

HYPERION® SYSTEM™ 9

BUSINESS RULES™

RELEASE 9.2

ADMINISTRATOR'S GUIDE



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Hyperion Solutions Corporation
5450 Great America Parkway
Santa Clara, California 95054

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Preface

Welcome to the *Hyperion System 9 Business Rules Administrator's Guide*. This preface discusses the following topics:

- “Purpose” on page vii
- “Audience” on page vii
- “Document Structure” on page vii
- “Where to Find Documentation” on page viii
- “Help Menu Commands” on page ix
- “Conventions” on page ix
- “Additional Support” on page x
- “Documentation Feedback” on page xi

Purpose

This guide provides administrators and power users with the information needed to use Hyperion System 9 Business Rules (Business Rules). It explains the features and options of Business Rules, and the concepts, processes, procedures, and examples needed to use the software.

Audience

This guide is for administrators and power users who are responsible for creating, editing, managing, and launching business rules using Business Rules.

Document Structure

This document contains the following information:

[Chapter 1, “Getting Started,”](#) contains a description of Business Rules and important concepts and terminology.

Chapter 2, “Working with Business Rules, Sequences, Macros, and Variables,” contains the instructions for creating and designing a business rule and sequence. It also contains information on including macros and variables in business rules and sequences.

Chapter 3, “Assigning Access Privileges,” contains information and procedures for assigning access privileges to business rules, sequences, macros, and variables.

Chapter 4, “Validating and Launching Business Rules and Sequences,” contains information on how to debug business rules and sequences and then launch them.

Chapter 5, “Using Projects to Manage Repository Objects,” shows how to add and remove business rules, macros, variables and sequences. It also describes how to use projects to organize business rules and sequences.

Chapter 6, “Importing and Exporting,” describes the process of importing and exporting business rules.

Chapter 7, “Managing the System,” describes how to set up the system, including migrating the repository, viewing information in the properties files, and managing database locations.

The [Glossary](#) contains a list of Business Rules terms and their definitions.

The Index contains a list of Business Rules terms and their page references.

Where to Find Documentation

Business Rules documentation is accessible from the following locations:

- The Business Rules Information Map, which contains links to the Business Rules documentation and online help, is available from the Windows Start menu.
- Online help is available for Business Rules from within Hyperion® System™ 9 BI™+ Analytic Administration Services™ (Analytic Administration Services). After you log on to the product, you can access online help by clicking the Help button or selecting Help from the menu bar.
- Online help is also available from within the Business Rules Web Launcher. After you log on to the product, you can access online help by clicking the Help button or selecting Help from the menu bar.
- The Hyperion Download Center can be accessed from the Hyperion Solutions Web site.

➤ To access documentation from the Hyperion Download Center:

- 1 Go to the [Hyperion Solutions Web site](#).

Note: Your Login ID for the Hyperion Download Center is your e-mail address. The Login ID and Password required for the Hyperion Download Center are different from the Login ID and Password required for Hyperion Support Online through Hyperion.com. If you are not sure whether you have a Hyperion Download Center account, follow the on-screen instructions.

- 2 In the **Login ID** and **Password** text boxes, enter your e-mail address and password.

- 3 In the **Language** list box, select the appropriate language and click **Login**.
- 4 If you are a member on multiple Hyperion Solutions Download Center accounts, select the account that you want to use for the current session.
- 5 To access documentation online, from the Product List, select the appropriate product and follow the on-screen instructions.

Help Menu Commands

Table i describes the commands that are available from the Help menu in Business Rules and Business Rules Web Launcher.


Table i Help Menu Commands

Command	Description
Help on This Topic	Launches a help topic specific to the window or Web page.
Contents	Launches Business Rules Help
Technical Support	Launches the Hyperion Technical Support site, where you submit defects and contact Technical Support.
Developer's Network	Launches the Hyperion Developer Network site, where you access information about known defects and best practices. This site also provides tools and information to assist you in getting starting using Hyperion products: <ul style="list-style-type: none"> ● Sample models ● A resource library containing FAQs, tips, and technical white papers ● Demos and Webcasts demonstrating how Hyperion products are used
Hyperion.com	Launches Hyperion's corporate Web site, where you access a variety of information about Hyperion: <ul style="list-style-type: none"> ● Office locations ● The Hyperion Business Intelligence and Business Performance Management product suite ● Consulting and partner programs ● Customer and education services and technical support
About Analytic Administration Services	Launches the About Analytic Administration Services dialog box, which contains copyright and release information, along with version details.

Conventions

The following table shows the conventions used in this document.

Table ii Conventions Used in this Document

Item	Meaning
	Arrows indicate the beginning of a procedure, which consists of one or more sequential steps.
Brackets []	In examples, brackets indicate that the enclosed elements are optional.
Bold	Bold text indicates words or characters that you type exactly as they appear on the page. Bold in procedural steps highlights major interface elements.
CAPITAL LETTERS	Capital letters denote commands and various IDs. (Example: COPY DATA command).
Ctrl + O	Keystroke combinations shown with the plus symbol (+) indicate that you should press the first key and hold it while you press the next key. Do not type the + symbol.
Ctrl+Q, Shift+Q	For consecutive keystroke combinations, a comma indicates that you press the combinations consecutively.
Example text	Courier font indicates that the material shown is a code or syntax example.
<i>Courier italics</i>	Courier italic text indicates a variable field in command syntax. Substitute your own values in place of the variable shown in Courier italics.
<i>ARBORPATH</i>	When you see the environment variable <i>ARBORPATH</i> in italics, substitute the value of ARBORPATH from your site.
<i>n, x</i>	Italic <i>n</i> stands for a variable number; italic <i>x</i> can stand for a variable number or a letter. These variables are sometimes found in formulas.
Ellipses (...)	Ellipsis points indicate that text has been omitted from an example.
Mouse orientation	This document provides examples and procedures using a right-handed mouse. If you use a left-handed mouse, adjust the procedures accordingly.
Menu options	Options in menus are shown in the following format. Substitute the appropriate option names in the placeholders, as indicated. Menu name > Menu command > Extended menu command For example: 1. Select File > Desktop > Accounts .

Additional Support

In addition to providing documentation and online help, Hyperion offers the following product information and support. For details on education, consulting, or support options, click the Services link on the Hyperion Solutions Web site.

Education Services

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

Documentation Feedback

Hyperion strives to provide complete and accurate documentation. Your opinion on the documentation is of value, so please send your comments by going to http://www.hyperion.com/services/support_programs/doc_survey/index.cfm.

1

Getting Started

This chapter describes the features and benefits of using Business Rules, the types of roles in Business Rules, and the basic concepts and terminology you should be familiar with before you begin to use Business Rules. It also describes the components of Business Rules and, at a high level, how to start using them to create and launch business rules.

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Before You Begin

Before you begin using this guide to learn about and work with Business Rules, you should ensure that the following tasks are completed:

- Install Hyperion® System™ 9 Shared Services™ (Shared Services). For more information, see the *Hyperion System 9 Shared Services Installation Guide*.
- Install Analytic Administration Services, which installs Business Rules automatically. For more information, see the *Hyperion System 9 BI+ Analytic Administration Services Installation Guide*.
- Create one empty database for Shared Services and one empty database for Business Rules in Microsoft SQL Server Enterprise Manager, Oracle, DB2, or MYSQL. For more information, see the *Hyperion System 9 BI+ Analytic Administration Services Installation Guide*.
- Configure Shared Services using the Hyperion® Configuration Utility™. For more information, see the *Hyperion System 9 Shared Services Installation Guide*.

- Configure Analytic Administration Services and Business Rules using the Hyperion Configuration Utility. (You use this utility to configure the application server and the relational database repository, and to register Analytic Administration Services and Business Rules with Shared Services.) For more information, see the *Hyperion System 9 Analytic Administration Services Installation Guide*.
- Provision users and groups for use in Business Rules, and assign Business Rules roles to them, using the Hyperion® System™ 9 Shared Services™ User Management Console™. For more information, see the *Hyperion System 9 Shared Services User Management Guide*.

For an overview of Shared Services, see [“Hyperion System 9 Shared Services”](#) on page 19.

About Business Rules

Business Rules guides users through the creation, execution, and management of business rules on Analytic Server, which is a component of Hyperion® System™ 9 BI+™ Analytic Services™ (Analytic Services).

In a traditional multidimensional application, users must program complicated calculations to perform the business rules they need. In addition, business rule logic creation, validation, and error detection are usually time consuming and frustrating for users. Also, users must modify the calculations often, sometimes weekly or hourly, to keep up with business demands. These frequent changes create high maintenance and incur high cost for the customers of analytic applications.

Business Rules improves the response time to changing business application needs, shortens application development cycles, increases business user productivity, improves re-use of application components, and increases the overall return on analytic application investments.

Business Rules Features and Benefits

Business Rules makes it easy to create, run, and manage business rules and sequences in your multidimensional analytic application. The main features and benefits of Business Rules are described in the following topics.

Easy to Create

- Macros simplify the creation of business rules and sequences, and save business rule designers time by enabling them to reuse pieces of business rules in other business rules or macros.
- Variables of the saved selection type can be used not only at run-time, but also during design time to make business rules easier to design.
- Pre-defined and re-usable formulas that define unique cost and revenue calculations save business rule designers time during the design process. The following formulas are provided:
 - Pro-Rata Ratio

- Units-Rates
- Variable
- Custom
- The graphical depiction of components, formulas, and processes makes it easy to construct business rules in a multidimensional application.

Easy to Use

- Business rules can be launched by business users from within Analytic Administration Services, the Business Rules Web Launcher, the Business Rules Command Line Launcher, and the Hyperion® System™9 Planning™ (Planning) Web Client.
- Business rules can be launched in all Analytic Server environments.
- Business rules can be stored and run on a server across a wide area network (WAN).
- Business rules with run-time prompts ensure valid inputs from budget preparers.
- Entry of run-time prompt values during launching makes a single, centrally created business rule reusable by several users.

Easy to Maintain

- The Business Rules architecture supports enterprise-wide maintenance and methods of use that can be successfully managed and deployed to multiple business users.
- Business rules, sequences, macros, variables, and projects can be stored in any of the following repositories: Microsoft Access, Microsoft SQL Server, Oracle, or DB2 for shared, enterprise-wide access.
- Use of a central repository makes administration and maintenance of business rules easy, because the repository stores information for several applications in one database.
- The logical organization of business rules, sequences, macros, and variables into projects makes them easier to find and maintain.

Business Rules Roles

The following table summarizes the typical Business Rules roles and the types of tasks that can be performed by the users and groups who are assigned these roles.

Note: You set up users and groups, and assign roles to them, in Hyperion System 9 Shared Services User Management Console. For more information, see the *Hyperion System 9 Shared Services User Management Guide*.

Hyperion Business Role	Tasks that Can Be Performed
Administrator	<p>A user or group who has the role of <i>administrator</i> can do any of the following tasks:</p> <ul style="list-style-type: none"> ● Create, launch, edit, validate, and manage business rules, sequences, macros, variables, and projects ● Assign access privileges to business rules, sequences, macros, variables, and projects ● Create and edit users, groups, and roles ● Set up the repository and log file
Interactive User	<p>A user or group who has the role of <i>interactive user</i> can do any of the following tasks:</p> <ul style="list-style-type: none"> ● Create, launch, edit, validate, and manage business rules, sequences, macros, variables, and projects ● Assign access privileges (with the exception of the ability to launch business rules, which can only be assigned by an administrator) to business rules, sequences, macros, variables, and projects
Basic User	<p>A user or group who has the role of <i>basic user</i> can do any of the following tasks:</p> <ul style="list-style-type: none"> ● Launch business rules and sequences to which the user has access ● View business rules and sequences to which the users has access ● View all variables and macros ● Edit specific business rules, sequences, macros, variables, and projects for which the user was granted editing privileges

Business Rules Product Components

This release of Business Rules contains the following three components:

- **Analytic Administration Services Administration Console (Administration Console):** Administrators use the Administration Console in Analytic Administration Services to create, edit, validate, launch, and maintain both graphical and non-graphical business rules.
- **Business Rules Web Launcher:** Business users use the Business Rules Web Launcher to select a business rule, enter run-time prompts if necessary, and then launch the business rule on the Web.
- **Business Rules Command Line Launcher:** Administrators use the Command Line Launcher to schedule business rules to run from outside of Business Rules by creating a command line launch (or shortcut) on the desktop.

