Hyperion Essbase™

Version 5

Spreadsheet Add-in
User's Guide for 1-2-3

HYPERiON®

Table of Contents

Introduction

Welcome to the Hyperion Essbase™ *Spreadsheet Add-in User's Guide for 1-2-3*. The Hyperion Essbase OLAP Server is an on-line analytical processing (OLAP) solution that satisfies the complex calculation requirements of financial, accounting, and marketing professionals. Essbase operates in a client-server computing environment on a local area network (LAN). In this environment, multiple users can retrieve and analyze centralized data using their desktop personal computers.

You can create reports from the data residing on the Hyperion Essbase OLAP Server in several ways:

- Generate database reports through a spreadsheet interface, called the Hyperion Essbase Spreadsheet Add-in, as explained in this guide.

- Use the Hyperion Essbase Application Manager's Report Writer to create a report script and run a report. For more information, see the *Database Administrator's Guide*.

- Use the Hyperion Essbase API to create and run database reports. For more information, see the online *API Reference* in the DOCS directory.

- Use third-party reporting tools such as Crystal Info for Essbase (sold separately from Essbase).

About This Guide

The *Spreadsheet Add-in User's Guide for 1-2-3* explains how to use Essbase with Lotus® 1-2-3® for Windows™. The main sections of this guide are structured as tutorials that take you step-by-step through basic and advanced tasks in the Spreadsheet Add-in. Use this guide to learn how to:

- Install the Essbase Spreadsheet Add-in software

- Start Essbase, and connect and disconnect from Essbase databases

- Retrieve data from a database into a spreadsheet

- Zoom in, zoom out, and navigate through the spreadsheet to analyze and arrange data from multiple viewpoints

- Work with linked reporting objects and linked partitions

- Update data on the Essbase server

- Use the spreadsheet to load and calculate data in the database

- Create multiple sheets from your data

- Work with currency conversions

The *Spreadsheet Add-in User's Guide for 1-2-3* is provided in the
\ESSBASE\DOCS\CLIENT directory in .PDF format for online viewing
and printing in Adobe® Acrobat Reader® (Version 3.0.1 or higher). The .PDF file is
named ESS123W.PDF. You can download Adobe Acrobat Reader from the Essbase
CD-ROM or from WWW.ADOBE.COM. On the Essbase CD-ROM, the Adobe Acrobat
Reader executable file is located in the ADOBE directory under the appropriate
platform and language-version subdirectories. Launch the executable file, follow the
prompts, and provide the information requested to install Acrobat Reader.

How This Guide is Organized

The *Spreadsheet Add-in User's Guide for 1-2-3* is organized into the following chapters:

- "Introducing Version 5" provides information on migrating from previous
  versions of Essbase to Version 5 and lists all new features and enhancements.

- Chapter 1, "Introducing Hyperion Essbase," introduces you to basic concepts of
  data retrieval and data manipulation through the spreadsheet interface.

- Chapter 2, "A Basic Essbase Tutorial," provides a step-by-step tutorial of basic
  data navigation, ad hoc retrieval, and reporting techniques.

- Chapter 3, "An Advanced Essbase Tutorial," describes advanced reporting and
  retrieval techniques for users requiring special reports or formatted data views.

- Chapter 4, "Using SQL Drill-Through," provides a brief overview of the
  Hyperion Essbase SQL Drill-Through product.

- Chapter 5, "Using Hyperion Integration Server Drill-Through," provides an
  overview of the Drill-Through tool.

Note: The Hyperion Essbase Spreadsheet Add-in Online Help provides a comprehensive
section on the Hyperion Essbase Spreadsheet Toolkit, which enables you to
customize and automate your use of Essbase using Lotus 1-2-3 macros. For more
information on the Spreadsheet Add-in Online Help, see "Accessing Online Help"
in Chapter 2.

Sample Databases and Files

This book provides tutorial steps that are based on sample databases and files that are provided with the Essbase server software. You will use the Sample Basic database for most tasks in Chapters 2, 3, and 4. You will use a sample Hyperion Essbase Currency Conversion application for the section on currency conversion ("Working with Currency Conversions") in Chapter 3. For information on the Sample Basic database, see "About the Sample Basic Database" in Chapter 2.

In addition to these sample applications and databases, you will also use several sample 1-2-3 files in the advanced tutorial in Chapter 3. (These files have `.WK4` file extensions but can be read in 32-bit versions of 1-2-3.) The individual at your organization who installs the server is responsible for making these applications, databases, and files available to you. Contact the Essbase System Administrator for more information.

Conventions Used in This Guide

This book uses several formatting styles to indicate actions that you should take or types of information that you need. The following table lists each document convention.

Convention	Description
1, 2, 3	Numbered items indicate procedures to follow in a specific order.
➤	This symbol indicates a single-step procedure.
•	Bulleted items indicate a list of related items.
Product	Dimension names and member names are displayed in This Font.
\ESSBASE	Names of files, directories, and specific text that you must type in This Font.
Essbase Options dialog box	Names of dialog boxes and their controls, such as buttons, text boxes, and list boxes, are in **boldface**.
Database Administrator's Guide	Titles of other books are in *italics*. Italics also indicate important terms and special emphasis.
Essbase|Retrieve	The vertical bar (|) indicates a menu followed by an individual menu command in that menu.

Other Sources of Information

In addition to this *Spreadsheet Add-in User's Guide*, you can find information about Essbase in the following sources:

- The *Start Here* booklet provides information on Version 5 features, platforms, and migration issues.

- *Installation Notes* explains how to install and configure the Essbase server, the Spreadsheet Add-in, Application Manager, and sample databases.

- The *Database Administrator's Guide* explains how to implement, manage, and maintain the Essbase server, and how to design and build Essbase applications.

- The online *Technical Reference* in the DOCS directory, which contains a list and description of Essbase functions, macros, calculation commands, report commands, ESSCMD commands, and configuration file settings.

- The online *API Reference* in the DOCS directory contains a complete listing and description of functions available through the Essbase API.

- The *Spreadsheet Add-in User's Guide for Excel* explains how to use the Essbase Spreadsheet Add-in features with Excel for Windows. This document is provided in the \ESSBASE\DOCS\CLIENT directory in .PDF format for online viewing and printing in Adobe® Acrobat Reader® (Version 3.0.1 or higher). You can download the Adobe Acrobat Reader from the Essbase CD-ROM or from WWW.ADOBE.COM.

- The Essbase Spreadsheet Add-in Online Help provides detailed information about Essbase menu commands and tasks.

- The SQL Interface Guide contains information on how to set up your systems to load data via the Essbase SQL Interface. This document is provided in the \ESSBASE\DOCS\CLIENT directory in .PDF format for online viewing and printing in Adobe® Acrobat Reader® (Version 3.0.1 or higher). You can download Adobe Acrobat Reader from the Essbase CD-ROM or from WWW.ADOBE.COM.

- The *SQL Drill-Through Guide* contains information about how to use SQL Drill-Through to access detail-level data stored in a remote SQL database. This document is provided in the \ESSBASE\DOCS\CLIENT directory in .PDF format for online viewing and printing in Adobe® Acrobat Reader® (Version 3.0.1 or higher). You can download Adobe Acrobat Reader from the Essbase CD-ROM or from WWW.ADOBE.COM.

Introducing Version 5

This chapter provides compatibility information between Hyperion Essbase Version 5 and previous versions of Essbase, including migration information and new feature descriptions and enhancements. It contains the following sections:

- Migrating to Version 5

- What's New in Version 5

Migrating to Version 5

If you used a previous version of Essbase, this section is for you. Keep in mind the following migration issues as you upgrade from previous versions of Essbase to Version 5.

Note: Please read the *Start Here* booklet and *Installation Notes* for detailed information about migrating from previous versions of Essbase.

- Version 5 of the Hyperion Essbase Spreadsheet Add-in is designed to work with Version 5 of the Hyperion Essbase OLAP Server. If the Essbase System Administrator upgrades the Essbase server to Version 5, Version 4.*x* of the Spreadsheet Add-in will work only on a limited basis until you also upgrade it to Version 5. You should only work in this environment on a short-term basis, and plan to upgrade the Spreadsheet Add-in to Version 5 soon.

- Canceling an Essbase retrieval in Lotus 1-2-3 is no longer available.

What's New in Version 5

Essbase Version 5 provides a number of enhancements and new features for the Spreadsheet Add-in:

- The Remove Only command is new to the Essbase menu, providing opposite functionality to the Keep Only command. This command removes selected members from the spreadsheet view. For more information, see "Removing a Data Subset" in Chapter 2.

- The User-Defined Attributes (UDAs) feature applies common characteristics to a certain set of members that is predefined in the database outline. The Spreadsheet Add-in uses these UDAs to set criteria and select from a group of members that share these user-defined traits. For more information, see "Selecting Members" in Chapter 2.

- The Navigate Without Data feature enables you to navigate through the spreadsheet without retrieving any data. With this feature, you can arrange a spreadsheet report without the time delays caused by data retrieval. For more information, see "Navigating Through the Spreadsheet Without Retrieving Data" in Chapter 2.

- Substitution variables enable you to use global variables to represent specific Essbase values as set on the Essbase server. For more information, see "Using Substitution Variables" in Chapter 3.

- Visual cues, or styles, for Linked Reporting Objects and Dynamic Calculation members have been added to enable you to apply different font styles to cells containing these items. For more information, see "Using Linked Reporting Objects," "Accessing Linked Partitions," and "Retrieving Dynamic Calculation Members" in Chapter 3.

- Dynamic Time Series members specify to-date calculations, such as year-to-date, based on a predetermined member. For more information, see "Specifying the Latest Time Period for Dynamic Time Series" in Chapter 3.

- Linked Partitions are part of the Hyperion Essbase Partitioning product. They provide the ability to link Essbase databases containing different dimensions without losing access to the additional dimensions. For more information, see "Accessing Linked Partitions" in Chapter 3.

Note: The Partitioning feature is enabled *only* if your organization has licensed and implemented the Hyperion Essbase Partitioning product.

- Linked Reporting Objects are objects linked to data cells through the Spreadsheet Add-in. Using this feature, you can link data cells to external files, World Wide Web resources (through URLs), cell notes, and linked partitions. For more information, see "Using Linked Reporting Objects" in Chapter 3.

- You can enter generation names and level names directly into a spreadsheet. When you retrieve on a generation or level name, Essbase returns all members from the database within the specified generation or level name.

- An updated **Essbase Member Selection** dialog box features new functionality, such as selecting Dynamic Time Series members and applying selection criteria to a subset (cross-section) of members. For more information, see "Selecting Members" in Chapter 2.

- An updated **Essbase Options** dialog box features tabbed dialog boxes to set display, zoom, mode, style, and global options. For more information, see the Spreadsheet Add-in Online Help.

- An updated **Essbase Cascade Options** dialog box features tabbed dialog boxes and several new options to increase flexibility of reporting on multiple members. For more information, see "Creating Multiple Sheets from Your Data" in Chapter 3.

- Hyperion Integration Server Drill-Through is part of the Hyperion Integration Server product. Using Drill-Through, you can view and customize spreadsheet reports that display data retrieved from relational databases. For more information, see Chapter 5.

Note:　　　　The Drill-Through feature is enabled *only* if your organization has licensed and implemented the Hyperion Integration Server product.

Chapter 1   Introducing Hyperion Essbase

Hyperion Essbase™ is a complete set of multidimensional database software that is optimized for planning, analysis, and management reporting applications. Essbase uniquely blends innovative technical design with an open, client-server architecture. Essbase enables you to extend your decision support systems beyond ad hoc query and reporting of historical performance, to dynamic, operational systems that combine historical analyses and future planning. By consolidating and staging historical and projected data for detailed analysis, you can gain perspectives about your business that enable you to take appropriate actions.

Essbase has the power and flexibility to be used for a broad range of on-line analytical processing (OLAP) applications including:

- Budgeting

- Forecasting and seasonal planning

- Financial consolidations and reporting

- Customer and product profitability analysis

- Price, volume, and mix analysis

- Executive Information Systems (EIS)

Essbase enables you and others in your 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.

Who Uses Essbase?

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

Because Essbase is applicable to such a broad variety of environments, individuals using it at your organization may fill one or more roles in implementing and running applications. In this guide, we refer to specific roles by three titles. We recognize, however, that these roles may be performed by one person, or several people may collaborate to perform a single role.

- *Essbase System Administrator*. The Essbase System Administrator typically has experience in networking, installing software packages, and general system administration functions. In addition to installing the Essbase software, the Essbase System Administrator may also set up Essbase user accounts, set up the security system, and maintain the Essbase OLAP Server.

- *Application Designer*. The Application Designer sets up the Essbase database, creates the database outline, and develops calculation and report scripts. The responsibilities of the Essbase System Administrator and the Application Designer may overlap in some areas. The Application Designer has probably developed some spreadsheet or database applications, and understands the operational problems and the tools being employed to solve them.

- *User*. The user interacts with Essbase databases through spreadsheets using Lotus 1-2-3 or 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 performs all processing of the request and returns the desired result to the client.

Essbase is built as a client-server architecture. System performance and multiuser capabilities are greatly enhanced under the Essbase client-server environment. Figure 1–1 illustrates the Essbase components and their relationships.
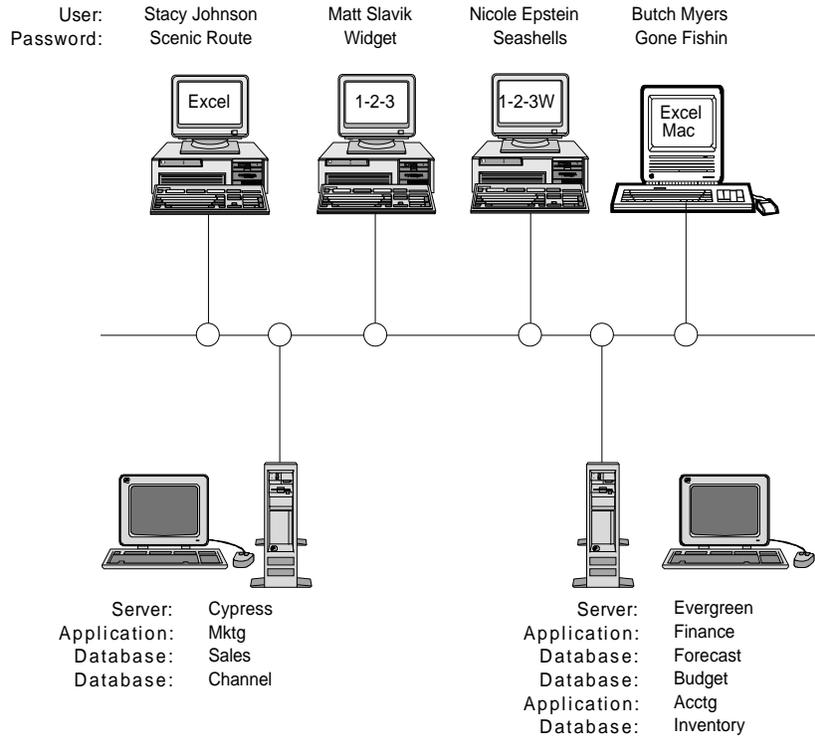

Figure 1–1, Essbase Components

The Server

The Hyperion Essbase OLAP Server is a multidimensional database that supports analysis of an unlimited number of data dimensions and members within these dimensions. Developed using a true client-server architecture, all data, the database outline, calculations, and data security controls reside on the Essbase server.

The Essbase server operates on Windows 95, Windows 98, Windows NT, and UNIX operating systems.

The Spreadsheet Add-in

The Hyperion Essbase Spreadsheet Add-in is a software program that merges seamlessly with Lotus 1-2-3 for Windows and Microsoft Excel. The Essbase spreadsheet program is an additional menu in Lotus 1-2-3 and provides enhanced commands such as Connect, Pivot, Zoom In, and Calculate. In addition to these commands, users can access and analyze data on the Essbase server using simple mouse-clicks and drag-and-drop operations. The Spreadsheet Add-in enables multiple users to access and update data on the Essbase server simultaneously.

The Network

Essbase runs on PC-based LANs that support the Named Pipes or TCP/IP protocol.

Note: Supported network environments and technical requirements are discussed in detail in *Installation Notes* included with the Essbase package.

Essbase Application Products

Several optional products are designed to extend and enhance the breadth of OLAP applications that can be addressed using the Essbase server. The following sections describe these products.

Application Programming Interface (API)

The Hyperion Essbase API enables application developers to create custom applications quickly using standard tools while using the robust data storage, retrieval, and manipulation capabilities of Essbase. The Essbase API supports Visual Basic and C. For more information, see the online *API Reference* in the DOCS directory.

Crystal Info for Essbase

Crystal Info for Essbase integrates Crystal Info, the industry leading production report writer, with the power of Essbase to deliver a comprehensive enterprise reporting system for OLAP applications. Crystal Info for Essbase provides an OLAP-aware, high-volume production reporting solution with powerful distribution and flexible processing capabilities. Crystal Info for Essbase has three main components: Crystal Reports for Essbase, Crystal Info Scheduler, and Crystal Info Server. Crystal Info for Essbase is sold separately from Essbase.

Currency Conversion

Hyperion 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 FASB52. For more information, see "Working with Currency Conversions" in Chapter 3.

Hyperion Web Gateway

Hyperion Web Gateway is a multithreaded server application that enables high-speed, interactive, read/write access to Essbase for OLAP applications over the World Wide Web. Combining Essbase with Web Gateway provides a comprehensive Web-based solution that delivers sophisticated management reporting, provides ad hoc multidimensional analysis, and enables development of comprehensive operational OLAP applications, including planning, budgeting, and forecasting over intranets or the Internet.

Essbase Objects

Hyperion Objects are ActiveX controls that enable you to build application programs quickly and easily to access and manipulate data residing in Essbase servers. You can combine Hyperion Objects with other controls in a visual design environment to construct new programs.

Partitioning

Hyperion Essbase Partitioning lets you define areas of data that are shared or linked between data models. Partitioning can affect the performance and scalability of Essbase 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, see "Accessing Linked Partitions" in Chapter 3.

Spreadsheet Toolkit

Hyperion Essbase Spreadsheet Toolkit includes over 20 macros that enable users to build customized Lotus 1-2-3 or Microsoft Excel applications that incorporate Essbase commands. Commands such as EssCascade, EssConnect, and EssDisconnect provide all of the functionality of their corresponding Essbase menu commands. For more information, see the Spreadsheet Add-in Online Help.

SQL Drill-Through

Hyperion Essbase SQL Drill-Through provides tight linking between summary data residing in Essbase and detail data residing in the relational database. Using SQL Drill-Through, you can automatically create an SQL query that retrieves the detail data that corresponds to a specific data cell residing in the Essbase server. The combination yields a powerful and full-featured analytical environment. For more information, see Chapter 4.

SQL Interface

Hyperion Essbase SQL Interface enables access to PC and SQL relational databases by making the Essbase server operate as an ODBC client. Using SQL Interface, data can be moved easily from these diverse corporate data sources into the Essbase server for user access and analysis. For more information, see the *SQL Interface Guide*.

Hyperion Integration Server

Hyperion Integration Server works with Hyperion Essbase and 1-2-3. Integration Server is a suite of tools and data integration services that serve as a bridge between relational data sources and the Hyperion Essbase OLAP Server. Hyperion Integration Server Drill-Through is one of these tools. Using Drill-Through, you can view and customize spreadsheet reports that display data retrieved from relational databases. For more information, see Chapter 5.

The Multidimensional Database

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

What Is Multidimensional?

A *dimension* is a perspective or view of a specific dataset. A different view of the same data can be called an *alternate dimension*. A system that supports simultaneous, alternate views of datasets is said to be *multidimensional.* Dimensions are typically items such as Time, Accounts, Product Lines, Markets, Divisions, and so on (see Figure 1–2). Within each dimension, there is typically a consolidation or other relationship between items.

In contrast, spreadsheets store data in two dimensions, usually Time and Accounts, as follows:

	A	B	C	D	E	F	G
1		Jan	Feb	Mar	Apr	May	Jun
2	Sales	1212	1421	1354	1178	1254	1465
3	COGS	345	392	387	321	320	401
4	Margin	867	1029	967	857	934	1064
5							
6	Marketing	46	24	95	11	56	5
7	Freight	21	71	93	23	88	21
8	Discounts	2	24	52	14	53	59
9	Total Expenses	69	119	240	48	197	85
10							
11	Gross Profit	798	910	727	809	737	979
12							
13							

Figure 1–2, Two-Dimensional Representations of Data in a Spreadsheet

An Essbase application can contain an unlimited number of dimensions, so you can analyze large amounts of data from multiple viewpoints. The following illustration shows four views of multidimensional data, which you can retrieve and analyze with the Spreadsheet Add-in software:
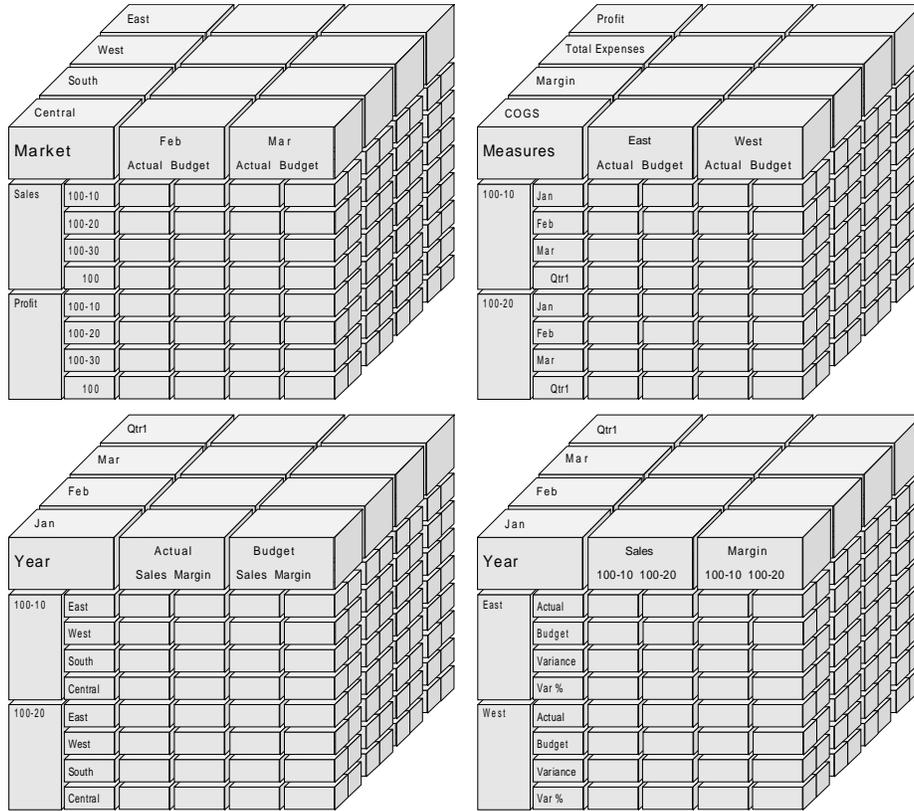
Figure 1–3, Multiple Views from a Five-Dimensional Database

The Database Outline

The *database outline* is the key to understanding Essbase. To define a multidimensional database, you design its database outline. The database outline contains the database organization (structure), its members, and rules, as shown in the following illustration:
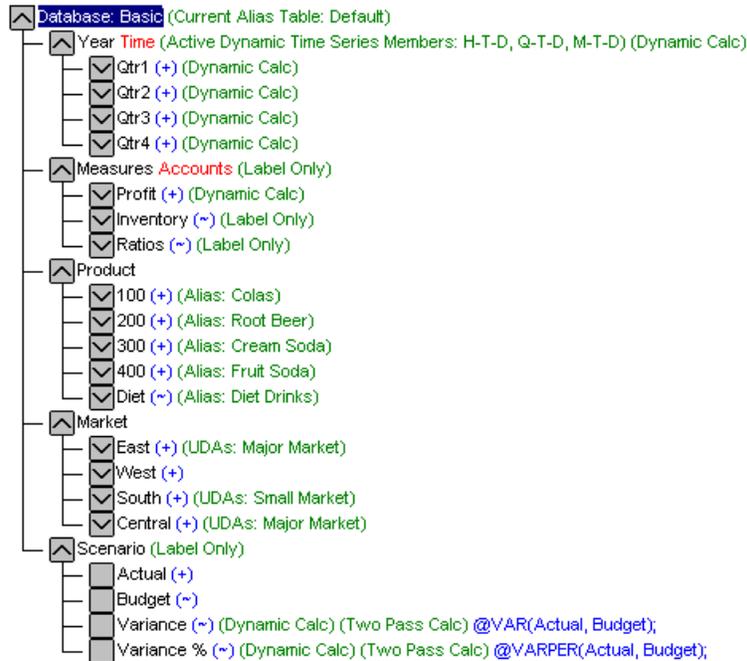
```
Database: Basic (Current Alias Table: Default)
  Year Time (Active Dynamic Time Series Members: H-T-D, Q-T-D, M-T-D) (Dynamic Calc)
      Qtr1 (+) (Dynamic Calc)
      Qtr2 (+) (Dynamic Calc)
      Qtr3 (+) (Dynamic Calc)
      Qtr4 (+) (Dynamic Calc)
  Measures Accounts (Label Only)
      Profit (+) (Dynamic Calc)
      Inventory (~) (Label Only)
      Ratios (~) (Label Only)
  Product
      100 (+) (Alias: Colas)
      200 (+) (Alias: Root Beer)
      300 (+) (Alias: Cream Soda)
      400 (+) (Alias: Fruit Soda)
      Diet (~) (Alias: Diet Drinks)
  Market
      East (+) (UDAs: Major Market)
      West (+)
      South (+) (UDAs: Small Market)
      Central (+) (UDAs: Major Market)
  Scenario (Label Only)
      Actual (+)
      Budget (~)
      Variance (~) (Dynamic Calc) (Two Pass Calc) @VAR(Actual, Budget);
      Variance % (~) (Dynamic Calc) (Two Pass Calc) @VARPER(Actual, Budget);
```

Figure 1–4, Essbase Database Outline

Note: Usually, the Application Designer or Essbase System Administrator creates the database outline. For more information on creating the database outline, see the *Database Administrator's Guide*.

The following sections describe the components of the database outline.

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, Time and Accounts. Other dimensions might include Products, Markets, and Scenarios. This dimensional organization enables you to define any consolidation structure or slice of data that is relevant to the application. Essbase 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 facilities in Essbase use the following terms to describe members.

- *Parents*. A parent is a member that has a consolidation branch below it. For example, in the following illustration, Qtr1 is a parent member because there is a branch containing monthly members below it.

```
⌂ Database: Basic (Current Alias Table: Default)
  └─ ⌂ Year Time (Active Dynamic Time Series Members: H-T-D, Q-T-D, M-T-D) (Dynamic Calc)
      ├─ ⌂ Qtr1 (+) (Dynamic Calc)
      │   ├─ ☐ Jan (+)
      │   ├─ ☐ Feb (+)
      │   └─ ☐ Mar (+)
      ├─ ⌂ Qtr2 (+) (Dynamic Calc)
      │   ├─ ☐ Apr (+)
      │   ├─ ☐ May (+)
      │   └─ ☐ Jun (+)
      ├─ ⌂ Qtr3 (+) (Dynamic Calc)
      │   ├─ ☐ Jul (+)
      │   ├─ ☐ Aug (+)
      │   └─ ☐ Sep (+)
      └─ ⌂ Qtr4 (+) (Dynamic Calc)
          ├─ ☐ Oct (+)
          ├─ ☐ Nov (+)
          └─ ☐ Dec (+)
```
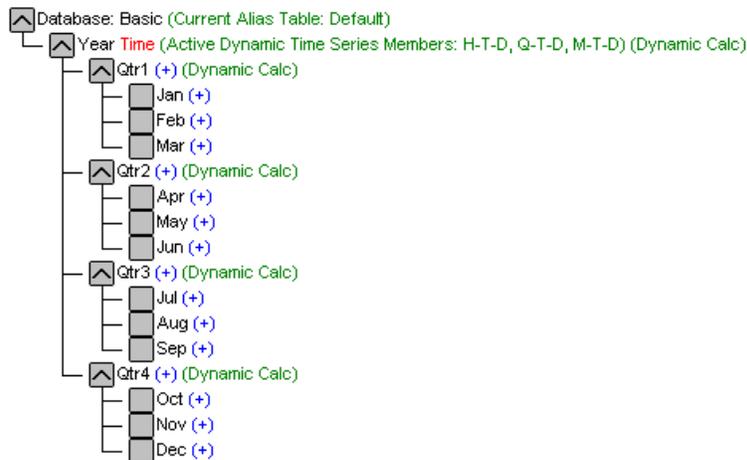
Figure 1–5, Relationships Among Database Members

- *Children*. A child is a member that has a parent above it. For example, Jan, Feb, and Mar are children of the parent Qtr1.

- *Siblings*. A sibling is a child member at the same branch 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*. Descendants are members below a parent. For example, if Year is the parent, 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*. Ancestors are members in a branch above a member. For example, Qtr2 and Year are ancestors of Apr.

- *Generations*. Generations describe the branch number of a member beginning at the root of the tree (Generation 1, which is the dimension name) and counting branches toward the leaf node.

- *Levels*. Levels describe the branch number of a member beginning with the leaf node (Level 0) and counting branches toward the root.

Formulas

Each database member can have one or more formulas associated with it in the database outline. For example, the Variance members of the Scenario dimension, as shown in Figure 1–4, contain formulas. Formulas can be simple or complex. For more information, see the *Database Administrator's Guide.*

Aliases

Essbase supports alternative names, or aliases, for database members. Aliases are very useful when different labels are used for the same member in various spreadsheets. One sheet, for example, might refer to Cost_of_Goods_Sold as COGS. Aliases can also be used for reporting in alternative languages or more formal output name sets, such as account numbers.

Consolidations

Consolidations in Essbase applications are defined by member branches. In this representation, you can describe the position of members within a dimensional branch in several ways. The database outline determines consolidation paths based on the location of members within a dimension. Members that are indented below others indicate a consolidation relationship. Indenting members also becomes important for the drill-down capabilities in the Spreadsheet Add-in. As you navigate your way through data, you can "zoom" through levels of consolidations. The database outline is the road map that determines the levels of data navigation.

Chapter 2　　　　　　　A Basic Essbase Tutorial

When you add the Hyperion Essbase Spreadsheet Add-in to the Lotus 1-2-3 spreadsheet, most 1-2-3 operations remain unchanged; the Essbase Spreadsheet Add-in simply adds a new menu and mouse shortcuts with which you can access the Hyperion Essbase OLAP Server.

The tasks described in this tutorial are basic tasks. That is, these are tasks that you will probably use often when working with Essbase. More advanced tasks are described in Chapter 3.

This tutorial chapter provides the following sections:

- Getting Acquainted with the Spreadsheet Add-in

- Before You Begin the Tutorial

- Retrieving Data

- Pivoting, Retaining, and Suppressing Data

- Formatting The Spreadsheet

- Using the Retrieval Wizard

- Selecting Members

- Saving and Disconnecting

- What's Next

Note:　　Each tutorial task builds upon the previous task. These tasks must be followed in succession.

The examples used in this tutorial are based on the sample database (called Sample Basic) that is included with the Essbase installation. Contact the Essbase System Administrator for information about accessing the Sample Basic database or other databases on the Essbase server.

Getting Acquainted with the Spreadsheet Add-in

This section provides the following information to help you get acquainted with the Essbase Spreadsheet Add-in:

- Adding the Spreadsheet Add-in

- Starting the Spreadsheet Add-in

- Accessing Online Help

- Enabling Mouse Actions

Adding the Spreadsheet Add-in

If you manually update your environment settings, or if you have removed the Spreadsheet Add-in from the 1-2-3 environment, you must use the 1-2-3 Add-in facility to add the Spreadsheet Add-in to 1-2-3. This adds the Essbase menu to the 1-2-3 menu bar, and points 1-2-3 to the Spreadsheet Add-in file in the \ESSBASE\BIN sub-directory. This file is on the hard drive of your PC, if you chose to install the Spreadsheet Add-in there, or on the network drive if you chose to set up the PC operating environment to run the Spreadsheet Add-in there.

To add the Spreadsheet Add-in to 1-2-3:

1.   In 1-2-3, choose File | Add-Ins | Manage Add-Ins.

     1-2-3 displays the **Manage Add-ins** dialog box.

2.   Click **Register**.

3.   Choose the file ESS123.12A in the \ESSBASE\BIN directory where you installed the Spreadsheet Add-in on your PC hard drive (if you installed the Spreadsheet Add-in there), or in the BIN directory where the Essbase System Administrator installed the Spreadsheet Add-in on a network drive (if you chose to set up the PC operating environment to run the Spreadsheet Add-in there).

4. Click **Open**.

5. Select the `ESS123.12A` add-in file. Make sure there is a check mark next to the add-in file.
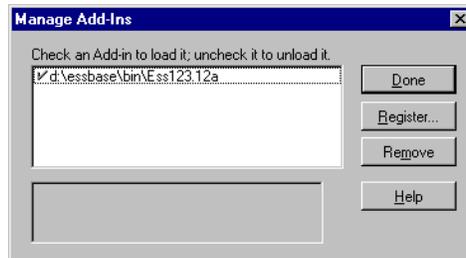
Figure 2–1, 1-2-3 Manage Add-Ins Dialog Box

6. Click **Done** to close the **Manage Add-Ins** dialog box and start the Spreadsheet Add-in.

    The Essbase startup screen is displayed.

    If the startup screen does not appear, or if 1-2-3 does not list Essbase as an Add-in on the menu bar, see *Installation Notes* for troubleshooting information.

Starting the Spreadsheet Add-in

Because the Spreadsheet Add-in software for Lotus 1-2-3 is implemented as a 1-2-3 Add-in, you must start 1-2-3 from Windows to use the Spreadsheet Add-in software.

To begin an Essbase session:

1. Start Lotus 1-2-3.

    After the 1-2-3 startup screen disappears, the Essbase screen is displayed.

    The Essbase menu should be in the Lotus 1-2-3 menu bar. If you do not see the Essbase menu, you may need to use the 1-2-3 Add-in facility to add the Spreadsheet Add-in into 1-2-3. For more information, see "Adding the Spreadsheet Add-in" in this chapter.

2.   Choose Essbase from the 1-2-3 menu bar to open the Essbase menu.
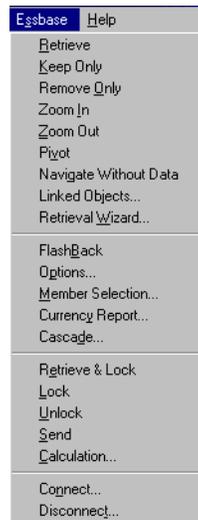
Figure 2–2, The Essbase Menu

You can view a short description of each command by moving the cursor over a menu item. The description is shown in the Lotus 1-2-3 status bar, which is located across the top of the 1-2-3 window.

