

Introduction

Welcome to the Hyperion Essbase OLAP server product family! Hyperion Essbase is a multidimensional database server that is optimized for planning, analysis, and management reporting applications.

The Hyperion Essbase OLAP server is a 32-bit, multithreaded software application that enables multiple users on multiple clients to work simultaneously. Hyperion Essbase uses a distributed, client-server model. That is, the database engine resides on a server and portions of the database software reside on each client. The server performs most of the database processing, thus enabling the clients to minimize query run time.

The Hyperion Essbase OLAP server product family consists of the following:

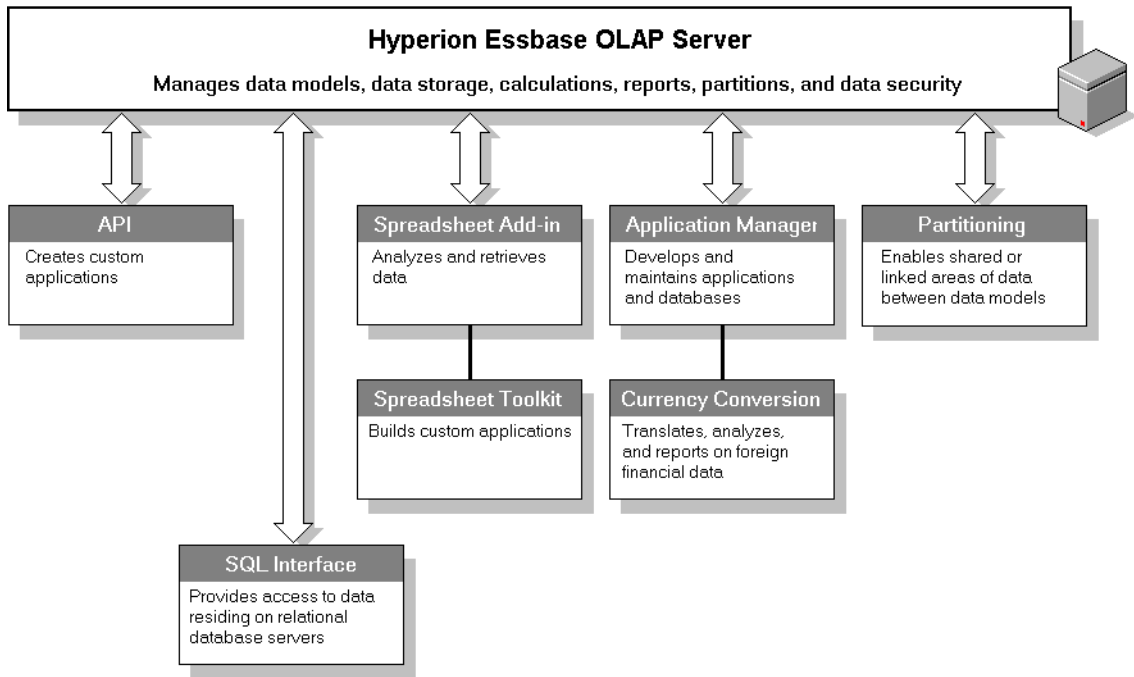
- **Hyperion Essbase OLAP server**
A multidimensional database management facility for storing data and managing analytic-data models, calculations, and data security
- **Hyperion Essbase Application Manager**
A graphical environment for developing and maintaining outlines and dimensions, performing data loads, creating complex calculations, creating partitions and reports, and defining security access
- **Hyperion Essbase Spreadsheet Add-in**
Desktop software that is integrated with Microsoft Excel and Lotus 1-2-3 spreadsheets to analyze data that is stored on the Hyperion Essbase server
- **Hyperion Essbase application tools and add-ons**
Tools and add-ons that are used for extending Hyperion Essbase applications, such as Hyperion Essbase Currency Conversion, Hyperion Essbase Partitions, Hyperion Essbase SQL Interface, Hyperion Essbase Spreadsheet Toolkit, and Hyperion Essbase Application Programming Interface (API)

Hyperion produces a variety of additional products, several of which support and enhance the operation of Hyperion Essbase OLAP server. These products include Hyperion Objects, Hyperion Web Gateway, Hyperion Integration Server, Hyperion Wired for OLAP, and Hyperion Reporting.

