

**Oracle® Essbase Analytics Link for Hyperion Financial
Management**

Administrator's Guide

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Introducing Analytics Link

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About Analytics Link

Oracle Essbase Analytics Link for Hyperion Financial Management provides near-real-time data synchronization between Oracle Hyperion Financial Management, and Oracle Essbase, enabling Essbase users to view live Financial Management data without having to create and manage extraction and load tasks. Analytics Link off-loads the Financial Management application server by managing all reporting requests, freeing resources for financial consolidations.

Business Intelligence Challenges with Financial Management

Financial Management data must be shared, but, as a proprietary data store, it is not easily available to other reporting tools. Essbase provides a higher level of reporting and analytics for Financial Management, including the ability to modify dimensions and add data. Analytics Link enables users to use Essbase analytical features with live Financial Management data. Users can access the data with any reporting tool that can access Essbase.

Existing Financial Management and Business Intelligence Integration

The existing integration between Financial Management and Essbase is a manual process that, while allowing maximum flexibility, might add significant effort to the implementation, because it focuses on batch processes involving data extraction, loading, and calculations.

A high-level look at the current integration process of Financial Management and Essbase:

1. Extract data from Financial Management.
2. Build an Essbase outline.

3. Load Essbase.
4. When Financial Management data changes, repeat steps 1 through 3.

Increasingly, businesses require an on-demand approach to data integration rather than this batch approach.

Analytics Link Key Features

Analytics Link offers seamless integration among Financial Management, Essbase, and other applications. The key advantages of Analytics Link:

- Delivers continuous operations for Financial Management by eliminating previously required downtime.
- Reduces IT costs by eliminating high implementation costs and the deployment of additional servers.
- Improves efficiencies through improved performance and scalability of real-time data synchronization.
- Reduces risk by ensuring data integrity and reliability between source and target systems.
- Improves business insight through real-time Business Intelligence reporting based on current financial information.
- Reduces barriers to sharing data by offering standard Business Intelligence access to application proprietary data.

About this Guide

Check the [Oracle Documentation Library \(http://www.oracle.com/technology/documentation/epm.html\)](http://www.oracle.com/technology/documentation/epm.html) on Oracle Technology Network to see whether an updated version of this guide is available.

Documentation Roadmap

Table 1 lists essential Analytics Link tasks.

Table 1 Documentation Roadmap

Task	Reference
Create the Analytics Link Servers node by enabling Analytics Link Administration Services Console plug-in in Administration Services Console.	<i>Oracle Essbase Analytics Link for Hyperion Financial Management Installation Guide</i>
Familiarize yourself with Analytics Link components and the flow of data from Financial Management to Analytics Link.	Chapter 2, “Understanding Data Synchronization from Financial Management to Analytics Link”

Task	Reference
Determine the region of the Financial Management application data that you want to work with in Analytics Link and the type of target database that you want Analytics Link to create.	Chapter 4, “Planning the Bridge Implementation”
Add components to the Analytics Link Servers node and define a bridge: <ul style="list-style-type: none"> ● Analytics Link Server ● Financial Management server, application, and data region ● Essbase Server, application, and database ● Data Synchronization Server ● Data Store ● Bridge 	Chapter 5, “Adding Components to an Analytics Link Server”
Create the Data Synchronization Server database for the bridge.	Chapter 6, “Creating the Data Synchronization Server Database and Synchronizing Data”
Set the properties for the bridge target database.	Chapter 7, “Setting Target Database Properties”
Design the grid for the bridge target database.	Chapter 8, “Designing the Target Database Grid”
Create an Essbase target database.	Chapter 9, “Creating an Essbase Bridge Target”
Customize the Essbase outline.	Chapter 10, “Customizing Essbase Outlines”
Extract data to an Essbase replicated partition database.	Chapter 11, “Extracting Financial Management Data to an Essbase Replicated Partition Database Target”
Extract data to an RDBMS database.	Chapter 12, “Extracting Financial Management Data and Metadata to an RDBMS Bridge Target”
Manage bridge operations.	Chapter 13, “Managing Analytics Link Bridges”

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Understanding Data Synchronization from Financial Management to Analytics Link

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About Analytics Link Software Components

Analytics Link consists of these components:

- [“Analytics Link Server” on page 15](#)
- [“Analytics Link Repository” on page 15](#)
- [“Analytics Link Data Synchronization Server” on page 16](#)
- [“Analytics Link Administration Services Console Plug-in” on page 16](#)
- [“Analytics Link Financial Management Connector” on page 16](#)
- [“Data Store” on page 16](#)
- [“Analytics Link Servers Node” on page 16](#)
- [“Analytics Link Bridges” on page 17](#)

Analytics Link Server

Analytics Link Server is a Web server that integrates Financial Management applications with Essbase databases and manages all operations of Analytics Link.

Analytics Link Repository

The Analytics Link repository is a relational database user/schema in which Analytics Link Server stores its internal data.

The location of the Analytics Link repository is specified during the Analytics Link configuration process. Whether using an existing relational database or creating a new database for the Analytics Link repository, you should create an Analytics Link user with permission to create and maintain tables within the schema.

Analytics Link Data Synchronization Server

Data Synchronization Server creates a database based on the data and metadata extracted from the Financial Management application. This database is a replica of the Financial Management application.

As an aggregation engine, Data Synchronization Server performs data aggregation on demand. Data Synchronization Server performs the same aggregations as the Financial Management application (except as noted below), so it returns matching results.

Note: Data Synchronization Server does not perform consolidations of the Entity dimension, which is the consolidation dimension of the Financial Management application. Consolidations of the Entity dimension must be performed in Financial Management.

Analytics Link Administration Services Console Plug-in

Analytics Link Administration Services Console Plug-in is the Analytics Link Server client, which provides the user interface for defining and managing Analytics Link Servers and bridges.

See [“Analytics Link Servers Node” on page 16](#) and [“Analytics Link Bridges” on page 17](#).

Analytics Link Financial Management Connector

The Analytics Link Financial Management Connector enables Analytics Link Server to extract Financial Management application metadata.

Data Store

The Data Store is a relational database user/schema. The Data Store may contain:

- Mapping tables that are defined in a bridge
See [“About Dimension Member Mapping Tables” on page 90](#).
- Data or metadata that is extracted to an RDBMS database
See [Chapter 12, “Extracting Financial Management Data and Metadata to an RDBMS Bridge Target.”](#)

Analytics Link Servers Node

When the Analytics Link Administration Services Console plug-in component is enabled in Administration Services Console, the Analytics Link Servers node is displayed in the Enterprise View. When an Analytics Link Server is added to the Analytics Link Servers node, the server node is populated with these subnodes: HFM Servers, Essbase Servers, Data Synchronization Servers, Data Stores, and Bridges.

Figure 1 shows the tree hierarchy of the Analytics Link Servers node after the Analytics Link Server named localEAL is added.

Figure 1 Analytics Link Servers node with Analytics Link Server named localEAL



Analytics Link Bridges

A bridge enables you to build a whole, partial, or transformed replica of a Financial Management application in an Essbase database, or extract Financial Management application data to an RDBMS database.

After a bridge is created, the bridge target cannot be changed. See [“Determining the Type of Bridge Target Database”](#) on page 25.

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Starting and Stopping Analytics Link Components

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Starting Analytics Link Components

Subtopics

- Starting Analytics Link Server
- Starting Data Synchronization Server

Starting Analytics Link Server

Follow the instructions for starting Analytics Link Server, based on the operating system and Web application server on which Analytics Link Server was deployed and, for Windows, whether Analytics Link Server was deployed as a service or process.

Table 2 Starting Analytics Link Server

Operating System	Deployed On this Web Application Server	Deployed As	Procedure
Windows	Oracle WebLogic Server	Service	Open Services Console, and then start the Hyperion Essbase Analytics Link Server - Web Application service.
Windows	WebLogic Server	Process	From the Start menu, select Programs, Oracle Analytics Link for Hyperion Financial Management , and then Start Analytics Link (WebLogic) . The Administrator: managed server EssbaseAnalyticsLink Command Prompt window opens.
Windows	Apache Tomcat	Service	Open Services Console, and then start the Oracle Essbase Analytics Link service.
Windows	Apache Tomcat	Process	From the Start menu, select Programs, Oracle Analytics Link for Hyperion Financial Management , and then Start Analytics Link (Tomcat) . The Tomcat - EAL Command Prompt window opens.

Operating System	Deployed On this Web Application Server	Deployed As	Procedure
Linux (64-bit)	WebLogic Server	N/A	Change the root directory to <i>HFS_HOME/bin</i> , and then enter: <code>./startAnalyticsLinkServices.sh</code>

Starting Data Synchronization Server

Follow the instructions in [Table 3](#) for starting Data Synchronization Server, based on the operating system on which Data Synchronization Server was installed.

Table 3 Starting Data Synchronization Server

Operating System	Installed As	Procedure
Windows	Service	Open Services Console, and then start the Oracle Analytics Link Data Synchronization Server service.
Linux (64-bit)	N/A	Change the root directory to <i>HFS_HOME/bin</i> , and then enter: <code>./startDSS.sh</code>

Stopping Analytics Link Components

Subtopics

- [Stopping Analytics Link Server](#)
- [Stopping Data Synchronization Server](#)

Stopping Analytics Link Server

Follow the instructions in [Table 4](#) for stopping Analytics Link Server, based on the operating system and Web application server on which Analytics Link Server was deployed and, for Windows, whether Analytics Link Server was deployed as a service or process.

Table 4 Stopping Analytics Link Server

Operating System	Deployed On this Web Application Server	Deployed As	Procedure
Windows	WebLogic Server	Service	Open Services Console, and then stop the Hyperion Essbase Analytics Link Server - Web Application service.
Windows	WebLogic Server	Process	Close the Administrator: managed server EssbaseAnalyticsLink Command Prompt window.

Operating System	Deployed On this Web Application Server	Deployed As	Procedure
Windows	Apache Tomcat	Service	Open Services Console, and then stop the Oracle Essbase Analytics Link service.
Windows	Apache Tomcat	Process	Close the Tomcat - EAL Command Prompt window.
Linux (64-bit)	WebLogic Server	N/A	Change the root directory to <i>HFS_HOME</i> /bin, and then enter: <code>./stopAnalyticsLinkServices.sh</code>

Stopping Data Synchronization Server

Follow the instructions in [Table 5](#) for stopping Data Synchronization Server, based on the operating system on which Data Synchronization Server was installed.

Table 5 Stopping Data Synchronization Server

Operating System	Installed As	Procedure
Windows	Service	Open Services Console, and then stop the Oracle Analytics Link Data Synchronization Server service.
Linux (64-bit)	N/A	Change the root directory to <i>HFS_HOME</i> /bin, and then enter: <code>./stopDSS.sh</code>

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Planning the Bridge Implementation

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Determining the Data Region of the Financial Management Application

A region defines a Financial Management application data set. Regions are used to limit the Financial Management data set that is extracted into Data Synchronization Server. Regions are also used to limit the data set that is copied from Data Synchronization Server to an Essbase replication partition database and to limit the data set that is extracted to RDBMS database tables.

- [“About Region Types” on page 23](#)
- [“About Dimension Selection Types and Member Selection” on page 24](#)

About Region Types

Types of regions:

- **Default region**—Named Default, this predefined region consists of non-aggregated Financial Management application data only. The default region is automatically created when a Financial Management application is added to a Analytics Link Server in the Analytics Link Servers node.

The default region can only be viewed and cannot be edited or deleted. If the Default region does not suit your reporting needs, create a user-defined region.

- **User-defined regions**—In a user-defined region, you specify the Financial Management application data set. User-defined regions are helpful for limiting the amount of Financial Management data that Analytics Link accesses. You can create multiple user-defined regions for the same Financial Management application.

See:

- [“Adding a User-Defined Financial Management Application Data Region” on page 33](#)
- [“Exporting and Importing Data Regions in XML Format” on page 135](#)
- [“Creating the Data Synchronization Server Database for the Bridge” on page 41](#)

About Dimension Selection Types and Member Selection

A region includes all 12 Financial Management dimensions; however, the members that are extracted from each Financial Management dimension into Data Synchronization Server depend on the dimension selection type and member selection specification.

For the Default region, [Table 6](#) lists the predefined selection type and member selection specification for each Financial Management dimension:

Table 6 Default Region Definition

HFM Dimension	Selection Type	Member Selection
Year	ALL	[empty]
Scenario	ALL	[empty]
Entity	ALL	[empty]
Period	BASE	[empty]
ICP	BASE	[empty]
Value	BASE_AND_CONSOLIDATED	[empty]
Custom1	BASE	[empty]
Custom2	BASE	[empty]
Custom3	BASE	[empty]
Custom4	BASE	[empty]
View	MEMBERS	Periodic
Account	BASE	[empty]

For a description of dimension selection types, see [“Adding a User-Defined Financial Management Application Data Region” on page 33](#).

Analytics Link handles region member selection specifications based on whether you are creating the Data Synchronization Server database or extracting data to an RDBMS database.

- On the **Data Synch** tab, you select a region when creating the Data Synchronization Server database.

In extracting Financial Management application data to Data Synchronization Server, Analytics Link extracts data for the Year and Scenario dimensions based on the dimension selection type and member selection specification.

For example, in the Default region, the selection type for the Year and Scenario dimensions is ALL; therefore, all data from those dimensions is extracted. However, assume that you select a user-defined region in which the Year dimension selection type is MEMBERS and the specified members are 2009 and 2010. Analytics Link extracts only those members from the Year dimension.

For all dimensions other than Year and Scenario, Analytics Link ignores the selection type and member selection specification and extracts all Financial Management application data into Data Synchronization Server.

For example, for the View dimension in the Default region, the selection type is MEMBERS and the specified member is Periodic. Analytics Link extracts all members from the View dimension, not just the Periodic member.

See [“Creating the Data Synchronization Server Database for the Bridge” on page 41.](#)

- On the **Extract** tab, you select a region when extracting data to an RDBMS.

For all dimensions, Analytics Link extracts the data based on the dimension selection type and member selection specifications.

For example, for the View dimension in the Default region, Analytics Link extracts only the Periodic member.

See [Chapter 12, “Extracting Financial Management Data and Metadata to an RDBMS Bridge Target.”](#)

Determining the Type of Bridge Target Database

The bridge target is either an Essbase or RDBMS database:

- **Essbase**—When the bridge target is **Essbase**, the bridge acts as a link between the Financial Management application and the Essbase database. Analytics Link creates the Essbase database.

The Essbase partition type determines whether Financial Management application data is stored in Data Synchronization Server or copied to the Essbase database:

- Essbase transparent partition—Financial Management application data that was extracted to Data Synchronization Server remains in Data Synchronization Server. Essbase queries are served from Data Synchronization Server, not Essbase.
- Essbase replicated partition—Financial Management application data that was extracted to Data Synchronization Server is copied to the Essbase replicated partition database. Essbase queries are served from the Essbase database, not Data Synchronization Server.

The Essbase partition type is set on the **Essbase** tab. See [“Setting Essbase Database Connection Types” on page 101.](#)

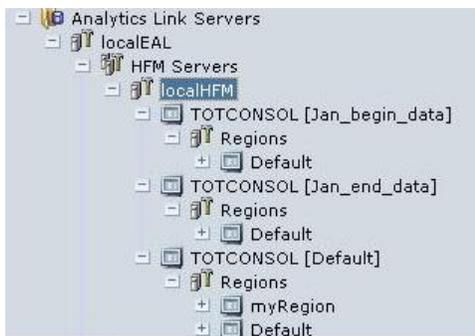
- **RDBMS**—When the bridge target is **RDBMS**, you can extract Financial Management application data that was extracted to Data Synchronization Server to an existing RDBMS database.

About Financial Management Application Snapshots

In Analytics Link, a snapshot is a complete copy of the data and metadata of a Financial Management application. You define a snapshot when you add a Financial Management application to a Analytics Link Server. See [“Adding a Financial Management Application” on page 33](#).

You can add multiple instances of the same Financial Management application by providing a different snapshot name in the Financial Management application definition. The snapshot name is displayed in brackets after the application name. [Figure 2](#) shows three instances of the TOTCONSOL application: TOTCONSOL [Default], TOTCONSOL [Jan_begin_data], and TOTCONSOL [Jan_end_data].

Figure 2 Snapshots of the Same Financial Management Application



Snapshots are useful for working with different instances of the same Financial Management application and archiving Financial Management applications.

Multiple bridges that use the same Financial Management application: For example, assume Financial Management and Oracle Hyperion Planning users need to run reports against the same Financial Management application.

- Financial Management users need to run live reports against the bridge target database at anytime; therefore, changes to the data in the Financial Management application must be synchronized with Data Synchronization Server on a continual basis.

In the bridge for this scenario, you would set an interval for the Data Update Agent to automatically synchronize changes to the Financial Management application data with Data Synchronization Server.

- Planning users need to run reports against the bridge target database, but the Financial Management administrator wants to control when Planning users see the Financial Management application data. Therefore, changes to the data in the Financial Management application can be synchronized with Data Synchronization Server on demand, before Oracle Hyperion Planning users need to run reports.

In the bridge for this scenario, you would run the Data Update Agent manually.

Archiving Financial Management applications: Analytics Link snapshots simplify the process of archiving Financial Management applications. A snapshot is a static copy of the state of a Financial Management application at the time the snapshot was created in Analytics Link. From

a snapshot, you can create an Essbase database, based on the Financial Management application snapshot, at any time.

Overview of Creating a Bridge for the First Time

► To create a bridge for the first time:

1 Start Analytics Link components and the Oracle products that work with Analytics Link.

See “Startup Order of Oracle Products” on page 30.

2 Add a Analytics Link Server to the Analytics Link Servers node, and define a bridge.

See Chapter 5, “Adding Components to an Analytics Link Server.”

3 Create the Data Synchronization Server database for the bridge.

See Chapter 6, “Creating the Data Synchronization Server Database and Synchronizing Data.”

4 Set the properties for the bridge target database.

See Chapter 7, “Setting Target Database Properties.”

5 Design the grid for the bridge target database.

See Chapter 8, “Designing the Target Database Grid.”

6 Create an Essbase target database, or extract data to an RDBMS database.

See:

- Chapter 9, “Creating an Essbase Bridge Target”
- Chapter 10, “Customizing Essbase Outlines.”
- Chapter 11, “Extracting Financial Management Data to an Essbase Replicated Partition Database Target”
- Chapter 12, “Extracting Financial Management Data and Metadata to an RDBMS Bridge Target.”

5

Adding Components to an Analytics Link Server

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Overview of Adding Components to an Analytics Link Server

► Adding bridge components to an Analytics Link Server:

1 Add the Analytics Link Server to the Analytics Link Servers node.

See “Adding an Analytics Link Server” on page 30.

2 Add the Financial Management server and application to the Analytics Link Server.

See:

- “Adding a Financial Management Server” on page 31
- “Adding a Financial Management Application” on page 33

3 **Optional:** Add a user-defined region.

See “Adding a User-Defined Financial Management Application Data Region” on page 33.

4 Add the Essbase Server, application, and database to the Analytics Link Server.

See:

- [“Adding an Essbase Server” on page 35](#)
 - [“Adding an Essbase Application” on page 36](#)
 - [“Adding an Essbase Database” on page 36](#)
- 5 **Add the Data Synchronization Server to the Analytics Link Server.**
[“Adding a Data Synchronization Server” on page 36.](#)
 - 6 **Add the Data Store to the Analytics Link Server.**
[“Adding a Data Store” on page 37.](#)
 - 7 **Add a bridge.**
See [“Creating a Bridge” on page 38](#) and [“About the Bridge Window” on page 39.](#)

Startup Order of Oracle Products

Before you can add components to the Analytics Link Server, all required Oracle product components must be running.

The following Oracle Enterprise Performance Management System products and Analytics Link components are listed in their recommended startup order.

1. Databases used as repositories
2. Any corporate user directories that you plan to configure for use with Oracle Hyperion Shared Services
3. Shared Services Oracle Internet Directory, which is used as Shared Services Native Directory
4. Shared Services Server
5. Essbase Server
6. **Optional:** Oracle Hyperion Provider Services Server
7. Essbase Administration Server
8. Data Synchronization Server
9. Analytics Link Server
10. Administration Services Console

Adding an Analytics Link Server

See [“Analytics Link Server” on page 15.](#)

► To add an Analytics Link Server:

- 1 **In Administration Services Console, in the Enterprise or custom view, right-click the Analytics Link Servers node and select **Add Analytics Link Server**.**
- 2 **In the **Add Analytics Link Server** dialog box, under **Analytics Link Server**, enter a display **Name** for Analytics Link Server.**

- 3 Enter the **Analytics Link Server Host** name.
- 4 Select the **URL** to Analytics Link Server. The format of the URL depends on which Web Server Analytics Link Server is deployed and whether Analytics Link Server is SSL enabled.

- Oracle WebLogic Server formats:
 - Analytics Link Server non-SSL enabled:
`http://host:port/hyperroll_livelihood/`
 - Analytics Link Server SSL enabled:
`https://host:port/hyperroll_livelihood/`
- Apache Tomcat formats:
 - Analytics Link Server non-SSL enabled:
`http://host:port/hyperroll_livelihood/services/`
 - Analytics Link Server SSL enabled:
`https://host:port/hyperroll_livelihood/services/`

Note: The URL must end with a slash (/). The default Analytics Link Server port is 5423.

- 5 Under **Analytics Link login**, enter the **Analytics Link Server (Web Service) User** name.

These credentials must be of a Shared Services user with permissions to create projects and provision users.

To add Analytics Link components, the user must have the following Repository Manager provisions: Provisioning Manager and Administrator.

See [“Repository Manager Application Provisions”](#) on page 140.

- 6 Enter the user **Password**.
- 7 Click **Test** to verify the connection.
- 8 Click **OK**.

Adding a Financial Management Server

► To add a Financial Management server to use with Analytics Link Server:

- 1 From the **Analytics Link Server**, right-click **HFM Servers** and select **Add HFM Server**.
- 2 In the **Add HFM Server** dialog box, under **HFM Server**, enter a **display Name** for the Financial Management Server.
- 3 Enter the **HFM Domain**, if one exists.
- 4 Enter the **HFM Host** name.
- 5 Enter the **HFM Cluster** name.

If Financial Management Server is not clustered, enter the Financial Management Server host name.

6 Under **HFM Database**, select the **RDBMS** type for the Financial Management repository:

- **Oracle**

If you select **Oracle**, there are two methods for entering the Oracle RDBMS connection description to the Financial Management repository (see **Connection Description** in [step 13](#)).

- **SQL Server**

7 Enter the Financial Management database **Host** name.

Note: If the Financial Management database runs on SQL Server, and there are multiple instances of SQL Server on the same computer, use the following format for the host name: *hostName\instanceName*.

8 Enter the Financial Management database **Port**:

- Oracle default port—1521
- SQL Server default port—1433

9 Enter the Financial Management **Database** name; for Oracle, enter the **SID**.

10 Enter the name of a Financial Management database **User** with read permission.

11 Enter the user **Password**.

12 Confirm the user password.

13 **Connection Description** is enabled only if you selected **Oracle** as the Financial Management repository RDBMS (see **RDBMS** in [step 6](#)).

- When **Connection Description** is selected:
 - The following fields, under **HFM Database**, are disabled on screen: **Host**, **Port**, and **Database**.
 - In the **Connection Description** field, you must enter the Oracle RDBMS connection description to the Financial Management repository. For example:

```
(DESCRIPTION=
  (ADDRESS_LIST=
    (ADDRESS= (PROTOCOL=TCP) (HOST=oracleserver) (PORT=1521))
  )
  (CONNECT_DATA=
    (SERVICE_NAME=ORCL)
  )
)
```

- When **Connection Description** is not selected, this field is disabled and the **Host**, **Port**, and **Database** fields are enabled. You must enter the appropriate Oracle RDBMS connection information in the **Host**, **Port**, and **Database** fields.

14 Click **OK**.

Adding a Financial Management Application

➤ To add a Financial Management application:

- 1 From the Analytics Link Server, right-click a Financial Management server and select **Add HFM Application**.
- 2 In the **Add HFM Application** dialog box, enter the Financial Management **Application Name**.
- 3 Enter the **Snapshot** name.
See “[About Financial Management Application Snapshots](#)” on page 26.
- 4 Enter the Financial Management application **User** name.
- 5 Enter the user **Password**.
- 6 Confirm the user password.
- 7 Click **OK**.

When you add a Financial Management application to the **HFM Servers** node, a Regions subnode and a Default region are automatically added to the tree hierarchy. See “[Determining the Data Region of the Financial Management Application](#)” on page 23.

Adding a User-Defined Financial Management Application Data Region

If you plan to only use the Default region, which is created automatically when you add a Financial Management application to the **HFM Servers** node, you can skip this topic.

➤ To define a new Financial Management application data region:

- 1 From the Analytics Link Server, navigate to the Financial Management application for which you want to define a data region.
- 2 Right-click **Region** and then select **Add Region**.
- 3 In the **Add HFM Region** dialog box, enter a display **Name** for the region.

After you save the region definition, the region name cannot be changed.

- 4 For each Financial Management dimension, in the **Selection Type** column, double-click the field and select a type:

Dimension selection types for Financial Management dimensions except the Value dimension:

- **ALL**—All members in the dimension are included in the data set.
Member selection is not supported.
- **BASE**—Only base-level dimension members are included in the data set.

Base-level members can be limited to the base members of the members that are specified in the **Member Selection** column. If the Member Selection column is empty, all base-level members are included.

- **IDESCENDANT**—Only dimension members that are specified in the **Member Selection** column and all of their descendants are included in the data set.

Member selection is required.

- **MEMBERS**—Only the dimension members that are specified in the **Member Selection** column are included in the data set.

Member selection is required.

Dimension selection types for the Value dimension:

- **ALL**—All members without alias names are included in the data set.

Alias member names are enclosed in angle brackets <>; for example, <Parent Curr Total>.

Member selection is not supported.

- **BASE**—All currencies, currency adjustments (for example, USD and USD Adj), and [None] are included in the data set.

Members can be limited to the members that are specified in the **Member Selection** column. If the Member Selection column is empty, all currencies, currency adjustments and [None] are included in the data set.