Note: If the Lotus 1-2-3 status bar does not appear, you can display it by choosing View | Set View Preferences and clicking the **Status bar** check box.

Accessing Online Help

The Spreadsheet Add-in includes a context-sensitive, online Help system. Depending on the type of information you need, you can access online Help in three ways:

- *Access the entire online Help system for browsing or searching for information.* To access the entire Help system, choose Help | Essbase Help. After you access online Help, you can browse or search through the system to view general information on the Spreadsheet Add-in, Essbase command descriptions, procedural information for completing tasks, and macro descriptions.

- *Access context-specific information from dialog boxes in the Spreadsheet Add-in.* Dialog boxes in the Spreadsheet Add-in feature a **Help** button that accesses online Help topics that are specific to that particular dialog box. This enables you to find the information you need without having to search through the entire Help system.

- *Access information on specific Essbase menu commands.* You can access online Help information for an Essbase menu command that you select. Press the F1 key and select the menu command. An online Help topic for that command is displayed.

Note: The Spreadsheet Add-in Online Help also provides a comprehensive section on the Hyperion Essbase Spreadsheet Toolkit, which enables you to customize and automate your use of Essbase using Lotus 1-2-3 macros.

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 button. The primary mouse button is the one that you use to start Windows applications, such as Lotus 1-2-3; the secondary button is used for auxiliary operations.

- *Select* chooses the object under the cursor when you press and release the primary mouse button. You can select a spreadsheet cell, for example, by pressing and releasing the primary mouse button on the cell.

- *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 start by placing the cursor on an object, pressing a mouse button, holding the mouse button as you move the object, and releasing it when you reach your goal. For example, you can highlight a range of cells in a 1-2-3 spreadsheet by dragging the cursor over the cells.

Note: Essbase uses a drag operation called a *pivot*, which uses 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.

Essbase offers enhanced mouse actions in Lotus 1-2-3. You can use the mouse to:

- Retrieve data

- Zoom in and out on database members

- Pivot (move or transpose) data rows and columns

- Access linked reporting objects

- Access linked partitions

To enable double-clicking to retrieve, zoom in, and zoom out on Essbase data:

1. Choose Essbase | Options.

2. In the **Essbase Options** dialog box, select the **Global** tab.

3. Click the **Enable Double-Clicking** check box to:

    - Retrieve and zoom in to more detailed data (primary mouse button)

    - Zoom out to less detailed data (secondary mouse button)
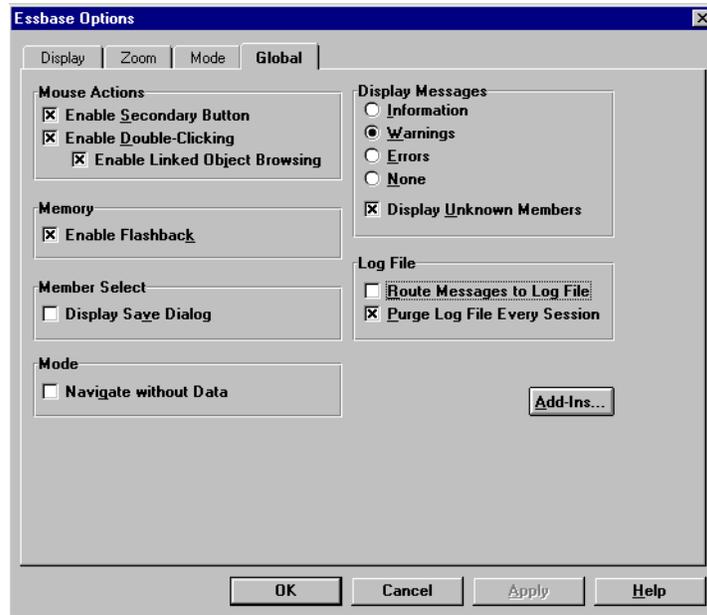
Figure 2–3, Essbase Options Dialog Box, Global Page

4.   Click OK to return to the spreadsheet.

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 Spreadsheet Add-in Online Help.

Before You Begin the Tutorial

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

- Setting Essbase Options

- Things to Remember During the Tutorial

- About the Sample Basic Database

Setting Essbase Options

Before you begin the tutorial steps, make sure that the spreadsheet options are set to the initial settings as illustrated in the following figures . If the option settings are different, the illustrations presented in this chapter may not match the spreadsheet view.

Note: For information on each option in the **Essbase Options** dialog box, see the Spreadsheet Add-in Online Help.

1.   Choose Essbase | Options.

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

3. Click the appropriate check boxes and option buttons so that your display matches the following illustration:
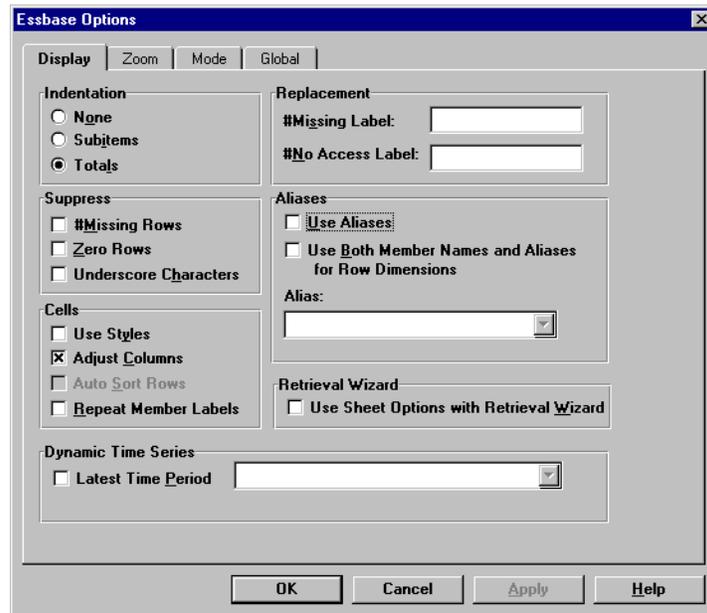
Figure 2–4, Initial Settings for Display Options

4. Select the **Zoom** tab.

5. Click the appropriate check boxes and option buttons so that your display matches the following illustration:
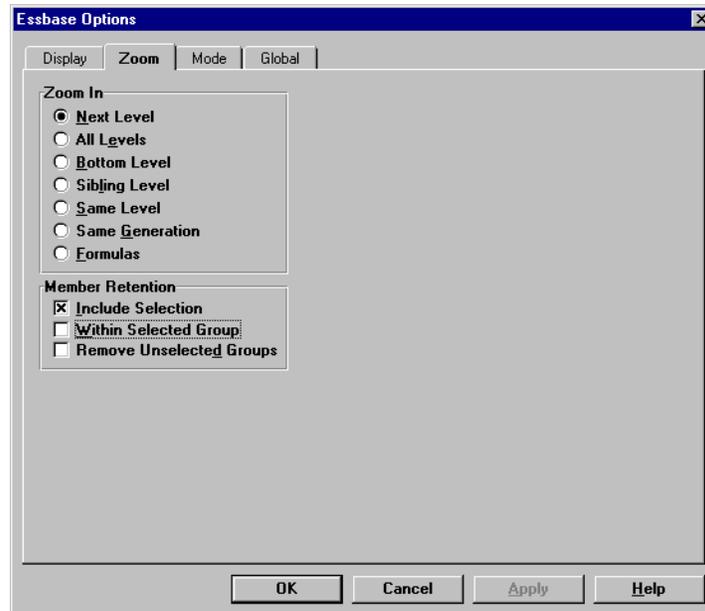
Figure 2–5, Initial Settings for Zoom Options

6. Select the **Mode** tab.

7. Click the appropriate check boxes and option buttons so that your display matches the following illustration:
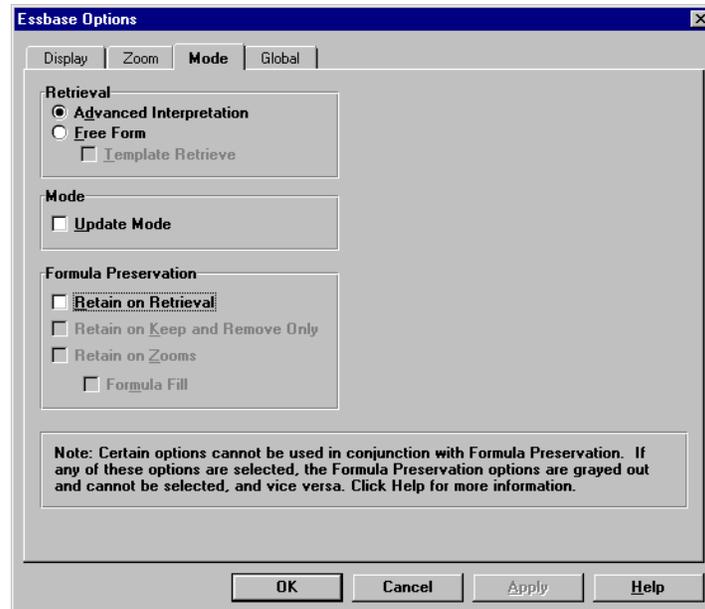
Figure 2–6, Initial Settings for Mode Options

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

8. Select the **Global** tab.

9. Click the appropriate check boxes and option buttons so that your display matches the following illustration:
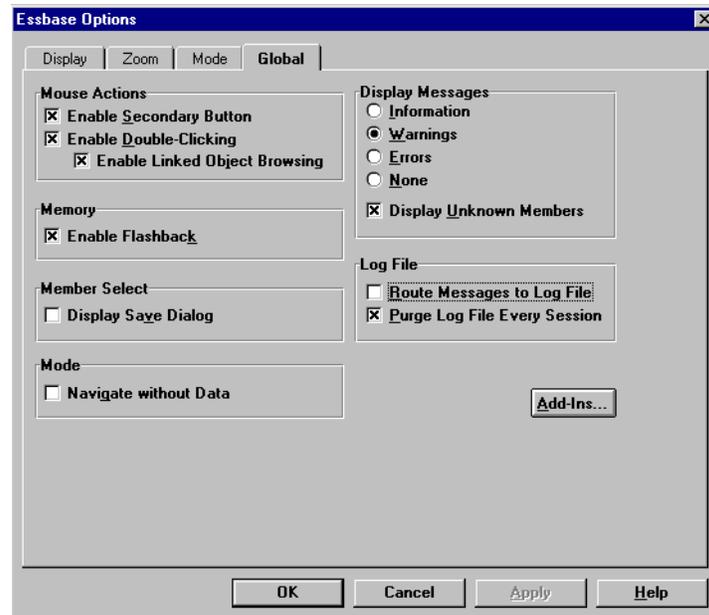
Figure 2–7, Initial Settings for Global Options

Note: You should have already checked the appropriate boxes for **Mouse Actions** as described in "Enabling Mouse Actions" above.

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

Things to Remember During the Tutorial

Keep in mind the following guidelines during this tutorial:

- Tasks that should *not* be performed as part of the tutorial are in gray boxes. These tasks are included only for your future reference. You can find more information on these tasks in the 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 your spreadsheet view.

- You can access many Essbase commands in these ways:

  - By selecting the command from the Essbase menu

  - For the Zoom In and Zoom Out commands, by double-clicking the primary or secondary mouse button

- You must set the options in the **Essbase Options** dialog box as described earlier. If the option settings are different, the illustrations presented in this chapter may not match the spreadsheet view.

- After you change a spreadsheet option in the **Essbase Options** dialog box, you must perform a retrieval or zoom 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 choose Essbase | FlashBack to return to the previous spreadsheet view.

- The values in the Sample Basic database that represent ratios or percentages are calculated to a very high level of precision (e.g., 55.26162826). In 1-2-3, you can apply a Number Format to control the number of decimal places that are shown in data values. For more information, see the Lotus 1-2-3 documentation.

- The numeric values that appear 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 spreadsheet columns and fonts have been adjusted for clarity in the illustrations. You do not need to change the width of columns in the spreadsheet to follow the tutorial steps. The **Adjust Columns** option in the **Essbase Options** dialog box (**Display** page) takes care of column adjustments for you.

About the Sample Basic Database

The Sample Basic database that you will use for the tutorial is based on a hypothetical company in the beverage industry. The company's major products 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 Essbase 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 Essbase environment, you can connect to the Essbase server and start using Essbase and the Spreadsheet Add-in. The following section walks you through a typical Essbase session where you connect to a database and retrieve data in various ways.

This section steps you through the following basic retrieval tasks:

- Connecting to a Database

- Changing Your Password

- Retrieving Data from a Database

- Restoring the Previous Database View

- Zooming In to More Detail

- Zooming Out to Less Detail

- Customizing Zoom In and Zoom Out Behavior

Note: Make sure that you followed the steps in "Setting Essbase Options" earlier in this chapter. If the settings in the **Essbase Options** dialog box are different from those shown above, your spreadsheet view will look different from the illustrations shown in this chapter.

Remember that you can perform common data retrieval tasks by:

- Selecting commands from the Essbase menu on the 1-2-3 menu bar

- Double-clicking the primary or secondary mouse buttons in the appropriate cell (Retrieve, Zoom In, and Zoom Out commands only)

Connecting to a Database

To access Essbase data, you must first connect to a database on the server. This tutorial assumes that you have the appropriate privileges to connect to a server, application, and database.

1. Choose Essbase | Connect.

   Essbase displays the **Essbase System Login** dialog box.

Figure 2–8, Essbase System Login Dialog Box

Note: To complete the steps that follow, you need to know the name of the Essbase server, your user name, and your password. If you do not have this information, contact the Essbase System Administrator.

2. Choose the server you want to access from the **Server** list box. (If server names do not appear in the list, you can type in the name of the server you want to access.) Press Tab to move to the **Username** text box.

3. Type your user name in the **Username** text box. Press Tab to move to the **Password** text box.

4. Type your password in the **Password** text box.

Note: You can change your password when you are connected to a server. See "Changing Your Password," next.

5. Click OK to connect to the server.

   Essbase displays a list of available Application/Database pairs in the list box. An Essbase server allows simultaneous access to multiple applications. An application can contain multiple databases. Only the databases to which you have security access appear in the list.

   For this tutorial, you will use the Sample Basic database. If the Sample Basic database was installed as part of the Essbase installation, it is shown in the list. If Sample Basic is not shown in the **Application/Database** list box, ask the Essbase System Administrator to install it.
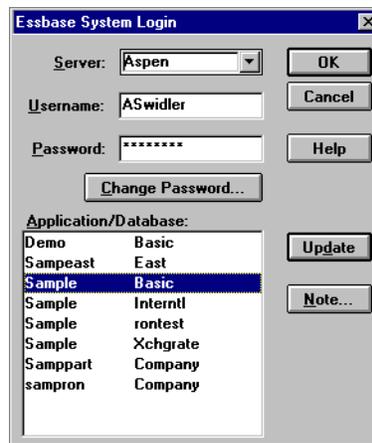
Figure 2–9, Available Application and Database Pairs

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

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

Note: Even if you are already connected to a database, Essbase may prompt you to reconnect to a database on the server when you open new spreadsheets or sample files. This prompt allows you to connect to different databases when you are working with multiple sheets in a 1-2-3 session.

Changing Your Password

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

Note: Remember, tasks that you should *not* perform as part of the tutorial appear in gray boxes.

To change your password:

1.   Click the **Change Password** button in the **Essbase System Login** dialog box.

2.   In the **Change Password** dialog box, type your new password in the **New Password** text box.

3.   Type the password again in the **Confirm Password** text box.

These 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 Essbase server:

- The Spreadsheet Add-in requests data from the server.

- The server processes the request and prepares the data.

- The server transmits the data to the Spreadsheet Add-in.

- 1-2-3 receives the data from Essbase and organizes it in the sheet.

To help you monitor these operations, Essbase uses three custom cursors.

This cursor:	Appears when:
	Essbase requests information from the server.
	The server is processing the request.
	The server returns the data.

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

To retrieve data into an empty sheet:

1.   Choose File | New to open a blank spreadsheet.

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

2. Choose Essbase | Retrieve.

   Essbase retrieves data into the 1-2-3 spreadsheet.

Figure 2–10, Initial Data Retrieval from Sample Basic

Because you checked the **Enable Double-Clicking** box in the **Essbase Options** dialog box (**Global** page), you can also double-click in an empty cell to retrieve data.

When you retrieve data into an empty sheet, Essbase returns data from the top levels of each database dimension. The top level is used as a starting point to navigate, or "zoom," into levels of detailed data. In the Sample Basic database, the following five dimensions appear: Measures, Product, Market, Scenario, and Year.

For the remainder of tasks in this tutorial, you can retrieve data by either double-clicking in a data cell or by choosing Essbase | Retrieve.

Note: The Essbase Spreadsheet Add-in for Lotus 1-2-3 does not support Cancel Retrieve functionality. Although you cannot cancel a retrieval action, you can restore the previous spreadsheet view after a retrieval is complete by choosing Essbase | FlashBack. For more information, see "Restoring the Previous Database View," next.

Restoring the Previous Database View

The FlashBack command restores the previous database view. A database view is simply what you see in the spreadsheet after a retrieval or navigation operation. FlashBack is similar to the 1-2-3 Edit | Undo command, which reverses the last action. The FlashBack command uses your machine's memory to store the current view before processing an Essbase retrieval request. You can use FlashBack to undo the most recent operation only. FlashBack cannot undo multiple operations.

Throughout this tutorial, you should follow all steps in the order they appear. If you make a mistake or find yourself out of step with the tutorial, you can use the FlashBack command from the Essbase menu 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 sheet, and choose Edit | Clear, and select **Contents**.

This clears the sheet so that you can start over.

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

To disable FlashBack:

1.   Choose Essbase|Options and click the **Global** tab.

2.   Clear the **Enable FlashBack** check box.

Zooming In to More Detail

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

You have two options for zooming in on a member:

•   Select the member and choose Essbase | Zoom In.

•   Select the member and double-click the primary mouse button.

To zoom in to lower levels of the Year dimension:

1. Double-click Year in cell A2.

    You can also select the cell that contains the Year member name and then
    choose Essbase | Zoom In.

    The zoom in action retrieves data for the level below (the children of) Year:
    Qtr1, Qtr2, Qtr3, and Qtr4.

Figure 2–11, Result of Zooming In on the Year Dimension

Note: For a discussion of the relationships among Essbase database members, see
               "The Database Outline" in Chapter 1.

               With Essbase, you can retrieve members into grouped, or "nested," columns or
               rows. 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 might be nested within a single-member row for a specific
               region, such as East (see Figure 2–11). Zooming in to lower levels of database
               members is one way to retrieve data into nested groups.

2. Zoom in on Market by double-clicking in cell D1 to create nested groups of rows down the spreadsheet.

Figure 2–12, Result of Zooming In on the Market Dimension (Nested Rows)

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

Follow these steps to zoom in on Scenario and retrieve its respective members into columns rather than rows:

1. Press and hold the Alt key.

2. Double-click Scenario (in cell E1).

3.   Release the `Alt` key.

Essbase displays the data in columns across the spreadsheet.

	A	B	C	D	E	F	G	H
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	

Figure 2–13, Result of Zooming In on the Scenario Dimension

Zooming Out to Less Detail

With Essbase, you can "zoom out" to higher levels in the database outline by collapsing the current member tree. For example, if you had previously zoomed in on a dimension, such as Scenario, to view data for Actual and Budget, you may need to zoom back out to view aggregate data for the Scenario dimension.

You have two options for zooming out on a member:

- Select the member and choose Essbase | Zoom Out.
- Select the member and double-click the *secondary* mouse button.

To zoom out on the Scenario dimension in the current spreadsheet:

1. Double-click the *secondary* mouse button on any member of the Scenario dimension (i.e., cell C2, D2, E2, F2, or G2).

    Essbase collapses the members of the Scenario dimension.

Figure 2–14, Result of Zooming Out on the Scenario Dimension

2. Zoom out on East by double-clicking the secondary mouse button in cell A3.

    Essbase collapses East, West, South, and Central into the single Market dimension and keeps the dimension in the same column.

Figure 2–15, Result of Zooming Out on East

Customizing Zoom In and Zoom Out 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 zoom in and zoom out techniques.

To retrieve *all* members of a dimension with a single zoom in operation:

1. Choose Essbase | Options and select the **Zoom** tab.

    Essbase displays the **Zoom** page.
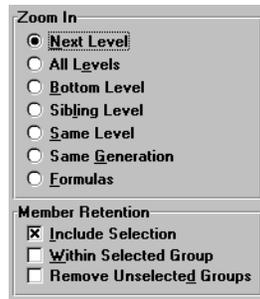
Figure 2–16, Zoom In and Member Retention Option Settings

The **Zoom In** option group contains items that enable you to customize zoom behavior. You can specify which members are returned to the spreadsheet during a zoom in operation. For example, if you select **Bottom Level,** Essbase retrieves data for the lowest level of members in a dimension. With this option, a zoom in 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 zoom retention characteristics. The default selection, **Include Selection**, retains the selected member along with the other members retrieved as a result of a zoom. For example, if you zoom in on Qtr1, Essbase retrieves data for Jan, Feb, and Mar, as well as for Qtr1. When this option is disabled, Essbase retrieves data only for Jan, Feb, and Mar; Qtr1 is eliminated.

Note: 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 this setting.

3. Zoom in (double-click) on Market in cell A3.

4. Zoom in (double-click) on Scenario in cell C2.

    Essbase retrieves all members of Market and Scenario. For the Market dimension, Essbase drilled down two levels to get to the bottom-most members, which are individual states. The Scenario dimension has only one member level, so this dimension's members would also be retrieved if you selected **Next Level** in the **Zoom In** option group.

	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

Figure 2–17, Result of Zooming In to All Member Levels

5. Choose Essbase | Options and select the **Zoom** tab.

6. Return the **Zoom In** option setting to **Next Level.**

If you want to zoom out on only one quarter of the year, you can select **Within Selected Group** in the **Member Retention** option group. For example, follow these steps to zoom out on just Qtr1:

1. In the **Member Retention** option group on the **Zoom** page, 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 on Qtr1 (in cell B3) to zoom out.

    Notice that zooming out to the Year dimension only affected New York. All other states show data for all four quarters.

	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

Figure 2–18, Result of Zooming Out Within a Selected Group

3. Before moving on with the tutorial, disable the **Within Selected Group** option:

    a. Choose Essbase | Options and select the **Zoom** tab.

    b. Clear the **Within Selected Group** check box in the **Member Retention** option group.

4. Choose File | Close to close the spreadsheet. You do not need to save the sheet.

Pivoting, Retaining, and Suppressing Data

Once you have retrieved data into the spreadsheet, 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 spreadsheet, or you may want to tell Essbase to suppress or retain specific data during data retrievals.

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

- Pivoting Rows and Columns

- Retaining a Data Subset

- Removing a Data Subset

- Navigating Through the Spreadsheet Without Retrieving Data

- Suppressing Missing and Zero Values and Underscore Characters

Pivoting Rows and Columns

Using the Pivot command, you can change the orientation of spreadsheet data. Use the Pivot command to:

- 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 choose Essbase | Pivot. This method applies only to moving a row group to a column group, or vice versa.

- Click in the center of the member cell that you want to pivot, press and hold 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.

For example, to pivot Year data from a row group to a column group.

1. Open a new spreadsheet and connect to the Sample Basic database.

Note: For instructions on connecting to Sample Basic, see "Connecting to a Database" earlier in this chapter.

2. Choose Essbase | Retrieve.

3. Zoom in (double-click) on Measures and Product in cells B1 and C1, respectively.

4. Press and hold the `Alt` key, and zoom in (double-click) on Scenario in cell E1.

D	A	B	C	D	E	F
1						Market
2				Actual	Budget	Variance
3	100	Profit	Year	30468	41940	-11472
4		Inventory	Year	29448	31590	2142
5		Ratios	Year	57.27288145	57.624004899	-0.351123447
6		Measures	Year	30468	41940	-11472
7	200	Profit	Year	27954	35950	-7996
8		Inventory	Year	33000	31090	-1910
9		Ratios	Year	55.53966595	57.466741615	-1.927075664
10		Measures	Year	27954	35950	-7996
11	300	Profit	Year	25799	29360	-3561
12		Inventory	Year	28865	27140	-1725
13		Ratios	Year	54.23795671	57.139504869	-2.901548161
14		Measures	Year	25799	29360	-3561
15	400	Profit	Year	21301	22130	-829
16		Inventory	Year	26092	25630	-462
17		Ratios	Year	53.59966758	57.230538922	-3.630871345
18		Measures	Year	21301	22130	-829

Figure 2–19, View Before Pivoting

5. Select Year in cell C3 and choose Essbase | Pivot.

Essbase pivots the Year dimension to a column group next to Market (above the Scenario members).

D	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	6.7806267806
5		Ratios	57.27288145	57.624004899	-0.35112345	-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	57.466741615	-1.92707566	-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	57.139504869	-2.90154816	-5.078007182
14		Measures	25799	29360	-3561	-12.12874659
15	400	Profit	21301	22130	-829	-3.746046091
16		Inventory	26092	25630	-462	-1.802575107
17		Ratios	53.59966758	57.230538922	-3.63087135	-6.344289978
18		Measures	21301	22130	-829	-3.746046091

Figure 2–20, Result of Pivoting a Row Group to a Column Group

6.   As another example, select Actual in cell C2.

7.   Press and hold the secondary mouse button and drag Actual to product 100 in cell A3.

Figure 2–21, Pivoting a Column Group to a Row Group

Note: The member label box that is shown under the cursor during the pivot operation displays the names of members you are pivoting. The *orientation* of the member label box, however, does not determine the orientation of the pivot result. Essbase determines the data orientation by the location of the destination cell.

Essbase pivots the Scenario members (Actual, Budget, Variance, and Variance%) from a column group to a row group appearing to the left of the Product members.

Figure 2–22, Result of Pivoting a Column Group to a Row Group

To transpose the order of row groups:

1. Select Actual in cell A2.

2. Press and hold the secondary mouse button and drag Actual to Profit in cell C2.

Figure 2–23, Pivoting the Order of Row Groups

The pivot changes the order of the row groups.

Figure 2–24, Result of Pivoting Row Groups

In this example, notice that the destination cell is another row member. Whenever the destination cell is a member of another row group, Essbase 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.

Note: Pivoting in a spreadsheet that contains duplicate members removes all but one of the duplicate members. This is also true for spreadsheets containing more than one Dynamic Time Series member with the same Latest Time Period setting.

Retaining a Data Subset

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

To keep only Actual and Budget data in the current spreadsheet:

1.   Select Actual in cell C2 and Budget in cell C3.

Figure 2–25, Selecting Members for the Keep Only Command

2. Choose Essbase | Keep Only.

   Essbase removes the Variance, Variance %, and Scenario rows from the spreadsheet and retains only Actual and Budget data.

Figure 2–26, Result of Retaining First Data Subset

3. Select Profit and Inventory in cells B2 and B4 and choose Essbase | Keep Only.

   Essbase retains only Profit and Inventory data and removes the other Measures members.

Figure 2–27, Result of Retaining Second Data Subset

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 spreadsheet view.

To remove a data subset from the current spreadsheet view:

1. Press and hold the Alt key and zoom in (double-click) on Year in cell D1.

2. Select Qtr3, Qtr4, and Year in cells F2, G2, and H2.

	A	B	C	D	E	F	G	H	I
1						Market			
2				Qtr1	Qtr2	Qtr3	Qtr4	Year	
3	100	Profit	Actual	7048	7872	8511	7037	30468	
4			Budget	9790	10660	11440	10050	41940	
5		Inventory	Actual	29448	29860	36461	35811	29448	
6			Budget	31590	29950	34830	32340	31590	
7	200	Profit	Actual	6721	7030	7005	7198	27954	
8			Budget	8480	8840	8830	9800	35950	
9		Inventory	Actual	33000	31361	35253	32760	33000	
10			Budget	31090	28040	30260	26460	31090	
11	300	Profit	Actual	5929	6769	6698	6403	25799	
12			Budget	6970	7680	7710	7000	29360	
13		Inventory	Actual	28865	30334	37331	38142	28865	
14			Budget	27140	28460	34700	35460	27140	

Figure 2–28, Selecting Members for the Remove Only Command

3. Choose Essbase | Remove Only.

Essbase removes data for Qtr3, Qtr4, and Year but retains data for Qtr1 and Qtr2.

Figure 2–29, Result of Removing a Data Subset

Navigating Through the Spreadsheet Without Retrieving Data

Using 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 spreadsheet.

This feature is especially useful when dealing with Dynamic Calculation members, which are usually specified by the Essbase Application Designer. By activating Navigate Without Data, you are effectively telling Essbase *not* to dynamically calculate values (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" in Chapter 3.

To navigate through the spreadsheet without retrieving data:

1. Choose Essbase | Navigate Without Data.

   Essbase displays a check mark next to the menu item.

Note: You can also enable the Navigate Without Data feature by choosing
Essbase | Options; selecting the **Global** tab; and clicking the **Navigate Without
Data** check box.

2. Zoom out on Qtr2 by double-clicking the secondary mouse button in cell E2.

   Essbase shows the collapsed Year dimension but withholds retrieving any data
   that is changed as a result of zooming out. The cells where data would normally
   appear are blank.

D	A	B	C	D	E	F	G
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				

Figure 2–30, Result of Zooming Out (Navigate Without Data Enabled)

3. Press and hold the Alt key, and zoom in (double-click) on Year in cell D2.

   Essbase zooms in without retrieving data.

4.   Click Actual in cell C3 and choose Essbase | Pivot.

Essbase executes the pivot but does not retrieve data.

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

D	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										

Figure 2–31, Result of First Pivot (Navigate Without Data Enabled)

5.   Click the secondary mouse button on Market (cell G1) and drag it to product 100 (cell A4).

Essbase executes the pivot without retrieving data.

D	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									

Figure 2–32, Result of Second Pivot (Navigate Without Data Enabled)

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

1. Select Qtr1 (cell D2) and Qtr2 (cell E2) and choose Essbase | Keep Only.

    Essbase retains only the selected members without retrieving data.

Figure 2–33, Result of Keep Only (Navigate Without Data Enabled)

2. Select products 300 (cell B7), 400 (cell B9), and Diet (cell B11) and choose Essbase | Remove Only.

    Essbase executes the Remove Only command without actually querying the database for information.

Figure 2–34, Result of Remove Only (Navigate Without Data Enabled)

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

1.   Choose Essbase | Navigate Without Data.

     Essbase removes the check mark next to the menu item.

Note: You can also disable Navigate Without Data by choosing Essbase | Options;
                 selecting the **Global** tab; and clearing the **Navigate Without Data** check box.

2.   Zoom in (double-click) on Market in cell A3.

     Essbase zooms in on the Market dimension and also retrieves data back into the
     spreadsheet.

	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	

Figure 2–35, Result of Zooming In (Navigate Without Data Disabled)

Note: If you want to retrieve data without changing the current spreadsheet view, you can
                 also retrieve data by simply double-clicking in any data cell or choosing
                 Essbase | Retrieve (after disabling Navigate Without Data).

Suppressing Missing and Zero Values and Underscore Characters

Several types of data can be returned to a spreadsheet 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 Essbase database. When data does not exist for any data cell in Essbase, a value of #Missing is returned to the sheet. If any cell in a row contains a value, that row is not suppressed on a retrieval.

With Essbase, you can suppress missing and zero values from displaying in the spreadsheet. In addition, you can tell Essbase to suppress underscore characters that may appear in some member names.

To suppress rows that contain missing values from appearing in the spreadsheet:

1. Zoom out on Profit by double-clicking the secondary mouse button in cell C3.

2. Pivot Measures in cell C3 to Actual in cell D1.

3. Zoom in (double-click) on product 100 in cell B4.

   Notice that in the South, the product 100–30 row contains all missing values, indicating that this product is not sold in the South. You may need to scroll down the spreadsheet to see this row.

	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	100-160	745	835	1160	1280	
17		100-20	306	363	570	660	
18		100-30	#Missing	#Missing	#Missing	#Missing	

Figure 2–36, Spreadsheet View Displaying Missing Data Values

4. Choose Essbase | Options and select the **Display** tab.

5. In the **Suppress** option group, click the **#Missing Rows** check box and click OK.

Note: The **Suppress #Missing Rows** and **Zero Rows** options are not available when any of the **Formula Preservation** options are selected in the **Essbase Options** dialog box. For more information on Formula Preservation, see "Preserving Formulas when Retrieving Data" in Chapter 3.

6. Choose Essbase | Retrieve to update the sheet.

Note: After you change a spreadsheet option in the **Essbase Options** dialog box, you must perform a retrieval or zoom operation to have the new setting take effect.

Essbase suppresses product 100–30 from the South member group.

Figure 2–37, Result of Suppressing Missing Data Values

7. Choose File | Close to close the spreadsheet. You do not need to save the sheet.

Note: 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 simply disabling the feature. If you disable the feature in the **Essbase Options** dialog box, missing values are retrieved *only from that point on.* For example, in the tutorial task described above, Essbase could not go back and return the missing values for product 100–30. To return these missing values to the spreadsheet, you would disable the **Suppress #Missing Rows** feature, zoom out on a Product member, then zoom back in.

You can also suppress zeros and underscore characters as described in the task above by clicking the appropriate boxes in the **Suppress** option group in the **Essbase Options** dialog box (**Display** page).

In addition to suppressing specific values and characters during retrieval, Essbase enables you to define a label for missing values (#Missing) or for data you do not have access to (#NoAccess). If you define a replacement label for these values, Essbase displays the replacement labels in the spreadsheet 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 Spreadsheet

Essbase provides you with various ways to customize the spreadsheet view. For example, you may want to apply visual cues, or styles, to certain member names or to data cells in the sheet, or you may want to display alternate names, or aliases, for member names. This section steps you through the following formatting procedures:

- Formatting Text and Cells

- Displaying Aliases for Member Names

- Displaying Both Member Names and Aliases

- Repeating Member Labels

This section of the tutorial starts with a new spreadsheet.

Formatting Text and Cells

In a spreadsheet report, you may have many hierarchical levels of database information displayed. By defining and applying visual cues, or styles, to the text and cells in the spreadsheet, you can easily keep track of specific database members, dimensions, and cell functions. Styles are a great way to help view and distinguish data in the Spreadsheet Add-in.

Note: Keep in mind that applying styles requires additional processing during a retrieval request. For more information, see "Removing Styles" in this section.

This section of the tutorial describes the following:

- Applying Styles to Parent Members

- Applying Styles to Dimension Members

- Applying Styles to Data Cells

- Determining the Precedence of Overlapping Styles

- Removing Styles

Note: For a discussion of the relationships among Essbase database members, see "The Database Outline" in Chapter 1.

Applying Styles to Parent Members

Each dimension in a database may contain a large number of hierarchical levels. As you view data in the spreadsheet, 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.

To apply styles to parent members:

1.   Open a new spreadsheet and connect to the Sample Basic database.

Note: For instructions on connecting to Sample Basic, see "Connecting to a Database" earlier in this chapter.