Business Rules Prerequisite Knowledge

This section introduces Business Rules and the concepts that are important to know before using Business Rules. Hyperion recommends that users have introductory Analytic Services training, knowledge of their specific multidimensional applications, and familiarity with their existing business processes before using Business Rules.

Before Using the Administration Console

Users should have the following Analytic Services knowledge before using the Administration Console:

- An understanding of the Analytic Services application, including database dimensionality and outline structure
- Knowledge of where the data is stored in the database, how the data is stored and aggregated, and at what level the data gets loaded into the database

For more information on Analytic Services applications, database dimensionality, and database outlines, see the *Hyperion System 9 BI+ Analytic Services Database Administrator's Guide*.

Users should also know the following aspects of their specific business processes:

- The order of calculations to take place
- The sequence of business rules
- The key assumptions being used to drive the calculations

Before Using the Web Launcher

Users should have the following information about their business rules before using the Business Rules Web Launcher:

- Which business rules they need to run
- Where to get the values for run-time prompts that need to be entered
- When the business rules need to run
- Familiarity with both the application and the database outline

Using the Administration Console

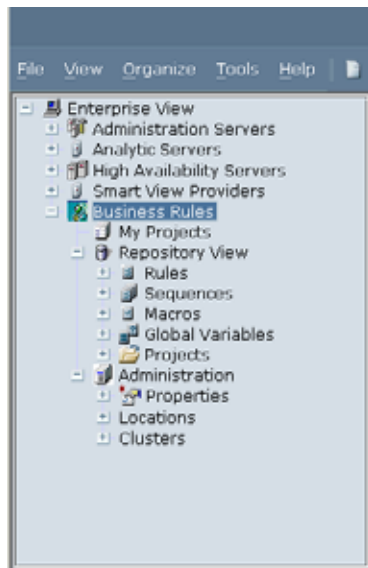
To access and use the Administration Console in Analytic Administration Services, Analytic Administration Services Server must be running. In addition, Analytic Server must also be running in order for you to select a database outline to refer to as you are creating your business rules, sequences, macros, and variables. For information on installing and starting Analytic Administration Services Server and Analytic Server, see the *Hyperion System 9 Analytic Administration Services Installation Guide*.

➤ To access the Administration Console:

- 1 Select **Start > Programs > Hyperion System 9 BI+ > Analytic Administration Services > Administration Console**.
- 2 On the **Analytic Administration Services Login** dialog box, enter a server name or select one from the drop-down list. Then enter your user name and password, and click **OK**.

The Analytic Administration Services window is displayed with Business Rules collapsed in the left frame of the window.

- 3 Expand the nodes under the Business Rule node to view their contents.



Business Rules contains the following three nodes:

- The My Projects node lists the projects in the Business Rules repository that were created by the logged on user. Projects are a convenient way to organize business rules, sequences, macros, and variables into logical groupings of information.
- The Repository View node lists all of the repository objects (business rules, sequences, macros, variables, and projects) that are in the Business Rules repository. You use the features in this node to create, edit, validate, launch, and manage repository objects.
- The Administration node lists the properties of the client and server. You use the features in this node to change the level of error reporting in the log file, to migrate the repository, and to import and export business rules.

Refer to this guide for information on using the features of the Administration Console in Analytic Administration Services.

Using the Web Launcher

The Business Rules Web Launcher is designed for business users who need to run different types of business rules that address their particular business needs. Business users use the Web Launcher to run business rules that you create for them. In order to use the Web Launcher, a business user must have Calculate access to at least one database on Analytic Server.

► To go on to Business Rules Web Launcher:

1 Enter the URL for the Web Launcher.

Business users must browse to the URL that their administrators provide, using Microsoft Internet Explorer.

The URL for the Business Rules Web Launcher is:

```
http://[Computer name]:[port]/hbrlauncher
```

where [Computer name] : [port] is the name and port where the Analytic Administration Server is running. (10080 is the default port.)

Your administrator can provide you with the computer name and port number, if the default port number is not used.

After you enter the Web Launcher URL, the Logon page is displayed.

2 In the **Server** text box, select a server name from the drop-down list.

3 In the **User** text box, enter your user name.

4 In the **Password** text box, enter the password that corresponds with your user name.

5 Click **Logon**.

The Business Rules Home page is displayed. The Business Rules Home Page allows the user to select a business rule to launch.

For information on using Business Rules Web Launcher, see the *Hyperion System 9 Business Rules Web Launcher User's Guide* or the *Hyperion System 9 Business Rules Web Launcher Online Help*.

Hyperion System 9 Shared Services

Shared Services functionality is programmed into products, such as Planning and Business Rules. Shared Services integrates the products to provide the following functionalities:

- User provisioning
- External authentication definition
- Metadata synchronization
- Data synchronization
- Task flow management

User provisioning functionality is described in the *Hyperion System 9 Shared Services User Management Guide*. External authentication is described in the *Hyperion System 9 Shared Services Installation Guide*. All other Shared Services functionality is described in the administrator's and user's guides for the products that implement Shared Services. Products that implement Shared Services functionality require access to a Shared Services server running Shared Services client and server software, and to a database dedicated to Shared Services.

Business Rules implements Shared Services user provisioning functionality. For more information on user provisioning for Business Rules, see the Business Rules product appendix in the *Hyperion System 9 Shared Services User Management Guide*. For more information on installing and configuring Shared Services for Business Rules, see the *Hyperion System 9 Analytic Administration Services Installation Guide*.

2

Working with Business Rules, Sequences, Macros, and Variables

You can use Business Rules to create a business rule (either graphical or non-graphical) or business rule sequence using macros, variables, commands, and functions. This chapter describes how to create business rules, business rule sequences, macros, and variables.

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About Business Rules

Business Rules enables you to create, use, and launch sophisticated multidimensional business rules. These business rules typically include the following:

- Allocation of costs among entities
- Revenue modeling
- Expense modeling for:
 - Employee planning
 - Depreciation planning
 - Selling costs
 - Manufacturing costs
- Balance sheet planning
 - Capital expenditures
 - Account receivables
- Sources and uses of cash

You can create business rules using commands, functions, macros, and variables (including run-time prompt variables). When you create the business rule, you become its owner and your user name becomes the Owner attribute of the business rule. As the owner of the rule, you have the right to edit and delete it. In order for users to launch the rule at a particular database location, you, as the administrator, must give launch privileges to the rule for that location.

Before you begin to create a business rule, you should be familiar with your Analytic Services outline and application. Having this information will help you create your business rules more efficiently. You should also understand the following about your data:

- How the data is stored and aggregated
- At what level the data gets loaded into the database
- The order of calculations to take place
- The key assumptions that drive the calculations

➤ Following is an overview of the process you use to create a business rule:

- 1 Make sure Shared Services Server is running.**
- 2 Make sure Analytic Administration Services Server is running.**
- 3 Make sure Analytic Server is running.**
- 4 Launch the Analytic Administration Services Administration Console.**
- 5 Log on to Analytic Administration Services.**
- 6 From within Analytic Administration Services, access Business Rules.**
- 7 Write the new business rule. You can use variables, macros, commands, functions, formulas, and actions in the rule.**
- 8 Specify the location where users can validate and/or launch the business rule.**

- 9 Grant access privileges to the business rule.
- 10 Save the business rule.
- 11 Validate the business rule.
- 12 Launch the business rule.

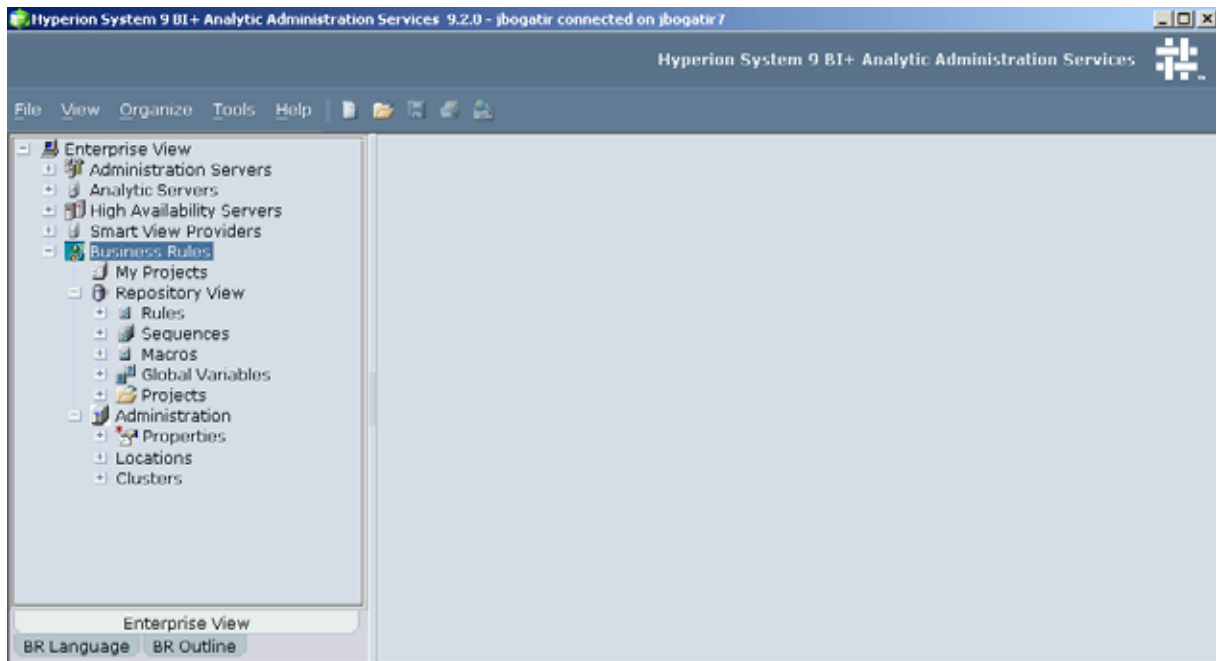
Accessing Business Rules

Note: Analytic Administration Services Server must be running before you can open the Analytic Administration Services Administration Console and access Business Rules. For more information on Analytic Administration Services Server, see the *Hyperion System 9 Analytic Administration Services Installation Guide* for this release of Business Rules.

► To access Business Rules:

- 1 Select **Start > Programs > Hyperion System 9 BI+ > Analytic Administration Services > Administration Console**.
- 2 On the **Analytic Administration Services Login** dialog box, enter a server name or select one from the drop-down list. Then enter your user name and password, and click **OK**.

The Analytic Administration Services Console window displays with Business Rules collapsed in the left frame of the window.



Creating a Business Rule

Note: Before you create a business rule in the Administration Console, make sure that Analytic Administration Services Server is running. For more information on Analytic Administration Services Server, see the *Hyperion System 9 Analytic Administration Services Installation Guide*.

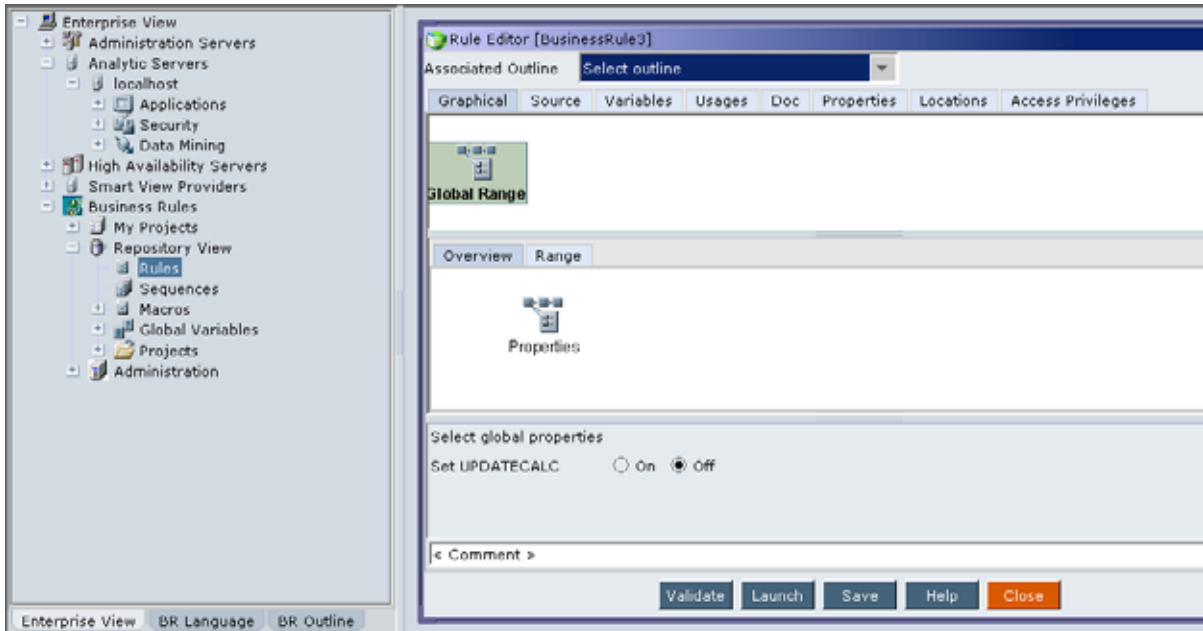
► To create a business rule:

- 1 Launch the Administration Console by selecting **Start > Programs > Hyperion System 9 BI+ > Analytic Administration Services > Administration Console**.
- 2 In the **Analytic Administration Services Login** dialog box, enter a server name and your user name and password to log on to Analytic Administration Services.
- 3 If the **Enterprise View** tab is not displayed, select it in the bottom of the left frame of the Administration Console window.