- **BASE_AND_CONSOLIDATED**—Only members from the BASE selection type (all currencies, currency adjustments and [None] and consolidation members are included in the data set.

Consolidation member names are enclosed in brackets []; for example, [Elimination].

Members can be limited to the members that are specified in the **Member Selection** column. If the **Member Selection** column is empty, all currencies, currency adjustments, [None]), and consolidation members are included in the data set.

- **IDESCENDANT**—Only dimension members that are specified in the **Member Selection** column and all of their descendants are included in the data set.

Member selection is required.

- **MEMBERS**—Only the dimension members that are specified in the **Member Selection** column are included in the data set.

Member selection is required.

5 For each Financial Management dimension with a selection type of:

- a. **MEMBERS** or **IDESCENDANT**—In the **Member Selection** column, double-click the field and enter a comma-separated list of dimension member names.

The Member Selection field must not be empty.

- b. **BASE** or **BASE_AND_CONSOLIDATED**—Optional: In the **Member Selection** column, double-click the field and enter a comma-separated list of dimension member names.

If the **Member Selection** column is empty, the data set includes all base-level dimension members (for BASE) and all base-level dimension members and consolidation members (for BASE_AND_CONSOLIDATED).

6 Optional: For the Accounts dimension, select Include Dynamic Accounts.

In Financial Management, members in the Account dimension that are tagged with the Dynamic account type are called dynamic accounts. The values of dynamic accounts are dynamically calculated when the data is requested. You can include dynamic accounts members only in user-defined regions.

The **Include Dynamic Accounts** checkbox is available when the Account dimension selection type is ALL, BASE, or IDESCENDANT. When the selection type is MEMBERS, you must explicitly specify the dynamic accounts members that you want included in the data set in the **Member Selection** column.

Note: Including dynamic accounts in a region increases the size of the extracted data. Depending on the expression of the dynamic accounts members, the increase in size could be significant.

7 Click Save to save the region definition.

8 Click Close.

You can import the region definition. [“Exporting and Importing Data Regions in XML Format” on page 135.](#)

When you add a region, Analytics Link automatically validates the region. See [“Validating Data Regions” on page 135.](#)

Adding an Essbase Server

► To add an Essbase Server:

1 From the Analytics Link Server, right-click Essbase Servers and select Add Essbase Server.

2 In the Add Essbase Server dialog box, enter the Essbase Server Name.

3 Enter the Essbase Host name.

4 In APS URL, select an option to connect Analytics Link Server to Essbase Server:

- To use Provider Services, select a Provider Services URL.
 - Provider Services non-SSL enabled:
`http://APS_server_host:port/aps/JAPI`
 - Oracle Hyperion Provider Services SSL enabled:
`https://APS_server_host:port/aps/JAPI`
- To use Essbase APIs that are embedded in Analytics Link Server, select **embedded**.

5 Click OK.

Adding an Essbase Application

Analytics Link supports only Essbase block storage applications. If the Essbase application that you specify does not exist, Analytics Link creates one in block storage mode.

Analytics Link supports non-Unicode mode and Unicode mode Essbase applications. See [“Unicode Database Property” on page 49](#).

► To add an Essbase application:

- 1 From the Analytics Link Server, right-click an Essbase Server and select **Add Essbase Application**.
- 2 In the **Add Essbase Application** dialog box, enter the **Essbase Application Name**.
The limit for Essbase application names is 8 characters.
- 3 Enter the name of the Essbase application **User** with Administrator privileges.
- 4 Enter the user **Password**.
- 5 Confirm the user password.
- 6 Click **OK**.

Adding an Essbase Database

Analytics Link supports only Essbase block storage databases. If the Essbase database does not exist, Analytics Link creates one in block storage mode.

Analytics Link supports non-Unicode mode and Unicode mode Essbase databases. See [“Unicode Database Property” on page 49](#).

► To add an Essbase database:

- 1 From the Analytics Link Server, right-click an Essbase application and select **Add Essbase Database**.
- 2 In the **Add Essbase Database** dialog box, enter the **Essbase Database Name**.
The limit for Essbase database names is 8 characters.
- 3 Click **OK**.

Adding a Data Synchronization Server

See [“Analytics Link Data Synchronization Server” on page 16](#).

► To add a Data Synchronization Server:

- 1 From the Analytics Link Server, right-click **Data Synchronization Servers** and select **Add Data Synchronization Server**.
- 2 In the **Add Data Synchronization Server** dialog box, enter a display **Name** for the Data Synchronization Server.

- 3 Enter the Data Synchronization Server **Host** name.
- 4 Enter the Data Synchronization Server **Port**.
The default port is 5024.
- 5 Enter the name of the Data Synchronization Server **User**.
- 6 Enter the user **Password**.
- 7 Confirm the user password.
- 8 Click **OK**.

Adding a Data Store

See “Data Store” on page 16.

► To add a Data Store:

- 1 From the Analytics Link Server, right-click **Data Stores** and select **Add Data Store**.
- 2 In the **Add Data Store** dialog box, enter a display **Name** for the Data Store database.
- 3 Select the **RDBMS** type:

- **Oracle**

If you select **Oracle**, there are two methods for entering the Oracle RDBMS connection description to the Data Store database (see **Connection Description** in [step 10](#)).

- **SQL Server**

- 4 Enter the Data Store **Host** name.

Note: If the Data Store runs on SQL Server, and there are multiple instances of SQL Server on the same computer, use the following format for the host name: *hostName \instanceName*.

- 5 Enter the Data Store **Port**:
 - Oracle default port—1521
 - SQL Server default port—1433
- 6 Enter the **Database** name; for Oracle, enter the **SID**.
- 7 Enter the name of a **User** with read, write, and create permissions to the Data Store.
- 8 Enter the user **Password**.
- 9 Confirm the user password.
- 10 **Connection Description** is enabled only if you selected **Oracle** as the Data Store RDBMS (see **RDBMS** in [step 3](#)).
 - When **Connection Description** is selected:
 - The following fields are disabled on screen: **Host**, **Port**, and **Database**.

- In the **Connection Description** field, you must enter the Oracle RDBMS connection description to the Data Store database. For example:

```
(DESCRIPTION=
  (ADDRESS_LIST=
    (ADDRESS= (PROTOCOL=TCP) (HOST=oracleserver) (PORT=1521))
  )
  (CONNECT_DATA=
    (SERVICE_NAME=ORCL)
  )
)
```

- When **Connection Description** is not selected, this field is disabled and the **Host**, **Port**, and **Database** fields are enabled. You must enter the appropriate Oracle RDBMS connection information in the **Host**, **Port**, and **Database** fields.

11 Click **OK**.

Creating a Bridge

See [“Analytics Link Bridges” on page 17](#).

► To add a bridge:

1 From the Analytics Link Server, right-click **Bridges** and select **Add Bridge**.

2 In the **Add Bridge** dialog box, under **Bridge**, enter a display **Name** for the bridge.

The bridge name cannot contain spaces.

3 Under **HFM**, select a **Financial Management Server** and **Application**.

See [“Adding a Financial Management Server” on page 31](#) and [“Adding a Financial Management Application” on page 33](#).

4 Under **Analytics Link**, select a **Data Synchronization Server**.

See [“Adding a Data Synchronization Server” on page 36](#).

5 Select a **Data Store**.

See [“Adding a Data Store” on page 37](#).

6 Under **Target**, select an option:

- **Essbase**. Then select an Essbase **Server**, **Application**, and **Database**.

See:

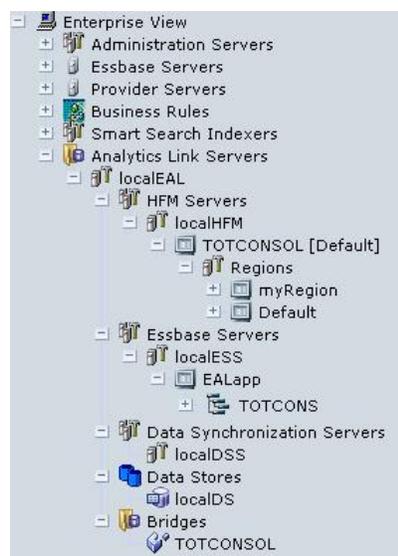
- [“Adding an Essbase Server” on page 35](#)
- [“Adding an Essbase Application” on page 36](#)
- [“Adding an Essbase Database” on page 36](#)

- **RDBMS**

7 Click **OK**.

Figure 3 on page 39 shows the tree hierarchy of the Analytics Link Servers node after components have been added.

Figure 3 Analytics Link Servers Node Showing All Components



About the Bridge Window

You manage a bridge in the bridge window, which has multiple tabs.

Bridge window tabs:

- **Summary** tab—You view information about the bridge definition and the status of bridge components and block or unblock user access to the bridge.
See:
 - [“Checking Bridge Component Status” on page 131](#)
 - [“Managing User Access to Analytics Link Bridges” on page 130](#)
- **Data Synch** tab—You create the Data Synchronization Server database for the bridge and manage synchronization of Financial Management application data and metadata with Data Synchronization Server.
See [Chapter 6, “Creating the Data Synchronization Server Database and Synchronizing Data.”](#)
- **Properties** tab—You set properties for the target database, such as allowing duplicate member names, solving uniqueness problems, adding the parent to Entity member names, and creating a Unicode-mode database.
See [Chapter 7, “Setting Target Database Properties.”](#)
- **Target Design Grid** tab—You design the grid of the target database so that only the dimensions and members that are relevant to your business needs are represented.

See:

- [Chapter 8, “Designing the Target Database Grid”](#)
- [Chapter 10, “Customizing Essbase Outlines”](#)
- **Essbase** tab—You create and manage an Essbase database, including defining the connection type between Analytics Link Server and Essbase, and the migration of Financial Management security information.

See [Chapter 9, “Creating an Essbase Bridge Target.”](#)

Note: If the bridge target type is RDBMS, the **Essbase** tab is not displayed in the bridge window.

- **Extract** tab—You can extract Financial Management application data and metadata from Data Synchronization Server to an RDBMS database, or copy Financial Management application data to an Essbase replicated partition database.

See

- [Chapter 11, “Extracting Financial Management Data to an Essbase Replicated Partition Database Target”](#)
- [Chapter 12, “Extracting Financial Management Data and Metadata to an RDBMS Bridge Target”](#)

If multiple bridges are open, each is displayed in a separate bridge window.

6

Creating the Data Synchronization Server Database and Synchronizing Data

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Creating the Data Synchronization Server Database for the Bridge

The first time you open a bridge, you must create the Data Synchronization Server database for the bridge.

► To create the Data Synchronization Server database for the bridge:

1 **Open a bridge.**

See [“Opening an Analytics Link Bridge” on page 129](#).

2 **On the Data Synch tab, under Data Status, select a region from the Region list.**

3 **Click Create.**

Analytics Link extracts the Financial Management application data and metadata to the Data Synchronization Server database and sets the status of **Analytics Link Data** to On.

To recreate **Analytics Link Data**, first click **Delete**, to remove the data from the Data Synchronization Server database for the bridge, and then click **Create**.

To make the **Analytics Link Data** inaccessible, click **Off**. Then click **Resume** when you want the data to be accessible again.

Note: When you create the Data Synchronization Server database using a user-defined region, you cannot edit or delete this region while it is in use. To change the definition of a user-defined region that is in use, you must delete the Data Synchronization Server database, then edit the region definition (see [“Editing User-Defined Data Regions” on page 134](#)), and then recreate the Data Synchronization Server database.

Managing Updates to Financial Management Data and Metadata

When Financial Management application data or metadata changes, you must synchronize those updates with the Data Synchronization Server database. You can view information about the last time data and metadata was synchronized on the **Data Synch** tab, under **Updates Status**.

See:

- [“Synchronizing Data Synchronization Server with Financial Management Application Data Updates” on page 42](#)
- [“Synchronizing Data Synchronization Server with Financial Management Application Metadata and Data Updates” on page 43](#)

Synchronizing Data Synchronization Server with Financial Management Application Data Updates

Data Update Agent synchronizes Financial Management application data updates with Data Synchronization Server. When active, Data Update Agent synchronizes data updates based on a specified interval. Only updated Financial Management data, not metadata, is synchronized.

► To set Data Update Agent to synchronize data automatically:

1 Open a bridge.

See [“Opening an Analytics Link Bridge” on page 129](#).

2 To set the data updates interval:

a. Under **Agent Status**, click **Modify**.

b. In the **Modify Update Interval** dialog box, select an option:

- **HFM Clusters Synch Maximum Delay**
- **Custom Update Interval**—Enter the time interval (in seconds) at which data synchronization between Financial Management and Data Synchronization Server should occur.

c. Click **OK**.

3 To activate Data Update Agent, click **Start**.

Note: When **Data Update Agent** status is Active, you cannot manage the Data Synchronization Server database, as the UI controls under **Data Status** are not available.

Synchronizing Data Synchronization Server with Financial Management Application Metadata and Data Updates

When Financial Management application metadata changes, you must manually synchronize Financial Management application metadata updates with Data Synchronization Server. You can also manually synchronize Financial Management application data updates.

➤ To synchronize Financial Management application metadata and data updates with Data Synchronization Server:

1 Open a bridge.

See “Opening an Analytics Link Bridge” on page 129.

2 Under Agent Status, if the status of Data Update Agent status is Active, click Stop.

When **Data Update Agent** status is Active, you cannot manage the Data Synchronization Server database, as the UI controls under **Data Status** are not available.

3 Under Data Status, select an update option:

- **Data Update**—Synchronizes only Financial Management data updates that were made since the previous synchronization with Data Synchronization Server. (See **Last Data Update** under **Updates Status**.)
- **Metadata Update**—Recreates the entire Data Synchronization Server database with Financial Management data and metadata.

Note: Use this option only when there have been metadata updates to the Financial Management application.

Note: If the bridge target database is Essbase, you must recreate the Essbase database after performing a metadata update or recreating the Data Synchronization Server database to ensure that the Essbase database is created with the updated Financial Management metadata.

7

Setting Target Database Properties

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The information in this chapter applies to Essbase and RDBMS target databases. Financial Management data examples are based on the Simple Demo Financial Management application.

About Target Database Properties

Target database properties control how the target database works with dimensions and members, and are specified on the **Properties** tab in the bridge window.

In working with a bridge, you typically recreate the target database multiple times, and even select different database properties, as you fine-tune the outline. Therefore, Analytics Link provides status information so that you know which properties were selected each time the target database was created. Status information appears to the right of the property name and is enclosed in parentheses; for example, (On).

Database property statuses:

- None—If the bridge target database has not been created, the status of each property is None.
- On—The property was selected when the target database was created last.
- Off—The property was not selected when the target database was created last.

After you create the Essbase target database, return to the **Properties** tab and click the **Refresh** button to see the updated status of each database property.

Allow Duplicate Member Names Database Property

The **Allow Duplicate Member Names** database property creates a nonunique name database, in which multiple members with the same name, where the values are not shared, are allowed. A qualified name format differentiates the duplicate member names.

When creating an Essbase target database for the first time and **Allow Duplicate Member Names** is selected:

- If the Essbase database referenced in the bridge definition does not exist, Analytics Link creates a nonunique name database.
- If the Essbase database exists, it must allow duplicate names. If the Essbase database requires unique names, Analytics Link generates an error and the database is not created.

To create a unique member name outline, clear **Allow Duplicate Member Names**. See [“Creating a Unique Member Essbase Outline” on page 111](#).

By default, this property is set to Off.

Add Parent to Entity Member Database Property

In the Entity dimension, the **Add Parent to Entity Member** database property displays each entity member name, and alias name, at generation 3 and above as *parentName.memberName* and *aliasParentName.aliasMemberName*, respectively.

For example, the following representation of the Entity dimension outline shows default member names (for example, UnitedStates and California) and alias names (for example, United States of America and State of California):

```
ESSEntity
...
  Regional (Alias:Regional Operations)
    UnitedStates (Alias: United States of America)
      California (Alias: State of California)
        Sunnyvale
...

```

When the Essbase outline is created with **Add Parent to Entity Member** selected, the following representation of the Entity dimension outline shows member names in *parentName.memberName* format (for example, Regional.UnitedStates and UnitedStates.California) and alias names in *parentAlias.memberAlias* format (for example, Regional Operations.United States of America and United States of America.State of California):

```
ESSEntity
...
  Regional (Alias: Regional Operations)
    Regional.UnitedStates (Alias:Regional Operations.United States of America)
      UnitedStates.California (Alias: United States of America.State of California)
        California.Sunnyvale
...

```

By default, this property is set to On.

When the **Add Parent to Entity Member** database property is set to On, and Entity dimension member name mapping is specified in a mapping table, the mapping table specification takes precedence over the database property. See [“Member Naming Considerations when Add Parent to Entity Member is Set to On” on page 94.](#)

Solve Uniqueness Problems Database Property

The **Solve Uniqueness Problems** database property solves duplicate member names before creating an Essbase target database. Analytics Link collects member names from:

- Financial Management metadata for all selected members in Essbase dimensions that are created by Analytics Link (**Dimension Creation** transformation type)
- User-created Essbase dimensions (ones that were created by the user, not Analytics Link) that use a (transformation types other than **Dimension Creation**)
- Names of target dimensions on the **Target Design Grid** tab in the bridge window

The **Solve Uniqueness Problems** property, when the **Allow Duplicate Member Names** property is not selected, resolves duplicate member issues in the following ways:

- If a member name duplicates a dimension name, member name, or alias name, Analytics Link adds the name of the dimension in which the duplicate member name exists to the member name. For example: *dimName.memberName*.
- If the description (or alias) of a member name duplicates a dimension name, member name, or alias name, Analytics Link adds the member name to the description in the following format: *memberName (Alias: aliasDescription (memberName))*

For example, in Financial Management, California-State of California is a member in the Entity and ICP dimensions. In the Essbase outline, the member is represented in the ESSEntity dimension as:

```
California (Alias: State of California)
```

In the ESSIPC dimension, Analytics Link resolves the duplicate alias as:

```
ESSICP.California (Alias: State of California (ESSICP.California))
```

- If a member name appears multiple times in the same dimension, the first occurrence of the member remains unchanged; subsequent occurrences of the member are tagged as shared members, and any descendants are removed. (In Essbase, shared members must be in the same dimension and cannot have children. Unlimited shared members can have the same name.)

If **Solve Uniqueness Problems** and **Allow Duplicate Member Names** are selected, Analytics Link ignores the **Solve Uniqueness Problems** property.

See [“Allow Duplicate Member Names Database Property” on page 46.](#)

Note: If the Essbase outline is not enabled to allow duplicate member names, and duplicate names exist in the dimensions that are used to create the database, you must select the **Solve Uniqueness Problems** property to resolve the duplicate names. If you do not select **Solve Uniqueness Problems**, creation of the Essbase database will fail.

By default, this property is set to On.

Extract Currencies from Custom Dimensions Database Property

The **Extract Currencies from Custom Dimensions** database property extracts currency members from the Financial Management Custom1 and Custom2 dimensions to the ESSCustom1 and ESSCustom2 dimensions in the Essbase outline.

- When the Essbase outline is created with **Extract Currencies from Custom Dimensions** and **Allow Duplicate Member Names** selected, the extracted currency dimension members in the Essbase dimensions are children of a parent member named currencies. The child currency members retain their Financial Management member names (such as EUR, JPY, and USD). For example, the following representation of the ESSCustom1 dimension outline shows currencies under the currencies parent:

```
ESSCustom1
  None
  ...
  currencies
  ...
    EUR
    JPY
    USD
```

See [“Allow Duplicate Member Names Database Property” on page 46](#).

- When the Essbase outline is created with **Extract Currencies from Custom Dimensions** and **Solve Uniqueness Problems** selected, the extracted currency dimension members in the Essbase dimensions are children of a parent member named *Cn.currencies* (in the ESSCustom1 dimension, the parent member name is C1.currencies). The child currency members are named *Cn.currency_name* (the euro is named C1.EUR). For example, the following representation of the ESSCustom1 dimension outline shows currencies under the C1.currencies parent:

```
ESSCustom1
  FM.None
  ...
  C1.currencies
  ...
    C1.EUR
    C1.JPY
    C1.USD
```

See [“Solve Uniqueness Problems Database Property”](#) on page 47.

By default, this property is set to Off.

Unicode Database Property

The **Unicode** database property creates a Unicode-mode database that can support multiple character sets. Essbase uses the UTF-8 encoding form to interpret and store character text. Character-based artifacts, such as member and alias names, can include characters from different languages.

When creating an Essbase target database for the first time and Unicode is selected:

- If the Essbase application and database referenced in the bridge definition do not exist, Analytics Link creates them in Unicode mode.
- If the Essbase database exists, it must be in Unicode mode. If the Essbase database is in non-Unicode mode, Analytics Link generates an error and the Essbase database is not created.

By default, this property is set to Off.



Designing the Target Database Grid

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The information in this chapter applies to Essbase and RDBMS target databases. Financial Management data examples are based on the Simple Demo Financial Management application.

Overview of Designing the Target Database Grid

The **Target Design Grid** tab in the bridge window enables you to modify the structure of Financial Management data in the target database. Financial Management data is converted, or transformed, in the target database based on a dimension's transformation type. The **Source Dimensions** column contains the list of Financial Management dimensions that are mapped to the dimensions listed in the **Target Dimensions** column. If the target database is Essbase, the Financial Management dimensions are mapped to Essbase dimensions. If the target database is an RDBMS database, the Financial Management dimensions are mapped to columns in relational tables in the RDBMS database.

➤ To design the target database grid:

- 1 In the bridge window, navigate to the **Target Design Grid** tab.
- 2 Under **Mapping Grid**, for each of the 12 Financial Management dimensions in the list, double-click the field in the **Transformation Type** column, and select a transformation type.

See “[About Transformation Types](#)” on page 53.

- 3 **Optional:** To add new dimensions to the target grid, navigate to the last row in the grid (which is empty) and select one of the following transformation types:

- New Dimension
- Currency Dimension
- Measure Dimension

4 The following steps depend on each dimension's transformation type:

- a. In the **Source Dimensions** column, you can change the Financial Management dimension or, more typically, create a comma-separated list of Financial Management dimensions for those transformation types that can have multiple Financial Management dimensions.
 - i. Double-click the **Source Dimensions** field to open the **Source Dimensions** dialog box.
 - ii. To change the source dimension, delete the dimension name in the **Add** field and then double-click a dimension name to add it to the **Add** field.
 - iii. To create a comma-separated list of Financial Management dimensions, double-click multiple dimension names.
 - iv. Click **OK** to add the specified dimensions to the **Source Dimensions** field in the mapping grid.
- b. In the **Target Dimensions** column, you can change the name of the dimension as it appears in the target database or create a comma-separated list of dimensions for those transformation types that can have multiple target dimensions.
 - i. Double-click the **Target Dimensions** field to open the **Target Dimensions** dialog box.
 - ii. To rename a target dimension, edit the dimension name in the **Add** field.
 - iii. To create a comma-separated list of target dimensions, double-click multiple dimension names.
 - iv. Click **OK** to add the specified dimensions to the **Target Dimensions** field in the mapping grid.
- c. In the **Member Selection** column, enter the name of the members that you want displayed in the target database. (The descendants of the specified members are also included in the target database.)
 - i. Double-click the **Member Selection** field to open the **Member List** dialog box.
 - ii. Enter a dimension member name or a comma-separated list of member names.
 - iii. Click **OK** to add the specified members to the **Member Selection** field in the mapping grid.

See [“About Dimension Member Selection” on page 88](#).
- d. In the **Mapping Table** column, you can specify a mapping table for those transformation types that support mapping tables.
 - i. Double-click the **Mapping Table** field to open the **Mapping Table** dialog box.
 - ii. Enter the **Mapping Table Name** and click **Recreate**.

Note: If the mapping table exists, Analytics Link recreates the table and fills it with default values.

- iii. After the mapping table is created, click **OK**.

Analytics Link creates the mapping table template in the Data Store using default values, which you need to modify.

- iv. In the Data Store, modify the mapping table data as needed and commit the changes to the Data Store.

Note: Instead of having Analytics Link create a mapping table template, you can create a mapping table directly in the Data Store. Consult this documentation for the mapping table structure for each transformation type. If you created the mapping table directly in the Data Store, in the **Mapping Table** dialog box, enter the **Mapping Table Name** and then click **OK**.

See [“About Dimension Member Mapping Tables” on page 90](#).

- e. (For **Dimension Mapping** transformation type only) For **Prefix**, double-click the field and enter a Java regular expression.

See [“About Prefixes” on page 95](#).

5 Validate the grid.

See [“Validating Target Grids” on page 133](#).

6 Click **Save Grid** to update the outline definition.

To delete a row in the mapping grid, right-click the row and select **Delete Row**.

To reset the mapping grid to the default values, click **Reset Grid**.

To change the order in which dimensions are displayed in an Essbase outline, use the **Row Up** and **Row Down** buttons. The order in which dimensions are displayed can impact how members are named. (These buttons do not apply when the bridge target is an RDBMS database.)

About Transformation Types

Transformation types determine how Financial Management dimensions are represented in the target database and enable you to add non-Financial Management dimensions and members to the target database.

The number of source and target dimensions, and whether member selection, mapping table, and prefix are supported, depend on the transformation type. [Table 7](#) summarizes the attributes of each transformation type. These attributes are discussed in detail in this chapter.

Table 7 Summary of Transformation Type Attributes

Transformation Type	Number of Source_Dims	Number of Target_Dims	Member Selection	Mapping Table	Prefix	See
Dimension Creation	1	1	Supported, based on Financial Management members	Supported	Not supported	“Dimension Creation Transformation Type” on page 54
Dimension Mapping	1	1	Supported, based on Essbase members	Supported	Supported	“Dimension Mapping Transformation Type” on page 57
Not in Outline	1	None	Required One Financial Management member must be specified.	Not supported	Not supported	“Not in Outline Transformation Type” on page 61
New Dimension	None	1	Required One Essbase member must be specified.	Not supported	Not supported	“New Dimension Transformation Type” on page 62
Join Dimensions	> 1	1	Supported, based on Essbase members	Required	Not supported	“Join Dimensions Transformation Type” on page 62
Break Dimension	1	> 1	Supported, based on Financial Management members	Required	Not supported	“Break Dimension Transformation Type” on page 65
Matrix Mapping	≥ 1	≥ 1	Not supported	Required	Not supported	“Matrix Mapping Transformation Type” on page 77
Currency	None	1	Not supported	Not supported	Not supported	“Currency Transformation Type” on page 85
Measure	None	1	Essbase target database: required; one member must be specified RDBMS target database: not supported	Not supported	Not supported	“Measure Transformation Type” on page 87

Dimension Creation Transformation Type

The **Dimension Creation** transformation type uses one Financial Management dimension as the source to create one dimension in the target database. This transformation type replicates the Financial Management dimension as it appears in the Financial Management application.