2.   Choose Essbase | Retrieve.

3.   Zoom in (double-click) on Year in cell A2.

4.   Choose Essbase | Options.

5. In the **Essbase Options** dialog box, select the **Style** tab.

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

Essbase displays the **Style** page.
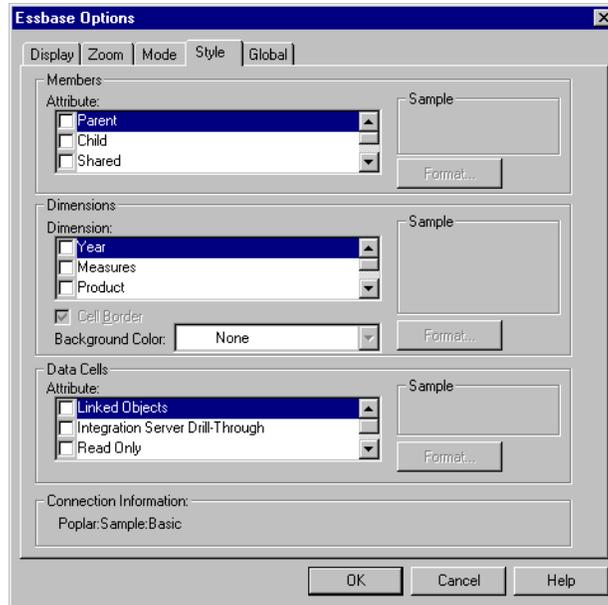
Figure 2–38, Essbase Options Dialog Box, Style Page

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

6. In the **Attribute** list, click the **Parent** check box.

Checking this box defines a font and color style for parent member names. Essbase defines a default color of navy for all parent members. You can select any font format by clicking the **Format** button.

7. Click the **Format** button.

    Essbase displays the **Font** dialog box.
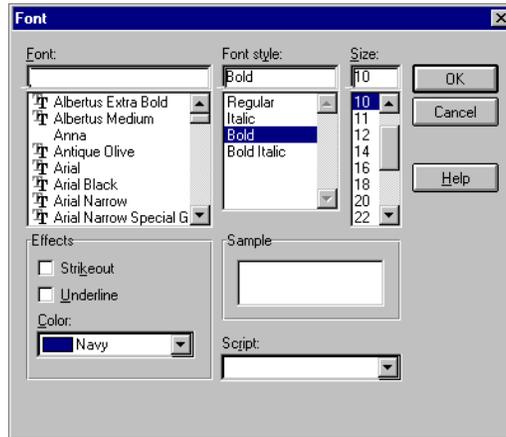
Figure 2–39, Font Dialog Box

8. Select **Bold** in the **Font style** list box and click OK.

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

9. Parent members will be the only style applied for now, so click OK.

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

10. Choose Essbase | Options and select the **Display** tab.

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

12. Choose Essbase | Retrieve to refresh the sheet and apply the styles.

    Essbase displays parent member names in bold, navy font.

13. Zoom in (double-click) on Qtr1 in cell A2.

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

Figure 2–40, Styles Applied to Parent Members

Applying Styles to Dimension Members

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

To apply styles to dimensions:

1. Choose Essbase | Options and select the **Style** tab.

2. In the **Dimension** list, select **Year**.

3. Click the **Cell Border** check box to create a border around each cell containing a member from the selected dimension.

4.   Select **Yellow** from the **Background Color** list box.
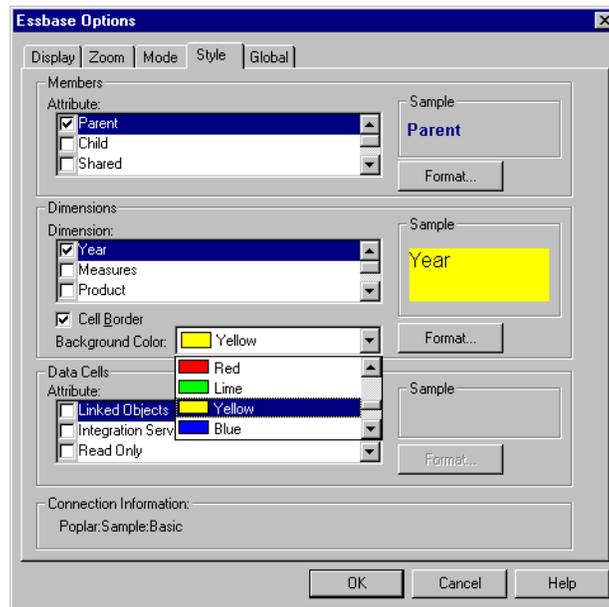
Figure 2–41, Selecting a Background Color from the Style Page

5.   Click **Format**.

Essbase displays the **Font** dialog box.

6.   Select **Bold** from the **Font style** list box and click OK.

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

7.   Select the **Measures** dimension from the **Dimension** list, and **Fuschia** from the **Background Color** list box.

8.   Select **Product** from the **Dimension** list, and clear the **Cell Border** check box.

9.   Select **Aqua** from the **Background Color** list box.

10.   Scroll down in the **Dimension** list and select **Market.**

11.   Click the **Cell Border** check box and click **Format**.

12. Select **Italic** from the **Font style** list box and click OK.

13. Select **Scenario** from the **Dimension** list, and select **Red** from the **Background Color** list box.

14. Click **Format** and select **White** from the **Color** list box.

15. Click OK twice to return to the spreadsheet.

Note: When you define styles, your choices are saved to the ESSBASE.INI file on your local machine. You can define one set of styles per database.

16. Zoom in (double-click) on Market in cell D1.

17. Press and hold the Alt key and zoom in (double-click) on Scenario on cell E1.

18. Refresh the sheet by choosing Essbase | Retrieve.

    Essbase redisplays the spreadsheet and implements the newly defined styles. For example, members of the Scenario dimension appear with a red background.

	A	B	C	D	E	F	G
1			Measures	Product			
2			Actual	Budget	Variance	Variance %	Scenario
3	East	Jan	1732	2080	-348	-16.73076923	1732
4		Feb	1843	2230	-387	-17.35426009	1843
5		Mar	1805	2190	-385	-17.57990868	1805
6		Qtr1	5380	6500	-1120	-17.23076923	5380
7		Qtr2	6499	7550	-1051	-13.9205298	6499
8		Qtr3	6346	7550	-1204	-15.94701987	6346
9		Qtr4	5936	6790	-854	-12.57731959	5936
10		Year	24161	28390	-4229	-14.89609017	24161
11	West	Jan	2339	2980	-641	-21.51006711	2339
12		Feb	2394	2990	-596	-19.93311037	2394
13		Mar	2404	2990	-586	-19.59866221	2404
14		Qtr1	7137	8960	-1823	-20.34598214	7137

Figure 2–42, Dimensions with Styles Applied

Applying Styles to Data Cells

You can apply styles to data cells, such as Read-Only cells, Read/Write cells, Linked Object cells, and Hyperion Integration Server Drill-Through cells to distinguish them from other cells in the sheet. 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 will attach a linked reporting object to a data cell and apply a style to this cell.

In general, you would apply styles to data cells by following these steps:

1. Choose Essbase|Options and select the **Style** tab.

2. In the **Data Cells** option group, click 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.

Note: Essbase displays an example of the selected style in the **Sample** box.
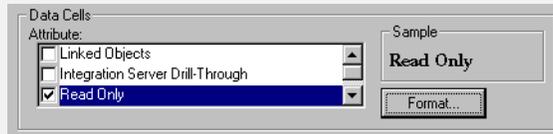
Figure 2–43, Sample Style for Read/Write Data Cells

5. Repeat steps 2–4 to set styles for other data cells.

6. Select the **Display** tab and click the **Use Styles** check box to apply styles to the spreadsheet.

7. Click OK to close the **Essbase Options** dialog box.

8. Choose Essbase|Retrieve to display the new styles in the spreadsheet.

Determining the Precedence of Overlapping Styles

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, members of a dimension always have the background color defined for them.

The text styles you can apply to members, dimensions, and data cells have a hierarchy that determines which characteristics are applied. Member styles are at the top of that hierarchy, which means that they are always applied (as long as styles are turned on). Note that in Figure 2–42 above, the Qtr1 label in cell B6 is in bold, navy font, even though the Year dimension style is defined with a yellow background. This is because the Qtr1 label gets its navy text from the style defined for parent members.

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

- Linked Object cells

- Integration Server Drill-Through

- Read-Only cells

- Read/Write cells

- Parent members

- Child members

- Shared members

- Cells containing formulas

- Dynamic Calculation members

- Dimensions

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 the 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 Essbase retrievals.

If you do not want to apply styles to the spreadsheet view, you can clear them. You can also turn off styles so they do not reappear when you refresh the view (by choosing Essbase | Retrieve, for example). *Do not* remove styles if you are stepping through the tutorial so that your spreadsheet will match the illustrations presented in the following tasks.

Note: If you have styles applied to the sheet and you execute the FlashBack command, these styles are temporarily removed from the current view. The styles are re-applied whenever you initiate a retrieval.

To remove all styles from a sheet:

> 1.   Select all cells in the sheet.
>
> 2.   Choose Edit|Clear Styles.

To disable styles:

> 1.   Choose 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 sheet, the styles remain in the current spreadsheet view when you refresh the view. This is done to avoid removing any styles that you may apply to individual cells using native spreadsheet formatting options.

Displaying Aliases for Member Names

Aliases are alternate names for database members. You can create reports that use the database member name, which is often a stock number or product code, or an alias name, which can be more descriptive. Aliases are defined by the Essbase Application Designer. Each database can contain one or more alias tables.

For example, the Product members in the Sample Basic database are defined as codes, such as 100 and 200. A descriptive alias for each of these Product members, 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 information, see the Spreadsheet Add-in Online Help or the *Database Administrator's Guide*.

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

1.   Zoom out on Actual by double-clicking the secondary mouse button in cell C2.

2.   Press and hold the Alt key and zoom in (double-click) on Product in cell D1.

3.   Choose Essbase | Options and select the **Display** tab.

4.   In the **Aliases** option group, click the **Use Aliases** check box to display member aliases.

5.   Select **Default** from the **Alias** list box.
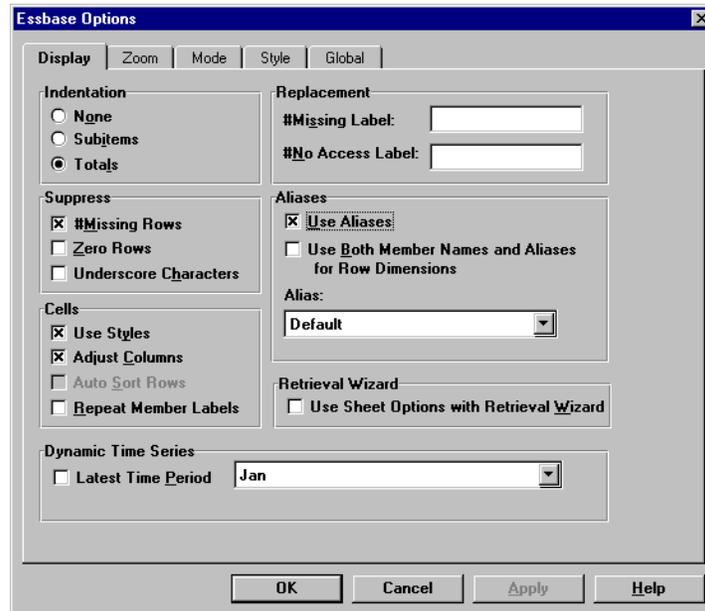
Figure 2–44, Enabling Aliases in the Essbase Options Display Page

6.   Click OK.

7. Choose Essbase | Retrieve to refresh the sheet and display the alias names.

Essbase 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.

	A	B	C	D	E	F	G	H
1					Measures			
2			Colas	Root Beer	Cream Soda	Fruit Soda	Diet Drinks	Product
3			Scenario	Scenario	Scenario	Scenario	Scenario	Scenario
4	East	Jan	924	158	184	466	181	1732
5		Feb	888	242	200	513	185	1843
6		Mar	935	162	207	501	189	1805
7		Qtr1	2747	562	591	1480	555	5380
8		Qtr2	3352	610	922	1615	652	6499
9		Qtr3	3740	372	522	1712	644	6346
10		Qtr4	2817	990	592	1537	557	5936
11		Year	12656	2534	2627	6344	2408	24161
12	West	Jan	378	752	755	454	663	2339
13		Feb	337	781	797	479	683	2394
14		Mar	327	792	811	474	679	2404
15		Qtr1	1042	2325	2363	1407	2025	7137

Figure 2–45, Result of Displaying Aliases

Notice that Essbase is still displaying the styles 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 tell Essbase to display both aliases and the database member names in the Spreadsheet Add-in.

To display the name and alias of a member:

1. Zoom out on Qtr2 by double-clicking the secondary mouse button in cell B8.

2. Click Colas in cell C2 and choose Essbase | Pivot.

3. Click Year in cell C3 and choose Essbase | Pivot.

4.   Choose Essbase | Options and select the **Display** tab.

5.   In the **Aliases** option group, click the box for **Use Both Member Names and Aliases for Row Dimensions**.

     Make sure that **Use Aliases** is already checked.

6.   Click OK to return to the spreadsheet, and choose Essbase | Retrieve.

     Essbase displays both member names and their aliases for row dimensions. Since the only row dimension in this example that has pre-assigned aliases is Product, only the Product members display their aliases. Region members simply repeat the member name instead of displaying an alias.

	A	B	C	D	E	F	G
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		

Figure 2–46, Result of Displaying Both Member Names and Aliases

Repeating Member Labels

By default, Essbase displays member labels only once for each nested row and column group. If you were connected to a large database when using the Spreadsheet Add-in, you might have to scroll down or across the spreadsheet to see additional data rows and columns. In some cases, as you scroll down or across, member labels may disappear from view. Essbase 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 spreadsheet view.

To repeat member labels down and across the spreadsheet:

1. Choose 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.

3. In the **Cells** option group, click the **Repeat Member Labels** check box and click OK.
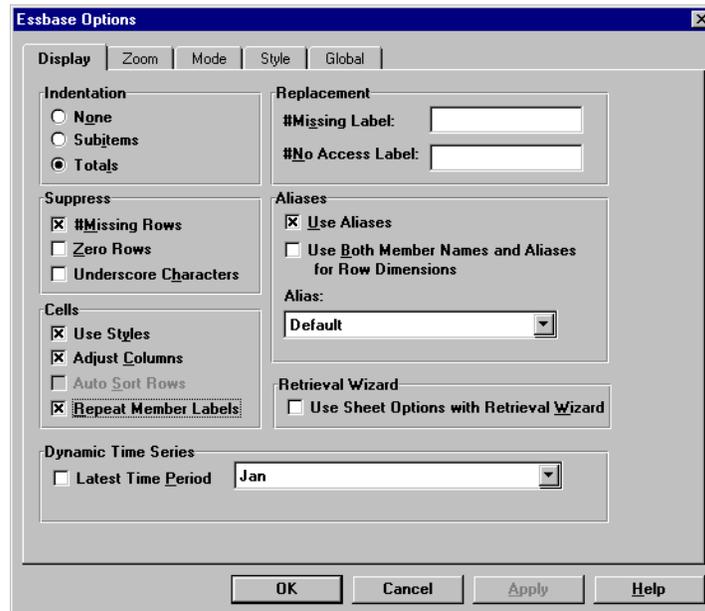
Figure 2–47, Enabling the Repeat Member Labels Option

4. Zoom in (double-click) on Year in cell E1.

Essbase displays a member label in every column and row cell. For the Sample Basic database that you are using for this tutorial, repeating member labels is probably not necessary since the database is relatively small. This feature is particularly helpful for keeping track of member labels when scrolling through large spreadsheets.

Figure 2–48, Result of Repeating Member Labels

Note: Even if you clear the **Repeat Member Labels** check box in the **Essbase Options** dialog box, Essbase retains the repeated member labels in the spreadsheet view. To remove the repeated labels, you would need to do one of the following: (1) clear the check box and open a new spreadsheet; (2) clear the check box and pivot the row group to a column group, then pivot it back to a row group (or vice versa); or (3) choose Essbase | FlashBack and clear the check box.

5. Choose Essbase | Options and select the **Display** tab.

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

7. Choose File | Close to close the spreadsheet. You do not need to save the sheet.

Using the Retrieval Wizard

So far, you have seen how easy it is to retrieve data and navigate through the Spreadsheet Add-in in an ad hoc fashion. Essbase also provides a Retrieval Wizard that enables you to define a database query for retrieving dimensions and database members into the spreadsheet.

The Retrieval Wizard steps you through a series of dialog boxes to request the data you want to view in the spreadsheet before actually retrieving any data. The Retrieval Wizard is particularly helpful when you know exactly which data you want to retrieve from the server. In addition, you can save a Retrieval Wizard query so that you can use it again.

Note: For complete information on Retrieval Wizard options, see the Spreadsheet Add-in Online Help.

To use the Retrieval Wizard, follow these steps:

1.   Choose Essbase | Retrieval Wizard.

Essbase displays Step 1 of the Essbase Data Retrieval Wizard. You can either build a new query or open an existing one.
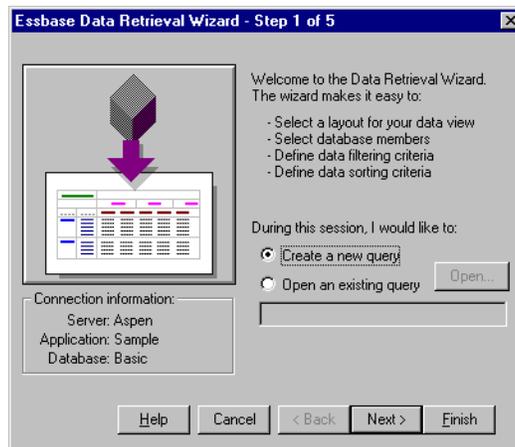
Figure 2–49, Retrieval Wizard—Step 1

2. Click **Next** to create a new query (the default action).

   Essbase displays Step 2 of the Retrieval Wizard. You can define the layout of the spreadsheet view by dragging dimension tiles to a Page, Row, or Column location. You can also select a list of members from each dimension by double-clicking on any dimension tile.

3. Define the spreadsheet layout by dragging the dimension tiles as follows:

   a. Drag Market and Product to a Row location.

   b. Drag Measures to the Page location.

   c. Drag Scenario below Year in the Column location.
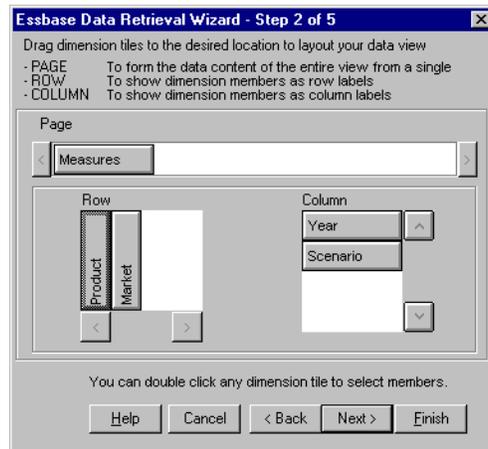
Figure 2–50, Retrieval Wizard—Step 2

4. Select the Measures dimension by double-clicking the Measures tile. You can select only one member from the dimension in the Page location.

Essbase displays the **Essbase Member Selection** dialog box so that you can select a member from the Measures dimension.
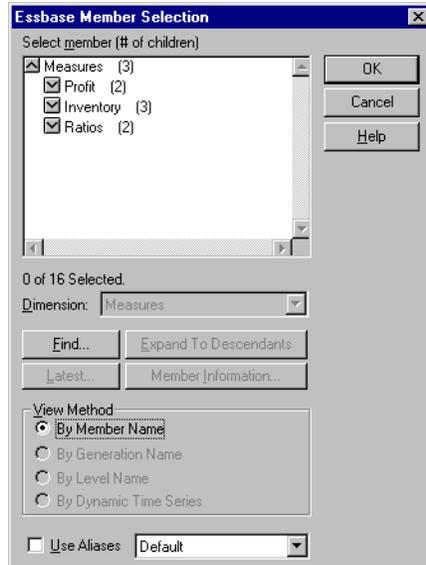
Figure 2–51, Essbase Member Selection Dialog Box (Page Location)

5. Select Profit and click OK.

Note: If you do not select members from any given dimension, Essbase uses the top member of the dimension.

6. Select members of the Year dimension:

a. Double-click the Year tile.

Essbase displays the **Essbase Member Selection** dialog box so that you can select members from dimensions in the Row or Column locations. Because Year is in a Column location, you can select one or more members.

b. Click Qtr1 and shift-click Qtr4 to select all four quarters.

c. Click **Add** to add the members to the **Rules** list box and click OK.
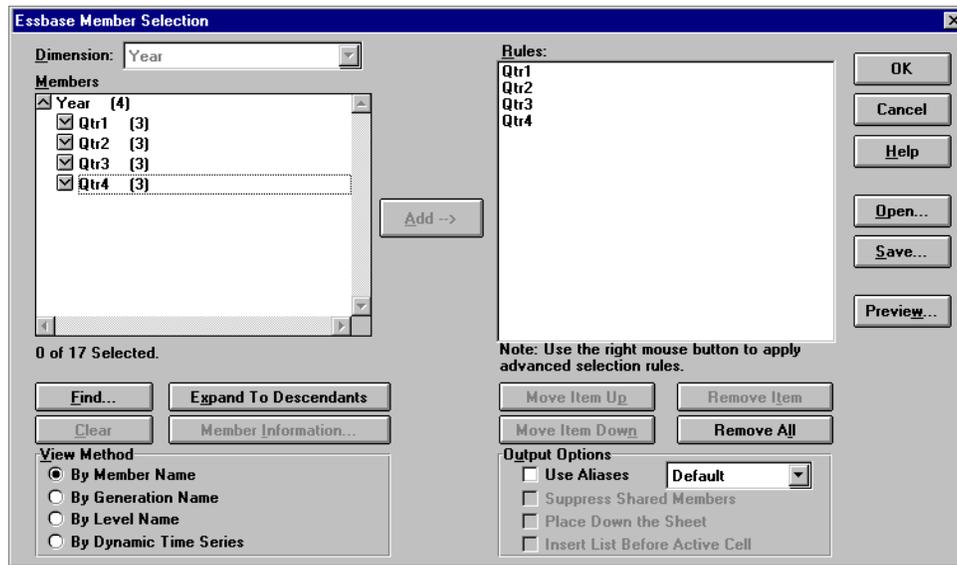
Figure 2–52, Essbase Member Selection Dialog Box (Row and Column Locations)

7. Select members of the Scenario dimension:

   a. Double-click the Scenario tile.

   b. Select Actual and Budget, and click **Add** to add the members to the **Rules** list box.

   c. Click OK.

8. Select members of the Product dimension:

   a. Double-click the Product tile.

   b. Select product codes 100 through 400, and click **Add** to add the members to the **Rules** list box.

   c. Select product code 100 from the **Rules** list box and click the right mouse button to view the pop-up menu.

   d. Select **All Children and Member** to select all children of 100, including 100. Essbase displays All Children and Member next to 100 in the **Rules** list box.

e. Select product code 400 and click the right mouse button to open the pop-up menu.

f. Select **All Descendants** from the pop-up menu to select all descendants of 400. Essbase displays All Descendants next to 400 in the **Rules** list box.
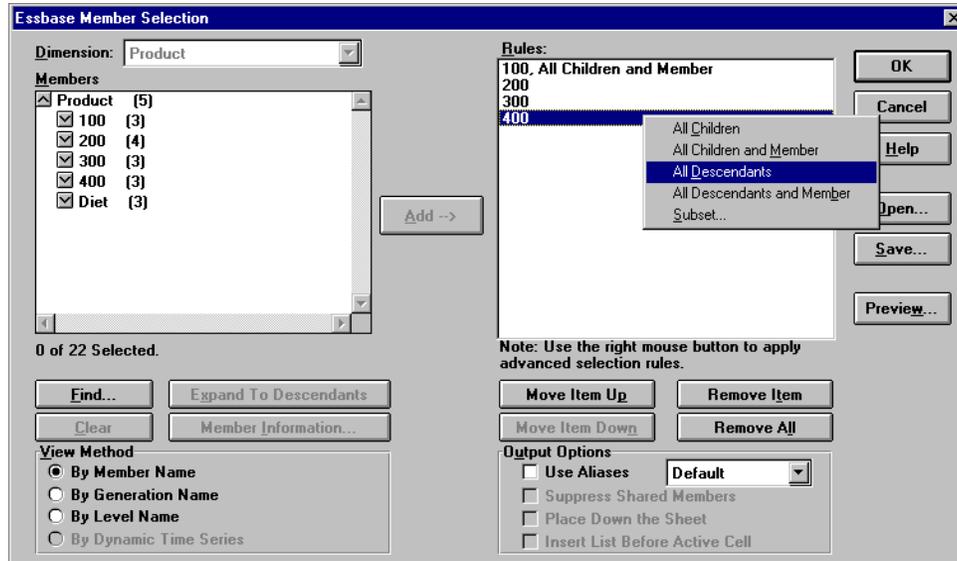
Figure 2–53, Using the Member Criteria Menu

g. Click the **Preview** button to view the list of product codes that will be retrieved into the spreadsheet.
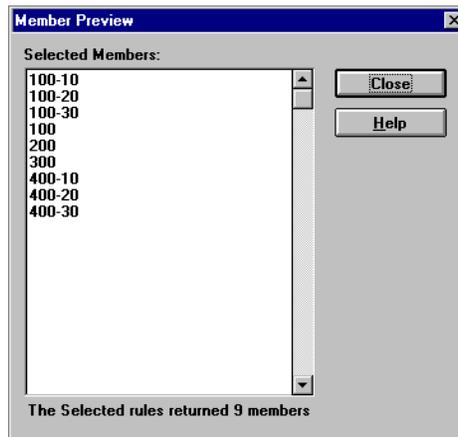
Figure 2–54, Member Preview Dialog Box

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

9. Click OK to close the **Essbase Member Selection** dialog box.

10. Select members of the Market dimension:

a. Double-click the Market tile.

b. In the **View Method** option group, select **By Generation Name** to view the members by generation name.

c. Select Region to pick the second generation of the Market dimension.

    d.   Click **Add** to add the generation name to the **Rules** list box.

    e.   Click **Preview** to view the list of members that will be retrieved into the spreadsheet. Essbase displays East, West, South, and Central in the **Member Preview** dialog box.
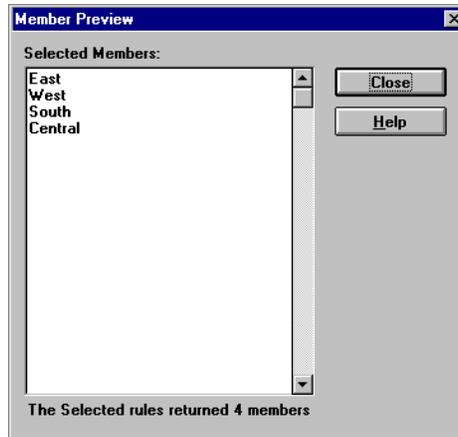
Figure 2–55, Member Preview Dialog Box (Generation Name Selection)

    f.   Click **Close** to close the dialog box, and then click OK.

    You have now defined a basic Essbase query.

11. Click **Finish** to continue.

    Essbase displays a confirmation box asking if you want to save your work. In the next chapter, you will build a more advanced query based on the basic query you have defined in these steps.

12. Click Yes to save your work.

Warning!   If you respond No, the results of the query overwrite any data that is in the currently active sheet. If this occurs, you can use the FlashBack command to revert the sheet to its prior state. However, a FlashBack action causes you to lose the query you defined with the Retrieval Wizard.

Essbase displays Step 5 of the Retrieval Wizard.
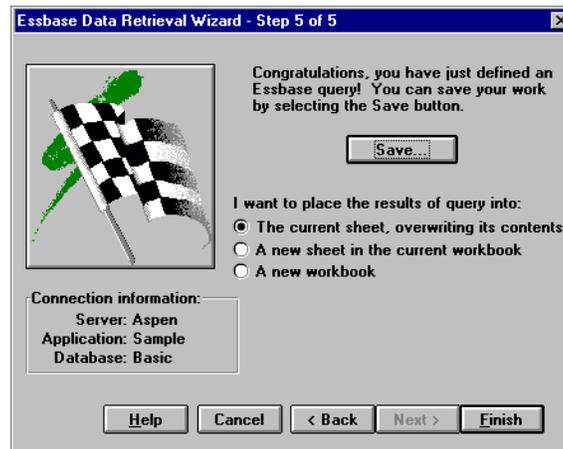
Figure 2–56, Retrieval Wizard—Final Step

13.   Click **Save** to save the query.

Essbase displays the **Save As Query** dialog box. You can save the 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 Essbase System Administrator for more information.

14.   Click **Client**.

15. Clear the **Create report specification** check box.
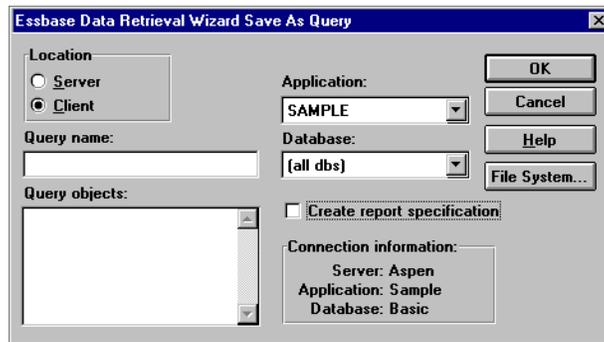
Figure 2–57, Retrieval Wizard Save as Query Dialog Box

16. Click the **File System** button.

Essbase displays the **Save As** dialog box.

17. Select a location, type Basic1 in the **File name** text box, and click **Save.** You will use the Basic1 query again in Chapter 3.
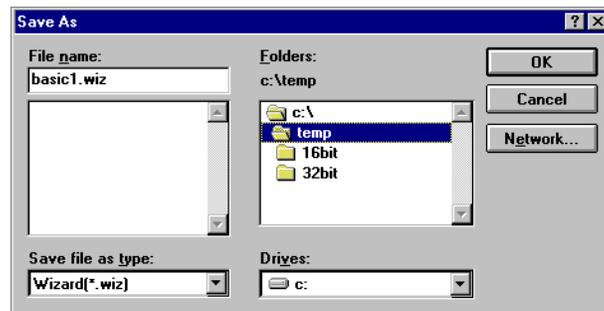
Figure 2–58, Save As Dialog Box

18. Click **A new workbook** in the Retrieval Wizard, and click **Finish**.

	A	B	C	D	E	F	G	H
1						Profit		
2			Qtr1		Qtr2		Qtr3	
3			Actual	Budget	Actual	Budget	Actual	Budget
4	100-10	East	2461	2550	2940	3050	3298	3440
5		West	1047	1720	1189	1900	1339	2120
6		South	745	1160	835	1280	1031	1490
7		Central	843	1080	928	1180	915	1170
8	100-20	East	212	220	303	300	312	310
9		West	-67	320	-177	200	-154	250
10		South	306	570	363	660	281	570
11		Central	908	1130	1045	1320	1089	1340
12	100-30	East	74	110	109	130	130	190
13		West	62	310	-163	30	-286	-130
14		South	#Missing	#Missing	#Missing	#Missing	#Missing	#Missing
15		Central	457	620	500	610	556	690

Figure 2–59, Results of Retrieval Wizard Query

Note: Even if you have styles enabled, they are not applied to the initial query results. To apply styles, choose Essbase | Retrieve. When Essbase returns the data to the sheet, you are free to further investigate the data by performing Zoom, Keep Only, Remove Only, and Pivot operations.

Applying Spreadsheet Options to Retrieval Wizard Results

You can also apply any of the spreadsheet options you have previously set from the **Essbase Options** dialog box to the results of a Retrieval Wizard query.

To enable the Retrieval Wizard to use your previously set spreadsheet options:

1. Choose Essbase | Options.

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

3. Click the **Use Sheet Options with Retrieval Wizard** check box and click OK.

4. Choose Essbase | Retrieve to refresh the spreadsheet.

Essbase displays the results of the Retrieval Wizard query and implements the previously set spreadsheet options. For example, note that aliases are now displayed for the Product dimension instead of the numeric codes.

Figure 2–60, Retrieval Wizard with Options Applied

5. Choose File | Close to close the spreadsheet. You do not need to save the sheet.

Selecting Members

An Essbase database may contain hundreds or even thousands of members, making it difficult to remember each member name. The **Essbase Member Selection** dialog box allows you to easily find and select members and to define their layout in the spreadsheet. 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 you want to retrieve.

Note: For complete information on the **Essbase Member Selection** dialog box, see the Spreadsheet Add-in Online Help.

For example, to view specific members from the Market dimension:

1. Open a new spreadsheet and connect to the Sample Basic database.

Note: For instructions on connecting to Sample Basic, see "Connecting to a Database" earlier in this chapter.

2. Choose Essbase | Retrieve.

3. Select Market and choose Essbase | Pivot to display Market as a row, rather than a column, dimension.

Figure 2–61, Initial Spreadsheet for Member Selection

4. Select Market again and choose Essbase | Member Selection.

    Essbase displays the **Essbase Member Selection** dialog box.
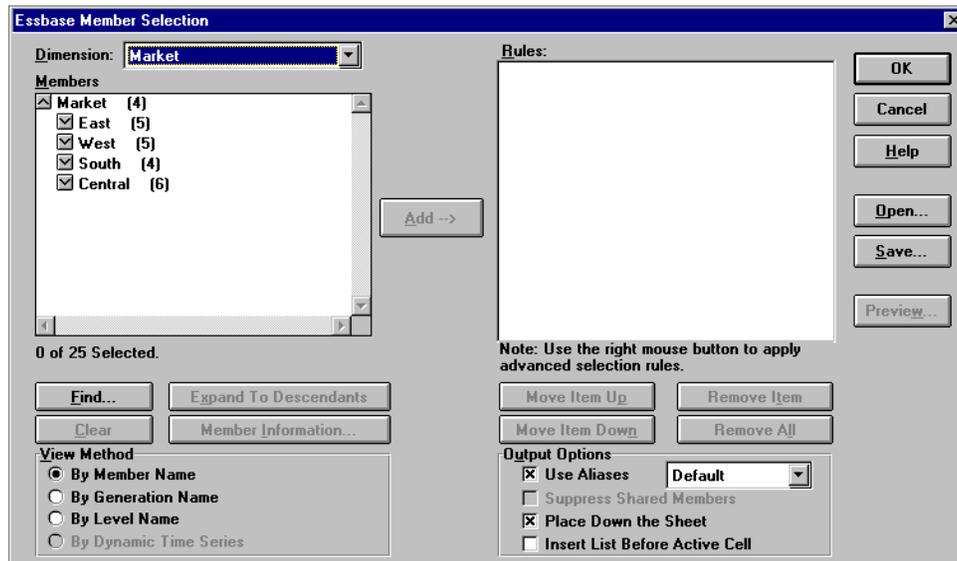
Figure 2–62, Essbase Member Selection Dialog Box

In the **Essbase Member Selection** dialog box, Essbase displays the Market dimension in the **Dimension** list box and its children, East, West, South, and Central in the **Members** list box.

