

## Hyperion Essbase 6.1

### *New Features and Documentation*

Congratulations on receiving Hyperion® Essbase® Release 6.1. Hyperion Essbase OLAP Server is a scalable, industrial strength online analytical processing (OLAP) database that enables you to build sophisticated decision support, planning, and analysis applications for your enterprise. With this release, you can build applications that integrate the following concepts within a single, client-server system:

- “What happened?”—historical trend analysis
- “What if?”—modeling and scenario analysis
- “What’s next?”—planning

Use this booklet to learn about Hyperion Essbase Release 6.1 new features and documentation.

For information on platform support, hardware requirements, installing, and creating a migration plan, see the *Hyperion Essbase Start Here* booklet.

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# Documentation Roadmap

The following table lists the documentation available with Hyperion Essbase Release 6.1.

Hyperion Essbase Component	Document Format	Document and File Location
Hyperion Essbase Release 6.1 General Information	Print <sup>1</sup>	<ul style="list-style-type: none"> <li>• Start Here: P/N H70D00-6100000</li> <li>• New Features: P/N H70D15-6100000</li> <li>• Installation Guide: P/N H70D01-6100000</li> </ul>
	PDF	<ul style="list-style-type: none"> <li>• Start Here: \Hyperion\essbase\docs\client\esstart.pdf</li> <li>• New Features: \Hyperion\essbase\docs\client\essnewf.pdf</li> <li>• Installation Guide: \Hyperion\essbase\docs\client\essinst.pdf</li> </ul>
Hyperion Essbase OLAP Server and Hyperion Essbase Application Manager	Help	<ul style="list-style-type: none"> <li>• Application Manager Help: \Hyperion\essbase\bin\app_man.hlp</li> </ul>
	PDF	<ul style="list-style-type: none"> <li>• MaxL User's Guide: \Hyperion\essbase\docs\client\essmaxl.pdf</li> </ul>
	HTML	<ul style="list-style-type: none"> <li>• Technical Reference: \Hyperion\essbase\docs\index.htm</li> <li>• Database Administrator's Guide: \Hyperion\essbase\docs\index.htm</li> </ul>
Hyperion Essbase API	HTML	<ul style="list-style-type: none"> <li>• API Reference: \Hyperion\essbase\docs\index.htm</li> </ul>
Hyperion Essbase Spreadsheet Add-in	Help	<ul style="list-style-type: none"> <li>• Spreadsheet Add-in Help for Excel: \Hyperion\essbase\bin\essexcel.hlp</li> <li>• Spreadsheet Add-in Help for 1-2-3: \Hyperion\essbase\bin\ess123w.hlp</li> <li>• Hyperion Integration Server Drill-Through help: \Hyperion\essbase\bin\olapsqld.hlp</li> </ul>
	PDF	<ul style="list-style-type: none"> <li>• Spreadsheet Add-in User's Guide for Excel: \Hyperion\essbase\docs\client\essexcel.pdf</li> <li>• Spreadsheet Add-in User's Guide for 1-2-3: \Hyperion\essbase\docs\client\ess123w.pdf</li> </ul>
Hyperion Essbase SQL Interface	PDF	<ul style="list-style-type: none"> <li>• SQL Interface Guide: \Hyperion\essbase\docs\client\essqlint.pdf</li> </ul>

1. A catalog of the available printed documentation is available from the Hyperion Solutions Support Web page at [www.hyperion.com](http://www.hyperion.com). You can order printed manuals by calling Hyperion Solutions Client Support at 1-877-901-4975 between 8:00 A.M.-8:00 P.M., EST. You must request each manual by its full name and part number.

# What's New in Release 6.1

## Custom-Defined Macros and Functions

The Hyperion Essbase calculator language can now be extended through the creation of custom-defined macros and functions.

- Custom-defined macros enable you to combine existing calculator functions into a single new function called a macro.
- Custom-defined functions enable you to use your own customized calculator functions within the Essbase calculator framework. These custom-developed functions must be written in the Java programming language and are called by the Essbase calculator framework as external functions.

**More information:** See the online *Technical Reference* in the DOCS directory.

## New Release 6.1 Calculator Functions

The following functions are new in Release 6.1.

### Member Set Functions

The @IRDESCENDENTS function returns all descendants of the specified member (optionally up to the specified generation or level), including the specified member and the descendants of shared members.