The **Dimension Creation** transformation type supports:

- Member selection, based on Financial Management members
- Member name mapping

The same Financial Management dimension cannot be used in **Dimension Creation** and **Break Dimension** transformation types within the same bridge.

In this example, assume that you want to create the Essbase ESSCustom1 dimension from the Financial Management Custom1 dimension, and you only want to include the Golf and Shoes members, and their descendants.

Representation of all members in the Financial Management Custom1 dimension:

```

Custom1
  [None]
  AllProducts
    Golf
      GolfBalls
      GolfShoes
      GolfTees
      GolfClubs
    Tennis
      TennisBalls
      TennisShoes
      TennisRacquets
  Balls
    GolfBalls
    TennisBalls
  Shoes
    GolfShoes
    TennisShoes

```

[Table 8](#) represents the information that you must provide on the **Target Design Grid** tab:

Table 8 Target Design Grid tab: Dimension Creation Transformation Type

Transformation Type	Source Dimensions	Target Dimensions	Member Selection	Mapping Table	Prefix
Dimension Creation	Custom1	ESSCustom1	Golf,Shoes	<i>tableName</i>	

[Table 9 on page 55](#) shows the Analytics Link-created mapping table template. Analytics Link fills the HFM_MEMBER column with the names of all members in the Financial Management Custom1 dimension (the member selection specification is ignored). The TARGET_MEMBER column is filled with the same names from the HFM_MEMBER column. SELECTED is set to 1 (TRUE) only for Golf and Shoes, and their descendants (such as GolfBalls and GolfShoes); the other members are set to 0 (FALSE).

Table 9 Analytics Link Mapping Table Template: Dimension Creation Transformation Type

HFM_MEMBER	TARGET_MEMBER	VISIBLE	ISBASE	GENERATION	DIM_LEVEL	SELECTED
[None]	FM None	1	1	0	0	0
AllProducts	AllProducts	1	0	0	2	0

HFM_MEMBER	TARGET_MEMBER	VISIBLE	ISBASE	GENERATION	DIM_LEVEL	SELECTED
Balls	Balls	1	0	0	1	0
Golf	Golf	1	0	1	1	1
GolfBalls	GolfBalls	1	1	2	0	1
GolfClubs	GolfClubs	1	1	2	0	1
GolfShoes	GolfShoes	1	1	2	0	1
GolfTees	GolfTees	1	1	2	0	1
Shoes	Shoes	1	0	0	1	1
Tennis	Tennis	1	0	1	1	0
TennisBalls	TennisBalls	1	1	2	0	0
TennisRacquets	TennisRacquets	1	1	2	0	0
TennisShoes	TennisShoes	1	1	2	0	1

Assume that you do not want GolfTees, which is a descendant of Golf, represented in the Essbase outline. Set VISIBLE to 0 (FALSE) for GolfTees. Also, assume that you want to change the names of Golf and Shoes to GolfProducts and ShoesProducts, respectively in the Essbase outline. These changes are shown in [Table 10](#).

Table 10 User-Updated Mapping Table Template: Dimension Creation Transformation Type

HFM_MEMBER	TARGET_MEMBER	VISIBLE	ISBASE	GENERATION	DIM_LEVEL	SELECTED
[None]	FM None	1	1	0	0	0
AllProducts	AllProducts	1	0	0	2	0
Balls	Balls	1	0	0	1	0
Golf	GolfProducts	1	0	1	1	1
GolfBalls	GolfBalls	1	1	2	0	0
GolfClubs	GolfClubs	1	1	2	0	1
GolfShoes	GolfShoes	1	1	2	0	1
GolfTees	GolfTees	0	1	2	0	1
Shoes	ShoesProducts	1	0	0	1	1
Tennis	Tennis	1	0	1	1	0
TennisBalls	TennisBalls	1	1	2	0	0
TennisRacquets	TennisRacquets	1	1	2	0	0

HFM_MEMBER	TARGET_MEMBER	VISIBLE	ISBASE	GENERATION	DIM_LEVEL	SELECTED
TennisShoes	TennisShoes	1	1	2	0	1

For the **Dimension Creation** transformation type, members for which VISIBLE and SELECTED are set to 1 (TRUE) are created in the Essbase outline and are tagged with the “eal” UDA. See [“About User-Defined Attributes \(UDAs\)” on page 97](#).

Representation of the Essbase ESSCustom1 dimension outline:

```
ESSCustom1
  GolfProducts    (Never Share) (UDAS: eal)
  GolfBalls      (Never Share) (UDAS: eal)
  GolfShoes      (Never Share) (UDAS: eal)
  GolfClubs      (Never Share) (UDAS: eal)
  ShoesProducts  (Never Share) (UDAS: eal)
  GolfShoes      (Shared Member)
  TennisShoes    (Never Share) (UDAS: eal)
```

If, before creating the target database, the dimension exists in the target database, Analytics Link removes the existing dimension and recreates it based on the target grid definition.

Dimension Mapping Transformation Type

The **Dimension Mapping** transformation type maps members in one Essbase dimension to members in one Financial Management dimension. The Essbase dimension must already exist in the Essbase outline.

The **Dimension Mapping** transformation type supports:

- Member selection, based on the Essbase dimension
- Member name mapping
- Prefix (see [“About Prefixes” on page 95](#))

The same Financial Management dimension cannot be used in **Dimension Mapping** and **Break Dimension** transformation types within the same bridge.

In this example, assume that you created a Period dimension in an Essbase outline and you want to map its members to the members in the Financial Management Period dimension.

Representation of the existing Essbase Period dimension outline:

```
Period
  3Months
    HY1
      Q1
        JUL
        AUG
        SEP
      Q2
        OCT
        NOV
        DEC
    HY2
```

```

Q3
  JAN
  FEB
  MAR
Q4
  APR
  MAY
  JUN
4Months (Dymanic Calc)
  T1 (Dymanic Calc) [Formula: ="JUL"+"AUG"+"SEP"+"OCT";]
    JUL (Shared Member)
    AUG (Shared Member)
    SEP (Shared Member)
    OCT (Shared Member)
  T2 (Dymanic Calc) [Formula: ="NOV"+"DEC"+"JAN"+"FEB";]
    NOV (Shared Member)
    DEC (Shared Member)
    JAN (Shared Member)
    FEB (Shared Member)
  T3 (Dymanic Calc) [Formula: ="MAR"+"APR"+"MAY"+"JUN";]
    MAR (Shared Member)
    APR (Shared Member)
    MAY (Shared Member)
    JUN (Shared Member)

```

Representation of the Financial Management Period dimension:

```

Period
  HalfYear1
    Quarter1
      July
      August
      September
    Quarter2
      October
      November
      December
  HalfYear2
    Quarter3
      January
      February
      March
    Quarter4
      April
      May
      June

```

Table 11 represents the information that you must provide on the **Target Design Grid** tab:

Table 11 Target Design Grid tab: Dimension Mapping Transformation Type

Transformation Type	Source Dimensions	Target Dimensions	Member Selection	Mapping Table	Prefix
Dimension Mapping	Period	Period	3Months	<i>tableName</i>	

Table 12 on page 59 shows an Analytics Link-created mapping table template. Analytics Link fills the TARGET_MEMBER column with the member names from the Essbase Period

dimension. The HFM_MEMBER_Period column is filled with the same names from the TARGET_MEMBER column. SELECTED is set to 1 (TRUE) for 3Months and its descendants; the other members are set to 0 (FALSE).

Table 12 Analytics Link Mapping Table Template: Dimension Mapping Transformation Type

TARGET_MEMBER	HFM_MEMBER_Period	VISIBLE	ISBASE	GENERATION	DIM_LEVEL	SELECTED
3Months	3Months	1	0	2	3	1
HY1	HY1	1	0	3	2	1
Q1	Q1	1	0	4	1	1
JUL	JUL	1	1	5	0	1
AUG	AUG	1	1	5	0	1
SEP	SEP	1	1	5	0	1
Q2	Q2	1	0	4	1	1
OCT	OCT	1	1	5	0	1
NOV	NOV	1	1	5	0	1
DEC	DEC	1	1	5	0	1
HY2	HY2	1	0	3	2	1
Q3	Q3	1	0	4	1	1
JAN	JAN	1	1	5	0	1
FEB	FEB	1	1	5	0	1
MAR	MAR	1	1	5	0	1
Q4	Q4	1	0	4	1	1
APR	APR	1	1	5	0	1
MAY	MAY	1	1	5	0	1
JUN	JUN	1	1	5	0	1
4Months	4Months	1	0	2	2	0
T1	T1	1	0	3	1	0
T2	T2	1	0	3	1	0
T3	T3	1	0	3	1	0

To map Essbase members to Financial Management members, modify the member names in the HFM_MEMBER_DIM column to match the Financial Management member names. As shown in [Table 13 on page 60](#), Essbase member 3Months, and its descendants, are mapped to Financial Management member names.

Table 13 User-Updated Mapping Table Template: Dimension Mapping Transformation Type

TARGET_MEMBER	HFM_MEMBER_Period	VISIBLE	ISBASE	GENERATION	DIM_LEVEL	SELECTED
3Months	Year	1	0	2	3	1
HY1	HalfYear1	1	0	3	2	1
Q1	Quarter1	1	0	4	1	1
JUL	July	1	1	5	0	1
AUG	August	1	1	5	0	1
SEP	September	1	1	5	0	1
Q2	Quarter2	1	0	4	1	1
OCT	October	1	1	5	0	1
NOV	November	1	1	5	0	1
DEC	December	1	1	5	0	1
HY2	HalfYear2	1	0	3	2	1
Q3	Quarter3	1	0	4	1	1
JAN	January	1	1	5	0	1
FEB	February	1	1	5	0	1
MAR	March	1	1	5	0	1
Q4	Quarter4	1	0	4	1	1
APR	April	1	1	5	0	1
MAY	May	1	1	5	0	1
JUN	June	1	1	5	0	1
4Months	4Months	1	0	2	2	0
T1	T1	1	0	3	1	0
T2	T2	1	0	3	1	0
T3	T3	1	0	3	1	0

Members for which VISIBLE and SELECTED are set to 1 (TRUE) are tagged with the “eal” UDA in the Essbase outline. See [“About User-Defined Attributes \(UDAs\)” on page 97](#).

Representation of the Essbase Period dimension outline:

```

Period
  3Months (UDAS: eal)
  HY1 (UDAS: eal)
  Q1 (UDAS: eal)

```

```

    JUL    (UDAS: eal)
    AUG    (UDAS: eal)
    SEP    (UDAS: eal)
  Q2      (UDAS: eal)
    OCT    (UDAS: eal)
    NOV    (UDAS: eal)
    DEC    (UDAS: eal)
  HY2     (UDAS: eal)
  Q3      (UDAS: eal)
    JAN    (UDAS: eal)
    FEB    (UDAS: eal)
    MAR    (UDAS: eal)
  Q4      (UDAS: eal)
    APR    (UDAS: eal)
    MAY    (UDAS: eal)
    JUN    (UDAS: eal)
4Months  (Dymanic Calc)
  T1      (Dymanic Calc) [Formula: ="JUL"+"AUG"+"SEP"+"OCT";]
    JUL    (Shared Member)
    AUG    (Shared Member)
    SEP    (Shared Member)
    OCT    (Shared Member)
  T2      (Dymanic Calc) [Formula: ="NOV"+"DEC"+"JAN"+"FEB";]
    NOV    (Shared Member)
    DEC    (Shared Member)
    JAN    (Shared Member)
    FEB    (Shared Member)
  T3      (Dymanic Calc) [Formula: ="MAR"+"APR"+"MAY"+"JUN";]
    MAR    (Shared Member)
    APR    (Shared Member)
    MAY    (Shared Member)
    JUN    (Shared Member)

```

Not in Outline Transformation Type

Financial Management dimensions that are set to the **Not in Outline** transformation type are not displayed in the target database.

The **Not in Outline** transformation type requires member selection, based on the Financial Management dimension. For Analytics Link to return data for Essbase queries, coordinates for all Financial Management dimensions, even dimensions that are not displayed in the Essbase outline, must be known. Therefore, for each Financial Management dimension that is set to the **Not in Outline** transformation type, you must specify a single Financial Management member that represents the coordinate for that dimension.

For example, assume that you do not want the Financial Management ICP dimension displayed in an Essbase target database and [ICP Top] represents the coordinate for the ICP dimension.

[Table 14](#) represents the information that you must provide on the **Target Design Grid** tab:

Table 14 Target Design Grid tab: Not in Outline Transformation Type

Transformation Type	Source Dimensions	Target Dimensions ¹	Member Selection	Mapping Table	Prefix
Not in Outline	ICP		[ICP Top]		

¹Because the Financial Management dimension is not displayed in the Essbase outline, the **Target Dimension** field is not available.

See [“Removing Financial Management Dimensions from the Essbase Outline”](#) on page 110.

New Dimension Transformation Type

Use the **New Dimension** transformation type when the Essbase outline has an existing Essbase dimension that is not represented in the Financial Management application.

The **New Dimension** transformation type requires member selection, based on the Essbase dimension.

For example, assume that the Essbase outline includes a dimension named Source, in which there are two members: Hfm and NonHfm. For member Hfm, you want the source of the data to be Financial Management data; for member NonHfm, you do not want the source of the data to be Financial Management data.

On the **Target Design Grid** tab, in an empty row, select the **New Dimension** transformation type. [Table 15](#) represents the information that you must provide on the **Target Design Grid** tab:

Table 15 Target Design Grid tab: New Dimension Transformation Type

Transformation Type	Source Dimensions ¹	Target Dimensions	Member Selection	Mapping Table	Prefix
New Dimension		Source	Hfm		

¹Because the Essbase dimension does not exist in the Financial Management application, the **Source Dimension** field is not available.

In the Essbase outline, member Hfm is tagged with the “eal” UDA and Essbase query results are returned from Data Synchronization Server. Queries on member NonHfm do not involve Data Synchronization Server. See [“About User-Defined Attributes \(UDAs\)”](#) on page 97.

Representation of the Essbase Source dimension outline:

```
Source
  Hfm   (UDAS: eal)
  NonHfm
```

Join Dimensions Transformation Type

The **Join Dimensions** transformation type maps members from multiple Financial Management dimensions to one Essbase target dimension. The Essbase dimension must already exist in the Essbase outline. Analytics Link does not create the Essbase dimension.

The **Join Dimensions** transformation type supports:

- Member selection, based on the Essbase dimension
- Member name mapping (required)

The same Financial Management dimension cannot be used in **Join Dimensions** and **Break Dimension** transformation types within the same bridge.

In this example, assume that you want to map all of the members in the Time dimension in an Essbase outline to members in the Financial Management Period and View dimensions.

Representation of the Essbase Time dimension outline:

```
Time
  Months
    JUL
    AUG
    SEP
  YearToDate
    YTDJUL
    YTDAUG
    YTDSEP
```

Representation of the Financial Management Period dimension:

```
Period
  HalfYear1
  Quarter1
    July
    August
    September
```

Representation of the Financial Management View dimension:

```
View
  Scenario View
  Periodic
  YTD
  HYTD
  QTD
```

[Table 16](#) represents the information that you must provide on the **Target Design Grid** tab:

Table 16 Target Design Grid tab: Join Dimensions Transformation Type

Transformation Type	Source Dimensions	Target Dimensions	Member Selection	Mapping Table	Prefix
Join Dimensions	Period,View	Time		<i>tableName</i>	

After defining Financial Management dimensions in the **Source Dimensions** column, you must delete the rows in the mapping grid that duplicate any of the specified Financial Management dimensions. In this example, the row for the Period dimension was used to define the **Join Dimensions** transformation type for the Period and View dimensions. Therefore, you must delete the default row for the View dimension.

[Table 17 on page 64](#) shows a Analytics Link-created mapping table template. Analytics Link fills the TARGET_MEMBER column with all of the member names from the Essbase dimension. The HFM_MEMBER_Period column is filled with the same names from the TARGET_MEMBER column. The HFM_MEMBER_View column is filled with [None]. For all members, VISIBLE is set to 1 (TRUE). SELECTED is set to 1 (TRUE) for all members because member selection was not limited.

Table 17 Analytics Link Mapping Table Template: Join Dimensions Transformation Type

TARGET_MEMBER	HFM_MEMBER_Period	HFM_MEMBER_View	ISBASE	GENERATION	DIM_LEVEL	VISIBLE	SELECTED
Months	Months	[None]	0	2	1	1	1
JUL	JUL	[None]	1	3	0	1	1
AUG	AUG	[None]	1	3	0	1	1
SEP	SEP	[None]	1	3	0	1	1
YearToDate	YearToDate	[None]	0	2	1	1	1
YTDJUL	YTDJUL	[None]	1	3	0	1	1
YTDAUG	YTDAUG	[None]	1	3	0	1	1
YTDSEP	YTDSEP	[None]	1	3	0	1	1

To map Essbase members to Financial Management members, modify the member names in the HFM_MEMBER_Period and HFM_MEMBER_View columns to match Financial Management members, as shown in [Table 18](#).

Table 18 User-Updated Mapping Table: Join Dimensions Transformation Type

TARGET_MEMBER	HFM_MEMBER_Period	HFM_MEMBER_View	ISBASE	GEN	DIM_LEVEL	VISIBLE	SELECTED
Months	Quarter1	Periodic	0	2	1	1	1
JUL	July	Periodic	1	3	0	1	1
AUG	August	Periodic	1	3	0	1	1
SEP	September	Periodic	1	3	0	1	1
YearToDate	Quarter1	YTD	0	2	1	1	1
YTDJUL	July	YTD	1	3	0	1	1
YTDAUG	August	YTD	1	3	0	1	1
YTDSEP	September	YTD	1	3	0	1	1

In the Essbase outline, all members for which VISIBLE and SELECTED are set to 1 (TRUE) are tagged with the “eal” UDA. See [“About User-Defined Attributes \(UDAs\)”](#) on page 97.

Representation of the Essbase Time dimension outline:

Time

```

Months    (UDAS: eal)
  JUL     (UDAS: eal)
  AUG     (UDAS: eal)
  SEP     (UDAS: eal)
YearToDate (UDAS: eal)
  YTDJUL  (UDAS: eal)

```

YTDAUG (UDAS: eal)
YTDSEP (UDAS: eal)

Caution! In the **Join Dimensions** transformation type, you are not allowed to map multiple Essbase members to the same Financial Management dimensions member combination, as shown in [Table 19](#).

Table 19 User-Updated Mapping Table: Join Dimensions Transformation Type

TARGET_MEMBER	HFM_MEMBER_PERIOD	HFM_MEMBER_VIEW	ISBASE	GEN	DIM_LEVEL	VISIBLE	SELECTED
A	July	Periodic	1	3	0	1	1
B	July	Periodic	1	3	0	1	1

Break Dimension Transformation Type

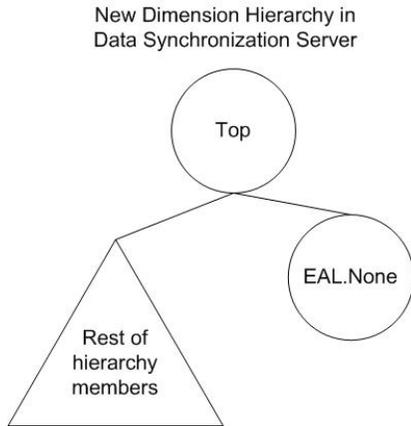
The **Break Dimension** transformation type breaks one Financial Management Custom dimension (Custom1, Custom2, Custom3, or Custom4) into multiple Essbase dimensions. The target Essbase dimensions must already exist in the Essbase database outline. The **Break Dimension** transformation type does not create Essbase dimensions.

In the Data Synchronization Server database, the Financial Management Custom dimension is replaced with new dimensions. These dimensions and their hierarchies are created using the member list from the mapping table and the hierarchical structure of the Financial Management Custom dimension. The number of new dimensions in the Data Synchronization Server database is the same as the number of Essbase target dimensions.

In Data Synchronization Server, Analytics Link adds two members to each new dimension, as shown in [Figure 4](#):

- Top—This member represents the top member of the new dimension
- EAL.None—This member tells Data Synchronization Server that the new dimension does not participate in queries.

Figure 4 New Dimension Hierarchy: Top and EAL.None Members



In the new dimensions, Analytics Link does not use the aggregation rules (for example, AggrWeight or SwitchSignForFlow) of the source Financial Management dimension. Data Synchronization Server aggregates the new dimensions based only on their hierarchies in the Data Synchronization Server database. Essbase dimension hierarchies are used only for reporting. Therefore, if an Essbase dimension hierarchy does not match the hierarchy in the Data Synchronization Server database, an Essbase query will return unexpected results. For example, assume that the Data Synchronization Server database includes the following hierarchy, in which members A and B are children of member C. The values of the base members are aggregated into the value of the parent member:

DSS Hierarchy	Member Value
C	6
A	5
B	1

If, in an existing Essbase dimension hierarchy, members A and C are children of member B, the member values would not properly represent the Data Synchronization Server hierarchy:

Essbase Hierarchy	Member Value
B	1
A	5
C	6

The **Break Dimension** transformation type supports:

- Member selection, based on the Financial Management source dimension
- Member name mapping (required)

The same Financial Management dimension cannot be used in the following transformation types within the same bridge: **Break Dimension** and **Join Dimensions**; **Break Dimension** and **Dimension Creation**; and **Break Dimension** and **Dimension Mapping**.

See the following break dimension examples:

- [“Breaking a Financial Management Dimension Hierarchy into Multiple Essbase Dimensions” on page 67](#)

- “Breaking Base Members in a Financial Management Dimension into Multiple Essbase Dimensions” on page 70
- “Breaking Nonbase Members in a Financial Management Dimension into Multiple Essbase Dimensions” on page 74

Breaking a Financial Management Dimension Hierarchy into Multiple Essbase Dimensions

You can break hierarchy branches in a Financial Management dimension into separate Essbase dimensions.

In this example, assume that you want to map the Shoes hierarchy in the Financial Management Custom1 dimension to the Essbase ShoesDim dimension and the Balls hierarchy to the Essbase BallsDim dimension.

Representation of the Financial Management Custom1 hierarchy:

```

Custom1
  [None]
  AllProducts
    Golf
      GolfBalls
      GolfShoes
      GolfTees
      GolfClubs
    Tennis
      TennisBalls
      TennisShoes
      TennisRacquets
  Balls
    GolfBalls
    TennisBalls
  Shoes
    GolfShoes
    TennisShoes

```

Representation of the existing Essbase ShoesDim dimension outline:

```

ShoesDim
  ShoesDim.Total
  ShoesDim.None
  Shoes
    GolfShoes
    TennisShoes

```

Representation of the existing Essbase BallsDim dimension outline:

```

BallsDim
  BallsDim.Total
  BallsDim.None
  Balls
    GolfBalls
    TennisBalls

```

Table 20 represents the information that you must provide on the **Target Design Grid** tab:

Table 20 Target Design Grid tab: Break Dimension Transformation Type

Transformation Type	Source Dimensions	Target Dimensions	Member Selection	Mapping Table	Prefix
Break Dimension	Custom1	ShoesDim,BallsDim	Shoes,Balls	<i>tableName</i>	

Table 21 on page 68 shows the Analytics Link-created mapping table template. Based on the member selection specification, SELECTED is set to 1 (TRUE) for Shoes and Balls, and their descendants (such as GolfShoes and GolfBalls, respectively), and Top and EAL.None; the other members are set to 0 (FALSE).

Table 21 Analytics Link Mapping Table Template: Break Financial Management Dimension Hierarchy Example

HFM_MEMBER	TARGET_MEMBER_SHOESDIM	VISIBLE_SHOESDIM	TARGET_MEMBER_BALLSDIM	VISIBLE_BALLSDIM	ISBASE	GEN	DIM_LEVEL	SELECTED
[None]	[None]	1	[None]	0	1	0	0	0
AllProducts	AllProducts	1	AllProducts	0	0	0	2	0
Balls	Balls	1	Balls	0	0	0	1	1
Golf	Golf	1	Golf	0	0	1	1	0
GolfBalls	GolfBalls	1	GolfBalls	0	1	2	0	1
GolfClubs	GolfClubs	1	GolfClubs	0	1	2	0	0
GolfShoes	GolfShoes	1	GolfShoes	0	1	2	0	1
GolfTees	GolfTees	1	GolfTees	0	1	2	0	0
Shoes	Shoes	1	Shoes	0	0	0	1	1
Tennis	Tennis	1	Tennis	0	0	1	1	0
TennisBalls	TennisBalls	1	TennisBalls	0	1	2	0	1
TennisRacquets	TennisRacquets	1	TennisRacquets	0	1	2	0	0
TennisShoes	TennisShoes	1	TennisShoes	0	1	2	0	1
Top	ShoesDim.Top	1	BallsDim.Top	1	1	1	1	1
EAL.None	ShoesDim.None	1	BallsDim.None	1	1	1	1	1

Table 22 on page 69 shows an updated mapping table:

- In the VISIBLE_SHOESDIM column, VISIBLE is set to 0 (FALSE) for members for which SELECTED is set to 1 (TRUE) but that are not part of ShoesDim (such as Balls and TennisBalls). For the same members, in the VISIBLE_BALLSDIM column, VISIBLE is set to 1 (TRUE). In the visible column for each Essbase dimension, it is not necessary to change the default visible settings for members for which SELECTED is set to 0 (FALSE).
- For each Essbase dimension, the Top member is renamed to *dimName.Total*.