The Hyperion Essbase OLAP server product family contains over 100 analytical functions, and offers the opportunity to develop effective multidimensional applications quickly. Hyperion Essbase is easy to deploy and supports standard applications, operating systems, and networking protocols.

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Hyperion Essbase Product Family

Step 1 Designing Applications and Databases

- Identify business and user requirements.
- Identify source data and determine the scope of the database.
- Define standard dimensions and designate sparse and dense dimensions.
- Identify relationships between dimensions and members.
- Define attribute dimensions.
- Consider issues such as regional and departmental information requirements for partitioning.
- Consider currency conversion requirements to track data in various currencies.
- Define the type of calculation that is associated with each dimension and each member.
- Calculate the size of the database, check disk space, and ensure that the sizes of the index, data files, and data caches in memory are adequate.
- Define security access for each user.

For detailed information, see the *Hyperion Essbase Database Administrator's Guide*, Volumes I and II.


Step 2 Creating Applications and Databases

- Start Hyperion Essbase Application Manager.
- Connect to the Hyperion Essbase server.
- Create a new application and database from the Hyperion Essbase Application Manager desktop window. You can create the application and database on the server or on the client.
- Double-click the name of the new database in the **Database Outlines** list box to open the database outline.
- Add dimensions and members to the outline.
- Set dimension and member properties, such as labels, calculations, and storage properties.
- Check the auto-configuration of dense and sparse dimensions. You can turn off auto-configuration and choose your sparse and dense dimensions manually.
- Create attribute dimensions and associate them with the appropriate base dimensions.
- Save the database outline and close Outline Editor.

You can also open the database outline with the File > Open command. In the **Open Server Object** window, ensure that Outlines is selected in the **List Objects of Type** list box.

For detailed information, see the *Hyperion Essbase Database Administrator's Guide*, Volume I.

Step 3 Creating a Rules File to Update an Outline

- Create a data source file that contains the dimensions and members that are to be added to the database.
- Start Hyperion Essbase Application Manager.
- Connect to the Hyperion Essbase server.
- In the Hyperion Essbase Application Manager desktop window, select an application and a database. The database must contain at least one dimension.
- To open a new rules file in the Data Prep Editor, select New > Data Load Rules from the File menu or click the rules button, , and then click the New button.
- In the rules file, specify the names of the new dimensions.
- Specify operations, such as the build type method, that the rules file should perform on the data file before loading the data file into the database.
- Define dimension build properties for each field in the rules file.
- Validate and save the rules file.
- To update the outline, open the outline and select the File > Update Outline command.
- Open the data source file in the Data Prep Editor.
- Associate the rules file with the outline.
- To ensure that Data Prep Editor displays dimension building fields, select **Dimension Building Fields** from the View menu.

For detailed information, see the *Hyperion Essbase Database Administrator's Guide*, Volume I.

Step 4 Loading Data into a Database

When loading free-form data:

- Connect to the Hyperion Essbase server.
- Ensure that the data source is valid and correctly formatted for the database into which the data is being loaded.
- Select the application and database, and select Database > Load Data.
- Select the data file and start loading data.

When using a rules file to load data:

- To create a rules file, select File > New > Data Load Rules.
- Specify the changes that the rules file should perform on the data file before loading the data file into the database.
- Validate and save the rules file.
- Associate the rules file with the database outline.

- Select Database > Load Data and start loading the data.
- Check results to ensure that the data load was successful.
- If the data load fails or completes only partially, check the error log file, correct the problem, and reload the data.
- Calculate the database.

When optimizing a data load:

- Group sparse dimensions in the outline.
- Position data in the order that it is presented in the outline.
- Load data from the server instead of the client.
- For free-form data, set up a range of records in the data source and minimize the data source.

For detailed information, see the *Hyperion Essbase Database Administrator's Guide*, Volume I.