Note: When the Administration Console window opens, the tab that is displayed by default (the Enterprise View, BR Language, or BR Outline tab) is the last tab that you were working on prior to logging off.

- 4 In the left navigation frame of Analytic Administration Services, expand the **Business Rules** node. Then expand the **Repository View** node.
- 5 Right-click the **Rules** node and select **New Rule**.

The Rule Editor is launched with the Graphical tab displayed.



- 6 **Optional:** If you have not selected an outline, from the **Associated outline** drop-down list, do one of the following:

- Choose a particular outline. (The outlines that are displayed in the drop-down list are outlines that you worked with in this session.)
- Choose **Select outline** to access another dialog from which you can select an outline that you have not worked with in this session. From the **Select Database Outline** dialog box, drill down to select a database outline from Planning or Analytic Services, and click **OK**.

The name of the outline is displayed in the **Associated outline** drop-down list. You can look at the contents of the outline on the **BR Outline** tab as you create your business rule.

- Choose **no associated outline selected** if you do not want to work with an outline. In this case, no outline is displayed on the **BR Outline** tab.

Note: If you have not selected one, you must select an outline in order to use actions and formulas in graphical business rules.

7 On the Graphical and Source tabs, write the business rule. Depending on what type of business rule you want to create, do either of the following:

- Create a *graphical business rule* on the **Graphical** tab. You can insert actions and formulas into a graphical business rules by right clicking anywhere inside the **Graphical** tab. You can also insert actions and formulas by selecting them from the **BR Language** tab and dragging and dropping them onto the **Graphical** tab. You can do any or all of the following:
 - Specify the global properties of the business rule, including how formula components should be calculated in the rule and what dimensions should be common to all of the formula components in the rule (known as the business rule range).

Note: Action components are not included in the global business rule range. You need to select dimensions and members for action components on the Range tab of each action component. For more information, see [“About Adding Actions to Graphical Business Rules” on page 54](#)

- i. **On the Overview tab, select the On button if you want to turn on intelligent calculation on. Intelligent calculation calculates only the data blocks that need to be calculated, which makes the calculation more efficient. Keep the default setting (Off) if you want all data blocks to be calculated.**
 - ii. **On the Range tab, for each dimension in the list that you want to include, enter a value in the Selected Values text box or click the magnifying glass icon to select the members and variables. For more information on member selection, see [“Selecting Members” on page 44](#).**
 - Add actions to the business rule. For more information on using actions in a graphical business rule, see [“About Adding Actions to Graphical Business Rules” on page 54](#).
 - Add formulas to the business rule. For more information on using formulas in a graphical business rule, see [“About Adding Formulas to Graphical Business Rules” on page 61](#).
- Create a *non-graphical business rule* (that is, an enhanced calc script) on the **Source** tab. You can insert variables and macros into a non-graphical business rules by right clicking anywhere inside the **Source** tab. You can also insert functions and commands by selecting them from the **BR Language** tab and dragging and dropping them onto the **Source** tab. You can do any or all of the following:

- Add global variables to the business rule. For more information on creating global variables, see [“Creating Global Variables” on page 34](#).
- Add macros to the business rule. For more information on creating macros, see [“Creating Macros” on page 47](#).
- Add Analytic Services calculation commands to the business rule. For more information on inserting Analytic Services calculation commands, see [“Using Analytic Services Calculation Commands” on page 50](#).
- Add Analytic Services functions to the business rule. For more information on inserting Analytic Services functions, see [“Inserting Functions with the Function Editor” on page 52](#).

Note: You can create a *graphical business rule* on the Graphical tab and then make changes to it on the Source tab. After you make changes to it on the Source tab, however, you cannot make additional changes to it on the Graphical tab; additional changes can only be made on the Source tab. You can view the graphical business rule in its enhanced calc script format on the Source tab.

You can create a *non-graphical business rule* on the Source tab, but you cannot make changes to it on the Graphical tab. When you create a rule on the Source tab, you can only make changes to it on the Source tab.

8 Optional: From the Variables tab, create or modify local variables (that is, variables that are used only in this business rule) and local or global run-time prompt variables.

- On the **Local Variables** tab, do any of the following:
 - Edit local variables. For more information, see [“Editing Local Variables” on page 41](#).
 - Create local variables. For more information, see [“Creating Local Variables” on page 37](#).
 - Delete local variables. For more information, see [“Deleting Local Variables” on page 45](#).
- On the **Run-time Prompts** tab, do any of the following:
 - Use the **Move Up** and **Move Down** buttons to reorder the local and global run-time prompts that are displayed during validation and launch.
 - Select the **Hide** check box next to a run-time prompt to hide it from users when they validate or launch the business rule.
 - Click **Add Global Variable Link** to access the Global Variables dialog box from which you can select global run-time prompt variables to associate with the business rule. For more information, see [“Associating Global Run-Time Prompt Variables with Business Rules” on page 46](#).
 - Select a variable, and click **Remove Global Variable Link** to remove the run-time prompt variable from the business rule.

Note: You can remove a run-time prompt variable from a business rule only if it is not used in the business rule.

9 On the Usages tab, you can see which business rule sequences use this business rule. If you are creating the business rule, the tab is empty until you begin using the rule in sequences.

- 10** On the **Doc** tab, write a summary for other users of what this business rule does. For graphical business rules, you can also view and/or print HTML documentation for the rules.

For example, you might include a note that lets users know that a business rule should be used to calculate quarterly revenues for a product line, and then aggregate them into a value for the year end.

- 11** On the **Properties** tab, enter a name, description, and owner for the business rule. If you want to prevent other users from viewing or editing the rule, select the **Locked** check box.

- 12** On the **Locations** tab, do one of the following:

- To enable users to validate and run the business rule against a *specific* database location or cluster:
 - a. Click **Add**.
 - b. In the **Associated Outline** dialog box, do one of the following:
 - Choose a particular database location. For more information on working with locations, see [“Managing Database Locations” on page 133](#).
 - Choose a particular cluster. For more information on working with clusters, see [“Managing Clusters” on page 139](#)
 - Choose **Select Outline** to access another dialog from which you can select an outline. From the **Select Database Outline** dialog box, drill down to select a database outline from Planning or Analytic Services, and click **OK**.
The server and database name is displayed in the **Locations** text box.
- To enable users to validate and run the business rule against *all* database locations and clusters, click **Allow All locations**.
- To delete one or more database locations so users cannot validate or launch the rule against them, select them from the **Locations** text box, and click **Delete**.

Note: The ability to assign access privileges is based on the locations you assign to the business rule. If you want a cluster or database location to be available when you assign access privileges, you need to select it from the Associated Outline dialog box or select Allow All Locations to ensure that all locations and clusters are available.

- 13** On the **Access Privileges** tab, if you are an administrator, you can grant and/or delete access to the business rule. If you are the owner, or you were granted modify access to the rule, you can assign users edit/no edit privileges for the business rule. For more info, see [“Adding or Editing Access Privileges for a Business Rule” on page 86](#) and [“Deleting Access Privileges for a Business Rule” on page 89](#).

- 14** Click **Save** to save the business rule. For more information on saving business rules, see [“Saving a Business Rule” on page 29](#).

Note: You must save the business rule before you can validate and/or launch it.

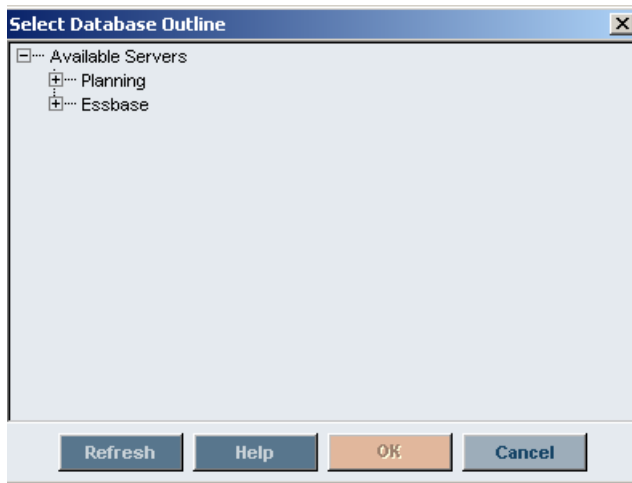
- 15** **Optional:** Validate the business rule. For more information on validating business rules, see [“Validating a Business Rule” on page 104](#).

- 16** **Optional:** Launch the business rule. For more information on launching business rules, see [“Launching a Business Rule” on page 105](#).

Selecting a Database Outline

You should select a Planning or Analytic Services database outline while you create repository objects like business rules, sequences, and projects and while you assign access privileges for these objects. Then the database outline is available for you to refer to when you are assigning locations against which users can validate and run a business rule or sequence, and when you are assigning access privileges for a business rule, sequence, or project.

- ▶ To select an outline, from the **Select Database Outline** dialog box, drill down to select a Planning or Analytic Services database outline, and click **OK**.



The name of the outline displays in the Associated outline drop-down list. You can look at the contents of the outline on the BR Outline tab.

Editing a Business Rule

You can edit the following properties of a business rule:

- The business rule syntax
- The business rule name
- The business rule description
- The documentation created for the rule
- The business rule owner
- The Locked status of the business rule
- The business rule access privileges
- The business rule launch locations

Saving a Business Rule

After you create or edit a business rule you need to save it to the repository. You need to save the business rule before you can validate or launch it.

- To save a business rule:
 - 1 After you create or edit the business rule, do one of the following:
 - a. In the **Rule Editor**, click **Save** to save the rule to the database.
 - b. In the **Enterprise View**, right-click the name of the business rule, and select **Save As** to save a copy of the business rule under a different name.

About Business Rule Sequences

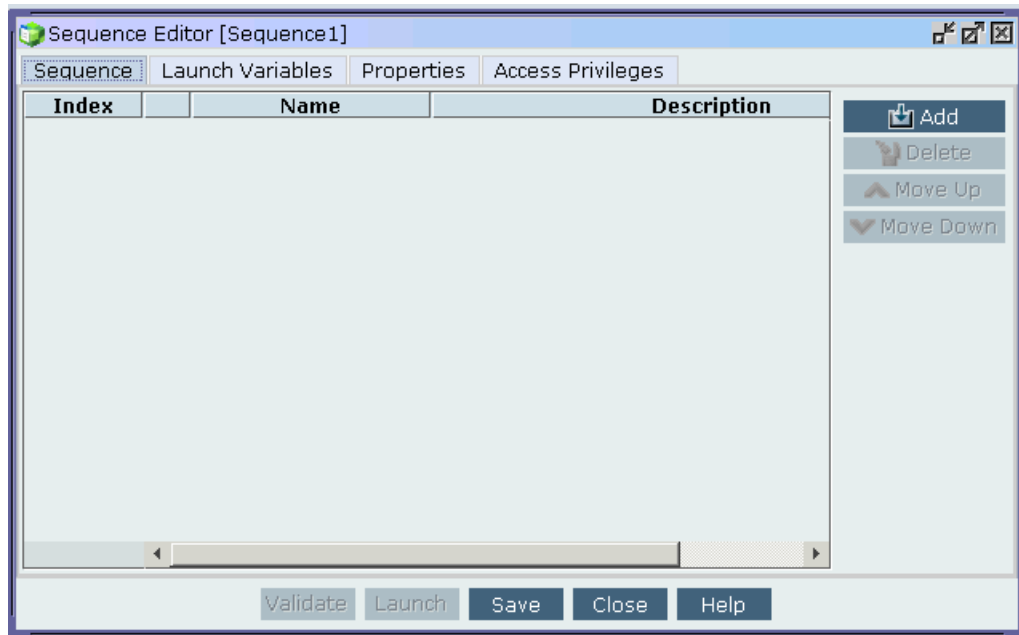
You can group multiple business rules together in a business rule sequence in order to launch multiple business rules in a particular order at one time. Graphical business rules, enhanced calc scripts, or calc scripts can be added to a sequence. Run time prompt values can be saved for each business rule in a sequence.