Table 22 User-Updated Mapping Table Template: Break Financial Management Dimension Hierarchy Example

HFM_MEMBER	TARGET_MEMBER_SHOESDIM	VISIBLE_SHOESDIM	TARGET_MEMBER_BALLSDIM	VISIBLE_BALLSDIM	ISBASE	GEN	DIM_LEVEL	SELECTED
[None]	[None]	0	[None]	0	1	0	0	0
AllProducts	AllProducts	0	AllProducts	0	0	0	2	0
Balls	Balls	0	Balls	1	0	0	1	1
Golf	Golf	0	Golf	0	0	1	1	0
GolfBalls	GolfBalls	0	GolfBalls	1	1	2	0	1
GolfClubs	GolfClubs	0	GolfClubs	0	1	2	0	0
GolfShoes	GolfShoes	1	GolfShoes	0	1	2	0	1
GolfTees	GolfTees	0	GolfTees	0	1	2	0	0
Shoes	Shoes	1	Shoes	0	0	0	1	1
Tennis	Tennis	0	Tennis	0	0	1	1	0
TennisBalls	TennisBalls	0	TennisBalls	1	1	2	0	1
TennisRacquets	TennisRacquets	0	TennisRacquets	0	1	2	0	0
TennisShoes	TennisShoes	1	TennisShoes	0	1	2	0	1
Top	ShoesDim.Total	1	BallsDim.Total	1	1	1	1	1
EAL.None	ShoesDim.None	1	BallsDim.None	1	1	1	1	1

Members for which VISIBLE and SELECTED are set to 1 (TRUE) are tagged with the “eal” UDA in the Essbase outline. See [“About User-Defined Attributes \(UDAs\)” on page 97](#).

Representation of the ShoesDim and BallsDim hierarchies in the Essbase outline:

```
ShoesDim
  ShoesDim.Total  (UDAS: eal)
    ShoesDim.None  (UDAS: eal)
      Shoes        (UDAS: eal)
        GolfShoes  (UDAS: eal)
          TennisShoes (UDAS: eal)
BallsDim
  BallsDim.Total  (UDAS: eal)
    BallsDim.None  (UDAS: eal)
      Balls        (UDAS: eal)
        GolfBalls  (UDAS: eal)
          TennisBalls (UDAS: eal)
```

Financial Management application member values:

```
Member      Value
GolfBalls   5
GolfShoes   7
```



```

    GolfClubs
  Tennis
    TennisBalls
    TennisShoes
    TennisRacquets
Balls
  GolfBalls
  TennisBalls
Shoes
  GolfShoes
  TennisShoes

```

Representation of the existing Essbase Sports dimension outline:

```

Sports
  Golf
  Tennis

```

Representation of the existing Essbase Products dimension outline:

```

Products
  Balls
  Clubs
  Shoes
  Racquets
  Tees

```

The combination of members from these dimensions will represent one member of the Financial Management dimension. For example, the combination of Products.Balls and Sports.Golf represents the GolfBalls member in the Financial Management Custom1 dimension.

[Table 23](#) represents the information that you must provide on the **Target Design Grid** tab:

Table 23 Target Design Grid tab: Break Dimension Transformation Type

Transformation Type	Source Dimensions	Target Dimensions	Member Selection	Mapping Table	Prefix
Break Dimension	Custom1	Sports,Products	Golf,Tennis	<i>tableName</i>	

[Table 24 on page 71](#) shows the Analytics Link-created mapping table template. Based on the member selection specification, SELECTED is set to 1 (TRUE) for Golf and Tennis, and their descendants, and Top and EAL.None; the other members are set to 0 (FALSE).

Table 24 Analytics Link Mapping Table Template: Consolidating Base Members Example

HFM_MEMBER	TARGET_MEMBER_SPORTS	VISIBLE_SPORTS	TARGET_MEMBER_PRODUCTS	VISIBLE_PRODUCTS	ISBASE	GEN	DIM_LEVEL	SELECTED
[None]	[None]	1	[None]	0	1	0	0	0
AllProducts	AllProducts	1	AllProducts	0	0	0	2	0
Balls	Balls	1	Balls	0	0	0	1	0
Golf	Golf	1	Golf	0	0	1	1	1

HFM_MEMBER	TARGET_MEMBER_SPORTS	VISIBLE_SPORTS	TARGET_MEMBER_PRODUCTS	VISIBLE_PRODUCTS	ISBASE	GEN	DIM_LEVEL	SELECTED
GolfBalls	GolfBalls	1	GolfBalls	0	1	2	0	1
GolfClubs	GolfClubs	1	GolfClubs	0	1	2	0	1
GolfShoes	GolfShoes	1	GolfShoes	0	1	2	0	1
GolfTees	GolfTees	1	GolfTees	0	1	2	0	1
Shoes	Shoes	1	Shoes	0	0	0	1	0
Tennis	Tennis	1	Tennis	0	0	1	1	1
TennisBalls	TennisBalls	1	TennisBalls	0	1	2	0	1
TennisRacquets	TennisRacquets	1	TennisRacquets	0	1	2	0	1
TennisShoes	TennisShoes	1	TennisShoes	0	1	2	0	1
Top	Sports.Top	1	Products.Top	1	1	1	1	1
EAL.None	Sports.None	1	Products.None	1	1	1	1	1

Table 25 on page 72 shows an updated mapping table:

- In the TARGET_MEMBER_SPORTS column, to consolidate the values of the Golf, GolfBalls, GolfShoes, GolfBalls, and GolfShoes members, each member is named Golf. Similarly, to consolidate the values of the Tennis, TennisBalls, TennisRacquets, and TennisShoes members, each member is named Tennis. By default, in the VISIBLE_SPORTS column, the VISIBILITY property for all members that are included in the member selection specification is set to 1 (TRUE). For the Sports.None member, for which SELECTED is set to 1 (TRUE) but that you do not want displayed in the Sports dimension, the VISIBILITY property is set to 0 (FALSE).
- In the TARGET_MEMBER_PRODUCTS column, base members are renamed according to product groups. For example, GolfBalls and TennisBalls are renamed to Balls, and GolfClubs is renamed to Clubs. By default, in the VISIBLE_PRODUCTS column, the VISIBILITY property for all members is set to 0 (FALSE), except for Top and EAL.None. Therefore, the VISIBILITY property is set to 1 (TRUE) for members that you want included in the Products dimension (such as GolfBalls and Top). For the Products.None member, for which SELECTED is set to 1 (TRUE) but that you do not want displayed in the Products dimension, the VISIBILITY property is set to 0 (FALSE).

Table 25 User-Updated Mapping Table Template: Consolidating Base Members Example

HFM_MEMBER	TARGET_MEMBER_SPORTS	VISIBLE_SPORTS	TARGET_MEMBER_PRODUCTS	VISIBLE_PRODUCTS	ISBASE	GEN	DIM_LEVEL	SELECTED
[None]	[None]	0	[None]	0	1	0	0	0

HFM_MEMBER	TARGET_MEMBER_SPORTS	VISIBLE_SPORTS	TARGET_MEMBER_PRODUCTS	VISIBLE_PRODUCTS	ISBASE	GEN	DIM_LEVEL	SELECTED
AllProducts	AllProducts	0	AllProducts	0	0	0	2	0
Balls	Balls	0	Balls	0	0	0	1	0
Golf	Golf	1	Golf	0	0	1	1	1
GolfBalls	Golf	1	Balls	1	1	2	0	1
GolfClubs	Golf	1	Clubs	1	1	2	0	1
GolfShoes	Golf	1	Shoes	1	1	2	0	1
GolfTees	Golf	1	Tees	1	1	2	0	1
Shoes	Shoes	0	Shoes	0	0	0	1	0
Tennis	Tennis	1	Tennis	0	0	1	1	1
TennisBalls	Tennis	1	Balls	1	1	2	0	1
TennisRacquets	Tennis	1	Racquets	1	1	2	0	1
TennisShoes	Tennis	1	Shoes	1	1	2	0	1
Top	Sports	1	Products	1	1	1	1	1
EAL.None	Sports.None	0	Products.None	0	1	1	1	1

Members for which VISIBLE and SELECTED are set to 1 (TRUE) are tagged with the “eal” UDA in the Essbase outline. See [“About User-Defined Attributes \(UDAs\)” on page 97](#).

Representation of the Sports and Products dimension hierarchies in the Essbase outline:

```
Sports (UDAS: eal)
  Golf (UDAS: eal)
  Tennis (UDAS: eal)
Products (UDAS: eal)
  Balls (UDAS: eal)
  Clubs (UDAS: eal)
  Shoes (UDAS: eal)
  Racquets (UDAS: eal)
  Tees (UDAS: eal)
```

Representation of the Products dimension hierarchy Essbase outline:

Financial Management application member values:

```
Member      Value
Golf        31
GolfBalls   5
GolfShoes   7
GolfTees    11
GolfClubs   8
Tennis      15
```

```
TennisBalls      4
TennisShoes      2
TennisRacquets   9
```

Example Essbase report script:

```
{ WIDTH 25 }
"Actual"
"2006"
"July"
"Sales"
"Customer2"
"ESSCustom3.FM None"
"Increases"
"Stamford"
"FM Entity Currency"
"FM ICP None"
"Periodic"
<ROW ("Sports")
<IDESC "Sports"
<COLUMN ("Products")
<IDESC "Products"
!
```

Resulting Essbase report:

Actual	2006	July	Sales	Customer2	ESSCustom3.FM None	Increases	Stamford	FM Entity
	Currency	FM ICP	None	Periodic				
	Balls	Clubs	Shoes	Tees	Racquets	Products		
	=====	=====	=====	=====	=====	=====		
Golf	5	8	7	11	#MISSING	31		
Tennis	4	#MISSING	2	#MISSING	9	15		
Sports	9	8	9	11	9	46		

Breaking Nonbase Members in a Financial Management Dimension into Multiple Essbase Dimensions

The Break Dimension transformation type can be used to break a nonbase member and its children in a Financial Management dimension hierarchy into separate Essbase dimensions.

In this example, assume you want to break the AllCustomers nonbase member and its children in Financial Management Custom2 dimension into two existing Essbase dimensions: CUSTOMERS2_3 and CUSTOMERS4_5. The AllCustomers member does not appear in either Essbase dimension.

Representation of the Financial Management Custom2 dimension:

```
Custom1
  [None]
  AllCustomers
    Customer2
    Customer3
    Customer4
    Customer5
```

Representation of the existing Essbase CUSTOMERS2_3 dimension outline:

CUSTOMERS2_3
 CUSTOMERS2_3.None
 Customer2
 Customer3

Representation of the existing Essbase CUSTOMERS4_5 dimension outline:

CUSTOMERS4_5
 CUSTOMERS4_5.None
 Customer4
 Customer5

Table 26 represents the information that you must provide on the **Target Design Grid** tab:

Table 26 Target Design Grid tab: Break Dimension Transformation Type

Transformation Type	Source Dimensions	Target Dimensions	Member Selection	Mapping Table	Prefix
Break Dimension	Custom2	CUSTOMERS2_3,CUSTOMERS4_5		<i>tableName</i>	

Table 27 shows a representation of a Analytics Link-created mapping table template.

Table 27 Analytics Link Mapping Table Template: Breaking Nonbase Members

HFM_MEMBER	TARGET_MEMBER_CUSTOMERS2_3	VISIBLE_CUSTOMERS2_3	TARGET_MEMBER_CUSTOMERS4_5	VISIBLE_CUSTOMERS4_5	SELECTED
[None]	[None]	1	[None]	0	1
AllCustomers	AllCustomers	1	AllCustomers	0	1
Customer2	Customer2	1	Customer2	0	1
Customer3	Customer3	1	Customer3	0	1
Customer4	Customer4	1	Customer4	0	1
Customer5	Customer5	1	Customer5	0	1
Top	CUSTOMERS2_3.Top	1	CUSTOMERS4_5.Top	1	1
EAL.None	CUSTOMERS2_3.None	1	CUSTOMERS4_5.None	1	1

Table 28 on page 76 shows an updated mapping table:

- In the TARGET_MEMBER_CUSTOMERS2_3 column, Customer2 and Customer3 are consolidated under the Top member, which has been renamed to CUSTOMERS2_3. In the VISIBLE_CUSTOMERS2_3 column, VISIBLE is set to 0 (FALSE) for members that are not part of the CUSTOMERS2_3 dimension.
- In the TARGET_MEMBER_CUSTOMERS4_5 column, Customer4 and Customer5 are consolidated under the Top member, which has been renamed to CUSTOMERS4_5. In the VISIBLE_CUSTOMERS4_5 column, VISIBLE is set to 1 (TRUE) for members that are part of the CUSTOMERS4_5 dimension.

Table 28 User-Updated Mapping Table Template: Breaking Nonbase Members

HFM_MEMBER	TARGET_MEMBER_CUSTOMERS2_3	VISIBLE_CUSTOMERS2_3	TARGET_MEMBER_CUSTOMERS4_5	VISIBLE_CUSTOMERS4_5	SELECTED
[None]	[None]	0	[None]	0	1
AllCustomers	AllCustomers	0	AllCustomers	0	1
Customer2	Customer2	1	Customer2	0	1
Customer3	Customer3	1	Customer3	0	1
Customer4	Customer4	0	Customer4	1	1
Customer5	Customer5	0	Customer5	1	1
Top	CUSTOMERS2_3	1	CUSTOMERS4_5	1	1
EAL.None	CUSTOMERS2_3.None	1	CUSTOMERS4_5.None	1	1

Members for which VISIBLE and SELECTED are set to 1 (TRUE) are tagged with the “eal” UDA in the Essbase outline. See [“About User-Defined Attributes \(UDAs\)” on page 97](#).

Representation of the CUSTOMERS2_3 dimension hierarchy in the Essbase outline:

```
CUSTOMERS2_3 (UDAS: eal)
  CUSTOMERS2_3.None (UDAS: eal)
  Customer2 (UDAS: eal)
  Customer3 (UDAS: eal)
```

Representation of the CUSTOMERS4_5 dimension hierarchy in the Essbase outline:

```
CUSTOMERS4_5 (UDAS: eal)
  CUSTOMERS4_5.None (UDAS: eal)
  Customer4 (UDAS: eal)
  Customer5 (UDAS: eal)
```

Financial Management application member values:

```
Member      Value
AllCustomers 27
Customer2   5
Customer3   7
Customer4   4
Customer5   11
```

Example Essbase report script:

```
{ WIDTH 25 }
"Actual "
"2006 "
"July "
"Sales "
"GolfBalls "
"ESSCustom3.FM None "
"Increases "
"Stamford "
"FM Entity Currency "
```

```

"FM ICP None"
"Periodic"
<ROW ("CUSTOMERS2_3")
<IDESC "CUSTOMERS2_3"
<COLUMN "CUSTOMERS4_5")
<IDESC "CUSTOMERS4_5"
!

```

Resulting Essbase report:

```

Actual 2006 July Sales GolfBalls ESSCustom3.FM None Increases Stamford FM Entity
Currency FM ICP None Periodic

                Customers4_5.None  Customer4  Customer5  Customer4_5
                =====
Customers2_3.None  #MISSING      4           11          15
Customer2          5             #MISSING    #MISSING    5
Customer3          7             #MISSING    #MISSING    7
  Customers2_3     12            4           11          27

```

Matrix Mapping Transformation Type

The **Matrix Mapping** transformation type maps n Financial Management dimensions to m Essbase dimensions using definition mapping expressions (rules), instead of direct member-to-member mapping that is used in other transformation types. (You can, however, use **Matrix Mapping** to directly map members from the source dimension to the target dimension.)

The **Matrix Mapping** transformation type is supported only for Essbase replicated partition or RDBMS database bridge targets. You can define more than one **Matrix Mapping** transformation type in a bridge.

The **Matrix Mapping** transformation type requires a mapping table to define the matrix mapping rules.

In creating a mapping table template for the **Matrix Mapping** transformation type, Analytics Link creates columns for each dimension specified on the mapping grid: `SRC_hfmDim` for each source dimension and `DEST_targetDim` for each target dimension. When the Financial Management Entity dimension is specified as a source dimension, Analytics Link also creates a column, named `SRC_PARENT`, for the Entity Parent.

No default data is used to populate the mapping table. You must create rows and define the expressions for transforming the source intersection to the target intersection. Each row in the mapping table represents one rule. Each field in a row must contain an expression. See [Table 29](#).

Table 29 User-Updated Mapping Table Template: Matrix Mapping Transformation Type

<code>SRC_hfmDim</code>	<code>DEST_targetDim</code>
<code>source_expression</code>	<code>destination_expression</code>

For valid expressions, see:

- [the section called “Valid Expressions for Source Dimensions”](#)

- the section called “Valid Expressions for Target Dimensions”

Analytics Link implements matrix mapping rules during the process of extracting the region data set from the Data Synchronization Server database to the target database. Analytics Link starts with the first row in the data set and applies each mapping rule, one at a time, to the data set row. After applying all of the rules on the first row, Analytics Link goes to the next row in the data set, and so on. When the rule source expression results in a match, the corresponding target expression is implemented and a destination cell is created. If the rule source expression does not result in a match, a destination cell is not created.

In the following example, assume that you are extracting the region described in [Table 30](#) from the Data Synchronization Server database into an Essbase database through a replicated partition:

Table 30 Region Definition: Matrix Mapping Example

HFM Dimension	Selection Type	Member Selection
Year	MEMBERS	2006
Scenario	MEMBERS	Actual
Entity	MEMBERS	Connecticut.Stamford
Period	MEMBERS	July
ICP	MEMBERS	[ICP None]
Value	MEMBERS	USD
Custom1	MEMBERS	GolfBalls
Custom2	MEMBERS	Customer2
Custom3	MEMBERS	[None]
Custom4	MEMBERS	Increases
View	MEMBERS	YTD
Account	MEMBERS	Sales

The data set that is extracted from Data Synchronization Server consists of one row of data, defined by the following coordinates:

Actual 2006 July Sales GolfBalls Customer2 [None] Increases Stamford USD [ICP None] YTD

Data for this region in Financial Management:

```

Actual
July 76.00

```

Assume that you want to copy the value of the Actual member in the Financial Management Scenario dimension into the Budget member in the Essbase EALScenario dimension.

[Table 31](#) represents the information that you must provide on the **Target Design Grid** tab:

Table 31 Target Design Grid tab: Matrix Mapping Transformation Type

Transformation Type	Source Dimensions	Target Dimensions	Member Selection	Mapping Table	Prefix
Matrix Mapping	Scenario	EALScenario		<i>tableName</i>	

[Table 32](#) shows a representation of a user-updated mapping table, in which there is one rule that maps the value of the Actual member to the Budget member in the destination dimension. The source and destination expressions use member names.

Table 32 User-Updated Mapping Table Template: Matrix Mapping Transformation Type

SRC_SCENARIO	DEST_EALSCENARIO
Actual	Budget

After updating the mapping table, you must synchronize the mapping changes on the **Target Design Grid** tab and then extract the region on the **Extract** tab.

Analytics Link implements the one rule in the mapping table on the only row in the data set. The source expression matches the Actual member in the Scenario dimension. Therefore, the corresponding destination expression is implemented. Analytics Link creates a destination cell and copies the value of Actual to the Budget member in the EALScenario dimension. In the extracted data set, the value of Budget is 76 but there is no value for Actual.

Example Essbase report script:

```
{ WIDTH 12 }
ROW ("SCENARIO")
"Actual"
"Budget"
"2006"
"July"
"Sales"
"GolfBalls"
"Customer2"
"ESSCustom3.FM None"
"Increases"
"Connecticut.Stamford"
"USD"
"FM ICP None"
"YTD"
!
```

Resulting Essbase report:

```
Actual Budget 2006 July Sales GolfBalls Customer2 ESSCustom3.FM None Increases
Connecticut.Stamford USD FM ICP None YTD
```

```
Actual #MISSING
Budget 76
```

Now assume that the matrix mapping table has two rules, as shown in [Table 33](#). The second rule maps the value of Actual to a member with the same name in the destination dimension.

Table 33 User-Updated Mapping Table Template: Matrix Mapping Transformation Type

SRC_SCENARIO	DEST_EALSCENARIO
Actual	Budget
Actual	=Scenario

For the only row of the data set, Analytics Link implements the first rule. The source dimension expression, member name Actual, results in a match and a new destination cell is created using the destination dimension expression: the member in the destination dimension is named Budget and its value is the same value of the Financial Management Actual member. Then Analytics Link implements the second rule on the row. The source dimension expression again matches the Actual member in the Scenario dimension and a destination cell is created. The member in the destination dimension is also named Actual and its value is the same value of the Financial Management Actual member. In the extracted data set, the values of Actual and Budget are 76.

Resulting Essbase report:

```
Actual Budget 2006 July Sales GolfBalls Customer2 ESSCustom3.FM None Increases
Connecticut.Stamford USD FM ICP None YTD
```

```
Actual 76
Budget 76
```

In the following example, assume that you want to change the hierarchy in the Financial Management Period dimension, which uses Year, HalfYear, Quarter, and Month, into a hierarchy that uses Year and Trimester in the Essbase ESSPeriod dimension.

Representation of the Financial Management Period dimension hierarchy:

```
Year
  HalfYear1
    Quarter1
      July
      August
      September
    Quarter2
      ...
  HalfYear2
    ...
```

Representation of the Essbase ESSPeriod dimension:

```
ESSPeriod
  Year
    Trimester1
    Trimester2
    Trimester3
```

Assume that you are extracting the region described in [Table 34](#) from the Data Synchronization Server database into Essbase. For the Period dimension, all base members, which are the 12 months of the year, are included in the data set.

Table 34 Region Definition: Matrix Mapping Example

HFM Dimension	Selection Type	Member Selection
Year	MEMBERS	2006
Scenario	MEMBERS	Actual
Entity	MEMBERS	Connecticut.Stamford
Period	BASE	
ICP	MEMBERS	[ICP None]
Value	MEMBERS	USD
Custom1	MEMBERS	GolfBalls
Custom2	MEMBERS	Customer2
Custom3	MEMBERS	[None]
Custom4	MEMBERS	Increases
View	MEMBERS	Periodic
Account	MEMBERS	Sales

The data set that is extracted from Data Synchronization Server consists of 12 rows of data (one row for each Period dimension base member). For example, the following coordinates are for July:

Actual 2006 July Sales GolfBalls Customer2 [None] Increases Stamford USD [ICP None] YTD

Data for this region in Financial Management:

	July	August	September	October	November	December	January	February	March	
	April	May	June							
Sales	7.00	13.00	17.00	6.00	12.00	3.00	5.00	2.00	9.00	1.00
	8.00	11.00								

To map the member names, you must use a mapping table. [Table 35](#) represents the information that you must provide on the **Target Design Grid** tab:

Table 35 Target Design Grid tab: Matrix Mapping Transformation Type

Transformation Type	Source Dimensions	Target Dimensions	Member Selection	Mapping Table	Prefix
Matrix Mapping	Period	ESSPeriod		<i>tableName</i>	

[Table 36](#) shows a user-updated matrix mapping table, in which there are 13 rules.

Table 36 User-Updated Mapping Table Template: Matrix Mapping Transformation Type

SRC_PERIOD	SRC_ESSPERIOD
January	Trimester1
February	Trimester1
March	Trimester1
April	Trimester1
May	Trimester2
June	Trimester2
July	Trimester2
August	Trimester2
September	Trimester3
October	Trimester3
November	Trimester3
December	Trimester3
@LIKE(%)	Year

On the first row of the region data set, Analytics Link implements each rule, one at a time. In this pass, only two of the 13 rules result in matches. In the first match, the source expression, member name January, results in the creation of a destination cell in which the member is named Trimester1 and its value is the value of January. The second match is the source expression, @LIKE(%). A destination cell is created in which the member is named Year and its value is the value of January. The other source expressions do not result in a match on the first data row.

As Analytics Link continues to implement each rule on each row in the data set, duplicate data rows (but with different values) are created for Trimester1, Trimester2, Trimester3, and Year. Assume that you select the SUM duplicate data row option when you extract the region.

Example Essbase report script:

```
{ WIDTH 12 }
COLUMN ("PERIOD")
<DESC "Period"
"Actual "
"2006 "
"Sales "
"GolfBalls "
"Customer2 "
"ESSCustom3.FM None "
"Increases "
"Connecticut.Stamford "
"USD "
"FM ICP None "
"Periodic "
!
```

Resulting Essbase report:

```
Actual 2006 Sales GolfBalls Customer2 ESSCustom3.FM None Increases
Connecticut.Stamford FM ICP None Periodic

          Trimester1   Trimester2   Trimester3   Year
          =====   =====   =====   =====
Periodic 17             39             38             94
```

For example, the value of Trimester 1, which is 17, is the result of summing the four duplicate Trimester1 data rows that represent the values of January (5), February (2), March (9), and April (1). The value of Year, which is 94, is the result of summing the 12 duplicate Year data rows that represent the values of each month.

Valid Expressions for Source Dimensions

Table 37 lists the valid expressions for source dimensions:

Table 37 Valid Expressions for Source Dimensions

Expression	Description
Member name	Matches the specified member name in the source dimension. Example expression: Golf Matches member Golf.
=(comma separated member list)	Matches the source dimension members that are specified in the member list. Example expression: =(Golf, Shoes) Matches members Golf and Shoes.
!=(comma separated member list)	Matches the source dimension members, except those that are specified in the member list. Example expression: !=(Golf, Shoes) Matches all members in the dimension except Golf and Shoes.
@DESCENDANT(<i>string</i>)	Matches the descendants of the specified member in the source dimension. This function excludes the specified member. Example expression: @DESCENDANT(Golf) Matches members GolfBalls, GolfShoes, GolfTees, and GolfClubs, which are descendants of Golf.

