	1570	1640	1660		4870	57.84	
14	Profit	1060	1120	1130		3310	39.31	
15								
16	**Ratio Analysis**							
17	Markup	57.3%	58.2%	58.0%		57.8%		
18	Marketing %	10.9%	11.0%	11.2%		11.0%		

10. Close the file without saving it.

Note: The section on "Preserving Formulas When Retrieving Data" on page 149 provides additional tutorial tasks that show you how to take advantage of all the Formula Preservation options.

Pivoting Data on Formatted Worksheets

Using the Pivot command, you can produce ad hoc reports in both formatted and unformatted worksheets. A formatted worksheet, however, may contain labels and formulas that make the result of a pivot operation ambiguous. The pivot is designed to compress and retain *only* the database elements represented in the worksheet. The worksheet also retains labels in areas that are not overwritten by pivoted data.

Note: Analytic Services prevents pivot operations on worksheets that contain formulas when Formula Preservation mode is active.

As part of the default Analytic Services installation, the `Inv.xls` sample file is provided which illustrates how to pivot data in a worksheet. The sample file was saved with the Retain on Retrieval option disabled so that you can pivot on its worksheets.

➤ To view the `Inv.xls` worksheet:

1. Select **File** > **Open**.
2. From the `\Essbase\client\sample` directory, open the `Inv.xls` file.

   An example of this worksheet is shown in Figure 100.

   Note: Depending on how software is installed on your PC, the file may not be available or may be located in a different directory. Contact the Analytic Services system administrator for the location of the file.

   Figure 100: Formatted Worksheet Before Pivoting

	A	B	C	D	E	F	G
1	Market		*Inventory Analysis*				
2	Actual						
3			Jan	Feb	Mar		Qtr1
4							
5	Sales	100	8314	8327	8407		25048
6		200	8716	8960	8951		26627
7		300	7874	8046	8077		23997
8		400	6634	6736	6778		20148
9		Product	31538	32069	32213		95820
10							
11	Opening Inventory	100	29448	29124	28929		29448
12	* Adjusted for Audit	200	33000	32100	31125		33000
13		300	28865	28964	29095		28865
14		400	26092	26246	26409		26092
15		Product	117405	116434	115558		117405
16							
17	Stock to Sales		3.72	3.63	3.59		
18			=====	=====	=====		

3. Select **Essbase** > **Options** and select the **Global** tab.
4. In the **Display Messages** group box, clear the **Display Unknown Members** check box to avoid seeing the Essbase messages when working with formatted worksheets, and click **OK**.
5. Using the right-mouse button, drag Sales (in cell A5) to the cell nested below Jan (C4).

   Analytic Services pivots the Sales member group so that it is nested below the monthly members. During the pivot, however, Analytic Services retains only database elements. For example, all data for Stock to Sales and Adjusted for Audit is deleted during the pivot.

The result is shown in Figure 101.

Figure 101: Result of Pivoting on a Formatted Worksheet

	A	B	C	D	E	F	G
1			*Inventory Analysis*		Market		
2					Actual		
3		Jan		Feb		Mar	
4		Sales	Opening Inventory	Sales	Opening Inventory	Sales	Opening Inventory
5							
6	100	8314	29448	8327	29124	8407	28929
7	200	8716	33000	8960	32100	8951	31125
8	300	7874	28865	8046	28964	8077	29095
9	400	6634	26092	6736	26246	6778	26409
10	Product	31538	117405	32069	116434	32213	115558
11							
12	* Adjusted for Audit						
13							
14							
15							
16							
17	Stock to Sales						
18			=====	:: =====	=====		

6. Close the file without saving it.

Preserving Formulas When Retrieving Data

In "Retrieving Data into Formatted Worksheets" on page 145, you used the Retain on Retrieval option to preserve formatting and formulas in an existing worksheet. Collectively, the Formula Preservation options enable you to retain formulas during data retrievals, keep and remove only operations, and drill operations. In addition, Analytic Services can replicate formulas for additional members retrieved into the worksheet as part of a drilling operation. This topic shows you how to create a report using all of the Formula Preservation options.

Keep in mind the following guidelines and restrictions when using the Formula Preservation options:

- On the Mode tab of the Essbase Options dialog box, you must have the Advanced Interpretation option selected to enable Retain on Retrieval. The Formula Preservation options do not work with free-form retrieval mode.
- You must enable Retain on Retrieval to enable Retain on Keep and Remove Only and Retain on Zooms.
- You must enable Retain on Zooms to enable Formula Fill.

- When you select the Retain on Retrieval check box, the Suppress #Missing Rows and Zero Rows options on the Display tab are not selectable. If you have selected either of the Display options, the Formula Preservation options become unselectable automatically.
- When you select the Retain on Zooms check box, the Remove Unselected Groups option on the Zoom tab is not selectable. When you enable the Remove Unrelated Groups option, Retain on Zooms becomes unselectable automatically.
- When Retain on Retrieval is selected, retrieval time may be slightly delayed.
- As a general rule, insert a blank row as the last row in the formula range. This action ensures that the cell range in the formula expands properly when you drill down on members when Retain on Zooms is selected.
- Formula arrays are not supported in Spreadsheet Add-in when the preserve formula option is on. If formula arrays are in the worksheet, Analytic Services does not preserve these types of formulas.

➤ To preserve formulas when retrieving or retaining data:

1. Select **File** > **New** or click  to open a new worksheet.
2. Select **Essbase** > **Retrieve**.
3. In cell A2, drill down (double-click) on Year.
4. Press and hold down the **Alt** key and, in cell E1, drill down (double-click) on Scenario.
5. Select cell G3 and enter the following formula in the cell: `=B3/B$7*100`, as shown in Figure 102.

   The `$` in front of the `7` anchors the formula to the Year member.

   Figure 102: Entering a Formula into a Cell

	A	B	C	D	E	F	G	H
1		Measures	Product	Market				
2		Actual	Budget	Variance	Variance %	Scenario		
3	Qtr1	24703	30580	-5877	-19.21844343	24703	=B3/B7*100	
4	Qtr2	27107	32870	-5763	-17.53270459	27107		
5	Qtr3	27912	33980	-6068	-17.85756327	27912		
6	Qtr4	25800	31950	-6150	-19.24882629	25800		
7	Year	105522	129380	-23858	-18.44025352	105522		

6. Press **Enter**.

The spreadsheet calculates the formula that you entered in cell G3 and now reflects Qtr1 as a percentage of Year. The result is shown in Figure 103.

Figure 103: Result of Calculated Formula with Analytic Services Data

	A	B	C	D	E	F	G	H
1		Measures	Product	Market				
2		Actual	Budget	Variance	Variance %	Scenario		
3	Qtr1	24703	30580	-5877	-19.21844343	24703	23.41028411	
4	Qtr2	27107	32870	-5763	-17.53270459	27107		
5	Qtr3	27912	33980	-6068	-17.85756327	27912		
6	Qtr4	25800	31950	-6150	-19.24882629	25800		
7	Year	105522	129380	-23858	-18.44025352	105522		

7. Select **Essbase > Options** and select the **Mode** tab.
8. In the **Formula Preservation** group box, select the check boxes for **Retain on Retrieval** and **Retain on Keep and Remove Only**, and click **OK**.
9. In cells D2, E2, and F2, respectively, select Variance, %Variance, and Scenario.
10. Select **Essbase > Remove Only**.

    Analytic Services removes the selected columns but retains the formula that you entered, keeping it with the retained dataset. The result is shown in Figure 104.

Figure 104: Result of Removing Columns With Retain on Keep and Remove Only Selected

	A	B	C	D	E
1		Measures	Product	Market	
2		Actual	Budget		
3	Qtr1	24703	30580	23.41028411	
4	Qtr2	27107	32870		
5	Qtr3	27912	33980		
6	Qtr4	25800	31950		
7	Year	105522	129380		
8					
9					
10					

11. Select **Essbase > Options** and select the **Mode** tab.
12. In the **Formula Preservation** group box, select the check box for **Retain on Zooms** and click **OK**.
13. In cell A3, drill down (double-click) on Qtr1.

Analytic Services drills down on Qtr1 and moves the formula down with the Qtr1 member. The result is shown in Figure 105.

Figure 105: Result of Drilling Down with Retain on Zooms Enabled

	A	B	C	D	E
1		Measures	Product	Market	
2		Actual	Budget		
3	Jan	8024	9940		
4	Feb	8346	10350		
5	Mar	8333	10290		
6	Qtr1	24703	30580	23.41028411	
7	Qtr2	27107	32870		
8	Qtr3	27912	33980		
9	Qtr4	25800	31950		
10	Year	105522	129380		
11					

14. Select **Essbase > FlashBack**.
15. Select **Essbase > Options** and select the **Mode** tab.
16. In the **Formula Preservation** group box, select the **Formula Fill** check box and click **OK**.
17. In cell A3, drill down (double-click) on Qtr1.

    Analytic Services drills down on Qtr1 and replicates the formula for each member of Qtr1 (Jan, Feb, and Mar). To view the replicated formulas, click in cells D3, D4, D5, and D6 and look at the new syntax in the spreadsheet formula bar. The result is shown in Figure 106.

Figure 106: Result of Drilling Down with Formula Fill Enabled

	A	B	C	D	E
1		Measures	Product	Market	
2		Actual	Budget		
3	Jan	8024	9940	29.60121002	
4	Feb	8346	10350	29.9011178	
5	Mar	8333	10290	32.29844961	
6	Qtr1	24703	30580	23.41028411	
7	Qtr2	27107	32870		
8	Qtr3	27912	33980		
9	Qtr4	25800	31950		
10	Year	105522	129380		
11					

18. Before moving on with the tutorial, complete each of the following tasks:
    a. Select **Essbase > Options** and select the **Mode** tab.
    b. Clear all of the **Formula Preservation** options.
    c. Select **File > Close** to close the worksheet.

You do not need to save the worksheet.

Retrieving a Range of Data

In a typical worksheet, you can select a range of cells by dragging the mouse across the worksheet. You can also select a range of cells and tell Analytic Services to restrict the data retrieval to the selected range in the worksheet. Retrieving a range of data is particularly useful in the following situations:

- A worksheet contains multiple reports.
- A worksheet contains extraneous information that is not supported in a formatted report retrieval.
- You need to retrieve only a small subset of values from the server, thus dramatically decreasing retrieval time for large datasets.
- You need to retrieve data to an area of the worksheet other than the first column.

As part of the default Analytic Services installation, the `Profit.xls` sample file is provided that illustrates how to retrieve a range of data.

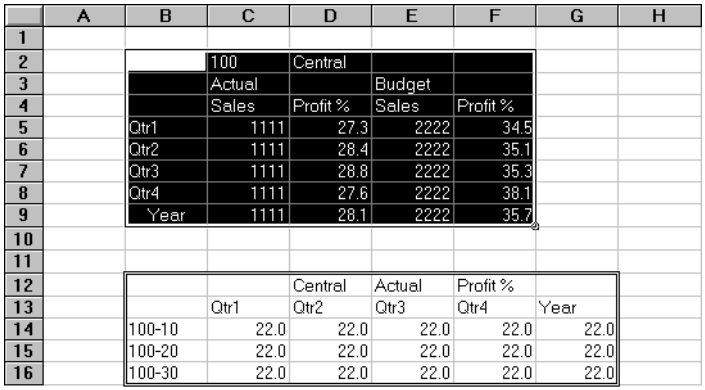
➤ To view the `Profit.xls` file:

1. Select **File** > **Open**.
2. From the `\Essbase\client\sample` directory, open the `Profit.xls` file.

   Note: Depending on how software is installed on your PC, the file may not be available or may be located in a different directory. Contact the Analytic Services system administrator for the location of the file.

As shown in Figure 107, when you open `Profit.xls`, the range of cells from B2 through F9 has already been selected for you.

Figure 107: Selected Range of Cells for Retrieval

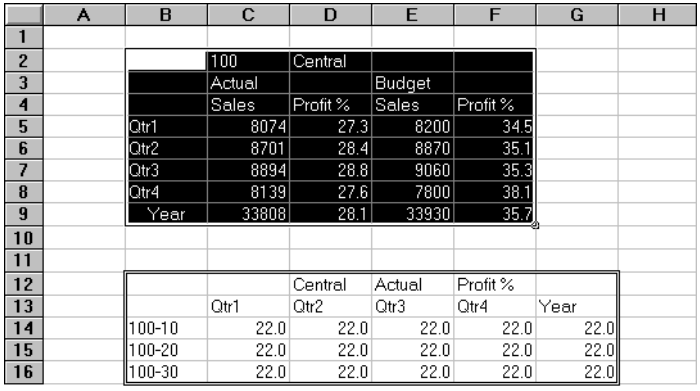


	A	B	C	D	E	F	G	H
1								
2			100	Central				
3			Actual		Budget			
4			Sales	Profit %	Sales	Profit %		
5		Qtr1	1111	27.3	2222	34.5		
6		Qtr2	1111	28.4	2222	35.1		
7		Qtr3	1111	28.8	2222	35.3		
8		Qtr4	1111	27.6	2222	38.1		
9		Year	1111	28.1	2222	35.7		
10								
11								
12				Central	Actual	Profit %		
13			Qtr1	Qtr2	Qtr3	Qtr4	Year	
14		100-10	22.0	22.0	22.0	22.0	22.0	
15		100-20	22.0	22.0	22.0	22.0	22.0	
16		100-30	22.0	22.0	22.0	22.0	22.0	

3. Select **Essbase > Retrieve** to update the selected range.

Analytic Services updates only the data in the selected range of cells, as shown in Figure 108.

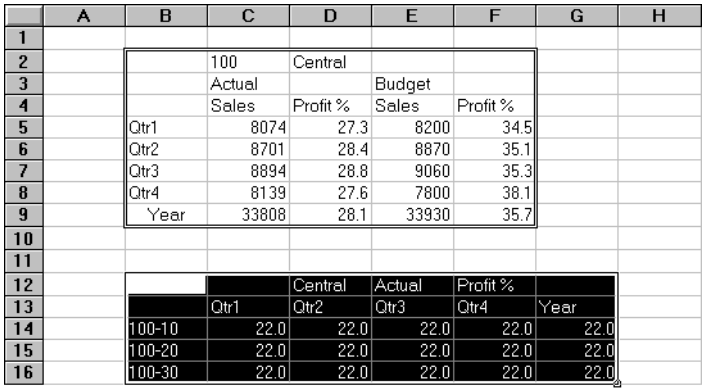
Figure 108: Result of Retrieving First Range of Data



	A	B	C	D	E	F	G	H
1								
2			100	Central				
3			Actual		Budget			
4			Sales	Profit %	Sales	Profit %		
5		Qtr1	8074	27.3	8200	34.5		
6		Qtr2	8701	28.4	8870	35.1		
7		Qtr3	8894	28.8	9060	35.3		
8		Qtr4	8139	27.6	7800	38.1		
9		Year	33808	28.1	33930	35.7		
10								
11								
12				Central	Actual	Profit %		
13			Qtr1	Qtr2	Qtr3	Qtr4	Year	
14		100-10	22.0	22.0	22.0	22.0	22.0	
15		100-20	22.0	22.0	22.0	22.0	22.0	
16		100-30	22.0	22.0	22.0	22.0	22.0	

4. Select cells B12 through G16, as shown in Figure 109.

Figure 109: Selecting Cells for Retrieval

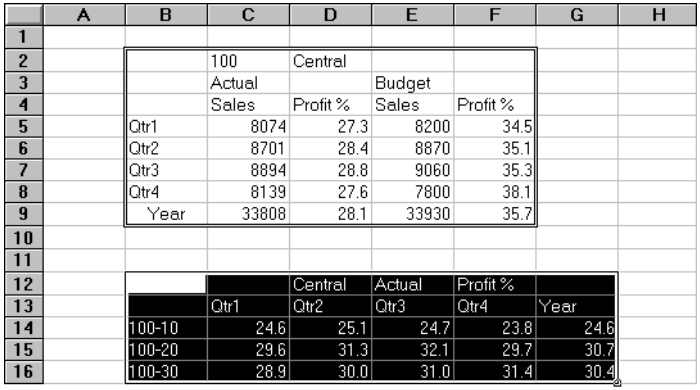


1							
2			100	Central			
3			Actual		Budget		
4			Sales	Profit %	Sales	Profit %	
5		Qtr1	8074	27.3	8200	34.5	
6		Qtr2	8701	28.4	8870	35.1	
7		Qtr3	8894	28.8	9060	35.3	
8		Qtr4	8139	27.6	7800	38.1	
9		Year	33808	28.1	33930	35.7	
10							
11							
12				Central	Actual	Profit %	
13			Qtr1	Qtr2	Qtr3	Qtr4	Year
14		100-10	22.0	22.0	22.0	22.0	22.0
15		100-20	22.0	22.0	22.0	22.0	22.0
16		100-30	22.0	22.0	22.0	22.0	22.0

5. Select **Essbase** > **Retrieve** once again to update the selected range.

Analytic Services updates the data in the selected range, as shown in Figure 110.

Figure 110: Result of Retrieving Second Range of Data



1							
2			100	Central			
3			Actual		Budget		
4			Sales	Profit %	Sales	Profit %	
5		Qtr1	8074	27.3	8200	34.5	
6		Qtr2	8701	28.4	8870	35.1	
7		Qtr3	8894	28.8	9060	35.3	
8		Qtr4	8139	27.6	7800	38.1	
9		Year	33808	28.1	33930	35.7	
10							
11							
12				Central	Actual	Profit %	
13			Qtr1	Qtr2	Qtr3	Qtr4	Year
14		100-10	24.6	25.1	24.7	23.8	24.6
15		100-20	29.6	31.3	32.1	29.7	30.7
16		100-30	28.9	30.0	31.0	31.4	30.4

6. Close the file without saving it.

Retrieving Data by Using a Function

The Analytic Services cell retrieve function, *EssCell*, retrieves a single database value into a worksheet cell. Enter an EssCell function directly into a worksheet or select an EssCell function from the spreadsheet menu bar.

Note: You must be connected to a database to use EssCell.

EssCell retrieves data when you perform an Analytic Services retrieval or when you recalculate a worksheet through Excel. As part of the default Analytic Services installation, the `Summary.xls` sample file is provided with EssCell functions already set in cells B16 and B17.

➤ To view the `Summary.xls` file:

1. Select **File** > **Open**.
2. From the `\Essbase\client\sample` directory, open the `Summary.xls` file.

   Note: Depending on how software is installed on your PC, the file may not be available or may be located in a different directory. Contact the Analytic Services system administrator for the location of this file.

Figure 111: Worksheet Containing EssCell Functions

	A	B	C	D	E	F	G
1	**200**						
2	**Texas**						
3							
4		Budget					
5		Qtr1	Qtr2	Qtr3	Qtr4	Year	
6	Sales	1460	1560	1630	1320	5970	
7	COGS	560	590	630	500	2280	
8	Margin	900	970	1000	820	3690	
9	Marketing	160	160	170	120	610	
10	Payroll	60	60	60	110	290	
11	Misc	#Missing	#Missing	#Missing	#Missing	#Missing	
12	Total Expenses	220	220	230	230	900	
13	Profit	680	750	770	590	2790	
14							
15							
16	Year Sales	#N/A					
17	Year Margin %	#N/A					

In Excel, cells B16 and B17 contain the EssCell function. If you select either of these cells, you can view the syntax for the EssCell function in the formula bar at the top of the worksheet.

The EssCell function is defined in a cell as follows:

Table 3: For Excel

`=EssCell(mbrList)`

In Excel, *mbrList* is one of the following factors:

- **A null value.** If the parameters of the function are empty, Analytic Services returns the data value from the top of each dimension.
- **A comma-delimited list of member names.** Member names must be enclosed in double quotation marks, with only one member per dimension allowed. If you list no members from a particular dimension, the function returns the data value from the top member of the unspecified dimension. Furthermore, you can include aliases in the member list, subject to the same rules as member names.
- **A worksheet cell reference.** The reference must point to a cell that contains a valid member name. Member names, such as 200 and 300-10, need to be formatted as text cells, rather than numeric cells.

For example, the syntax for the EssCell function in cell B16 in the `Summary.xls` file for Excel is as follows:

```
=EssCell("Sales", A1, A2, B4, F5)
```

When you open the worksheet, the values in these cells are #N/A. To update the values with the data in your database, you must perform a retrieval from Analytic Services.

3. Select **Essbase** > **Retrieve**.

Analytic Services calculates the EssCell functions in cells B16 and B17.

Figure 112: Retrieval on a Worksheet Containing the EssCell Function

	A	B	C	D	E	F
1	200					
2	Texas					
3						
4		Budget				
5		Qtr1	Qtr2	Qtr3	Qtr4	Year
6	Sales	1460	1560	1630	1320	5970
7	COGS	560	590	630	500	2280
8	Margin	900	970	1000	820	3690
9	Marketing	160	160	170	120	610
10	Payroll	60	60	60	110	290
11	Misc	#Missing	#Missing	#Missing	#Missing	#Missing
12	Total Expenses	220	220	230	230	900
13	Profit	680	750	770	590	2790
14						
15						
16	Year Sales	5970				
17	Year Margin %	61.81				

Now update the EssCell functions to retrieve data for a different state.

4. Change the contents of cell A2 from Texas to Florida.

The values in cells B16 and B17 are updated as soon as you update the cell. The update occurs because Excel has recalculated the worksheet (if you have configured Excel to calculate changes automatically). The remaining data cells do not change. To completely update the worksheet, you must retrieve data from the server.