Note: You can add business rules and business rule sequences to an existing business rule sequence.

Creating a Business Rule Sequence

- To create a business rule sequence (or to add a business rule or business rule sequence to an existing business rule sequence):
 - 1 Launch the **Administration Console** by selecting **Start > Programs > Hyperion System 9 BI+ > Analytic Administration Services > Administration Console**.
 - 2 In the **Analytic Administration Services Login** dialog box, enter a server name and your user name and password to log on to **Analytic Administration Services**.
 - 3 In the left navigation frame of **Analytic Administration Services**, expand the **Business Rules** node. Then expand the **Repository View** node.
 - 4 Do one of the following:
 - a. If you are creating a new sequence, right-click **Sequences**, and select **New Sequence**.
 - b. If you are adding a business rule or business rule sequence to an existing sequence, expand the **Sequences** node and double-click the sequence to which you want to add a business rule or business rule sequence.

The Sequence Editor is displayed showing the Sequence tab.



5 On the **Sequence** tab, click **Add**.

The Add to Sequence dialog box is displayed. A list of the rules you can add to the new business rule sequence is displayed on the Rules tab. A list of the sequences you can add to the new business rule sequence is displayed on the Sequences tab.

6 On the **Add to Sequence** dialog box, select the check boxes next to the business rules and business rule sequences you want to add to your new business rule sequence. Then click **OK**.

The business rules and business rule sequences that you select are added to your new sequence and are displayed on the Sequence tab. The order in which the business rules and business rule sequences are displayed is the order in which they are validated and launched.

Note: You cannot create a sequence that contains business rules that are associated with both an outline from Analytic Services and an outline from Planning.

7 Optional: Use the **Move Up** and **Move Down** buttons to change the order in which the business rules and sequences are validated and launched.

8 Click **OK** to save the business rules and sequences you want to add to the sequence.

9 On the **Launch Variables** tab, select the **Merge Launch Variables** check box to display only the first instance of each launch variable in the Launch Variable Value list. If you do not select this check box, all instances of each launch variable are displayed. For example, if there are two instances of the **Execution Database Name** launch variable, and you merge launch variables, only the first instance of the **Execution Database Name** launch variable is listed; if you do not merge launch variables, both instances are listed.

Note: If you select Merge Launch Variables, the first value that the user enters for the run-time prompt is used for all subsequent occurrences of that run-time prompt during validation and launch.

- 10 Select the **Hide** check box next to any business rule or sequence that contains a variable whose value you do not want users to see when they are validating or launching the sequence. For example, if the value is used to calculate employee bonuses, you may not want users to see the value when they launch the rule or sequence.

Note: You must specify a launch value when you select Hide. If you select Merge Launch Variables, and the merged variables have different Hide settings, Hide is not selected.

- 11 In the **Execution Database Name** text box, enter or select the database against which the sequence is to be launched.
- 12 On the **Properties** tab, you can enter a name and description for the sequence, the name of the sequence owner, and specify whether or not the sequence should be locked so that other users cannot see it or edit it.
- 13 On the **Access Privileges** tab, if you are an administrator, you can grant and/or delete access to this sequence. If you are the owner, or you were granted modify access to the sequence, you can assign users edit/no edit privileges for the sequence. For more information, see [“Adding or Editing Access Privileges for a Business Rule Sequence” on page 96](#) and [“Deleting Access Privileges from a Business Rule Sequence” on page 98](#).
- 14 Click **Save** to save the new sequence.

Note: You must save the sequence before you can validate or launch it.

- 15 **Optional:** To validate the sequence, click **Validate**. For more information on validating sequences, see [“Validating a Business Rule Sequence” on page 106](#).
- 16 **Optional:** To launch the sequence, click **Launch**. For more information on launching sequences, see [“Launching a Business Rule Sequence” on page 108](#).

Editing a Business Rule Sequence

You can edit any of the following properties of a business rule sequence:

- The rules in the sequence
- The name of the sequence
- The description of the sequence
- The owner of the sequence
- The Locked status of the sequence
- The access privileges for the sequence
- The locations where the sequence can be launched

Saving a Business Rule Sequence

After you create or edit a business rule sequence, you need to save it to the repository. You must save it before you can validate or launch it.

- To save a business rule sequence:
 - 1 Launch the Administration Console by selecting **Start > Programs > Hyperion System 9 BI+ > Analytic Administration Services > Administration Console**.
 - 2 In the **Analytic Administration Services Login** dialog box, enter a server name and your user name and password to log on to Analytic Administration Services.
 - 3 In the left navigation frame of Analytic Administration Services, expand the **Business Rules** node. Then expand the **Repository View** node.
 - 4 Do one of the following:
 - a. Right-click **Sequences** and select **New Sequence** to create a new business rule sequence. For more information on creating a business rule sequence, see [“Creating a Business Rule Sequence” on page 29](#).
 - b. Expand **Sequences** and double-click the business rule sequence you want to edit. For more information on editing a business rule sequence, see [“Editing a Business Rule Sequence” on page 31](#).
 - 5 After you create or edit the business rule sequence, do one of the following:
 - a. In the **Rule Editor**, click **Save** to save the sequence to the database.
 - b. In the **Enterprise View**, right-click the name of the sequence, and select **Save As** to save a copy of the sequence with a different name.

Note: When you first click Save to save any repository object (like business rules, sequences, macros, variables, and projects), the Save As dialog box is displayed for you to enter a name and a description for the object. Duplicate names are not allowed. You can only rename an existing object if you have edit privileges for that object.

Deleting a Business Rule or Sequence from a Sequence

When you delete a business rule or business rule sequence from a business rule sequence, you delete it from the sequence only; it is not deleted from the repository or any other rules, sequences, macros, or variables.

- To delete a business rule or business rule sequence from another business rule sequence:
 - 1 Launch the Administration Console by selecting **Start > Programs > Hyperion System 9 BI+ > Analytic Administration Services > Administration Console**.
 - 2 In the **Analytic Administration Services Login** dialog box, enter a server name and your user name and password to log on to Analytic Administration Services.
 - 3 In the left navigation frame of Analytic Administration Services, expand the **Business Rules** node. Then expand the **Repository View** node.

- 4 Expand the **Sequences** node, and double-click the sequence from which you want to delete a business rule or business rule sequence.

The Sequence Editor is displayed showing the Sequence tab with a list of the business rules and sequences that are in the business rule sequence.

- 5 On the **Sequence** tab, select the rule or sequence you want to delete.

Note: You can only delete one rule or sequence at a time.

- 6 Click **Delete** to delete the business rules and sequences you selected from your business rule sequence.

- 7 Click **Save** to save the changes you made to the business rule sequence.

About Variables

Variables can assume any of a set of values that you define for them. As a designer, you use them during design-time in your business rules and macros. If you set the variable usage type to run-time prompt, at run-time, users are prompted to supply a value or values for the variable.

Variables are either *local* (apply to one business rule only) or *global* (can be applied to any business rule or macro). Business Rules provides three types of variables that you can use in your business rules:

- **Use by Value** – At design time, you can use this variable type to design your business rule so that when a use by value variable is inserted into the business rule, the variable is substituted with a value.

For example, if you have a business rule that contains a variable named [CurrMonth], with a type of Use by Value and a value of May, when you insert the variable into the rule, the value May displays in the rule.
- **Saved Selection** – At design time, this type of variable inserts the name of the variable into the rule. Then at run-time, the value specified for the variable is used. This lets you use the same variable in a rule while allowing you to change the variable value without prompting.

For example, if you have a business rule that contains a variable named [CurrMonth], with a type of Saved Selection and a value of May, when you insert the variable into the rule, [CurrMonth] appears, but when you run the rule, May is used.
- **Run-time Prompt** – At run-time, the user is asked to supply a single member, multiple members, string, number, or dimension for the variable. Run-time prompts enable you to enter variables in a business rule that resolve when a user launches the rule.

Note: When you create runtime prompt text, you can enter unlimited text. However, when you display the runtime prompt in an application, the text is truncated. The display limit varies, depending on the application that displays the runtime prompt.

For example, if you have a business rule that contains a variable named [CurrMonth], and the user supplies a variable with a value of July, at run-time, July is substituted for [CurrMonth].

Creating Global Variables

➤ To create a global variable:

- 1 Launch the Analytic Administration Services Administration Console by selecting **Start > Programs > Hyperion System 9 BI+ > Analytic Administration Services > Administration Console**.
- 2 To access Business Rules, in the left frame of the Analytic Administration Services window, expand the **Enterprise View** node, the **Business Rules** node, and the **Repository View** node.
- 3 Right-click **Global Variables**, and select **New Variable**.

In the right frame of the Analytic Administration Services window, the tabs for creating a global variable are displayed.

The screenshot shows a configuration window for a global variable. The title is "Global Variable [Variable1]". At the top, there is a dropdown menu for "Associated Outline" with the value "Select outline". Below this are four tabs: "Variable", "Usages", "Properties", and "Access Privileges". The "Variable" tab is selected and contains the following fields:

- Name: Variable1
- Description: (empty text box)
- Type: Integer (dropdown menu)
- Smart List: (checkbox, unchecked)
- Dimension: No dimension selected (dropdown menu)
- Limits: 0:0 (text box)
- Allow #Missing: (checkbox, unchecked)
- Default Value: (empty text box)
- Usage Type: Saved selection (dropdown menu)

At the bottom of the window are three buttons: "Save", "Help", and "Close".

- 4 In the **Variable** tab, enter a name and a description for the variable.
- 5 In the **Type** text box, enter one of the following to define the type of variable:
 - Member - a specific member from the dimension you select
 - Members - a range of members from the dimension you select
 - Dimension - a dimension to be used for member selection
 - String - a text string
 - Integer - an integer (This is the default selection.)
 - Real - a real number

- Percent - a percentage

6 Select the **Smart List** check box if you want to use a Smart List as the variable type. (For more information, see the *Hyperion System 9 Planning Administrator's Guide* for this release.) For example, you can set up an integer Smart List for a reporting cycle that has values 1-5, for Yearly (1), Quarterly (2), Monthly (3), Daily (4), and Hourly (5). A user can select "Monthly" and the number three is stored in the database. This prevents users from having to remember the numbers.

Note: If you do not select a Planning outline that supports the use of Smart Lists, this check box is not enabled.

7 In the **Smart List** text box, enter the name of the Smart List or use the **Lookup** button to search for a Smart List name. See "[Selecting Smart Lists](#)" on page 37.

8 In the **Dimension** text box, if you selected **Member** or **Members** in step 5, and you are creating a run-time prompt variable, select the dimension from which you want to choose a member or members for the run-time prompt to run against.

Note: If you did not select an outline from the Associated Outline drop-down list, you are not able to select a dimension from the Dimension text box, and you are not able to select members from the Value text box.

9 In the **Limits** text box, do one of the following:

- If you specified **Member** or **Members** in step 5, enter the names of the members in the text box, or use the lookup button to search for and select a range of members against which users can validate the variable. To make selecting members easier, you can use the **Member** drop-down list and the **Exclude** text box to refine your member selection by specifying a group of members (and excluding others) based on their relationship to the member you selected from the outline.
- If you specified **Real #**, **Integer**, or **Percent** in step 5, enter minimum and maximum values in the **Limits** text box.
- If you specified a Smart List as the variable type in step 6, enter limits for the Smart List or use the lookup button to select limits. The limits you select for the Smart List display as names (rather than as the numbers associated with the names) in the **Limits** text box.

Note: If you specified Dimension or String in step 5, or if you selected Saved Selection as your usage type, the Limits text box and lookup button are disabled.

10 Select the **Allow #Missing** check box to enable users to specify **#Missing** or blank as the default value for the variable.

Blank and **#Missing** mean that a cell has no data value. **#Missing** is different from zero. Zero is a data value, and **#Missing** indicates lack of a data value for the cell. **#Missing** decreases the size of the database and positively impacts system performance.