Expression	Description
@LIKE(<i>expression</i>)	<p>Matches the source dimension member names that match the specified pattern. (The LIKE expression is similar to the SQL LIKE expression.)</p> <p>Some supported expressions:</p> <ul style="list-style-type: none"> ● @LIKE(<i>string</i>%) <ul style="list-style-type: none"> As a trailing-wildcard character, the percentage sign allows matching to a string of any length (including zero length) that match the specified pattern. For example, the following expression matches member names in the source dimension that begin with “USD,” such as USD, USD Total, and USD Adjs: <pre>@LIKE(USD%)</pre> The following expression matches alias member names in the source dimension starting with “Entity Curr” and that are enclosed in angle brackets <>, such as <Entity Currency>, <Entity Curr Total>, and <Entity Curr Adjs>: <pre>@LIKE(<Entity Curr%>)</pre> ● @LIKE(<i>string</i>_) <ul style="list-style-type: none"> The underscore (_) allows matching on a single character and specifies the members in the source dimension that match the specified pattern. For example, the following expression matches member names with three characters that begin with “US,” such as USD and USA, but does not match USDA: <pre>@LIKE(US_)</pre> ● @LIKE([[<i>string</i>]) <ul style="list-style-type: none"> To match member names that begin with “[”, such as member names that are enclosed with brackets [], you must enclose the open bracket with a set of brackets. For example, the following expression matches the member [Proportion] in the source dimension: <pre>@LIKE([[]Proportion])</pre>

Valid Expressions for Target Dimensions

Table 38 lists the valid expressions for target dimensions:

Table 38 Valid Expressions for Target Dimensions

Expression	Description
Member name	<p>Use the specified member name in the target dimension.</p> <p>Example expression:</p> <pre>SalesRevenue</pre> <p>For example, if the source dimension expression matches Sales, the member in the target dimension is named SalesRevenue.</p>
=SRC_HFM_ <i>dimName</i>	<p>The value is taken from the specified dimension of the source cell. For example, if the source dimension expression matches the Sales member, the member in the target dimension is named Sales. If the Entity dimension is the source dimension, to get the value of the SRC_PARENT cell, you use parentId as the name of SRC_HFM_<i>dimName</i>.</p>

Currency Transformation Type

The **Currency** transformation type, in essence, breaks the Financial Management Value dimension into two Essbase dimensions (Currency and Value), making the reporting process easier and more intuitive to users.

Representation of the Financial Management Value dimension:

```
Value
[None]
[Contribution Total]
[Contribution Adjs]
[Contribution]
[Elimination]
[Proportion]
[Parent Total]
[Parent Adjs]
[Parent]
[<Parent Curr Total>
<Parent Curr Adjs>
<Parent Currency>
<Entity Curr Total>
<Entity Curr Adjs>
<Entity Currency>
EURO Total
EURO Adjs
EURO
GBR Total
GBR Adjs
GBR
USD Total
USD Adjs
USD
```

In one of the most common usage scenarios for the **Currency** transformation type, you must specify only up to the first 15 members of the Financial Management Value dimension in the member selection specification to become the members of the Essbase Value dimension. In Financial Management, these first 15 members do not include an explicit definition of entity currency; rather the entity currency is implicitly defined. For example, in Financial Management, the <Entity Currency> member returns the value of an entity in its local currency (the default currency of the entity) and the <Parent Currency> member returns the value of an entity translated into the currency of its parent entity (the default currency of the entity parent). See [“About Dimension Member Selection for the Value Dimension” on page 90](#).

All currency members (such as USD) from the Financial Management Value dimension become the members of the Essbase Currency dimension. (Member selection is not supported for the **Currency** dimension transformation type.) In this way, the user always knows the currency of the retrieved data.

You can add only one Currency dimension to the grid.

You must provide a name for the Currency dimension (for example, Currencies) in the **Target Dimension** field. [Table 39](#) represents the information that you must provide on the **Target Design Grid** tab for the Value and Currency dimensions:

Table 39 Target Design Grid tab: Currency Transformation Type

Transformation Type	Source Dimensions ¹	Target Dimensions	Member Selection	Mapping Table	Prefix
Dimension Creation	Value	ESSValue	[Contribution Total],[Parent Total], <Parent Curr Total>,<Entity Curr Total>		
Currency		Currencies			

¹Because the Currency dimension does not exist in the Financial Management application, the **Source Dimension** field is not available.

Representation of the Essbase ESSValue and Currencies dimensions:

ESSValue

```

FM Contribution Total (UDAS: eal)
FM Contribution Adjs (UDAS: eal)
FM Contribution (UDAS: eal)
FM Elimination (UDAS: eal)
FM Proportion (UDAS: eal)
FM Parent Total (UDAS: eal)
FM Parent Adjs (UDAS: eal)
FM Parent (UDAS: eal)
FM Parent Curr Total (UDAS: eal)
FM Parent Curr Adjs (UDAS: eal)
FM Parent Currency (UDAS: eal)
FM Entity Curr Total (UDAS: eal)
FM Entity Curr Adjs (UDAS: eal)
FM Entity Currency (UDAS: eal)

```

Currencies

```

EURO (UDAS: eal)
GBR (UDAS: eal)
USD (UDAS: eal)

```

If the **Solve Uniqueness Problems** database property is set to On, Analytics Link solves duplicate member names in the currency dimension by adding the dimension name; for example, Currencies.USD.

Financial Management application member values:

	Europe.Italy	Sullivan.Italy
[Contribution]	3.00	6.00
[Parent]	3.00	6.00
<Entity Currency>	3.00	3.00
EURO	3.00	3.00
GBR		
USD	6.00	6.00

Example Essbase report script:

```

{ WIDTH 35 }
"Actual"
"2006"
"July"
"Sales"
"GolfBalls"
"Customer2"
"ESSCustom3.FM None"

```

```

"Increases"
"FM ICP None"
"Periodic"
<ROW ("ESSValue")
"FM Entity Currency"
"FM Parent"
"FM Contribution"
<COLUMN ("ESSEntity")
"Europe.Italy" "Sullivan.Italy"
"EURO"
!
"USD"
!
"GBR"
!

```

Resulting Essbase report:

```

Actual    2006    July    Sales    GolfBalls    Customer2    ESSCustom3.FM None    Increases
  FM ICP None    Periodic    EURO

```

```

                Europe.Italy    Sullivan.Italy
=====
FM Entity Currency    3    3
FM Parent    3    #MISSING
FM Contribution    3    #MISSING

```

```

Actual    2006    July    Sales    GolfBalls    Customer2    ESSCustom3.FM None    Increases
  FM ICP None    Periodic    USD

```

```

                Europe.Italy    Sullivan.Italy
=====
FM Entity Currency    #MISSING    #MISSING
FM Parent    #MISSING    6
FM Contribution    #MISSING    6

```

```

Actual    2006    July    Sales    GolfBalls    Customer2    ESSCustom3.FM None    Increases
  FM ICP None    Periodic    GBR

```

```

                Europe.Italy    Sullivan.Italy
=====
FM Entity Currency    #MISSING    #MISSING
FM Parent    #MISSING    #MISSING
FM Contribution    #MISSING    #MISSING

```

Note: In creating the Currency dimension in Essbase, Analytics Link does not support retrieving currency rates.

Measure Transformation Type

The **Measure** transformation type adds a Measure dimension to the target database.

You can add only one Measure dimension to the grid.

The target database type determines how the **Measure** transformation type is specified on the **Target Design Grid** tab:

- Essbase target database—If you use the **Measure** transformation type, in the **Target Dimension** field, you must provide a name for the dimension and, in the **Member Selection** field, you must specify one member that Analytics Link will create in the Measure dimension. The name of the member must be unique in the Essbase outline: for Essbase members that Analytics Link creates and for Essbase members in already existing Essbase dimensions. Analytics Link does not check for uniqueness on this member (even if the **Solve Uniqueness Problems** property is set to On).

In this example, assume that you want to name the Essbase dimension as Measure.

[Table 40](#) represents the information that you must provide on the **Target Design Grid** tab:

Table 40 Target Design Grid tab: Measure Transformation Type for an Essbase Target Database

Transformation Type	Source Dimensions ¹	Target Dimensions	Member Selection	Mapping Table	Prefix
Measure		Measure	eal_measure		

¹Because the Measure dimension does not exist in the Financial Management application, the **Source Dimension** field is not available.

In the Essbase outline, the Measure dimension is tagged as an Accounts dimension.

Representation of the Essbase Measure dimension outline:

```
Measure    Accounts
    eal_measure (Never Share) (UDAS:eal)
```

- RDBMS target database—Analytics Link automatically adds the **Measure** transformation type to the mapping grid and, by default, names the dimension Measures in the **Target Dimension** field. You can change the dimension name. Member selection is not supported.

[Table 41](#) represents the default information on the **Target Design Grid** tab:

Table 41 Target Design Grid tab: Measure Transformation Type for an RDBMS Target Database

Transformation Type	Source Dimensions ¹	Target Dimensions	Member Selection	Mapping Table	Prefix
Measure		Measures			

¹Because the Measure dimension does not exist in the Financial Management application, the **Source Dimension** field is not available.

When you extract data to an RDBMS database, Analytics Link creates a mapping table in the Data Store. The name of the Measure dimension (for example, Measures) is used as the column name and the column is populated with data, not member names.

About Dimension Member Selection

This topic discusses member selection for dimensions other than the Value dimension. See [“About Dimension Member Selection for the Value Dimension” on page 90](#).

Through member selection you can limit the Financial Management dimension members that you want to include in the target database or limit the existing Essbase members that will receive Financial Management data. The transformation type of a dimension determines whether:

- Member selection is supported for the dimension
- Member selection is based on members in the Financial Management source dimension or the Essbase target dimension.

For information about which transformation types support member selection, see [Table 7 on page 54](#).

When member selection is specified for the Entity dimension, you must enter member names in the following format:

```
parentName.memberName
```

This format ensures that the correct data is retrieved for the top-level members in the Entity dimension, which are specified in the member selection, and the first 12 members of Value dimension, as they appear in the Financial Management application.

When member selection is specified for dimensions that use the **New Dimension, Join Dimensions**, or **Dimension Mapping** transformation types, and an Essbase target database is created with the **Allow Duplicate Member Names** property selected, member names (which are based on the Essbase target dimension) must be entered in a fully qualified format.

Using Fully Qualified Name: A fully qualified member name comprises the duplicate member or alias name and all ancestors up to and including the dimension name. Each name must be enclosed in brackets ([]) and separated by a period (.).

Fully-qualified format:

```
[DimensionMember].[Ancestors...].[DuplicateMember]
```

For example:

```
[Market].[East].[State].[New York]
[Market].[East].[City].[New York]
```

Using Shortcut Qualified Member Name for New Dimension: For the **New Dimension** transformation type, you must provide the name of an existing Essbase member in the **Member Selection** column on the **Target Design Grid** tab. If the Essbase **Duplicate member names allowed** property is set to TRUE for the Essbase outline that contains this member, you must specify a unique member name in the following format:

```
[New_Dimension_Name]@[Member_Selection_Name]
```

Qualifying Members by Differentiating Ancestor: A member name qualified by differentiating ancestor uses the member or alias name and all ancestors up to and including the ancestor that uniquely identifies the duplicate member or alias. The top ancestor in the path will always be a unique member name. Each name must be enclosed in brackets ([]) and separated by a period (.). The syntax is as follows:

```
[DifferentiatingAncestor].[Ancestors...].[DuplicateMember]
```

For example:

```
[State].[New York]
[City].[New York]
```

About Dimension Member Selection for the Value Dimension

When member selection is specified for the Value dimension, enter member names as they appear in Financial Management. In Financial Management, all members in the Value dimension are base-level members, as shown in the following representation of the Value dimension:

```
Value
...
  <Entity Curr Total>
  <Entity Curr Adj>
  <Entity Currency>
...
```

Analytics Link creates the Value dimension in an Essbase target database as a multilevel hierarchy, based on the consolidation logic of the Value dimension in Financial Management. For example, assume that you enter <Entity Curr Total> in the **Member Selection** field. In Financial Management, the value of the <Entity Curr Total> member is the sum of the <Entity Currency> and <Entity Curr Adj> members. Therefore, Analytics Link creates a hierarchy where <Entity Curr Total> is the parent of <Entity Currency> and <Entity Curr Adj>, as shown in the following representation of the Value dimension in an Essbase outline:

```
ESSValue
..
  <Entity Curr Total>
    <Entity Curr Adj>
    <Entity Currency>
...
```

About Dimension Member Mapping Tables

Mapping tables map member names among source and target dimensions. Analytics Link creates mapping table templates in the Data Store that is associated with the bridge. Analytics Link creates the template using default values, which you then manually modify in the Data Store tables.

The structure of Analytics Link mapping tables depends on the transformation type of the dimension. See the transformation type topic for specific information about mapping table requirements. For information about which transformation types support mapping tables, see [Table 7 on page 54](#).

The following information applies to all mapping tables:

- Analytics Link uses column names to find data; the order of columns is not important.
- Analytics Link-created mapping table templates include ISBASE, GENERATION, and DIM_LEVEL columns. The source database from which the values in these columns are taken depends on the transformation type. For example, the member selection specification for the **Dimension Creation** transformation type is based on Financial Management members. For the **Join Dimensions** transformation type, the member selection specification is based on

Essbase members. See the **Member Selection** column in [Table 7, “Summary of Transformation Type Attributes”](#).

- The ISBASE, GENERATION, and DIM_LEVEL columns are created to assist you in making massive data updates to the values in the HFM_MEMBER, TARGET_MEMBER, and VISIBLE columns, using queries instead of manually updating rows. For example, to set the VISIBLE property to 1 (TRUE) for all nonbase members, a query can search the ISBASE column for values of 0.
- If creating a user-defined mapping table, the ISBASE, GENERATION, and DIM_LEVEL columns are not required.
- The SELECTED column, which is for presentation purposes only, reflects the member selection specification in the **Member Selection** column on the **Target Design Grid** tab. Changing values in the SELECTED column in the mapping table does not affect the members that are used in creating the target database, because Analytics Link only uses the member selection specification from the **Target Design Grid** tab.

Oracle recommends that you create mapping table templates in Analytics Link; however, you can create mapping tables yourself. See [Appendix D, “Mapping Table Template Reference.”](#)

About the VISIBLE Mapping Property

The VISIBLE property specifies whether a member is related to Analytics Link.

[Table 42](#) describes the relationship among **Dimension Creation**, **Dimension Mapping**, **Join Dimensions**, and **Break Dimension** transformation types, the value of VISIBLE in a mapping table, and the target database type.

Table 42 VISIBLE Mapping Table Column

Transformation Type	VISIBLE	Target Database	Description
Dimension Creation	0 (FALSE)	Essbase (Transparent Partition)	Analytics Link does not create the member in the Essbase outline.
Dimension Creation	0 (FALSE)	<ul style="list-style-type: none"> • Essbase (Replicated Partition) • RDBMS 	<p>Analytics Link does not create the member in the Essbase outline.</p> <p>When you extract data to the Essbase or RDBMS database, Analytics Link does not copy the member value, even if the member is included in the extract data region.</p>
Dimension Creation	1 (TRUE) + SELECTED=1 (TRUE)	Essbase (Transparent Partition)	<p>Analytics Link creates the member with the “eal” UDA in the Essbase outline.</p> <p>The member value is retrieved from Data Synchronization Server through the Essbase transparent partition.</p> <p>See “About User-Defined Attributes (UDAs)” on page 97.</p>
Dimension Creation	1 (TRUE) + SELECTED=1 (TRUE)	<ul style="list-style-type: none"> • Essbase (Replicated Partition) • RDBMS 	<p>Analytics Link creates the member in the Essbase outline.</p> <p>When you extract data to an Essbase or RDBMS database, Analytics Link copies the member value, if the member is included in the extract data region.</p>

Transformation Type	VISIBLE	Target Database	Description
Dimension Mapping ¹ Join Dimensions ¹ Break Dimension ¹	0 (FALSE)	Essbase (Transparent Partition)	Analytics Link does not add the “eal” UDA to the member in the Essbase outline. See “About User-Defined Attributes (UDAs)” on page 97 . The member value is not retrieved from Data Synchronization Server through the transparent partition.
Dimension Mapping ¹ Join Dimensions ¹ Break Dimension ¹	0 (FALSE)	<ul style="list-style-type: none"> ● Essbase (Replicated Partition) ● RDBMS 	When you extract data to the Essbase or RDBMS database, Analytics Link does not copy the member value, even if the member is included in the extract data region.
Dimension Mapping ¹ Join Dimensions ¹ Break Dimension ¹	1 (TRUE) + SELECTED=1 (TRUE)	Essbase (Transparent Partition)	Analytics Link adds the “eal” UDA to the member in the Essbase outline. The member value is retrieved from Data Synchronization Server through the Essbase transparent partition. See “About User-Defined Attributes (UDAs)” on page 97 .
Dimension Mapping ¹ Join Dimensions ¹ Break Dimension ¹	1 (TRUE) + SELECTED=1 (TRUE)	<ul style="list-style-type: none"> ● Essbase (Replicated Partition) ● RDBMS 	When you extract data to an Essbase or RDBMS database, Analytics Link copies the member value, if the member is included in the extracted data region.

¹For these transformation types, Analytics Link does not create dimensions in the Essbase outline, as the Essbase dimensions and members already exist.

You can edit VISIBLE property values only in the mapping table.

About Making Intermediate Members Invisible

With the **Dimension Creation** transformation type, if you make an intermediate Financial Management member invisible, the children of the intermediate member remain visible and become children of the parent of the removed intermediate Financial Management member.

In this example, assume that you want AllProducts to include GolfBalls, Tennis, and TennisBalls, but you do not want the rest of the members included in the Essbase database.

Representation of the Financial Management Custom1 dimension:

```

Custom1
  [None]
  AllProducts
    Golf
      GolfBalls
      GolfShoes
    ...
    Tennis
      TennisBalls
      TennisShoes
    ...
    Balls
      GolfBalls

```

```

TennisBalls
Shoes
  GolfShoes
  TennisShoes

```

Financial Management dimension member values:

```

Member      Value
AllProducts 13
Golf        3
GolfBalls   1
GolfShoes   2
Tennis      10
TennisBalls 7
TennisShoes 3

```

On the **Target Design Grid** tab, select the **Dimension Creation** transformation type for the Custom1 dimension and specify a mapping table. In the Analytics Link-created mapping table, **VISIBLE** and **SELECTED** are set to 1 (TRUE) for all members.

[Table 43](#) represents a user-updated mapping table, in which the **VISIBLE** property is set to 0 (FALSE) for all members except for AllProducts, GolfBalls, Tennis, and TennisBalls, which are the only members that you want included in the Essbase outline.

Table 43 User-Updated Mapping Table Template: Making Intermediate Members Invisible Example

HFM_MEMBER	TARGET_MEMBER	VISIBLE	ISBASE	GEN	DIM_LEVEL	SELECTED
[None]	ESSCustom1.FM None	0	1	0	0	1
AllProducts	AllProducts	1	0	0	2	1
Balls	Balls	0	0	1	1	1
Golf	Golf	0	0	1	1	1
GolfBalls	GolfBalls	1	1	2	0	1
GolfClubs	GolfClubs	0	1	2	0	1
GolfShoes	GolfShoes	0	1	2	0	1
GolfTees	GolfTees	0	1	2	0	1
Shoes	Shoes	0	0	1	1	1
Tennis	Tennis	1	0	1	1	1
TennisBalls	TennisBalls	1	1	2	0	1
TennisRacquets	TennisRacquets	0	1	2	0	1
TennisShoes	TennisShoes	0	1	2	0	1

Members for which **VISIBLE** and **SELECTED** are set to 1 (TRUE) are tagged with the “eal” UDA in the Essbase outline. See [“About User-Defined Attributes \(UDAs\)” on page 97](#).

Representation of the hierarchy in the Essbase ESSCustom1 dimension:

```

ESSCustom1
  AllProducts    (UDAS: eal)
  GolfBalls     (UDAS: eal)
  Tennis        (UDAS: eal)
  TennisBalls   (UDAS: eal)

```

Example Essbase report script:

```

{ WIDTH 20 }
<ROW ("ESSCustom1")
"Actual"
"2006"
"July"
"Sales"
<IDESC "ESSCustom1"
"Customer2"
"ESSCustom3.FM None"
"Increases"
"Connecticut.Stamford"
"FM Entity Currency"
"FM ICP None"
"Periodic"
!

```

Resulting Essbase report:

Actual	2006	July	Sales	Customer2	ESSCustom3.FM None	Increases
				FM Currenty Entity	FM ICP None	Periodic
ESSCustom1			13			
AllProducts			13			
GolfBalls			1			
Tennis			10			
TennisBalls			7			

As the Essbase report shows, when you change the **VISIBLE** property, you can get unexpected values in Essbase (nonbase members in the Essbase dimension are not equal to the sum of their children).

Note: In the Entity dimension, if the original Entity Parent member is set to invisible (thereby removing the Entity Parent member from the Essbase dimension), another entity becomes the Entity Parent of the Entity member. This substitution may cause unexpected values for Value dimension members that are dependent on the Entity Parent member, such as [Proportion], [Elimination], and [Parent].

Member Naming Considerations when Add Parent to Entity Member is Set to On

When Analytics Link creates an Essbase dimension, the mapping of Financial Management member names to Essbase dimension names are determined in this order:

1. Name changes based on the **Add Parent to Entity Member** database property value of the bridge.

2. Name changes based on mapping table

In this example, assume the **Add Parent to Entity** database property is set to On. All other database properties are set to Off.

Representation of a hierarchy in the Financial Management Entity dimension:

```
Entity
  [None]
    UnitedStates
      California
        Sunnyvale
        FosterCity
      Connecticut
        Stamford
```

[Table 44](#) represents a mapping table for the Entity dimension, in which the Stamford member is renamed as Stamford_in_Connecticut in the **TARGET_MEMBER** column and Connecticut is specified in the **ENTITY_PARENT** column.

Table 44 Example 1: Mapping Table for Entity Dimension

HFM_MEMBER	ENTITY_PARENT	TARGET_MEMBER	VISIBLE	SELECTED
Stamford	Connecticut	Stamford_in_Connecticut	1	1

According to the order in which Analytics Link names members, name changes that are based on a mapping table overwrite the **Add Parent to Entity Member** specification. Therefore, Stamford is renamed to Stamford_in_Connecticut, not Connecticut.Stamford.

Representation of the hierarchy in the Essbase ESSEntity dimension:

```
ESSEntity
  FM None (UDAS: eal)
    UnitedStates (UDAS: eal)
      UnitedStates.California (UDAS: eal)
        California.Sunnyvale (UDAS: eal)
        California.FosterCity (UDAS: eal)
      UnitedStates.Connecticut (UDAS: eal)
        Stamford_in_Connecticut (UDAS: eal)
```

About Prefixes

In situations where a uniform prefix is used in Essbase member names (for example, to solve member name uniqueness problems), the prefix feature is useful for mapping member names without using a mapping table. The prefix feature is supported only for the **Dimension Mapping** transformation type.

In this example, assume that the members in an Essbase dimension are similarly named as the members in a Financial Management dimension, except that the Essbase member names include a uniform prefix of “Ac_”.

Representation of an Essbase dimension, ESSDim1:

```
Ac_A
Ac_B
  Ac_B1
  Ac_B2
Ac_C
Ac_D
```

Representation of a Financial Management dimension, HFMDim1:

```
A
B
  B1
  B2
C
D
```

To map the Financial Management member names to the Essbase member names, you can use a mapping table, as shown in [Table 45](#).

Table 45 Mapping Table Template

TARGET_MEMBER	HFM_MEMBER	VISIBLE	SELECTED
Ac_A	A	1	1
Ac_B	B	1	1
Ac_B1	B1	1	1
Ac_B2	B2	1	1
Ac_C	C	1	1
Ac_D	D	1	1

Because using a mapping table might not be practical when mapping a large number of members, you can specify the prefix as a regular expression to simplify the mapping process. [Table 46](#) represents the information that you must provide on the **Target Design Grid** tab:

Table 46 Target Design Grid tab: Dimension Mapping Transformation Type

Transformation Type	Source Dimensions	Target Dimensions	Member Selection	Mapping Table	Prefix
Dimension Mapping	HFMDim1	ESSDim1			Ac_

Analytics Link creates internal mapping information by removing the prefix from the Essbase member name. Each Essbase member in the dimension is then mapped to the Financial Management member with the same name. For example, Essbase member Ac_A becomes A and is mapped to Financial Management member A.

If a mapping table exists for the dimension, the prefix feature is:

- Not implemented on the Essbase dimension members for which mapping is defined in the mapping table

- Implemented on the Essbase dimension members for which mapping is not defined in the mapping table

If Analytics Link cannot find a matching Financial Management member in the Data Synchronization Server database, the query returns #MISSING for the particular member.

About User-Defined Attributes (UDAs)

In Essbase, a user-defined attribute (UDA) describes a characteristic of the members that are assigned a UDA and is used to return lists of members that have the specified associated UDA.

For an Essbase transparent partition target database, Analytics Link assigns a UDA with the name “eal” to dimension members that Analytics Link creates or that are mapped to Financial Management members. Essbase query results are returned from Data Synchronization Server when member coordinates for all Essbase dimensions have the “eal” UDA.

Members that are assigned the “eal” UDA by dimension transformation type:

- **Dimension Creation, Currency, and Measure** transformation types:
All members Analytics Link creates for which **VISIBLE** and **SELECTED** mapping properties are set to 1 (TRUE).
- **Dimension Mapping, Join Dimensions, and Break Dimension** transformation types:
Only those members for which **VISIBLE** and **SELECTED** mapping properties are set to 1 (TRUE).
- **New Dimension** transformation type:
Only the selected member from the existing target dimension.

For an Essbase replicated partition target database, the replicated Partition definition is not based on UDAs. Analytics Link copies data into Essbase database cells only when a member in each Essbase dimension is mapped to Financial Management members on the **Target Design Grid** tab. The Essbase member must be mapped in one of these ways:

- The Essbase member is created by Analytics Link, using the **Dimension Creation, Currency, or Measures** transformation types.
- The Essbase member is mapped to a Financial Management member through a mapping table, using the **Dimension Mapping, Join Dimensions, or Break Dimension** transformation types.
- Using the **Dimension Mapping** transformation type, the Essbase member that is not mapped through a mapping table and has the same name as the Financial Management dimension member.
- The Essbase member is mapped to a Financial Management member through matrix mapping rules, using the **Matrix Mapping** transformation type.
- The Essbase member is mapped to a Financial Management member through the **Member Selection** column value, using the **New Dimension** transformation type.

9

Creating an Essbase Bridge Target

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The information in this chapter applies to Essbase target databases. The **Essbase** tab does not appear in the bridge window when the bridge target is an RDBMS database.

Overview of Creating an Essbase Bridge Target

Data Synchronization Server must be running and, on the **Data Synch** tab, the status of the Data Synchronization Server database (**Analytics Link Data**) must be set to On. If the status of **Analytics Link Data** is Off, load the Data Synchronization Server database by clicking the **Resume** button.