Figure 113: Updating the EssCell Function

	A	B	C	D	E	F
1	200					
2	Florida					
3						
4		Budget				
5		Qtr1	Qtr2	Qtr3	Qtr4	Year
6	Sales	1460	1560	1630	1320	5970
7	COGS	560	590	630	500	2280
8	Margin	900	970	1000	820	3690
9	Marketing	160	160	170	120	610
10	Payroll	60	60	60	110	290
11	Misc	#Missing	#Missing	#Missing	#Missing	#Missing
12	Total Expenses	220	220	230	230	900
13	Profit	680	750	770	590	2790
14						
15						
16	Year Sales	5030				
17	Year Margin %	60.04				

Tip: If the worksheet contains many EssCell functions, change the spreadsheet to manual calculation mode. This change prevents the cells that contain EssCell functions from calculating until you retrieve data or calculate the worksheet manually. For more information on manual calculation mode, see the Excel documentation .

5. Select **Essbase > Retrieve** to update the report.

Analytic Services returns an error message if EssCell is unsuccessful. Table 4 lists messages that Analytic Services displays in the EssCell cell and explains the conditions that cause the messages:

Table 4: EssCell Messages

Message	Reason
#N/A	The worksheet is not connected to a database.
#VALUE!	A member name in the list or reference is invalid.
#NAME?	A text name in the function does not contain double quotation marks.

6. Close the file without saving it.

EssCell functions are already defined in the sample file that you used for this tutorial task.

This task is optional. Optional tasks do *not* need to be performed as part of the tutorial. They are provided for information only.

In Excel, to enter your own EssCell function into a worksheet:

1. From the Excel menu bar, select **Insert > Function**.
2. From the **Function Category** list, select **Essbase Add-in**.

   The Excel Function Wizard instructs you in defining the EssCell function.

Note: For more information on EssCell functions, see the Spreadsheet Add-in online help.

Retrieving Dynamic Calculation Members

Dynamic calculation members are database members that are excluded from the batch calculation process, thus shortening the regular database calculation time.

The Analytic Services application designer tags dynamic calculation members in the database outline so that Analytic Services knows not to calculate those members until a data retrieval requests them. This process is referred to as *dynamic calculation*. Dynamically calculating database members benefits Analytic Server in the following ways:

- Reduced disk usage
- Reduced database restructuring time
- Reduced time to back up the database

Database values that Analytic Services calculates dynamically take slightly longer to retrieve in Spreadsheet Add-in because calculations must be performed *before* retrieving data into the worksheet. For more information on dynamic calculation, see the *Essbase XTD Analytic Services Database Administrator's Guide*.

Tip: Enable the Navigate Without Data feature while you arrange the spreadsheet report so that Analytic Services does not dynamically calculate the database as the report is being created. For more information on the Navigate Without Data feature, see "Navigating Through the Worksheet Without Retrieving Data" on page 69.

Because there may be a performance impact on retrieving data for dynamic calculation members, define visual cues, or styles, for these members so that you can identify them in Spreadsheet Add-in.

As part of the default Analytic Services installation, the `Asymm.xls` sample file is provided that illustrates how to use Dynamic Calculation members.

➤ To view the `Asymm.xls` file:

1. Select **File** > **Open**.
2. From the `\Essbase\client\sample` directory, open the `Asymm.xls` file.
3. Drill up on Actual by double-clicking the right-mouse button in cell C3.
4. In cell C3, drill down on Scenario to display all members of Scenario.

   Analytic Services displays only the Scenario members for Qtr1, as shown in Figure 114.

   Figure 114: Displaying Scenario Members

	A	B	C	D	E	F	G
1					Sales		
2							
3			*Actual*	*Budget*	*Variance*	*Variance %*	*Scenario*
4			**Qtr1**	**Qtr1**	**Qtr1**	**Qtr1**	**Qtr1**
5	East	Colas	6292	5870	422	7.189097104	6292
6		Root Beer	5726	5460	266	4.871794872	5726
7		Fruit Soda	3735	3880	-145	-3.737113402	3735
8							
9	West	Root Beer	8278	7700	578	7.506493506	8278
10		Cream Soda	8043	6890	1153	16.73439768	8043

5. Select **Essbase** > **Options** and select the **Style** tab.

   Note: You must be connected to the Sample Basic database to display the Style tab. For more information on connecting to a database, see "Connecting to a Database" on page 122.

6. In the **Members** group box, scroll down until you see **Dynamic Calculations**.
7. Select the **Dynamic Calculations** check box and click the **Format** button.
8. In the **Font** style list, select **Bold Italic**.
9. In the **Color** list, select **Gray**.
10. Click **OK** and then select the **Display** tab.
11. In the **Cells** option group, click **Use Styles**. Click **OK**.
12. Select **Essbase > Retrieve**.

    Analytic Services displays the data and applies all the visual cues, or styles, that you set, including the newly set styles for dynamic calculation members and the styles you set in Chapter 2. You know that the columns for Variance and Variance% are dynamically calculated because Analytic Services displays these members in gray, bold, italicized font. (Variance and Variance% both display a red background because that style was previously set for all members of the Scenario dimension.)

    The result is shown in Figure 115.

    Figure 115: Result of Retrieving Dynamic Calculation Members

	A	B	C	D	E	F	G
1					Sales		
2							
3			Actual	Budget	*Variance*	*Variance %*	Scenario
4			Qtr1	Qtr1	Qtr1	Qtr1	Qtr1
5	East	Colas	6292	5870	422	7.189097104	6292
6		Root Beer	5726	5460	266	4.871794872	5726
7		Fruit Soda	3735	3880	-145	-3.737113402	3735
8							
9	West	Root Beer	8278	7700	578	7.506493506	8278
10		Cream Soda	8043	6890	1153	16.73439768	8043

Note: Occasionally, other styles that you have set will override a style for dynamic calculation members. For example, if a parent member is also a dynamic calculation member, and if you have set styles for both parent and dynamic calculations, the style for the parent member overrides the style for the dynamic calculation member. You must remove the style for parent members in order to see the style for dynamic calculation members. For more information on the precedence of styles, see "Precedence of Overlapping Styles" on page 83.

13. Close the `Asymm.xls` file without saving it.

Specifying the Latest Time Period for Dynamic Time Series

Dynamic Time Series members are predefined database members that are used in dynamic, to-date reporting, such as year-to-date or month-to-date values. Dynamic Time Series members are not displayed as individual members in the database outline; instead, they correspond to a generation name that uses a key term for time, such as year, month, or day.

For example, in the Sample Basic database, a generation name called Quarter was created for generation 2 in the Year dimension. Generation 2 includes the members for Qtr1, Qtr2, Qtr3, and Qtr4. When the generation name Quarter was created, Analytic Services created a Dynamic Time Series member called Q-T-D, or quarter-to-date.

To take advantage of Dynamic Time Series in Spreadsheet Add-in, choose the latest time period for which you want data in a to-date calculation. The calculated value of the Dynamic Time Series member is derived when you define the latest time period to be reported.

In the Sample Basic database, for example, the level 0 members of the Year dimension are the months of the year: Jan, Feb, Mar, and so on. If the current month is August and you want to know the sales data for the quarter up to the current month, a quarter-to-date calculation gives you the sales data for the months of July and August.

➤ To illustrate the concept of Dynamic Time Series:

1. Select **File** > **New** or click  to open a new worksheet.
2. Select **Essbase** > **Options** and select the **Zoom** tab.
3. In the **Zoom In** option group, select **Next Level**.
4. Clear the **Within Selected Group** check box and click **OK**.
5. Select **Essbase** > **Retrieve**.
6. In cell B1, drill down on (double-click) Measures.
7. In cell B2, click Year.
8. Type `Q-T-D` in cell B2 and press **Enter** to enter a predefined Dynamic Time Series member (Q-T-D).

The result is shown in Figure 116.

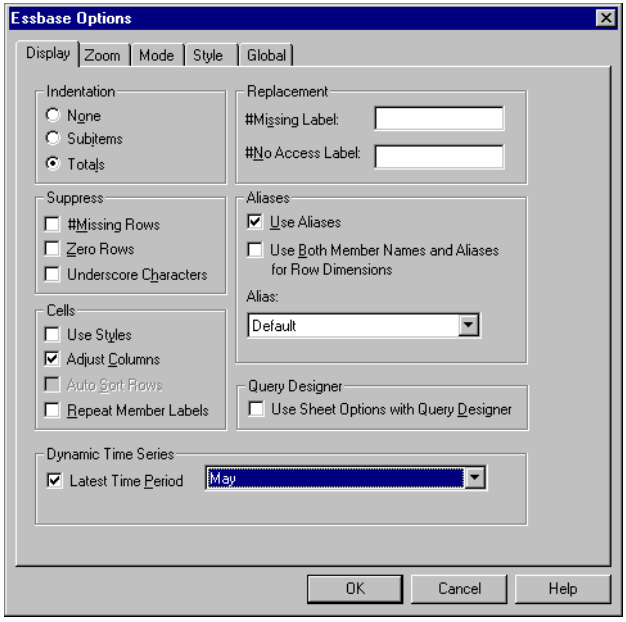
Figure 116: Entering a Dynamic Time Series Member into a Worksheet

	A	B	C	D	E
1			Product	Market	Scenario
2	Profit	Q-T-D	105522		
3	Inventory	Year	117405		
4	Ratios	Year	55.26162827		
5	Measures	Year	105522		
6					
7					

Note: For a list of other possible Dynamic Time Series members, see the Spreadsheet Add-in online help.

9. Select **Essbase** > **Options** and select the **Display** tab.
10. In the **Dynamic Time Series** group box, select the **Latest Time Period** check box and from the drop-down list box, select May, as shown in Figure 117.

Figure 117: Specifying Latest Time Period in a Dynamic Time Series



Note: If you do not specify a latest time period, Analytic Services uses the first level 0 member (Jan) as the default.

11. Click **OK**.
12. Select **Essbase > Retrieve**.

    Note: The Retrieve & Lock, Zoom In, and Zoom Out commands are not supported with Dynamic Time Series members.

    Analytic Services displays data for the Q-T-D member, as shown in Figure 118. The data values in the worksheet are the aggregated values for April and May, because May is the month that you specified as the latest month in the quarter-to-date Dynamic Time Series.

    Figure 118: Result of Specifying Latest Time Period in a Dynamic Time Series

	A	B	C	D	E
1			Product	Market	Scenario
2	Profit	Q-T-D	17573		
3	Inventory	Year	117405		
4	Ratios	Year	55.26162827		
5	Measures	Year	105522		

13. To close the worksheet, select **File > Close**.

    You do not need to save the worksheet.

In Advanced Interpretation mode, you can also create a report like the one shown Figure 118 by typing the name of the Dynamic Time Series member followed by the name of the latest time period in parentheses (for example `Q-T-D(May)`). If you are using Free-Form retrieval mode, you must enter the Dynamic Time Series member enclosed in quotation marks (for example, `"Q-T-D"`) and the latest time period also enclosed in quotes (for example, `("May")`) in separate, adjacent cells. You can also select a Dynamic Time Series member and a latest time period through Essbase Query Designer or through Member Selection.

For more information on Dynamic Time Series, see the Spreadsheet Add-in online help.

Using Substitution Variables

The Analytic Services application designer uses substitution variables to define global variables to represent values that are specific to Analytic Services. For example, Latest can be a substitution variable representing the latest time period in a Dynamic Time Series.

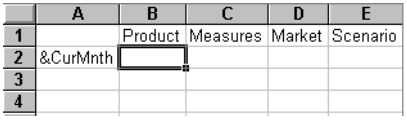
Using Essbase XTD Administration Services Console, the application designer sets substitution variables and their corresponding values for a specific application. Analytic Services stores these variables and their values on the Analytic Server. You can take advantage of the predefined substitution variables in Spreadsheet Add-in during Dynamic Time Series reporting.

For example, say the application designer sets a substitution variable on the server for the current month. The variable is called CurMnth and has a value of August. If you use the substitution variable in the worksheet, a retrieval returns values for August, because August is set as the current month on the server. If, at a later date, the application designer changes the value of the CurMnth substitution variable to October, a retrieval returns data for October.

The Sample Basic database that you are using for this tutorial does not contain predefined substitution variables. If the application designer had set a substitution variable in the database that you are using, you could enter a substitution variable directly into a worksheet.

For example, you could open a blank worksheet and type member names, as shown in Figure 119.

Figure 119: Entering a Substitution Variable in a Worksheet

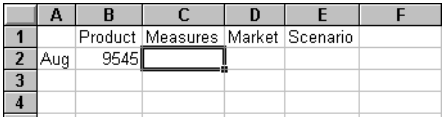


	A	B	C	D	E
1		Product	Measures	Market	Scenario
2	&CurMnth				
3					
4					

Notice the substitution variable (CurMnth) in cell A2. When you enter a substitution variable directly into a cell, you must precede it with an ampersand (&).

In this example, a retrieval produces the results shown in Figure 120.

Figure 120: Result of Retrieval on a Substitution Variable



	A	B	C	D	E	F
1		Product	Measures	Market	Scenario	
2	Aug	9545				
3						
4						

Analytic Services queries the server for the value of the substitution variable CurMnth, which is August. Data is returned only for August.

Note: If you save a worksheet containing a substitution variable as a template, make sure that you save the worksheet *before* you retrieve data. For example, if you save the worksheet shown in Figure 120 as a template, each time you retrieve the template, August rather than the substitution variable CurMnth is displayed.

Using Free-Form Reporting to Retrieve Data

So far, you have been shown how to retrieve Analytic Services data into a worksheet through ad hoc retrieval, Essbase Query Designer queries, and Member Selection operations. In addition to these retrieval methods, Analytic Services supports *free-form reporting*.

Free-form reporting enables you to tell Analytic Services specifically what you want to retrieve by typing data into the worksheet. This free-form of reporting is especially useful when you are familiar with the dimensions and members in the database outline.

Analytic Services provides two different retrieval modes for free-form reporting:

- Advanced Interpretation
- Free-Form

In both retrieval modes, enter member names directly into the worksheet. The following sections describe the similarities and differences between the two modes.

Using Advanced Interpretation Mode

Analytic Server server contains an advanced spreadsheet interpretation engine that scans a worksheet and interprets its content when fulfilling retrieval requests. When you construct a report by entering names directly into a worksheet in Advanced Interpretation retrieval mode, Analytic Services interprets the member names and creates a default view that is based on the location of the labels.

Keep in mind the following guidelines when you are working in Advanced Interpretation mode:

- Precede all member names that consist of numbers with a single quotation mark. For example, for Product dimension member 100, type '100 in the worksheet.

- If you define a report that does not contain all the database dimensions, you may need to enter a dummy value, such as 0, in the first data cell. Analytic Services overwrites this value with the contents of the database cell upon retrieval. Be sure to use a numeric value as the dummy value.

➤ To construct a free-form report in Advanced Interpretation retrieval mode:

1. Select **File > New** or click  to open a new worksheet.
2. Select **Essbase > Options** and select the **Mode** tab.
3. In the **Retrieval** option group, select **Advanced Interpretation** (the default setting) and click **OK**.
4. Enter member names and data as shown in Figure 121.

   Note: If a member name consists of a number, such as 100, you must precede the member name with a single quotation mark (for example, '100). This rule also applies to member names with spaces between words.

   Figure 121: Creating a New Free-Form Report

	A	B	C	D	E	F
1	Sales	East	Budget			
2						
3		Qtr1	Qtr2			
4	100					
5	200					
6	300					
7	400					

5. Select **Essbase > Retrieve** or double-click a data cell.

   Analytic Services retrieves data for the members that you entered into the free-form report and implements the Use Aliases option that you set in the Essbase Options dialog box in "Setting Essbase Options" on page 124.

   Figure 122: Retrieving Data into a Free-Form Report

	A	B	C	D	E	F
1	Sales	East	Budget			
2						
3		Qtr1	Qtr2			
4	Colas	5870	6760			
5	Root Beer	5460	5650			
6	Cream Soda	3680	4030			
7	Fruit Soda	3880	4150			

Now define a free-form report that does not contain all the dimensions from the database. In Advanced Interpretation mode, you may need to enter a dummy data value, such as 0, into the first data cell to indicate to Analytic Services where the data starts in the worksheet. Be sure to use a numeric value as the dummy value.

For example:

1. Select **Essbase > FlashBack**.
2. Delete cells A1, B1, and C1.
3. In cell B4, type `0` to provide Analytic Services with a data cell reference point.

Figure 123: Defining a Free-Form Report Without All Dimensions

	A	B	C	D	E	F
1						
2						
3		Qtr1	Qtr2			
4	100	0				
5	200					
6	300					
7	400					

4. Select **Essbase > Retrieve**.

   Analytic Services adds the dimensions that were omitted from the free-form report to the worksheet and retrieves data.

Figure 124: Retrieval in a Free-Form Report Without All Dimensions

	A	B	C	D	E	F
1						
2						
3		Measures	Market	Scenario		
4		Qtr1	Qtr2			
5	Colas	7048	7872			
6	Root Beer	6721	7030			
7	Cream Soda	5929	6769			
8	Fruit Soda	5005	5436			

5. Select **File > Close** to close the worksheet.

   You do not need to save the worksheet.

Using Free-Form Mode

Similar to Advanced Interpretation mode, Free-Form mode enables you to enter member names into any location in a worksheet and then interprets the contents of the worksheet when fulfilling the retrieval request. In addition, with Free-Form mode, you can use Analytic Services report script commands to retrieve data into a worksheet.

Report script commands are most useful for defining member references that can bring back the most current member information dynamically. For example, if you need to create a report that shows every product, including the products added since the last retrieval, standard retrieval mode reflects changes only when you drill down on the product.

If you use the report script command `<IDESCENDANTS`, Analytic Services retrieves all descendants of a specified member, as well as the specified member. For more information on the syntax of report script commands and on guidelines for developing reports, see the *Technical Reference* and the *Essbase XTD Analytic Services Database Administrator's Guide*.

Keep in mind the following guidelines when working in Free-Form retrieval mode:

- You must precede all member names that consist of numbers with a single quotation mark. For example, for the Product dimension member 100, you must type '100 in the worksheet.
- You cannot cancel a retrieve in Free-Form mode.
- You cannot apply Analytic Services styles in Free-Form mode.
- Analytic Services removes blank rows and columns on any retrieval action.
- Excel does not support Report Writer formatting commands, such as {BRACKETS}, {DECIMAL}, and {EUROPEAN} in Free-Form mode. They are incompatible with the Excel formatting features.
- When you are in Free-Form mode, an Auto Sort Rows option is selectable in the Display tab of the Essbase Options dialog box. If you select this feature, Analytic Services retrieves data in symmetric rows. The rows are sorted according to the order specified in the database outline.
- Not all Formula Preservation and Modes options (Essbase Options dialog box, Mode tab) are available in Free-Form mode.

- To use Dynamic Time Series in Free-Form mode, do not put the Dynamic Time Series member and the latest time period (for example, `"Q-T-D" ("Feb")`) in the same cell. You need to type the Dynamic Time Series member, `"Q-T-D"` in one cell, and the latest time period within parentheses, `("Feb")`, in a separate, adjacent cell.

➤ To construct a free-form report in Free-Form retrieval mode:

1. Select **File** > **New** or click  to open a new worksheet.
2. Select **Essbase** > **Options** and select the **Mode** tab.
3. In the **Retrieval** option group, select **Free Form**.
4. Select the **Display** tab.
5. In the **Cells** option group, select **Auto Sort Rows** and click **OK**.
6. Enter the member names into the worksheet as shown in Figure 125.

   Figure 125: Typing Member Names In a Free-Form Report

	A	B	C	D	E	F
1	Product	COGS				
2	Jan					
3	East					
4	Budget					
5	Actual					
6						
7						

7. Select **Essbase** > **Retrieve**.

   Analytic Services retrieves data for the members and creates a default view according to the location of the labels. Note that in Figure 126, three members were pivoted from row groups to column groups.

   Figure 126: Result of Retrieving in Free-Form Retrieval Mode

	A	B	C	D	E	F
1		Product	COGS	Jan	East	
2	Budget	2590				
3	Actual	3007				
4						
5						

8. Select **File** > **Close** to close the worksheet.

   You do not need to save the worksheet.

➤ To create a report by entering member names and a report script command:

1. Selecting **File** > **New** or click  to open a new worksheet.
2. Enter the member names into the blank worksheet as shown in Figure 127.

   Figure 127: Typing Member Names in a Free-Form Report

	A	B	C	D	E
1		Actual	Sales	East	
2		Jan	Feb	Mar	
3					

3. In cell A3, type `<IDESCENDANTS Product and` press **Enter**.

   Figure 128: Typing a Report Script Command in a Free-Form Report

	A	B	C	D
1		Actual	Sales	East
2		Jan	Feb	Mar
3	<DESCENDANTS Product			
4				

4. Select **Essbase** > **Retrieve**.

   Analytic Services retrieves data into the worksheet for all descendants of Product and for the members that you entered in the worksheet. The result is shown in Figure 129.

   Figure 129: Result of a Retrieve with a Report Script Command

	A	B	C	D	E
1		Actual	Sales	East	
2		Jan	Feb	Mar	
3	Cola	1812	1754	1805	
4	Diet Cola	200	206	214	
5	Caffeine Free Cola	93	101	107	
6	Colas	2105	2061	2126	
7	Old Fashioned	647	668	672	
8	Diet Root Beer	310	310	312	
9	Sasparilla	#Missing	#Missing	#Missing	
10	Birch Beer	896	988	923	
11	Root Beer	1853	1966	1907	
12	Dark Cream	999	1012	1026	

   Note: When Analytic Services completes the retrieval, the report script command is overwritten by the data it returns. You can use FlashBack to restore the previous view in Free-Form mode.