The @RDESCENDENTS function returns all descendants of the specified member (optionally up to the specified generation or level), including descendants of shared members, but not the specified member.

Given a character string, the @MEMBER function returns the member with the name specified by that character string.

### Mathematical Functions

The @EXP function returns the value of  $e$  (the base of natural logarithms) raised to the power of the specified expression.

The @LN function returns the natural logarithm of a specified expression.

The @LOG function returns the logarithm to a specified base of a specified expression.

The @LOG10 function returns the base-10 logarithm of a specified expression.

The @MAXS function returns the maximum value among the expressions in the specified member list, with the ability to skip zero and #MISSING values, or skip zero or #MISSING values.

The @MINS function returns the minimum value among the expressions in the specified member list, with the ability to skip zero and #MISSING values, or skip zero or #MISSING values.

## Range and Financial Functions

The @MAXSRANGE function returns the maximum value of a member across a range of members, with the ability to skip zero and #MISSING values, or skip zero or #MISSING values.

The @MINSRANGE function returns the minimum value of a member across a range of members, with the ability to skip zero and #MISSING values, or skip zero or #MISSING values.

## Relationship Functions

The @ATTRIBUTEVAL function returns the value (TRUE or FALSE) of the attribute from the specified Boolean attribute dimension associated with the current member.

The @ATTRIBUTESVAL function returns the text value of the attribute from the specified text attribute dimension associated with the current member.

## String Functions

The @CONCATENATE function returns a character string that is the result of appending a member name or specified character string to another member name or character string.

The @SUBSTRING function returns a substring of characters from another character string or from a member name.

## Calculation Method Function

To help maximize performance, the @CALCMODE function enables you to override the execution mode chosen by Hyperion Essbase for a formula. For example, you can use this function to change the execution of sparse member formulas that run more slowly in top-down mode to run in a faster bottom-up mode. You can also use @CALCMODE to change the execution of formulas that calculate correctly without cell mode to run in the faster block mode.

**More information:** See the online *Technical Reference* in the DOCS directory.

## Dynamic Calculator Cache

Hyperion Essbase Release 6.1 includes a new dynamic calculator cache. The dynamic calculator cache helps manage memory usage for calculations involving Dynamic Calc members. Managing data blocks in the dynamic calculator cache also reduces the overall memory space requirement and can improve performance by reducing the number of calls to the operating system to do memory allocations.

Release 6.1 includes five new ESSBASE.CFG settings that you can use to establish the size of this cache and define how it is used.

**More information:** See the online *Technical Reference* in the DOCS directory.

## MaxL

MaxL is the multi-dimensional access language for Hyperion Essbase OLAP Server. MaxL is a practical, expressive interface for administering Hyperion Essbase system administration in the following ways:

- Provides an intuitive, language interface to the Hyperion Essbase OLAP Server, enabling programmatic management of Essbase applications without a prerequisite knowledge of C, Visual Basic, or the Essbase API.
- Includes the MaxL Command Shell, which can be used interactively or for running scripts. The MaxL Command Shell includes command-line argument processing, environment variable processing, nesting of MaxL scripts, and shell escapes. These features offer the flexibility needed to create a highly automated Essbase production environment.
- Includes an optional Essbase Perl Module (Essbase.pm), which extends the power of MaxL by enabling Perl programmers to embed MaxL queries in Perl scripts.

**More information:** See the online *Technical Reference* in the DOCS directory.

## Improved Diagnostics

Two performance statistics commands, GETPERFSTATS and RESETPERFSTATS, have been updated in Hyperion Essbase Release 6.1. The GETPERFSTATS command returns short, medium, and long performance statistics for the thread, database, and application. The statistics appear as tables in the ESSCMD window.

The RESETPERFSTATS command resets statistics gathering for a specified persistence and scope.

**More information:** See the online *Technical Reference* in the DOCS directory.

## Improved Password Protection

Hyperion Essbase Release 6.1 provides an enhanced encryption algorithm for transferring login information over the network. The encryption takes place at the API level, so all of the tools should be compatible with this change. Hyperion Essbase Release 6.1 uses the Blowfish algorithm from Counterpane Internet Security, Inc. For more information, see <http://www.counterpane.com/blowfish.html>.