Note: This check box is enabled only when the Type is numeric (that is, integer, real, or percent).

- 11 In the **Default Value** text box, if you are creating a variable of the run-time prompt type, and if you want to provide a default value for the user, click the **Search** button, and do one of the following:
- If you selected **Member** in step 5, in the **Single Select** dialog box, select a member. If you want to use aliases for the members names, select an alias table from the **Alias Tables** drop-down list, then select the **Use Alias Names** check box. Click **OK**.
 - If you selected **Members** in step 5, in the **Multiple Select** dialog box, use the right, left, up, and down arrows to select and exclude members. To make selecting members easier, you can use the **Member** drop-down list and the **Exclude** text box to refine your member selection by specifying a group of members (and excluding others) based on their relationship to the member you selected from the outline. For more information on selecting multiple members, see [“Selecting Members” on page 44](#).
 - If you selected the **Smart List** check box, you must enter a valid default value for the Smart List in this text box.

12 In the **Usage type** text box, enter one of the following types of variables:

- **Use by Value** – At design time, you can use this variable type to design your business rule so that when a use by value variable is inserted into the business rule, the variable is substituted with a value.
- **Saved Selection** – At run-time, the value specified for the variable is used. This lets you use the same variable in a rule while allowing you to change the variable value without prompting. (This is the default selection.)
- **Run-time Prompt** – At run-time, the user is asked to supply a single member, multiple member, number, string, or dimension for the variable. Run-time prompts enable you to enter variables in a business rule that resolve when a user launches the rule.

13 In the **Prompt string** text box, if you are creating a run-time prompt, enter the text of the prompt to be displayed when the business rule is launched by a user.

For example, if you want users to receive a run-time prompt that asks them to enter a range of members from a particular dimension, you might enter the following text, “Select members from the Product dimension.”

Note: When you create runtime prompt text, you can enter unlimited text. However, when the runtime prompt is displayed in Business Rules, the text is truncated. The display limit varies, depending on the application that displays the runtime prompt.

14 If you selected run-time prompt as the usage type for the variable, select the “Do not save value entered during validation and launch as the default value” check box if you want the value that you enter in the **Default Value** text box to be used as the default value for the run-time prompt. If you do not select this check box, the last value that the user enters for the run-time prompt during validation and launch is used as the default value for the next run-time prompt.

15 On the **Usages** tab, you can see which business rules and macros use this variable. If you are creating the variable, the tab is empty until you begin using the variable in business rules and macros.

- 16 On the **Properties** tab, you can enter the name of the variable owner, specify whether or not the variable should be locked to prevent users from opening it for editing, and view other information about the variable.
- 17 On the **Access Privileges** tab, if you are an administrator, you can grant and/or delete access to this variable. If you are the owner, or you were granted modify access to the variable, you can assign users edit/no edit privileges for the variable. For more information, see [“Adding or Editing Access Privileges for a Variable” on page 90](#) and [“Deleting Access Privileges for a Variable” on page 92](#).
- 18 Click **Save** to save the new variable.

Selecting Smart Lists

To select a Smart List name as the variable type, select the name of the Smart List you want to use. You can select only one Smart List; the Smart List numbers are not selectable. When you select a Smart List name from this dialog box, the name is displayed in the Smart List text box on the Variable tab.

To select a Smart List value for the Default Value text box, select the Smart List option you want to use as the default value. When you select a Smart List option from this dialog box, only its numeric value is displayed in the Default Value text box on the Variable tab.

Note: Smart List options with a lock cannot be selected.

Creating Local Variables

A local variable is the same as a global variable, but affects only the business rule for which you create it. You can add, modify, or delete a local variable on the Local Variable tab of the rule for which it is created.

Local variables assume the access privileges of the rule with which they are associated. Local variables are only added, modified, or deleted when the rule is saved.

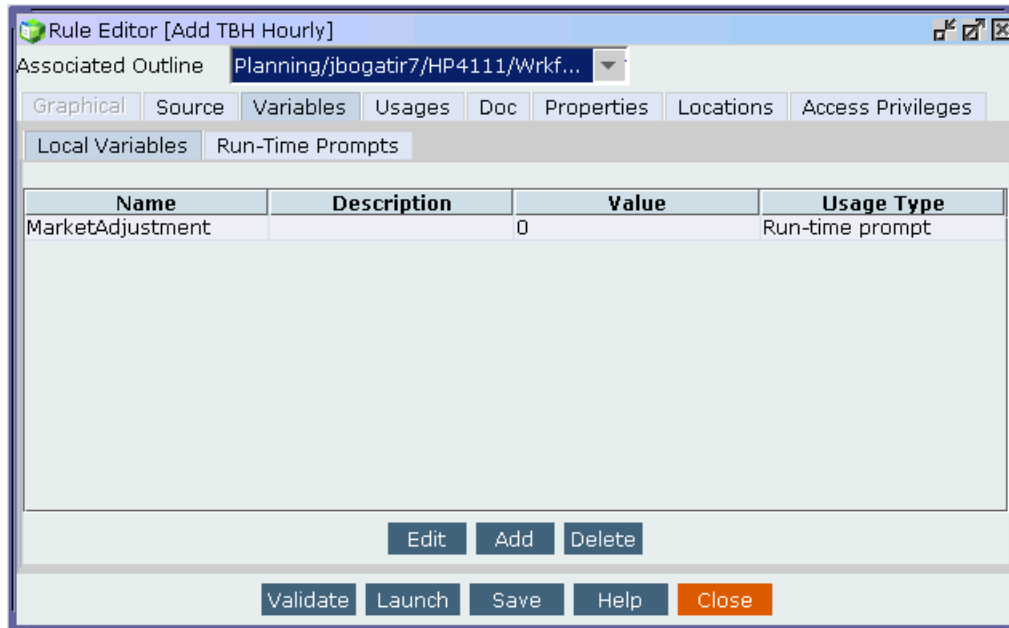
► To create a local variable:

- 1 Launch the Administration Console by selecting **Start > Programs > Hyperion System 9 BI+ > Analytic Administration Services > Administration Console**.
- 2 In the **Analytic Administration Services Login** dialog box, enter a server name and your user name and password to log on to Analytic Administration Services.
- 3 In the left navigation frame of Analytic Administration Services, expand the **Business Rules** node. Then expand the **Repository View** node.
- 4 Expand the **Rules** node, and double-click the rule to which you want to add a local variable.

The cursor is positioned on the first line of the Source tab.

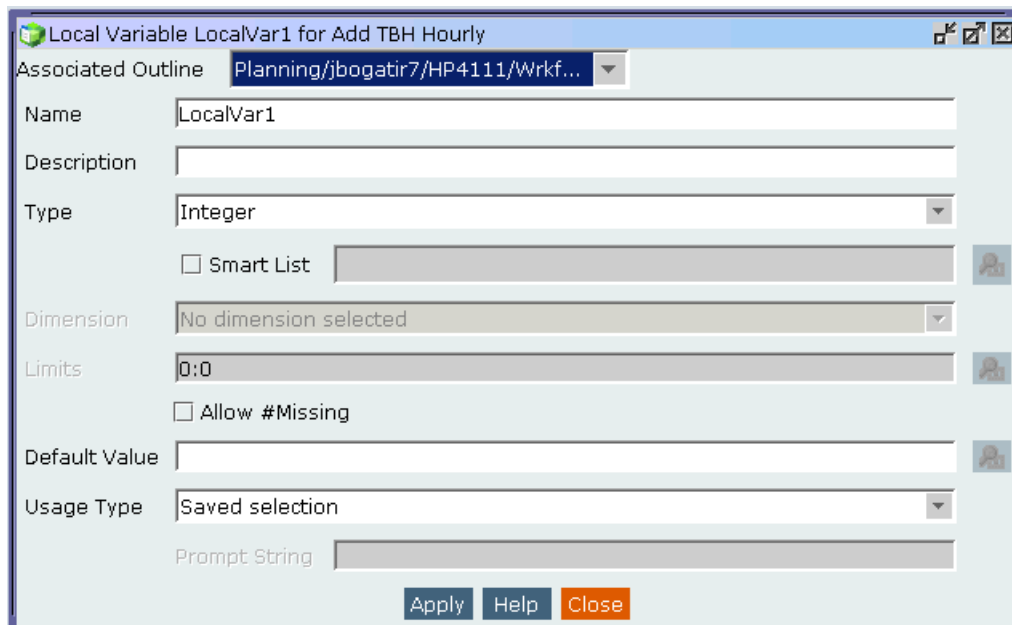
- 5 Select the **Variables** tab.

The Local Variables tab is displayed.



6 On the **Local Variables** tab, click **Add**.

The Local Variable page is displayed.



7 On the **Local Variable** page, enter a name and a description for the variable.

8 In the **Type** text box, enter one of the following to define the type of variable:

- Member - a specific member from the dimension you select
- Members - a range of members from the dimension you select
- Dimension - a dimension to be used for member selection

- String - a text string
- Integer - an integer (This is the default selection.)
- Real - a real number
- Percent - a percentage

9 Select the **Smart List** check box if you want to use a Smart List as the variable type. (For more information, see the *Hyperion System 9 Planning Administrator's Guide* for this release.) For example, you can set up an integer Smart List for a reporting cycle that has values 1-5, for Yearly (1), Quarterly (2), Monthly (3), Daily (4), and Hourly (5). A user can select "Monthly" and the number three is stored in the database. This prevents users from having to remember the numbers.

Note: If you do not select a Planning outline that supports the use of Smart Lists, this check box is not enabled.

10 In the **Smart List** text box, enter the name of the Smart List or use the **Lookup** button to search for a Smart List name. See ["Selecting Smart Lists" on page 37](#).

11 In the **Dimension** text box, if you selected **Member, Members, or Dimension** in step 8, and you are creating a run-time prompt variable, select the dimension from which you want to choose a member or members for the run-time prompt to run against.

Note: If you did not select an outline from the Associated Outline drop-down list, you are not able to select a dimension from the Dimension text box, and you are not able to select members from the Value text box.

12 In the **Limits** text box, do one of the following:

- If you specified **Member** or **Members** in step 8, enter the names of the members in the **Limits** text box, or use the lookup button to search for and select a range of members against which users can validate the variable. To make selecting members easier, you can use the **Member** drop-down list and the **Exclude** text box to refine your member selection by specifying a group of members (and excluding others) based on their relationship to the member you selected from the outline. If you want to use aliases for the members names, select an alias table from the **Alias Tables** drop-down list, then select the **Use Alias Names** check box.
- If you specified **Real #, Integer, or Percent** in step 8, enter minimum and maximum values in the **Limits** text box.
- If you specified a Smart List as the variable type in step 9, enter limits for the Smart List or use the lookup button to select limits. The limits you select for the Smart List display as names (rather than as the numbers associated with the names) in the **Limits** text box.

Note: If you specified Dimension or String in step 8, or if you selected Saved Selection as your usage type, the Limits text box and lookup button are disabled.

13 Select the **Allow #Missing** check box to enable users to specify #Missing or blank as the default value for the variable.

Blank and #Missing mean that a cell has no data value. #Missing is different from zero. Zero is a data value, and #Missing indicates lack of a data value for the cell. #Missing decreases the size of the database and positively impacts system performance.

Note: This check box is enabled only when the Type is numeric (that is, integer, real, or percent).

14 In the **Default Value** text box, if you are creating a variable of the run-time prompt type, and if you want to provide a default value for the user, click the **Search** button, and do one of the following:

- If you selected **Member** in step 8, in the **Single Select** dialog box, select a member. If you want to use aliases for the members names, select an alias table from the **Alias Tables** drop-down list, then select the **Use Alias Names** check box. Click **OK**.
- If you selected **Members** in step 8, in the **Multiple Select** dialog box, use the right, left, up, and down arrows to select and exclude members. To make selecting members easier, you can use the **Member** drop-down list and the **Exclude** text box to refine your member selection by specifying a group of members (and excluding others) based on their relationship to the member you selected from the outline. For more information on selecting multiple members, see [“Selecting Members” on page 44](#).
- If you selected the **Smart List** check box, you must enter a valid default value for the Smart List in this text box.