5. Select **File** > **Close** to close the worksheet.

You do not need to save the worksheet.

Using Attributes in Free-Form Reporting

Analytic Services enables you to retrieve data selectively by specifying attributes that are associated with a base dimension. For example, in the Sample Basic database, the Product base dimension is associated with attributes such as packaging and size. You can enter an attribute name into the worksheet to retrieve data that is associated with that attribute.

➤ To use attributes in a free-form report:

1. Select **File** > **New** or click  to open a new worksheet.
2. Enter member names as shown in the Figure 130.

   Figure 130: Using Attributes in Free-Form Reports

	A	B	C	D	E
1	Caffeinated	Bottle	Profit	Qtr1	East
2					

   Caffeinated is an attribute dimension associated with the Product base dimension. Bottle is a level 0 member of the Pkg_Type attribute dimension. The Pkg_Type dimension is associated with the Product base dimension. A level 0 member is the lowest level member in a dimension.

3. Click any empty cell and select **Essbase** > **Retrieve** or double-click an empty data cell.

   Analytic Services retrieves information on profits for the first quarter of the year for all members of the Product base dimension that are associated with both the level 0 attribute members of the Caffeinated attribute dimension (Caffeinated_True and Caffeinated_False) and the level 0 member Bottle of the Pkg_Type attribute dimension. The results should look like Figure 131.

   Figure 131: Result of Using Attributes in Free-Form Reports

	A	B	C	D	E	F
1		Caffeinated	Bottle	Profit	Qtr1	East
2	Scenario	2604				
3						

4. You can drill down to data on the level 0 attribute members of the Caffeinated attribute dimension. The results should look like Figure 132.

Figure 132: Drilling Down on Attributes in Free-Form Reports

	A	B	C	D	E	F
1			Bottle	Profit	Qtr1	East
2	Caffeinated_True	Scenario	142			
3	Caffeinated_False	Scenario	2462			
4						

5. To drill down further for data on profits for the first quarter for all members of the East base dimension, double-click cell E1. The results should look like Figure 133.

Figure 133: Result of Drilling Down on East

	A	B	C	D	E	F
1				Bottle	Profit	Scenario
2	New York	Caffeinated_True	Year	-2050		
3		Caffeinated_False	Year	6754		
4		Caffeinated	Year	4704		
5	Massachusetts	Caffeinated_True	Year	30		
6		Caffeinated_False	Year	1577		
7		Caffeinated	Year	1607		
8	Florida	Caffeinated_True	Year	1727		
9		Caffeinated_False	Year	934		
10		Caffeinated	Year	2661		
11	Connecticut	Caffeinated_True	Year	1134		
12		Caffeinated_False	Year	742		
13		Caffeinated	Year	1876		
14	New Hampshire	Caffeinated_True	Year	-84		
15		Caffeinated_False	Year	842		
16		Caffeinated	Year	758		
17	East	Caffeinated_True	Year	757		
18		Caffeinated_False	Year	10849		
19		Caffeinated	Year	11606		

Entering Generation and Level Names

In addition to entering database member names into a free-form report, you can enter generation or level names directly into a worksheet to retrieve specific members. The Analytic Services application designer defines generation and level names for database dimensions in the database outline. Two options enable you to determine which generation and level names are defined in the database:

- View generation and level names in the Essbase Member Selection dialog box or through Essbase Query Designer.
- Contact the Analytic Services application designer to see which generation and level names are defined in the database outline.

➤ To enter generation and level names directly into a free-form report:

1. Select **File** > **New** or click  to open a new worksheet.
2. Select **Essbase** > **Options** and select the **Mode** tab.
3. In the **Retrieval** option group, select **Advanced Interpretation**. Click **OK**.
4. Enter member names as shown in Figure 134.

   Figure 134: Entering Member Names in a Free-Form Report

	A	B	C	D	E	F
1		Sales	Budget	West	Year	
2						
3						

5. Enter a generation name as shown in Figure 135.

   Family is a generation name in the Product dimension. The name is already defined in the Sample Basic database.

   Figure 135: Entering a Generation Name in a Free-Form Report

	A	B	C	D	E	F
1		Sales	Budget	West	Year	
2	Family					
3						
4						

6. Select **Essbase** > **Retrieve**.

   Analytic Services retrieves data for the member and generation names that you entered. The Family generation name expands to its individual members. The result is shown in Figure 136.

   Figure 136: Result of Free-Form Retrieval with Generation Name

	A	B	C	D	E	F
1		Sales	Budget	West	Year	
2	Colas	34830				
3	Root Beer	31810				
4	Cream Soda	30480				
5	Fruit Soda	22730				
6	Diet Drinks	35690				
7						

7. Change Year to a level name (Lev0,Year) as shown in Figure 137.

Figure 137: Entering a Level Name in a Free-Form Report

	A	B	C	D	E	F
1		Sales	Budget	West	Lev0,Year	
2	Colas	34830				
3	Root Beer	31810				
4	Cream Soda	30480				
5	Fruit Soda	22730				
6	Diet Drinks	35690				
7						

Note: Do not insert a space between the comma after 0 and the word Year. Generation and level names that are entered directly into a worksheet must be precise.

8. Select **Essbase > Retrieve**.

As shown in Figure 138, Analytic Services retrieves data for the level 0 members of the Year dimension, which are the individual months (Jan, Feb, Mar, and so forth).

Figure 138: Result of Free-Form Retrieval with Level Name

	A	B	C	D	E	F
1			Sales	Budget	West	
2	Jan	Colas	2860			
3		Root Beer	2540			
4		Cream Soda	2220			
5		Fruit Soda	1840			
6		Diet Drinks	2810			
7	Feb	Colas	2820			
8		Root Beer	2560			
9		Cream Soda	2310			
10		Fruit Soda	1840			
11		Diet Drinks	2900			
12	Mar	Colas	2820			

9. Select **File > Close** to close the worksheet.

You do not need to save the worksheet.

Using Linked Reporting Objects

A *linked reporting object* is an external file, cell note, or World Wide Web resource that you link to a cell in an Analytic Services database. The file, note, or Web resource (indicated by a URL, or Uniform Resource Locator) can then be retrieved by the Spreadsheet Add-in users who have access to the database.

Note: If your organization has licensed and implemented the Essbase Partitioning option, you can also access *linked partitions* from cells in Spreadsheet Add-in. For more information on linked partitions, see "Ways to Access Linked Partitions" on page 192.

In this topic, the following procedures are discussed:

For additional information on using linked reporting objects, see the Spreadsheet Add-in online help.

Linking a File to a Data Cell

Using the linked reporting objects feature, you can link an external file to a data cell in Spreadsheet Add-in. Analytic Services stores the file on the Analytic Server. Users who have access to the database can then retrieve the file and view the data contained in the cell.

The following example uses the `Asymm.xls` sample worksheet with data from the Sample Basic database. It links a sample file, `Budasmp.txt`, to a cell containing the Budget figure. `Budasmp.txt` details the budgetary assumptions for the current year.

➤ To link a file to a data cell:

1. Select **File** > **Open**.
2. From the `\essbase\client\sample` directory, open the `Asymm.xls` file.
3. Make sure that you are connected to the Sample Basic database.

   If you are not connected, see "Connecting to a Database" on page 122.

4. Select cell D5, as shown in Figure 139.

   Note: You can link objects only to data cells, not to cells containing member names.

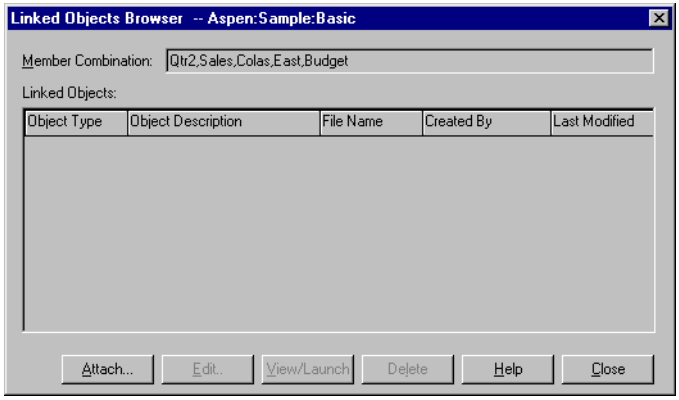
   Figure 139: Selecting a Data Cell for Linking an External File

	A	B	C	D	E	F	G
1	Sales						
2							
3			*Actual*	*Budget*	*Budget*	*Budget*	
4			Qtr1	Qtr2	Qtr3	Qtr4	
5	East	Colas	6292	6760	7300	5570	
6		Root Beer	5726	5650	5600	5780	
7		Fruit Soda	3735	4150	4350	3850	
8							
9	West	Root Beer	8278	7970	8320	7820	
10		Cream Soda	8043	7720	8300	7570	
11							

5. Select **Essbase > Linked Objects**.

   Analytic Services displays the Linked Objects Browser dialog box, as shown in Figure 140.

   Figure 140: Linking a File

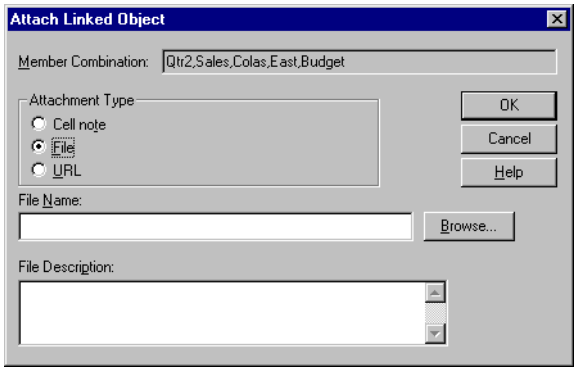


6. In the **Linked Objects Browser** dialog box, click the **Attach** button.

   Analytic Services displays the Attach Linked Object dialog box.

7. Under the **Attachment Type** group box, select **File**, as shown in Figure 141.

Figure 141: Linking a File to a Data Cell



8. Click the **Browse** button located next to the **File Name** text box.

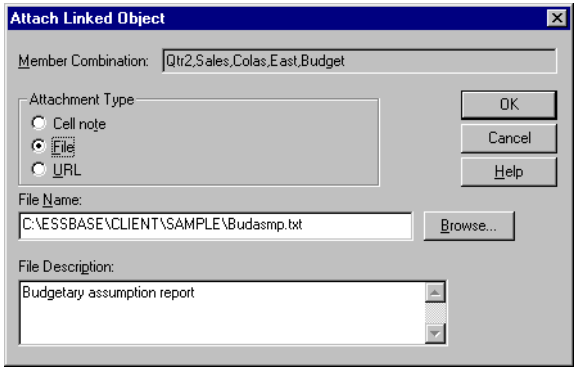
   Analytic Services displays the Browse Files dialog box.

9. Go to the `\Essbase\client\sample` directory and select the `Budasmp.txt` file.

10. Click **Open**.

11. Under **File Description**, enter a brief description for the file as indicated in Figure 142.

Figure 142: Selecting and Describing a File to Link



Note: Entering text in the File Description text box is optional.

12. Click **OK** to close the dialog box and link the file to the cell.

    Analytic Services copies the file to the server and establishes a link to the current data cell.

13. Click **Close** to close the **Linked Objects Browser** dialog box.

Do not close the `Asymm.xls` file. You use the file in the next tutorial task.

To recognize cells that have linked reporting objects attached to them, you may want to apply a visual cue, or style, to the cells.

➤ To apply styles:

1. Select **Essbase > Options** and select the **Style** tab.
2. In the **Data Cells** area, select **Linked Objects**.
3. Click **Format**.
4. From the **Font style** list box, select **Italic**.
5. From the **Color** list box, select **Purple**. Click **OK**.
6. Select the **Display** tab.
7. In the **Cells** option group, select the **Use Styles** box and click **OK**.
8. Select **Essbase > Retrieve** to refresh the worksheet and apply the styles.

   Cell D5 (the cell to which you just attached the linked file) is now displayed in purple, italic font, as shown in Figure 143. Analytic Services also refreshes the worksheet with the other options set in the Essbase Options dialog box.

   Figure 143: Result of Applying a Style to a Linked Reporting Object Cell

	A	B	C	D	E	F
1	Sales					
2						
3			Actual	Budget	Budget	Budget
4			Qtr1	Qtr2	Qtr3	Qtr4
5	East	Colas	6292	*6760*	7300	5570
6		Root Beer	5726	5650	5600	5780
7		Fruit Soda	3735	4150	4350	3850
8						
9	West	Root Beer	8278	7970	8320	7820
10		Cream Soda	8043	7720	8300	7570

Leave the file (`Asymm.xls`) open for the next tutorial task.

Linking a Cell Note to a Data Cell

In addition to linking external files to a data cell in Spreadsheet Add-in, you can also link individual cell notes that contain information on particular data cells. Cell notes can consist of no more than 599 characters. If you need to link information to a data cell that is longer than 599 characters, you must create and save an external file and then link the file to the data cell.

➤ To link a cell note to a data cell:

1. In the `Asymm.xls` file, select cell C5.

   Note: You can link objects only to data cells, not to cells containing member names.

2. Select **Essbase > Linked Objects**.

   Analytic Services displays the Linked Objects Browser dialog box.

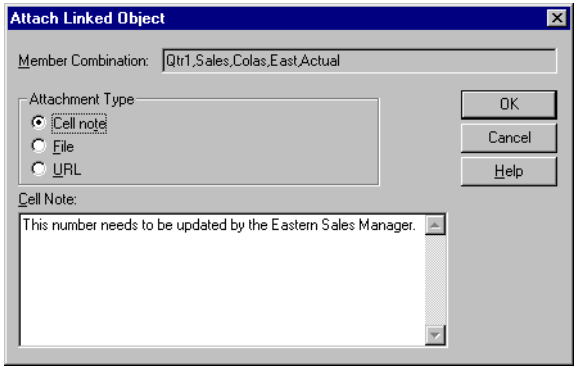
3. In the **Linked Objects Browser** dialog box, click **Attach**.

   Analytic Services displays the Attach Linked Object dialog box.

4. Under the **Attachment Type** group box, select **Cell Note** (see Figure 144).

5. In the **Cell Note** text box, type the note as indicated in Figure 144.

   Figure 144: Creating a Cell Note to Link



6. Click **OK** to close the dialog box and link the cell note.

   Analytic Services copies the note to the server and establishes a link to the current data cell.

7. Click **Close** to close the **Linked Objects Browser** dialog box.
8. Select **Essbase > Retrieve** to refresh the worksheet and apply the style that you defined for linked objects.

   Now Analytic Services displays two data cells (C5 and D5) in purple, italic font to represent a cell that contains a linked reporting object. The result is shown in Figure 145.

   Figure 145: Result of Creating a Linked Cell Note

	A	B	C	D	E	F	G
1	Sales						
2							
3			Actual	Budget	Budget	Budget	
4			Qtr1	Qtr2	Qtr3	Qtr4	
5	East	Colas	6292	6760	7300	5570	
6		Root Beer	5726	5650	5600	5780	
7		Fruit Soda	3735	4150	4350	3850	
8							
9	West	Root Beer	8278	7970	8320	7820	
10		Cream Soda	8043	7720	8300	7570	

Leave the `Asymm.xls` file open for the next tutorial task.

Linking a URL to a Data Cell

A URL is an address string that identifies resources on the World Wide Web, such as documents, images, and downloadable files. With the linked reporting objects feature, you can link a URL to a data cell so that users who have access to the database can link directly to the specified URL. When you access the cell from Spreadsheet Add-in, your default Web browser opens and displays the specified URL.

Note: For more information on URL syntax, see the Spreadsheet Add-in online help.

If you have a Web browser and Internet access, follow these steps to link a data cell to the Hyperion Web site:

1. In the `Asymm.xls` file, select cell E5, as shown in Figure 146.

   Note: You can link objects only to data cells, not to cells containing member names.

   Figure 146: Selecting a Data Cell for Linking to a URL

	A	B	C	D	E	F	G
1	Sales						
2							
3			Actual	Budget	Budget	Budget	
4			Qtr1	Qtr2	Qtr3	Qtr4	
5	East	Colas	6292	6768	7300	5570	
6		Root Beer	5726	5650	5600	5780	
7		Fruit Soda	3735	4150	4350	3850	
8							
9	West	Root Beer	8278	7970	8320	7820	
10		Cream Soda	8043	7720	8300	7570	

2. Select **Essbase** > **Linked Objects**.

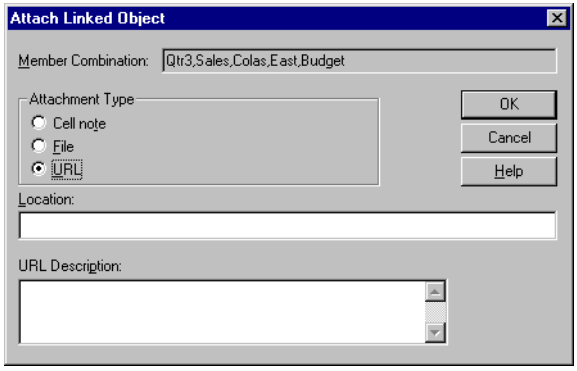
   Analytic Services displays the Linked Objects Browser dialog box.

3. In the **Linked Objects Browser** dialog box, click **Attach**.

   Analytic Services displays the Attach Linked Object dialog box.

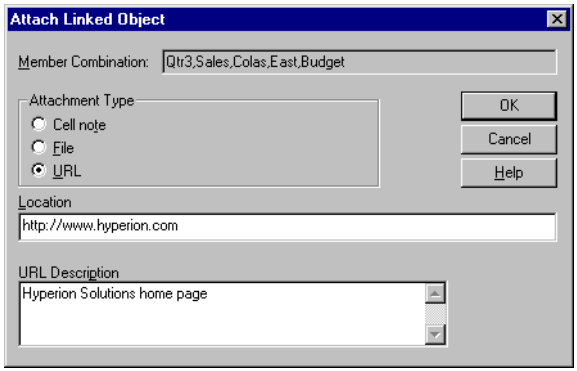
4. Under the **Attachment Type** option group, select **URL**, as shown in Figure 147.

   Figure 147: Linking a URL to a Data Cell



5. Enter a URL in the **Location** text box and a brief description in the **URL Description** text box, as shown in Figure 148.

   Figure 148: Entering and Describing a URL to Link



   Entering text in the URL Description text box is optional. The text field for entering the URL location is limited to 512 characters. The text field for entering the URL description is limited to 80 characters.

6. Click **OK** to close the dialog box and link the URL to the cell.

   Analytic Services copies the URL string to the server and establishes a link to the current data cell.

   Note: The syntax for the URL is not checked at the time of creation; Analytic Services checks the syntax when the user accesses the URL from the worksheet. The default Web browser checks for the existence, or validity, of the URL.

7. Click **Close** to close the **Linked Objects Browser** dialog box.

8. Select **Essbase > Retrieve** to refresh the worksheet and apply the style that you defined for linked objects.

Leave the `Asymm.xls` file open for the next tutorial task.

The following topics explain how to access linked reporting objects from Spreadsheet Add-in.

Accessing and Editing Linked Reporting Objects

Two options are available for accessing and editing a linked reporting object that is attached to a data cell:

- Select the cell (as identified by the style applied to it) and select Essbase > Linked Objects.
- Enable double-clicking for linked object browsing.

Note: If you enable double-clicking for linked object browsing, double-clicking behavior changes for retrieving data and performing drill actions. For more information on these changes, see the Spreadsheet Add-in online help.

For this tutorial, you access the linked reporting objects that you created in the previous sections by using the Essbase menu item instead of the double-clicking action.

Accessing a Linked File

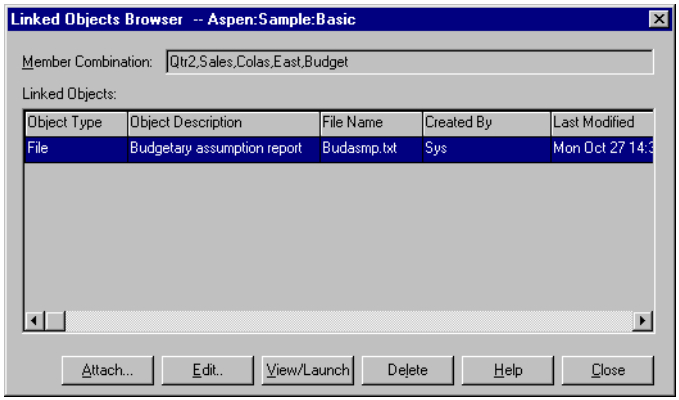
Sometimes you want to check an external file that is linked to a data cell.

➤ To access the external file that you previously linked to a data cell:

1. In the `Asymm.xls` file, select cell D5.
2. Select **Essbase > Linked Objects**.

3. In the **Linked Objects Browser** dialog box, select the `Budasmp.txt` file, as shown in Figure 149.

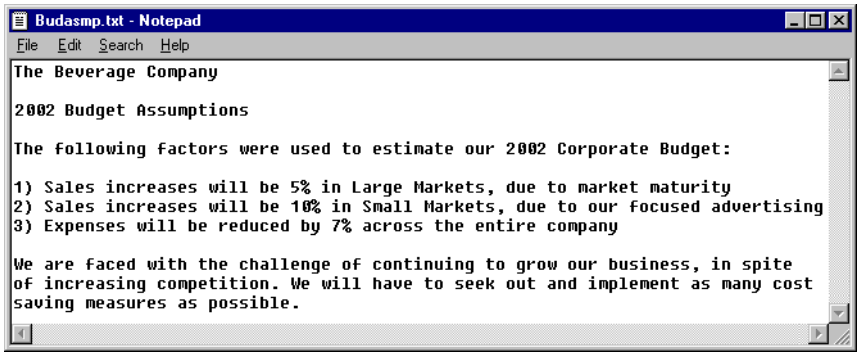
Figure 149: Accessing a Linked External File



4. Click **View/Launch** to view the linked file.

The `Budasmp.txt` file is opened from the source application, as shown in Figure 150.