## Parallel Export

In previous versions of Hyperion Essbase, export was a single-threaded process. In Release 6.1, the PAREXPORT command enables administrators to export Hyperion Essbase databases natively using multiple threads. The export process is therefore multithreaded and allows users to leverage the full power of their hardware investment.

**More information:** See the online *Technical Reference* in the DOCS directory.

## New Formula Validation Options

Through new menu options in Outline Editor and Formula Editor, users can choose whether Hyperion Essbase validates formulas on the client or on the server.

## Release 6.1 ESSCMD Commands

### New ESSCMD Command

PAREXPORT—Executes a parallel export by enabling you to specify the number of export threads to be used, export filename(s) for the data, the type of data to export, and how the data is to be exported.

**More information:** See the online *Technical Reference* in the DOCS directory.

### Updated ESSCMD Commands

- EXPORT—Sends the data values of a database to an ASCII text file. Updated to include a format option setting to allow export of data in column or non-column format.
- GETPERFSTATS—Added performance statistics to the report to help users analyze the effectiveness of their dynamic calculator cache configuration settings.
- GETVERSION—Displays the patch number in addition to the version number.

**More information:** See the online *Technical Reference* in the DOCS directory.

# Release 6.1 ESSBASE.CFG Settings

## New ESSBASE.CFG Settings

- AGENTLOGMESSAGELEVEL—Enables you to specify the level of messages written to the Agent Event Log.
- LOGMESSAGELEVEL—Enables an administrator to specify the level of messages written to the Application Event Log.
- DYNCALCCACHEMAXSIZE—Specifies the maximum size Hyperion Essbase can allocate to each dynamic calculator cache on the server.
- DYNCALCCACHEONLY—For situations when the dynamic calculator cache has no more room, this setting specifies whether or not Hyperion Essbase may perform Dynamic Calc calculations in memory outside the dynamic calculator cache.
- DYNCALCCACHEWAITFORBLK—Specifies whether Hyperion Essbase waits until space becomes available in the dynamic calculator cache or immediately writes and calculates the data blocks in memory outside the dynamic calculator cache.
- DYNCALCCACHEBLKTIMEOUT—Specifies how long Hyperion Essbase is to wait for available space in the dynamic calculator cache.
- DYNCALCCACHEBLKRELEASE—Specifies whether Hyperion Essbase writes and calculates the blocks immediately outside the dynamic calculator cache or uses space in the dynamic calculator cache that it makes available by swapping out blocks and temporarily compressing them in a dynamic calculator cache compressed-block buffer.
- DYNCALCCACHECOMPRBLKBUFSIZE—Specifies the size of the dynamic calculator cache compressed-block buffer.
- EXPORTTHREADS—Enables the user to set the number of export threads that can be used to export data.
- JVMMODULELOCATION—Enables the user to designate a specific Java Virtual Machine library to be used by Hyperion Essbase.

**More information:** See the online *Technical Reference* in the DOCS directory.

## Updated ESSBASE.CFG Setting

EXCEPTIONLOGOVERWRITE—Changed default from TRUE to FALSE

**More information:** See the online *Technical Reference* in the DOCS directory.



## MERANT ODBC Drivers

MERANT ODBC drivers version 3.6 are provided with Hyperion Essbase Release 6.1 SQL Interface. The MERANT ODBC drivers come with the following documents: *MERANT DataDirect Connect ODBC Installation Guide* and *MERANT DataDirect Connect ODBC Reference*. These documents are in PDF for online viewing and printing in Adobe Acrobat Reader (version 3.0.1 or later). Acrobat Reader is available in the \ADOBE directory on the Hyperion Essbase CD-ROM.

## New Spreadsheet Add-in Platform

Hyperion Essbase Spreadsheet Add-in supports Microsoft Excel 2000 and Lotus 1-2-3 Millennium Release 9.5.

**More information:** See the Hyperion Essbase Spreadsheet Add-in Help, 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*.

# What's New in Release 6.0

## Sophisticated, Economical Attribute Analysis

Attributes are characteristics of your data. For example, products can have attributes such as colors, sizes, or flavors.

Hyperion Essbase Release 6.0 provides a number of attribute-related features that help you define and store attribute information and analyze attribute data in meaningful ways.