Step 5 Calculating Data

- Decide on a type of calculation: an outline calculation, a calc script calculation, or a combination of both.
- Ensure that relationships between members and member consolidations in the database outline are correct.
- Consider whether tagging some members as Dynamic Calc or whether using Intelligent Calculation will improve calculation efficiency.
- Consider which members you need to tag as two-pass calculation to ensure correct calculation results.
- Select the application and database and select Database > Calculate.
- Select a calc script or the default calc and run the calculation.

When using a calc script:

- Use calculation commands and formulas in the calc script to perform specific calculations on the database.
- Group formulas and dimensions in the calc script to improve calculation performance.
- Associate the calc script with the database and run the calc script.

Optimizing calculations:

- Run test calculations on various database configurations to determine the optimal configuration for calculation performance.
- If necessary, change the order of the sparse dimensions in the database outline.

- Balance data block density and size.
- When loading data incrementally by time, consider making the time dimension a sparse dimension.
- If the database outline has two or more flat dimensions (few parents but many children), to optimize calculations, add intermediate levels to the database outline or use the SET CALCHASHTBL command in a calc script.
- To maximize calculation performance, ensure that formulas are placed correctly.
- If you change data in one section of the database, consider using Intelligent Calculation to recalculate only data blocks that have changed.
- Ensure that memory cache sizes are adequate and that the calculator cache is large enough.
- If using transparent partitions, ensure that the calculator cache is sufficient for optimal performance.
- Ensure that, when calculating a data block, Hyperion Essbase can access the required blocks.
- If necessary, use two-pass calculations.
- If necessary, aggregate #MISSING values.
- Consider loading data at parent levels instead of at level 0.

For detailed information, see the *Hyperion Essbase Database Administrator's Guide*, Volume I.

Step 6 Viewing Data

Viewing data using Hyperion Essbase Spreadsheet Add-in:

- Add Hyperion Essbase Spreadsheet Add-in to Microsoft Excel or Lotus 1-2-3.
- Install the Hyperion Essbase Toolbar (for Excel only).
- Start Hyperion Essbase Spreadsheet Add-in.
- Connect to the database on the server.
- To retrieve data, select Essbase > Retrieve in the spreadsheet.
- To drill down to more detailed data for a member, select the member and select Essbase > Zoom-in.
- Alternatively, to create a query with Hyperion Essbase Query Designer (EQD), select Essbase > Query Designer.
- To view the results of the query, in the navigation panel, click the right-mouse button and select Apply Query.

For more information, see the *Hyperion Essbase Spreadsheet Add-in User's Guide for Excel* and the *Hyperion Essbase Spreadsheet Add-in User's Guide for 1-2-3*.

Viewing data using Hyperion Wired for OLAP Enterprise:

You can also use Hyperion Wired for OLAP Enterprise to view data. Hyperion Wired for OLAP Enterprise is designed for online analytic processing analysis, presentation, and reporting. For more information, refer to *Hyperion Wired for OLAP Enterprise Guide*.

Note: For a list of third party applications that support Hyperion Essbase, refer to the Hyperion web site at www.hyperion.com.

Step 7

Storing Data

Hyperion Essbase automatically sets the default Hyperion Essbase kernel storage settings. However, you can customize the major Hyperion Essbase kernel settings in the Database Settings dialog box in Hyperion Essbase Application Manager as follows:

- **Data compression:** To specify data compression on disk and the compression scheme, select a value from the **Data Compression** list box of the **Storage** tab.
- **Cache sizes:** To specify the index, data file, and data cache sizes, enter the desired values in the **Storage** tab. To prevent a slow-down of the operating system, ensure that the sum of index and data cache sizes for all the active databases on the server is not more than 2/3 of the system's RAM.
- **Cache memory locking:** To lock the memory that is used for the index, data file, and data caches into physical memory. Use the **Storage** tab for this setting.
- **Disk volumes:** To specify the storage location of Hyperion Essbase index files and data files, specify the appropriate disk volume names and configuration parameters in the **Location** box in the **Storage** tab.
- **Isolation level:** To specify either committed access or uncommitted access, set the isolation level for transactions in the **Transaction** tab. Depending on which type of access you specify, Hyperion Essbase uses additional parameters.