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

Essbase displays the **Member Information** dialog box. The dialog box provides information about the selected member, such as dimension, generation, level, storage setting, formula, User-Defined Attributes, and member comments.
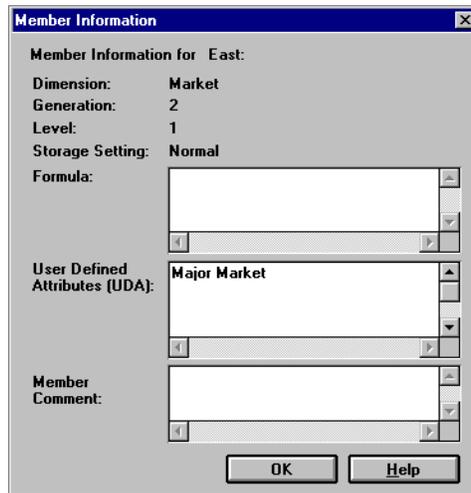
Figure 2–63, Member Information Dialog Box

6.   Click OK to close the **Member Information** dialog box.

7.   Click the **Add** button to add East to the **Rules** list box.

Note: Alternatively, you can double-click on an item in the **Members** list box to add the item.

8. Select West and click the **Find** button.

   Essbase displays the **Find Member** dialog box.

   In the **Find Member** dialog box, you can do pattern-match searches for members in the selected dimension. Wildcard patterns—(trailing asterisk, *) and (single-character match, ?)—are allowed. This dialog box locates the members that match the text string in alphabetical order and keeps them selected so that they can be selected as a group.

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

9. In the **Find Member** dialog box, type C* in the text box.
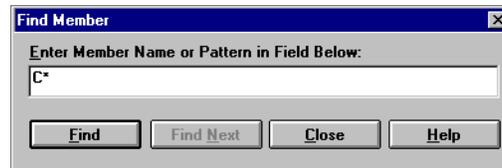
Figure 2–64, Find Member Dialog Box

10. Click **Find** to locate the first member that matches C*.

    Essbase locates and selects California. Its parent, West, is also selected since it was highlighted before the search.

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

12. Deselect West, leaving only California selected, and click **Add**.

    Essbase displays East and the new selection, California, in the **Rules** list box.

13. Select East in the **Rules** list box and click the right mouse button to view the pop-up menu.

14. Select **All Children** from the pop-up menu.

    Essbase displays All Children next to East in the **Rules** list box.

15. Select East, All Children in the **Rules** list box and click the right mouse button again.

16. Select **Subset** from the pop-up menu.

    Essbase displays the **Subset** dialog box, where you can further define conditions for the selected member.

Note: You can define a maximum of 50 conditions in the **Subset** dialog box.

17. In the **Subset** dialog box, select **User-defined Attribute** from the first list box and select **Major Market** from the second list box.

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

    Essbase displays Attribute of Major Market in the **Conditions** list box. The **Add as AND Condition** button adds the selected subsetting condition to the **Conditions** list box to be evaluated, using AND logic. AND logic means that the selection must meet the current condition *and* the one after it in the **Conditions** list box.
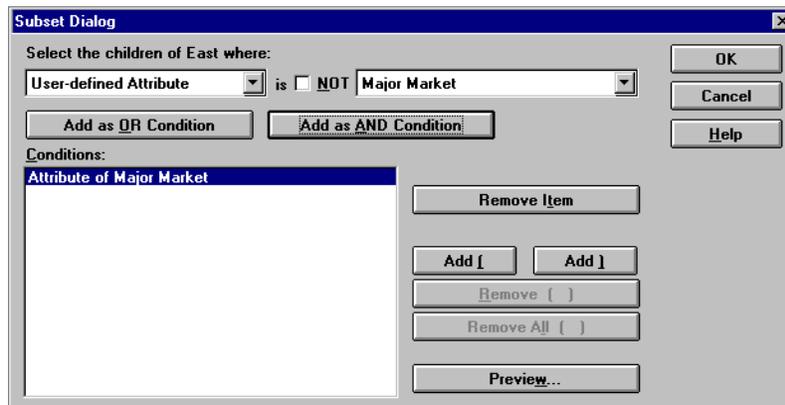
Figure 2–65, Subset Dialog Box Before Adding Conditions

19. Select **Pattern** from the first list box, click the **NOT** check box, and type **New York** in the second list box.

    The **NOT** check box, when checked, tells Essbase to exclude the members that meet the selected condition from the selection.

20. Click **Add as AND Condition**.

Essbase displays NOT Pattern Matching New York in the **Conditions** list box.

21. Select **User-defined Attribute** from the first list box and **Small Market** from the second list box. Clear the **NOT** check box.

22. Click **Add as OR Condition**.

   Essbase displays Attribute of Small Market in the **Conditions** list box.

   The **Add as OR Condition** button adds the selected condition to the **Conditions** list box to be evaluated using OR logic. OR logic means that the selection must meet the current condition *or* the one after it in the **Conditions** list box.

23. Select **Generation Name** from the first list box, click the **NOT** check box, and select **Region** from the second list box.

24. Click **Add as AND Condition.**

   Essbase displays NOT Generation of Region in the **Conditions** list box.

25. Select **Attribute of Major Market** and click the **Add (** button.

26. Select **NOT Pattern Matching New York** and click the **Add)** button.

   The **Add (** and **Add)** buttons add a left parenthesis and right parenthesis to the selected items, respectively. Use parentheses for grouping multiple subsetting conditions together 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, Essbase evaluates (1) members that have the **Major Market** attribute and do not match New York and (2) the results from this condition against members with the **Small Market** attribute.

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 should appear as follows.
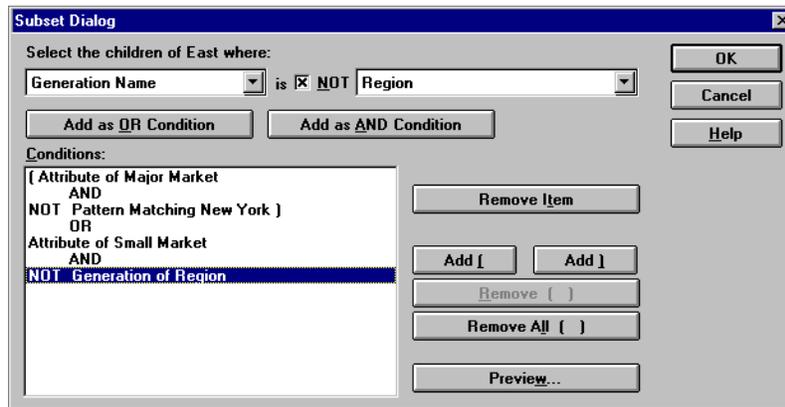
Figure 2–66, Subset Dialog Box After Adding Conditions

27. Click **Preview** to open the **Member Preview** dialog box to view the resulting member selection based on the conditions you have defined.
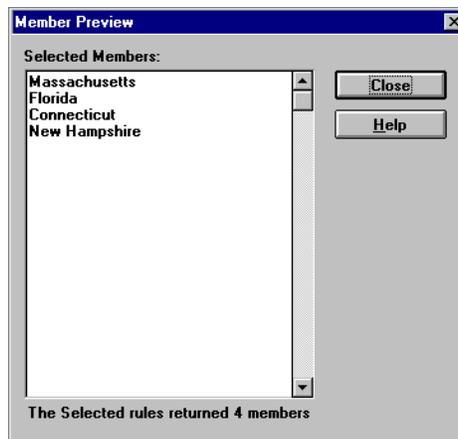
Figure 2–67, Resulting Member Selection from Subsetting Conditions

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

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

    The conditions you set in the **Subset** dialog box appear in the **Rules** list box.

30. Select California and click the **Move Item Up** button once to change the order in which California will appear in the spreadsheet.

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

31. Click **Preview** to preview the members that will be retrieved in the spreadsheet.

    Essbase displays the **Member Preview** dialog box. Click **Close** after previewing the list.
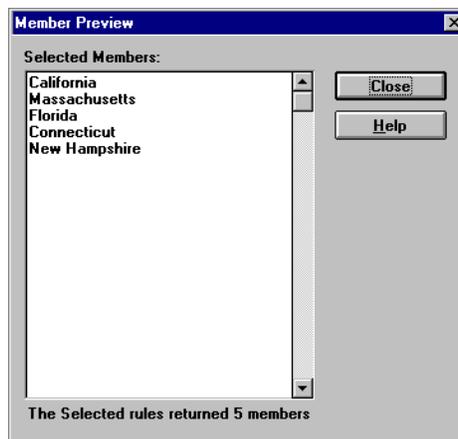
Figure 2–68, Members to be Retrieved in Spreadsheet

The selection should appear as follows:
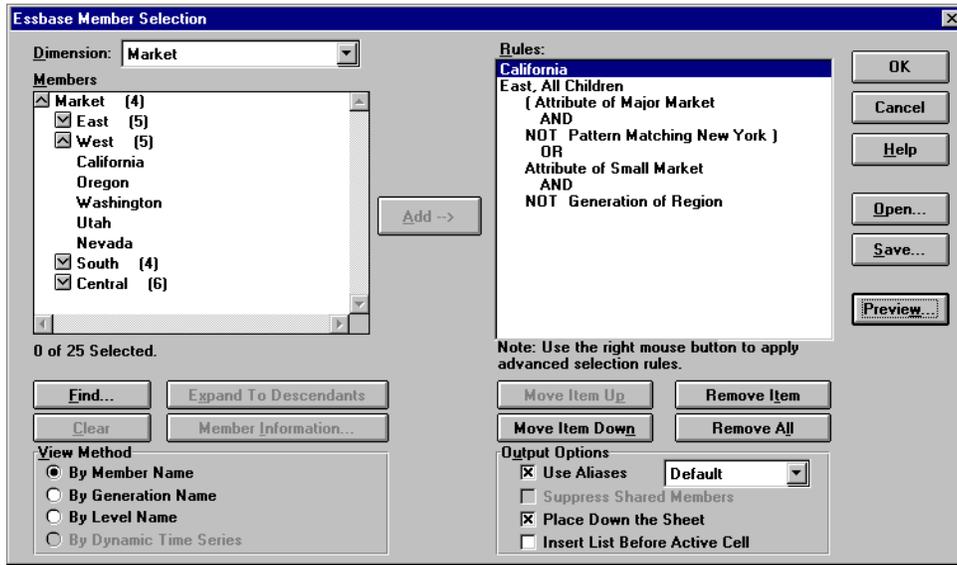
Figure 2–69, Selecting Members Completed

32. Click OK to close the **Essbase Member Selection** dialog box and insert the new members into the spreadsheet.
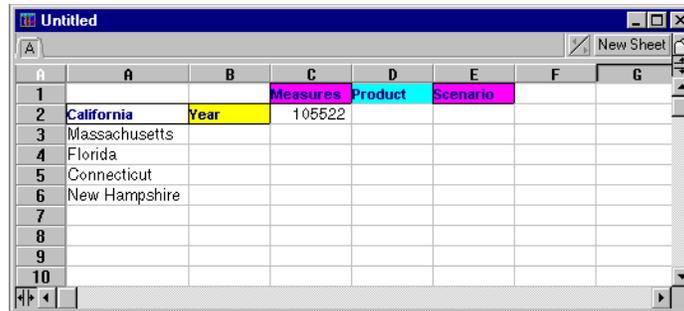
Figure 2–70, Result of Selecting Members

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

33. Type Year next to each state, starting with Massachusetts. You need to do this step so that every state has a matching Year dimension associated with it in the report.

Figure 2–71, Spreadsheet After Adding the Year Dimension to All States

34. Choose Essbase | Retrieve to update the values in the sheet.

Essbase retrieves data for the members you selected and also applies the styles you have previously set.

Figure 2–72, Result After Retrieving with Member Selection

Saving and Disconnecting

After performing basic retrieval, navigation, and formatting tasks, you can save spreadsheets and disconnect from Essbase. This section steps you through both tasks and also provides information on forced logouts from Essbase.

Saving a Spreadsheet

At any point during an Essbase session, you can save the active spreadsheet with the 1-2-3 File | Save or File | Save As command. Saving a sheet enables you to keep a personal library of database views. You can open the sheet during a later session and retrieve the latest data values to update the view.

Note: Saving a sheet saves the settings from the **Essbase Options** dialog box *unless the sheet is protected*. Essbase cannot save option settings for a protected sheet.

Disconnecting from Essbase

When you have finished retrieving and navigating through data, you should disconnect from the Essbase server to free up a port (or user count) on the server for other Spreadsheet Add-in users.

To disconnect from the server:

1.   Choose Essbase | Disconnect.

Essbase displays the **Essbase Disconnect** dialog box, where you can disconnect any sheet that is connected to a database.
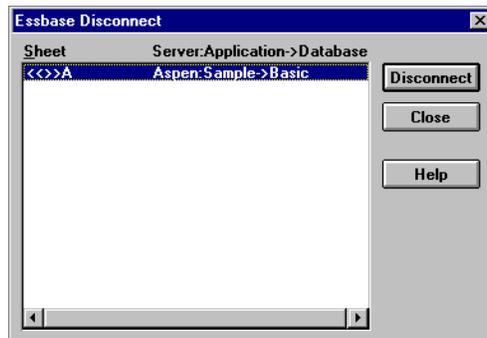
Figure 2–73, Essbase Disconnect Dialog Box

2.   Select a sheet name from the list and click **Disconnect**.

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

Note: You can also disconnect from the server by simply closing 1-2-3. An abnormal termination of a 1-2-3 session, such as a power loss or system failure, does not disconnect your server connection.

Automatic Logouts

Each time you close an individual sheet or a whole workbook, Essbase disconnects you from the server. If you have a workbook with multiple sheets that are connected to the server, closing a sheet disconnects only that sheet. If you close the workbook, Essbase disconnects all sheets. If you attempt to close a sheet or workbook and then cancel, Essbase still disconnects you from the server.

If you connect a sheet and then open or create a new spreadsheet, the new sheet will use the same connection information as the sheet that you already have open.

Forced Logouts

Essbase provides two administrative facilities that control user connections:

- **Forced Logout**, where an administrator disconnects users at any point in time. This usually occurs when maintenance operations are performed on databases.

- **Auto Logout**, where Essbase automatically disconnects users that are inactive after a time interval specified by an administrator.

For further information, contact the Essbase System Administrator.

What's Next

Now that you have completed the basic Essbase tutorial, you are ready to move on to more complex tasks. In the next chapter, you will use the sample 1-2-3 files to see how you can perform advanced Essbase tasks in the Spreadsheet Add-in.

Chapter 3

An Advanced Essbase Tutorial

The tutorial you completed in Chapter 2 was designed to teach you basic data retrieval and navigation concepts for the Hyperion Essbase Spreadsheet Add-in. This chapter builds on those skills and expands your knowledge of Essbase and the Spreadsheet Add-in.

This chapter provides the following sections on advanced tasks:

- Performing Advanced Retrieval Tasks
- Using Linked Reporting Objects
- Connecting to Multiple Databases
- Accessing Linked Partitions
- Updating Data on the Server
- Calculating a Database
- Creating Multiple Sheets from Your Data
- Working with Currency Conversions

In this advanced tutorial, you will use several sample Lotus 1-2-3 files that were installed as part of the default Essbase installation. (These files have `.WK4` file extensions but can be read in 32-bit versions of 1-2-3.) The sample files are stored in the `\ESSBASE\CLIENT\SAMPLE` directory. You will also reconnect to the Sample Basic database.

Before You Begin the Tutorial

Before you begin the advanced tutorial, follow the steps in the next two sections, "Connecting to a Database" and "Setting Essbase Options." In addition, be sure to read "Things to Remember During the Tutorial" and "About the Sample Basic Database" in Chapter 2 for important information about what you should expect as you perform the tutorial tasks.

Connecting to a Database

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

1. Choose Essbase | Connect.

   Essbase displays the **Essbase System Login** dialog box.

Figure 3–1, Essbase System Login Dialog Box

Note: To complete the steps that follow, you need to know the name of the Essbase server, your user name, and your password. If you do not have this information, contact the Essbase System Administrator.

2. Choose the server you want to access from the **Server** list box. (If server names do not appear in the list, you can type in the name of the server you want to access.)

3. Press Tab to move to the **Username** text box and type your user name in the **Username** text box.

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

Note: You can change your password when you are connected to a server. See "Changing Your Password" in Chapter 2 for instructions.

5. Click OK to connect to the server.

    Essbase displays a list of available Application/Database pairs in the list box.
    An Essbase server allows simultaneous access to multiple applications. An
    application can contain multiple databases. Only the databases to which you
    have security access appear in the list.

    For this tutorial, you will use the Sample Basic database. If the Sample Basic
    database was installed as part of the Essbase installation, it is shown in the list.
    If Sample Basic is not shown in the **Application/Database** list, ask the Essbase
    System Administrator to install it.
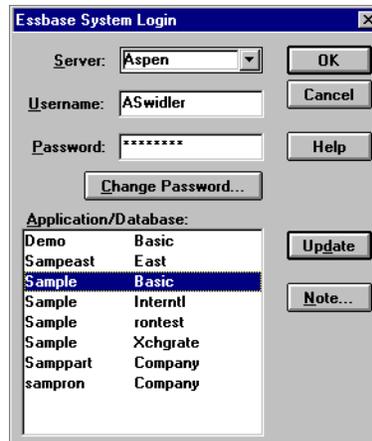
Figure 3–2, Available Application and Database Pairs

6. Double-click Sample Basic in the **Application/Database** list. You can also select
    Sample Basic from the list and click OK.

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

Note: Even if you are already connected to a database, Essbase may prompt you to
           reconnect to a database on the server when you open new spreadsheets or files. This
           allows you to connect to different databases when you are working with multiple
           sheets in a 1-2-3 session.

Setting Essbase Options

Before you begin the tutorial, make sure that the spreadsheet options are set to the initial settings as illustrated in the following figures.

Note: For information on each option in the **Essbase Options** dialog box, see the Spreadsheet Add-in Online Help.

1.   Choose Essbase | Options.

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

3.   Click the appropriate check boxes and option buttons so that your display matches the following illustration:

Figure 3–3, Initial Settings for Display Options

4. Select the **Zoom** tab.

5. Click the appropriate check boxes and option buttons so that your display matches the following illustration:
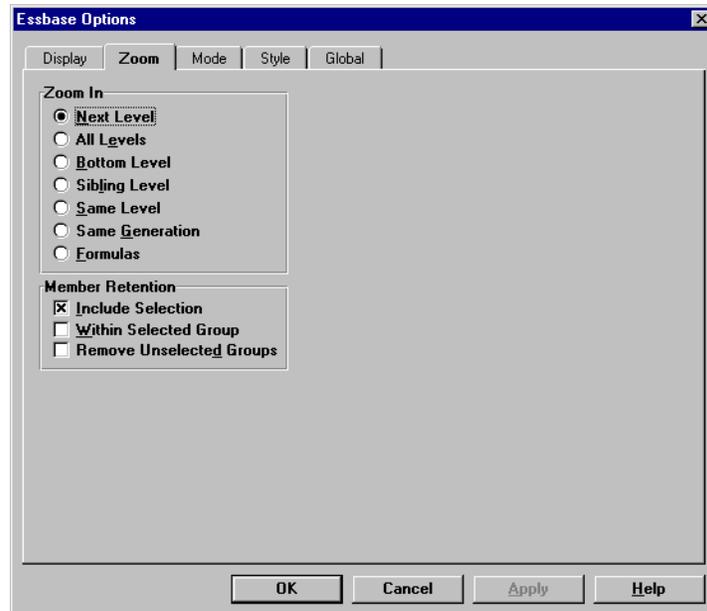
Figure 3–4, Initial Settings for Zoom Options

6. Select the **Mode** tab.

7. Click the appropriate check boxes and option buttons so that your display matches the following illustration:
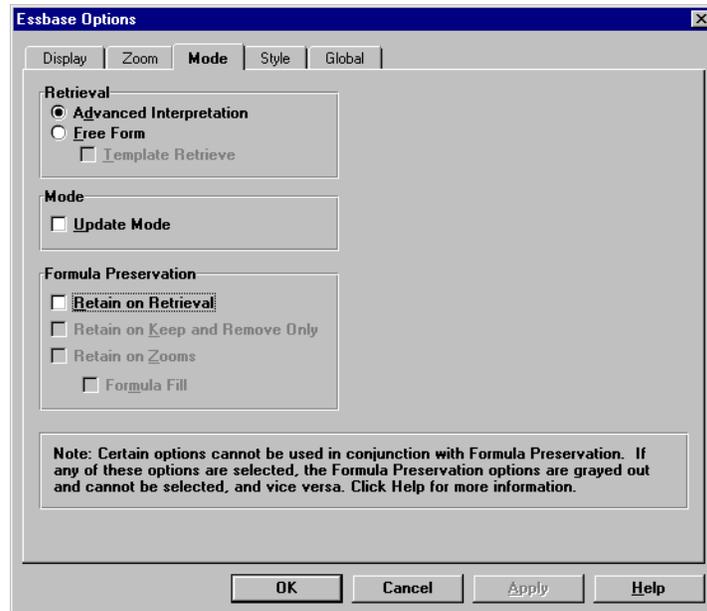
Figure 3–5, Initial Settings for Mode Options

8. Skip the **Style** tab.

9. Select the **Global** tab.

10. Click the appropriate check boxes and option buttons so that your display matches the following illustration:
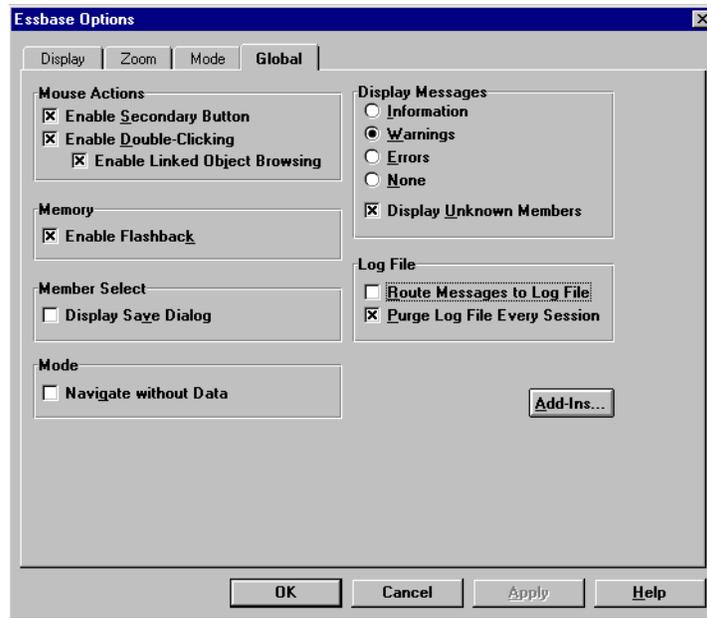
Figure 3–6, Initial Settings for Global Options

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

Note: The settings in the **Essbase Options** dialog box apply to all 1-2-3 spreadsheets. You cannot save the Essbase Options settings on a per sheet basis. For this tutorial, leave these 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 your spreadsheet view.

Performing Advanced Retrieval Tasks

The tutorial in Chapter 2 described how to perform basic data retrieval and navigation tasks in the Spreadsheet Add-in. This section walks you through performing the following *advanced* retrieval tasks:

- Defining Data Filtering and Sorting Criteria

- Retrieving Data into Asymmetric Reports

- Working with Formatted Sheets

- Preserving Formulas when Retrieving Data

- Retrieving a Range of Data

- Retrieving Data Using a Function

- Retrieving Dynamic Calculation Members

- Specifying Latest Time Period for Dynamic Time Series

- Using Free-Form Reporting to Retrieve Data

Remember that you can perform common data retrieval tasks by:

- Selecting commands from the Essbase menu on the 1-2-3 menu bar

- Double-clicking the primary or secondary mouse button in the appropriate cell (for Retrieve, Zoom In, and Zoom Out commands)

Defining Data Filtering and Sorting Criteria

Despite the ease and speed with which Essbase lets you navigate into large databases, it is not practical to use 1-2-3's capabilities to filter and sort very large databases. The Hyperion Essbase OLAP Server includes powerful data filtering and sorting capabilities that you can take advantage of. In Chapter 2, you learned how to use the Retrieval Wizard to define a dimensional layout and select members to view. The Retrieval Wizard also provides a powerful yet easy-to-use facility to define conditional retrievals.

To become familiar with these capabilities, perform the following steps. Work with the query, Basic1, that you saved in Chapter 2.

Note: If you skipped the tutorial in Chapter 2, go back and follow the steps in "Using the Retrieval Wizard" to create and save the Basic1 query.

1.   Choose Essbase | Retrieval Wizard.

Essbase displays Step 1 of the Data Retrieval Wizard.

2.   Click **Open an existing query**, then click **Open**.

Essbase displays the **Open Query** dialog box.

3.   Select the Basic1 file from the location that you specified in Chapter 2, and click OK.

4.   Click **Next** to continue to Step 2 of the Retrieval Wizard.

5. The member selection remains unaltered from the last Retrieval Wizard session, so click **Next** again to continue to Step 3 of the Retrieval Wizard.

   Essbase displays Step 3 of the Retrieval Wizard. The filter controls the number of data rows that are retrieved based on any column criteria you define. You can define data filtering criteria on data values that reside in one or more columns of the view.
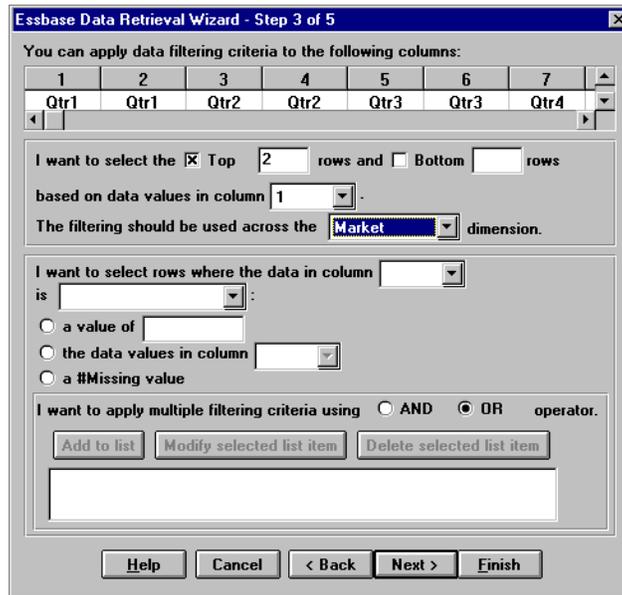
Figure 3–7, Retrieval Wizard–Step 3

Step 3 of the Retrieval Wizard contains the following items:

- A grid to show all the data columns that will be retrieved, based on Column member selections in Step 2.

- A group that enables you to define **Top** or **Bottom** filtering criteria. You can select the highest or lowest rows based on the Row dimension members selected from Step 2. When using the top or bottom criteria, you specify the number of rows, such as "top 10." You also need to define the data column for which the criteria are based. Further, if you have more than one dimension defined, you can specify which dimension the criteria apply to.

- A group that enables you to specify standard data comparison operations, such as **Greater than**, **Less than**, and **Equal to**. You can apply the comparison operator to data values in one or more data columns; you can even apply criteria to compare values between two columns.

- If you define more than one column criteria, you can link the criteria with an **OR** or **AND** operator.

6. Click the **Top** check box, and enter a value of 2 in the **rows** text box.

7. Select **1** from the **column** list box (Qtr1, Actual) as the column on which data values are based.

8. Select Market as the dimension that filtering should be applied to.

   Your screen should look like Figure 3–7. These settings will select the top two markets for each product, based on the data in column 1.

9. Click **Next**.

   Essbase displays Step 4 of the Retrieval Wizard. You can specify data sorting criteria, which affect the order in which the selected rows, from a combination of Steps 2 and 3, are retrieved.

Step 4 of the Retrieval Wizard contains the following items:

- A grid to show all the data columns that will be retrieved, based on Column member selections in the Wizard's Step 2.

- A group that enables you to select one or more data columns to sort. For the selected column, you can apply an ascending or descending sort order. You can also specify sorting to occur over a specific Row dimension group. For example, sorting by Product within each Market, or sorting across all Products and Markets. This option is unavailable if you have defined a top or bottom filtering criteria in the Wizard's Step 3.

10. Select column 1 as the column on which data values will be based.

11. Click **Ascending order** and click **Add to list** to add the sort criteria.

Essbase adds the sorting criteria to the list box.
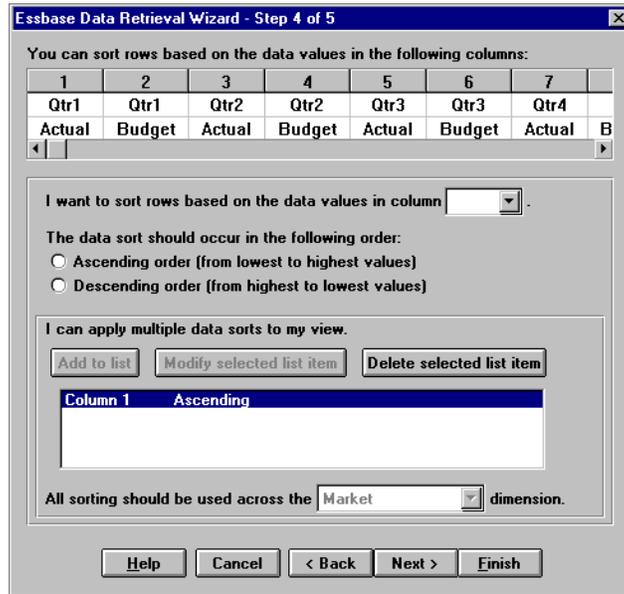
Figure 3–8, Retrieval Wizard–Step 4

12. Click **Next**.

Essbase displays Step 5 of the Retrieval Wizard.
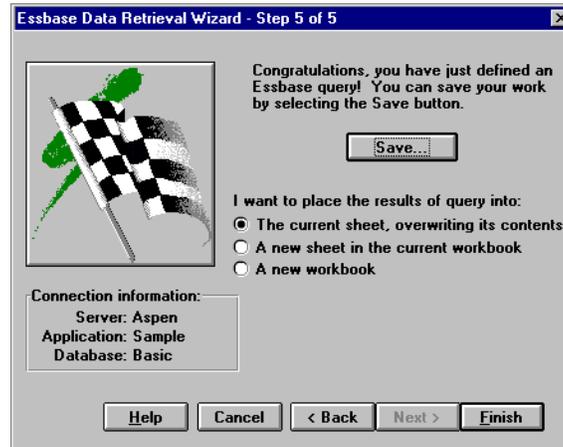
Figure 3–9, Retrieval Wizard–Step 5

13. Click **Finish** and respond **Yes** to save the query.

14. Make sure **The current sheet overwriting its contents** is selected and click **Save.** Save the query again as `Basic1`.

15. Click **Finish** to display the results of the query.

Essbase returns two markets for each product. Within each product group, the top two markets are sorted in ascending order, based on the data values in column 1.

Figure 3–10, Result of Filtering and Sorting Data

16. Choose File | Close to close the spreadsheet. You do not need to save the sheet.

Note: For complete information on the Retrieval Wizard, see the Spreadsheet Add-in Online Help.

Retrieving Data into Asymmetric Reports

When you retrieve data into a spreadsheet, the resulting report can be either *symmetric* or *asymmetric*. Symmetric reports are characterized by repeating, identical groups of members. For example, Figure 3–10 above shows a symmetric report that contains Actual and Budget members nested below each Year member (Qtr1, Qtr2, Qtr3, and Qtr4).

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

Asymmetric reports are typically created in one of the following ways:

- Entering member names into the sheet in Free-Form retrieval mode

- Using a zoom action with the **Within Selected Group** option selected from the **Essbase Options** dialog box (**Zoom** page)

- Suppressing rows that contain missing values, zero values, or underscore characters during data retrievals

If you retrieve data into an asymmetric report, Essbase must perform more 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 *Database Administrator's Guide*.

Essbase provides a sample file, ASYMM.WK4, that illustrates these concepts as part of the default Essbase installation. To view the sample file, ASYMM.WK4:

1. Choose File | Open.

2. Open the ASYMM.WK4 file from the \ESSBASE\CLIENT\SAMPLE directory.

    Depending on how software is installed on your PC, this file may not be available or may be located in a different directory. Contact the Essbase System Administrator for more information.

	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							
12							

Figure 3–11, Asymmetric Report

In ASYMM.WK4, row and column dimension groups are asymmetric, which means that the nested member groups from the Product dimension differ in their 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. Choose Essbase | Connect and connect to the Sample Basic database.

4. Choose Essbase | Options and select the **Display** tab.

5. Click the **Use Aliases** check box so that your options match the sample file, and click OK.

6. Leave the ASYMM.WK4 file open for the next tutorial task.

Pivoting in Asymmetric Reports

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

To illustrate this point, use the ASYMM.WK4 file that you have open:

1. Using the secondary mouse button, drag East (cell A5) to the cell below Qtr1 (cell C5).

	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
10									
11									
12									

Figure 3–12, Result of Pivoting in an Asymmetric Report

Essbase combines the Product members into all unique members. For example, Root Beer, which is shown twice in Figure 3–11, is shown only once in the current view. Colas, which was shown in only one market in Figure 3–12, is now shown in East and West.

Essbase also removes the blank line between Product row groups. A pivot action always eliminates a row or column in which all cells are empty.

2. Close ASYMM.WK4 without saving the changes.

Working with Formatted Sheets

In addition to providing flexible, ad hoc retrievals, Essbase supports retrieving data into formatted sheets. A sheet 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 sheet

- Lotus 1-2-3 formulas (see also "Preserving Formulas when Retrieving Data" later in this chapter)

- Visual cues (Styles)

Once you have formatted and saved a sheet, you may want to retrieve and navigate through new data in the existing sheet format. This section provides the following information on working with formatted sheets:

- Rules for Working with Formatted Sheets

- Retrieving Data into Formatted Sheets

- Pivoting Data on Formatted Sheets

Rules for Working with Formatted Sheets

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

Rule 1:   The sheet cannot contain any numeric cells before the first Essbase data cell. For example, in Figure 3–13, the first Essbase data cell is B6. No cell in rows 1 through 5 or cell A6 can contain numeric values, nor can they contain formulas that resolve to numeric values.

Rule 2:   A cell that lies within a row or column of Essbase data cannot contain text or numeric values. For example, in Figure 3–13, the cells in columns B, C, D, and F and rows 6 through 9 and 11 through 14 cannot contain any text or numbers, or they 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" in this chapter.