- You can use attribute dimensions and members in the outline to define attributes. Attribute dimensions and members are Dynamic Calc. Therefore, attribute data is not stored in the database and outlines may be smaller.
- Through the system-defined Attribute Calculations dimension, Hyperion Essbase provides access to five consolidations of all attribute data: sums, counts, averages, minimums, and maximums.
- Flexibility at retrieval time means that viewing attribute data is optional.
- You can create useful summaries of the data using crosstabs. Crosstabs are a way of displaying summaries of data, based on multiple characteristics of that data. For example, you can group different attribute information by columns and rows to see the total sales of grape-flavored soda packaged in 12-ounce cans.
- Through text, numeric, Boolean, and date based comparisons, you can selectively view only the data that you want to see.
- Optionally, you can use numeric attributes to group and summarize attribute data by ranges of values. For example, you can analyze data by population ranges such as 0 through 1000000, 1000001 through 2000000, and so on.
- Hyperion Essbase provides three new attribute-related functions: @ATTRIBUTE, @WITHATTR, and @ATTRIBUTEVAL. In addition, all relevant functions have been enhanced to support attribute processing or calculations.

**More information:** See the *Hyperion Essbase OLAP Server Database Administrator's Guide* and the online *Technical Reference* in the DOCS directory.

# Release 6.0 ESSCMD Commands

## New ESSCMD Commands

- CREATELOCATION—creates a new location alias.
- DELETELOCATION—removes a location alias from the current database.
- LISTLOCATIONS—displays all location aliases of a given database.
- GETATTRINFO—returns member, dimension, and data information for given members.
- GETATTRIBUTEPECS—returns the format specifications for a given attribute.
- LISTFILES—supplies accurate index and data file information.
- GETPERFSTATS—returns performance statistics tables.
- RESETPERFSTATS—enables, disables, or resets performance statistics gathering.

## Updated ESSCMD Commands

- GETDBINFO—returns information on the internal structure of a database. Updated to include information on the data file cache and cache memory locking.
- GETMBRINFO—returns information on a specific member. Updated to include attribute information.
- GETDBSTATE—returns information on the state of the currently selected database. Updated to include information on the data file cache and cache memory locking.
- SETDBSTATEITEM—defines database settings by number. Updated to include settings for the data file cache size and cache memory locking.

**More information:** See the online *Technical Reference* in the DOCS directory.

## Parallel Login and Application Startup Tasks

- Users can now log into the Hyperion Essbase server in parallel.
- Speed up parallel login processing by using a new command-line parameter, `quicklogin`, which caches the security file and writes it to disk at specified time intervals. Example: `Essbase password -quicklogin`.

## Enterprise Architecture

Hyperion Essbase Release 6.0 supports concurrent agent operations so that you can now deploy a larger number of applications, databases, and users on one or more Hyperion Essbase servers. The new multitasking agent executes certain tasks in parallel.

You can perform the following tasks simultaneously:

- Starting multiple applications
- Stopping multiple applications
- Logging on multiple users. Users can log on when an application is loading or the database is recovering.

## Support for Large Outlines

Hyperion Essbase Release 6.0 supports large outlines by improving performance for outline-related operations, including the following:

- Outline editing
- Dimension building
- Restructuring
- Calculating

# New API Features

New C and Visual Basic APIs and enhanced functionality of existing C and Visual Basic APIs enable attributes.

Enhanced C Structures for Hyperion Essbase Kernel (previously called Storage Manager):

- ESS\_DBSTATE-T
- ESS\_DBINFO-T

Enhanced C Functions for Hyperion Essbase Kernel (previously called Storage Manager):

- EssGetDatabaseState()
- EssSetDatabaseState()
- EssGetDatabaseInfo()

Enhanced Visual Basic Structures for Hyperion Essbase Kernel (previously called Storage Manager):

- ESB\_DBSTATE\_T
- ESB\_DBINFO\_T

Enhanced Visual Basic Functions for Hyperion Essbase Kernel (previously called Storage Manager):

- EsbGetDatabaseState()
- EsbSetDatabaseState()
- EsbGetDatabaseInfo()

New C Structures for Attributes:

- ESS\_ATTRIBUTEINFO\_T
- ESS\_ATTRIBUTEVALUE\_T
- ESS\_ATTRSPECS\_T
- ESS\_PARTOTL\_DIMASSOCCHG\_API\_T
- ESS\_PARTOTL\_MBRASSOCCHG\_API\_T
- ESS\_ATTRIBUTEQUERY\_T