For more information on database settings and defaults, see the *Hyperion Essbase Database Administrator's Guide*, Volume II.

Step 8

Generating Reports

Generating reports with Hyperion Essbase Report Writer:

- Decide whether you want to create a structured report or a free-form report.
- Plan the elements of the report, such as page layout, number of columns, identity of members, format of data values, and content of titles.
- For a structured report, create page, column, and row headings. These headings are not necessary for a free-form report.
- To create a report script, use a Report Editor or any other text editor.
- From Report Editor, select Report > Run to run the report.
- Save the report on either the Hyperion Essbase server or on a desktop machine.

Optimizing generated reports:

- Check the configurable variables that are used in conditional retrieval and data sorting commands. For more information, see the online *Technical Reference* in the DOCS directory.
- In the **General** tab under Database > Settings, set the retrieval buffer size between 10K and 256K.
- In the ESSBASE.CFG file on both the client and server files (located in the `essbase\bin` directory), set `netdelay` to 200.
- To improve report processing time, make the reports symmetric.
- To improve data extraction time, structure the report script in the same order as the data extracted by the report extractor; group dense dimensions in columns and sparse dimensions in rows.

For detailed information, see the *Hyperion Essbase Database Administrator's Guide*, Volume II.

Step 9 Using Command-Line Operations

Use ESSCMD to execute server operations at the command line, in either batch or interactive mode.

Consider using script or batch files for commands that are frequently used or for completing tasks that require many commands.

- Choose either the interactive mode or the batch processing mode to enter commands.
- Enter ESSCMD at the operating system command prompt. (Ensure that Hyperion Essbase is running before starting ESSCMD.)

- Log on to the Hyperion Essbase server with the LOGIN command.
- Enter any valid ESSCMD command and press Enter. For a complete listing of commands, type HELP.
- To exit the application, type EXIT.

Note: For more information on using ESSCMD, see the *Hyperion Essbase Database Administrator's Guide*, Volume II, or the online *Technical Reference* in the DOCS directory.

Step 10 Maintaining Security

- Create a security plan for your environment; base the plan on database security needs.
- Choose the appropriate security layer and define privileges and access at the server, the application, the database, and the data cell levels for users or groups.
- Connect to the appropriate server.
- Select Security > Users > Groups and make the necessary changes.

To assign database access for individual users:

- Select Security > Users > Group > Edit User > App Access.
- Select Access DBs, and click DB Access.
- Select the appropriate database and access privileges, and click OK.

To define global application access:

- Connect to the appropriate server, and select the name of the application.
- Select Application > Settings, and define the settings.

To define global database access:

- Connect to the appropriate server, and select the name of the application and database.
- Select Database > Settings, and define the settings on the General tab.

Note: Higher access settings take precedence, whether they are at the application, database, or user level. For example, user-assigned settings override all global settings, if the user-assigned settings are higher.

For detailed information, see the *Hyperion Essbase Database Administrator's Guide*, Volumes I and II.

Step 11 Tuning and Maintaining Databases

- Ensure that block size is not excessively large.
- To achieve optimal database performance, set the correct size for the index, data file, data, and calculator caches.
- Validate the database to ensure data integrity.
- Consider using partitioning to distribute data across multiple cubes for better scalability and performance.
- Ensure that the disk space is adequate to allow the application to grow over time.
- Archive the data on the Hyperion Essbase server on a regular basis.
- Enable the logging facility for spreadsheet update to ensure that log files are updated after archiving.
- If sorting on retrievals, increase the size of the retrieval sort buffer.

For detailed information, see the *Hyperion Essbase Database Administrator's Guide*, Volume I and Volume II.

Step 12 What's Next?

Congratulations! You have made the transition to a Hyperion Essbase OLAP server!

The Next Step:

- For procedures to install Hyperion Essbase, see the *Hyperion Essbase Installation Guide*.
- For command and function syntax, see the online *Technical Reference* in the DOCS directory.
- For information on using Hyperion Essbase Spreadsheet Add-in, see the *Hyperion Essbase Spreadsheet Add-in User's Guide for Excel* or the *Hyperion Essbase Spreadsheet Add-in User's Guide for 1-2-3*.



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