Tip: If you need to preserve text in a cell, define that text or value as a 1-2-3 formula, and use the **Formula Preservation** options.

Rule 3:   The Pivot command is not available when the **Retain on Retrieval** check box is checked in the **Essbase Options** dialog box (**Mode** page).

Rule 4:   The Pivot command removes all cells that contain text other than database member names.

Retrieving Data into Formatted Sheets

Essbase provides a sample file, P&L.WK4, that illustrates these concepts as part of the default Essbase installation. The P&L.WK4 sample file illustrates how to retrieve data into a sheet that contains formatted text, formulas, and protected cells.

To view the P&L.WK4 sheet:

1. Choose File | Open.

2. Open the P&L.WK4 file from the \ESSBASE\CLIENT\SAMPLE directory.

   Depending on how software is installed on your machine, this file may not be available or may be located in a different directory. Contact the Essbase System Administrator for more information.
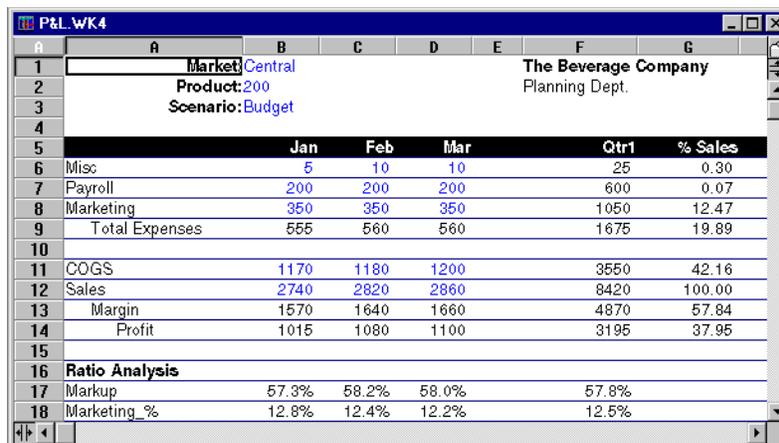
	A	B	C	D	E	F	G
1	Market:Central					The Beverage Company	
2	Product:200					Planning Dept.	
3	Scenario:Budget						
4							
5		Jan	Feb	Mar		Qtr1	% Sales
6	Misc	5	10	10		25	0.30
7	Payroll	200	200	200		600	0.07
8	Marketing	350	350	350		1050	12.47
9	Total Expenses	555	560	560		1675	19.89
10							
11	COGS	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%	

Figure 3–13, A Sample Formatted Sheet

3. Choose Essbase | Connect and connect to the Sample Basic database.

4. Choose Essbase | Options and select the **Display** tab.

5. In the **Cells** option group, make sure that **Adjust Columns** is checked.

6. In the **Aliases** option group, clear the **Use Aliases** check box.

7. Select the **Mode** tab.

8. In the **Formula Preservation** option group, click the **Retain on Retrieval** check box to enable Formula Preservation mode.

Note: When **Retain on Retrieval** is enabled, Essbase must examine each cell before inserting data. This may cause a slight delay in retrieval time.

9. Click OK.

By default, an Essbase retrieval overwrites 1-2-3 formulas in the retrieval area of a sheet with data values. The retrieval process also eliminates formulas in cells outside the retrieval area. However, with the **Retain on Retrieval** option, you can define retrievals that do not overwrite formulas in any area of the sheet.

10. Choose Essbase | Retrieve to update the sheet with the latest data values.

Essbase determines that some text cells in the sheet do not correspond to database member names. When Essbase is unable to resolve text in the sheet, the following message is returned:
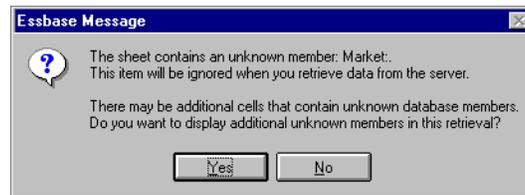
Figure 3–14, Essbase Unknown Member Message

In this example, the first unknown member detected is Market: in cell A1. Essbase doesn't recognize the colon (:) that follows Market in the cell. If you click **Yes**, Essbase displays the next unknown member; if you click **No**, Essbase continues with the retrieval.

Note: If you work with formatted sheets often, you may want to tell Essbase not to display this message. For more information, see "Pivoting Data on Formatted Sheets."

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

Essbase retrieves new data but retains the formatting and formulas in the spreadsheet.

Figure 3–15, Result of Retrieving into a Formatted Report

12. Close P&L.WK4 without saving it.

Note: This chapter's section on "Preserving Formulas when Retrieving Data" provides additional tutorial tasks that show you how to take advantage of all the **Formula Preservation** options.

Pivoting Data on Formatted Sheets

With the Pivot command, you can produce ad hoc reports in both formatted and unformatted sheets. However, a formatted sheet 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 sheet. The sheet also retains labels in areas that are not overwritten by pivoted data.

Note: Essbase prevents pivot operations on sheets that contain formulas when **Formula Preservation** mode is active.

INV.WK4, a sample file installed as part of the default Essbase installation, illustrates these concepts. You must disable the **Retain on Retrieval** option to execute a pivot.

To view the `INV.WK4` sheet:

1. Choose File | Open.

2. Open the `INV.WK4` file from the `\ESSBASE\CLIENT\SAMPLE` directory.

   Depending on how software is installed on your PC, this file may not be
   available or may be located in a different directory. Contact the Essbase System
   Administrator for more information.

Figure 3–16, Formatted Sheet before Pivoting

3. Choose Essbase | Connect and connect to the Sample Basic database.

4. Choose Essbase | Options and select the **Mode** tab.

5. In the **Formula Preservation** option group, clear the **Retain on Retrieval** check
   box.

6.   Select the **Global** tab.

7.   In the **Display Messages** option group, clear the **Display Unknown Members** check box to avoid seeing the Essbase message when working with formatted sheets.

8.   Using the secondary mouse button, drag Sales (in cell A5) to the cell nested below Jan (C4).

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

	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			=====	=====	=====		

Figure 3–17, Result of Pivoting on a Formatted Sheet

9.   Close INV.WK4 without saving it.

Preserving Formulas when Retrieving Data

In "Retrieving Data into Formatted Sheets" previously in this chapter, you used the **Retain on Retrieval** option to preserve formatting and formulas in an existing spreadsheet. Collectively, the **Formula Preservation** options enable you to retain formulas during data retrievals, Keep and Remove Only operations, and Zoom operations. In addition, Essbase can replicate formulas for additional members retrieved into the sheet as part of a Zoom operation. This section steps you through using all of the **Formula Preservation** options in a report that you create.

You must enable some options to enable other options. Keep in mind the following guidelines and restrictions when using the **Formula Preservation** options:

- On the **Mode** page 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 enable **Retain on Retrieval**, the **Suppress #Missing Rows** and **Zero Rows** options on the **Display** page are disabled. Conversely, if you have either of these **Display** options selected, the **Formula Preservation** options are disabled.

- When you enable **Retain on Zooms**, the **Remove Unselected Groups** option on the **Zoom** page is disabled, and vice versa.

- When **Retain on Retrieval** is enabled, there may be a slight delay in retrieval time.

- As a general rule, always insert a blank row as the last row in the formula range to ensure that the cell range in the formula expands properly when you zoom in on members with **Retain on Zooms** enabled. For more information, see the Spreadsheet Add-in Online Help.

- Formula arrays are not supported in the Essbase Spreadsheet Add-in with the preserve formula option on. If you have formula arrays in the spreadsheet, Essbase will not preserve these types of formulas.

To preserve formulas when retrieving or retaining data:

1. Open a new spreadsheet and connect to the Sample Basic database.

Note: For instructions on connecting to Sample Basic, see "Connecting to a Database" earlier in this chapter.

2. Choose Essbase | Retrieve.

3. Zoom in (double-click) on Year in cell A2.

4. Press and hold the Alt key and zoom in (double-click) on Scenario in cell E1.

5. Select cell G3 and enter the following formula in the cell:

   =B3/B7*100

	A	B	C	D	E	F	G
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	
8							
9							
10							

Figure 3–18, Entering a Lotus 1-2-3 Formula into a Cell

6.   Press Enter.

1-2-3 calculates the formula you entered in cell G3 and now reflects Qtr1 as a percentage of Year.

Figure 3–19, Result of Lotus 1-2-3 Formula with Essbase Data

7.   Choose Essbase | Options and select the **Mode** tab.

8.   In the **Formula Preservation** option group, click the boxes for **Retain on Retrieval** and **Retain on Keep and Remove Only,** and click OK.

9.   Select Variance, %Variance, and Scenario in cells D2, E2, and F2, respectively.

10. Choose Essbase | Remove Only.

Essbase removes the selected columns but retains the 1-2-3 formula you entered, keeping it with the retained dataset.

Figure 3–20, Result of Removing Columns with Retain on Keep or Remove Only Enabled

11. Choose Essbase | Options and select the **Mode** tab.

12. In the **Formula Preservation** option group, click the box for **Retain on Zooms** and click OK.

13. Zoom in (double-click) on Qtr1 in cell A3.

     Essbase zooms in on Qtr1 and moves the formula you entered down with the Qtr1 member.

	A	B	C	D	E	F
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						
12						

Figure 3–21, Result of Zooming with Retain on Zooms Enabled

14. Choose Essbase | FlashBack.

15. Choose Essbase | Options and select the **Mode** tab.

16. In the **Formula Preservation** option group, click the **Formula Fill** check box and click OK.

17. Zoom in (double-click) on Qtr1 in cell A3.

Essbase zooms in on Qtr1 and fills in, or replicates, a corresponding 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 1-2-3 formula bar.

Figure 3–22, Result of Zooming In with Formula Fill Enabled

Before moving on with the tutorial:

1. Choose Essbase | Options and select the **Mode** tab.

2. Clear all of the **Formula Preservation** options.

3. Choose File | Close to close the spreadsheet. You do not need to save the sheet.

Retrieving a Range of Data

In a typical 1-2-3 spreadsheet, you can select a range of cells by pressing the primary mouse button and dragging the mouse across the sheet. You can also select a range of cells and then tell Essbase to restrict the data retrieval to the selected range in the sheet. Retrieving a range of data is particularly useful when:

• A sheet contains multiple reports

• A sheet 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, which dramatically decreases retrieval time for large datasets

- You need to retrieve data to an area of the sheet other than the first column

Essbase provides a sample file, `PROFIT.WK4`, that illustrates these concepts as part of the default Essbase installation.

To view the `PROFIT.WK4` file:

1. Choose File | Open.

2. Open the `PROFIT.WK4` file from the `\ESSBASE\CLIENT\SAMPLE` directory.

    Depending on how software is installed on your PC, this file may not be available or may be located in a different directory. Contact the Essbase System Administrator for more information.

    `PROFIT.WK4` has two cell ranges outlined for you.

3. Choose Essbase | Connect and connect to the Sample Basic database.

4. Select cells B2 through F9 as shown in the following illustration.

Figure 3–23, Selecting a Range of Cells for Retrieval

5.   Choose Essbase | Retrieve to update the selected range.

Figure 3–24, Result of Retrieving First Range of Data

Essbase updates only the data in the selected range of cells. Now, choose another range to update.

6.   Select cells B12 through G16.

Figure 3–25, Selecting Cells for Retrieval

7.   Choose Essbase | Retrieve once again to update the selected range.

Essbase updates the data in the selected range.

Figure 3–26, Result of Retrieving Second Range of Data

8.   Close PROFIT.WK4 without saving it.

Retrieving Data Using a Function

The Essbase cell retrieve function, *EssCell*, retrieves a single database value into a spreadsheet cell. You can enter an EssCell function directly into a sheet.

Note: You must be connected to a database to use EssCell.

EssCell retrieves data when you run the macro from 1-2-3. Essbase provides a sample file, SUMMARY.WK4, that illustrates these concepts as part of the default Essbase installation. This file has EssCell functions already defined for Year Sales and Year Margin % (cells B16 and B17).

To view the SUMMARY.WK4 file:

1.   Choose File | Open.

2.   Open the SUMMARY.WK4 file from the \ESSBASE\CLIENT\SAMPLE directory.

     Depending on how software is installed on your PC, this file may not be
     available or may be located in a different directory. Contact the Essbase System
     Administrator for more information.

Figure 3–27, Sheet Containing EssCell Functions

Cells B19 and B20 in SUMMARY.WK4 contain the EssCell function; the syntax for this
function tells Essbase to place the results in cells B16 and B17, respectively. If you
select cell B16 or B17, you can view the syntax for the EssCell function in the 1-2-3
formula bar at the top of the sheet.

The EssCell function is defined in a cell as follows:

{LET *CellRef*,@EssCell(*Membernames*)}

Where:

- *CellRef* is a reference that points to the cell where Essbase should return the database value.

- *Membernames* is a comma-delimited list of member names or NULL. Member names and NULL must be enclosed in double quotes. You can include aliases in the member list. You must specify all 15 members or use NULL, even when there are fewer than 15 dimensions in the outline. No more than 15 members can be specified in this list.

  For example:

  {LET H38,@EssCell("Year","100-10","NULL","NULL","NULL","NULL",
  "NULL","NULL","NULL","NULL","NULL","NULL","NULL","NULL","NULL")}

Note: For more information on the LET command, see the 1-2-3 documentation.

When you open the sheet, cells B16 and B17 are blank. To update these values with the data in the database, you must run the EssCell functions that are entered in cells B19 and B20 from 1-2-3.

3. Choose Essbase | Connect and connect to the Sample Basic database.

4. Choose Essbase | Options and select the **Mode** tab.

5. Click the **Retain on Retrieval** check box and click OK.

6. Select cell B19 and choose Edit | Scripts & Macros | Run from the 1-2-3 menu bar.

7. Select **Macro** and click **Run** to run the EssCell function.

Essbase retrieves the database value into the specified cells. Essbase returns an error message if EssCell is unsuccessful.

Figure 3–28, Retrieval on a Sheet Containing the EssCell Function

8. Close SUMMARY.WK4 without saving it.

The sample file you used for this tutorial task already had EssCell functions defined. To enter your own EssCell function into a spreadsheet, you would:

➤   Enter the EssCell syntax in the appropriate cell in the sheet.

Note: For more information on the EssCell function, 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 Essbase Application Designer tags Dynamic Calculation members in the database outline so that Essbase 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 the Essbase server in the following ways:

- Reduced disk usage

- Reduced database restructuring time

- Reduced time to back up the database

Database values that Essbase calculates dynamically take slightly longer to retrieve in the Spreadsheet Add-in because Essbase must perform calculations *before* retrieving data into the spreadsheet. For more information on Dynamic Calculation, see the *Database Administrator's Guide*.

Tip: Enable the Navigate Without Data feature while you arrange the spreadsheet report so that Essbase does not dynamically calculate the database when you are creating the report. For more information on the Navigate Without Data feature, see "Navigating Through the Spreadsheet Without Retrieving Data" in Chapter 2.

Since there may be a performance impact on retrieving data for Dynamic Calculation members, you may want to define visual cues, or styles, for these members so that you can identify them in the Spreadsheet Add-in.

To illustrate these concepts, use the ASYMM.WK4 file. To view this file:

1. Choose File | Open.

2. Open the ASYMM.WK4 file from the \ESSBASE\CLIENT\SAMPLE directory.

3. Choose Essbase | Connect and connect to the Sample Basic database.

4. Zoom out on Actual by double-clicking the secondary mouse button in cell C3.

5. Zoom in on Scenario in cell C3 to display all members for this dimension.

    Essbase displays all of the Scenario members for Qtr1 only.

Figure 3–30, Displaying Scenario Members

6. Choose Essbase | Options and select the **Style** tab.

7. Scroll down in the **Members** list until you see **Dynamic Calculations**.

8. Click the **Dynamic Calculations** check box and click the **Format** button.

9. In the **Font** style list box, select **Bold Italic**.

10. In the **Color** list box, select **Gray**.

11. Click OK and then select the **Display** tab.

12. In the **Cells** option group, click **Use Styles** and click OK.

13. Choose Essbase | Retrieve.

Essbase displays the data and applies all the visual cues, or styles, you have set, including the newly set style for Dynamic Calculation members and the styles you set in Chapter 2. In this example, the columns for Variance and Variance% were dynamically calculated. You can tell because Essbase displays these members in gray, bold, italicized font. (They also have a red background because of the style that was previously set for all members of the Scenario dimension.)

Figure 3–31, Result of Retrieving Dynamic Calculation Members

Note: Occasionally, other styles you have set may override a style for Dynamic Calculation members. For example, if a parent member is also a Dynamic Calculation member, and if you have styles set for both, the style for the parent member overrides the style for the Dynamic Calculation member. In this case, you would need to remove the style for parent members to see the style for Dynamic Calculation members. For more information on the precedence of styles, see "Determining the Precedence of Overlapping Styles" in Chapter 2.

14. Close ASYMM.WK4 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 do not appear 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 for Generation 2 in the Year dimension was created that contains the members for Qtr1, Qtr2, Qtr3, and Qtr4. When the generation name Quarter was created, Essbase created a Dynamic Time Series member called Q-T-D, or quarter-to-date.

To take advantage of Dynamic Time Series in the Spreadsheet Add-in, you can 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. Open a new spreadsheet and connect to the Sample Basic database.

Note: For instructions on connecting to Sample Basic, see "Connecting to a Database" earlier in this chapter.

2. Choose Essbase | Retrieve.

3. Zoom in (double-click) on Measures in cell B1.

4. Click Year in cell B2.

5. Type Q-T-D in cell B2 and press Enter to enter a predefined Dynamic Time Series member (Q-T-D):

Figure 3–32, Entering a Dynamic Time Series Member into a Spreadsheet

Note: For a list of other possible Dynamic Time Series members, see the Spreadsheet Add-in Online Help.

6. Choose Essbase | Options and select the **Display** tab.

7. In the **Dynamic Time Series** area, click the box for **Latest Time Period**.

8. From the list box, select **May** and click OK.
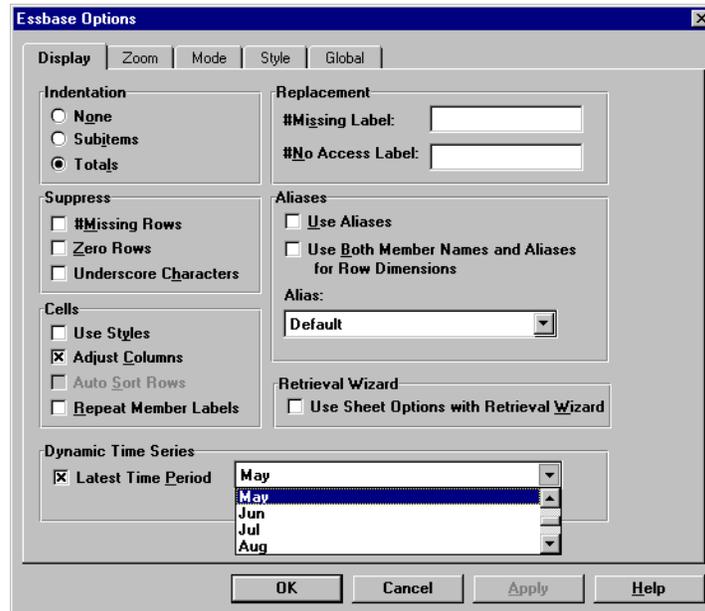
Figure 3–33, Specifying Latest Time Period in a Dynamic Time Series

Note: If you do not specify a latest time period, Essbase uses the first Level 0 member (Jan) as the default.

9. Choose Essbase | Retrieve.

Note: The Retrieve & Lock, Zoom In, and Zoom Out commands are unavailable for use with Dynamic Time Series members.

Essbase displays data for the Q-T-D member. The data values in the spreadsheet are the aggregated values for April and May, because May is the month you specified as the latest month in the quarter-to-date Dynamic Time Series.

Figure 3–34, Result of Specifying Latest Time Period in a Dynamic Time Series

10. Choose File | Close to close the spreadsheet. You do not need to save the sheet.

Note: You can also create a report like the one shown above by simply typing the Dynamic Time Series member followed by the latest time period in parentheses: for example, Q-T-D(May). If you do this in Free-Form retrieval mode, you must enter the Dynamic Time Series member and the latest time period in separate, adjacent cells. You can also select a Dynamic Time Series member and a latest time period through the Retrieval Wizard or Member Selection.

For more information on Dynamic Time Series, see the Spreadsheet Add-in Online Help.

Using Substitution Variables

The Essbase Application Designer uses substitution variables to define global variables to represent Essbase-specific values. For example, Latest can be a substitution variable representing the latest time period in a Dynamic Time Series. Using the Hyperion Essbase Application Manager, the Application Designer sets substitution variables and their corresponding values for a specific application. Essbase stores these variables and their values on the Essbase server. You can take advantage of the predefined substitution variables in the Spreadsheet Add-in during Dynamic Time Series reporting.

For example, say the Application Designer has set a substitution variable on the server for the current month. The variable is called CurMnth and has a value of August. This means that if you use this substitution variable in the spreadsheet, a retrieval returns values for August, since August was set as the current month on the server. If, at a later date, the Application Designer changed the value of the CurMnth substitution variable to October, a retrieval would return data for October.

The Sample Basic database you are using for this tutorial does not contain predefined substitution variables. If the Application Designer had set a substitution variable in the database you were using, you could enter a substitution variable directly into a spreadsheet.

For example, you could:

1.   Open a blank spreadsheet and type member names as follows:

Figure 3–35, Entering a Substitution Variable in a Spreadsheet

Note: 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 following results:

Figure 3–36, Result of Retrieval on a Substitution Variable

Essbase queries the server for the value of the substitution variable CurMnth, which is August. Data is returned for August only.

Note: If you save a spreadsheet containing a substitution variable as a template, make sure that you save the sheet *before* you retrieve data. For example, if you saved the sheet shown in Figure 3–36 as a template, each time you retrieved the template, August would be shown rather than the substitution variable CurMnth.

Using Free-Form Reporting to Retrieve Data

So far, you have learned how to retrieve Essbase data into a spreadsheet through ad hoc retrieval, Retrieval Wizard queries, and Member Selection operations. In addition to these retrieval methods, Essbase supports *free-form reporting*. With free-form reporting, you can tell Essbase specifically what you want to retrieve by simply typing data into the spreadsheet. Free-form reporting is especially useful when you are familiar with the dimensions and members in the database outline.

Essbase provides two different retrieval modes for free-form reporting:

- Advanced Interpretation retrieval mode

- Free-Form retrieval mode

In both retrieval modes, you can enter member names directly into the spreadsheet. The following sections describe the similarities and differences between these two modes.

Using Advanced Interpretation Mode

The Essbase server contains an advanced spreadsheet interpretation engine that scans a sheet and interprets its content when fulfilling retrieval requests. When you construct a report by entering names directly into a sheet in Advanced Interpretation retrieval mode, Essbase interprets the member names and creates a default view 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 quote. For example, for Product dimension member 100, type '100 in the sheet.

- 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. Essbase overwrites this value with the contents of the corresponding 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. Open a new spreadsheet and connect to the Sample Basic database.

Note: For instructions on connecting to Sample Basic, see "Connecting to a Database" earlier in this chapter.

2. Choose Essbase | Options and select the **Display** tab.

3. In the **Cells** option group, clear the **Use Styles** check box and select the **Mode** tab.

4. In the **Retrieval** option group, select **Advanced Interpretation** (the default setting) and click OK.

5. Enter member names and data as in the following illustration.

Note: If a member name consists of a number, such as 100, you must precede the member name with a single quote (for example, '100). This also applies to member names with spaces between words.

Figure 3–37, Creating a New Free-Form Report

6.   Choose Essbase | Retrieve or double-click in a data cell.

Essbase retrieves data for the members you entered into the free-form report.

Figure 3–38, Retrieving Data into a Free-Form Report

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 Essbase data cell to tell Essbase where the data starts in the sheet. Be sure to use a numeric value as the dummy value.

For example:

1.   Choose Essbase | FlashBack.

2.   Delete cells A1, B1, and C1.

3.   Type 0 in cell B4 to provide Essbase with a data cell reference point.

Figure 3–39, Defining a Free-Form Report Without All Dimensions

4.   Choose Essbase | Retrieve.

Essbase adds the dimensions that were omitted from the free-form report to the spreadsheet and retrieves data.

Figure 3–40, Retrieval in a Free-Form Report Without all Dimensions

5.   Choose File | Close to close the spreadsheet. You do not need to save the sheet.

Using Free-Form Mode

Similar to Advanced Interpretation retrieval mode, Free-Form retrieval mode enables you to enter member names into any location in a sheet and then interprets the sheet's contents when fulfilling the retrieval request. In addition, with Free-Form retrieval mode, you can use Essbase report script commands to retrieve data into a sheet.

Report script commands are most useful for defining member references that can dynamically bring back the most current member information. For example, if you need to create a report that shows every product, including those added since the last retrieval, standard retrieval mode only reflects these changes when you zoom in on the product. If you use the report script command <IDESC, Essbase retrieves all descendants of a member in the database, including the specified member. For more information on the syntax of report script commands and guidelines for developing reports, see the online *Technical Reference* in the DOCS directory and the *Database Administrator's Guide.*

Keep in mind the following guidelines when you are working in Free-Form retrieval mode:

- You must precede all member names that consist of numbers with a single quote. For example, for the Product dimension member 100, you need to type '100 in the sheet.

- You cannot apply Essbase Styles in Free-Form mode.

- Essbase removes any blank rows and columns on any retrieval action.

- Do not use Report Writer formatting commands, such as {BRACKETS}, {DECIMAL}, and {EUROPEAN} in Free-Form mode, because they are incompatible with Excel's formatting features.

- When you are in Free-Form mode, an **Auto Sort Rows** option is enabled in the **Display** page of the **Essbase Options** dialog box. If you select this feature, Essbase retrieves data in symmetric rows that are sorted according to the order specified in the database outline.

- All **Formula Preservation** and **Modes** options (**Essbase Options** dialog box, **Mode** page) are not available in Free-Form mode.

- To use Dynamic Time Series in Free-Form mode, do not put the Dynamic Time Series 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, and the latest time period within parentheses, (Feb), in separate, adjacent cells.

To construct a free-form report in Free-Form retrieval mode:

1. Open a new spreadsheet and connect to the Sample Basic database.

Note: For instructions on connecting to Sample Basic, see "Connecting to a Database" earlier in this chapter.

2. Choose 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, click the **Auto Sort Rows** box**,** and click OK.

6.   Enter the following member names into the sheet:

Figure 3–41, Typing Member Names In a Free-Form Report

7.   Choose Essbase | Retrieve.

Essbase retrieves data for the members and creates a default view according to the location of the labels. Note that three members were pivoted from row groups to column groups.

Figure 3–42, Result of Retrieving in Free-Form Retrieval Mode

8.   Choose File | Close to close the spreadsheet. You do not need to save the sheet.

Now create a report by entering member names and a report script command:

1.   Open a new spreadsheet and connect to the Sample Basic database.

Note: For instructions on connecting to Sample Basic, see "Connecting to a Database" earlier in this chapter.

2.   Enter the following member names into the blank sheet:
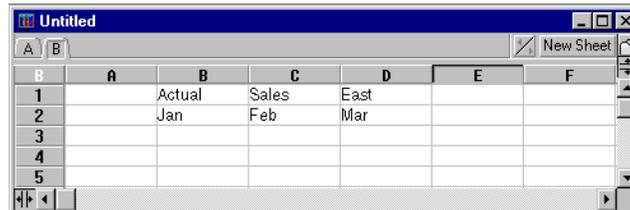
Figure 3–43, Typing Member Names in a Free-Form Report

3.   Click in cell A3 and enter the following command:

```
<IDESC Product
```
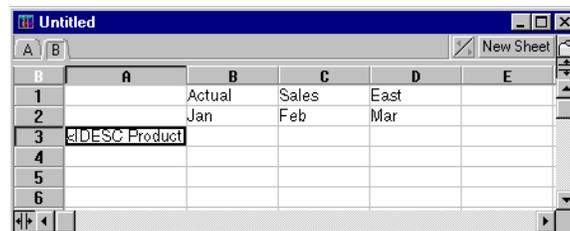

Figure 3–44, Typing a Report Script Command in a Free-Form Report

4.   Choose Essbase | Retrieve.

Essbase retrieves data into the sheet for all descendants of Product and for the members you entered in the sheet.

Figure 3–45, Result of the Retrieve

Note: When Essbase 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.   Choose File | Close to close the spreadsheet. You do not need to save the sheet.

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 spreadsheet to retrieve specific members. The Essbase Application Designer defines generation and level names for database dimensions in the database outline. You have two options for finding out what generation and level names have been defined in the database:

- View generation and level names in the **Essbase Member Selection** dialog box.

- Contact the Essbase Application Designer to see what generation and level names have been defined in the database outline.

To enter generation and level names directly into a free-form report:

1. Open a new spreadsheet and connect to the Sample Basic database.

2. Choose Essbase | Options and select the **Mode** tab.

3. In the **Retrieval** option group, select **Advanced Interpretation** and click OK.

4. Enter member names as shown in the following illustration:
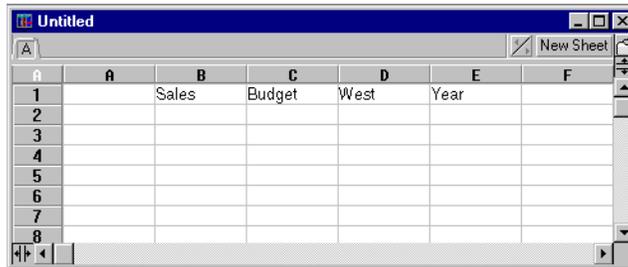
Figure 3–46, Entering Member Names in a Free-Form Report

5. Enter a generation name as shown in the following illustration:

    Family is a generation name in the Product dimension that is already defined in the Sample Basic database.
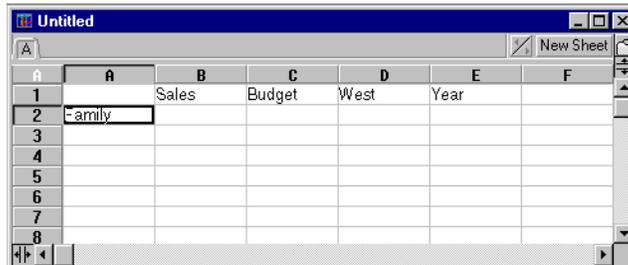
Figure 3–47, Entering a Generation Name in a Free-Form Report

6.   Choose Essbase | Retrieve.

Essbase retrieves data for the member and generation names you entered. The Family generation name expands to its individual members.

Figure 3–48, Result of Free-Form Retrieval with Generation Name

7.   Change Year to a level name (Lev0, Year) as shown in the following illustration.

Note: Be sure not to insert a space between the comma after 0 and Year. Generation and level names that are entered directly into a sheet must be precise.

Figure 3–49, Entering a Level Name in a Free-Form Report

8.   Choose Essbase | Retrieve.

Essbase retrieves data for the Level 0 members of the Year dimension, which are the individual months (Jan, Feb, Mar, and so forth).

Figure 3–50, Result of Free-Form Retrieval with Level Name

9.   Choose File | Close to close the spreadsheet. You do not need to save the sheet.

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 Essbase database. The file, note, or Web resource (indicated by a URL, or Uniform Resource Locator) can then be retrieved by Spreadsheet Add-in users who have access to the database.

Note: If your organization has licensed and implemented the Hyperion Essbase Partitioning product, you can also access *linked partitions* from cells in the Spreadsheet Add-in. For more information on linked partitions, see "Accessing Linked Partitions" later in this chapter.

This section describes the following procedures:

- Linking a File to a Data Cell
- Linking a Cell Note to a Data Cell
- Linking a URL to a Data Cell
- Accessing and Editing Linked Reporting Objects

Note: For additional information on using linked reporting objects, see the Spreadsheet Add-in Online Help.

Linking a File to a Data Cell

With the Linked Reporting Objects feature, you can link an external file to a data cell in the Spreadsheet Add-in. Essbase stores the file on the Essbase server. Users who have access to the database can then retrieve the file while viewing the data contained in the cell.

The following example uses the ASYMM.WK4 sample spreadsheet 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.

Follow these steps to link the file to a data cell:

1. Choose File | Open.

2. Open the ASYMM.WK4 file from the \ESSBASE\CLIENT\SAMPLE directory.

3. Choose Essbase | Connect and connect to the Sample Basic database.

4. Choose Essbase | Options and select the **Display** tab.

5. In the **Aliases** option group, click the **Use Aliases** check box so that your options match the sample file.

6.   Select cell D5.

Note: You can link objects only to data cells, not to cells containing member names.

Figure 3–51, Selecting a Data Cell for Linking an External File

7.   Choose Essbase | Linked Objects.

Essbase displays the **Linked Objects Browser** dialog box.

Figure 3–52, Linked Objects Browser Dialog Box, Linking a File

8. In the **Linked Objects Browser** dialog box, click **Attach**.

    Essbase displays the **Attach Linked Object** dialog box.

9. Under the **Attachment Type** option group, click **File**.
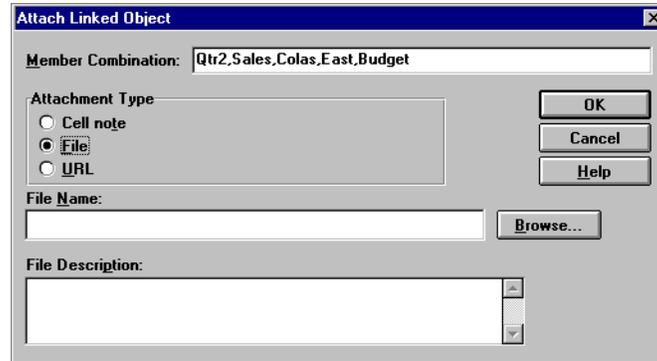
Figure 3–53, Linking a File to a Data Cell

10. Click the **Browse** button next to the **File Name** text box.

    Essbase displays the **Browse Files** dialog box.

11. Select the BUDASMP.TXT file from the \ESSBASE\CLIENT\SAMPLE directory.

12. Click **Open**.

13. Under **File Description**, enter a brief description for the file as indicated in the following illustration.

Note: Entering text in the **File Description** text box is optional.
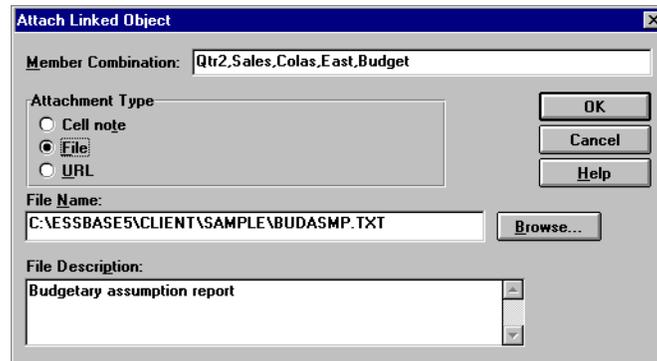
Figure 3–54, Selecting and Describing a File to Link

14. Click OK to close the dialog box and link the file to the cell.

Essbase copies the file to the server and establishes a link to the current data cell.