#### New C Functions for Attributes:

- EssCheckAttributes()
- EssFreeStructure()
- EssGetAssociatedAttributesInfo()
- EssGetAttributeInfo()
- EssGetAttributeSpecifications()
- EssOtlAssociateAttributeDimension()
- EssOtlAssociateAttributeMember()
- EssOtlDisassociateAttributeDimension()
- EssOtlDisassociateAttributeMember()
- EssOtlFindAttributeMembers()
- EssOtlFreeStructure()
- EssOtlGetAssociatedAttributes()
- EssOtlGetAttributeInfo()
- EssOtlGetAttributeSpecifications()
- EssOtlQueryAttributes()
- EssOtlSetAttributeSpecifications()

#### New Visual Basic Structures for Attributes:

- ESB\_ATTRIBUTEINFO\_T
- ESB\_ATTRSPECS\_T
- ESB\_ATTRIBUTEQUERY\_T

#### New Visual Basic Functions for Attributes:

- EsbCheckAttributes()
- EsbGetAssociatedAttributesInfo()
- EsbGetAttributeInfo()
- EsbGetAttributeSpecifications()
- EsbOtlAssociateAttributeDimension()
- EsbOtlAssociateAttributeMember()

- EsbOtlDisassociateAttributeDimension()
- EsbOtlDisassociateAttributeMember()
- EsbOtlFindAttributeMembers()
- EsbOtlGetAssociatedAttributes()
- EssOtlGetAttributeInfo()
- EsbOtlGetAttributeSpecifications()
- EsbOtlQueryAttributes()
- EsbOtlSetAttributeSpecifications()

Enhanced C Structures for Attributes:

- ESS\_DIMENSIONINFO\_T
- ESS\_MEMBERINFO\_T
- ESS\_PARTOTL\_DIMCHG\_API\_T
- ESS\_PARTOTL\_MBRCHG\_API\_T
- ESS\_PARTOTL\_OSN\_RELATIVES\_API\_T
- ESS\_MBRINFO\_T

Enhanced C Functions for Attributes:

- EssGetDimensionInfo()
- EssGetMemberInfo()
- EssQueryDatabaseMembers()
- EssOtlAddDimension()
- EssOtlAddMember()
- EssOtlGetMemberInfo()
- EssOtlMoveMember()
- EssOtlRenameMember()
- EssOtlSetMemberInfo()
- EssOtlVerifyOutline()

Enhanced Visual Basic Structures for Attributes:

- `ESB_DIMENSIONINFO_T`
- `ESB_MEMBERINFO_T`
- `ESB_MBRINFO_T`

Enhanced Visual Basic Functions for Attributes:

- `EsbGetDimensionInfo()`
- `EsbGetMemberInfo()`
- `EsbQueryDatabaseMembers()`
- `EsbOtlAddDimension()`
- `EsbOtlAddMember()`
- `EsbOtlGetMemberInfo()`
- `EsbOtlMoveMember()`
- `EsbOtlRenameMember()`
- `EsbOtlSetMemberInfo()`
- `EsbOtlVerifyOutline()`

`EssQueryDatabaseMembers()` and `EsbQueryDatabaseMembers()` now enable you to specify an output of two or more items of information on a member. If you specify `ATTRIBUTES` as an item, the output is the number of attributes followed by a tab-separated list of attribute names.

**More information:** See the online *API Reference* in the `DOCS` directory.



# New Features in the Hyperion Essbase Kernel

In Hyperion Essbase Release 6.0, the Hyperion Essbase Kernel (previously known as the Storage Manager) uses direct I/O (input/output) and no-wait I/O on most server platforms and file systems. This means that Hyperion Essbase directly caches the index and data files (page files) and is able to perform asynchronous, overlapped I/Os, providing the following benefits:

- Faster response time. A user waits less time for Hyperion Essbase to return data.
- Better scalability and predictability. It is easier to determine the optimal cache sizes for Hyperion Essbase databases with Hyperion Essbase Release 6.x.

In previous releases of Hyperion Essbase, the file system did most of the index and data file caching.