You must create the Data Synchronization Server database for the bridge before Analytics Link can create an Essbase database. See [“Creating the Data Synchronization Server Database for the Bridge” on page 41.](#)

► To create an Essbase database:

- 1 Open a bridge that was created with Essbase as the target database.

See [“Creating a Bridge” on page 38.](#)

- 2 On the **Properties** tab, set the database properties that are to be used in creating the Essbase database.

Property options:

- **Allow Duplicate Member Names**
- **Add Parent to Entity Members**
- **Solve Uniqueness Problems**
- **Extract Currencies from Custom Dimensions**
- **Unicode**

See [Chapter 7, “Setting Target Database Properties.”](#)

3 On the **Target Design Grid** tab, define the dimensions and members to be included the Essbase database outline.

See:

- [Chapter 8, “Designing the Target Database Grid”](#)
- [Chapter 10, “Customizing Essbase Outlines”](#)

4 On the **Essbase** tab:

a. Under **Status**, verify that the Essbase Server is available.

See [“Checking Essbase Component Status” on page 132.](#)

b. For **Connection Type**, select how the Essbase outline is connected to the Data Synchronization Server.

Connection type options:

- **Transparent Partition**
- **Replicated Partition**
- **Outline Only**

See [“Setting Essbase Database Connection Types” on page 101.](#)

c. For **Security**, select whether to migrate user and data security from the Financial Management application to the Essbase database.

Security migration options:

- **Migrate Users and Data Security**
- **Migrate Users**
- **Do Not Migrate**

See [“Setting Financial Management User and Data Security Options” on page 102.](#)

5 On the **Essbase** tab, click **Create**.

Analytics Link builds the Essbase database and outline (block storage only), and the Essbase application if the application defined in the bridge does not exist.

Note: Each time Analytics Link creates an Essbase target database, Analytics Link reads the mapping grid definition and mapping table data, saves this information in the Analytics Link repository, and sends it to Data Synchronization Server database. Therefore, if you make changes to the mapping grid definition and mapping table data, and then save these changes, the changes are automatically read and the mapping information in the Analytics Link repository and Data Synchronization Server database is updated during the creation of the Essbase database.

6 To see the Essbase database outline, in **Enterprise View** or a custom view, under the topmost **Essbase Servers** node, navigate to the Essbase database, right-click the **Outline** node, and then select **View**.

If you create an Essbase replicated partition database, see [Chapter 11, “Extracting Financial Management Data to an Essbase Replicated Partition Database Target.”](#)

Setting Essbase Database Connection Types

When creating an Essbase database as the bridge target, the connection type determines how the Essbase outline is connected to the Data Synchronization Server and whether data queries are served from Data Synchronization Server or Essbase. See [“Determining the Type of Bridge Target Database” on page 25.](#)

The connection type is specified on the **Essbase** tab of the bridge window.

Connection types:

- [“Transparent Partition Connection Type” on page 101](#)
- [“Replicated Partition Connection Type” on page 101](#)
- [“Outline-Only Connection Type” on page 101](#)

Transparent Partition Connection Type

In Essbase, a transparent partition allows users to manipulate data that is stored remotely as if it were part of the local database. The remote data is retrieved from the data source each time that users at the data target request it.

In Analytics Link, Financial Management data that is transformed and stored in Data Synchronization Server is visible to Essbase through a transparent partition.

Essbase queries return data directly from Data Synchronization Server, for those Essbase members that are assigned the “eal” UDA. See [“About User-Defined Attributes \(UDAs\)” on page 97.](#)

Transparent Partition is the default connection type for an Essbase target database.

Replicated Partition Connection Type

In Essbase, a replicated partition is a copy of a portion of the data source that is stored in the data target.

In Analytics Link, Financial Management data that is transformed in Data Synchronization Server is copied to the Essbase database through the replicated partition.

Essbase queries return data directly from the Essbase replicated partition target database, not from Data Synchronization Server database (which is the replicated partition source database).

Outline-Only Connection Type

The Outline-Only connection type does not connect the Essbase outline to the Data Synchronization Server.

Setting Financial Management User and Data Security Options

In Financial Management, a user's or group's ability to access application elements depends on the security classes to which the user or group belongs and on the security class associated with the application elements. When creating an Essbase database as the target database, security options, which are specified on the **Essbase** tab of the bridge window, determine whether user and data security in the Financial Management application is migrated to the Essbase database.

Security options:

- [“Migrate User and Data Security” on page 102](#)
- [“Migrate User Security” on page 102](#)
- [“Do Not Migrate Security” on page 102](#)

Migrate User and Data Security

The Migrate Users and Data Security option migrates user and data security from the Financial Management application to the Essbase database.

Migrate User Security

The Migrate Users option only migrates user security from the Financial Management application to the Essbase database. Data security is not migrated.

Do Not Migrate Security

The Do Not Migrate option does not migrate user or data security from the Financial Management application to the Essbase database.

Do Not Migrate is the default security setting.

Creating and Deleting Essbase Databases

In the bridge window, you design the Essbase grid on the **Target Design Grid** tab and create and delete the Essbase database on the **Essbase** tab.

After Analytics Link creates the Essbase database for the first time, the database outline always exists:

- If you delete the Essbase database, dimensions that Analytics Link creates with **Dimension Creation**, **Measure**, and **Currency** transformation types are removed from the outline. Additionally, database objects that Analytics Link creates, such as partitions, UDAs, security filters, and groups, are removed.
- If you delete all of the dimensions from the grid, the outline will be empty.

When recreating an Essbase database, Analytics Link deletes the dimensions created with the **Dimension Creation**, **Measure**, and **Currency** transformation types and then recreates these dimensions.

About Essbase Sparse and Dense Dimensionality

Most data sets of multidimensional databases have two characteristics:

- Data is not smoothly and uniformly distributed.
- Data does not exist for the majority of member combinations. For example, all products may not be sold in all areas of the country.

Essbase maximizes performance by dividing standard dimensions into two dimensionality types:

- Sparse—A sparse dimension has a low percentage of available data positions filled. Most multidimensional databases are inherently sparse; they lack data values for the majority of member combinations.
- Dense—A dense dimension has a high probability that one or more cells is occupied in every combination of dimensions.

Dimensionality information is stored in Data Synchronization Server when Analytics Link creates the Essbase database and you synchronize mapping information.

Analytics Link follows these rules to determine dimensionality when an Essbase database is created for the first time:

- If the target grid includes some dimensions created with **Dimension Creation**, **Measure**, and **Currency** transformation types, those dimensions are created as sparse dimensions. The dimensionality of dimensions that do not use these transformation types remains unchanged.
- If all dimensions in the target grid are created with **Dimension Creation**, **Measure**, and **Currency** transformation types:
 - If the Financial Management Period dimension is created with the **Dimension Creation** transformation type, Analytics Link creates the Period dimension as dense. Other dimensions that are created in the Essbase database are sparse.
 - If the Period dimension is not created with the **Dimension Creation** transformation type, the first dimension in the grid that is created with the **Dimension Creation** transformation type is created as dense. Other dimensions that are created in the Essbase database are sparse.
- If the target grid does not include any dimensions created with **Dimension Creation**, **Measure**, and **Currency** transformation types, the dimensionality of all dimensions in the Essbase database remains unchanged.

When Analytics Link recreates a dimension that already exists in an Essbase database, the dimension dimensionality remains unchanged.

Note: If you manually change the dimensionality of dimensions in an Essbase database, you must manually synchronize mapping information so that the dimensionality information is updated in Data Synchronization Server. If the Essbase database is a replicated partition database and you do not synchronize mapping information, the data that Analytics Link copies to the Essbase database through the replicated partition might be affected. See [“Synchronizing Mapping Data Changes for RDBMS Bridge Targets” on page 128](#) and [“About Extracting Data into an Essbase Replicated Partition Database” on page 114](#).

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The information in this chapter applies to Essbase target databases. Financial Management data examples are based on the Simple Demo Financial Management application.

Renaming Financial Management Dimensions in the Essbase Outline

By default, when Analytics Link creates an Essbase outline with Financial Management data, Financial Management dimension names are prepended with “ESS.” On the **Target Design Grid** tab, as shown in [Figure 5](#), the **Source Dimensions** column lists the Financial Management dimensions (with names such as Year and Scenario); the **Target Dimensions** column defines the dimension names that are created in the Essbase outline (with names such as ESSYear and ESSScenario).

Figure 5 Target Design Grid tab: Default Target Dimension Names

Transformation Type	Source Dimensions	Target Dimensions	Member Selection	Mapping Table	Prefix
Dimension Creation	Scenario	ESSScenario			
Dimension Creation	Year	ESSYear			
Dimension Creation	Period	ESSPeriod			
Dimension Creation	Account	ESSAccount			
Dimension Creation	Custom1	ESSCustom1			
Dimension Creation	Custom2	ESSCustom2			
Dimension Creation	Custom3	ESSCustom3			
Dimension Creation	Custom4	ESSCustom4			
Dimension Creation	Entity	ESSEntity			
Dimension Creation	Value	ESSValue			
Dimension Creation	ICP	ESSICP			
Dimension Creation	View	ESSView			

If you want to change Essbase dimensions names but the Essbase database was previously created, you must delete the existing Essbase database before making any changes on the **Target Design Grid** tab. If you do not delete the existing Essbase database before you change Essbase dimensions names on the **Target Design Grid** tab, when you save the grid and then delete the Essbase database before recreating it, Analytics Link tries to delete dimensions with the new names that are taken from the **Target Design Grid** tab. The result is that dimensions with the previously defined names remain in the Essbase database. To delete the existing Essbase database, on the **Essbase** tab, click **Delete**, and then **Yes**, to remove all Analytics Link-created dimensions from the Essbase outline.

- To rename Financial Management dimensions in the Essbase outline:
 - 1 **Open a bridge.**
See “Opening an Analytics Link Bridge” on page 129.
 - 2 **On the Target Design Grid tab, for each dimension that you want to rename, double-click the default Essbase dimension name in the Target Dimension field.**
 - 3 **The following instructions depend on whether the Essbase database for the bridge was previously created:**
 - a. Essbase database does not exist—In the **Target Dimensions List** dialog box, enter a new name and then click **OK**.
 - b. Essbase database was previously created—In the **Target Dimensions** dialog box, enter a new name in the **Add** field and then click **OK**.
 - 4 **Click Save Grid to update the outline definition.**
 - 5 **Click Create to create a new Essbase outline that is based on the updated bridge definition.**

Renaming Financial Management Member Names in the Essbase Outline

Using the **Dimension Creation** transformation type, member mapping allows you to rename Financial Management member names in the Essbase outline. See [“Dimension Creation Transformation Type” on page 54](#).

Representation of the Essbase outline with default member names in the ESSView dimension:

```
FM Scenario View (Never Share) (UDAS: eal)
Periodic (Never Share) (UDAS: eal)
YTD (Never Share) (UDAS: eal)
HYTD (Never Share) (UDAS: eal)
QTD (Never Share) (UDAS: eal)
```

In this example, assume that you want YTD, HYTD, and QTD displayed as YearToDate, HalfYearToDate, and QtrToDate, respectively, in the Essbase outline.

➤ To rename Financial Management member names in the Essbase outline:

1 Open a bridge.

See [“Opening an Analytics Link Bridge” on page 129](#).

2 On the Target Design Grid tab, navigate to the dimension with the Dimension Creation transformation type whose member names you are renaming.

For example, navigate to the View dimension.

3 Double-click the Mapping Table field for the dimension, and enter the Mapping Table Name.

4 Click Recreate.

The mapping table is created with default values and stored in the bridge Data Store under the Data Store user schema.

Note: If the mapping table exists, Analytics Link recreates the table and fills it with default values.

5 Click OK.

6 Click Save Grid to update the outline definition.

7 In the bridge Data Store, open the table that Analytics Link created.

[Table 47](#) shows the Analytics Link-created mapping table for the View dimension. By default, Analytics Link copies the names from the HFM_MEMBER column to the TARGET MEMBER column. Because <Scenario View> is an alias member name, Analytics Link renames it to FM Scenario View.

Table 47 Analytics Link Mapping Table Template: View Dimension (Dimension Creation Transformation Type)

HFM_MEMBER	TARGET_MEMBER	VISIBLE	ISBASE	GENERATION	DIM_LEVEL	SELECTED
<Scenario View>	FM Scenario View	1	1	0	0	1

HFM_MEMBER	TARGET_MEMBER	VISIBLE	ISBASE	GENERATION	DIM_LEVEL	SELECTED
Periodic	Periodic	1	1	0	0	1
YTD	YTD	1	1	0	0	1
HYTD	HYTD	1	1	0	0	1
QTD	QTD	1	1	0	0	1

- 8 In the TARGET MEMBER column, modify the members names as you want them displayed in the Essbase outline.

Table 48 shows the modified mapping table for the View dimension, in which YTD is changed to YearToDate, HYTD is changed to HalfYearToDate, and QTD is changed to QtrToDate.

Table 48 User-Updated Mapping Table: View Dimension (Dimension Creation Transformation Type)

HFM_MEMBER	TARGET_MEMBER	VISIBLE	ISBASE	GENERATION	DIM_LEVEL	SELECTED
<Scenario View>	FM Scenario View	1	1	0	0	1
Periodic	Periodic	1	1	0	0	1
YTD	YearToDate	1	1	0	0	1
HYTD	HalfYearToDate	1	1	0	0	1
QTD	QtrToDate	1	1	0	0	1

- 9 Commit the mapping table data to the Data Store.
- 10 On the Essbase tab, click **Delete**, and then **Yes**, to remove all Analytics Link-created dimensions from the Essbase outline.
- 11 Click **Create** to create a new Essbase outline that is based on the updated bridge definition.

Representation of the View dimension with the renamed member names:

```
FM Scenario View (Never Share) (UDAS: eal)
Periodic (Never Share) (UDAS: eal)
YearToDate (Never Share) (UDAS: eal)
HalfYearToDate (Never Share) (UDAS: eal)
QtrToDate (Never Share) (UDAS: eal)
```

Including Only Part of a Financial Management Dimension in the Essbase Outline

When Analytics Link creates an Essbase outline with Financial Management data, all members in the Financial Management dimensions are represented in the outline. You can modify a dimension definition to include selected dimension members and hierarchies. This topic is based on using the **Dimension Creation** transformation type. See [“Dimension Creation Transformation Type” on page 54](#).

Representation of the Financial Management Year dimension members:

1999
2000
2001
...
2007
2008

Representation of the Financial Management View dimension members:

<Scenario View>
Periodic
YTD
HYTD
QTD

Representation of the Financial Management Account dimension members:

[None]
Exchange Rates
...
Plug
NetProfit
 NetIncome
 ...
 Taxes
TotalAssets
...
TotalLiabEquity
...

In this example, assume that you want to include only some members from the Financial Management Year, View, and Account dimensions in the Essbase outline.

➤ To include only part of a Financial Management dimension in the Essbase outline:

1 Open a bridge.

See [“Opening an Analytics Link Bridge” on page 129](#).

2 On the Target Design Grid tab, navigate to the dimension that you want to modify and select the Dimension Creation transformation type.

3 Double-click the Member Selection field for the dimension, enter a comma-separated list of Financial Management members, and then click OK.

If the member selection specification defines nonbase (non-level-0) members, the specified members and all their descendants are included in the Essbase database as a branch in the dimension hierarchy.

In this example, assume the following member specifications, as shown in [Table 49](#):

- Year dimension—Base members 2007 and 2008
- View dimension—Base members YTD and Periodic
- Account dimension—Nonbase member NetProfit

Table 49 Target Design Grid tab: Dimension Creation Transformation Type

Transformation Type	Source Dimensions	Target Dimensions	Member Selection	Mapping Table	Prefix
Dimension Creation	Year	ESSYear	2007,2008		
Dimension Creation	View	ESSView	YTD, Periodic		
Dimension Creation	Account	ESSAccount	NetProfit		

- 4 Click **Save Grid** to update the outline definition.
- 5 On the **Essbase** tab, click **Delete**, and then **Yes**, to remove all Analytics Link-created dimensions from the Essbase outline.
- 6 Click **Create** to create a new Essbase outline that is based on the updated bridge definition.

Representation of the Essbase Year dimension members:

2007
2008

Representation of the Essbase View dimension members:

Periodic
YTD

Representation of the Essbase Account dimension members:

NetProfit
NetIncome
...
Taxes

Removing Financial Management Dimensions from the Essbase Outline

See [“Not in Outline Transformation Type”](#) on page 61.

Assume that you want only the Actual scenario, not all scenarios, from the Financial Management Scenario dimension represented in an Essbase outline.

If you want to change the transformation type for a Financial Management dimension from **Create Dimension** to **Not in Outline** but the Essbase database was previously created, you must delete the existing Essbase database before making any changes on the **Target Design Grid** tab. If you do not delete the existing Essbase database before you change the transformation type, when you save the grid and then delete the Essbase database before recreating it, Analytics Link does not delete the dimension because the dimension is set to **Not in Outline**. The dimension remains in the Essbase database. To delete the existing Essbase database, on the **Essbase** tab, click **Delete**, and then **Yes**, to remove all Analytics Link-created dimensions from the Essbase outline.

➤ To remove Financial Management dimensions from the Essbase outline:

- 1 Open a bridge.

See “Opening an Analytics Link Bridge” on page 129.

- 2 On the **Target Design Grid** tab, in the **Transformation Type** column, select **Not in Outline** for the Financial Management dimensions that you do not want included in the Essbase outline.

The dimension name in the **Target Dimensions** field is automatically removed.

In this example, set the transformation type for the Scenario dimension to **Not in Outline**.

- 3 For any Financial Management dimension that was deselected in [step 2](#), define one Financial Management member in the **Member Selection** field.

In this example, enter Actual in the **Member Selection** field.

- 4 Click **Save Grid** to update the outline definition.
- 5 Click **Create** to create a new Essbase outline that is based on the updated bridge definition.

The Scenario dimension is not represented in the Essbase outline, but all queries against the Essbase database returns data for the Actual member of the Scenario dimension.

Creating a Unique Member Essbase Outline

On the **Properties** tab, set the following database properties to create a unique member Essbase outline:

- **Allow Duplicate Member Names**—Deselect this option.
- **Solve Uniqueness Problems**—Select this option to resolve any duplicate names which might be in the data that you are using to create the Essbase outline.

If there are duplicate names and you do not select this option, creation of the Essbase database will fail.

When an Essbase database is created with the **Allow Duplicate Member Names** database property set to On, Analytics Link does not allow you to change **Allow Duplicate Member Names** to Off and then recreate the database. You must manually delete the Essbase database under the topmost **Essbase Servers** node in Enterprise View or a custom view, and then, on the **Essbase** tab, create the database again.

11

Extracting Financial Management Data to an Essbase Replicated Partition Database Target

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The information in this chapter applies to Essbase replicated partition target databases.

About the Essbase Replicated Partition Database Target

With an Essbase replicated partition database bridge target, Financial Management data is copied from Data Synchronization Server (the source of the replicated partition) to the Essbase database (the target of the replicated partition) through the replicated partition.

When creating a bridge with an Essbase replicated partition database as the bridge target type, note these changes in the bridge window: On the **Extract** tab, the **Table Name** field and the **Extract Metadata** group, which apply only to an RDBMS bridge target, are not displayed.

See [“Determining the Type of Bridge Target Database” on page 25](#).

Overview of Extracting Data into an Essbase Replicated Partition Database

➤ To extract Analytics Link data to an Essbase replicated partition database:

- 1 **Open a bridge that was created with Essbase as the bridge target database and Replicated Partition as the connection type.**

See [“Creating a Bridge” on page 38](#) and [“Overview of Creating an Essbase Bridge Target” on page 99](#).

- 2 **On the Extract tab, under Status, verify that Essbase Server, Essbase Application, and Essbase Database are set to Available and Analytics Link Data is set to On.**

See [“Checking Data Store Status”](#) on page 132.

3 Under Extract Data:

- a. Select Default or a user-defined region from the **Region** list.

See [“Adding a User-Defined Financial Management Application Data Region”](#) on page 33.

- b. For **Duplicate**, select a consolidation operator that Analytics Link should use when consolidating the value of duplicate data rows.

Duplicate member consolidation operators:

- **SUM**
- **LAST**
- **FIRST**

See [“About Duplicate Data Row Consolidation Operators”](#) on page 124.

4 Click Validate and, optionally, select Perform a Full Validation of the Region.

See [“Validating Data Regions”](#) on page 135.

5 Click Extract Data.

During the extract process, the name of the region for which data is being extracted, the time the extract process started, and a progress bar appear at the bottom of the **Extract** tab. When the extract process is finished, the status is set to “Completed.”

6 To extract data from another region, repeat the extract process, starting with [step 3 on page 114](#).

About Extracting Data into an Essbase Replicated Partition Database

Each Essbase dimension is tagged as sparse or dense. Essbase stores data values in data blocks. Essbase creates a data block for each unique combination of sparse dimension members (providing that at least one data value exists for the combination). Each data block contains all the dense dimension member values for its unique combination of sparse dimension members.

The following example illustrates how Analytics Link extracts data into a replicated partition in an existing Essbase database. Assume the existing Essbase database has the following dimensions, dimensionality, and members:

```
ESSDim1 (Sparse)
  X
  Y
  Z
ESSDim2 (Dense)
  A
  B
  C
EssDim3 (Dense)
```

- 1
- 2
- 3

Assume that the following data exists in the Essbase database:

ESSDim1	ESSDim2	ESSDim3	Value
X	A	3	7
X	B	2	7
X	C	1	7
Y	A	1	7
Y	B	2	7
Y	C	3	7
Z	A	1	7

A data value is stored in one cell in the database. To refer to a specific data value in a multidimensional database, you specify its member on each dimension. The data value can be expressed using the cross-dimensional operator (->).

Figure 6 represents the three blocks that Essbase creates for each combination of sparse members.

Figure 6 Essbase Blocks

Essbase Blocks

X (block header)

	1	2	3
A			7
B		7	
C	7		

Y (block header)

	1	2	3
A	7		
B		7	
C			7

Z (block header)

	1	2	3
A	7		
B			
C			

- For the block whose header is member X, each of the following intersections has a value:
 - X -> A -> 3 = 7
 - X -> B -> 2 = 7
 - X -> C -> 1 = 7
- For the block whose header is member Y, each of the following intersections has a value:
 - Y -> A -> 1 = 7
 - Y -> B -> 2 = 7
 - Y -> C -> 3 = 7

- For the block whose header is member Z, only one intersection has a value: Z -> A -> 1 = 7.

The remaining cells in the blocks are empty.

Now assume that the following data set was extracted from the Data Synchronization Server database, based on the defined region and all member mapping transformations:

ESSDim1	ESSDim2	ESSDim3	Value
X	A	2	9
X	A	1	9
Y	B	2	9

This data set, which is called the Data Synchronization Server extract data set, is ready for replication into the Essbase database.

Analytics Link process for copying data, based on the Data Synchronization Server extract data set, into an Essbase database through a replicated partition:

1. The sparse and dense dimensionality of the existing Essbase dimensions is taken directly from Essbase.
 - ESSDim1—Sparse
 - ESSDim2—Dense
 - ESSDim3—Dense

Note: If the dimensionality of the Essbase target database changes after the creation of the database from the bridge, you must synchronize the changes with the Data Synchronization Server database by clicking **Synchronize Mapping** on the **Target Design Grid** tab before extracting data. See the note at the end of the following topic, [“About Essbase Sparse and Dense Dimensionality”](#) on page 103.

2. From the Data Synchronization Server extract data set, Analytics Link selects the coordinates from all dense dimensions:
 - ESSDim2—Members A and B
 - ESSDim3—Members 1 and 2

This data set is called the Data Synchronization Server extract data set dense area.

3. Analytics Link groups the Data Synchronization Server extract data set into blocks with the same logic that Essbase uses, as shown in [Figure 7](#). The Data Synchronization Server extract data set dense area is shaded.

Figure 7 Data Synchronization Server Extract Data Set

Essbase Blocks				DSS Extract Data Set			
X (block header)							
	1	2	3		1	2	3
A			7	A	9	9	
B		7		B			
C	7			C			
Y (block header)							
	1	2	3		1	2	3
A	7			A			
B		7		B		9	
C			7	C			
Z (block header)				Block does not exist			
	1	2	3				
A	7						
B							
C							

- For the block whose header is member X, each of the following intersections has a value:
 - X -> A -> 1 = 9
 - X -> A -> 2 = 9
 - For the block whose header is member Y, only one intersection has a value: Y -> B -> 2 = 9
 - There is no corresponding block whose header is member Z.
4. For each Data Synchronization Server extract data set block that has at least one row of data:
- In the Essbase block that has the same sparse coordinates as the Data Synchronization Server extract data set block, Analytics Link clears the data that corresponds to the Data Synchronization Server extract data set dense area.

As shown in [Figure 8](#), cleared values are shown in strikethrough text:

Figure 8 Essbase Blocks with Data Cleared by Analytics Link

Essbase Blocks				DSS Extract Data Set				Cleared Essbase Blocks			
X (block header)											
	1	2	3		1	2	3		1	2	3
A			7	A	9	9		A			7
B		7		B				B		7	
C	7			C				C	7		
Y (block header)											
	1	2	3		1	2	3		1	2	3
A	7			A				A	7		
B		7		B		9		B		7	
C			7	C				C			7
Z (block header)				Block does not exist				Block not cleared			
	1	2	3								
A	7										
B											
C											

- For the block whose header is member X, the data has been cleared in each of the following intersections:
 - X -> A -> 1
 - X -> A -> 2
 - X -> B -> 1
 - X -> B -> 2
- For the block whose header is member Y, data has been cleared in each of the following intersections:
 - Y -> A -> 1
 - Y -> A -> 2
 - Y -> B -> 1
 - Y -> B -> 2
- Because there is no block in the Data Synchronization Server extract data set that corresponds to the Essbase block whose header is member Z, Analytics Link does not touch that Essbase block.
- Analytics Link then copies the Data Synchronization Server extract data set into Essbase, as shown in [Figure 9](#):

Figure 9 Essbase Blocks with Copied Data Synchronization Server Extract Data Set

Essbase Blocks	DSS Extract Data Set	Cleared Essbase Blocks	Essbase Blocks with Copied DSS Extract Data Set																																																																
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- For the block whose header is member X, each of the following intersections has a value:
 - X -> A -> 1 = 9 (value extracted from Data Synchronization Server)
 - X -> A -> 2 = 9 (value extracted from Data Synchronization Server)
 - X -> A -> 3 = 7 (existing value in Essbase)
 - X -> C -> 1 = 7 (existing value in Essbase)
- For the block whose header is member Y, each of the following intersections has a value:
 - Y -> B -> 2 = 9 (extracted from Data Synchronization Server)
 - X -> C -> 3 = 7 (existing value in Essbase)
- For the block whose header is member Z, only one intersection has a value: Z -> A -> 1 = 7 (existing value in Essbase).