Figure 150: Viewing the Contents of a Linked External File



Note: You can edit the contents of a file in the source application. After the edits are made and the file is saved, you can re-attach the edited file by clicking the Edit button in the Linked Objects Browser dialog box. Analytic Services displays the Re-attach Linked Object dialog box, which you can use to re-attach, or relink, the edited file to the data cell.

5. Close the `Budasmp.txt` file and click **Close** to close the **Linked Objects Browser** dialog box.

Leave the `Asymm.xls` file open for the next task.

Accessing a Linked Cell Note

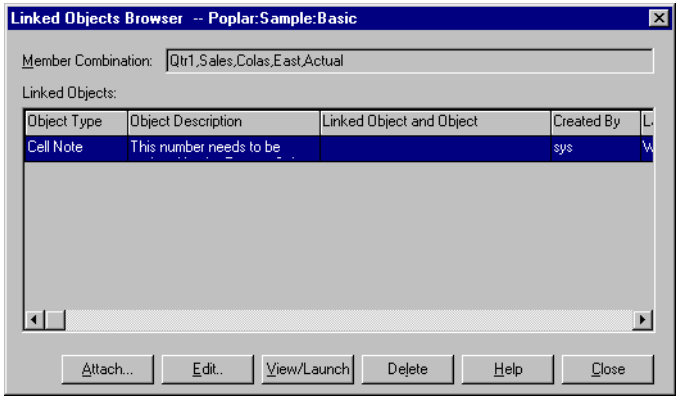
Sometimes you have to edit a cell note that was previously created.

➤ To access and edit the cell note that you previously created:

1. In the `Asymm.xls` file, select cell C5.
2. Select **Essbase > Linked Objects**.

   The Linked Objects Browser dialog box displays the cell note that is linked to the selected data cell.
3. In the **Linked Objects Browser** dialog box, select the cell note, as shown in Figure 151.

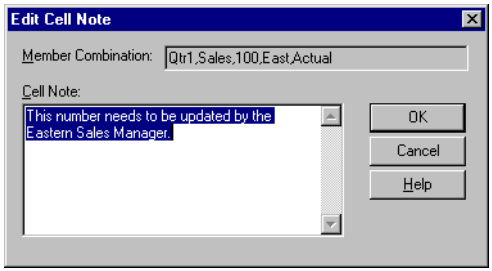
   Figure 151: Accessing a Linked Cell Note



4. Click **Edit** to edit the contents of the cell note.

Analytic Services displays the Edit Cell Note dialog box with the selected cell note displayed, as shown in Figure 152.

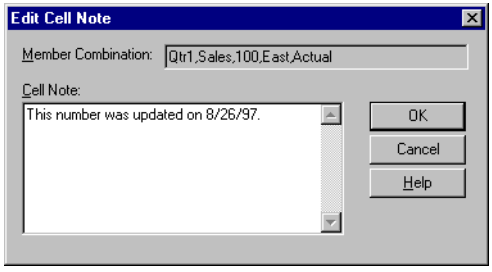
Figure 152: Editing the Contents of a Linked Cell Note



If you simply want to view the contents of the cell note, click the View/Launch button instead of the Edit button in the Linked Objects Browser dialog box.

5. Edit the contents of the cell note as indicated in Figure 153.

Figure 153: Result of Editing Cell Note Contents



6. Click **OK** to close the **Edit Cell Note** dialog box and save the edits you made to the note.

   Analytic Services saves the edits to the cell note on the server.

7. Click **Close** to close the **Linked Objects Browser** dialog box.

Leave the file (`Asymm.xls`) open for the next tutorial task.

Accessing a Linked URL

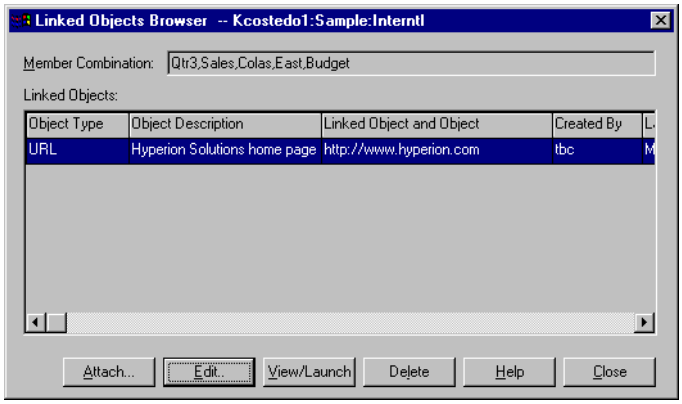
If you followed the steps in "Linking a URL to a Data Cell" on page 182, you can access and edit the URL that you created.

➤ To access the URL:

1. In the `Asymm.xls` file, select cell E5.
2. Select **Essbase** > **Linked Objects**.

   The Linked Objects Browser dialog box displays the URL that is linked to the selected data cell.
3. In the **Linked Objects Browser** dialog box, select the URL, as shown in Figure 154.

   Figure 154: Accessing a Linked URL



4. Click **View/Launch** to view the linked URL.

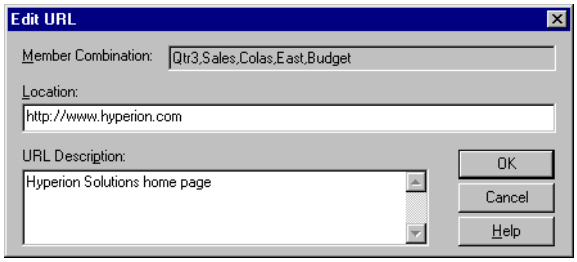
   Analytic Services checks the syntax of the URL. If there are syntax errors, Analytic Services displays an error message. If the URL syntax is correct, the default Web browser launches and connects to the specified site. In this case, the syntax for the URL is correct, so the default Web browser launches and connects to the Hyperion Web site.
5. Close the Web browser.

➤ To edit the URL:

1. In the **Linked Objects Browser** dialog box, select the URL.
2. Click **Edit**.

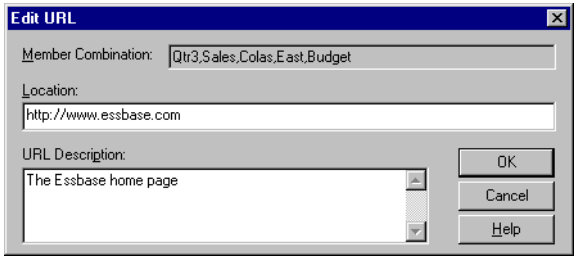
   Analytic Services displays the Edit URL dialog box with the selected URL displayed in the Location text box, as shown in Figure 155.

   Figure 155: Preparing to Edit the Contents of a Linked URL



3. Edit the URL location and description as shown in Figure 156.

   Figure 156: Editing the Contents of a Linked URL



4. Click **OK** to close the **Edit URL** dialog box and save the edits that you made.

   Analytic Services saves the edits to the URL on the server.

5. Click **View/Launch** to view the new URL.

   The Web browser launches and connects to the new URL.

6. Close the Web browser.
7. Click **Close** to close the **Linked Objects Browser** dialog box.
8. Close the `Asymm.xls` file without saving it.

Connecting to Multiple Databases

Analytic Services supports simultaneous access to multiple databases. The databases can be in different applications and can be stored on different servers. In the spreadsheet application, you can open multiple worksheets, each of which can be connected to a different database. An individual worksheet can access only one database at a time. Use the Connect command from the Essbase menu to switch the connection between databases.

Note: Depending on the status of production applications at your site, you may not have access to additional applications or databases. Contact the Analytic Services system administrator if you need access to other applications.

For this tutorial, you do not need to connect to another database.

This task is optional. Optional tasks do *not* need to be performed as part of the tutorial. They are provided for information only.

To access multiple databases:

1. Select **Essbase** > **Connect**.
2. In the **Essbase System Login** dialog box, select the server that you want to access from the **Server** list box (or type in the name of the server).
3. Press **Tab** to move to the **Username** text box and type your username.
4. Press **Tab** to move to the **Password** text box and type your password.
5. Click **OK** to connect to the server.

   When the server connection is complete, a list of available application and database pairs is displayed in the Application/Database list.
6. Double-click the **Application/Database** pair that you want to connect to in the **Application/Database** list. Alternatively, you can select the **Application/Database** pair and click **OK**.

   If the application is not already running, Analytic Services automatically starts it. There may be a brief pause as the application loads; the time required to start an application depends on the number of databases, the sizes of the databases, and the sizes of the indexes of the databases contained within the application.
7. Open a new worksheet and repeat the steps to connect to additional databases. You can open one database at a time per worksheet.

For information on connecting to multiple databases from Essbase Query Designer, refer to Chapter 2.

Ways to View Active Database Connections

If you frequently connect to multiple databases, you may need to check the active database for each worksheet. You can view the database connection status in two ways:

- The Style tab of the Essbase Options dialog box contains a Connection Information text box. This box displays connection information for the active worksheet.
- The Essbase Disconnect dialog box lists all active worksheets and their connection information. This dialog box also enables you to disconnect one or more worksheets from their respective databases.

Ways to Access Linked Partitions

Linked partitions are part of the Essbase Partitioning product. They provide the ability to link Analytic Services databases that contain different dimensions without losing access to all dimensions of both databases. If your organization has purchased and implemented the partitioning product, you can take advantage of its capabilities. The *Essbase XTD Analytic Services Database Administrator's Guide* describes how to design and implement a linked partition. The Analytic Services application designer usually sets up partitioning.

Note: The Partitioning product also enables the Analytic Services application designer to set up transparent or remote partitions. For more information on partitioning, see the *Essbase XTD Analytic Services Database Administrator's Guide*.

You can set visual cues, or styles, for cells tagged as linked objects. These cells are access points to the linked partition within the linked database. Two options are available for accessing a linked partition from a data cell in Spreadsheet Add-in:

- Select the cell and select Essbase > Linked Objects.
- Enable double-clicking for linked object browsing.

  If you enable double-clicking for linked object browsing, double-clicking behavior changes for retrieving data and performing drill actions. For more information on these changes, see the Spreadsheet Add-in online help.

When you select Essbase > Linked Objects from a linked partition cell, Analytic Services completes the following actions:

- Analytic Services displays the Linked Objects Browser dialog box, which contains a list of possible partitions which you can access. From this dialog box, select the partition to connect to.

  The Linked Objects Browser dialog box may also contain a list of linked reporting objects, such as cell notes and external files. For more information on linked objects, see "Using Linked Reporting Objects" on page 177.

- After you select a partition, Analytic Services creates a new worksheet that contains corresponding members and dimensions for the cell in the linked partition.

  Note: Analytic Services does not preserve formulas across partitions.

- Analytic Services retrieves data values from the linked partition.

You can now perform operations such as drill down and drill up to get more information on the new worksheet.

Note: The Sample Basic database that you are using for this tutorial does not contain a linked partition. However, the instructions for accessing a linked partition are shown as an optional task in the light-colored box below.

This task is optional. Optional tasks do *not* need to be performed as part of the tutorial. They are provided for information only.

To access a linked partition in Spreadsheet Add-in if the Analytic Services application designer has set up a linked partition:

1. Locate a linked object cell, as indicated by the style applied to the cell.
2. Access the **Linked Objects Browser** dialog box in either of these ways:
   - Select **Essbase > Linked Objects** to open the **Linked Objects Browser** dialog box.
   - In the **Essbase Options** dialog box, select the **Enable Linked Object Browsing** check box to enable double-clicking to view linked objects.
3. Select the partition that you want to connect to and click **View/Launch**.

   Analytic Services creates a new worksheet that contains the dimensions and members for the cell in the linked partition.

You need the proper privileges to access a linked partition. If your user account and password match the account information for the linked partition, Analytic Services establishes a connection with the linked partition. Otherwise, Analytic Services displays the Essbase System Login dialog box for you to enter the user account and password manually.

Updating Data on the Server

Data values are changed frequently in applications that involve planning, budgeting, and forecasting. After you retrieve data into the worksheet, you can use Spreadsheet Add-in to change values, enter formulas, and format data. Analytic Services is also designed to permit multiple-user, concurrent database access and update.

Depending on your security privileges, you may be able to modify all data values or a certain subset of values. To recognize cells to which you have read/write access, apply a visual cue, or style, to the cells. For more information on applying styles, see “Applying Styles to Data Cells” on page 82.

To update data from a worksheet, you must lock the database area that contains the values that you want to change. Locking prohibits other users from changing the data that you want to update. Other users can retrieve locked data but cannot lock or change the data. You have exclusive update rights to that area.

Note: You cannot update attribute-related data on the server because attribute data is always calculated dynamically and, hence, is not saved.

You can lock data values in three ways:

- The Retrieve & Lock command retrieves data into the worksheet while locking the corresponding data area on the server. When you perform a subsequent retrieval, Analytic Services automatically unlocks the previous data values.

  Note: The Retrieve & Lock command is not supported with Dynamic Time Series members.

- The Lock command locks information that you have already retrieved. When you perform a subsequent retrieval, Analytic Services automatically unlocks the previous data values.
- The Update Mode check box in the Mode tab of the Essbase Options dialog box automatically locks the corresponding database area for each retrieval.

To update the server with data values from the worksheet, use the Send command on the Essbase menu. After updating the server, the Send command automatically unlocks data (unless you are in Update Mode). You must clear Update Mode to stop the automatic locking of blocks.

You can unlock data blocks in two ways:

- The Unlock command unlocks all blocks that you have locked.
- The server automatically unlocks data blocks that have been locked for the maximum time allowed as defined by the Analytic Services system administrator. Automatic unlock ensures that blocks are not locked for extended periods of time.

The `P&l.xls` file is installed as part of the default Analytic Services installation. This file illustrates how to update data on the server.

➤ To view the `P&l.xls` worksheet:

1. Select **File** > **Open**.
2. From the `\Essbase\client\sample` directory, open the `P&l.xls` file.
3. Select **Essbase** > **Retrieve & Lock**.

   Analytic Services retrieves data and locks the appropriate area of the database, as shown in Figure 157.

   Figure 157: P&L Worksheet After Retrieve & Lock

	A	B	C	D	E	F	G	H
1	**Market:** Central					**The Beverage Company**		
2	**Product:** 200					Planning Dept.		
3	**Scenario:** Budget							
4								
5		Jan	Feb	Mar		Qtr1	% Sales	
6	Misc	#Missing	#Missing	#Missing		0	0.00	
7	Payroll	210	210	210		630	0.07	
8	Marketing	300	310	320		930	11.05	
9	Total Expenses	510	520	530		1560	18.53	
10								
11	COGS	1170	1180	1200		3550	42.16	
12	Sales	2740	2820	2860		8420	100.00	
13	Margin	1570	1640	1660		4870	57.84	
14	Profit	1060	1120	1130		3310	39.31	
15								
16	**Ratio Analysis**							
17	Markup	57.3%	58.2%	58.0%		57.8%		
18	Marketing %	10.9%	11.0%	11.2%		11.0%		

4. Change the value for Sales in Jan (cell B12) to 4000 and press **Enter**.

Analytic Services changes the affected data values.

5. Select **Essbase > Send** to update the server with the new values.

   Analytic Services updates the server and unlocks the data blocks.

Figure 158: P&L Worksheet After Sending New Values to the Server

	A	B	C	D	E	F	G	H
1	**Market:** Central					**The Beverage Company**		
2	**Product:** 200					Planning Dept.		
3	**Scenario:** Budget							
4								
5		Jan	Feb	Mar		Qtr1	% Sales	
6	Misc	5	10	10		25	0.30	
7	Payroll	200	200	200		600	0.07	
8	Marketing	350	350	350		1050	12.47	
9	Total Expenses	555	560	560		1675	19.89	
10								
11	COGS	1170	1180	1200		3550	42.16	
12	Sales	2740	2820	2860		8420	100.00	
13	Margin	1570	1640	1660		4870	57.84	
14	Profit	1015	1080	1100		3195	37.95	
15								
16	**Ratio Analysis**							
17	Markup	57.3%	58.2%	58.0%		57.8%		
18	Marketing %	12.8%	12.4%	12.2%		12.5%		

6. Close `P&l.xls` without saving it.

Analytic Services provides a spreadsheet sheet update logging feature that tracks and logs all data updates sent from Spreadsheet Add-in to the server. The Analytic Services system administrator enables this feature for extra protection against data loss. For more information on spreadsheet update logging, see the *Essbase XTD Analytic Services Database Administrator's Guide* or contact the Analytic Services system administrator.

Database Calculation

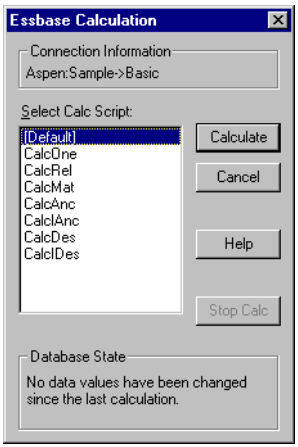
Sending updated data to the server does not automatically recalculate the database. If you have the appropriate security privileges to perform database calculations, you can calculate the database from Spreadsheet Add-in with the Calculation

command. For this tutorial, you will not actually calculate the Sample Basic database. For more information on Analytic Services calculations, see the *Essbase XTD Analytic Services Database Administrator's Guide*.

CAUTION: Do not perform any calculation operations for this tutorial.

When you select Essbase > Calculation, Analytic Services displays the Essbase Calculation dialog box, as shown in Figure 159.

Figure 159: Essbase Calculation Dialog Box



The Essbase Calculation dialog box contains the following items:

- The Connection Information text box displays the active database connection.
- The Select Calc Script list box contains the server-based calculation scripts to which you have access.
- The Database State status box indicates the current calculation state of the database. The following states are possible:
  - Calculating

    Indicates that a calculation is currently running on the database.
  - Data values have been modified since the last calculation

Indicates that data values have changed since the database was last calculated. The last calculation may have been an entire calculation of the database or a calculation of any subset of the database.

– No data values have been changed since the last calculation

  Indicates that the data in the database has not changed since it was last calculated. The last calculation may have been an entire calculation of the database or a calculation of any subset of the database.

CAUTION: If the last calculation was performed on a subset of the data, the entire database may not have been calculated since values last changed. To ensure that the results of calculations are up-to-date, you may want to run a calculation of the entire database. For more information, contact the Analytic Services system administrator.

Creating Multiple Worksheets from Data

One frequent requirement of budgeting and planning applications is to send worksheets to various functional areas of an organization. After the worksheets have been distributed, the recipients can review the contents, make modifications, and send updates back to the distributor.

Using the Essbase Cascade feature, you can create multiple worksheet files based on a single database view. You can specify at what level of detail you want to replicate the worksheets to tailor the information to each recipient's needs.

The Sample Basic database contains data for beverage products sold in different states across the U.S. For example, assume that you want all product managers to review and respond to a proposed budget and to return their changes to the finance department. You must create a worksheet for each combination of budget and P&L data to distribute to the product managers for their respective products.

➤ To create this set of worksheets:

1. Select **File** > **Open**.
1. From the `\Essbase\client\sample` directory, open the `P&l.xls` file.

   This file contains the data that you need to replicate for each worksheet.
2. Select **Essbase** > **Retrieve**.

Notice that the retrieval uses the Use Aliases option, which is already set for this file in the Essbase Options dialog box. In this example, product 200 changes to Root Beer, which is its preassigned alias.

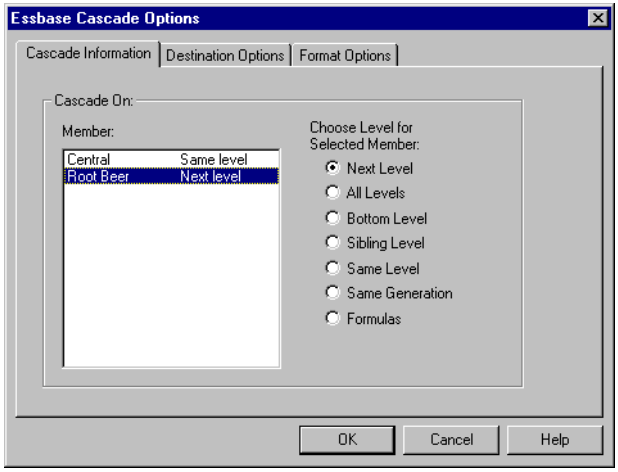
3. Select Central (in cell B1) and Root Beer (in cell B2) as the members to be represented in the resulting worksheets.
4. Select **Essbase > Cascade**.

   Analytic Services displays the Essbase Cascade Options dialog box.
5. Click the **Cascade Information** tab.

   The Cascade Information page contains the list of members that you selected and the options for specifying the level at which the selected members are retrieved into the cascaded worksheets.

   For more information on each option, see the Spreadsheet Add-in online help.
6. Select Central in the **Member** list box, and select **Same level** in the **Choose Level for Selected Member** option group.
7. Select Root Beer in the **Member** list box, and select **Next level** (the default setting), as shown in Figure 160.