Hyperion Essbase Release 6.0 introduces:

- A new cache, the data file cache.
- A new database setting, the cache memory locking setting. Using this setting you can lock the memory used for the index cache, data file cache, and data cache into physical memory. This improves performance for a Hyperion Essbase database because the system memory manager does not need to swap and reserve space for the memory used by its caches. By default, Cache Memory Locking is turned off. You can turn on this setting using the SetDbStateItem ESSCMD command or in the Storage tab of the Database Settings dialog box. In the Application Manager, select Database > Settings.

Because Hyperion Essbase now caches the index and data files, to maintain or improve performance, you must allocate to the Hyperion Essbase index and data file caches the memory previously allocated by the file system to the file system cache. For information about minimum RAM and disk space requirements for running Hyperion Essbase applications, see the *Hyperion Essbase Start Here* booklet, the *Hyperion Essbase Installation Guide* for information pertaining to your server platform, and Chapter 15, “Estimating Disk and Memory Requirements for a Database” in the *Hyperion Essbase OLAP Server Database Administrator’s Guide* for Release 6.0.

To view the database settings currently in effect, use the GetDbInfo ESSCMD command. To view the database settings most recently entered (but not necessarily yet in effect), use the GetDbState ESSCMD command.

**Note:** Direct I/O, no-wait I/O, and Cache Memory Locking are not supported on Windows 95 or Windows 98 platforms. No-wait I/O and Cache Memory Locking are not supported on AIX. Cache Memory Locking is not supported on HP-UX. No-wait I/O is not supported on Solaris or Linux. See the *Hyperion Essbase Start Here* booklet for more information.

**Note:** On Windows NT with NTFS only: to obtain accurate index and data file size information, use Application Manager or the new LISTFILES ESSCMD command. The index and data file size information provided by the Windows NT operating system may be inaccurate.

## New Features in the ESSBASE.CFG File

- DATACACHE SIZE specifies the initial value for the data cache size for any new databases that are created after Hyperion Essbase is restarted.
- DATAFILECACHE SIZE specifies the initial value for the data file cache size for any new databases that are created after Hyperion Essbase is restarted.
- INDEXCACHE SIZE specifies the initial value for the index cache size for any new databases that are created after Hyperion Essbase is restarted.
- LROONSHARED MBR specifies whether shared member LROs are unique from those of their corresponding regular members.
- SUPNA specifies whether the Suppress #Missing Rows option in the Hyperion Essbase Spreadsheet Add-in suppresses the display of cells for which a user has no access (in addition to suppressing #MISSING rows).

**More information:** See the online *Technical Reference* in the DOCS directory.

# New Features in the Spreadsheet Add-in

The new features in Hyperion Essbase Spreadsheet Add-in are listed below.

## A More Powerful Interface to Create Queries

Hyperion Essbase Query Designer (EQD) replaces the Retrieval Wizard to create queries for reports. This feature enables you to:

- Design a layout for the report
- Select members (including attributes) for the report
- Perform member filtering
- Perform data filtering
- Perform data sorting

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

## Support for Attributes

You can view attributes in reports by typing the name of the attribute directly in the spreadsheet, using member selection, or using Hyperion Essbase Query Designer. You can also apply styles to attributes to identify them in the spreadsheet.

## New Client Platforms

Hyperion Essbase Spreadsheet Add-in supports Microsoft Excel 2000 and Lotus 1-2-3 Millennium Release 9 and 9.1.

**More information:** See the Hyperion Essbase Spreadsheet Add-in Help, 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*.

# New Features in the Calculator

The following functions are new in Release 6.0:

## Member Set Functions

- The @ANCEST function returns the ancestor at a specified generation or level for the current member being calculated in a specified dimension.
- The @CURRMBR function returns the current member being calculated for a specified dimension.
- The @LIST function creates and distinguishes lists to be processed by functions that require list arguments. @LIST acts as an aggregation of parameters, treating a collection of parameters as one entity.
- The @MERGE function merges two member lists to be processed by another function. Duplicate values from both lists are included only once in the merged list.
- The @RANGE function returns a member list that crosses a specified member from one dimension with a specified member range from another dimension.
- The @REMOVE function removes values or members in one list from another list.
- The @PARENT function returns the parent of the current member being calculated in the specified dimension.
- The @ATTRIBUTE function returns all base members that are associated with a specified attribute member.
- The @WITHATTR function returns all base members that are associated with attributes that satisfy the conditions you specify.