15 In the **Usage type** text box, enter one of the following types of variables:

- **Use by Value** – At design time, you can use this variable type to design your business rule so that when a use by value variable is inserted into the business rule, the variable is substituted with a value.
- **Saved Selection** – At run-time, the value specified for the variable is used. This lets you use the same variable in a rule while allowing you to change the variable value without prompting. (This is the default selection.)
- **Run-time Prompt** – At run-time, the user is asked to supply a single member, multiple member, number, string, or dimension for the variable. Run-time prompts enable you to enter variables in a business rule that resolve when a user launches the rule.

16 In the **Prompt string** text box, if you are creating a run-time prompt, enter the text of the prompt to be displayed when the business rule is launched by a user.

For example, if you want users to receive a run-time prompt that asks them to enter a range of members from a particular dimension, you might enter the following text, “Select members from the Product dimension.”

Note: When you create runtime prompt text, you can enter unlimited text. However, when the runtime prompt is displayed in Business Rules, the text is truncated. The display limit varies, depending on the application that displays the runtime prompt.

- 17 If you selected run-time prompt as the usage type for the variable, select the “Do not save value entered during validation and launch as the default value” check box if you want the value that you enter in the **Default Value** text box to be used as the default value for the run-time prompt. If you do not select this check box, the last value that the user enters for the run-time prompt during validation and launch is used as the default value for the next run-time prompt.
- 18 On the **Properties** tab, you can enter the name of the variable owner, specify whether or not the variable should be locked so that other users cannot see it or edit it, and view other information about the variable.
- 19 Click **Apply** to save the local variable.

Editing Local Variables

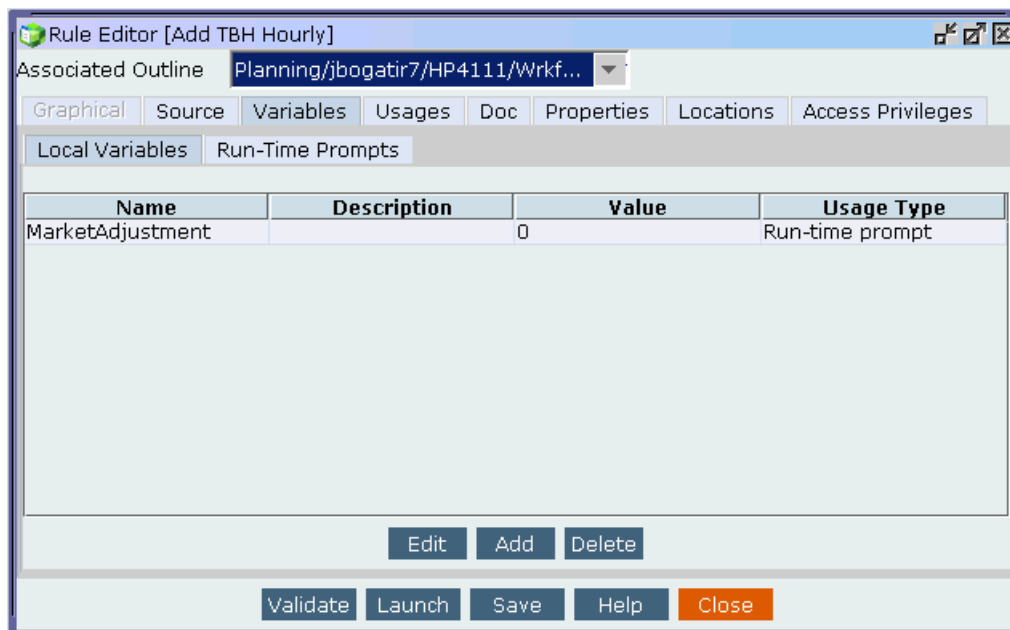
► To edit a local variable:

- 1 Launch the Administration Console by selecting **Start > Programs > Hyperion System 9 BI+ > Analytic Administration Services > Administration Console**.
- 2 In the **Analytic Administration Services Login** dialog box, enter a server name and your user name and password to log on to Analytic Administration Services.
- 3 In the left navigation frame of Analytic Administration Services, expand the **Business Rules** node. Then expand the **Repository View** node.
- 4 Expand the **Rules** node, and double-click the rule that contains the local variable you want to edit.

The cursor is positioned on the first line of the Source tab.

- 5 Select the **Variables** tab.

The Local Variables tab is displayed. This tab contains all of the local variables available for editing.



- 6 To edit a local variable, select the variable, and click **Edit**.

The Local Variable page is displayed.

Local Variable MarketAdjustment for Add TBH Hourly

Associated Outline Planning/jbogatir7/HP4111/Wrkf...

Name MarketAdjustment

Description

Type Real

Smart List

Dimension No dimension selected

Limits 0:0

Allow #Missing

Default Value 0

Usage Type Run-time prompt

Prompt String LABEL_MARKET_ADJUSTMENT

Apply Help Close

- 7 On the **Local Variable** page, enter a name and a description for the variable.
- 8 In the **Type** text box, enter one of the following to define the type of variable:
- Member - a specific member from the dimension you select
 - Members - a range of members from the dimension you select
 - Dimension - a dimension to be used for member selection
 - String - a text string
 - Integer - an integer (This is the default selection.)
 - Real - a real number
 - Percent - a percentage
- 9 Select the **Smart List** check box if you want to use a Smart List as the variable type. (For more information, see the *Hyperion System 9 Planning Administrator's Guide* for this release.) For example, you can set up an integer Smart List for a reporting cycle that has values 1-5, for Yearly (1), Quarterly (2), Monthly (3), Daily (4), and Hourly (5). A user can select "Monthly" and the number three is stored in the database. This prevents users from having to remember the numbers.

Note: If you do not select a Planning outline that supports the use of Smart Lists, this check box is not enabled.

- 10 In the **Smart List** text box, enter the name of the Smart List or use the **Lookup** button to search for a Smart List name. See ["Selecting Smart Lists" on page 37](#).

- 11** In the **Dimension** text box, if you selected **Member**, **Members**, or **Dimension** in step 8, and you are creating a run-time prompt variable, select the dimension from which you want to choose a member or members for the run-time prompt to run against.

Note: If you did not select an outline from the Associated Outline drop-down list, you are not able to select a dimension from the Dimension text box, and you are not able to select members from the Value text box.

- 12** In the **Limits** text box, do one of the following:

- If you specified **Member** or **Members** in step 8, enter the names of the members in the text box, or use the lookup button to search for and select a range of members against which users can validate the variable. To make selecting members easier, you can use the **Member** drop-down list and the **Exclude** text box to refine your member selection by specifying a group of members (and excluding others) based on their relationship to the member you selected from the outline.
- If you specified **Real #**, **Integer**, or **Percent** in step 8, enter minimum and maximum values in the **Limits** text box.
- If you specified a Smart List as the variable type in step 9, enter limits for the Smart List or use the lookup button to select limits. The limits you select for the Smart List display as names (rather than as the numbers associated with the names) in the **Limits** text box.

Note: If you specified Dimension or String in step 8, or if you selected Saved Selection as your usage type, the Limits text box and lookup button are disabled.

- 13** Select the **Allow #Missing** check box to enable users to specify **#Missing** or blank as the default value for the variable.

Blank and **#Missing** mean that a cell has no data value. **#Missing** is different from zero. Zero is a data value, and **#Missing** indicates lack of a data value for the cell. **#Missing** decreases the size of the database and positively impacts system performance.

Note: This check box is enabled only when the Type is numeric (that is, integer, real, or percent).

- 14** In the **Default Value** text box, if you are creating a variable of the run-time prompt type, and if you want to provide a default value for the user, click the **Search** button, and do one of the following:

- If you selected **Member** in step 8, in the **Single Select** dialog box, select a member. If you want to use aliases for the members names, select an alias table from the **Alias Tables** drop-down list, then select the **Use Alias Names** check box. Click **OK**.
- If you selected **Members** in step 8, in the **Multiple Select** dialog box, use the right, left, up, and down arrows to select and exclude members. To make selecting members easier, you can use the **Member** drop-down list and the **Exclude** text box to refine your member selection by specifying a group of members (and excluding others) based on their relationship to the member you selected from the outline. For more information on selecting multiple members, see [“Selecting Members” on page 44](#).

- If you selected the **Smart List** check box, you must enter a valid default value for the Smart List in this text box.
- 15** In the **Usage type** text box, enter one of the following types of variables:
- **Use by Value** – At design time, you can use this variable type to design your business rule so that when a use by value variable is inserted into the business rule, the variable is substituted with a value.
 - **Saved Selection** – At run-time, the value specified for the variable is used. This lets you use the same variable in a rule while allowing you to change the variable value without prompting. (This is the default selection.)
 - **Run-time Prompt** – At run-time, the user is asked to supply a single member, multiple members, a number, a string, or a dimension for the prompt. Run-time prompts enable you to enter variables in a business rule that resolve when a user launches the rule.
- 16** In the **Prompt string** text box, if you are creating a run-time prompt, enter the text of the prompt to be displayed when the business rule is launched by a user.

For example, if you want users to receive a run-time prompt that asks them to enter a range of members from a particular dimension, you might enter the following text, “Select members from the Demo database.”

Note: When you create runtime prompt text, you can enter unlimited text. However, when the runtime prompt is displayed in Business Rules, the text is truncated. The display limit varies, depending on the application that displays the runtime prompt.

- 17** If you selected run-time prompt as the usage type for the variable, select the “Do not save value entered during validation and launch as the default value” check box if you want the value that you enter in the **Default Value** text box to be used as the default value for the run-time prompt. If you do not select this check box, the last value that the user enters for the run-time prompt during validation and launch is used as the default value for the next run-time prompt.
- 18** On the **Properties** tab, you can enter the name of the variable owner, specify whether or not the variable should be locked so that other users cannot see it or edit it, and view other information about the variable.
- 19** Click **Apply** to save the changes you made to the local variable.

Selecting Members

When you create run-time prompt variables, you can use Multiple Member Selection to provide users with a range of members from which they can choose a member or members at run-time. Limiting the members that users can select for a run-time prompt variable ensures that users choose valid members against which to validate or launch the business rule or sequence.

When you add actions and formulas to graphical business rules, you can also use Multiple Member Selection to select members that define the business rule range, the formula range, and the destination for copied values.

► To select multiple members:

- 1 In the **Multiple Select** dialog box, select a member you want to include from the database outline.
- 2 Use the drop-down list below the arrow keys to select additional members based on their relationship to the member you selected in step 1. This prevents you from having to select each of the members individually.

For example, assume you selected Year as your dimension and want to include Qtr1 and its child members in the selection. To do this, you select Qtr1 from the outline and Descendents (inc) from the drop-down list.

- 3 Use the right arrow key to move all of the members you selected to the **Selected** list in the right side of the dialog box.
- 4 **Optional:** Select the same or a different member from the outline, then use the drop-down list and the **Excluded** text box to exclude members based on their relationship to the member you select.

For example, assume you want to exclude Qtr2 and its child members from the selection. To do this, you select Qtr2 from the outline and Descendents (inc) from the drop-down list. Then you use the down arrow key to move Qtr2 and its child members to the Excluded list.

- 5 If you want to use aliases for the members names, select an alias table from the **Alias Tables** drop-down list, then select the **Use Alias Names** check box.
- 6 If you are selecting members for graphical business rules, there is a **Local Variables** and a **Global Variables** tab from which you can select variables. To select variables, repeat steps 1-4 above for the Local and the Global Variables tab.
- 7 Click **OK** after you move the members you want to include to the **Selected** list, and move any members you do not want to include to the **Excluded** list.