Figure 160: Cascade Information Tab



The replicated, or cascaded, spreadsheet reports now provide data for members at the *same* level as Central (East, West, and South) and for members at the level *below* Root Beer (Old Fashioned, Diet Root Beer, Sarsaparilla, and Birch Beer).

8. Click the **Destination Options** tab.
9. In the **Destination Directory** text box, type `C:\temp` as the name of the directory where you want the cascaded worksheets to be stored.

   You can also click Browse to select a destination directory from the Browse dialog box.
10. In the **Destination Types** group box, select the **Separate Workbooks** option (the default setting) to create separate spreadsheet files for each cascaded worksheet.

    You can also choose to create only one workbook with separate worksheets for each cascaded report, or you can choose to send the cascaded reports to the printer.
11. In the **File Information** group box, select the **Overwrite Existing Files** check box (the default setting).

    When this check box is selected, Analytic Services overwrites any cascaded worksheets with the same file name.

    You can also select the Open Created Files check box to open each cascaded file in the spreadsheet as it is created.

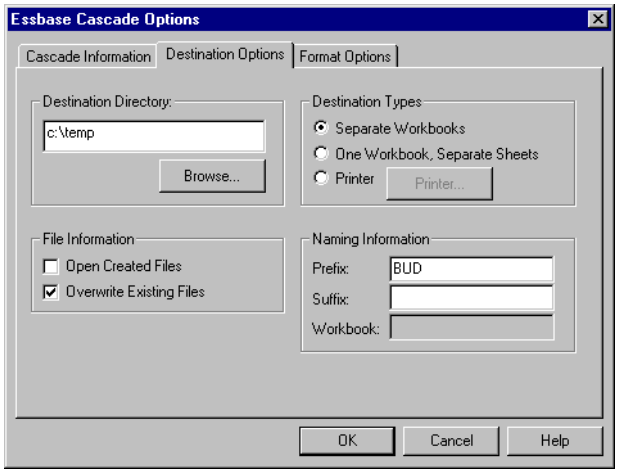
CAUTION: Depending on the number of replicated worksheets that you want to create, the Cascade command can create more worksheets than can be stored in the memory of your computer. Therefore, the Open Created Files option should not be used when you are replicating large numbers of worksheets.

---

12. In the **Naming Information** group box, type `BUD` in the **Prefix** text box.

The completed Destination Options tab should look like Figure 116.

Figure 161: Destination Options Tab



When you assign a prefix or suffix in the Naming Information group box, the worksheet files that are generated as a result of executing the Cascade command are named with the prefix or suffix that you specify. The default is to generate worksheet names that are numbered 1 through *n*, where *n* is the total number of worksheets created.

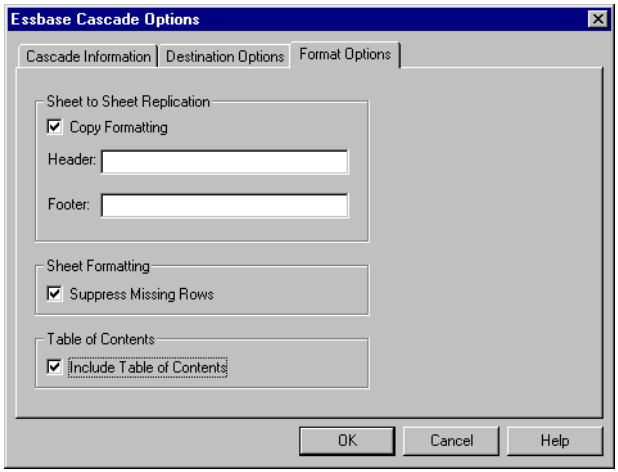
The syntax for the file names is *PrefixnSuffix*.xls for Excel. If you do not specify a prefix or suffix, Analytic Services creates the worksheets `1.xls`, `2.xls`, and so on. If you are creating a single workbook, the same naming convention is used for the worksheet tab names within the workbook.

CAUTION: Do not specify a prefix and suffix combination that leaves no characters free for Analytic Services to create unique file names. If file names are duplicated, Analytic Services overwrites the duplicate file name with the last cascaded worksheet.

---

13. Click the **Format Options** tab, as shown in Figure 167.

Figure 162: Format Options Tab



14. Select the **Copy Formatting** check box to copy the formatting of the source worksheet into each cascaded worksheet.

    Copy formatting copies only the visual cues set using Analytic Services and the cell formatting that you set using the worksheet. It does not copy formulas, column formatting, worksheet formatting, or graphs.

15. In the **Header** and **Footer** text boxes, specify a header or footer name to be used for all of the cascaded worksheets.

16. In the **Sheet Formatting** group box, select the **Suppress Missing Rows** check box so that rows containing only #Missing values are not replicated.

17. In the **Table of Contents** group box, select the **Include Table of Contents** check box.

    This creates a Table of Contents text file that lists all replicated worksheets, their creation dates, and their member content. By default, Analytic Services names the Table of Contents file with the extension `.lst`.

18. Click **OK** to create the cascaded worksheets.

    Analytic Services rapidly creates the cascaded worksheets. As each worksheet is created, it is automatically saved, closed, and logged in the Table of Contents. Each individual file is saved in the directory that you specified,

named `Bud1.xls` through `Bud10.xls`. When the Cascade is completed, Analytic Services returns you to the original worksheet view (that is, the source file).

19. Using a text editing application, open the Table of Contents file from the destination directory that you specified earlier. This file is named `BUD0.LST` and contains a list of all cascaded worksheets, as shown in Figure 163.

Figure 163: Table of Contents File for Cascaded Worksheets

```
/*************************************************************/
/*  File name:      c:\temp\BUD0.lst */
/*  Creation date:  Mon Nov 10 11:48:34 2003 */
/*************************************************************/
c:\temp\BUD1.xls        /*  East, Old Fashioned  */
c:\temp\BUD2.xls        /*  East, Diet Root Beer  */
c:\temp\BUD3.xls        /*  East, Sasparilla  */
c:\temp\BUD4.xls        /*  East, Birch Beer  */
c:\temp\BUD5.xls        /*  West, Old Fashioned  */
c:\temp\BUD6.xls        /*  West, Diet Root Beer  */
c:\temp\BUD7.xls        /*  West, Sasparilla  */
c:\temp\BUD8.xls        /*  South, Old Fashioned  */
c:\temp\BUD9.xls        /*  South, Diet Root Beer  */
c:\temp\BUD10.xls       /*  South, Sasparilla  */
```

20. Select **File** > **Close** to close the worksheet.

    You do not need to save the worksheet.

You can create multiple worksheet files based on the attributes of a product. Type in the attribute names in the top row of the worksheet. Select the attribute names and select Essbase > Cascade. Proceed as previously described.

Working with Currency Conversions

Organizations with offices in different countries generally do business in the currency of the host country (known as the *local* currency). Such organizations must convert data entered in local currencies to a common currency for consolidation and analysis.

The Analytic Services currency conversion product can be purchased separately for Analytic Services. If your organization purchased this product and implemented a currency conversion application, you can take advantage of the capabilities of Analytic Services Currency Conversion. The *Essbase XTD Analytic Services Database Administrator's Guide* describes how to design and implement a currency conversion application.

The following topics provide a brief tutorial for working with currency conversions:

Retrieving Currency Conversion Data

This topic focuses on basic currency conversion concepts, including the Currency Report command.

A currency conversion application consists of two databases:

- A main database that contains data in local and converted values
- A currency rates database that contains exchange rates

Apply exchange rates from the currency rates database to local values from the main database to derive converted values. The Analytic Server product installation includes a sample currency conversion application (installation options) that consists of two sample databases: a main database called Interntl and a currency rates database called Xchgrate.

The Sample Interntl database consists of five dimensions: Year, Measures, Product, Market, and Scenario. All but the Market and Scenario dimensions are identical to the Sample Basic database.

The Market dimension includes Toronto, Vancouver, Montreal, Germany, Sweden, Switzerland, and the UK. The Scenario dimension handles different currency types (such as Actual and Budget) in both local and converted currencies. In this database, all local currencies are converted to the common currency of U.S. dollars.

The Sample Xchgrate database, which is a subset of the main database, contains four dimensions:

- The CurTime dimension accommodates different exchange rates by month.
- The CurName dimension contains names of currencies from their respective markets.

- The CurCategory dimension contains the names of the various currency categories that may be applied to the categories of Measures. For example, one rate is applied to Profit and Loss items and another rate is applied to Balance Sheet items.
- The CurType dimension enables a currency database to contain rates for different scenarios, such as Actual and Budget.

Connecting to the Sample Currency Databases

To complete the following exercises, the Sample Interntl and Sample Xchgrate databases must be installed on the server. Contact the Analytic Services system administrator if these application and database pairs are unavailable.

➤ To retrieve data from the Sample Interntl database:

1. Select **Essbase** > **Connect**.
2. Select the Sample Interntl database and click **OK** to complete the connection.

   The Analytic Services installation also includes sample spreadsheet files that illustrate currency conversion concepts.
3. From the `\Essbase\client\sample` directory, open `Local.xls`.

   The worksheet contains actual (Act) and budget (Bud) data entered in local currencies for New York and Germany, as shown in Figure 164.

   Figure 164: Retrieving Local Data

	A	B	C	D	E
1		Jan	100-10		
2					
3		*Act*		*Bud*	
4		**New York**	**Germany**	**New York**	**Germany**
5	Sales	678	210	640	190
6	COGS	271	84	260	80
7	Margin	407	126	380	110
8					
9	Marketing	94	27	80	20
10	Payroll	51	31	40	20
11	Misc	0	0	#Missing	#Missing
12	Total Expenses	145	58	120	40
13					
14	Margin %	60.03	60.00	59.38	57.89
15	Profit %	38.64	32.38	40.63	36.84

4. From the `\Essbase\client\sample` directory, open `Convert.xls`.
5. Select **Essbase** > **Retrieve**.

The worksheet contains values for Actual and Budget as they are displayed after conversion.

Figure 165: Retrieving Converted Data Values

	A	B	C	D	E	F	G
1				Jan	Cola		
2		Actual		Actual @ Bud XChg		Budget	
3		New York	Germany	New York	Germany	New York	Germany
4	Sales	678	130.2	678	210	640	133
5	COGS	271	52	271	84	260	56
6	Margin	407	78	407	126	380	77
7	Marketing	94	17	94	27	80	14
8	Payroll	51	19	51	31	40	14
9	Misc	0	0	0	0	0	0
10	Total Expenses	145	36	145	58	120	28
11	Margin %	60	60	60	60	59	58
12	Profit %	39	32	39	32	41	37

The worksheet contains data that is converted to U.S. dollars. Values for New York remain the same, but German values are converted. Analytic Services converts the values by using the exchange rates from the Sample Xchgrate database.

6. From the `\Essbase\client\sample` directory, open `Rates.xls`.
7. Connect to the Sample Xchgrate database.
8. Select **Essbase > Retrieve**.

   The portion of the result is shown in Figure 166.

Figure 166: Retrieving Exchange Rates from a Currency Database

	A	B	C	D	E	F	G	H	I	J
1				Jan	Feb	Mar	Apr	May	Jun	Jul
2	USD	Act xchg	P&L	1	1	1	1	1	1	1
3			B/S	1	1	1	1	1	1	1
4		Bud xchg	P&L	1	1	1	1	1	1	1
5			B/S	1	1	1	1	1	1	1
6	CAD	Act xchg	P&L	1.53	1.53	1.53	1.53	1.53	1.53	1.53
7			B/S	1.55	1.55	1.55	1.55	1.55	1.55	1.55
8		Bud xchg	P&L	1.5	1.5	1.5	1.5	1.5	1.5	1.5
9			B/S	1.5	1.5	1.5	1.5	1.5	1.5	1.5
10	EUR	Act xchg	P&L	1.01	1.01	1.01	1.01	1.01	1.01	1.01
11			B/S	1.03	1.03	1.03	1.03	1.03	1.03	1.03
12		Bud xchg	P&L	1.05	1.05	1.05	1.05	1.05	1.05	1.05
13			B/S	1.05	1.05	1.05	1.05	1.05	1.05	1.05

The worksheet contains all possible combinations of exchange rate scenarios, categories, and types by month. Because this example converts to U.S. dollars (USD), the sample file contains a base rate of 1 for USD. Therefore, the local and

converted figures remain the same for New York. Analytic Services converts the figures for Germany, however, by using data values in the currency database, as follows:

- Analytic Services divides data values from Actual by values in the Act xchg currency type.
- Analytic Services divides data values from Actual @ Bud xchg by values in the Bud xchg currency type.
- Analytic Services divides data values from Budget by values in the Bud xchg currency type.
- Analytic Services bases all figures in `Convert.xls` on the CurCategory of P&L and the CurTime of Jan.

Note: A conversion can be defined as a multiplication or division operation on exchange rates. The definition is determined by the application designer.

Performing Ad Hoc Currency Reporting

A main database, such as Sample Interntl, usually contains values that are converted and stored in the database. You may want to perform currency conversions dynamically, as well. Analytic Services provides this capability with the Currency Report command. This command enables you to interactively change the currency rates and types applied to the retrieval.

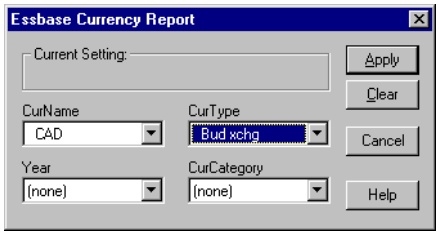
➤ To perform an ad hoc conversion on data in the `Convert.xls` file:

1. From the `\Essbase\client\sample` directory, open `Convert.xls`.

   The worksheet contains data that is already converted to U.S. dollars.
2. Select **Essbase** > **Connect** and connect to the Sample Interntl database.
3. Select **Essbase** > **Retrieve**.
4. Select **Essbase** > **Currency Report**.

Analytic Services displays the Essbase Currency Report dialog box, as shown in Figure 167.

Figure 167: Essbase Currency Report Dialog Box



The Essbase Currency Report dialog box enables you to modify the exchange rates applied to the retrieval interactively. The box contains options for currency settings, names, categories, and years. For more information on these options, see the Spreadsheet Add-in online help.

Note: The dimension names CurName, CurType, and CurCategory are default names for a currency database. The application designer can use different names for any of these dimensions.

5. Select the currency settings that you want to apply.

   For example, select CAD from the CurName drop-down list and Bud xchg from the CurType drop-down list.

6. Click **Apply** to apply the settings.

7. Select **Essbase > Retrieve** to refresh the data in the worksheet with the results of the ad hoc conversion.

In the example shown in Figure 168, Analytic Services converted the New York and Germany figures to Canadian dollars (CAD).

Figure 168: Performing an Ad Hoc Currency Conversion

	A	B	C	D	E	F	G
1				Jan	Cola		
2		Actual		Actual @ Bud XChg		Budget	
3		New York	Germany	New York	Germany	New York	Germany
4	Sales	1017	186	1017	300	960	190
5	COGS	407	74	407	120	390	80
6	Margin	611	112	611	180	570	110
7	Marketing	141	24	141	39	120	20
8	Payroll	77	27	77	44	60	20
9	Misc	0	0	0	0	0	0
10	Total Expenses	218	51	218	83	180	40
11	Margin %	60	60	60	60	59	58
12	Profit %	39	32	39	32	41	37

8. Click the **Clear** button in the **Essbase Currency Report** dialog box to make currency reporting unavailable and return to standard retrieval mode.

   Performing a currency report retrieval does not change values in the database. The process performs a temporary conversion as part of the retrieval. Converted data values may not always balance, because the ad hoc conversion is performed on values that were previously calculated or previously consolidated in another currency.

If values must balance and be verified, they must be converted to the target currency in the database, calculated, and retrieved. This procedure differs from the ad hoc currency conversion retrievals described in this section.

Chapter 4

Using Drill-Through

Essbase XTD Integration Services is a product that works with Essbase XTD Analytic Services and Essbase XTD Spreadsheet Add-in for Microsoft Excel. Integration Services is a suite of tools and data integration services that serves as a bridge between relational data sources and Analytic Server. Drill-through is one of these tools. Drill-through enables you to view and customize spreadsheet reports that display data retrieved from relational databases. Your organization must license Integration Services for you to use the drill-through tool.

This chapter provides the following information:

- A brief overview of the drill-through feature
- A description of the sample database, spreadsheet file, and drill-through report used for the tutorial
- A tutorial that guides you through tasks for using drill-through

About Drill-Through

Despite the benefits of the multidimensional database for storing analytic data, some data elements required for analysis are better suited to the relational structure of a relational database.

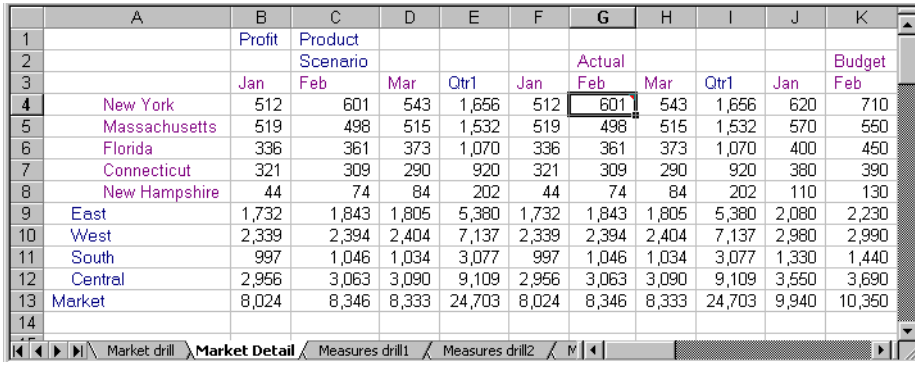
The scope of data residing in an Analytic Services database is typically at a summary level, where data is summarized and calculated for planning and analysis. Detailed, transactional data usually is not examined during the planning and analysis of a business.

For example, you might use Analytic Services to analyze retail sales for the first quarter in the Eastern region. Detailed data, such as a list of customers who purchased a particular product in a particular size, is unnecessary during the normal course of analyzing business performance. As you analyze sales results,

however, you may want to view more detailed information. Drill-through enables you to drill from the summarized and calculated data stored in Analytic Server of your organization into detailed data stored in a relational database.

The database administrator predefines a data mapping for you from Analytic Services to the relational source. For example, the Analytic Services members East, West, South, and Central might map to a field called Region in a relational database. As you navigate through data in the spreadsheet, Analytic Services can detect how the current data maps to the relational source. For example, suppose you select cell G4 in Figure 169.

Figure 169: Example of a Drill-Through Sheet



	A	B	C	D	E	F	G	H	I	J	K
1		Profit	Product								
2			Scenario				Actual				Budget
3		Jan	Feb	Mar	Qtr1	Jan	Feb	Mar	Qtr1	Jan	Feb
4	New York	512	601	543	1,656	512	601	543	1,656	620	710
5	Massachusetts	519	498	515	1,532	519	498	515	1,532	570	550
6	Florida	336	361	373	1,070	336	361	373	1,070	400	450
7	Connecticut	321	309	290	920	321	309	290	920	380	390
8	New Hampshire	44	74	84	202	44	74	84	202	110	130
9	East	1,732	1,843	1,805	5,380	1,732	1,843	1,805	5,380	2,080	2,230
10	West	2,339	2,394	2,404	7,137	2,339	2,394	2,404	7,137	2,980	2,990
11	South	997	1,046	1,034	3,077	997	1,046	1,034	3,077	1,330	1,440
12	Central	2,956	3,063	3,090	9,109	2,956	3,063	3,090	9,109	3,550	3,690
13	Market	8,024	8,346	8,333	24,703	8,024	8,346	8,333	24,703	9,940	10,350
14											

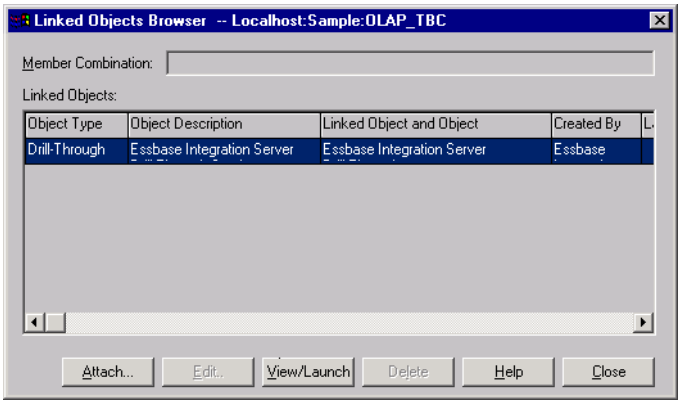
Market drill | Market Detail | Measures drill1 | Measures drill2

The dimensional attributes of the cell are as follows: Actual, Profit, New York, Feb, and Product. The combination of one or more of these attributes becomes the basis for a drill-through query that returns data from the relational source.

From Spreadsheet Add-in, you can access a predefined drill-through report that is based on the dimension or member intersections of Analytic Services data cells in the sheet. Using Essbase XTD Integration Services Console, an administrator at your organization sets up drill-through reports for you to access; that is, each drill-through report is already defined in terms of what to retrieve from the relational source.

In Spreadsheet Add-in, you can access drill-through reports from the Linked Objects Browser dialog box, as shown in Figure 170. When you select a drill-through cell in the sheet and select Essbase > Linked Objects, the Linked Objects Browser dialog box displays a drill-through entry that you can select and launch.

Figure 170: Linked Objects Browser Dialog Box with Drill-Through Entry



You can define a style for cells tagged as “drill-through” to identify which cells in the spreadsheet are associated with drill-through reports. For more information on defining styles for drill-through cells, see “Accessing Drill-Through Reports from the Spreadsheet” on page 223.