## Statistical Functions

- The @CORRELATION function calculates the correlation coefficient between two parallel data sets.
- The @COUNT function calculates the number of values in a specified data set.
- The @MEDIAN function calculates the median, or middle number, in a specified data set.
- The @MODE function calculates the mode, or the most frequently occurring value, in a specified data set.
- The @RANK function calculates the rank of a specified member or value in a data set.

- The @STDEV function calculates the standard deviation of specified members, based upon a sample.
- The @STDEVP function calculates the standard deviation of specified members, based upon the entire population.
- The @STDEV RANGE function calculates the standard deviation of specified members, across a range of members.
- The @VARIANCE function calculates the statistical variance of a specified data set, based upon a sample.
- The @VARIANCEP function calculates the statistical variance of a specified data set, based upon the entire population.

## Allocation and Forecasting Functions

- The @ALLOCATE function allocates values from a member, cross-dimensional member, or value across a member list within the same dimension, based on a variety of criteria.
- The @MDALLOCATE function allocates values from a member, cross-dimensional member, or value across multiple dimensions, based on a variety of criteria.
- The @MOVAVG function applies a moving average to a data set, where each term in the list is replaced by a trailing average. This function modifies the data set for smoothing purposes.
- The @MOVMAX function applies a moving maximum to a data set, where each term in the list is replaced by a trailing maximum. This function modifies the data set for smoothing purposes.
- The @MOV MED function applies a moving median to a data set, where each term in the list is replaced by a trailing median. This function modifies the data set for smoothing purposes.
- The @MOV MIN function applies a moving minimum to a data set, where each term in the list is replaced by a trailing minimum. This function modifies the data set for smoothing purposes.
- The @SPLINE function applies a smoothing spline to a set of data points. A spline is a mathematical curve that is used for purposes of smoothing or interpolation.
- The @TREND function calculates future values based on curve-fitting to historical values.

## Relationship Functions

- The @ATTRIBUTEVAL function returns the numeric value associated with a level 0 attribute member from a numeric, Boolean, or date attribute dimension, for the current member combination.
- The @XREF function returns a data value from another database to be used when calculating a value from the current database.

## Date and Time Functions

The @TODATE function converts date strings to integers that can be used in calculation formulas.

## Calculation Method function

The @CALCMODE function specifies the calculation method that Hyperion Essbase uses when calculating a formula that contains the @ISMBR function.

**More information:** See the online *Technical Reference* in the DOCS directory.

## New Features in Partitioning

Hyperion Essbase can use attribute functions to base partitions on attribute values associated with a base dimension. To use this feature, you can use @ATTRIBUTE and @WITHATTR to partition a dimension based on its characteristics.

## New Features in Security Filters

Hyperion Essbase can use the attribute functions @ATTRIBUTE and @WITHATTR to define filters on attribute values associated with a base dimension.

## Large Data Export Capability

Hyperion Essbase imposes no limitation on the size of data files you can export. The only limitations are the maximum file size and volume size allowed by your operating and file systems. Import file size remains limited to 2 GB.

## New Features in Report Writer

- Use the new <ATTRIBUTE command to extract information based on the data characteristics of members of a base dimension.
- Use the new <WITHATTR command to display all base dimension members associated with the specified attribute.
- Use the new <TODATE command to extract data for a specific date or for a time period before or after a specific date.

**More information:** See the online *Technical Reference* in the DOCS directory.

# Where to Get More Information

Each topic in this booklet is described in more detail in the documentation.

For information on creating a plan for migrating calculation scripts, report scripts, ESSCMD scripts, and API programs, see the *Hyperion Essbase Start Here* booklet.

For answers or comments on technical documentation:

Hyperion Essbase Technical Publications  
Phone: 408-744-9500  
FAX: 408-744-0400  
E-mail: TechPubs@hyperion.com

For answers to technical questions on the product, performance, and platform specifics, contact your authorized technical support provider or:

Hyperion Essbase Client Support  
Phone: 877-901-HYSL in North America  
E-mail: client\_support@hyperion.com  
Internet: <http://support.hyperion.com>

Clients in Europe, Asia, or other areas should call their local support phone number.

Visit the Hyperion Solutions Web Site Home Page at <http://www.hyperion.com>

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