Caution! Assume that you have extracted a region and the Financial Management application data is replicated into the Essbase database. Now, assume that the Financial Management application data for the region is cleared and the data changes are synchronized with the Data Synchronization Server database. After extracting the region into the Essbase database, the DSS Extract Data Set is empty in this case and no block in the Essbase database is cleared. Therefore, all of the data from the previous extract data process remains in Essbase, which is not what the user expects. The user expects to see in Essbase the same values as in the Financial Management application that are #MISSING. Each time before you extract data for a region, Oracle recommends that you manually clear the Essbase database region that should get the Financial Management application data.

Note: The same kind of problem explained above occurs if you extract data multiple times and the DSS Extract Dataset Dense Area of the last data extraction is different from the DSS Extract Dataset Dense Area of the previous data extraction on the same region.

12

Extracting Financial Management Data and Metadata to an RDBMS Bridge Target

In This Chapter

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About Duplicate Data Row Consolidation Operators	124
About the Use Default Entity Parent Extract Data Option	124
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The information in this chapter applies to RDBMS target databases.

About the RDBMS Bridge Target

Analytics Link enables you to quickly extract Financial Management data and metadata directly from the Data Synchronization Server on demand for use in a relational database.

The relational database, which is defined as the Data Store, must already exist; Analytics Link does not create one. Extracted data and metadata are stored in the Data Store. Region definitions, which apply to extracting data, are stored in the Analytics Link repository. See [“Data Store” on page 16](#).

Note: You should create a dedicated database for the Data Store, if you plan to extract Analytics Link data and metadata.

When creating a bridge with RDBMS as the bridge target type, note these changes in the bridge window:

- On the **Summary** tab, the **Create Bridge Application** button and **Essbase Settings** group are not displayed.
- The **Essbase** tab is not displayed.

See [“Determining the Type of Bridge Target Database” on page 25](#).

Extracting Financial Management Data to an RDBMS Bridge Target

Regions are used to extract data to an RDBMS database. Creating user-defined regions for data extraction is useful for extracting only the data that is required by the user. See [“Determining the Data Region of the Financial Management Application” on page 23](#).

Only one region can be extracted at a time. Extracting data is an asynchronous process; the next extract can be performed even if the previous extract has not finished. The extracted data is stored in the Data Store, in a table with a name that you specify.

The data extraction table columns:

- A column for each value in the **Target Dimensions** column in the **Target Design Grid** tab of the bridge.
- A measures dimension column, named MEASURES, which Analytics Link automatically creates.
- EXTRACTDATE column, which stores the date on which the extraction was performed.

The rules that regulate usage of the data movement:

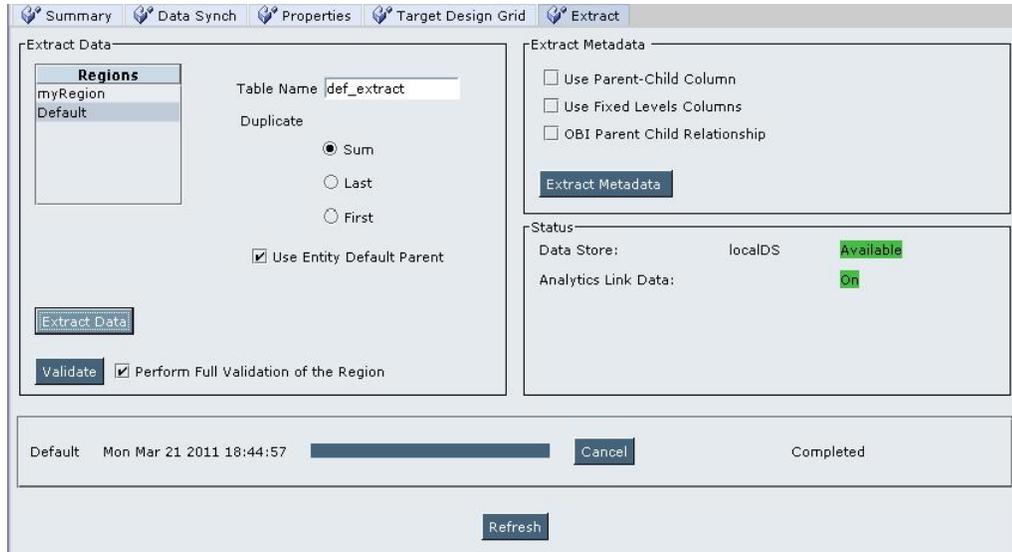
- The structure of the source data is transformed by the defined mappings.

Note: The **Matrix Mapping** transformation type is supported only for Essbase replicated partition or RDBMS database bridge targets.

- The Entity dimension is represented by two columns: one for Entity member and one for the Entity Parent. The name of the Entity Parent column is *EntityTargetDimName_PARENTID*. If the Entity dimension uses the **Matrix Mapping** transformation type, the Entity Parent column is not automatically created in the target database table.
- When the **Matrix Mapping** transformation type is used with the Financial Management Entity dimension, the value of **Add Parent to Entity Member** database property is ignored (as if it is set to Off). The parent name is not be added to the Entity member name in the extracted table column. Instead, the mapping table template for the **Matrix Mapping** transformation type includes a separate column named SRC_PARENT for the Entity parent, so that the Entity parent can be extracted to its own column in the extracted table by the specific definition of matrix mapping. To get the value of the Entity parent, use the =parentId expression in the destination column of the matrix mapping table.
- If the data extract table does not exist, Analytics Link creates the table.
- If the data extract table already exists, the extracted data is appended to existing table.
- If the user wants to define the extracted data table name or column names with special characters or save the case of the name:
 - On Oracle RDBMS, enclose the string in inverted commas (“string”)
 - On Microsoft SQL Server, you do not have to do anything

- To extract Analytics Link data to an RDBMS database:
- 1 **Open a bridge that was created with RDBMS as the bridge target database.**
See [“Creating a Bridge” on page 38.](#)
 - 2 **On the **Target Design Grid** tab, if you make changes to the mapping grid or mapping tables, you must click **Save Grid** and then click **Synchronize Mappings** before proceeding with the extraction process.**
See [“Synchronizing Mapping Data Changes for RDBMS Bridge Targets” on page 128.](#)
 - 3 **On the **Extract** tab, under **Status**, verify that **Data Store** is set to Available and **Analytics Link Data** is set to On.**
See [“Checking Data Store Status” on page 132.](#)
 - 4 **Under **Extract Data**:**
 - a. Select Default or a user-defined region from the **Region** list.
See [“Adding a User-Defined Financial Management Application Data Region” on page 33.](#)
 - b. Enter a **Table Name**.
Analytics Link creates the table in the Data Store if the table does not exist. If the table exists, data is appended to the table.
 - c. For **Duplicate**, select a consolidation operator that Analytics Link should use when consolidating the value of duplicate data rows.
Duplicate member consolidation operators:
 - **SUM**
 - **LAST**
 - **FIRST**See [“About Duplicate Data Row Consolidation Operators” on page 124.](#)
 - d. Define the **Use Entity Default Parent** option.
See [“About the Use Default Entity Parent Extract Data Option” on page 124.](#)
 - 5 **Click **Validate** and, optionally, select **Perform a Full Validation of the Region**.**
See [“Validating Data Regions” on page 135.](#)
 - 6 **Click **Extract Data**.**
During the extract process, the name of the region for which data is being extracted, the time the extract process started, and a progress bar appear at the bottom of the **Extract** tab. When the extract process is finished, the status is set to “Completed.”
 - 7 **To extract data from another region, repeat the extract process, starting with [step 4 on page 123.](#)**

Figure 10 Extract tab: Extracting Data to an RDBMS Database



About Duplicate Data Row Consolidation Operators

You can use the following consolidation operators to determine the value of duplicate data rows in the extracted data set:

- SUM—The values of all duplicate data rows in the extracted data set are summed.
- LAST—The value of the last of the duplicate data rows in the extracted data set is used.
- FIRST—The value of the first of the duplicate data rows in the extracted data set is used.

About the Use Default Entity Parent Extract Data Option

Use Default Entity Parent is an option on the **Extract** tab.

If the **Use Default Entity Parent** option is selected and data for Entity Parent-independent Value dimension members exist in the region that is used for data extraction, Analytics Link extracts this data for only the entity Default Parent.

If **Use Default Entity Parent** is not selected and data for Entity Parent-independent Value dimension members exist in the region that is used for data extraction, Analytics Link extracts this data for all entity parents that are defined in the region.

Extracting Financial Management Metadata to an RDBMS Bridge Target

You can extract Analytics Link metadata only after the data is synchronized. Tables in the Data Store are dropped and recreated each time you extract metadata.

➤ To extract Analytics Link metadata to an RDBMS database:

- 1 On the **Extract** tab, under **Status**, verify that **Data Store** is set to Available and **Analytics Link Data** is set to On.

See “[Checking Data Store Status](#)” on page 132.

- 2 Under **Extract Metadata**, select the hierarchy option that you want Analytics Link to use when creating the metadata tables:

- **Parent-Child Columns**

See “[Parent-Child Columns Metadata Extraction Type](#)” on page 125.

- **Fixed Levels Columns**

See “[Fixed Levels Columns Metadata Extraction Type](#)” on page 126.

- **OBI Parent-Child Relationship**

See “[OBI Parent-Child Relationship Metadata Extraction Type](#)” on page 126.

- 3 Click **Validate**.

See “[Validating Data Regions](#)” on page 135.

- 4 Click **Extract Metadata**.

Parent-Child Columns Metadata Extraction Type

When extracting metadata using the Parent-Child Columns option, Analytics Link creates a table for each dimension named *bridgeName_dimensionName_PCD*. For example, the parent-child table for the Custom 1 dimension in a bridge named RDBMS is RDBMS_Custom1_PCD.

Parent-child table columns:

Column Name	Column Type	Description
ID	Numeric	Financial Management member internal ID
LABEL	Text	Financial Management member name
DESCRIPTION	Text	Financial Management member description ¹
PARENT_ID	Numeric	Financial Management parent member internal ID ²
PARENT_LABEL	Text	Financial Management parent member name ²

Column Name	Column Type	Description
HIERARCHY	Text	Hierarchy name

¹If a member does not have a description, the value of DESCRIPTION is Null.

²If a member does not have a parent, the value of Parent_ID and Parent_LABEL is Null.

Fixed Levels Columns Metadata Extraction Type

When extracting metadata using the Fixed Levels Columns option, Analytics Link creates tables named *bridgeName_dimensionName_LD*. For example, the fixed levels table for the Custom 1 dimension in a bridge named RDBMS is RDBMS_Custom1_LD.

Fixed Levels table columns for each hierarchy level:

Column Name	Column Type	Description
<i>dimensionName_KEY</i>	Text	Contains the lowest level for the row
L _n _ID	Numeric	Financial Management member internal ID
L _n _LABEL	Text	Financial Management member name
L _n _DESCRIPTION	Text	Financial Management member description ¹

¹If a member does not have a description, the value of DESCRIPTION is Null.

- Levels are numbered top-down, with the top level designated as L0. All members that have no parent are considered L0. The number of levels is the length of the longest branch.
- Bottom-level columns of short branches are filled with Nulls.
- If a member has multiple parents, a row is included for each parent.
- If a member belongs to different levels in different hierarchies, the maximal level is considered a member level.

OBI Parent-Child Relationship Metadata Extraction Type

By extracting metadata using the OBI parent-child relationship extraction type, you can create hierarchies based on relational tables in Oracle Business Intelligence Enterprise Edition.

In an OBI parent-child relationship, the distance of one member from another member is the number of parent-child hierarchical levels between the member and an ancestor or descendant. For example, the number of parent-child hierarchical levels between a member and its parent is 1.

When extracting metadata using the OBI Parent-Child Relationship option, Analytics Link creates tables named *bridgeName_dimensionName_PCDR*. For example, the OBI parent-child relationship table for the Custom 1 dimension in a bridge named RDBMS is named RDBMS_Custom1_PCDR.

[Table 50](#) describes the columns in an OBI parent-child relationship table:

Table 50 OBI Parent-Child Relationship Table

Column Name	Column Type	Description
ID	Numeric	Financial Management member internal ID
MEMBER	Text	Financial Management member name
ANCESTOR_ID	Text	Financial Management member ancestor internal ID The ancestor may be the parent of the member or a higher-level ancestor.
ANCESTOR	Text	Financial Management member ancestor name
DISTANCE	Numeric	Number of parent-child hierarchy levels from the member to the ancestor
ISLEAF	Numeric	Indicates whether the Financial Management member is a leaf, or base, member 1=TRUE 0=FALSE

For example, consider the following hierarchy, in which Andrew is the topmost member; Barbara and Carlos are children of Andrew; Dawn and Emre are children of Barbara; and Carlos does not have children.

```

Andrew
  Carlos
  Barbara
    Dawn
    Emre

```

In the OBI parent-child relationship table shown in [Table 51 on page 127](#), the distance between Dawn and Andrew, and Emre and Andrew, is 2, because Dawn and Emre are children of Barbara, who is the child of Andrew. All other relationships are 1, because they are between a parent and child.

Table 51 Example: OBI Parent-Child Relationship Table

MEMBER	ANCESTOR	DISTANCE	ISLEAF
Andrew	null	1	0
Barbara	Andrew	1	0
Carlos	Andrew	1	1
Dawn	Barbara	1	1
Dawn	Andrew	2	1
Emre	Barbara	1	1
Emre	Andrew	2	1

Synchronizing Mapping Data Changes for RDBMS Bridge Targets

On the **Target Design Grid** tab, the **Synchronize Mappings** button is mostly used when the bridge target is an RDBMS database.

In extracting data into the target RDBMS database, the mapping grid definition on the **Target Design Grid** tab and mapping table data, if specified, are not saved in the Analytics Link repository and are not updated in the Data Synchronization Server database. Therefore, if you make changes to the mapping grid definition or mapping table data, you must explicitly save the mapping grid definition and synchronize the mapping table data changes in the Analytics Link repository and Data Synchronization Server database before extracting data into the target RDBMS database. Click **Save Grid** and then click **Synchronize Mapping**.

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Checking the Status of Bridge Components.....	131
Working with Target Grids	132
Working with Data Regions.....	134
Deleting Components from the Analytics Link Servers Node	137

Working with Analytics Link Bridges

To use bridges, the Analytics Link Server and all other required components must be running. See [“Startup Order of Oracle Products”](#) on page 30.

Bridges are managed in the bridge window. See [“About the Bridge Window”](#) on page 39.

See:

- [“Opening an Analytics Link Bridge”](#) on page 129
- [“Editing an Analytics Link Bridge Definition”](#) on page 130
- [“Deleting an Analytics Link Bridge”](#) on page 130
- [“Managing User Access to Analytics Link Bridges”](#) on page 130

Opening an Analytics Link Bridge

Analytics Link bridges are located in the Analytics Link Servers node, under the **Bridges** node.

► To open a bridge:

- 1 Under the **Analytics Link Servers** node, expand the **Bridges** node.
- 2 Right-click the bridge that you want to open, and then select **Open Bridge**.

You can also double-click a bridge to open the bridge window.

See [“About the Bridge Window”](#) on page 39.

Editing an Analytics Link Bridge Definition

After a bridge is created, you can change the bridge definition by selecting different Financial Management and Analytics Link components. However, the type of database selected for the bridge target cannot be changed.

See [“Creating a Bridge” on page 38](#).

► To edit the bridge definition:

- 1 Under the **Analytics Link Servers** node, expand the **Bridges** node.
- 2 Right-click the bridge that you want to edit, and then select **Edit Bridge**.
- 3 In the **Edit Bridge** dialog box, modify the bridge definition.

See [“Creating a Bridge” on page 38](#).

- 4 Click **OK**.

Caution! Some changes to the bridge definition may require that you recreate some of the bridge components, such as the Data Synchronization Server database or the Essbase database.

Deleting an Analytics Link Bridge

Deleting a bridge does not delete any components in the bridge definition from the Analytics Link Server node.

► To delete a bridge:

- 1 From the **Analytics Link Server** node, expand the **Bridges** node.
- 2 Right-click the bridge that you want to delete, and then select **Delete**.

Managing User Access to Analytics Link Bridges

Bridge status determines whether the target database can be modified and queried.

Bridge status types:

- **Open**—The target database can be updated with changes made to the bridge, and queries to the database return results.
- **Closed**—The target database cannot be updated with changes made to the bridge, and queries to the database do not return results.

► To manage access to bridges:

- 1 **Open a bridge.**

See [“Opening an Analytics Link Bridge” on page 129](#).

- 2 On the **Summary** tab, view the bridge status (Open or Closed).

- 3 Under **One-Click Operations**, click an option:
 - **Block Bridge Access**—Bridge status is Closed.
 - **Unblock Bridge Access**—Bridge status is Open.

Checking the Status of Bridge Components

See:

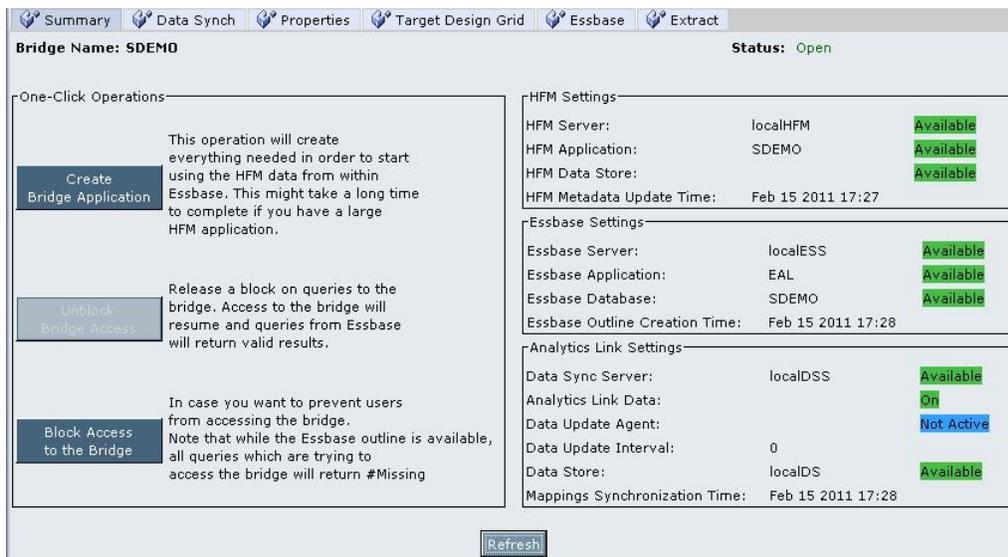
- “Checking Bridge Component Status” on page 131
- “Checking Essbase Component Status” on page 132
- “Checking Data Store Status” on page 132

Checking Bridge Component Status

The **Summary** tab, as shown in [Figure 11 on page 131](#), provides information about the status of bridge components; for example, whether all required servers are available, whether databases were created, whether data is available, when the last database update occurred, and so on. The right pane of the **Summary** tab has the following groups:

- HFM Settings
- Essbase Settings (this group is displayed only when the bridge target is an Essbase database)
- Analytics Link Settings

Figure 11 Summary tab: Bridge with an Essbase Target Database



➤ To check the status of a bridge:

- 1 Open a bridge.

See [“Opening an Analytics Link Bridge” on page 129](#).

- 2 Select the **Summary** tab to display component status information.

Checking Data Synchronization Server and Analytics Link Data Status

You can check the status of **Data Sync Server** on the following bridge window tabs:

- **Summary** tab, under **Analytics Link Settings**
- **Data Synch** tab, under **Data Status**

You can check the status of **Analytics Link Data** (which is the Data Synchronization Server database for the bridge) on the following bridge window tabs:

- **Summary** tab, under **Analytics Link Settings**
- **Data Synch** tab, under **Data Status**
- **Extract** tab, under **Status**

Checking Essbase Component Status

For a bridge whose target is an Essbase database, you can check the status of an Essbase server, application, and database on the following bridge window tabs:

- **Summary** tab, under **Essbase Settings**
- **Essbase** tab, under **Status**
- **Extract** tab, under **Status**

See [“Checking Bridge Component Status” on page 131](#).

Checking Data Store Status

You can check the status of the Data Store on the following bridge window tabs:

- **Summary** tab, under **Analytics Link Settings**
- **Extract** tab, under **Status**

Bridge data store status information is displayed if the bridge target database is an RDBMS database.

See [“Checking Bridge Component Status” on page 131](#).

Working with Target Grids

See:

- [“Exporting and Importing Target Grids in XML Format” on page 133](#)
- [“Validating Target Grids” on page 133](#)

Exporting and Importing Target Grids in XML Format

You can export a target grid definition in XML format, which allows you to easily recreate a grid by importing the XML text, instead of going through the process of creating the grid for the first time. You might also want to export the grid definition as part of your Analytics Link configuration documentation, if required by your company for disaster recovery.

➤ To export a target grid definition:

- 1 On the **Target Design Grid** tab, click **Export XML**.
- 2 In the **Mapping XML** dialog box, select and copy the XML-formatted text.
- 3 Paste the XML-formatted text into a text file and save the file.
- 4 Click **Close**.

Although Oracle recommends importing a previously exported grid definition, you can import any correctly formatted XML text.

➤ To import a target grid definition:

- 1 On the **Target Design Grid** tab, click **Import XML**.
- 2 In the **Mapping XML** dialog box, enter or paste an XML-formatted grid definition.
- 3 Click **Load**.
- 4 In the Messages pane below the bridge window, look for messages that indicate that the format of the grid is expressed incorrectly and, if necessary, look in the `ea1.log` file for more information. For example:

```
[2011-May-16 15:22:02] "memberSelection" attribute must be defined for  
type="MEASURE" (id=13) for Essbase bridge target
```

Correct any XML errors and repeat the import process.

Validating Target Grids

In Analytics Link, two types of validation processes exist for the Essbase target grid:

- XML format validation—**Validate** button

When you press **Validate**, and the **Perform Full Mapping Validation** option is not selected, Analytics Link verifies that the target grid is expressed correctly in XML format.

In the Validation dialog box, look for messages that indicate that the format of the grid is expressed incorrectly. For example:

```
ERROR: Matrix dimension mapping should be used for replicated partitions only
```

If the XML format validation fails, you cannot proceed with creating the Essbase database. Correct any XML errors and repeat the validation process.

- Member name validation—**Perform Full Mapping Validation** check box.

When you select **Perform Full Mapping Validation** and then press **Validate**, depending on the transformation type of the dimension, Analytics Link validates the names of Financial Management or Essbase members, as well as validates the XML format of the grid.

```
ERROR: The mapping definition members selection contains the following invalid member: newmbr, that is not found in Essbase.
```

If the XML format validation fails, you cannot proceed with creating the Essbase database. Correct any XML errors and repeat the validation process.

Working with Data Regions

See:

- [“Viewing Data Regions” on page 134](#)
- [“Editing User-Defined Data Regions” on page 134](#)
- [“Exporting and Importing Data Regions in XML Format” on page 135](#)
- [“Validating Data Regions” on page 135](#)
- [“Deleting User-Defined Regions” on page 136](#)

Viewing Data Regions

➤ To view a region:

- 1 In the **Analytics Link Servers** node, navigate to the **Financial Management** application whose region you want to view.
- 2 In the **Region** node, right-click **region** and then select **View Region** for the Default region, or select **Edit Region** for user-defined regions.

Note: The Default region can only be viewed; it cannot be edited or deleted.

Editing User-Defined Data Regions

You can edit user-defined regions that are not used by a bridge when creating the Data Synchronization Server database. The Default region cannot be edited.

➤ To edit a region:

- 1 In the **Analytics Link Servers** node, navigate to the **Financial Management** application whose region you want to edit.
- 2 In the **Region** node, right-click a user-defined region and then select **Edit Region**.

- 3 In the **Edit HFM Region** dialog box, modify the **Selection Type** and **Member Selection** columns, as appropriate.

You cannot modify the region name.

- 4 **Optional: Select Include Dynamic Accounts.**

In Financial Management, dynamic accounts are accounts with values that are dynamically calculated when the data is requested. The values for dynamic accounts are not stored. The most common type of dynamic calculation is ratio calculation. Only base accounts can be dynamic.

See [“Adding a User-Defined Financial Management Application Data Region”](#) on page 33.

- 5 Click **Save** to save the region definition and to close the dialog box.

Exporting and Importing Data Regions in XML Format

You can export a region definition in XML format, which allows you to easily recreate a region by importing the XML text, instead of going through the process of creating the region for the first time. You might also want to export the region definition as part of your Analytics Link configuration documentation, if required by your company for disaster recovery.

► To export a region definition:

- 1 In the **Add HFM Region** or **Edit HFM Region** dialog box, click **Export XML**.
- 2 In the **Mapping XML** dialog box, select and copy the XML-formatted text.
- 3 Paste the XML-formatted text into a text file and save the file.
- 4 Click **Close**.

Although Oracle recommends importing a previously exported region definition, you can import any correctly formatted XML text.

► To import a region definition:

- 1 In the **Add HFM Region** or **Edit HFM Region** dialog box, click **Import XML**.
- 2 In the **Mapping XML** dialog box, enter or paste an XML-formatted region definition.
- 3 Click **Load**.
- 4 In the **Messages** pane below the bridge window, look for messages that indicate that the format of the region is expressed incorrectly. For example:

```
[2011-Mar-22 16:33:19] Filling regions grid failed: The element type "Scenario" must be terminated by the matching end-tag "</Scenario>".
```

Correct any XML errors and repeat the import process.