About the Drill-Through Wizard

An administrator at your organization can predefine drill-through reports for you to view or to customize. The person who develops a report determines whether the report can be customized by drill-through users. If a report can be customized, you use the Drill-Through Wizard to customize it.

The Drill-Through Wizard is a graphical user interface that steps you through the following customization tasks:

- Selecting columns to retrieve from the relational data source

  Decide which columns from the predefined report you need to see.

- Selecting the display order for columns

  Change the default display order of columns across the sheet.

- Selecting a sort order for data

Select an ascending or descending sort order for a particular column; for example, sort a list of store managers in alphabetical order.

- Selecting data filters

  Define a filter on a column so that only data meeting certain criteria is retrieved.

Before You Start

Before starting the tutorial, you should have a working familiarity with the Analytic Services product through the use of the Spreadsheet Add-in interface. Review in this guide Chapter 2, "A Basic Tutorial" and Chapter 3, "An Advanced Tutorial" as prerequisite reading.

A sample Analytic Services database is the basis for the examples in this tutorial. The database administrator creates this sample Analytic Services database using the sample metaoutline supplied with Integration Services. For information on creating the Integration Services sample application, which includes the sample metaoutline, see the Integration Services Console online help. A sample spreadsheet file, `Essdt.xls`, contains a sheet with the appropriate member intersections for the sample drill-through report. For more information on the sample database, spreadsheet file, and drill-through report, see "About the Samples Used in This Tutorial" on page 222.

If you plan to follow the examples in a live working session, check with the person at your organization who installs the Integration Services product family for information on the sample database that you need for drill-through, and to which instance of Analytic Server you should connect.

Note: The `Essdt.xls` file also contains sample results of the drill-through reports when you run them without customizing the reports. The results are provided in separate sheets in the workbook so that you can see the sample report results without working through the tutorial. For more information about the sample reports, see "About the Samples Used in This Tutorial" on page 222.

Before starting the tutorial, make sure you meet the following requirements:

- You must install the following components on your client computer:
  - A 32-bit version of Excel
  - Essbase XTD Spreadsheet Add-in
  - The Drill-through module

The drill-through module is installed automatically when you install Spreadsheet Add-in. This module is transparent until you invoke it from the Linked Objects Browser. For more information on installation, contact the Analytic Services system administrator.

- The Analytic Services system administrator must install the Analytic Server.
- You must have access to Integration Services and to an instance of Analytic Server. For more information, contact the Analytic Services system administrator or the person who administers Integration Services at your organization.
- You must have access to the underlying relational database (typically using a username and password that are different from those that you use for Analytic Services). To obtain the appropriate access, contact the Analytic Services system administrator or the person who administers Integration Services at your organization.
- Make sure that the `Essdt.xls` sample drill-through report spreadsheet is available in the `\Essbase\client\sample` directory.
- To use the `Essdt.xls` sample drill-through report spreadsheet, you need to log in to a computer with both Analytic Server and Integration Services installed. You must perform a member and data load and calculate the data for the sample Analytic Services database that you will access from Spreadsheet Add-in.
- The sample database that contains the drill-through report must be set up and running. The sample drill-through reports used in this tutorial (called "Market Detail," "Measures Detail," and "Product Detail") are available with the sample spreadsheet files. Contact the person at your organization who installs Integration Services to find out the name of the sample database to use for drill-through.

For more information on Integration Services installations, see the *Essbase XTD Integration Services Installation Guide*. For more information on Analytic Services installations, see the *Essbase XTD Analytic Services Installation Guide*.

Keep in mind the following guidelines during the tutorial:

- Each tutorial task builds upon the previous one, and tasks must be followed in succession.

- Optional tasks are displayed in gray boxes. These tasks are included for your reference only and should *not* be performed as part of the tutorial. You can find more information on these tasks in the Drill-Through online help.
- The examples used in this tutorial are based on the sample database that is included with the Integration Services installation. Contact the person at your organization who installs Integration Services for information about accessing the sample database.
- Set the options in the Essbase Options dialog box as described in "Setting Essbase Options" on page 216. If the option settings are different, the illustrations presented in this chapter may not match the spreadsheet view.
- If you make a mistake during the tutorial, select Essbase > FlashBack to return to the previous spreadsheet view.

Setting Essbase Options

Before you begin the tutorial, make sure that the spreadsheet options are set to the initial settings, as illustrated in Figure 171 through Figure 175. If your option settings are different, the illustrations presented in this chapter may not match the spreadsheet view.

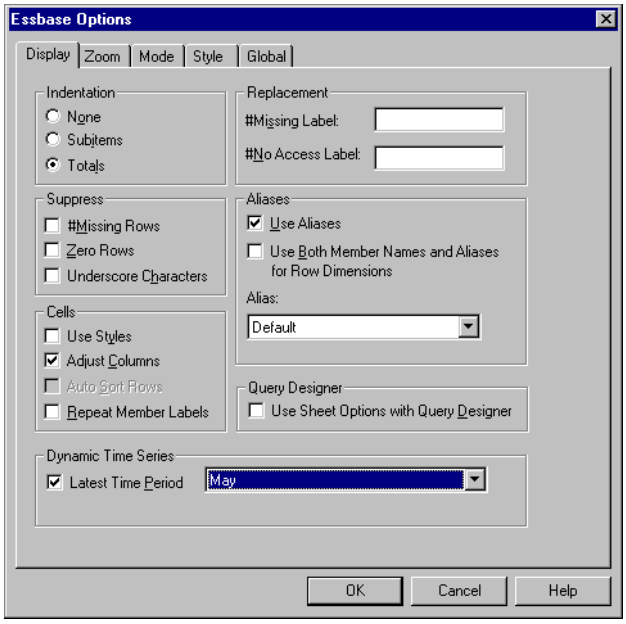
For information about each option in the Essbase Options dialog box, click Help to see the Spreadsheet Add-in online help.

➤ To set Essbase options:

1. From the spreadsheet menu, select **Essbase > Options**.
2. In the **Essbase Options** dialog box, select the **Display** tab.

3. Select the appropriate check boxes and option buttons so that your display matches Figure 171.

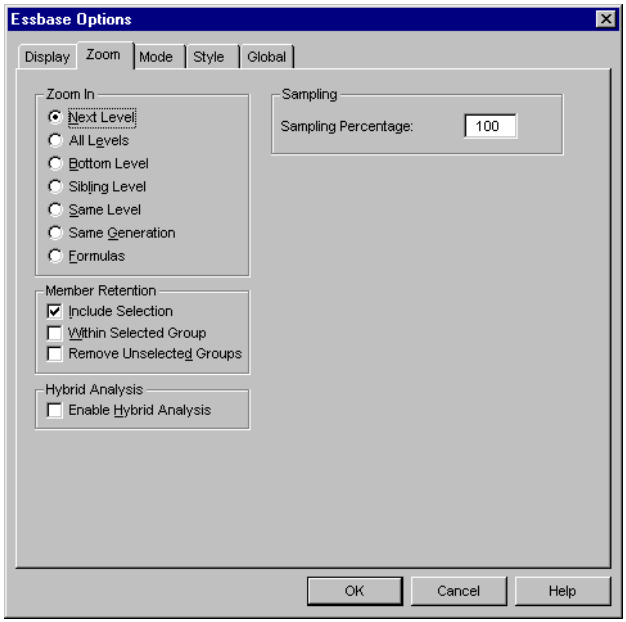
Figure 171: Initial Settings for Display Options



4. Select the **Zoom** tab.

5. Select the appropriate check boxes and option buttons so that your display matches Figure 172.

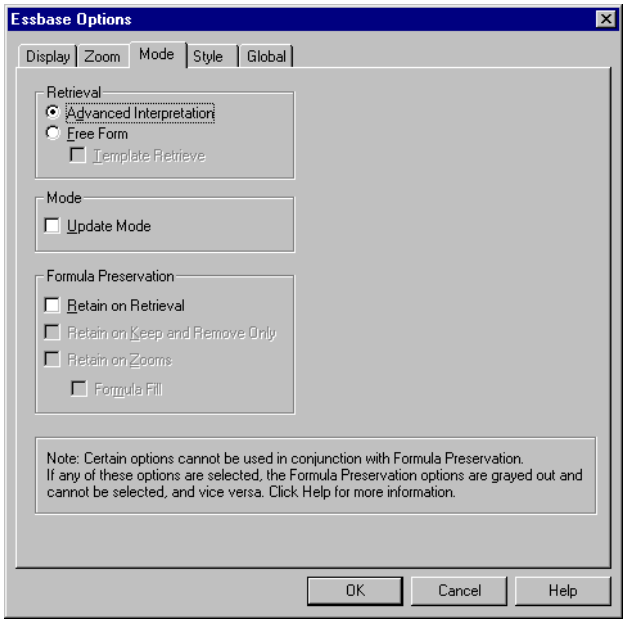
Figure 172: Initial Settings for Zoom Options



6. Select the **Mode** tab.

7. Select the appropriate check boxes and option buttons so that your display matches Figure 173.

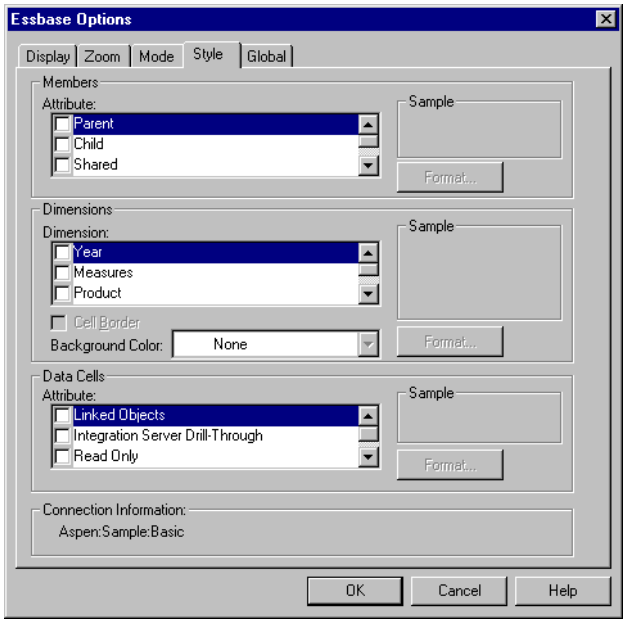
Figure 173: Initial Settings for Mode Options



8. Select the **Style** tab.

9. Select the appropriate check boxes and option buttons so that your display matches Figure 174.

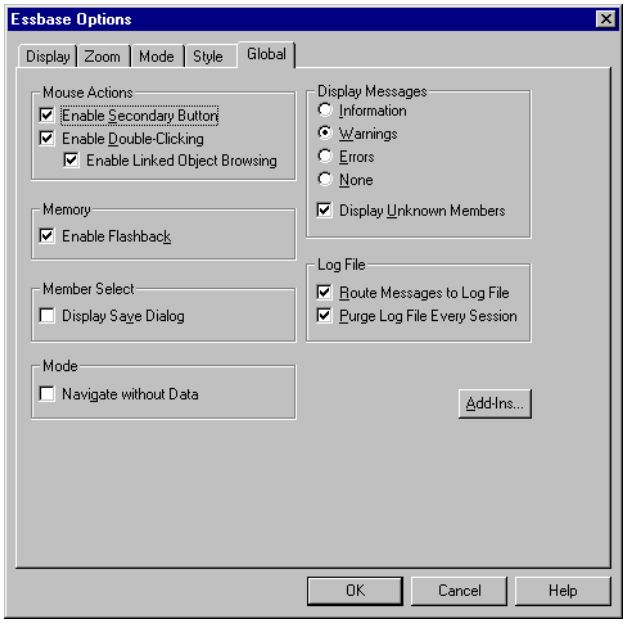
Figure 174: Initial Settings for Style Options



10. Select the **Global** tab.

11. Select the appropriate check boxes and option buttons so that your display matches Figure 175.

Figure 175: Initial Settings for Global Options

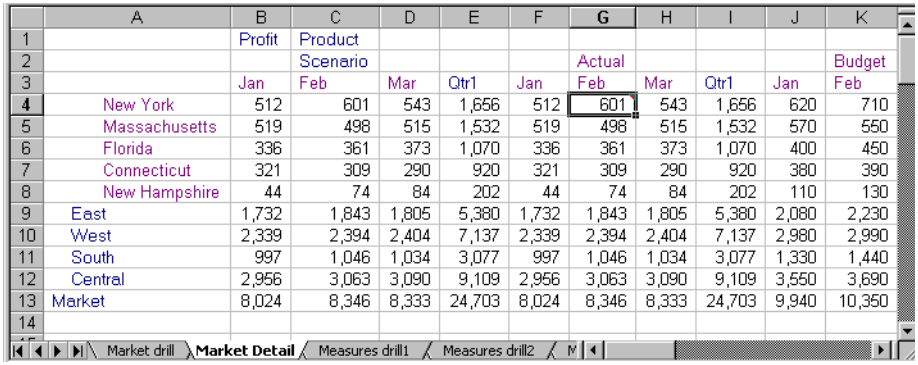


12. Click **OK** to save the settings for this session and close the **Essbase Options** dialog box.

About the Samples Used in This Tutorial

The sample database used for this tutorial contains the following dimensions: Scenario, Product, Market, Measures, and Year. The sample spreadsheet file shown in Figure 176 provides a particular view from the sample database.

Figure 176: View from Sample Database



	A	B	C	D	E	F	G	H	I	J	K
1		Profit	Product								
2			Scenario				Actual				Budget
3		Jan	Feb	Mar	Qtr1	Jan	Feb	Mar	Qtr1	Jan	Feb
4	New York	512	601	543	1,656	512	601	543	1,656	620	710
5	Massachusetts	519	498	515	1,532	519	498	515	1,532	570	550
6	Florida	336	361	373	1,070	336	361	373	1,070	400	450
7	Connecticut	321	309	290	920	321	309	290	920	380	390
8	New Hampshire	44	74	84	202	44	74	84	202	110	130
9	East	1,732	1,843	1,805	5,380	1,732	1,843	1,805	5,380	2,080	2,230
10	West	2,339	2,394	2,404	7,137	2,339	2,394	2,404	7,137	2,980	2,990
11	South	997	1,046	1,034	3,077	997	1,046	1,034	3,077	1,330	1,440
12	Central	2,956	3,063	3,090	9,109	2,956	3,063	3,090	9,109	3,550	3,690
13	Market	8,024	8,346	8,333	24,703	8,024	8,346	8,333	24,703	9,940	10,350
14											

Market drill | Market Detail | Measures drill1 | Measures drill2

For this spreadsheet view, detail-level data exists in a relational data source—data that is not available from Analytic Services. For example, the relational source contains columns of data for market detail, measures detail, and product detail. This steps in this tutorial walk you through a sample drill-through session, where you will drill down from the data shown in Figure 176 into the detail data from the relational source.

This tutorial uses two sample drill-through reports, “Measures Detail” and “Market Detail.” As with all drill-through reports, these reports have been predefined to retrieve specific columns from the relational source. You will use the Drill-Through Wizard to customize the report, “Measures Detail.”

Note: The sample file also contains two more sample reports called “Product Detail” and “Two reports” that you can use for drill-through practice. In “Two reports,” select the drill-through cell B3 to select from two drill-through reports, “Product Detail” and Market Detail, select cell B6 to view “Market Detail,” and cell G3 to view “Product Detail.”

In addition to the sample drill-through reports, the `Essdt.xls` file provides sample results of the drill-through reports. The following list describes the drill-through results that are provided:

- The Market Detail drill tab displays the results for Market Detail when you run a drill-through report on cell G4 without customizing the report.

- The Measures Detail drill1 tab displays the results for Measures Detail when you run a drill-through report on cell C4 without customizing the report.
- The Measures Detail drill2 tab displays the results for Measures Detail when you run a drill-through report on cell G6 without customizing the report.
- The Product Detail drill tab displays the results for Product Detail when you run a drill-through report on cell D5.

Using Drill-Through

Drill-through consists of these tasks as discussed in the following topics:

Accessing Drill-Through Reports from the Spreadsheet

Using Spreadsheet Add-in, you can access detail-level drill-through reports that are based on the member intersections of Analytic Services data cells in the sheet.

Each drill-through report has been predefined by an administrator at your organization; that is, each drill-through report is already set up to retrieve specific columns from the relational source and to sort and filter data in these columns in specific ways. Using the Drill-Through Wizard, you can customize these predefined drill-through reports to retrieve only the data that you want, displayed in a specific way.

To access the predefined drill-through report, double-click a drill-through cell in the spreadsheet (or select a range of cells and select Essbase > Linked Objects). You can set styles for cells tagged as "drill-through" to help identify which cells in the sheet are associated with drill-through reports.

When you double-click a drill-through cell, Analytic Services displays the Linked Objects Browser dialog box, which displays a drill-through report entry. A single cell can be associated with multiple reports. The Linked Objects Browser dialog box also displays entries for linked partitions and other linked object types, such as cell notes, URLs, and application files.

After you view or customize the drill-through report, Integration Services retrieves data from the relational source and displays the results in a new spreadsheet.

Before starting the drill-through tutorial, perform the following tasks:

1. Open the sample `Essdt.xls` file.

   The sample spreadsheet file contains the appropriate member intersections from the sample database for the drill-through report. This file is provided as part of the default Analytic Services installation.

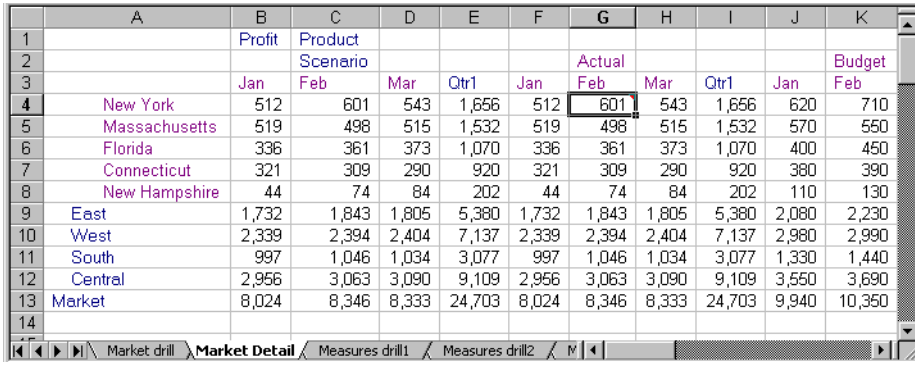
2. Set a style for data cells that are associated with drill-through reports.

➤ To access the sample file and sample database:

1. Start the spreadsheet application.
2. Select **File** > **Open** and open the `Essdt.xls` file from the `Essbase\client\sample` directory.

   The sample file should look like Figure 177. In this example, the Market Detail tab is selected. The default tab that is selected when you first open the file may be different.

   Figure 177: Sample Spreadsheet File for Drill-Through



	A	B	C	D	E	F	G	H	I	J	K
1		Profit	Product								
2			Scenario				Actual				Budget
3		Jan	Feb	Mar	Qtr1	Jan	Feb	Mar	Qtr1	Jan	Feb
4	New York	512	601	543	1,656	512	601	543	1,656	620	710
5	Massachusetts	519	498	515	1,532	519	498	515	1,532	570	550
6	Florida	336	361	373	1,070	336	361	373	1,070	400	450
7	Connecticut	321	309	290	920	321	309	290	920	380	390
8	New Hampshire	44	74	84	202	44	74	84	202	110	130
9	East	1,732	1,843	1,805	5,380	1,732	1,843	1,805	5,380	2,080	2,230
10	West	2,339	2,394	2,404	7,137	2,339	2,394	2,404	7,137	2,980	2,990
11	South	997	1,046	1,034	3,077	997	1,046	1,034	3,077	1,330	1,440
12	Central	2,956	3,063	3,090	9,109	2,956	3,063	3,090	9,109	3,550	3,690
13	Market	8,024	8,346	8,333	24,703	8,024	8,346	8,333	24,703	9,940	10,350
14											

   The sample file shows data for specific members of an Analytic Services database. This sample file contains the following three predefined drill-through reports, indicated by the tabs of the spreadsheet: “Market Detail,” “Measures Detail,” and “Product Detail.” Using drill-through, you can access these reports and customize them so that Integration Services retrieves only the data that you need and displays it in the desired format.

3. Select the **Market Detail** tab on the spreadsheet.

4. Select **Essbase > Connect** and connect to the appropriate sample database.

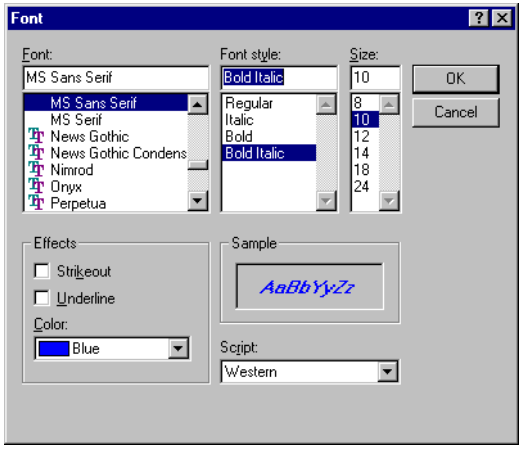
   Note: A specific sample database for drill-through is not automatically provided with Integration Services or Analytic Services. Contact the person at your organization who installs Integration Services to set up a database for you.

5. Select **Essbase > Options** and select the **Style** tab.
6. In the **Data Cells** option group, select the **Integration Server Drill-Through** check box and click **Format**.