15. Click **Close** to close the **Linked Objects Browser** dialog box.

16. Do not close the ASYMM.WK4 file. You will use it in the next tutorial task.

To recognize cells that have linked reporting objects attached to them, you might want to apply a visual cue, or style, to these cells.

To apply styles:

1. Choose Essbase|Options and click the **Style** tab.

2. In the **Data Cells** option group, click the **Linked Objects** check box.

3. Click **Format**.

4. In the **Font style** list box, select **Italic.**

5. In the **Color** list box, select **Purple**.

6. Click OK and then select the **Display** tab.

7. In the **Cells** option group, click the **Use Styles** box and click OK.

8. Choose Essbase|Retrieve to refresh the sheet and apply the styles.

    Cell D5 (the cell you just attached the linked file to) now displays purple, italic font. Essbase also refreshes the sheet with the other options set in the **Essbase Options** dialog box.

Figure 3–55, Result of Applying a Style to a Linked Object Cell

9. Leave the ASYMM.WK4 file 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 the Spreadsheet Add-in, you can also link individual cell notes containing information on particular data cells. Cell notes can be no more than 599 characters in length. If you need to link information to a data cell that is longer than 599 characters, you need to create and save an external file, and then link the file to the data cell.

Follow these steps to link a cell note to a data cell:

1. In the ASYMM.WK4 file, select cell C5.

Note: You can link objects only to data cells, not to cells containing member names.

2. Choose Essbase | Linked Objects.

    Essbase displays the **Linked Objects Browser** dialog box.

3. In the **Linked Objects Browser** dialog box, click **Attach**.

    Essbase displays the **Attach Linked Object** dialog box.

4. Under the **Attachment Type** option group, click **Cell note**.

5. In the **Cell Note** box, type the note as indicated in the following illustration.
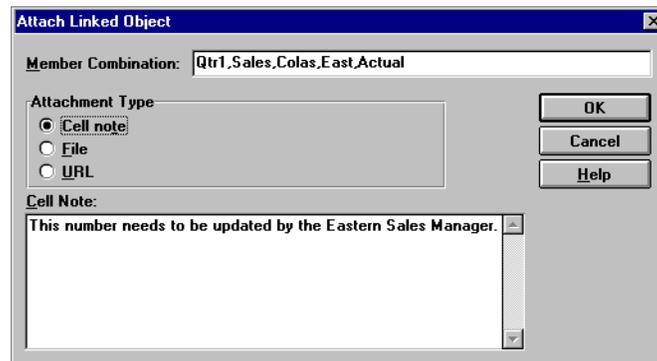
Figure 3–56, Creating a Cell Note to Link

6. Click OK to close the dialog box and link the cell note.

   Essbase 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. Choose Essbase|Retrieve to refresh the sheet and apply the style you defined for linked objects.

   Now Essbase displays two data cells (C5 and D5) in purple, italic font to represent a cell containing a linked reporting object.

Figure 3–57, Result of Creating a Linked Cell Note

9. Leave the ASYMM.WK4 file open for the next tutorial task.

Linking a URL to a Data Cell

A URL, or Uniform Resource Locator, 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 the Spreadsheet Add-in, the 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 Solutions Web site:

1.   In the ASYMM.WK4 file, select cell E5.

Note: You can link objects only to data cells, not to cells containing member names.

Figure 3–58, Selecting a Data Cell for Linking to a URL

2.   Choose Essbase|Linked Objects.

Essbase displays the **Linked Objects Browser** dialog box.

3.   In the **Linked Objects Browser** dialog box, click **Attach**.

Essbase displays the **Attach Linked Object** dialog box.

4. Under the **Attachment Type** option group, click **URL**.

Figure 3–59, 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 indicated in the following illustration.

Note: Entering text in the **URL Description** text box is optional.
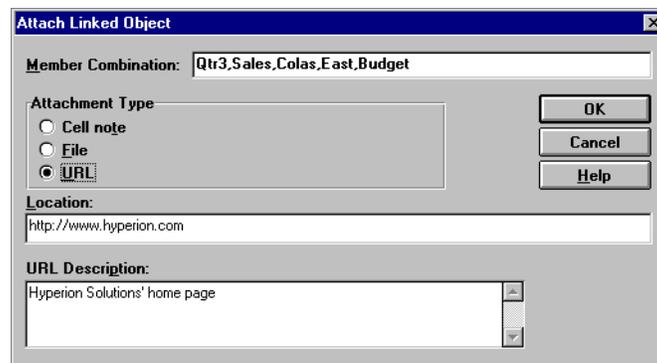
Figure 3–60, Entering and Describing a URL to Link

Note: The text field for entering the URL location is limited to 512 characters in length. The text field for entering the URL description is limited to 80 characters in length.

6.   Click OK to close the dialog box and link the URL to the cell.

Essbase 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 creation time; Essbase checks the syntax when a user accesses the URL from the spreadsheet. The default Web browser checks for the existence (or use validity) of the URL.

7.   Click **Close** to close the **Linked Objects Browser** dialog box.

8.   Choose Essbase | Retrieve to refresh the sheet and apply the style you defined for linked objects.

9.   Leave the ASYMM.WK4 file open for the next tutorial task.

Now that you have learned to create linked reporting objects, you are ready to learn how to access them from the Spreadsheet Add-in.

Accessing and Editing Linked Reporting Objects

You have two options for accessing and editing a linked reporting object that you have attached to a data cell:

- Select the cell (as identified by the style applied to it) and choose Essbase | Linked Objects.

- Enable mouse double-clicking for linked object browsing.

Note: If you enable double-clicking for linked object browsing, double-clicking behavior changes for retrieving data or performing zoom actions. For more information on these changes, see the Spreadsheet Add-in Online Help.

For this tutorial, you will access the linked reporting object you created in the previous sections by using the Essbase menu item instead of the double-clicking action.

Accessing a Linked File

To access an external file that you previously linked to a data cell:

1. In the `ASYMM.WK4` file, select cell D5.

2. Choose Essbase | Linked Objects.

3. In the **Linked Objects Browser** dialog box, select the `BUDASMP.TXT` file.
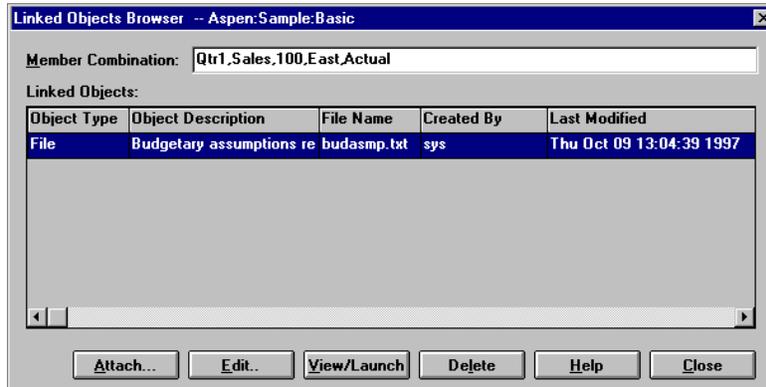
Figure 3–61, Accessing a Linked External File

4. To view the linked file, click **View/Launch**.

    The `BUDASMP.TXT` file is opened from the source application.
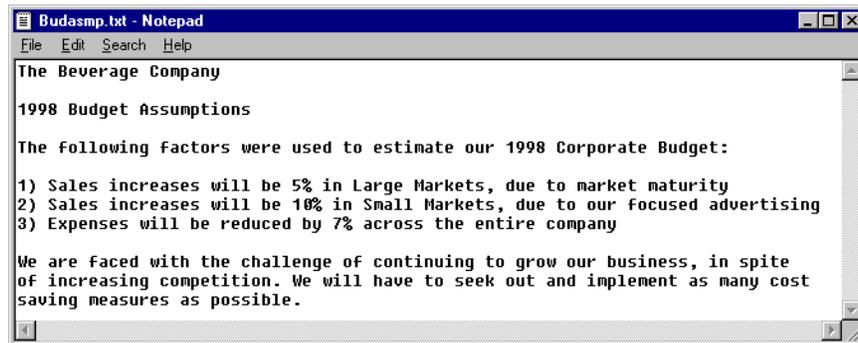
Figure 3–62, Viewing the Contents of a Linked External File

Note: When you want to edit the contents of a file, do so in the source application. After the edits are made and the file saved, you can re-attach the edited file by clicking the **Edit** button in the **Linked Objects Browser** dialog box. Essbase displays the **Re-attach Linked Object** dialog box, where you can re-attach, or re-link, the edited file to a data cell. For more information, see the Spreadsheet Add-in Online Help.

5.   Close the BUDASMP.TXT file and click **Close** to close the **Linked Objects Browser** dialog box.

6.   Leave the ASYMM.WK4 file open for the next tutorial task.

Accessing a Linked Cell Note

To access and edit the cell note you created earlier.

1.   In the ASYMM.WK4 file, select cell C5.

2.   Choose Essbase | Linked Objects.

3.   In the **Linked Objects Browser** dialog box, select the cell note.
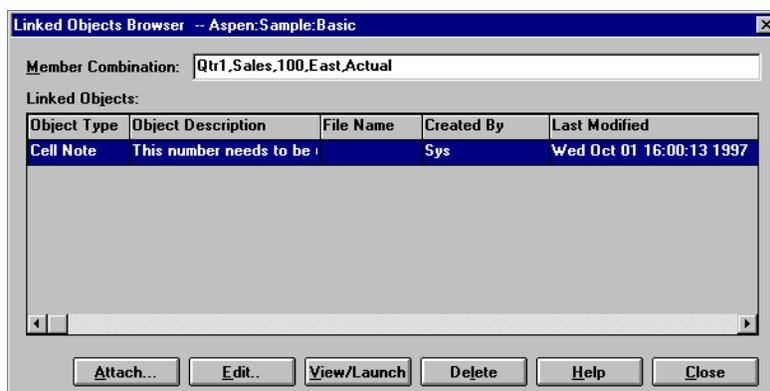
Figure 3–63, Accessing a Linked Cell Note

4. To edit the contents of the cell note, click **Edit**.

    Essbase displays the **Edit Cell Note** dialog box with the selected cell note displayed.
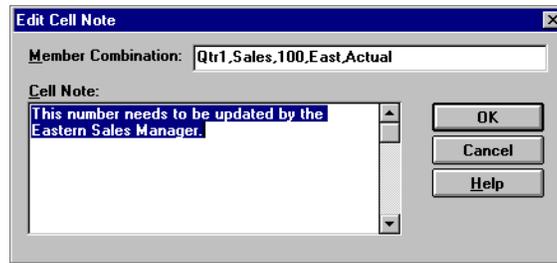
Figure 3–64, Editing the Contents of a Linked Cell Note

Note: If you simply wanted to view the contents of the cell note, you would 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 the following illustration:
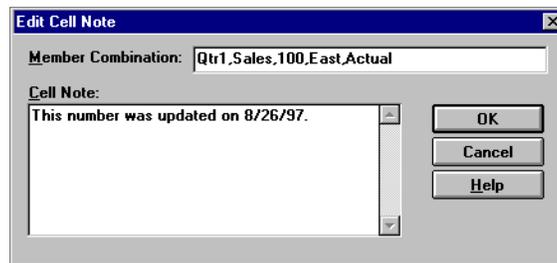
Figure 3–65, Result of Editing Cell Note Contents

6. Click OK to close the **Edit Cell Note** dialog box and save the edits you made to the note.

    Essbase saves the edits to the cell note on the server.

7. Click **Close** to close the **Linked Objects Browser** dialog box.

8. Leave the ASYMM.WK4 file open for the next tutorial task.

Accessing a Linked URL

If you followed the steps in "Linking a URL to a Data Cell," you can access and edit the URL you created.

To access the URL, follow these steps:

1. In the ASYMM.WK4 file, select cell E5.

2. Choose 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.
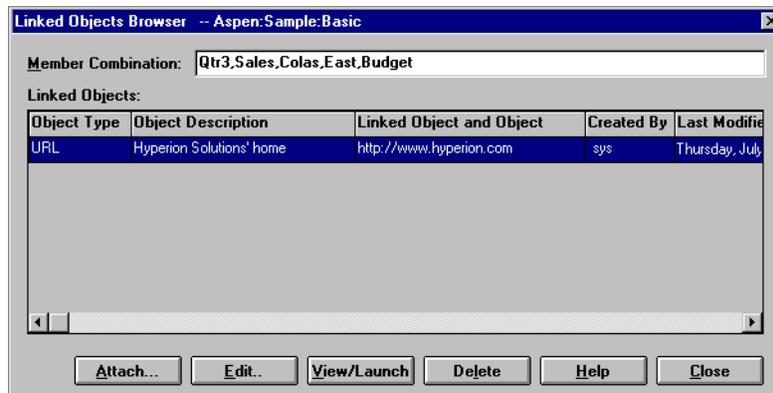
Figure 3–66, Accessing a Linked URL

4. To view the linked URL, click **View/Launch**.

    Essbase checks the syntax of the URL. If there are syntax errors, Essbase 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 Solutions Web site.
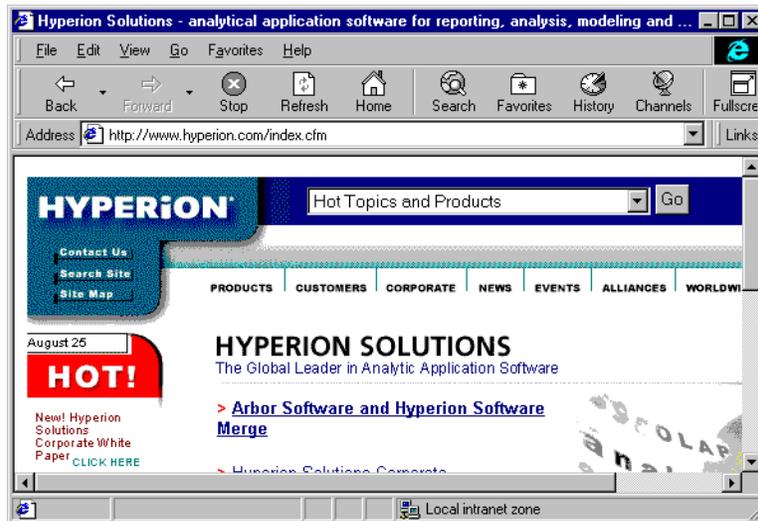
Figure 3–67, Viewing the Linked URL

5. Close the Web browser.

To edit the URL, follow these steps:

1. In the **Linked Objects Browser** dialog box, select the URL.

    When you select the URL, Essbase highlights it.

2. To edit the linked URL, click **Edit**.

    Essbase displays the **Edit URL** dialog box with the selected URL displayed.
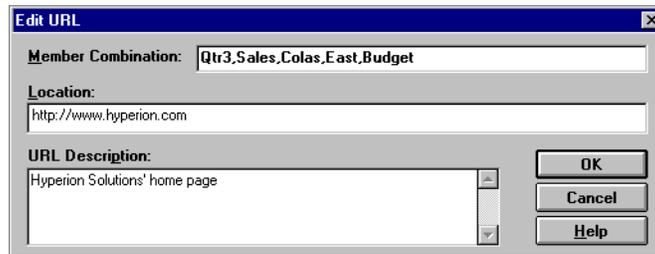
Figure 3–68, Preparing to Edit the Contents of a Linked URL

3. Edit the URL location and description as show in the following illustration:
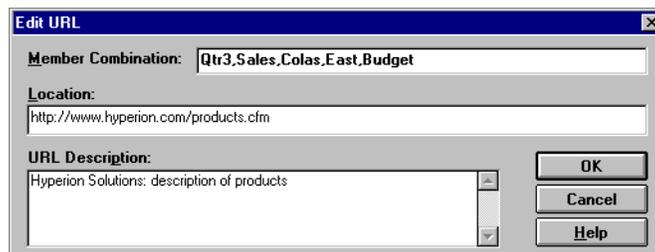
Figure 3–69, Editing the Contents of a Linked URL

4. Click OK to close the **Edit URL** dialog box and save the edits you made.

    Essbase 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.

Figure 3–70, Viewing the Edited URL

6. Close the Web browser.

7. Click **Close** to close the **Linked Objects Browser** dialog box.

8. Close the `ASYMM.WK4` file without saving it.

Connecting to Multiple Databases

Essbase supports simultaneous access to multiple databases. The databases can be in different applications and can be stored on different servers. In 1-2-3, you can open multiple spreadsheets, each of which can be connected to a different database. An individual sheet can access only one database at a time. You can use the Connect command on the Essbase menu to switch your connection between databases.

Note: Depending on the status of production applications at your site, you may not have access to additional applications or databases. Check with the Essbase System Administrator if you need access to other applications.

For this tutorial, you do not need to connect to another database. To access multiple databases, you would use the following procedure:

1.   Choose Essbase|Connect.

2.   In the **Essbase System Login** dialog box, choose the server 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 user name.

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 shown in the **Application/Database** list.

6.   Double-click the Application/Database pair 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, Essbase automatically starts it. There may be a brief pause as the application loads; the time required to start an application depends on the size and number of databases contained within the application and the size of their indexes.

7.   Open a new sheet and repeat the steps to connect to additional databases. You can open one database at a time per sheet.

Viewing Active Database Connections

If you frequently connect to multiple databases, you may need to check the active database for each sheet. There are two ways to view the database connection status:

- The **Style** page of the **Essbase Options** dialog box contains a **Connection Information** text box. This box displays connection information for the active sheet.

- The **Essbase Disconnect** dialog box lists all active sheets and their connection information. From this dialog box, you can also disconnect one or more sheets from their respective databases.

Accessing Linked Partitions

Linked partitions are part of the Hyperion Essbase Partitioning product. They provide the ability to link Essbase databases containing different dimensions together without losing access to the additional dimensions. If your organization has purchased and implemented the Partitioning product, you can take advantage of its powerful capabilities. The *Database Administrator's Guide* describes how to design and implement a linked partition. Partitions are usually set up by the Essbase Application Designer.

Note: The Partitioning product also allows the Essbase Application Designer to set up transparent or remote partitions. For more information on partitioning, see the *Database Administrator's Guide*.

You can set visual cues, or styles, for cells tagged as Linked Objects. These cells are the access points to the linked database, or partition. You have two options for accessing a linked partition from a data cell in the Spreadsheet Add-in:

- Select the cell and choose Essbase | Linked Objects.

- Enable mouse double-clicking for linked object browsing.

  If you enable double-clicking for linked object browsing, double-clicking behavior changes for retrieving data or performing zoom actions. For more information on these changes, see the Spreadsheet Add-in Online Help.

When you choose Essbase | Linked Objects from a linked partition cell:

- Essbase displays the **Linked Objects Browser** dialog box, which contains a list of possible partitions to access. From this dialog box, you can select the partition to connect to.

Note: 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 reporting objects, see "Using Linked Reporting Objects" earlier in this chapter.

- After you select the partition, Essbase creates a new sheet containing corresponding members and dimensions for that cell in the linked partition.

Note: Essbase does not preserve formulas across partitions.

- Essbase retrieves data values from the linked partition.

- You can then perform operations such as zoom in and zoom out to get more information on the new sheet.

The Sample Basic database that you are using for this tutorial does not contain a linked partition. If the Essbase Application Designer had a linked partition set up, you would use the following procedure to access the linked partition in the Spreadsheet Add-in:

1.   Locate a Linked Object cell, as indicated by the style applied to the cell.

2.   Choose Essbase|Linked Objects to open the **Linked Objects Browser** dialog box.

Note: Alternatively, you can click the **Enable Linked Object Browsing** check box in the **Essbase Options** dialog box to enable double-clicking to view linked objects.

3.   Select the partition you want to connect to and click **View/Launch**.
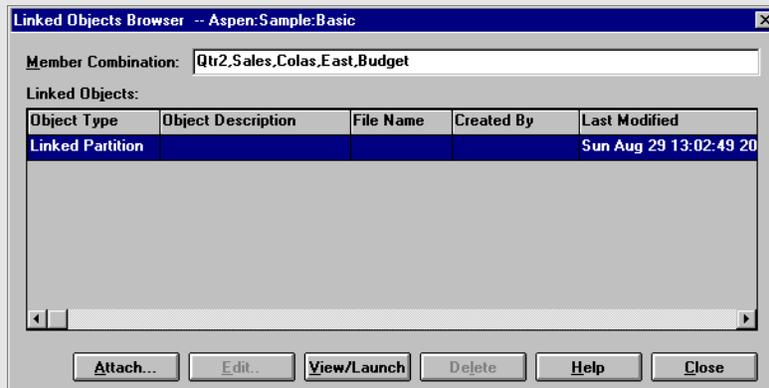
Figure 3–71, Linked Objects Browser Dialog Box, Linked Partition

Essbase creates a new sheet containing the dimensions and members for that cell in the linked partition.

Note: You need to have the proper privileges to access a linked partition. If your user account and password match the account information for the linked partition, Essbase uses this information to establish a connection with the linked partition. Otherwise, Essbase displays the **Essbase System Login** dialog box for you to enter the user account and password information manually.

Updating Data on the Server

Data values are changed frequently in applications that involve planning, budgeting, and forecasting. Once you retrieve data into the sheet, you can use the Spreadsheet Add-in to change values, enter formulas, and format your data. Essbase is also designed to permit multiuser, concurrent database access and updates. Depending on your security privileges, you may be able to modify all data values or a certain subset of values. To recognize cells that you have read/write access to, you can apply a visual cue, or style, to these cells. For more information, see "Applying Styles to Data Cells" in Chapter 2.

When you need to update data from the sheet, you must lock the area of the database that contains the values you want to change. This prohibits other users from changing the data you want to update. Other users can retrieve and read locked data, but they cannot lock or change the data. You have exclusive update rights to that area.

You can lock data values in three ways:

- The Retrieve & Lock command retrieves data into the sheet while locking the corresponding data area on the server. When you perform a subsequent retrieval, Essbase automatically unlocks the previous data values.

Note: The Retrieve & Lock command is unavailable for use with Dynamic Time Series members.

- The Lock command locks information that you have already retrieved. When you perform a subsequent retrieval, Essbase automatically unlocks the previous data values.

- The **Update Mode** check box in the **Mode** page of the **Essbase Options** dialog box automatically locks the corresponding database area for each retrieval.

To update the server with data values from the sheet, 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 disable **Update Mode** to stop locking blocks automatically.

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 Essbase System Administrator. This ensures that blocks are not locked for extended periods of time.

P&L.WK4, a sample Lotus 1-2-3 file installed as part of the default Essbase installation, illustrates these concepts.

To view the P&L.WK4 file:

1.   Choose File | Open.

2.   Open the P&L.WK4 file from the \ESSBASE\CLIENT\SAMPLE directory.

3.   Choose Essbase | Connect and connect to the Sample Basic database.

4.   Choose Essbase | Options and select the **Display** tab.

5.   Clear the **Use Styles** check box and click OK.

6.   Choose Essbase | Retrieve & Lock.

Essbase retrieves data and locks the appropriate area of the database.

	A	B	C	D	E	F	G
1	Market: Central					The Beverage Company	
2	Product: Root Beer					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%	

Figure 3–72, P&L Sheet After Retrieve & Lock

7. Change the value for Sales in Jan (cell B12) to 4000 and press Enter.

    Essbase changes the affected data values.

8. Choose Essbase | Send to update the server with the new values.

    Essbase updates the server and unlocks the data blocks.

	A	B	C	D	E	F	G
1	Market: Central					The Beverage Company	
2	Product: Root Beer					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	9.61
9	Total Expenses	510	520	530		1560	16.12
10							
11	COGS	1170	1180	1200		3550	36.67
12	Sales	4000	2820	2860		9680	100.00
13	Margin	2830	1640	1660		6130	63.33
14	Profit	2320	1120	1130		4570	47.21
15							
16	Ratio Analysis						
17	Markup	70.8%	58.2%	58.0%		63.3%	
18	Marketing_%	7.5%	11.0%	11.2%		9.6%	

Figure 3–73, P&L Sheet After Sending New Values to the Server

9. Close P&L.WK4 without saving it.

Note: Essbase provides a spreadsheet update logging facility, which tracks and logs all data updates sent from the Spreadsheet Add-in to the server. The Essbase System Administrator enables this facility for extra protection against data loss. For more information, see the *Database Administrator's Guide* or contact the Essbase System Administrator.

Calculating a Database

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 the Spreadsheet Add-in with the Calculation command. For this tutorial, you will not actually calculate the Sample Basic database. For more information on Essbase calculations, see the *Database Administrator's Guide*.

Warning!   Do not perform any calculation operations for this tutorial.

When you choose Essbase | Calculation, Essbase displays the **Essbase Calculation** dialog box.
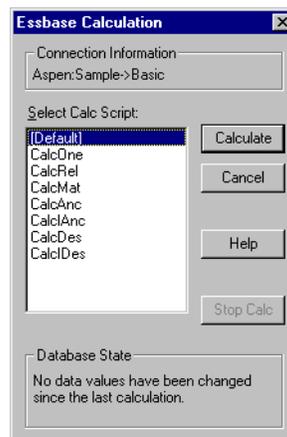
Figure 3–74, Essbase Calculation Dialog Box

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 that you have access to.

- The **Database State** text 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.

Warning!   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 Essbase System Administrator.

Creating Multiple Sheets from Your Data

One frequent requirement of budgeting and planning applications is to send spreadsheets to various functional areas of an organization. After the sheets have been distributed, the recipients can review the contents, make modifications, and send updates back to the distributor. Essbase provides a Cascade feature, which enables you to create multiple spreadsheet files based on a single database view. You can specify at what level of detail you want to replicate the sheets 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. As an example, assume that we want all product managers to review and respond to a proposed budget and return their changes to the finance department. Therefore, we must create a spreadsheet for each combination of budget and P&L data to distribute to the product managers for their respective products.

To create this set of sheets, use the `P&L.WK4` file:

1. Choose File|Open.

2. Open the `P&L.WK4` file from the `\ESSBASE\CLIENT\SAMPLE` directory. This file contains the data you need to replicate for each sheet.

3. Choose Essbase|Connect and connect to the Sample Basic database.

4. Choose Essbase | Retrieve to update the sheet and implement the options you have set.

5. Select Central (in cell B1) and Root Beer (in cell B2) as the members to be represented in the resulting sheets.

Figure 3–75, Selecting Members to Cascade On

6. Choose Essbase | Cascade.

   Essbase displays the **Essbase Cascade Options** dialog box.

7. Click the **Cascade Information** tab.

   The **Cascade Information** page contains the list of members you have selected and options for specifying the level at which the selected members are retrieved into the cascaded sheets.

Note: For more information on each option, see the Spreadsheet Add-in Online Help.

8. Select Central in the **Member** list box, and select **Same Level** in the **Choose Level for Selected Member** option group.

9. Select Root Beer in the **Member** list box, and select **Next Level** (the default setting).
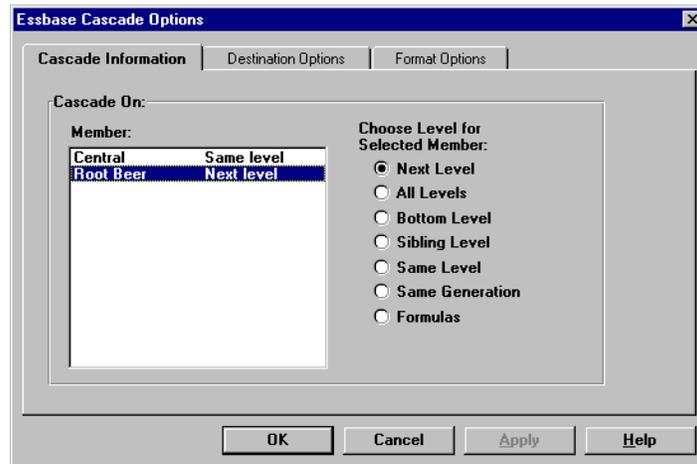
Figure 3–76, Cascade Options Dialog Box (Cascade Information Page)

The replicated, or cascaded, spreadsheet reports will 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, Sasparilla, and Birch Beer).

10. Click the **Destination Options** tab.

11. In the **Destination Directory** text box, enter C:\TEMP as the name of the directory where you want the cascaded sheets to be stored.

    You can also click **Browse** to choose a destination directory from the **Browse** dialog box.

12. In the **Destination Types** option group, select **Separate Workbooks** (the default setting) to create separate 1-2-3 files for each cascaded sheet.

    You can also tell Essbase to create only one workbook with separate sheets for each cascaded report, or you can send the cascaded reports to the printer.

13. In the **File Information** option group, click **Overwrite Existing Files** (the default setting). This option tells Essbase to overwrite any cascaded sheets with the same file name.

You could also select **Open Created Files** to open each cascaded file in 1-2-3 as it is created.

Warning: Depending on the number of replicated sheets you want to create, the Cascade command can create more sheets than can be stored in your computer's memory. Therefore, the **Open Created Files** option should *not* be used when you are replicating large numbers of sheets.

14. In the **Naming Information** option group, type BUD in the **Prefix** text box.
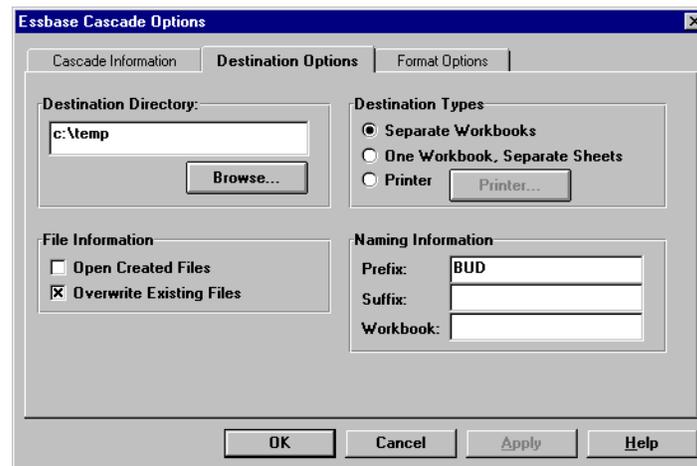
Figure 3–77, Essbase Cascade Options Dialog Box (Destination Options Page)

When you assign a prefix or suffix in the **Naming Information** option group, the spreadsheet 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 spreadsheet names that are numbered 1 through *n*, where *n* is the total number of sheets created. The syntax for the file names is `PrefixnSuffix`.123. If you do not specify a prefix or suffix, Essbase creates the sheets 1.123, 2.123, and so on. If you are creating a single workbook, the same naming convention is used for the sheet tab names within the workbook.

Warning!   Do not specify a prefix and suffix combination that leaves no characters free for Essbase to create unique file names. If file names are duplicated, Essbase overwrites the duplicate file name with the last cascaded sheet.

15. Click the **Format Options** tab.

16. Click the **Copy Formatting** check box to copy the formatting of the source spreadsheet into each cascaded sheet.

Notes:

Copy Formatting copies only the visual cues set using Essbase and cell formatting you set using the spreadsheet. It does not copy formulas, column formatting, sheet formatting, or graphs.

In the **Header** and **Footer** text boxes, you can specify a header or footer name to be used for all of the cascaded sheets.

17. In the **Sheet Formatting** area, click the **Suppress Missing Rows** check box so that rows containing only #Missing values will not be replicated.

18. In the **Table of Contents** area, click the **Include Table of Contents** check box to create a text file that lists all replicated sheets, their creation date, and their member content.

By default, Essbase names the Table of Contents file with the extension .LST.
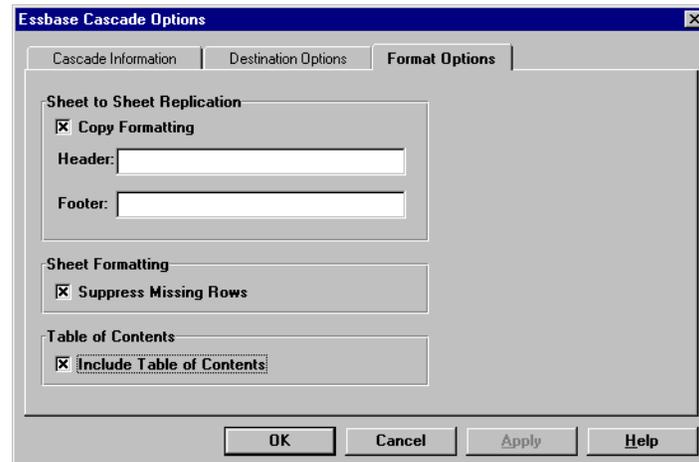
Figure 3–78, Essbase Cascade Options Dialog Box (Format Options Page)

19. Click OK to create the cascaded sheets.

Essbase rapidly creates the cascaded sheets (9 total sheets in this example). As each sheet is created, it is automatically saved, closed, and logged in the Table of Contents. Each individual file is saved in the directory you specified, named BUD1.123 through BUD9.123. When the Cascade is completed, Essbase returns you to the original spreadsheet view (that is, the source file).

20. Open the Table of Contents file from the destination directory you specified earlier. This file is named BUD0.LST and contains a list of all cascaded sheets.
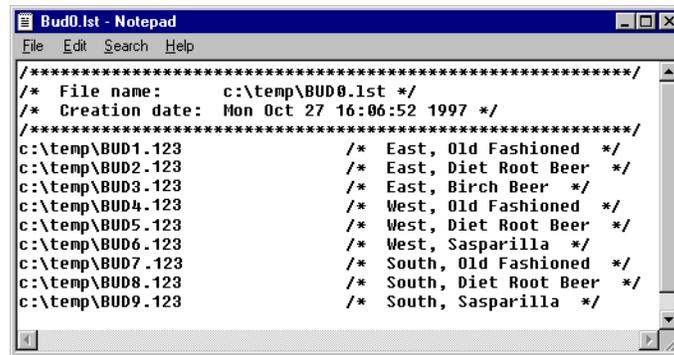
Figure 3–79, Table of Contents File for Cascaded Sheets

21. Choose File | Close to close the spreadsheet. You do not need to save the sheet.

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 Hyperion Essbase Currency Conversion product can be purchased separately for Essbase. If your organization has purchased this product and has implemented a Currency Conversion application, you can take advantage of its powerful capabilities. The *Database Administrator's Guide* describes how to design and implement a Currency Conversion application.

The following sections provide a brief tutorial for working with currency conversions:

- About Currency Conversion Retrievals

- Connecting to the Sample Currency Databases

- Performing Ad Hoc Currency Reporting

About Currency Conversion Retrievals

This section focuses on basic currency conversion concepts, including the easy-to-use 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

Converted values are derived by applying exchange rates from the currency rates database to local values from the main database. The Hyperion Essbase OLAP Server product installation includes an optionally installable sample Currency Conversion application 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 dimensions are identical to the Sample Basic database, except the Market and Scenario dimensions. The Market dimension includes Toronto, Vancouver, Montreal, France, Germany, Spain, 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 different categories of Measures. For example, there are different rates that are applied to Profit and Loss items versus Balance Sheet items.