Validating Data Regions

In Analytics Link, two types of validation processes exist for data regions:

- XML format validation—**Validate** button

When you press **Validate**, and the **Perform Full Validation of the Region** option is not selected, Analytics Link verifies that the region is expressed correctly in XML format.

If the XML format validation fails, you cannot proceed with the process.

- Financial Management member name validation—**Perform Full Validation of the Region** check box.

When you select **Perform Full Validation of the Region** and then press **Validate**, Analytics Link validates the names of Financial Management members in the region and the XML format of the region.

If Financial Management member name validation fails, Analytics Link returns a warning, but you can proceed with the process.

For example:

```
WARNING: The following Financial Management members are invalid in member selection
for the region 'myRegion':: xyz,
```

When you create a user-defined region, Analytics Link automatically validates the XML format of the region.

You can also explicitly validate a data region when you extract data to an RDBMS database target. See [“Extracting Financial Management Data to an RDBMS Bridge Target” on page 122.](#)

► To explicitly validate a region:

- 1 In the **Extract** tab, under **Extract Data**, select a **region** from the list.
- 2 **Optional:** Select **Perform Full Validation of the Region**.
- 3 Click **Validate**.

If the region has no errors, the **Validate** dialog box is empty. If region validation fails, the **Validate** dialog box lists the errors.

- 4 Click **Close**.
- 5 **Correct any validation errors and repeat the validation process.**

Deleting User-Defined Regions

You can delete user-defined regions that are not used by a bridge when creating the Data Synchronization Server database. The Default region cannot be deleted.

► To delete a user-defined region:

- 1 In the **Analytics Link Servers** node, navigate to the **Financial Management** application whose region you want to edit.
- 2 In the **Region** node, right-click a user-defined region and select **Delete Region**.
- 3 Select **OK**.

Deleting Components from the Analytics Link Servers Node

In the Analytics Link Servers node, you can delete any component that you added if it is not used in a bridge definition. See [Chapter 5, “Adding Components to an Analytics Link Server.”](#)

If the component is used in a bridge definition, you must first remove the component from the bridge definition before you can delete the component in the Analytics Link Servers node.

See [“Editing an Analytics Link Bridge Definition”](#) on page 130.



Analytics Link Security

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About EPM System Security Mode

Analytics Link user management and security is provided through EPM System security, which uses Shared Services to provide user management, user provisioning, and external authentication definition. Provisioning refers to the process of assigning roles and access permissions to users for Essbase applications.

Products that implement Oracle Enterprise Performance Management System security require access to a Shared Services server running Shared Services client and server software, and to a database dedicated to Shared Services.

Note: Analytics Link security does not have to be managed by the same instance of Shared Services that manages the security of Financial Management or Essbase. However, if you migrate Financial Management security to Essbase, Analytics Link, Financial Management, and Essbase must use the same Shared Services Server instance. See [Appendix B, “Migration of Financial Management Security Elements.”](#)

Analytics Link Projects in Shared Services

In Oracle Hyperion Shared Services Console, each Analytics Link Server is registered as a new project named `LiveLink@server_name`.

For every Analytics Link Server project, two new products are registered in Oracle Hyperion Shared Services:

- HLL—Repository management
- HLLBRIDGE—Bridge operations

Every Analytics Link Server project contains two applications:

- **Repository Manager**—One application per project for repository provisions
See “[Repository Manager Application Provisions](#)” on page 140.
- **Bridge Manager**—One application for each defined bridge
See “[Bridge Manager Application Provisions](#)” on page 140.

Repository Manager Application Provisions

Repository Manager provisions:

- **Provisioning Manager**—Changes provisions
- **Administrator**—Manages repository items
Only Administrators can add bridges or other components (for example, Data Synchronization Servers, Data Stores, and so on) to the Analytics Link Servers node.
- **Repository Access**—Read-only access to repository items.
To access bridges (as Operator or Bridge Access), users must be provisioned with Repository Access; otherwise, they cannot see bridges and other components.

Bridge Manager Application Provisions

Bridge Manager provisions:

- **Provisioning Manager**—Changes provisions
- **Operator**—Invokes all bridge services
- **Bridge Access**—Read-only access to the bridge
Use this provision to enable users to view bridge definitions and the status of bridge components.



Migration of Financial Management Security Elements

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Financial Management application security elements are synchronized to Essbase through Analytics Link, as described in this appendix.

Financial Management Security Elements

Financial Management application security elements include classes and properties.

Financial Management security classes are assigned to application elements upon creation. Financial Management users belonging to any of the security classes have individual access levels for each class. Access rights are described in [Table 52](#):

Table 52 Access Rights for Financial Management Security Classes

Access right	Description
None	The user has no access to any application elements assigned to the security class.
Metadata	The user can view a specified member in a list, but cannot view or modify data for the member.
Read	The user can view data for application elements assigned to the security class, but cannot promote or reject.
Promote	The user can view data for application elements assigned to the security class, and can also promote or reject.
All	The user can modify data for application elements assigned to the security class, and can also promote or reject.

Each Financial Management dimension member that belongs to Account, Entities, Scenario, Custom1-4, or ICP can be associated with a security class, so that only users with access right of “Read” and higher (“Promote” and “All”) can see the data for the member. If a dimension member is not associated with a security class, its default security class is “[Default],” and all user access rights to that member are as defined in the “[Default]” security class.

Security properties associated with a Financial Management application further define how security classes are handled for the application. The security properties manage how the security

classes should be enforced. A Financial Management application has the following security properties:

Table 53 Description of Financial Management Security Properties

Security Property	Description
Node Security	Define which security classes should be used for parent-dependent values ([Contribution Total], [Contribution Adjs], [Contribution], [Elimination], [Proportion], [Parent Total], [Parent Adjs], [Parent]). If node security is PARENT, the security classes of the entity's parent are taken in consideration; otherwise (if node security is ENTITY), only the security classes of the entity itself are used.
Enable Metadata Security Filtering	Specifies whether users of an application see all dimension members, or only the members to which they have access.
Use security for Accounts	Specifies that security classes of the Accounts dimension should be taken in consideration.
Use security for Entities	Specifies that security classes of the Entities dimension should be taken in consideration.
Use security for Scenarios	Specifies that security classes of the Scenarios dimension should be taken in consideration.
Use security for Custom1-4	Specifies that security classes of the Custom1-4 dimensions should be taken in consideration.
Use security for ICP	Specifies that security classes of the ICP dimension should be taken in consideration.

Note: When changing security properties, keep in mind that a user's access to a Financial Management data cell is dependent on the user having access to each dimension member that forms the intersection of that cell.

Security Migration Options from Financial Management to Essbase

In Analytics LinkAnalytics Link, you have multiple options for migrating Financial Management application security elements to Essbase; or, you can select not to migrate. The migration options, found in the Essbase tab of the Analytics Link Bridge Console, are as follows:

Table 54 Financial Management to Essbase Security Migration Options

Migration Option	Description
Do Not Migrate	Analytics Link does not migrate Financial Management security elements to Essbase.
Migrate Users	For all users and groups that have at least Metadata access to existing Financial Management security classes, Analytics Link migrates these users and groups to Essbase with a provision of Read access to the Essbase application (and constituent databases) corresponding to the Financial Management security elements. The migrated users and groups are provisioned as follows: <ul style="list-style-type: none"> ● Read on the Essbase application ● Server access on Essbase:<ESS host>:1 project

Migration Option	Description
Migrate Users and Data Security	Analytics Link creates security filters on the Essbase databases within the Essbase applications that correspond to the Financial Management security elements. Additionally, Analytics Link provisions the appropriate Financial Management users with Filter access. For details, see “Migrate Users and Data Security” on page 143 .

Migrate Users and Data Security

If you select the **Migrate Users and Data Security** option for migrating Financial Management application security elements to Essbase, Analytics Link creates Essbase database security filters and provisions them to Financial Management users. The filters are provisioned as corresponding to each users access level to the Financial Management security classes for the appropriate applications.

The filters are created and provisioned as follows: for each combination of Financial Management security classes (including [Default]) to which a user or group has at least Read access for each security class in the combination, Analytics Link builds two security filters, `EAL_P_<counter>` and `EAL_E_<counter>`, where `<counter>` is a number starting with 0.

`EAL_P_<counter>` Filter

This filter sets Read permissions for the following Essbase database members:

- All entity-parent-dependent members of Value dimension ([Contribution Total], [Contribution Adjs], [Contribution], [Elimination], [Proportion], [Parent Total], [Parent Adjs] and [Parent])
- For dimensions Scenario, Account, Custom1-4, and ICP:
 - If the Use Security for `<Dimension>` property is true, all members that belong to the one of the classes in the security-class combination
 - Otherwise, all dimension members
 - If the Use Security for Entities property is true,
 - and if the NodeSecurity property is "ENTITY"—all entities that belongs to one of the classes in the combination
 - and if the NodeSecurity property is "PARENT"—all entities that have a parent that belongs to one of the classes in the combination. If an entity does not have a parent, then Read permission is set if the entity itself belongs to one of the classes in the combination.
 - Otherwise, all dimension members

Note: If “Enable Metadata Security Filtering”=TRUE, then Read permission is set for the entity only if both it and its parent belong to one of the classes in the combination.

EAL_E_<counter> Filter

This filter sets Read permissions for the following Essbase database members:

- All entity parent-*independent* members of the Value dimension
- For dimensions Scenario, Account, Custom1-4, Entity, and ICP:
 - If the Use Security for <Dimension> property is true, all members that belong to the one of the classes in the security-class combination
 - Otherwise, all dimension members

Note: Analytics Link sets permissions only for members of Scenario, Account, Entity, Custom1-4, and ICP dimensions, according to the application settings.

Filters and Groups

For each filter created as a result of the processes in “[Migrate Users and Data Security](#)” on page 143, a corresponding Shared Services group is created with a name in the format of *filter_name_G_bridgeID*, and the group is granted the filter.

Note: The bridgeID is the ID of the Analytics Link bridge that created the specific group in Shared Services. To find the bridgeID, open the bridge in Administration Services Console. The header of the bridge console includes the bridge name and the bridgeID in parantheses.

The new groups are provisioned as follows:

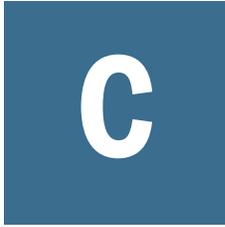
- Read on the Essbase application
- Server access on Essbase:<ESS host>:1 project

A description is added to the group to aid the administrator in discerning which classes are associated with a filter and corresponding group.

Each Financial Management user that has at least Read access to relevant Financial Management security classes, is assigned to the group created for the related filter.

Analytics Link users must have Shared Services/Directory Manager provision to create groups in Shared Services.

For Release 11.1.2 and later, Analytics Link users must have LCM administrator (Foundation/Shared Services) provision to create groups in Shared Services.



Financial Management Dimensions

By default, when Analytics Link creates an Essbase outline with Financial Management data, all Financial Management dimensions and their members are represented in the outline. Analytics Link enables you to customize the Essbase outline so that only the dimensions and members that are relevant to your business needs are represented.

[Table 55](#) describes the 12 Financial Management dimensions (eight system-defined dimensions and four custom dimensions):

Table 55 Financial Management Dimensions

Dimension	Description
Scenario	Set of data, such as Budget, Actual, Forecast, and Legal. For example, the Actual scenario can contain data from a general ledger, reflecting past and current business operations. The Budget scenario can contain data that reflects the targeted business operations. The Forecast scenario typically contains data that corresponds to predictions for upcoming periods. A Legal scenario can contain data calculated according to legal GAAP format and rules.
Year	Fiscal or calendar year for the data. An application can contain data for multiple years.
Period	Time periods, such as quarters and months.
View	Various modes of calendar intelligence, such as periodic, year-to-date, and quarter-to-date frequencies. If you set the view to Periodic, the values for each month are displayed. If you set the view to year-to-date or quarter-to-date, the cumulative values for the year or quarter are displayed.
Entity	Management and legal reporting structures in your organization, such as region and divisions. Entities can be categorized as base entities (bottom of the organization structure; data is loaded to base entities) or parent entities (which contain one or more entities as children).
Value	Types of values stored in an application. For example, the Entity Currency member stores the value for an entity in the local currency of the entity. The Parent Currency member stores the value for an entity translated to the currency of the parent entity.
Account	Hierarchy of natural accounts, which store financial data for entities and scenarios in an application. Each account has a type, such as Revenue or Expense, that defines its accounting behavior.
Intercompany Partner	Intercompany account balances. Financial Management can track and eliminate intercompany transaction details across entities and accounts.
Custom1 Custom2 Custom3 Custom4	Dimensions associated with accounts. These dimensions enable you to specify additional details, such as products, markets, channels, or balance sheet movement. For example, a custom dimension for products associated with Sales and COGS accounts enables you to track sales and cost detail by product. Financial Management creates four custom dimensions.



Mapping Table Template Reference

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About Mapping Table Templates

You can create mapping tables in the Data Store yourself, rather than use the mapping table templates that Analytics Link creates from the **Target Design Grid** tab.

Analytics Link uses the SQL query examples provided in this appendix to create mapping table templates. These queries are in Oracle 11g Server format.

See [“About Dimension Member Mapping Tables”](#) on page 90

Dimension Creation Transformation Type Mapping Table Template

The following query creates a mapping table template for mapping one Financial Management source dimension to one target dimension:

```
CREATE TABLE "<EAL_DATA_STORE_DB>"."<MAPPING_TABLE>"
(
  "HFM_MEMBER" NVARCHAR2(80) Not Nullable,
  "TARGET_MEMBER" NVARCHAR2(80) Not Nullable,
  "VISIBLE" NUMBER(38,0) Not Nullable,
  "ISBASE" NUMBER(38,0) Nullable,
  "GENERATION" NUMBER(38,0) Nullable,
  "DIM_LEVEL" NUMBER(38,0) Nullable,
  "SELECTED" NUMBER(38,0) Nullable
);
```

Representation of the mapping table columns:

HFM_MEMBER	TARGET_MEMBER	VISIBLE	ISBASE	GENERATION	DIM_LEVEL	SELECTED
------------	---------------	---------	--------	------------	-----------	----------

Mapping table rules for the **Dimension Creation** transformation type: Member selection is based on the Financial Management source dimension. By default, if a Financial Management member is not included in the mapping table, Analytics Link considers `VISIBLE` is set to 1 (TRUE) and the member is included in the target database. The member name is the same as it is in Financial Management.

Analytics Link implements the LAST duplicate row policy only on rows for which `SELECTED` is set to 1 (TRUE). The uniqueness of a row is identified by the `HFM_MEMBER` and `TARGET_MEMBER` columns. See [“About Duplicate Data Row Consolidation Operators” on page 124](#).

See [“Dimension Creation Transformation Type” on page 54](#).

Dimension Mapping Transformation Type Mapping Table Template

The following query creates a mapping table template for mapping one Essbase source dimension to one Financial Management target dimension:

```
CREATE TABLE "<EAL_DATA_STORE_DB>"."<MAPPING_TABLE>"
(
  "HFM_MEMBER_<DIM>" NVARCHAR2(80) Not Nullable,
  "TARGET_MEMBER" NVARCHAR2(80) Not Nullable,
  "VISIBLE" NUMBER(38,0) Not Nullable,
  "ISBASE" NUMBER(38,0) Nullable,
  "GENERATION" NUMBER(38,0) Nullable,
  "DIM_LEVEL" NUMBER(38,0) Nullable,
  "SELECTED" NUMBER(38,0) Nullable
);
```

For `HFM_MEMBER_<DIM>`, you must substitute the name of the Financial Management target dimension.

Representation of the mapping table columns:

TARGET_MEMBER	HFM_MEMBER_DIM	VISIBLE	ISBASE	GENERATION	DIM_LEVEL	SELECTED
---------------	----------------	---------	--------	------------	-----------	----------

Mapping table rules for the **Dimension Mapping** transformation type: Member selection is based on the Essbase target dimension. Therefore, if an Essbase member is not displayed in the `TARGET_MEMBER` column, Analytics Link considers `VISIBLE` is set to 0 (FALSE) for that member and Analytics Link does not add the “eal” UDA to the member name. See [“About User-Defined Attributes \(UDAs\)” on page 97](#).

Analytics Link implements the LAST duplicate row policy only on rows for which `SELECTED` is set to 1 (TRUE). The uniqueness of a row is identified by the `TARGET_MEMBER` and `HFM_MEMBER_DIM` columns. See [“About Duplicate Data Row Consolidation Operators” on page 124](#).

See [“Dimension Mapping Transformation Type” on page 57](#).

Join Dimensions Transformation Type Mapping Table Template

The following query creates a mapping table template for mapping multiple Financial Management source dimensions to one Essbase target dimension:

```
CREATE TABLE "<EAL_DATA_STORE_DB>"."<MAPPING_TABLE>"
(
  "TARGET_MEMBER" NVARCHAR2(80) Not Nullable,
  "HFM_MEMBER_<DIM1>" NVARCHAR2(80) Not Nullable,
  ...
  "HFM_MEMBER_<DIMN>" NVARCHAR2(80) Not Nullable,
  "ISBASE" NUMBER(38,0) Nullable,
  "GENERATION" NUMBER(38,0) Nullable,
  "DIM_LEVEL" NUMBER(38,0) Nullable,
  "VISIBLE" NUMBER(38,0) Not Nullable,
  "SELECTED" NUMBER(38,0) Nullable
);
```

For HFM_MEMBER_<DIM1> through HFM_MEMBER_<DIMN>, you must substitute the names of the Financial Management source dimensions.

Representation of the mapping table columns:

TARGET_MEMBER	HFM_MEMBER_Dim1	HFM_MEMBER_Dimn	ISBASE	GENERATION	DIM_LEVEL	VISIBLE	SELECTED
---------------	-----------------	-----------------	--------	------------	-----------	---------	----------

Mapping table rules for the **Join Dimensions** transformation type: Member selection is based on the Essbase target dimension. Therefore, if an Essbase member is not displayed in the TARGET_MEMBER column, Analytics Link considers VISIBLE is set to 0 (FALSE) for that member and Analytics Link does not add the “eal” UDA to the member name. See [“About User-Defined Attributes \(UDAs\)” on page 97](#).

Analytics Link implements the LAST duplicate row policy only on rows for which SELECTED is set to 1 (TRUE). The uniqueness of a row is identified by the TARGET_MEMBER and HFM_MEMBER_DIM1 to HFM_MEMBER_DIMn columns. See [“About Duplicate Data Row Consolidation Operators” on page 124](#).

See [“Join Dimensions Transformation Type” on page 62](#).

Break Dimension Transformation Type Mapping Table Template

The following query creates a mapping table template for mapping one Financial Management source dimension to multiple Essbase target dimensions:

```
CREATE TABLE "<EAL_DATA_STORE_DB>"."<MAPPING_TABLE>"
(
  "HFM_MEMBER" NVARCHAR2(80) Not Nullable,
  "TARGET_MEMBER_<DIM1>" NVARCHAR2(80) Not Nullable,
  "VISIBLE_<DIM1>" NUMBER(38,0) Not Nullable,

  "TARGET_MEMBER_<DIMN>" NVARCHAR2(80) Not Nullable,
```

```
"VISIBLE_<DIMN>" NUMBER(38,0) Not Nullable,
"ISBASE" NUMBER(38,0) Nullable,
"GENERATION" NUMBER(38,0) Nullable,
"DIM_LEVEL" NUMBER(38,0) Nullable,
"SELECTED" NUMBER(38,0) Nullable
);
```

Representation of the mapping table columns:

HFM_MEMBER	TARGET_MEMBER_Dim1	VISIBLE_Dim1	TARGET_MEMBER_Dimn	VISIBLE_Dimn	ISBASE	GENERATION	DIM_LEVEL	SELECTED
------------	--------------------	--------------	--------------------	--------------	--------	------------	-----------	----------

Mapping table rules for the **Break Dimension** transformation type:

- For a Financial Management member, if SELECTED is set to 0 (FALSE), or if SELECTED is set to 1 (TRUE) but the VISIBLE property for each Essbase dimension is set to 0 (FALSE), the Financial Management member does not participate in the internal hierarchy and mapping information is not passed to the Data Synchronization Server database.
- Member selection is based on the Financial Management source dimension. If a Financial Management member is not included in the mapping table, Analytics Link considers VISIBLE is set to 0 (FALSE) for that member for all target member dimensions.

See [“Break Dimension Transformation Type” on page 65](#).

Matrix Mapping Transformation Type Mapping Table Template

The following query creates a mapping table template for mapping intersections that are defined by *n* number of Financial Management source dimension to intersections that are defined by *m* number of Essbase target dimensions.

```
CREATE TABLE "<EAL_DATA_STORE_DB>"."<MAPPING_TABLE>"
(
  SRC_<HFM_Dimension1> NCLOB not null,
  ...
  SRC_<HFM_DimensionN> NCLOB not null,
  DEST_<Destination_dimension1/column1> NCLOB not null,

  DEST_<Destination_dimensionM/columnM> NCLOB not null,
)
```

Representation of the mapping table columns:

SRC_DIM1	SRC_DIMn	DEST_DIM1	DEST_DIMm
----------	----------	-----------	-----------

If the Financial Management Entity dimension is a source dimension, the table includes a column, named SRC_PARENT, for the Entity Parent value. Representation of the mapping table columns:

SRC_ENTITY	SRC_PARENT	DEST_ENTITYDIM	DEST_ParentDIM
------------	------------	----------------	----------------

See [“Matrix Mapping Transformation Type”](#) on page 77.



Special Characters

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Naming Restrictions for Essbase Dimensions, Members, and Aliases

When naming Essbase dimensions, members, and aliases, follow these rules:

- Use no more than 80 bytes when naming non-Unicode-mode dimensions, members, or aliases.
- Use no more than 80 characters when naming Unicode-mode dimensions, members, or aliases.
- Do not use quotation marks (" "), brackets ([]), or tabs.
- Do not place spaces at the beginning or end of names.
- At the beginning of names, do not use the characters listed in [Table 56](#):

Table 56 Restricted Characters for Essbase Dimension, Member, and Alias Names

Character	Description
@	at sign
\ ¹	backslash
{ }	brace
,	comma
-	dash, hyphen, or minus
=	equal sign
<	less-than sign
()	parentheses
.	period

Character	Description
+	plus sign
'	single quotation mark
_	underscore
	vertical bar

¹If you are using Essbase 11.1.2 with Analytics Link, you can use a backslash at the beginning of Essbase dimension, member, and alias names.

Note: Some Financial Management dimension or member names begin with characters that are not valid in Essbase, as listed in [Table 56](#). When creating the outline, Analytics Link replaces these invalid characters with the string “FM.” For example, [Member] becomes FM Member and <Entity Currency> becomes FM Entity Currency.

- Do not use the same alias name for two siblings. If two sibling alias names match, Analytics Link creates an alias for the second sibling that is a concatenation of the alias and the “(member name)” string.

Valid Characters Removed by Analytics Link

Analytics Link replaces the characters in [Table 57](#) with spaces, if these characters appear within the Financial Management member name (but not as the first character of the member name):

Table 57 Characters Replaced With Spaces

Character	Description
<	less-than sign
>	greater-than sign
()	parentheses
{ }	braces



Attributes of Analytics Link Essbase Outlines

Consider these rules for Essbase databases and outlines:

- Essbase applications and database types must be block storage.
- If the Essbase database does not exist, Analytics Link creates the Essbase database with these properties:
 - The Essbase database **Auto Configure** property is set to FALSE.
 - The value of the Essbase database **Duplicate member names allowed** property is set to the same value as the **Allow Duplicate Member Names** database property for the bridge.
- If you define an existing Essbase database as the bridge target:
 - The Essbase database **Auto Configure** property must be set to FALSE.
 - The value of the Essbase database **Duplicate member names allowed** property must be the same value as the **Allow Duplicate Member Names** database property for the bridge.
- If the bridge **Unicode** database property is set to On and the Essbase application does not exist, Essbase Server must have the **Permission to create Unicode-mode application** property selected. If the bridge **Unicode** database property is set to On and the Essbase application already exists, the Essbase application should have been created in Unicode mode.
- Essbase dimensions must be Label Only, because in the Data Synchronization Server replica of Financial Management, there is no dimension name member. Reports return the value of the first child.
- All members ignore consolidation.
- Analytics Link builds alias tables in the database for each description language of the Data Synchronization Server replica of the Financial Management application. A default alias table is built for the first defined description language. For the remaining description languages, Analytics Link builds different alias tables in the database with the same name as the description language. When you configure Analytics Link Server using the Analytics Link Configuration Tool, you specify the maximum number of alias tables for the Essbase database that Analytics Link creates.
- Essbase comments are the IDs of the Financial Management members; for example (*/*5**). IDs are dimension unique.
- Some Oracle Hyperion Financial Management member names and descriptions are not valid in Essbase (see [Table 56, “Restricted Characters for Essbase Dimension, Member, and Alias Names,”](#) on page 153). When creating the Oracle Essbase outline, Analytics Link renames those members. For example:

- [Member] becomes FM Member
- [None] becomes FM None
- <Entity Currency> becomes FM Entity Currency



Analytics Link Log Files and Messages

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Analytics Link Log Files

By default, Analytics Link creates log files in the `HFS_HOME\Work` directory.

Oracle Essbase Analytics Link for Hyperion Financial Management log files:

- `config.log`—Analytics Link Configuration Tool task output and error messages.
- `dss.log`—Data Synchronization Server task output and error messages.
- `ea1.log`—Analytics Link Server task output and error messages.

➤ To access the Analytics Link Server log file (`ea1.log`) from Administration Services Console:

- 1 From the **Analytics Link Servers** node, navigate to the **Analytics Link Server** for which you want to view the **Analytics Link Server** log file.
- 2 Right-click the **Analytics Link Server**, and then select **Analytics Link Server Log**.
Log information is displayed in the **Analytics Link Server Log** dialog box.
- 3 When you are finished viewing the log information, click **Close**.

Analytics Link Messages in Administration Services Console

In Administration Services Console, the Messages pane is displayed along the bottom of the console window. Error messages and status information that are returned by Analytics Link Server are displayed in this area and are preceded by a time stamp. For example:

```
[2011-Mar-21 10:23:50] Getting mapping data is successful
```

Use the right-click menu in the Messages pane to clear, copy, email, print, or save messages to another program. See the *Oracle Essbase Administration Services Online Help*.

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