   Analytic Services displays the Font dialog box.

7. Select **Bold Italic** from the **Font style** list box.
8. Select **Blue** from the **Color** drop-down list, and click **OK** to return to the **Essbase Options** dialog box.

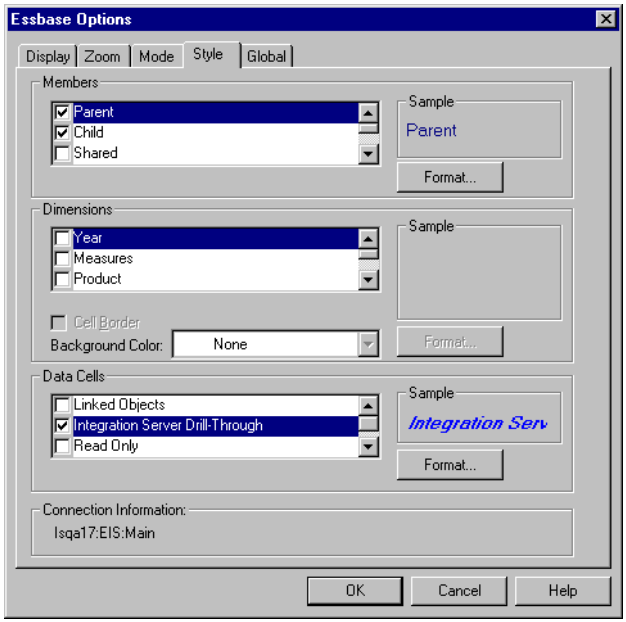
   Figure 178: Font Dialog Box Selection



In the Essbase Options dialog box, Analytic Services displays an example of the selected style in the Sample box.

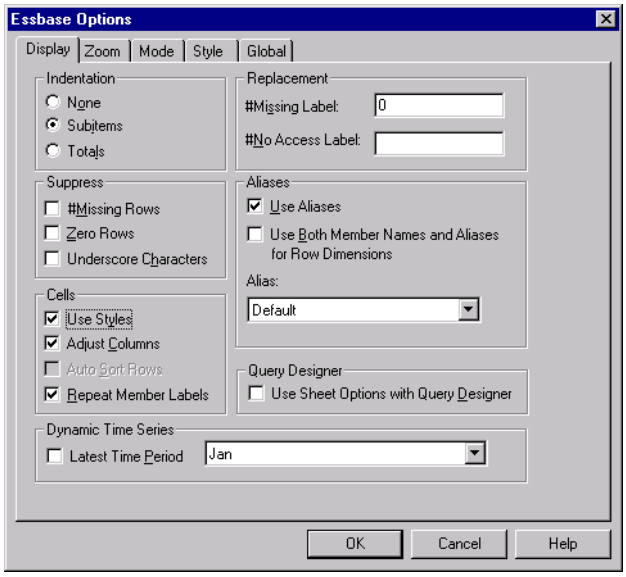
Figure 179 shows how the Essbase Options Style tab looks with the style for drill-through cells defined.

Figure 179: Sample Style for Drill-Through Data Cells



9. In the **Essbase Options** dialog box, select the **Display** tab, and then select the **Use Styles** check box, as shown in Figure 180.

Figure 180: Setting the Use Styles Option

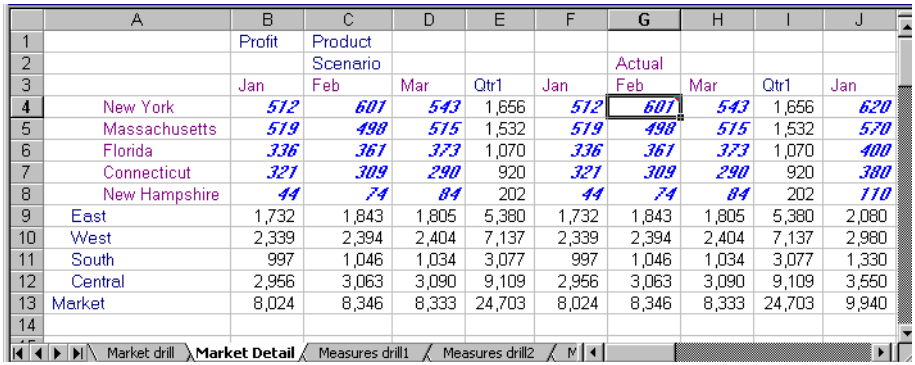


10. Click **OK** to close the **Essbase Options** dialog box.

11. Select **Essbase > Retrieve** to display the new style in the spreadsheet.

In Figure 181, the sample drill-through report is associated with the data cells for Actual, Profit, and Product at the month and Eastern state levels, so that these data cells are displayed in blue, bold, and italic font.

Figure 181: Sample Spreadsheet File with Drill-Through Style Applied



	A	B	C	D	E	F	G	H	I	J
1		Profit	Product							
2			Scenario				Actual			
3		Jan	Feb	Mar	Qtr1	Jan	Feb	Mar	Qtr1	Jan
4	New York	512	601	543	1,656	512	601	543	1,656	620
5	Massachusetts	519	498	515	1,532	519	498	515	1,532	570
6	Florida	336	361	373	1,070	336	361	373	1,070	400
7	Connecticut	321	309	290	920	321	309	290	920	380
8	New Hampshire	44	74	84	202	44	74	84	202	110
9	East	1,732	1,843	1,805	5,380	1,732	1,843	1,805	5,380	2,080
10	West	2,339	2,394	2,404	7,137	2,339	2,394	2,404	7,137	2,980
11	South	997	1,046	1,034	3,077	997	1,046	1,034	3,077	1,330
12	Central	2,956	3,063	3,090	9,109	2,956	3,063	3,090	9,109	3,550
13	Market	8,024	8,346	8,333	24,703	8,024	8,346	8,333	24,703	9,940
14										

Market drill | Market Detail | Measures drill1 | Measures drill2

➤ To access the sample drill-through report from Spreadsheet Add-in:

1. Select any drill-through cell; for example, cell G4.

   You can also select a continuous range of cells from the same parent in one dimension to display all drill-through reports associated with the cells that you select. In this example, there is only one drill-through report attached to the range of cells.

   In order for Integration Server to return a valid drill-through report when multiple cells are selected, all members selected for multi-cell drill-through must come from:

   - The same physical table and column in the relational source database
   - The same member level in the underlying OLAP metaoutline
   - The same hierarchy

   A multi-cell drill-through operation is valid only if all three criteria noted above are met. A message is displayed if the combination of cells you select is not valid for performing a multi-cell drill-through operation.

2. Access the **Linked Objects Browser** in either of these ways:

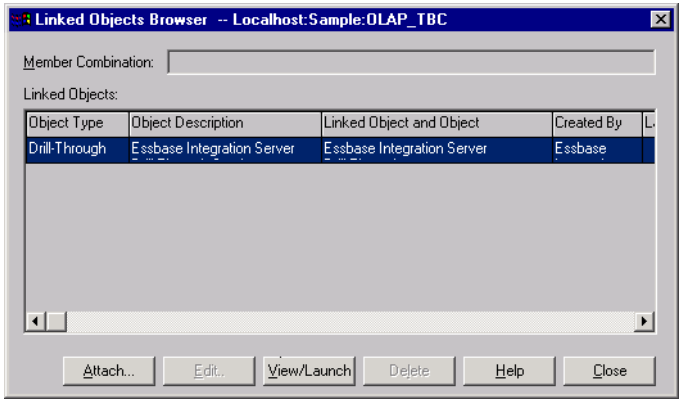
   - Select **Essbase > Linked Objects** to open the **Linked Objects Browser** dialog box, as shown in Figure 182.

- In the **Essbase Options** dialog box (**Global** tab), select the **Enable Linked Object Browsing** check box.

  This process enables you to double-click a linked object cell to open the Linked Objects Browser dialog box.

  This option works only with single-cell selection. If you select a range of cells, use the Essbase > Linked Objects menu command.

Figure 182: Linked Objects Browser Dialog Box with Drill-Through Entry Selected



3. Select the drill-through report entry and click **View/Launch**.
4. In the **Select Drill-Through Report** dialog box, select **Market detail** and click **Execute**.

   The results of the drill-through report are displayed in a spreadsheet. The results of the Market Detail report shows that the regional director for the East region is John West and that the population for New York is between 18,000,001-21,000,000.

Figure 183: Results of Market Detail Drill-Through Report

	A	B	C	D	E
1	REGION	DIRECTOR	STATE	POPULATION_ALIAS	
2	East	John West	New York	18,000,001--21,000,000	
3					

If there is only one report available for the cells that you select in the spreadsheet and if that report is not designed to be customized, the drill-through process generates the report and immediately displays the results

in the spreadsheet. The person at your organization who develops drill-through reports specifies whether you can customize a report and whether you need to log in to access the drill-through report and the relational data source.

5. Follow the steps in "Selecting Drill-Through Reports to View or Customize" on page 230 to select a report to customize.

Selecting Drill-Through Reports to View or Customize

After you launch the drill-through process from the Linked Objects Browser dialog box, Integration Services displays the Select Drill-Through Report dialog box under one or the other of the following conditions:

- More than one drill-through report exists for the cell or cell range that you select in the spreadsheet.
- Only one report exists, but you have the option of customizing it using the Drill-Through Wizard.

The Select Drill-Through Report dialog box displays the list of drill-through reports available for the cells that you select in the spreadsheet. Depending on how a report is defined in Integration Services Console, you may have access only to view, not customize, the report.

Note: Tasks that you should *not* perform as part of the tutorial are shown in light colored boxes.

This task is optional. Optional tasks do *not* need to be performed as part of the tutorial. They are provided for information only.

The sample report used for this tutorial is the Measures Detail report. You will use the Drill-Through Wizard to customize this sample report.

To execute a predefined drill-through report without customizing it, perform these tasks:

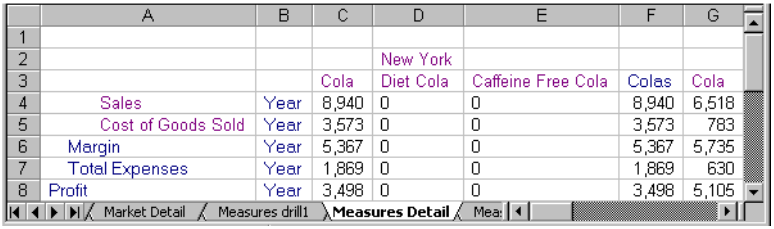
1. Select the report that you want to view from the **Available Reports** list box.
2. Click **Execute**.

Integration Services retrieves the data from the relational source and displays the results in a new spreadsheet. The new sheet is added before the current sheet.

➤ To customize the sample drill-through report:

1. In the `Essdt.xls` file, select the **Measures Detail** tab, as shown in Figure 184.

   Figure 184: Initial Drill-Through Report for Measures Detail



	A	B	C	D	E	F	G
1							
2				New York			
3			Cola	Diet Cola	Caffeine Free Cola	Colas	Cola
4	Sales	Year	8,940	0	0	8,940	6,518
5	Cost of Goods Sold	Year	3,573	0	0	3,573	783
6	Margin	Year	5,367	0	0	5,367	5,735
7	Total Expenses	Year	1,869	0	0	1,869	630
8	Profit	Year	3,498	0	0	3,498	5,105

Market Detail | Measures drill1 | Measures Detail | Mea

2. Select **Essbase** > **Connect** and connect to the appropriate sample database.

   Note: A specific sample database for drill-through is not automatically provided with Integration Services. Contact the person at your organization who installs Integration Services to set up a database for you.

3. Select **Essbase** > **Options** and select the **Style** tab to define styles for this sheet.

4. In the **Data Cells** option group, select the **Integration Server Drill-Through** check box and click **Format**.

   Analytic Services displays the Font dialog box, as shown in Figure 178 on page 225.

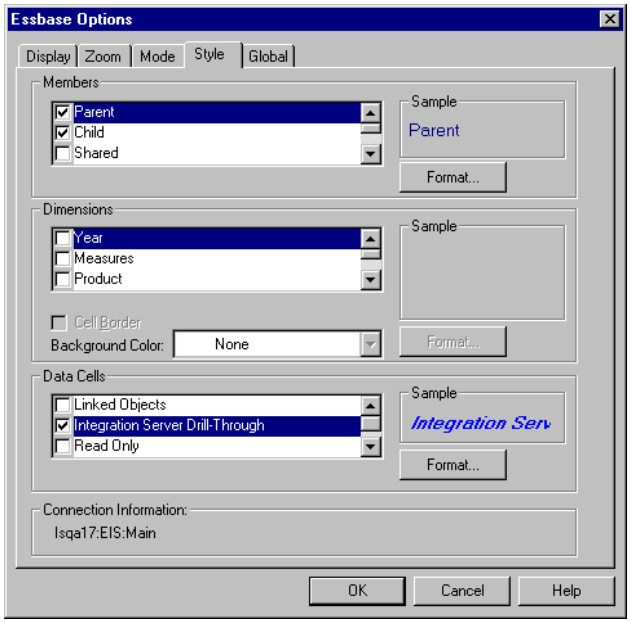
   Note: The style for drill-through cells may already be set as blue, bold, and italic because you set the style in the previous exercise. If this is the case, then go to step 7.

5. Select **Bold Italic** from the **Font style** list box.

6. Select **Blue** from the **Color** drop-down list, and click **OK** to return to the **Essbase Options** dialog box.

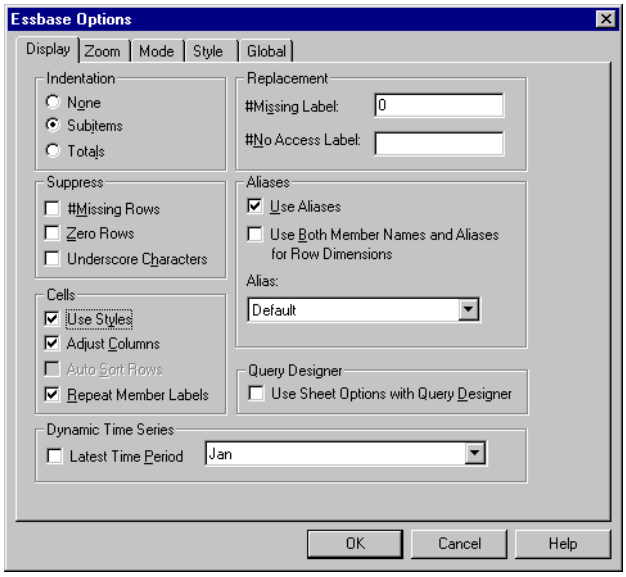
In the Essbase Options dialog box, Analytic Services displays an example of the selected style in the Sample box, as shown in Figure 185.

Figure 185: Sample Style for Drill-Through Data Cells



7. In the **Essbase Options** dialog box, select the **Display** tab and select the **Use Styles** check box, as shown in the **Cells** group box in Figure 186.

Figure 186: Setting the Use Styles Option



8. Click **OK** to close the **Essbase Options** dialog box.

9. Select **Essbase > Retrieve** to display the new style in the spreadsheet.

In this example, the sample drill-through report is associated with every member intersection at the state level in the East region, so that all data cells associated with an Eastern state and children of Cola are now displayed in blue, bold, and italic font.

Figure 187: Sample File with Drill-Through Style Applied

	A	B	C	D	E	F	G	H
1								
2				New York				Massachusetts
3			Cola	Diet Cola	Caffeine Free Cola	Colas	Cola	Diet Cola
4	Sales	Year	*8,940*	*0*	*0*	8,940	*6,518*	*0*
5	Cost of Goods Sold	Year	*3,573*	*0*	*0*	3,573	*783*	*0*
6	Margin	Year	*5,367*	*0*	*0*	5,367	*5,735*	*0*
7	Total Expenses	Year	*1,869*	*0*	*0*	1,869	*630*	*0*
8	Profit	Year	*3,498*	*0*	*0*	3,498	*5,105*	*0*

➤ To access the sample drill-through report from Spreadsheet Add-in:

1. Select any drill-through cell; for example, cell G6, as shown in Figure 188.

   Figure 188: Selecting the Drill-Through Cell for the Measures Detail Report

	A	B	C	D	E	F	G	H
1								
2				New York				Massachusetts
3			Cola	Diet Cola	Caffeine Free Cola	Colas	Cola	Diet Cola
4	Sales	Year	8,940	0	0	8,940	6,518	0
5	Cost of Goods Sold	Year	3,573	0	0	3,573	783	0
6	Margin	Year	5,367	0	0	5,367	5,735	0
7	Total Expenses	Year	1,869	0	0	1,869	630	0
8	Profit	Year	3,498	0	0	3,498	5,105	0

   If Integration Services is not running, the drill-through process does not launch properly. If drill-through is not launching properly, contact the Analytic Services system administrator.

   If you are prompted with the Drill-Through Login dialog box to connect to Integration Server and the relational data source, enter the appropriate connection information. The person at your organization who administers Integration Services and develops drill-through reports should provide you with this information.

2. Access the **Linked Objects Browser** in either of these ways:

   - Select **Essbase > Linked Objects** to open the **Linked Objects Browser** dialog box, as shown in Figure 182.
   - In the **Essbase Options** dialog box (**Global** tab), select the **Enable Linked Object Browsing** check box.

     This process enables you to double-click a linked object cell to open the Linked Objects Browser dialog box.

     This option works only with single-cell selection. If you select a range of cells, use the Essbase > Linked Objects menu command.

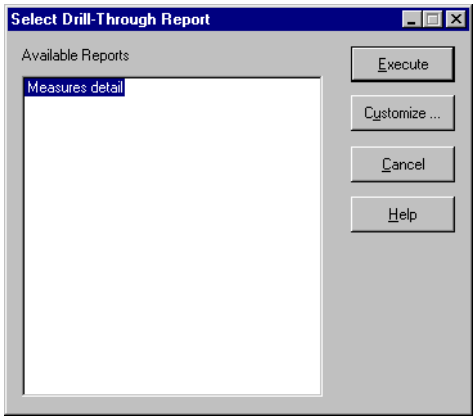
3. Select the drill-through report entry and click **View/Launch**.

   The Select Drill Through Report dialog box is displayed.

   Note: In the Select Drill Through Report dialog box, if the Customize button is selectable, then you can customize the report. If more than one drill-through report is displayed, then you can select from the different drill-through reports. In this tutorial, only one report, “Measures detail,” is displayed and customizable.

4. Select the Measures detail report in the **Available Reports** list, as shown in Figure 189.

Figure 189: Selecting the Sample Drill-Through Report

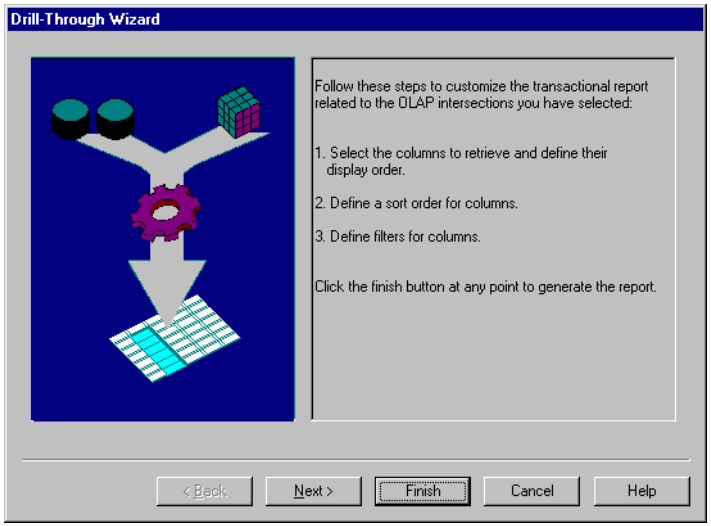


5. Click **Customize**.

Note: The Customize button may or may not be selectable for any given report, depending on how the report was defined in Integration Services Console.

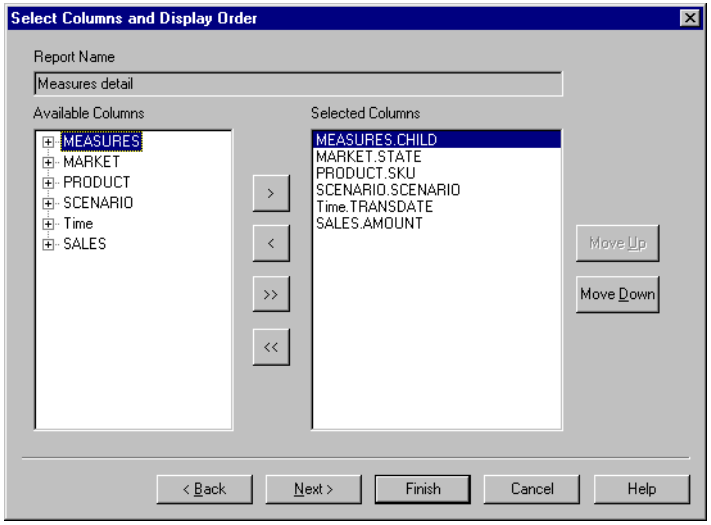
Integration Services displays the first screen of the Drill-Through Wizard, as shown in Figure 190.

Figure 190: Drill-Through Wizard Dialog Box, Introductory Screen



6. Click **Next** to display the **Select Columns and Display Order** dialog box, as shown in Figure 191.

Figure 191: Select Columns and Display Order Dialog Box



7. Follow the steps in the topic, "Selecting and Ordering Columns" on page 237, to select and order rows for the customized report.

Selecting and Ordering Columns

Using the Drill-Through Wizard, you can customize predefined drill-through reports. The first task in using the Drill-Through Wizard is selecting and ordering columns to retrieve from the relational database. These columns contain detailed information that is not available in the Analytic Services database.