Deleting Local Variables

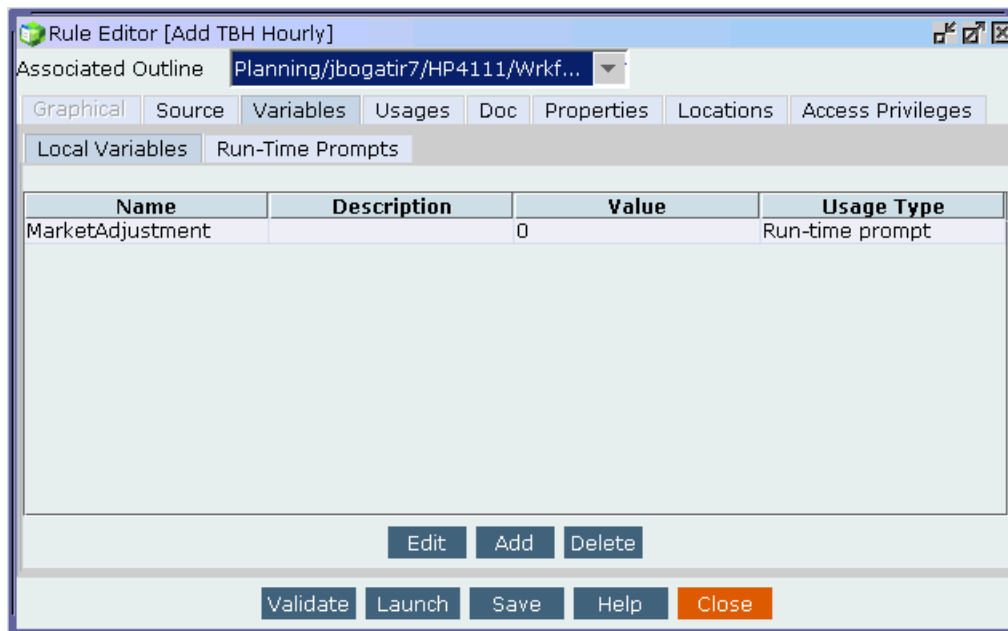
► To delete a local variable:

- 1 Launch the Administration Console by selecting **Start > Programs > Hyperion System 9 BI+ > Analytic Administration Services > Administration Console**.
- 2 In the **Analytic Administration Services Login** dialog box, enter a server name and your user name and password to log on to Analytic Administration Services.
- 3 In the left navigation frame of Analytic Administration Services, expand the **Business Rules** node. Then expand the **Repository View** node.
- 4 Expand the **Rules** node, and double-click the rule that contains the local variable you want to delete.

The cursor is positioned on the first line of the Source tab.

- 5 Select the **Variables** tab.

The Local Variables tab is displayed. This tab contains all of the local variables that you can delete.



- 6 To delete a local variable, select the variable, and click **Delete**.

Inserting Variables

You can insert variables (either local or global) into a business rule or macro as you are creating the business rule or macro on the Source tab.

- To insert a variable into a business rule or macro:

- 1 Right-click in the **Source** tab where you want to insert a variable.

The Variables dialog box is displayed. It contains a list of all local and global variables.

- 2 In the **Variables** dialog box, select either a global or a local variable.

- 3 Click **OK** to insert the variable into the business rule or macro.

The variable is inserted on the Source tab to the right of the cursor.

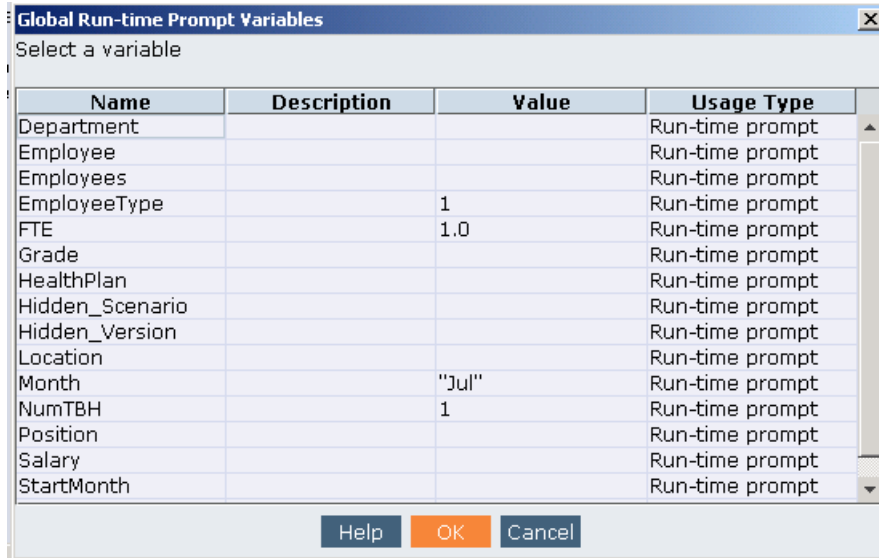
Note: You can also use variables in graphical business rules to define the business rule range, source, or destination. In addition, you can select a variable to use during single or multiple member selection.

Associating Global Run-Time Prompt Variables with Business Rules

You can use the Global Run-Time Prompt Variables dialog box to select one or more global run-time prompts to associate with a business rule. This enables users to see the global run-time prompts when they validate or launch the rule, though the run-time prompt may or may not be used in the business rule.

Note: You can associate only *global* run-time prompt variables with a business rule.

- To associate global run-time prompt variables with a business rule, in the Global Run-Time Prompt Variables dialog box, select the run-time prompts you want to associate with the business rule. Use Shift + click to select multiple continuous run-time prompts; use Ctrl + click to select multiple non-continuous run-time prompts. Then click OK.



About Macros

A macro is a reusable part of a business rule that can be referenced by other business rules and macros to save you time when you are writing business rules and sequences. Macros are global so you can reference them in any business rule or another macro. Macros can contain variables and other macros, but they cannot contain themselves.

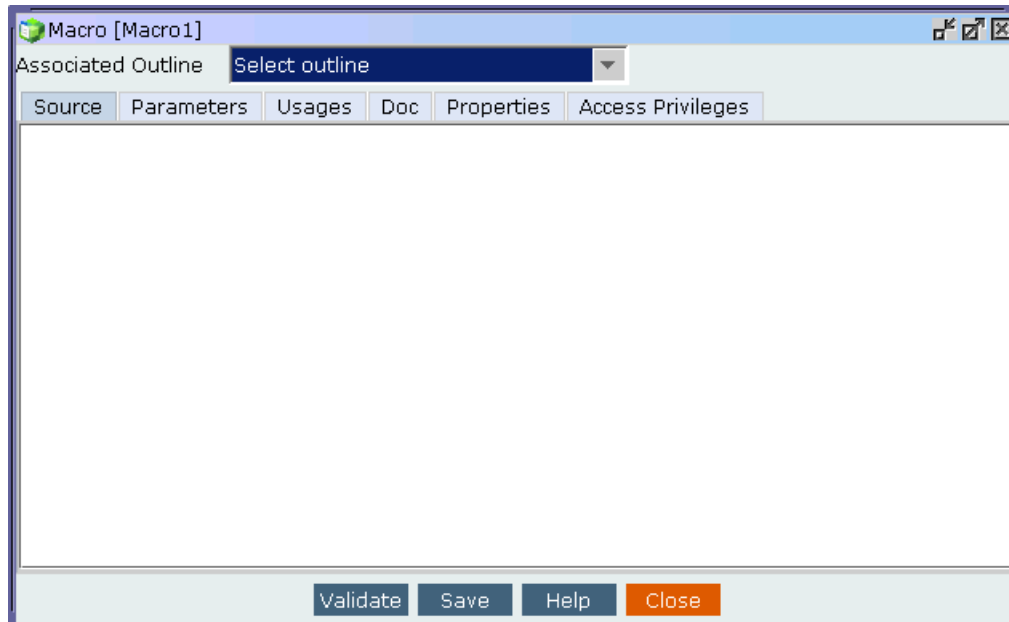
For example, you might want to create an initialization block macro for the beginning of your business rule that you name %stdinit instead of `set updatecalc On;` or `set aggmisg Off;`.

Creating Macros

- To create a macro:
 - 1 Launch the Administration Console by selecting **Start > Programs > Hyperion System 9 BI+ > Analytic Administration Services > Administration Console**.
 - 2 In the **Analytic Administration Services Login** dialog box enter a server name and your user name and password to log on to Analytic Administration Services.

- 3 In the left navigation frame of Analytic Administration Services, expand the **Business Rules** node. Then expand the **Repository View** node.
- 4 Right-click the **Macros** node and select **New Macro**.

The cursor is positioned on the first line of the Source tab.



- 5 On the **Source** tab, write the macro. You can insert global variables, other macros, and parameters into the macro by right clicking anywhere inside the **Source** tab. You can also insert functions and commands.
 - For more information on creating global variables, see [“Creating Global Variables” on page 34](#).
 - For more information on creating macros, see [“Creating Macros” on page 47](#).
 - For more information on inserting parameters, see [“Inserting Parameters into Macros” on page 49](#).
 - For more information on inserting Analytic Services commands, see [“Using Analytic Services Calculation Commands” on page 50](#).
 - For more information on inserting Analytic Services functions, see [“Inserting Functions with the Function Editor” on page 52](#).
- 6 On the **Parameters** tab, you can view a list of the parameters that are being used in the macro and enter definitions for them.

Note: No parameters are listed on this tab unless you insert them into the macro on the Source tab.

- 7 On the **Usages** tab, you can see which business rules and other macros are using this macro. If you are creating the macro, the tab is empty until you begin using the macro in business rules and other macros.
- 8 On the **Doc** tab, you can enter a description of the macro for other users.

- 9 On the **Properties** tab, you can enter the name of the macro owner, specify whether or not the macro should be locked so that other users cannot see it or edit it, and view other information about the macro.
- 10 On the **Access Privileges** tab, if you are an administrator, you can grant and/or delete access to this macro. If you are the owner, or you were granted modify access to the macro, you can assign users edit/no edit privileges for the macro. For more information, see [“Adding or Editing Access Privileges for a Macro” on page 93](#) and [“Deleting Access Privileges for a Macro” on page 95](#).
- 11 Click **Save** to save the new macro.
- 12 **Optional:** Validate the macro after selecting the associated outline.

Inserting Macros

You can insert a macro into a business rule or another macro as you are creating the business rule or macro.

- To insert a macro into a business rule or another macro:

- 1 Right-click in the **Source** tab where you want to insert a macro.

The Insert Macro dialog box is displayed. It contains a list of all macros that you can insert.

- 2 In the **Insert Macro** dialog box, select a macro to insert.
- 3 Click **OK** to insert the macro into the business rule or macro.

The macro is inserted on the Source tab to the right of the cursor.

Inserting Parameters into Macros

You can insert a parameter into a macro as you are creating it. Parameters provide you with flexibility when you are designing macros that users need to insert into rules. You give the parameter a name that instructs users what to substitute for it when the user is adding the macro to a business rule.

- To insert a parameter into a macro:

- 1 Right-click in the **Source** tab where you want to insert a parameter.

The Macro Parameters dialog box is displayed. It contains a list of all of the parameters that you can insert into the macro.

- 2 In the **Macro Parameters** dialog box, select the parameter you want to insert into the macro.
- 3 Click **OK** to insert the parameter into the macro.

The parameter is inserted on the Source tab to the right of the cursor.

Editing Macros

You can edit the following properties of a macro:

- The syntax of the macro
- The macro name
- The macro description
- The documentation for the macro
- The macro owner
- The Locked status of the macro
- The access privileges for the macro

About Analytic Services Calculation Commands

You can use calculation commands within business rules and macros to specify how the data in the database should be calculated when the business rule or business rule sequence is launched.

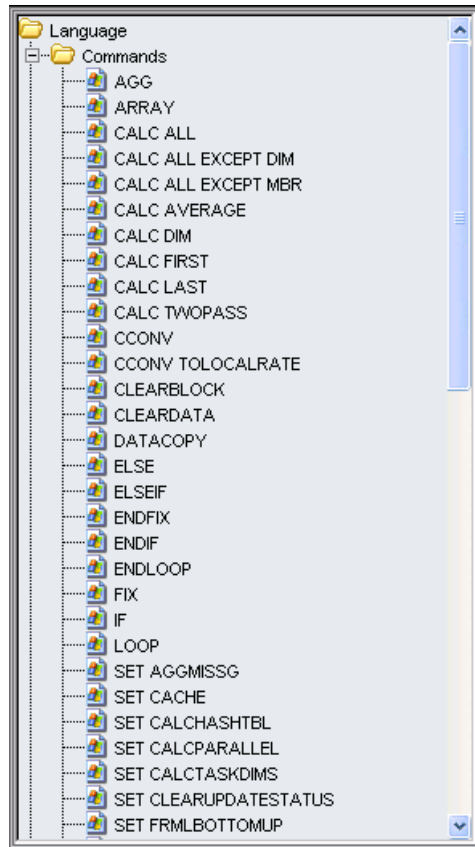
Business rules and macros can contain one or a series of calculation commands. The order of the commands defines the execution order of the calculation.

For a complete list of the calculation commands you can use in business rules, business rule sequences, macros and variables, see the *Hyperion System 9 Analytic Services Technical Reference Guide*.