- The CurType dimension allows a currency database to contain rates for different scenarios, such as Actual and Budget.

Connecting to the Sample Currency Databases

The Sample Interntl and Sample Xchgrate databases must be installed on the server to complete these exercises. Contact the Essbase System Administrator if these application and database pairs are unavailable.

To retrieve data from the Sample Interntl database:

1. Choose Essbase | Connect.

2. Select the Sample Interntl database and click OK to complete the connection.

    The Essbase installation also includes sample 1-2-3 files that illustrate currency conversion concepts.

3. Choose File | Open.

4. Open LOCAL.WK4 from the \ESSBASE\CLIENT\SAMPLE directory.

    This spreadsheet contains actual (Act) and budget (Bud) data entered in local currencies for New York and Germany.

Figure 3–80, Retrieving Local Data

5. Open CONVERT.WK4 from the \ESSBASE\CLIENT\SAMPLE directory.

6.   Choose Essbase | Retrieve.

This sheet contains values for the same members as they appear after
conversion.

Figure 3–81, Retrieving Converted Data Values

Notice that the sheet contains data that is converted to U.S. dollars. Values for
New York remain the same, but Germany values are converted. Essbase
converts these values using exchange rates from the Sample Xchgrate database.

7.   Open `RATES.WK4` from the `\ESSBASE\CLIENT\SAMPLE` directory and connect
to the Sample Xchgrate database.

8.   Choose Essbase | Retrieve.

Figure 3–82, Retrieving Exchange Rates from the Currency Database

This sheet contains all possible combinations of exchange rate scenarios, categories, and types by month. Because this example converts to U.S. dollars (US$), the sample file contains a base rate of 1 for US$. Therefore, the local and converted figures remain the same for New York. Essbase converts the figures for Germany, however, as follows using data values in the currency database:

- Essbase divides data values from Actual by values in the Act xchg currency type.

- Essbase divides data values from Actual @ Bud xchg by values in the Bud xchg currency type.

- Essbase divides data values from Budget by values in the Bud xchg currency type.

- Essbase bases all figures in CONVERT.WK4 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. This 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. Essbase provides this capability with the Currency Report command. With this command, you can interactively exchange the currency rates and types applied to the retrieval.

To illustrate this point, perform an ad hoc conversion on data in the CONVERT.WK4 file, by following these steps:

1.   Choose File | Open.

2.   Open CONVERT.WK4 from the \ESSBASE\CLIENT\SAMPLE directory.

3.   Choose Essbase | Connect and connect to the Sample Interntl database.

     This sheet contains data that is already converted to U.S. dollars.

4.   Choose Essbase | Retrieve.

5.   Choose Essbase | Currency Report.

     Essbase displays the **Essbase Currency Report** dialog box.
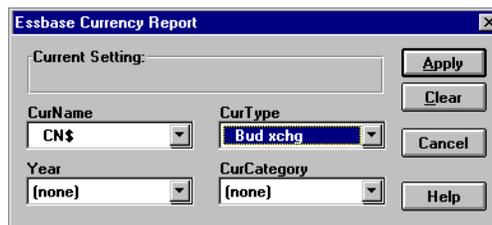
Figure 3–83, Essbase Currency Report Dialog Box

From the **Essbase Currency Report** dialog box, you can interactively modify the exchange rates applied to the retrieval. This 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.

6. Select the currency settings you want to apply.

    For example, select CN$ from the **CurName** list box and Bud xchg from the
    CurType list box.

7. Click **Apply** to apply the settings.

8. Choose Essbase | Retrieve to refresh the data in the sheet with the results of the
    ad hoc conversion.

    Essbase converts the New York and Germany figures to Canadian dollars
    (CN$).

	A	B	C	D	E	F	G
1		Jan	100-10				
2							
3		Actual		Actual @ Bud XChg		Budget	
4		New York	Germany	New York	Germany	New York	Germany
5	Sales	452	87	452	200	427	89
6	COGS	181	35	181	80	173	37
7	Margin	271	52	271	120	253	51
8							
9	Marketing	63	11	63	26	53	9
10	Payroll	34	13	34	30	27	9
11	Misc	0	0	0	0	#Missing	#Missing
12	Total Expenses	97	24	97	55	80	19
13							
14	Margin %	60.03	60.00	60.03	60.00	59.38	57.89
15	Profit %	38.64	32.38	38.64	32.38	40.63	36.84
16							

Figure 3–84, Performing an Ad Hoc Currency Conversion

9. Click the **Clear** button in the **Essbase Currency Report** dialog box to disable
    currency reporting and return to standard retrieval mode.

Note: Performing a currency report retrieval does not change values in the database. It
           simply 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 consolidated in another currency.

           If the values must balance and verify, 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; see the Essbase System
           Administrator for more information.

Chapter 4   Using SQL Drill-Through

Hyperion Essbase SQL Drill-Through is an optional product that works with
Essbase and Lotus 1-2-3. This tutorial provides a brief overview of the SQL Drill-
Through product, and walks through several examples of how to access detail-level
data from a remote SQL database in the Spreadsheet Add-in.

What Is SQL Drill-Through?

Essbase excels at rapid navigation of large analytic datasets in an intuitive fashion.
Despite the inherent benefits of the multidimensional database for storing analytic
data, some data elements that are required for analysis are better suited to remain in
the relational structure.

Usually, the scope of data residing in an Essbase database is at a summary level
where complex relationships are modeled and consolidated for planning and
analysis. Typically, detailed "transaction" level data is not rigorously examined
during the planning and analysis of a business. For example, say you use Essbase to
budget, plan, and perform variance analysis on weekly data. Daily data is not used
during the normal course of analyzing business performance. However, as you
analyze variance results by week, you will occasionally find high- or low-
performing areas that are well outside the normal range of variance. When this
occurs, you might want to view daily transactions to locate any problems that might
exist.

With SQL Drill-Through, you can navigate from analytic data in Essbase databases
to transaction details in relational databases. The SQL Drill-Through product
provides intuitive data navigation into a relational database by defining mappings
between the dimensional attributes of an Essbase database and the fields of
relational database tables. The complexity of the mapping is transparent to you. As
with the Hyperion Essbase Spreadsheet Add-in interface, you do not need to learn a
programming language or know how to construct Structured Query Language
(SQL) queries to view relational data.

The database administrator needs to predefine the data mapping. For example, the
Essbase members East, West, South, and Central might map back to a field called
Region in a DB2 database. As you navigate through data in the spreadsheet,
Essbase knows how the current data maps back to the relational source. The SQL

Drill-Through product dynamically creates an SQL query based on the dimensional attributes of a single Essbase data point in the spreadsheet.

For example, suppose you select cell C8 in the following sheet:

Figure 4–1, Sample SQL Drill-Through File

The dimensional attributes of the cell are: Sales, New York, Actual, Feb, and 400. The combination of one or more of these attributes becomes the basis of an SQL query that returns all records that contain matching field values. For example, the SQL query would return all records from a Sales table that contain a value of Feb in the Monthly field, 400 in the Product ID field, and New York in the State field.

Before You Start

Before reviewing the following concepts, you should have a working familiarity with the Essbase product through the use of the Spreadsheet Add-in interface. As a prerequisite, you should review Chapters 2 and 3 of this guide.

The Sample Basic database is the basis for the examples in this tutorial. If you plan to follow the examples in a live working session, check with the Essbase System Administrator to ensure that the Sample Basic database and SQL Drill-Through product are installed and ready for use. If you followed the tutorials in Chapters 2 and 3, you are already familiar with the Sample Basic database.

The Essbase System Administrator should install the SQL Drill-Through product on your client PC. Additionally, SQL Drill-Through requires ODBC (Open Database Connectivity) drivers and databases that house the relational data. The ODBC drivers can be installed on the Essbase server machine or on your client PC. If the ODBC drivers are on the server, the Essbase System Administrator must also install the Hyperion Essbase SQL Interface product on the server. If the ODBC drivers are

on your client PC, you must provide these drivers. For more information, see the *SQL Drill-Through Guide*.

The SQL mapping information is controlled via an initialization file (`.INI`) that is placed on your PC. If the `.INI` file is not properly defined on your machine, you might see an error message when you start the spreadsheet session.

Essbase displays the following error if the `.INI` file is not properly installed on your PC.
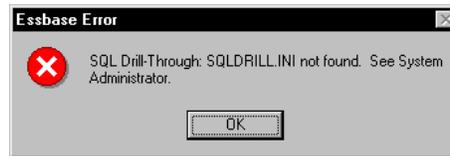
Figure 4–2, Essbase Error Message for Missing SQLDRILL.INI File

Essbase displays the following error when the `.INI` file is installed, but the file itself doesn't contain any SQL mapping profile entries:

Figure 4–3, Essbase Error Message for Incomplete SQLDRILL.INI File

If either of these errors occurs, you will be able to run a normal spreadsheet session with Essbase, but SQL Drill-Through will not function properly. For more information, contact the Essbase System Administrator.

A Guided Tour

The Sample Basic database is a five-dimensional product-planning and analysis database. As shown below, it contains dimensions for Year, Measures, Scenario, Product, and Market. The following is an expanded view of the database outline:
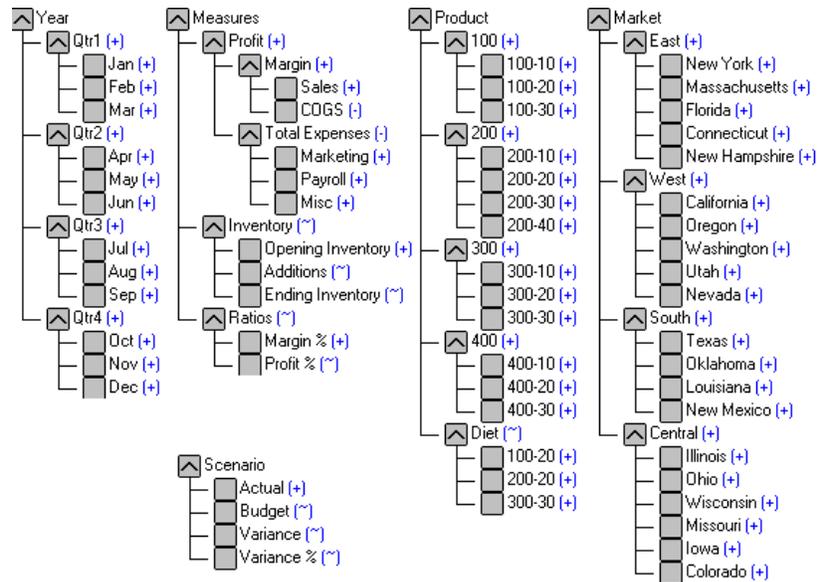
Figure 4–4, Expanded Database Outline for Sample Basic

Note: The outline shown in Figure 4–4 does not show member labels or descriptions.

This tutorial walks you through two sample SQL Drill-Through sessions. If your organization has already built an application with SQL Drill-Through, you might not have access to the profiles used in this tutorial.

Sample 1

Assume that the Essbase System Administrator has reviewed the end-user requirements for returning detailed data that relates to data in Essbase. In summary, the Sample Basic database contains data that is used for product planning. When performing variance analysis between Actual and Budget data, you occasionally need to view detailed information at a product ID and market area level. Neither of these details is stored in the Essbase database. On a dimension-by-dimension basis, you might require the following:

- Product dimension: When you view information about product families or product groups, Essbase must return transactions by Product ID. The retrieved records must match the code of the product currently being viewed in the Essbase model.

- Market dimension: You want to view transactional data only when you are looking at the lowest level in the Market dimension. In this case, you want to view area data only for the state you are currently viewing from the Spreadsheet Add-in.

- Year dimension: You want to view transactional data only when you are looking at quarterly or monthly data. If you are analyzing a quarterly figure, Essbase must return records that relate to the months within the given quarter being viewed. If you are analyzing a monthly figure, Essbase must return records that match the current month being viewed.

- Scenario dimension: The Scenario data in Essbase is irrelevant because you always want to view actual figures from the relational database.

- Measures dimension: The Measures data in Essbase is irrelevant because you always want to view unit sales from the relational database.

To analyze data, use the sample `SQLDRILL.WK4` file that is provided as part of the default Essbase installation:

1. Start Lotus 1-2-3.

2. Choose File|Open and open the `SQLDRILL.WK4` file from the `\ESSBASE\CLIENT\SAMPLE` directory.

    This file is supplied as part of the default Essbase installation and contains an Essbase view that analyzes actual performance as a percent variance to budget data.

3. Choose Essbase|Connect and connect to the Sample Basic database. (See "Connecting to a Database" in Chapter 2 for instructions.)

4. Choose Essbase|Retrieve.

Figure 4–5, Spreadsheet Showing Variance Percent to Budget Data

Based on the spreadsheet view, it appears that product family 400 is performing below budget. You may want to do an analysis by product ID and market area to find the problems. February is of particular concern since it is the largest volume month of the quarter.

5. Select cell C8.

    By selecting this cell, you are focusing the SQL Drill-Through analysis to data with attributes of: Sales, New York, Actual, Feb, and 400.

6.   Choose Essbase|SQL Drill-Through.

A short pause occurs while the Essbase server determines the dimensional attributes of the current cell.

Note: The SQL Drill-Through action can be initiated only if the current cell is a data cell in the Essbase database. If not, Essbase displays the following error message:

Figure 4–6, Essbase Error Message for Nondata Point Cell

If this message is returned, click OK. Then select a cell that contains data from an Essbase retrieval, and choose Essbase|SQL Drill-Through again.

The Essbase client-server icon is displayed while the server updates the Spreadsheet Add-in with the relevant information. Essbase displays the **SQL Database Login** dialog box.
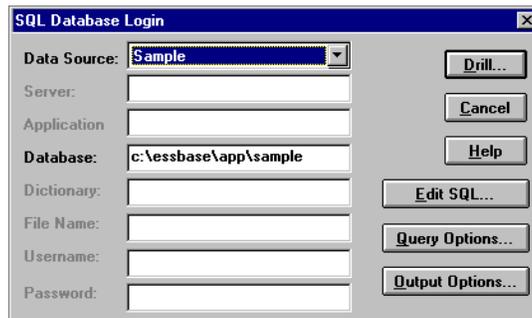
Figure 4–7, SQL Database Login Dialog Box

This dialog box contains several fields that specify the data source. Depending on the data source, you might be required to enter a password to gain access to underlying tables. The Essbase System Administrator defines the appropriate data source for the application. This tutorial uses dBASE files.

- The **Edit SQL** button lets you view or modify the SQL statement that is dynamically constructed from the active cell in the spreadsheet.

- The **Query Options** button lets you select from one or more SQL mapping profiles that are defined by the Essbase System Administrator. A profile is a definition of how to map the dimensional attributes of an Essbase database to the fields of a relational database. Depending on the nature of the SQL drill requirement, you might have multiple mappings that define relationships to various fields of one or more tables.

- The **Output Options** button lets you select the destination of the SQL query output. You can view the results of the query in the spreadsheet, in a text file, or in printed form.

7. Choose **Query Options** to select the appropriate profile.

   Essbase displays the **Query Options** dialog box.
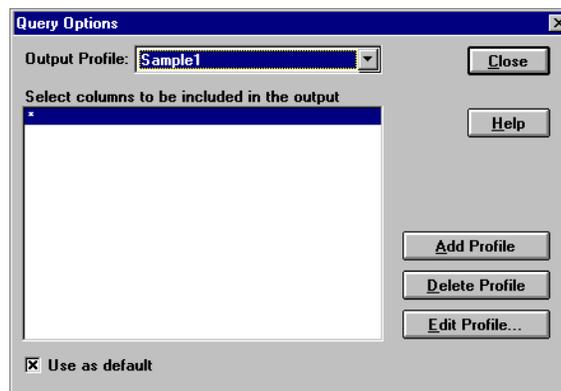
Figure 4–8, Query Options Dialog Box

The **Output Profile** list box lets you select from a list of predefined profiles that are either shipped with the Essbase installation software or are defined by the Essbase System Administrator.

The **Delete Profile** and **Edit Profile** buttons are available only to users that are defined as SQL Drill-Through Supervisors in their initialization file. If you need to define or modify the existing profiles, contact the Essbase System Administrator.

8. Select the profile named **Sample1** from the **Output Profile** list box, and click **Close**.

    Essbase displays the **SQL Database Login** dialog box.

9. Choose **Output Options** to select an output destination.

    Essbase displays the **Output Options** dialog box:
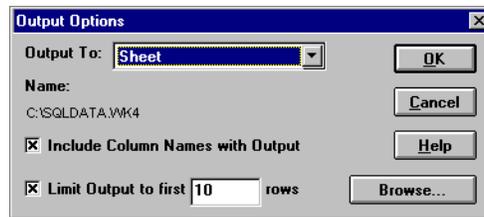
Figure 4–9, Output Options Dialog Box

The **Output To** list box lets you select the destination for the results of the SQL query. Three destinations are available:

-   The **File** destination outputs the records in an ASCII text file. If you select the **Browse** button, you can specify a file name.

-   The **Printer** destination outputs the records to a selected printer.

-   The **Sheet** destination outputs the records to a `.WK4` file that corresponds to the version of Lotus you are using. You can select the **Browse** button to specify a file name.

You can limit the number of records that are returned by the query by selecting the **Limit Output** check box, and entering the maximum number of rows.

10. Select **Sheet** and click OK.

Essbase displays the **SQL Database Login** dialog box.

11. Choose **Drill** to start the SQL query.

Essbase displays the following message :
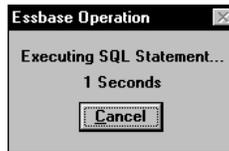
Figure 4–10, Essbase Message During SQL Drill-Through

The server then passes the SQL statement to the source database. The query is asynchronous, so you can cancel it if necessary.

Once the query is complete, Essbase sends data records to the output destination. The spreadsheet output is shown as follows:

Figure 4–11, Result of SQL Drill-Through

Essbase returns all Product IDs that start with 400 for New York in the month of Feb.

To further illustrate how the SQL Drill-Though product dynamically returns records based on the current data cell, you'll analyze data at a more detailed product level.

1. Close `SQLDATA.WK4` without saving it.

2. Return to the `SQLDRILL.WK4` sheet.

Note: If you attempt another SQL Drill-Through action while the output destination sheet is already open, a new untitled workbook is created.

3. Zoom in (double-click) on product 400 in cell A8.

	A	B	C	D	E	F	G
1	Sales						
2	New York						
3			Actual			Variance	
4		Jan	Feb	Mar	Jan	Feb	Mar
5	100	678	645	675	38	35	35
6	200	551	641	586	21	31	16
7	300	663	675	695	153	155	155
8	400-10	234	232	234	(16)	(18)	(16)
9	400-20	219	243	213	(11)	(17)	(17)
10	400-30	134	189	198	(6)	(11)	(12)
11	400	587	664	645	(33)	(46)	(45)
12	Product	2479	2625	2601	179	175	161
13							
14							

Figure 4–12, Result of Zoom In Operation

4. Select cell D8 and choose Essbase | SQL Drill-Through.

Essbase displays the **SQL Database Login** dialog box.

5.   Click **Drill** to start the SQL query.

Essbase returns all Product IDs that start with 400–10 for Mar.

Figure 4–13, Result of SQL Drill-Through on March Data for Product 400–10

6.   Close SQLDATA.WK4 without saving it.

7.   In SQLDRILL.WK4, zoom out on cell A8.

Sample 2

This sample illustrates how a different mapping profile can be used to retrieve data at a different level of detail.

As mentioned in Sample 1, the Sample Basic database contains data that is used for product planning. When performing variance analysis between actual and budget data, you may occasionally need to view more detailed information at a weekly level. Weekly data is not stored in the Essbase database. On a dimension-by-dimension basis, you would require the following:

- Product dimension. When you view information about product families or product groups, Essbase must return transactions by Product Group that match the code of the product currently being viewed in the Essbase model.

- Market dimension. You want to view transactional data only when you are looking at the region or state level in the Market dimension. When you view regional data from Essbase, the states belonging to the current region must be returned. When you view state data from Essbase, the relational records for the given state must be returned.

- Year dimension. You want to view weekly data only when you are looking at the lowest level in the Year dimension. In this case, you want to view weekly data that relates to the current month from Essbase.

- Scenario dimension. The Scenario data in Essbase is irrelevant because you always want to view actual figures from the relational database.

- Measures dimension. The Measures data dimension is irrelevant because you always want to view unit sales from the relational database.

To analyze data:

1. Choose File|Open and open SQLDRILL.WK4 (if it's not already open from the previous example).

   This file is supplied as part of the default Essbase installation and contains an Essbase view that analyzes actual performance as a percent variance to budget data.

2. Choose Essbase|Connect and connect to the Sample Basic database. (See "Connecting to a Database" in Chapter 2 for instructions.)

3. Choose Essbase|Retrieve.

Figure 4–14, SQL Drill-Through Starting Point for Sample 2

Based on the view, it appears that product family 400 is performing below budget. You may want to do an analysis by week to find the problems. February is of particular concern since it is the largest volume month of the quarter.

4. Select cell C8 and choose Essbase|SQL Drill-Through.

   This focuses the SQL Drill-Through analysis to data with attributes of: Sales, New York, Actual, Feb, and 400.

After a short pause, during which the Essbase server determines the dimensional attributes of the active cell in the spreadsheet, Essbase displays the **SQL Database Login** dialog box.
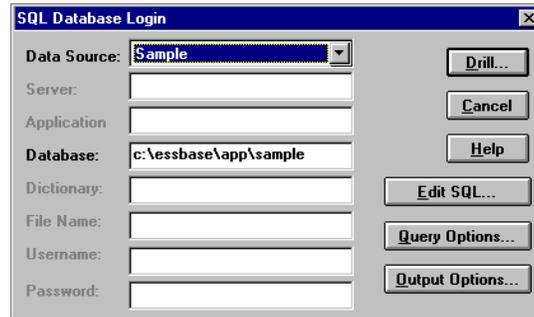
Figure 4–15, SQL Database Login Dialog Box

5.   Click **Query Options** to select the appropriate profile.

In the **Query Options** dialog box, the **Output Profile** list box lets you select predefined profiles that are either shipped with the Essbase installation software or are defined by the Essbase System Administrator.

6.   Select the profile named **Sample2** and click **Close**.
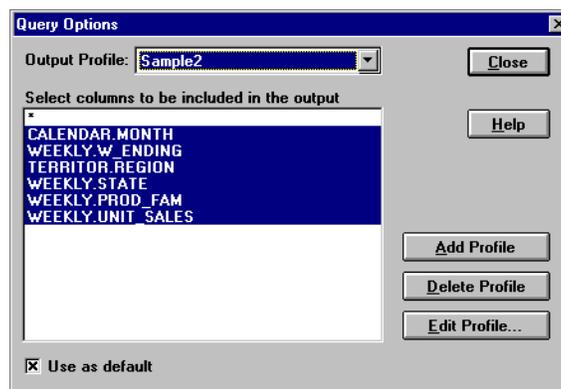
Figure 4–16, Query Options Dialog Box

Essbase displays the **SQL Database Login** dialog box.

7.   Click **Drill** to start the SQL query.

Essbase returns weekly data for the month of February and all Product IDs that start with 400.

Figure 4–17, Result of SQL Drill-Through

You are now finished with the SQL Drill-Through tutorial. For more information on SQL Drill-Through, see the Spreadsheet Add-in Online Help.

Chapter 5   Using Hyperion Integration Server Drill-Through

Hyperion Integration Server is a product that works with Hyperion Essbase and 1-2-3. Integration Server is a suite of tools and data integration services that serve as a bridge between relational data sources and the Hyperion Essbase OLAP Server. Hyperion Integration Server Drill-Through is one of these tools. With Drill-Through, you can view and customize spreadsheet reports that display data retrieved from relational databases. Your organization must license Hyperion Integration Server for you to use the Drill-Through tool.

This chapter provides:

- A brief overview of the Drill-Through feature

- A description of the sample database, 1-2-3 file, and Drill-Through report used for the tutorial

- A tutorial that walks you through tasks for using Drill-Through

Notes:

- Drill-Through is available only for 32-bit clients, such as 1-2-3 97.

- Drill-Through is different from the Hyperion Essbase SQL Drill-Through product. Integration Server Drill-Through is accessed through the Linked Objects Browser; Essbase SQL Drill-Through is accessed from the Essbase menu. These two products are independent of each other.

What Is Drill-Through?

Despite the benefits of the multidimensional database for storing analytic data, some data elements that are required for analysis are better suited to remain in the relational structure, in a relational database. The scope of data residing in an Essbase database is typically at a summary level, where data is summarized and calculated for planning and analysis. Usually, detailed, transactional data is not examined during the planning and analysis of a business.

For example, say you are using Essbase to analyze retail sales for the first quarter in the Eastern region. Detail data, such as a list of customers who purchased a particular product in a particular size, is not used during the normal course of analyzing business performance. However, as you analyze sales results, you may want to view more detailed information. Drill-Through is a tool that enables you to drill from the summarized and calculated data stored in your organization's Hyperion Essbase OLAP Server into detailed data stored in a relational database.

The database administrator predefines a data mapping for you from Essbase to the relational source. For example, the Essbase 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, Essbase knows how the current data maps to the relational source. For example, suppose you select cell E4 in the following sheet:

C:\ESSBASE\client\sample\Dtreport.123

CityDemog / **PromoMediaMix** \ Sheet3

	A	B	C	D	E	F	G	H	I	J	K
1							East				
2						1996			1997		
3					Feb	Jan	Mar	Feb	Jan	Mar	
4	MARKETING	Bottles	Retail	Colas	3062	9856	3693	3840	12349	4619	
5				Cream_Soda	1195	3790	1404	1487	4739	1750	
6				Root_Beer	1222	3897	1456	1521	4883	1823	
7				DIET	1792	5830	2146	2244	7288	2674	
8			Wholesale	Colas	208	650	246	265	817	302	
9				Cream_Soda	51	156	59	66	191	73	
10				Root_Beer	85	264	102	110	325	132	
11				DIET	88	272	102	110	340	126	
12											
13											

Figure 5–1, Example of Drill-Through Sheet

The dimensional attributes of the cell are: East, Feb, 1996, Marketing, Bottles, Retail, and Colas. The combination of one or more of these attributes becomes the basis of a Drill-Through query that returns data from the relational source.

From the Hyperion Essbase Spreadsheet Add-in, you can access a predefined Drill-Through report that is based on the member intersections of Essbase data cells in the sheet. Using an Integration Server tool called Hyperion OLAP Builder, 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.

You access Drill-Through reports from the Spreadsheet Add-in **Linked Objects Browser** dialog box. When you select a Drill-Through cell in the sheet and choose Essbase | Linked Objects, the **Linked Objects Browser** dialog box displays an entry for Drill-Through that you can select and launch.
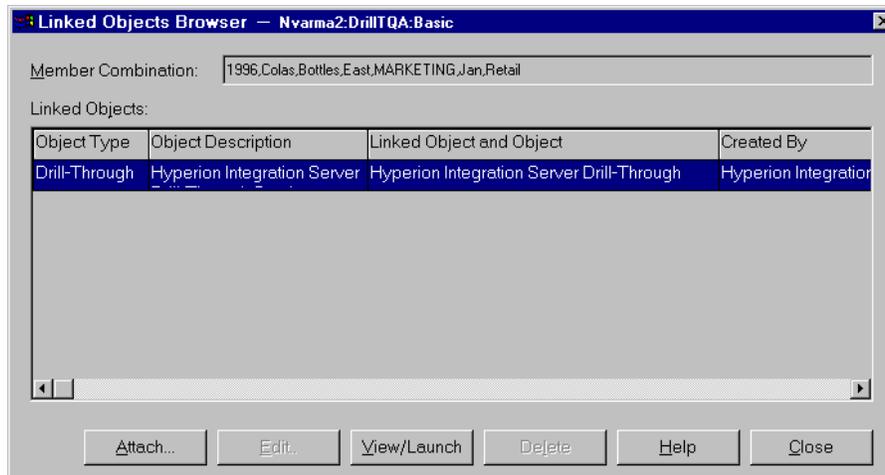
Figure 5–2, Linked Objects Browser Dialog Box with Drill-Through Entry

To help you identify which cells in the sheet have Drill-Through reports associated with them, you can define a style for cells tagged as Drill-Through. For more information, see "Accessing Drill-Through from the Spreadsheet" later in this chapter.

What Is the Drill-Through Wizard?

Integration Server Drill-Through reports are predefined by an administrator at your organization for you to view or customize. The person who develops a report determines whether or not the report can be customized by Drill-Through users. If a report can be customized, you can use the Integration Server 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*

  Choose an ascending or descending sort order for a particular column, for example, sort a list of 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 Essbase product through the use of the Spreadsheet Add-in interface. As a prerequisite, you should review Chapters 2 and 3 of this guide.

A sample Essbase database is the basis for the examples in this tutorial. The database administrator creates this sample Essbase database using the sample metaoutline supplied with Integration Server. For more information, see the *Hyperion OLAP Builder User's Guide*. A sample 1-2-3 file, DTREPORT.123, contains a sheet with the appropriate member intersections for the sample Drill-Through report. For more information on the sample database, 1-2-3 file, and Drill-Through report, see "About the Samples Used for this Tutorial" later in this chapter.

If you plan to follow the examples in a live working session, check with the person at your organization who installs the Hyperion Integration Server product family for information on the sample database needed for Drill-Through. You will also need to know which Essbase server to connect to.

Before you start the tutorial, make sure the following requirements are met:

- You must install the following components on your client PC:

  - The Spreadsheet Add-in for 1-2-3

  - A 32-bit version of 1-2-3 (for example, 1-2-3 97)

  - Drill-Through

    The Drill-Through module is installed automatically when you install the Spreadsheet Add-in for 32-bit 1-2-3. This module is transparent to you until you invoke it from the **Linked Objects Browser**. For more information on installation, contact the Essbase System Administrator.

- The Essbase System Administrator must install the Essbase server.

- You must have access to the Hyperion Integration Server and to the Essbase server. For more information, contact the Essbase System Administrator or the person who administers Hyperion Integration Server at your organization.

- You must have access to the underlying relational database (typically using a user name and password that are different from Essbase). For more information, contact the Essbase System Administrator or the person who administers Hyperion Integration Server at your organization.

- Make sure that the sample 1-2-3 file, DTREPORT.123, is available in the \ESSBASE\CLIENT\SAMPLE directory.

- The sample database that contains the Drill-Through report must be set up. The sample Drill-Through report used in this tutorial (called "Promotion Media Mix for Cities") is available with the sample database. Contact the person at your organization who installs Hyperion Integration Server to find out the name of the sample database needed for Drill-Through.

Note: For more information on Hyperion Integration Server installations, see the Hyperion Integration Server *Installation Notes*. For more information on Essbase installations, see the Essbase *Installation Notes*.

Also, keep in mind the following guidelines during the tutorial:

- Each tutorial task builds upon the previous task. These tasks must be followed in succession.

- Tasks that should *not* be performed as part of the tutorial appear in gray boxes. These tasks are included for your reference. You can find more information on these tasks in the Hyperion Integration Server Drill-Through Online Help.

- The examples used in this tutorial are based on the sample database that is included with the Hyperion Integration Server installation. Contact the person at your organization who installs Hyperion Integration Server for information about accessing the sample database.

- You must set the options in the **Essbase Options** dialog box as described in the next section, "Setting Essbase Options." 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, you can choose 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 the following figures. If your option settings are different, the illustrations presented in this chapter may not match the spreadsheet view.

Note: For information about each option in the **Essbase Options** dialog box, click **Help** to see the Spreadsheet Add-in Online Help.