In the Select Columns and Display Order dialog box, you can select which columns you want Integration Services to retrieve from the relational data source. From this dialog box, you can also specify how the columns are displayed in the resulting report.

The Available Columns list consists of columns available from the relational data source for this report (as defined in Integration Services Console). The Selected Columns list box consists of the columns from the Available Columns list in expanded form. You can remove columns from the Selected Columns list to exclude them from the drill-through report.

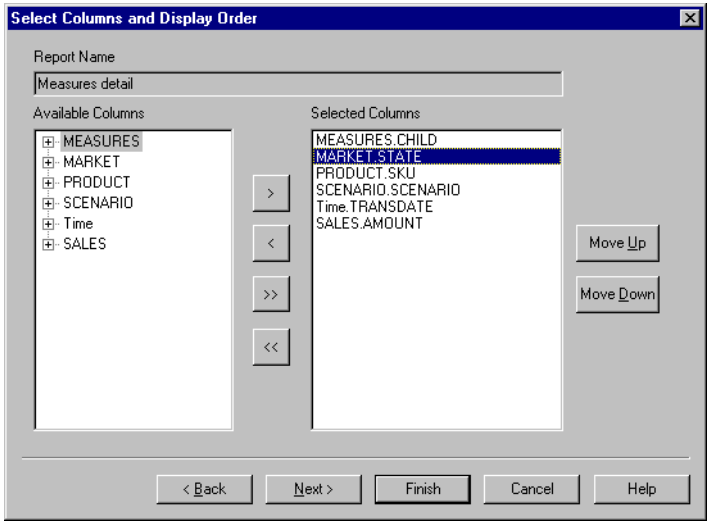
In this example, the columns from the Available Columns list are selected for inclusion in the sample Measures detail report. These columns are displayed in expanded form in the Selected Columns list.

➤ To remove one of the selected columns from the drill-through report:

1. From the **Selected Columns** list, select the MARKET.STATE column., as shown in Figure 192.

   Note: To select multiple columns in the list that are not adjacent to each other, hold down the Ctrl key and select each column. To select a range of columns, hold down the Shift key and click the first and last columns in the list, which also selects all columns in between them.

   Figure 192: Selecting Columns to Remove from the Drill-Through Report



2. Click < to move the selected column from the **Selected Columns** list back to the **Available Columns** list.

   Note: To move a column from one list to another, click > or <. To move all columns from one list to another, click >> or <<.

3. Click **Next** to display the **Select Data Sort Order** dialog box, and follow the steps in the topic, "Ordering Data" on page 239 to further customize the report.

   Note: When you finish customizing the report, click Finish at any time to generate the report and view the results in a new sheet. The new sheet is placed before the current sheet.

Ordering Data

In the Select Data Sort Order dialog box, you can select an ascending or descending sort order for the data in a column. Sort order determines the order in which rows will be displayed in the drill-through report. For example, you can sort the contents of the Time.TRANSDATE column, which represents the transaction dates, in ascending order in the drill-through report.

➤ To define the sort order of rows in the drill-through report:

1. In the **Available Columns** list, select the Time.TRANSDATE column.

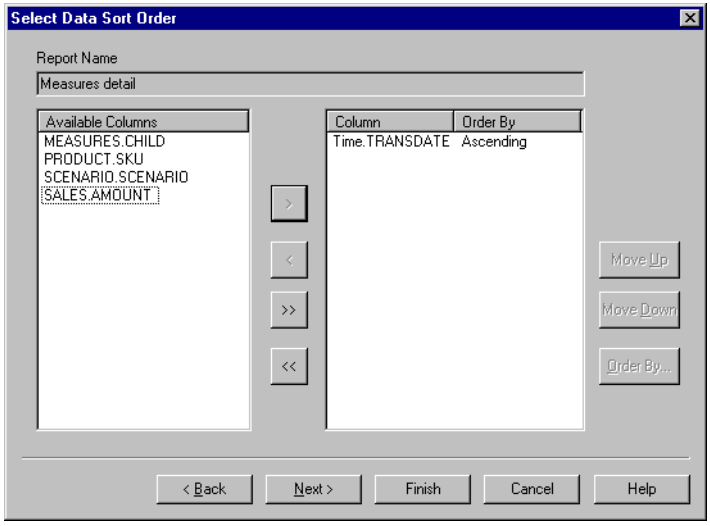
   The columns in the Available Columns list box are those that you selected in "Selecting and Ordering Columns" on page 237. The columns in the Column list are those for which a sort order has already been defined in Integration Services Console.

   If a data sort order was selected when the report was created in Integration Services Console, the Order By list displays that selection. Otherwise, the default sort order is Ascending.

2. Click [>] to move the Time.TRANSDATE column to the **Column** list, as shown in Figure 193, so that you can define a sort order for the column.

Note: To move a column from one list to another, click [>] or [<]. To move all columns from one list to another, click [>>] or [<<].

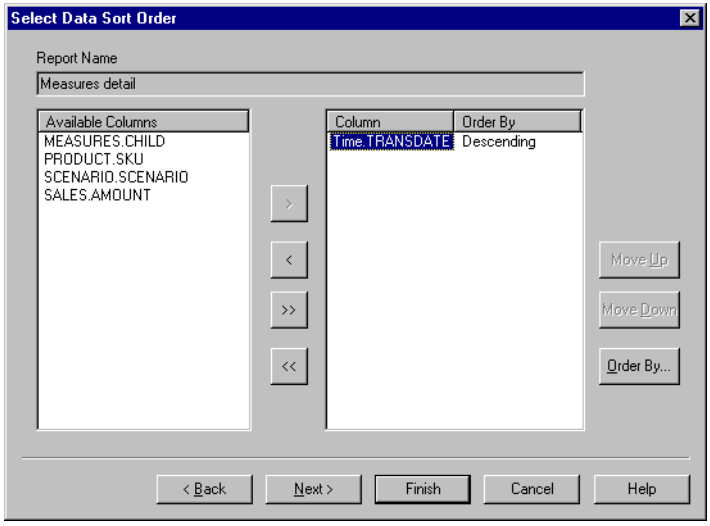
Figure 193: Moving a Column to the Column List for Sorting



3. In the **Column** list, double-click the Time.TRANSDATE column to change the data sort order from Ascending to Descending, as shown in Figure 194.

   This action causes transaction date values to be displayed in reverse chronological order in the drill-through report.

Figure 194: Selecting the Data Sort Order



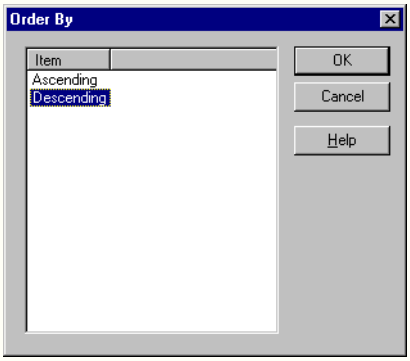
Note that this task is optional. Optional tasks do *not* need to be performed as part of the tutorial. They are provided for information only.

To change the data sort order for multiple columns at one time, perform these tasks:

1. Hold down the **Ctrl** key and select the desired columns from the **Column** list.
2. Click **Order By**.

   Integration Services displays the Order By dialog box.

Figure 195: Order By Dialog Box



3. Select **Ascending** or **Descending** and click **OK** to return to the **Select Data Sort Order** dialog box.

4. Click **Next** to display the **Select Data Filters** dialog box, and follow the steps in the topic, "Filtering Data" on page 242 to customize the report further.

Filtering Data

You can create and apply filters to determine what Integration Services retrieves for the drill-through report. You can also save, edit, and delete the filters that you create. For any given column, you may want to retrieve only data that meets certain conditions. For example, the MEASURES.CHILD column in the sample database contains all children of the Measures dimension.

In the sample drill-through report, if you do not apply a filter to this list of measures, Integration Services retrieves all children from the relational source, because the sample drill-through report applies to all children of Measures. In this section, you will apply a filter to the MEASURES.CHILD column so that all children of Measures, except Misc, are included in the report.

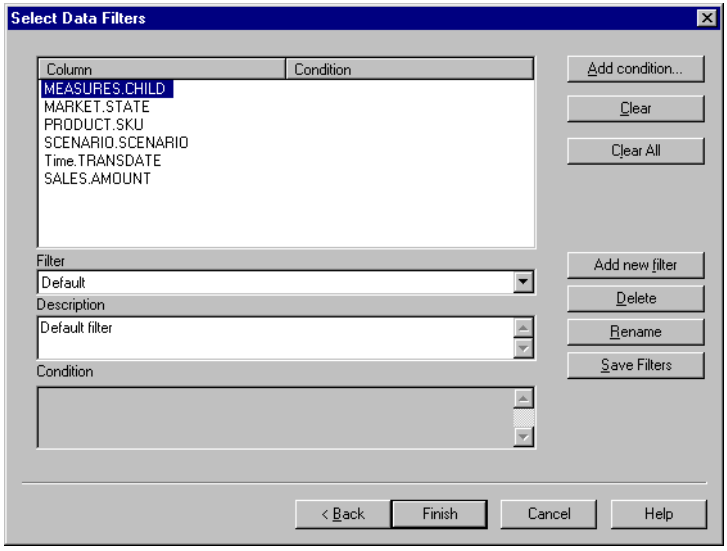
Note: When you apply a filter on a non-level 0 member using Integration Services, the filter may return more members than expected. To work around this problem, use the Drill-Through Wizard.

➤ To define a filter:

1. Select the MEASURES.CHILD column from the **Column** list.

   As shown in Figure 196, the columns in the Column list box are those that you selected in "Selecting and Ordering Columns" on page 237.

   Figure 196: Select Data Filters Dialog Box

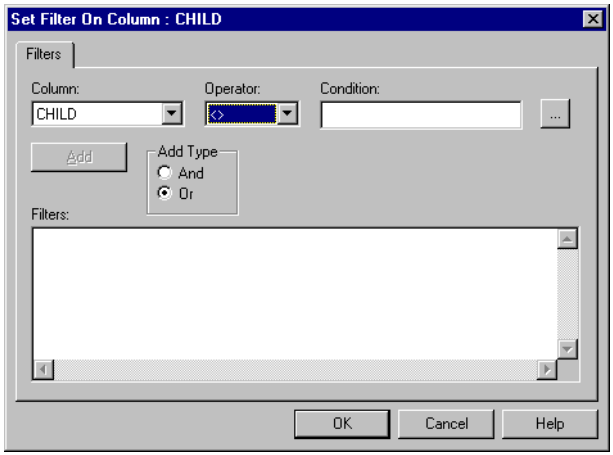


   If there is a filter already attached to the column, it is displayed in the Condition column. The full string of the filter is displayed in the lower Condition text box.

2. With the MEASURES.CHILD column selected, click **Add condition**.

The Set Filter on Column dialog box is displayed, as shown in Figure 197.

Figure 197: Set Filter on Column Dialog Box



3. Select CHILD from the **Column** drop-down list.

   The column displayed in the Column drop-down list is the one that you selected in step 1 on page 243.

4. Select the <> operator, which represents not equal to, from the **Operator** drop-down list.

   Note: You can select multiple values at one time only if you have selected In or Not In as the filter operator. For more information on filter operators, see the Drill-Through online help.

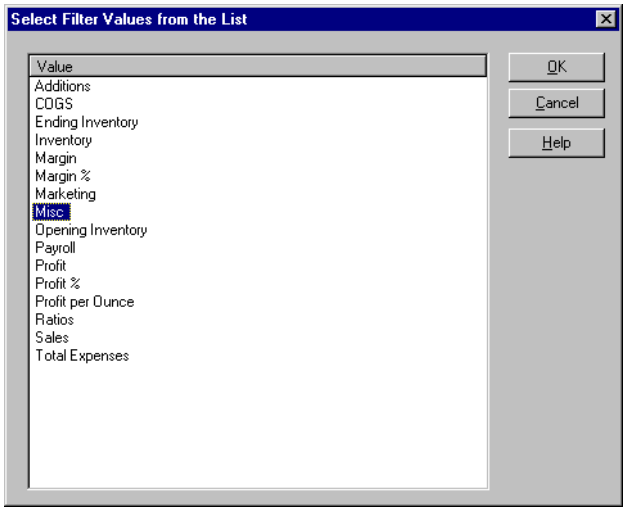
5. Click the **Browse** button next to the **Condition** text box to open the **Select Filter Values from the List** dialog box, which lists all possible values for that column.

   The Select Filter Values from the List dialog box is displayed.

   Note: Integration Services retrieves these values directly from the relational data source. If the relational data source contains many values, Integration Services confirms if you want to view them all before it retrieves them from the data source.

6. In the **Select Filter Values from the List** dialog box, select **Misc**, as shown in Figure 198, and click **OK**.

Figure 198: Selecting Filter Values from the List



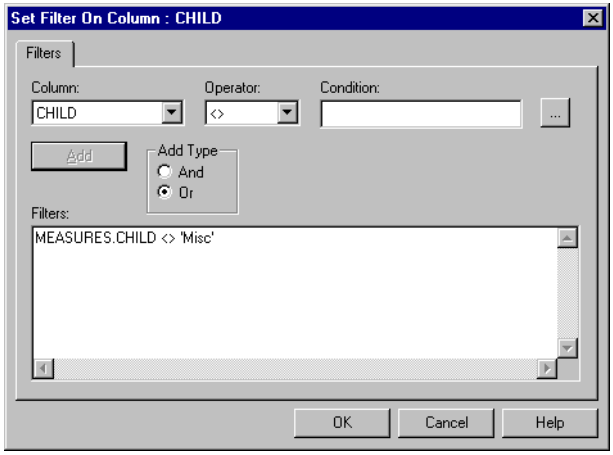
The Set Filter On Column dialog box is displayed.

7. In the **Set Filter On Column** dialog box, click **Add** to add the condition to the **Filters** list.

Note: For information on using multiple filter conditions, see the Drill-Through online help.

The Set Filter on Column dialog box should look like Figure 199.

Figure 199: Defining a Filter for a Column



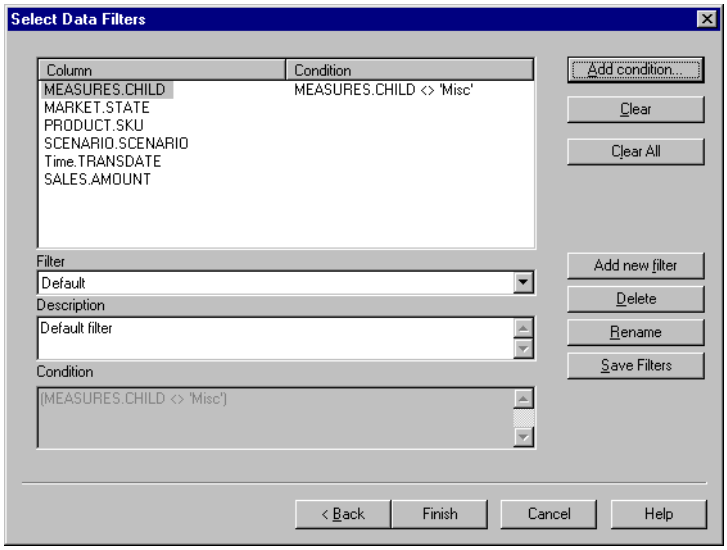
The filter defined above causes all children of Measures, except Misc data, to show in the drill-through report.

The Add button becomes unselectable after you create the first filter, but becomes selectable when you create another filter. In this tutorial, you are creating only one filter. The And and Or options are used when combining multiple filters. The default value is Or, which means that Integration Services applies the filter if any of the conditions that you specify are met. If you select And, Integration Services applies the filter only if *all* the conditions are met.

8. Click **OK** to return to the **Select Data Filters** dialog box.

Notice that the filter defined in the Set Filter on Column dialog box is displayed in the Condition column and the Condition text box of the Select Data Filters dialog box.

Figure 200: Result of Defining a Filter for a Column



You can also create a filter by typing the filter conditions directly into the Filters text box of the Set Filter on Column dialog box. For more information, see the Drill-Through online help.

To clear a filter for a selected column, select the filter and click Clear. To clear all filters for all columns, click Clear All.

You can save the filter that you just created and then apply it to the MEASURES.CHILD column, so that all children of Measures, except Misc, are included in the report.

➤ To save the filter that you just created:

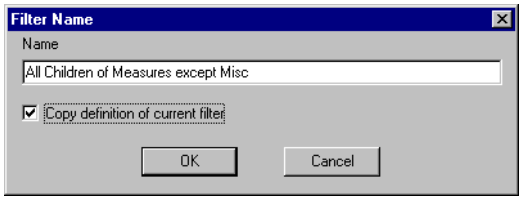
1. In the **Select Data Filters** dialog box, click **Add new filter**.

   The Filter Name dialog box is displayed.

2. In the **Name** text box of the **Filter Name** dialog box, type the name for the filter that you are creating.

For this tutorial, type `All Children of Measures except Misc`, as shown in Figure 201.

Figure 201: Naming a Filter in the Filter Name Dialog Box



3. Select the **Copy definition of current filter** check box.

   Selecting Copy definition of current filter gives the filter the same description and conditions as the filter currently selected in the Select Data Filters dialog box.

4. Click **OK**.

   The filter is added to the list of saved filters in the Filter drop-down list of the Select Data Filters dialog box.

   Optional: If you want to describe the filter, type a short description for the filter in the Description text box.

5. Click **Save Filters**.

6. Click **Finish** to apply the filter to the MEASURES.CHILD column, so that all children of Measures, except Misc, are included in the report.

Note: You can also delete or rename filters. See the Spreadsheet Add-in online help for information.

Integration Services generates the customized drill-through report and displays the results in a new spreadsheet. The new spreadsheet is added to the workbook before the current spreadsheet.

Figure 202: Customized Drill-Through Report

	A	B	C	D	E
1	CHILD	SKU	SCENARIO	TRANSDATE	AMOUNT
2	Additions	100-10	Actual	2000-12-09 00:00:00.000	123.97
3	COGS	100-10	Actual	2000-12-09 00:00:00.000	51.59
4	Marketing	100-10	Actual	2000-12-09 00:00:00.000	16.94
5	Payroll	100-10	Actual	2000-12-09 00:00:00.000	23.87
6	Sales	100-10	Actual	2000-12-09 00:00:00.000	392.7
7	Additions	100-10	Actual	2000-12-04 00:00:00.000	37.03
8	COGS	100-10	Actual	2000-12-04 00:00:00.000	15.41
9	Marketing	100-10	Actual	2000-12-04 00:00:00.000	5.06
10	Payroll	100-10	Actual	2000-12-04 00:00:00.000	7.13
11	Sales	100-10	Actual	2000-12-04 00:00:00.000	117.3
12	Additions	100-10	Actual	2000-11-28 00:00:00.000	53.82
13	COGS	100-10	Actual	2000-11-28 00:00:00.000	19.5
14	Marketing	100-10	Actual	2000-11-28 00:00:00.000	6.24
15	Payroll	100-10	Actual	2000-11-28 00:00:00.000	8.06
16	Sales	100-10	Actual	2000-11-28 00:00:00.000	118.04
17	Additions	100-10	Actual	2000-11-19 00:00:00.000	153.18
18	COGS	100-10	Actual	2000-11-19 00:00:00.000	55.5
19	Marketing	100-10	Actual	2000-11-19 00:00:00.000	17.76
20	Payroll	100-10	Actual	2000-11-19 00:00:00.000	22.94
21	Sales	100-10	Actual	2000-11-19 00:00:00.000	335.96
22	Additions	100-10	Actual	2000-10-16 00:00:00.000	191
23	COGS	100-10	Actual	2000-10-16 00:00:00.000	72

In this sample, the customized drill-through report reflects the specifications that you set using the Drill-Through Wizard:

- The Time.TRANSDATE column is sorted in descending order, displaying the transaction dates in reverse chronological order.
- All children of Measures, Additions, COGS, Marketing, Payroll, Sales, and Opening Inventory, except Misc, are displayed as you specified in the filtering part of the Drill-Through Wizard.

Disconnecting from Analytic Services

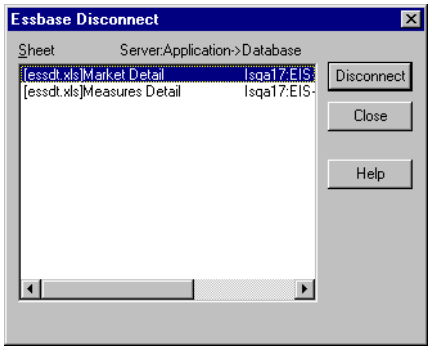
When you finish using drill-through, disconnect from Analytic Services to make a port available on the server for other Spreadsheet Add-in users.

➤ To disconnect from the server:

1. Select **Essbase > Disconnect**.

   Analytic Services displays the Essbase Disconnect dialog box, where you can disconnect any spreadsheet that is connected to a database, as shown in Figure 203.

   Figure 203: Analytic ServicesDisconnect Dialog Box

   Analytic Services may return an error message when you attempt to disconnect after using drill-through. If an error message is returned, select Essbase > Retrieve from the sheet and then disconnect.

2. Select a sheet name from the list and click **Disconnect**.
3. Repeat step 2 until you have disconnected from all active sheets.
4. Click **Close** to close the **Essbase Disconnect** dialog box.

Note: You can also disconnect from the server by closing the spreadsheet application. An abnormal shutdown of a Spreadsheet Add-in session, such as a power loss or system failure, does not disconnect your server connection.

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