1. Choose Essbase | Options.

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

3. Click the appropriate check boxes and option buttons so that your display matches the following illustration:
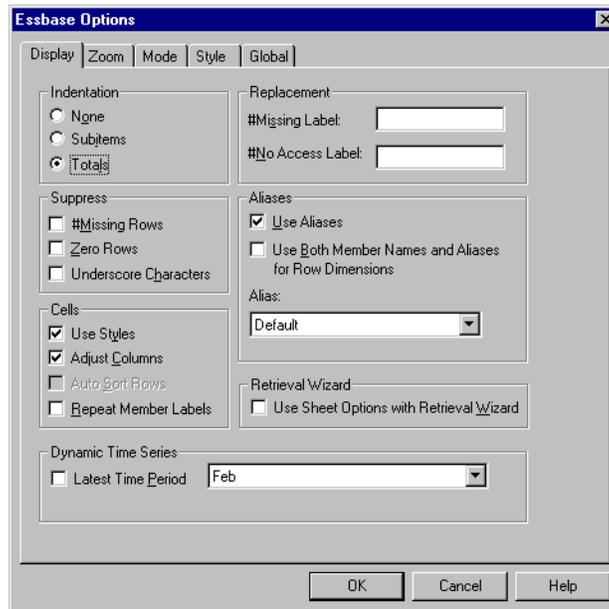
Figure 5–3, Initial Settings for Display Options

4. Select the **Zoom** tab.

5. Click the appropriate check boxes and option buttons so that your display matches the following illustration:
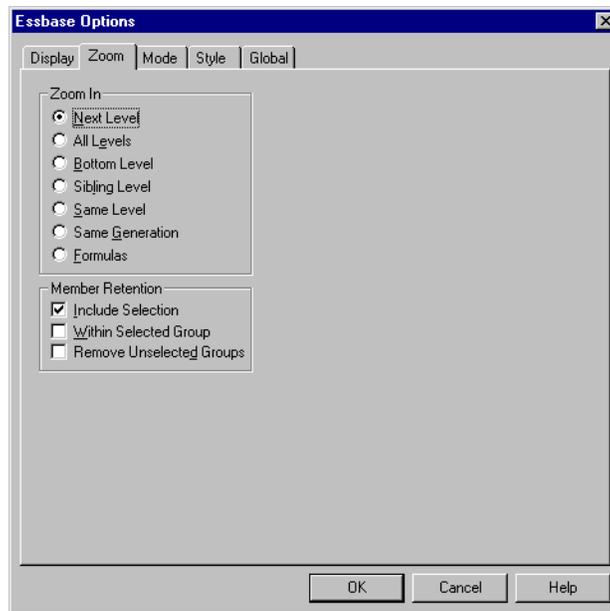
Figure 5–4, Initial Settings for Zoom Options

6. Select the **Mode** tab.

7. Click the appropriate check boxes and option buttons so that your display matches the following illustration:
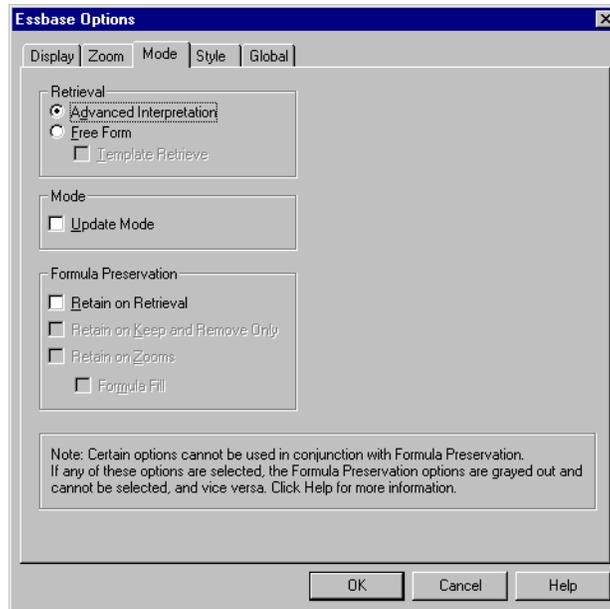
Figure 5–5, Initial Settings for Mode Options

8. Select the **Style** tab.

9. Click the appropriate check boxes and option buttons so that your display matches the following illustration:
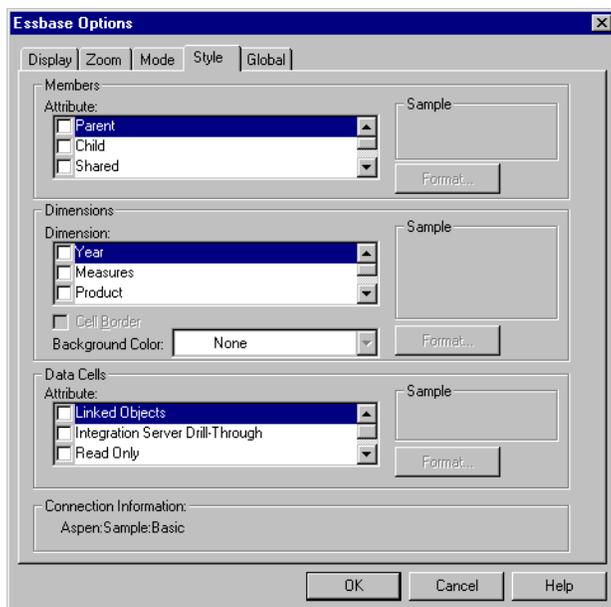
Figure 5–6, Initial Settings for Style Options

10. Select the **Global** tab.

11. Click the appropriate check boxes and option buttons so that your display matches the following illustration:
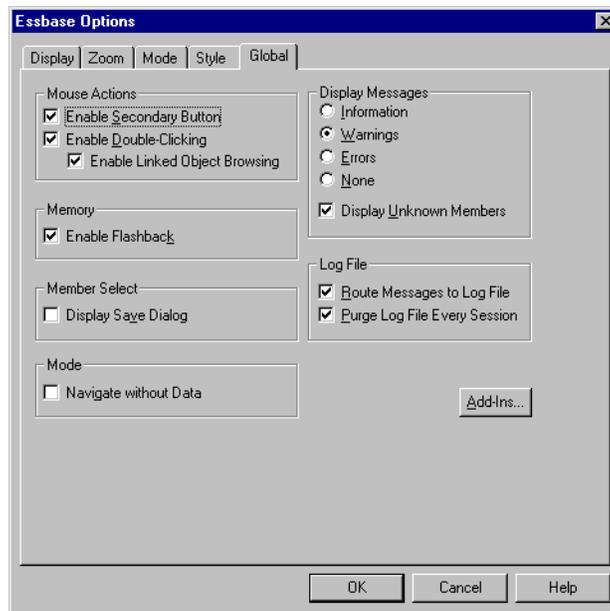
Figure 5–7, Initial Settings for Global Options

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, PRODUCTS, PACKAGE, MARKETS, ACCOUNTS, TIME, and CHANNEL. The sample 1-2-3 file provides a particular view from this database:

B	A	B	C	D	E	F	G	H	I	J	K
1							East				
2						1996			1997		
3					Feb	Jan	Mar	Feb	Jan	Mar	
4	MARKETING	Bottles	Retail	Colas	3062	9856	3693	3840	12349	4619	
5				Cream_Soda	1195	3790	1404	1487	4739	1750	
6				Root_Beer	1222	3897	1456	1521	4883	1823	
7				DIET	1792	5830	2146	2244	7288	2674	
8			Wholesale	Colas	208	650	246	265	817	302	
9				Cream_Soda	51	156	59	66	191	73	
10				Root_Beer	85	264	102	110	325	132	
11				DIET	88	272	102	110	340	126	
12											
13											

Figure 5–8, View from Sample Database

For this spreadsheet view, detail-level data exists in a relational data source— data that is not available from Essbase. For example, the relational source contains columns of data for cities, seasons, and different types of media (for example, print, radio, and so forth). This tutorial walks you through a sample Integration Server Drill-Through session, where you will drill down from the data shown above into the detail data from the relational source.

This tutorial uses a sample Drill-Through called "Promotion Media Mix for Cities." As with all Drill-Through reports, this report has been predefined to retrieve specific columns from the relational source. You will use the Drill-Through Wizard to customize the predefined report.

Note: The sample file also contains a second sample report, called City Demographics, that you can use for Drill-Through practice.

Using Drill-Through

Drill-Through consists of the following tasks:

- Accessing Drill-Through from the Spreadsheet Add-in

- Selecting Drill-Through Reports to View or Customize

- Selecting and Ordering Columns

- Sorting Data

- Filtering Data

The following sections describe each of these tasks and step you through a live working Drill-Through session.

Accessing Drill-Through from the Spreadsheet

From the Spreadsheet Add-in, you can access detail-level Drill-Through reports that are based on the member intersections of Essbase 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, sort data in these columns in specific ways, and so forth. Using the Drill-Through Wizard, you can customize these predefined Drill-Through reports to retrieve only the data you want, displayed in a specific way.

To access the predefined Drill-Through report, you double-click a Drill-Through cell in the spreadsheet (or select a range of cells and choose Essbase | Linked Objects). To help you identify which cells in the sheet are associated with Drill-Through reports, you can set styles for cells tagged as Drill-Through. When you double-click a Drill-Through cell, Essbase displays the **Linked Objects Browser** dialog box, which displays a Drill-Through report entry. A single cell can have multiple reports associated with it. The **Linked Objects Browser** dialog box also displays entries for linked partitions and other linked object types (for example, cell notes and application files). After you view or customize the Drill-Through report, the Integration Server retrieves data from the relational source and displays the results in a new spreadsheet.

Before starting the Drill-Through tutorial, you will:

1.   Open a sample 1-2-3 file that contains the appropriate member intersections from the sample database for the Drill-Through report. This file, DTREPORT.123, is provided as part of the default Essbase installation.

2.   Set a style for data cells that have Drill-Through reports associated with them.

To access the sample file and sample database:

1.   Start 1-2-3.

2.   Choose File | Open and open the DTREPORT.123 file from the ESSBASE\CLIENT\SAMPLE directory.

The sample file should look like this:

C:\ESSBASE\client\sample\Dtreport.123										
CityDemog \ **PromoMediaMix** \ Sheet3										
B	A	B	C	D	E	F	G	H	I	J	K
1								East			
2							1996			1997		
3					Feb	Jan	Mar	Feb	Jan	Mar	
4	MARKETING	Bottles	Retail	Colas	3062	9856	3693	3840	12349	4619	
5				Cream_Soda	1195	3790	1404	1487	4739	1750	
6				Root_Beer	1222	3897	1456	1521	4883	1823	
7				DIET	1792	5830	2146	2244	7288	2674	
8			Wholesale	Colas	208	650	246	265	817	302	
9				Cream_Soda	51	156	59	66	191	73	
10				Root_Beer	85	264	102	110	325	132	
11				DIET	88	272	102	110	340	126	
12											
13											

Figure 5–9, Sample 1-2-3 File for Drill-Through

The sample file shows data for specific members of an Essbase database. From this view, a predefined Drill-Through report exists for all member intersections in the sheet. Using Drill-Through, you can access this report and customize it so that the Integration Server retrieves only the data you need and displays the data in the desired format.

3.   Choose Essbase | Connect and connect to the appropriate sample database.

Note: For information on the sample database, contact the person at your organization who installs Hyperion Integration Server.

4.   Choose Essbase | Options and select the **Style** tab.

5. In the **Data Cells** option group, click the **Integration Server Drill-Through** check box and click **Format**.

Essbase displays the **Font** dialog box.

6. Select **Bold Italic** from the **Font style** list box.

7. Select **Red** from the **Color** drop-down list, and click OK.

Note: Essbase displays an example of the selected style in the **Sample** box.
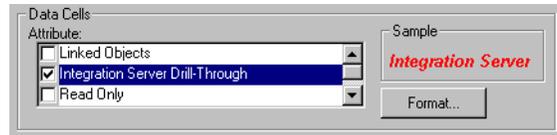
Figure 5–10, Sample Style for Integration Server Drill-Through Data Cells

8. Click OK to close the **Essbase Options** dialog box.

9. Choose Essbase | Retrieve to display the new style in the spreadsheet.

In this example, the sample Drill-Through report is associated with every member intersection in the sheet, so all cells now appear in red, bold, italic font.

Figure 5–11, Sample 1-2-3 File with Drill-Through Style Applied

To access the sample Drill-Through report from the Spreadsheet Add-in:

1.   Select any Drill-Through cell, for example, cell E4.

Figure 5–12, Selecting a Drill-Through Cell

Note: You can also select a continuous range of cells in the sheet to display all
                     Drill-Through reports associated with cells you select. In this example, we
                     only have one Drill-Through report attached to the range of cells.

2. Choose Essbase | Linked Objects to open the **Linked Objects Browser** dialog box.

   Alternatively, click the **Enable Linked Object Browsing** check box in the **Essbase Options** dialog box (**Global** page), which 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.
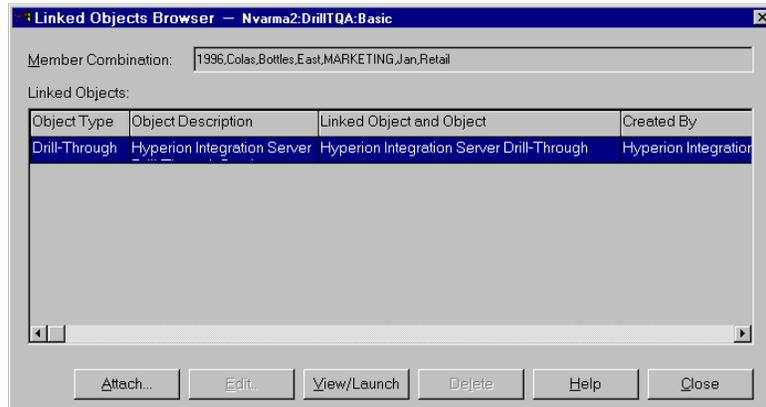
Figure 5–13, Linked Objects Browser Dialog Box with Drill-Through Entry Selected

3. Select the Drill-Through report entry and click **View/Launch**.

    Essbase launches Drill-Through and displays the **Select Drill-Through Report** dialog box.

Note: If the Hyperion Integration Server is not running, Drill-Through does not launch properly. For more information, contact the Essbase System Administrator.
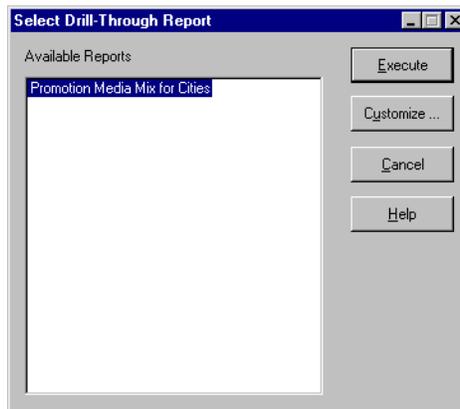
Figure 5–14, Select Drill-Through Report Dialog Box

4. If you are prompted with the **Drill-Through Login** dialog box to connect to the Integration Server and the relational data source, enter the appropriate connection information. The person at your organization who administers Hyperion Integration Server and develops Drill-Through reports should provide you with this information.

Note: 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, Drill-Through 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 the Integration Server and relational data source.

5. Follow the steps in the next section, "Selecting Drill-Through Reports to View or Customize" to select a report to customize.

Selecting Drill-Through Reports to View or Customize

After you launch Drill-Through from the **Linked Objects Browser** dialog box, the Integration Server displays the **Select Drill-Through Report** dialog box if:

- More than one Drill-Through report exists for the cell or cell range that you select in the spreadsheet, or

- 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 Hyperion OLAP Builder, you may have access only to view, not customize, the report.

The sample report used for this tutorial is called the Promotion Media Mix for Cities. You will use the Drill-Through Wizard to customize this sample report. To execute a predefined Drill-Through report without customizing it, you would:

1. Select the report that you want to view from the **Available Reports** list box.

2. Click **Execute**.

    The Integration Server 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. Select the Promotion Media Mix for Cities report from the **Available Reports**
    list box.
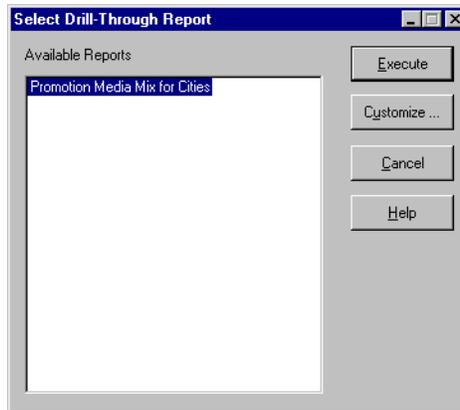
Figure 5–15, Selecting the Sample Drill-Through Report

2. Click **Customize**.

Note: The **Customize** button may be enabled or disabled for any given report, depending on how the report was defined in OLAP Builder.

The Integration Server displays the first screen of the Drill-Through Wizard.
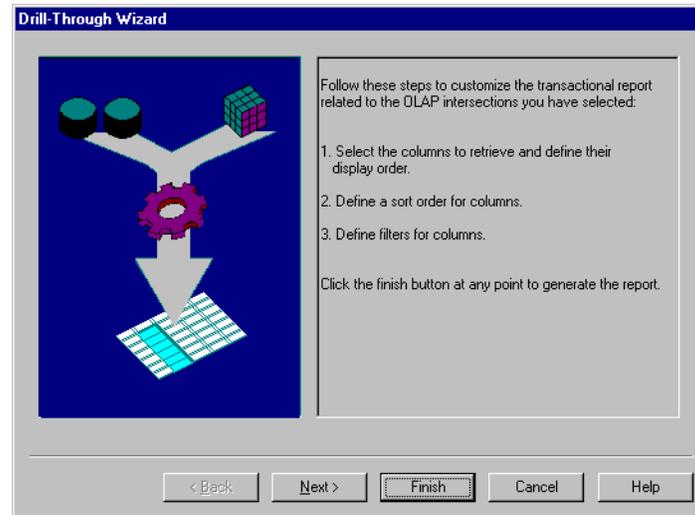
Figure 5–16, Drill-Through Wizard Dialog Box, Introductory Screen

3.   Click **Next** to display the **Select Columns and Display Order** dialog box.
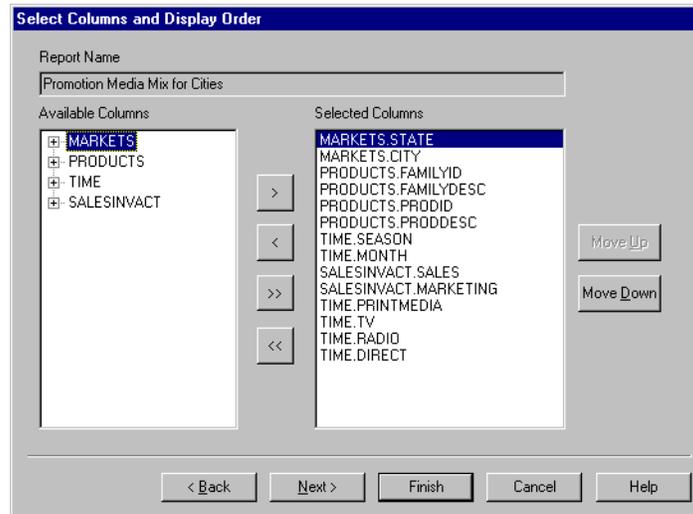
Figure 5–17, Select Columns and Display Order Dialog Box

4.   Follow the steps in the next section, "Selecting and Ordering Columns," 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 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 Essbase database.

In the **Select Columns and Display Order** dialog box, you can select which columns you want the Integration Server 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 box displays a list of columns available from the relational data source for this report (as defined in OLAP Builder). The **Selected Columns** list box displays the columns from the **Available Columns** list box in expanded form. You can remove columns from the **Selected Columns** list box to exclude them from the Drill-Through report.

In this example, the columns from the **Available Columns** list box are selected for inclusion in the sample Promotion Media Mix for Cities report. These columns appear in expanded form in the **Selected Columns** list box. In this task, you will remove several of the selected columns from the Drill-Through report:

1. In the **Selected Columns** list box, select the `TIME.PRINTMEDIA`, `TIME.TV`, `TIME.RADIO`, and `TIME.DIRECT` columns.

    Hold down the `Ctrl` key to select multiple columns at once.
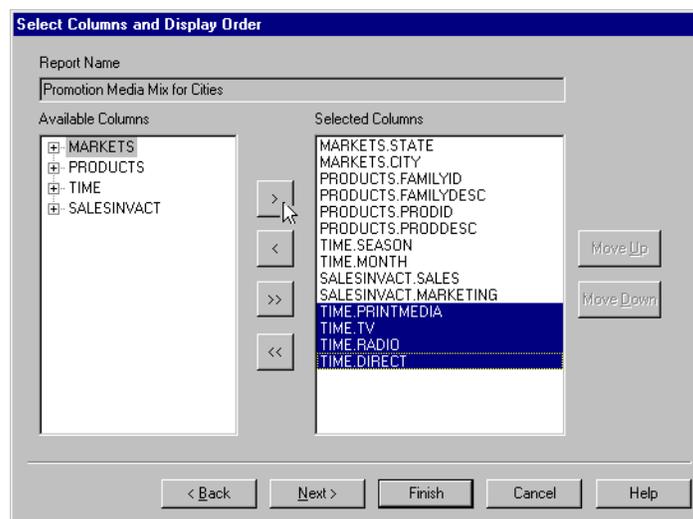
Figure 5–18, Selecting Columns to Remove From the Drill-Through Report

2. Click [<] to move the selected columns from the **Selected Columns** list box back to the **Available Columns** list box.

    To move a column from one list box to another, click [>] or [<].
    To move all columns from one list box to another, click [>>] or [<<].

3. To rearrange the display order of columns, select each PRODUCTS column (one at a time) in the **Selected Columns** list box and click **Move Up** twice to move each column up above the MARKETS columns.

The customized report will display the columns in the **Selected Columns** list box in the order in which they appear; the PRODUCTS columns will appear as the first (left-most) columns, then the MARKETS columns, and so forth.
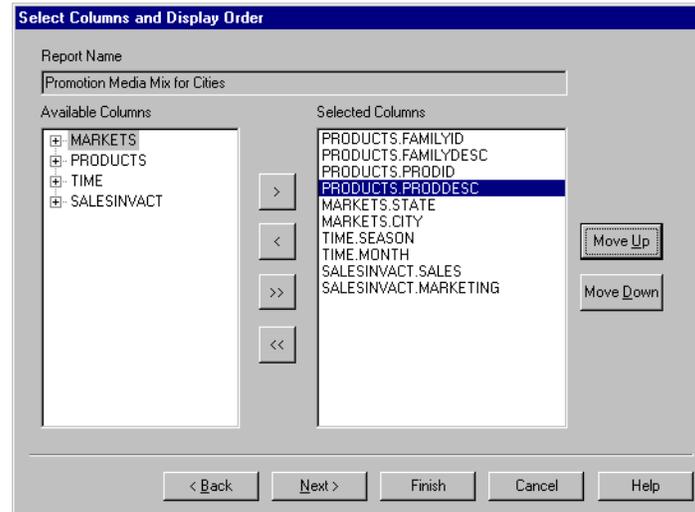
Figure 5–19, Rearranging the Display Order of Columns

4. Click **Next** to display the **Select Data Sort Order** dialog box, and follow the steps in the following section, "Ordering Data" to further customize the report.

Note: When you finish customizing the report, you can 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 appear in the Drill-Through report. For example, you can sort the contents of a MARKETS.CITY column in ascending order, which presents the cities in alphabetical order in the Drill-Through report.

To define the sort order of rows in the Drill-Through report:

1. In the **Available Columns** list box, select the SALESINVACT.MARKETING column.

   The columns in the **Available Columns** list box are those that you selected in "Selecting and Ordering Columns." The columns in the **Column** list box are those for which a sort order has already been defined in OLAP Builder.

   If a data sort order was selected when the report was created in OLAP Builder, that selection is displayed in the **Order By** list box. Otherwise, the default sort order is **Ascending**.

2. Click ⟩ to move the SALESINVACT.MARKETING column to the **Column** list box so that you can define a sort order for the column.

   To move a column from one list box to another, click ⟩ or ⟨ .
   To move all columns from one list box to another, click ⟩⟩ or ⟨⟨ .
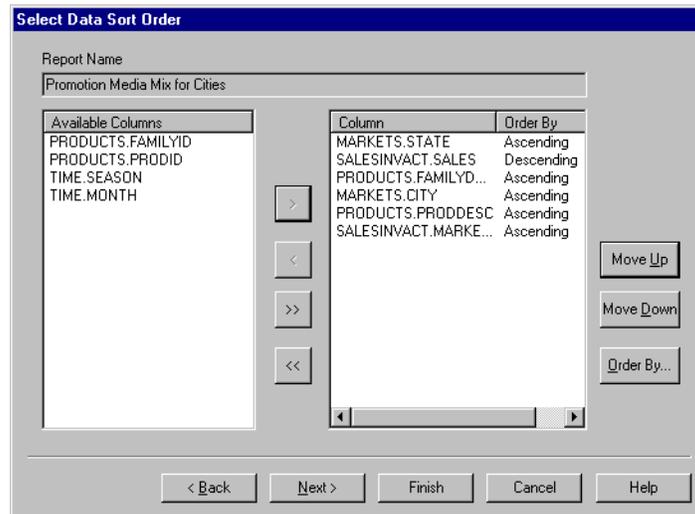
Figure 5–20, Moving a Column to the Column List Box for Sorting

3. Rearrange the display order of columns in the **Column** list box so that the columns are grouped:

    a. Click MARKETS.CITY and click **Move Up** twice.

    b. Click SALESINVACT.MARKETING and click **Move Up** twice.

4. In the **Column** list box, double-click the SALESINVACT.SALES column to change the data sort order from **Descending** to **Ascending** so that SALES values appear in chronological order in the Drill-Through report.

    The Integration Server now sorts the columns it retrieves first by state (in alphabetical order), then by city (in alphabetical order), then by sales (in chronological order).
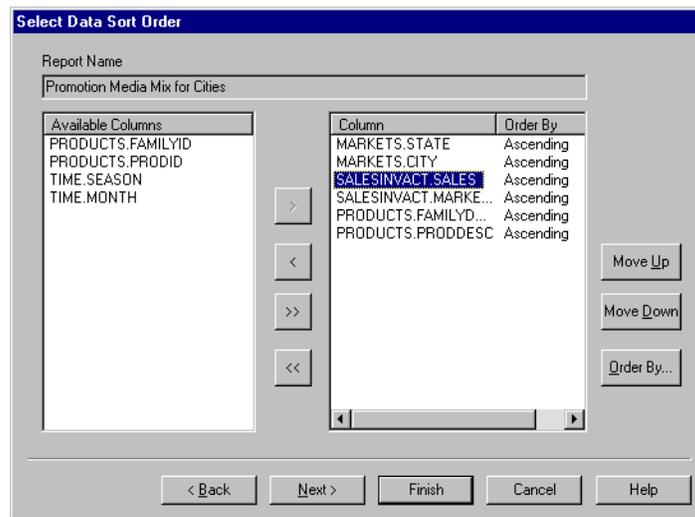
Figure 5–21, Selecting the Data Sort Order

5. Click **Next** to display the **Select Data Filters** dialog box, and follow the steps in the following section, "Filtering Data" to further customize the report.

To change the data sort order for multiple columns at one time, you would:

1.   Hold down the `Ctrl` key and select the desired columns from the **Column** list box.

2.   Click **Order By**.

The Integration Server displays the **Order By** dialog box.
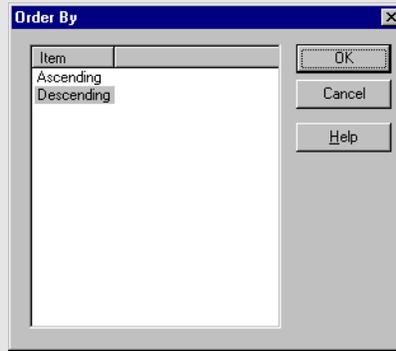
Figure 5–22, Order By Dialog Box

3.   Select **Ascending** or **Descending** and click OK to return to the **Selecting Data Sort Order** dialog box.

Filtering Data

You can apply filters to determine what the Integration Server retrieves for the Drill-Through report. For any given column, you may want to retrieve only data that meets certain conditions. For example, the MARKETS.CITY column in the sample database contains many cities. In the sample Drill-Through report, if you did not apply a filter to this list of cities, the Integration Server would retrieve all cities in the East from the relational source, because the sample Drill-Through report applies to the entire Eastern region. In this section, you will apply a filter to the MARKETS.CITY column so that only specific Eastern cities are included in the report.

To define a filter:

1.   Select the MARKETS.CITY column from the **Column** list box.

The columns in the **Column** list box are those that you selected in "Selecting and Ordering Columns."
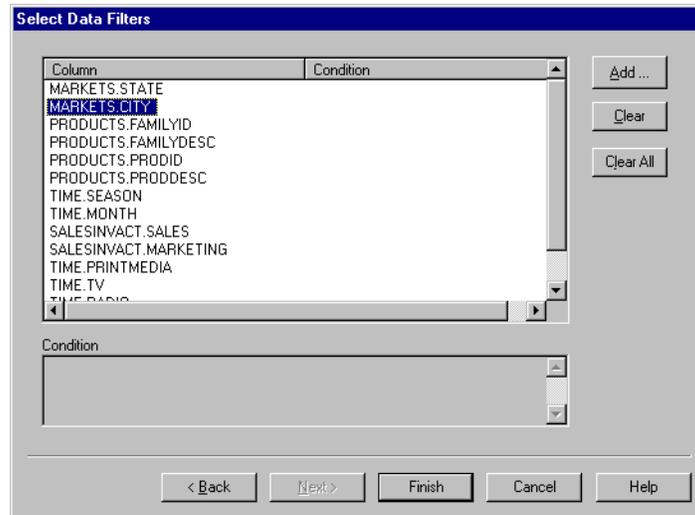
Figure 5–23, Select Data Filters Dialog Box

Note: If there is a filter already attached to the column, it appears in the **Condition** list box. The full string of the filter is displayed in the lower **Condition** text box.

2. With the `MARKETS.CITY` column selected, click **Add**.

   The Integration Server displays the **Set Filter on Column** dialog box.
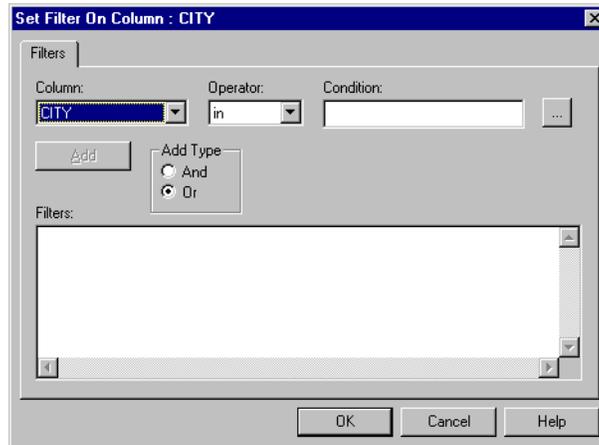
Figure 5–24, Set Filter on Column Dialog Box

3. Select the `CITY` column from the **Column** drop-down list box.

   The column displayed in the **Column** drop-down list box is the one that you selected in "Filtering Data."

4. Select the **in** operator from the **Operator** drop-down list box.

Note: For more information on filter operators, see the Hyperion Integration Server Drill-Through Online Help.

5. Click the **Browse** button to open the **Select Filter Values from the List** dialog box, which lists all possible values for that column.

   The Integration Server displays the **Select Filter Values from the List** dialog box.

Note: The Integration Server retrieves these values directly from the relational data source. If the relational data source contains many values, the Integration Server confirms whether you want to view them all before it retrieves them from the data source.

6. Hold down the `Ctrl` key, select **Andover**, **Boston**, and **Cape Cod**, and click OK.

    You can select multiple values at one time only if you have selected **in** or **not in** as the filter operator.
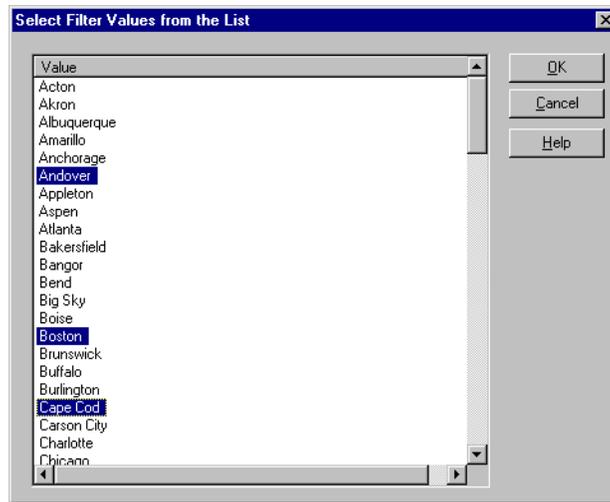
Figure 5–25, Selecting Filter Values from the List

7. Select **And** from the **Add Type** option group.

8. Click **Add** to add the condition to the **Filters** list box.

Note: For information on using multiple filter conditions, see the Hyperion Integration Server Drill-Through Online Help.

The **Set Filter on Column** dialog box should now look like this:
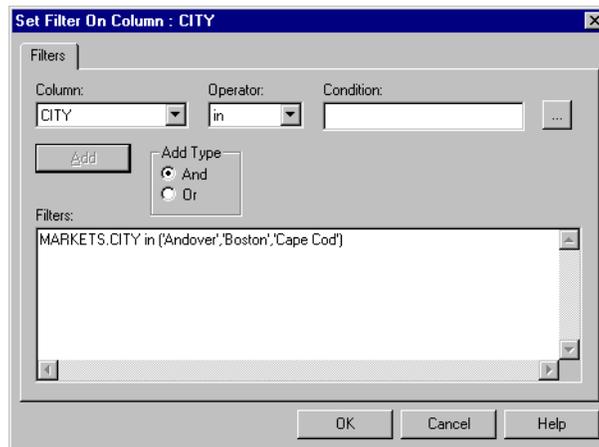
Figure 5–26, Defining a Filter for a Column

The filter defined above causes only Andover, Boston, and Cape Cod data to show in the Drill-Through report.

9.   Click OK to return to the **Select Data Filters** dialog box.
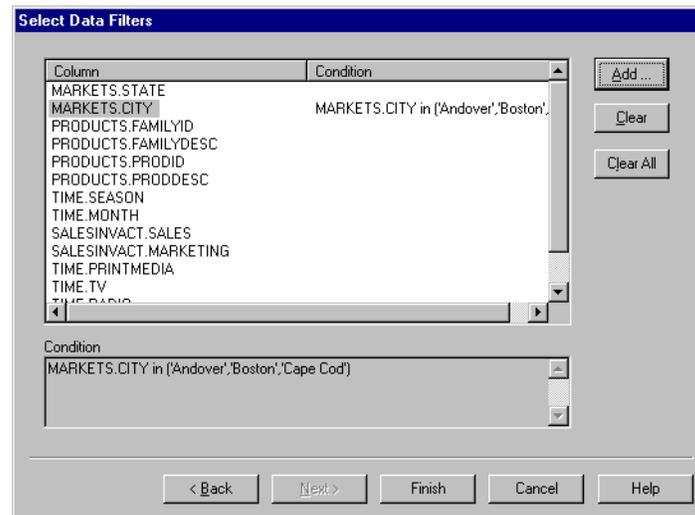
Figure 5–27, Result of Defining a Filter for a Column

Notes:

- You can also create a filter by typing the filter conditions directly into the **Filters** list box. For more information, see the Hyperion Integration Server Drill-Through Online Help.

- To delete a filter, select the filter and click **Clear**. To delete all filters, click **Clear All**.

10. Click **Finish**.

The Integration Server generates the customized Drill-Through report and displays the results in a new spreadsheet. The new sheet is added to the workbook before the current sheet.

Figure 5–28, Customized Drill-Through Report

In this sample, the customized Drill-Through report reflects the specifications you set using the Drill-Through Wizard:

- The `TIME.PRINTMEDIA`, `TIME.TV`, `TIME.RADIO`; and `TIME.DIRECT` columns are excluded.

- The columns are displayed across the sheet in the order you specified in the **Selected Columns** list box in the **Select Columns and Display Order** dialog box.

- The STATE, CITY, SALES, MARKETING, FAMILYDESC, and PRODDESC columns are sorted in ascending order, starting with the STATE column and proceeding to the PRODDESC column. For example, the Integration Server first sorts the STATE column in ascending order. Because there is only one state represented in this column (Massachusetts), the Integration Server moves on to the CITY column and sorts its contents in ascending (alphabetical) order. Then, within the SALES column, the values are sorted in ascending (chronological) order within each city. This process continues until all specified columns are sorted first by CITY and then in ascending order within CITY.

- The only cities retrieved from the relational source are Andover, Boston, and Cape Cod, as you specified in the filtering part of the Drill-Through Wizard.

Disconnecting from Essbase

When you finish using Drill-Through, disconnect from the Essbase server to free up a port on the server for other Spreadsheet Add-in users.

To disconnect from the server:

1. Choose Essbase | Disconnect.

    Essbase displays the **Essbase Disconnect** dialog box, where you can disconnect any sheet that is connected to a database.
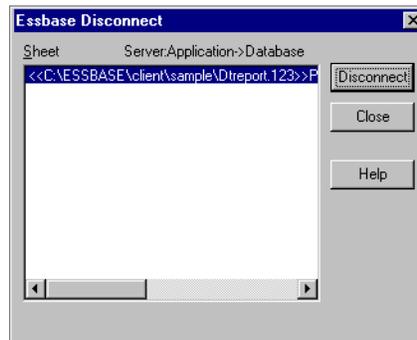
Figure 5–29, Essbase Disconnect Dialog Box

Note: Essbase may return an error message when you attempt to disconnect after using Drill-Through. If an error message is returned, choose 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 1-2-3. An abnormal termination of a 1-2-3 session, such as a power loss or system failure, does not disconnect your server connection.

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