Using Analytic Services Calculation Commands

- To use a calculation command in a business rule, business rule sequence, macro, or variable:
 - 1 Launch the Administration Console by selecting **Start > Programs > Hyperion System 9 BI+ > Analytic Administration Services > Administration Console**.
 - 2 In the **Analytic Administration Services Login** dialog box, enter a server name and your user name and password to log on to Analytic Administration Services.
 - 3 In the left navigation frame of Analytic Administration Services, expand the **Business Rules** node and the **Repository View** node.
 - 4 Do one of the following:
 - Create a new business rule or macro. For more information, see the following topics:
 - [“Creating a Business Rule” on page 24](#)
 - [“Creating Macros” on page 47](#)
 - Open an existing business rule or macro by double-clicking it.
 - 5 In the lower left area of the window, select the **BR Language** tab.
 - 6 Under the **Language** folder, expand the **Commands** folder.

A list of the calculation commands you can use displays. For more information on the specific commands, see the “Calculation Commands” chapter of the *Hyperion System 9 Analytic Services Technical Reference Guide*.



- 7 To insert a command into a business rule, business rule sequence, macro, or variable, simply drag and drop the command onto the **Source** tab.

The command is inserted to the right of the cursor on the Source tab.

About Analytic Services Functions

Functions are predefined routines that perform specialized calculations and return sets of members or data values. The following list describes the types of functions you can use to help you design business rules, business rule sequences, macros, and variables. For a complete list of the specific functions you can use, see the *Hyperion System 9 Analytic Services Technical Reference Guide*.

- **Boolean functions** – Provide a conditional test by returning either a TRUE (1) or FALSE (0) value. For example, you can use the @ISMBR function to determine whether the current member is one that you specify.
- **Mathematical functions** – Perform specialized mathematical calculations. For example, you can use the @AVG function to return the average value of a list of members.
- **Relationship functions** – Look up data values within a database during a calculation. For example, you can use the @ANCESTVAL function to return the ancestor values of a specified member combination.

- **Range functions** – Declare a range of members as an argument to another function or command. For example, you can use the @SUMRANGE function to return the sum of all members that lie within a specified range.
- **Financial functions** – Perform specialized financial calculations. For example, you can use the @INTEREST function to calculate simple interest or the @PTD function to calculate period-to-date values.
- **Member Set functions** --Generate a list of members that is based on a specified member. For example, you can use the @ICHILDREN function to return a specified member and its children.
- **Allocation functions** – Allocate values that are input at a parent level across child members. You can allocate values within the same dimension or across multiple dimensions. For example, you can use the @ALLOCATE function to allocate sales values that are input at a parent level to the parent's children; each child's allocation is determined by its share of the previous year's sales.
- **Forecasting functions** – Manipulate data for the purposes of smoothing or interpolating data, or calculating future values. For example, you can use the @TREND function to calculate future values that are based on curve-fitting to historical values.
- **Statistical functions** – Calculate advanced statistics. For example, you can use the @RANK function to calculate the rank of a specified member or a specified value in a data set.
- **Date and Time functions** -- Use date and time characteristics in calculation formulas. For example, you can use the @TODATE function to convert date strings to numbers that can be used in calculation formulas.
- **Miscellaneous functions** – Provide two different kinds of functionality:
 - You can specify calculation modes that Analytic Services should use to calculate a formula: cell, block, bottom-up, and top-down
 - You can manipulate character strings for member and dimension names; for example, to generate member names by adding a character prefix to a name or removing a suffix from a name, or by passing the name as a string.
- **Custom-Defined functions** – Enable you to perform functions that you develop for your calculation operations. These custom-developed functions are written in the Java programming language and are called by the Analytic Services calculator framework as external functions.

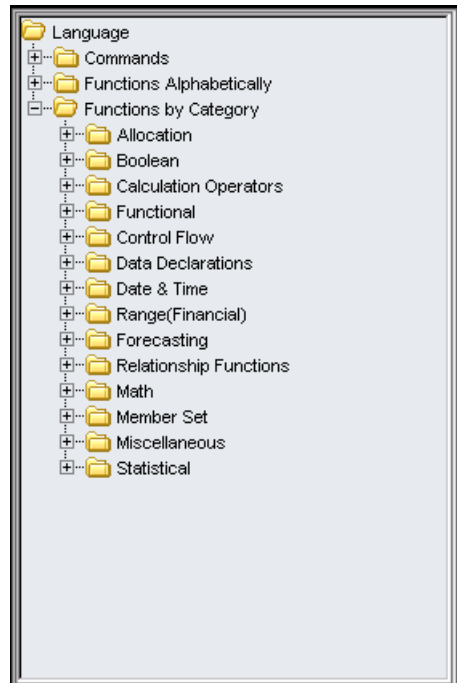
Inserting Functions with the Function Editor

You can use the Function Editor to insert Analytic Services functions into your business rules, sequences, variables, and macros. For more information on specific Analytic Services functions, see the *Hyperion System 9 Analytic Services Technical Reference Guide*.

- To insert a function with the Function Editor:
 - 1 If it is not open already, open the business rule or macro into which you want to insert a function.

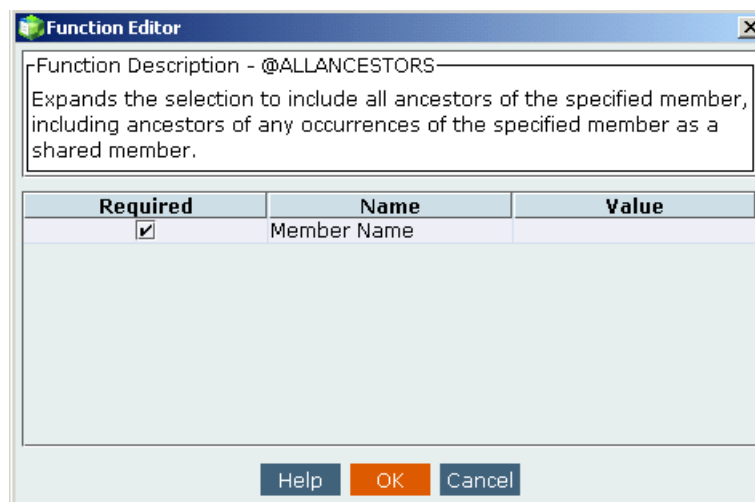
- 2 In the lower left area of the Analytic Administration Services Administration Console, select the **BR Language tab**.
- 3 Under the **Language** folder, expand the **Functions Alphabetically** or **Functions by Category** folder.

A list of the functions you can use to help you design your business rule, business rule sequence, macro, or variable is displayed. For more information on the specific functions, see the *Hyperion System 9 Analytic Services Technical Reference Guide*.



- 4 To insert a function, drag and drop the function onto the **Source** tab.

The Function Editor is displayed. It contains the name of the function, its description, and whether it is required. It also contains any arguments whose values you must enter.



- 5 In the **Value** text box, enter values for all of the required arguments that are listed.
- 6 Click **OK**.

About Adding Actions to Graphical Business Rules

You can choose from four possible actions to include in a *graphical* business rule: Aggregate Data, Copy Data, Clear Data, and Create Blocks.

- **Aggregate Data**—Use to calculate your database by specifying which dimensions to calculate and what calculation options you want to use during the aggregation.
- **Copy Data**—Use to copy data from one part of your database to another. You select the source data to copy and then specify the target or destination value.
- **Clear Data**—Use to define a subset of data that will be cleared from the database before a new value is added. You can choose either to clear cells or to clear blocks of data.
- **Create Blocks**—Use to specify a data slice to ensure that blocks are created for all sparse member combinations in that slice.

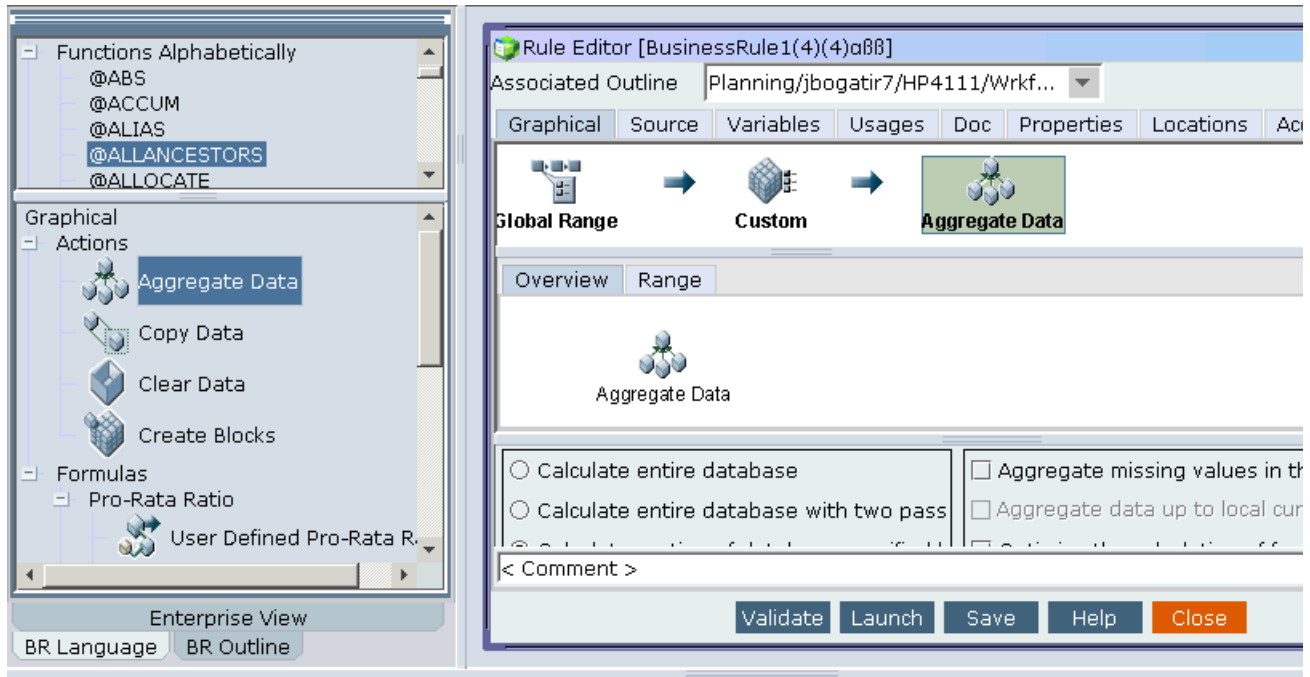
These actions, and the procedures for using them in graphical business rules, are described in the following topics.

Adding an Aggregate Data Action

You may want to update the data in the database outline to make sure that it is accurate. You can use the Aggregate Data action to update the data before and/or after a calculation is performed.

- ▶ To add an Aggregate Data action to your business rule:
 - 1 If it is not open, open the graphical business rule to which you want to add an Aggregate Data action.
 - 2 If the **BR Language** tab is not selected, select it in the bottom of the left frame of the Analytic Administration Services window.
 - 3 Expand the **Actions** folder and double-click the **Aggregate Data** action, or drag it to the desired location in the business rule on the **Graphical** tab.

The Aggregate Data action is added to the business rule and the Overview tab is displayed.



4 On the Overview tab, choose one of the following three calculation options:


- **Calculate Entire Database (CALC ALL)**—Calculates and aggregates the entire database based on the database outline.
- **Calculate Entire Database with Two Pass Calculation (CALC TWOPASS)**—Calculates all members tagged in the database outline as Two Pass Calc. These members must be in a dimension tagged as Accounts.
- **Calculate Portion of Database Specified Below** (default selection)—Calculates only the portion of the database outline specified in the table. The **Calculate Portion of Database Specified Below** option is the default selection that you can use to change or select the dimensions you want to calculate.

For additional information on these calculation options, see the *Hyperion System 9 Analytic Services Technical Reference Guide*.

5 If you selected Calculate Portion of Database Specified Below in step 4, for each dimension in the list that you want to calculate, select the value type using the Value Type drop-down list.

Value Type	Description
Not Specified	The default for every dimension
User Defined	Members defined by the user through Member Selection
Derived	The union of values defined in the destinations before the aggregation component and the values defined in the sources after the aggregation
All	All members to be included in this dimension's aggregation

Note: If all dimensions are <Not Specified>, no aggregation is performed. If at least one dimension has members selected, an aggregation is performed for the member values of any dimensions that have selections, and for all member values of the remaining dimensions.

- 6 If you selected the **User Defined** value type in the previous step, the **Member Selection** button, , is available. Enter a member value to be aggregated or select the values to be aggregated using the Member Selection button. If you selected the Derived value type, values are created dynamically from the union of values in the Formula, Copy, and Clear destinations in previous components and the Formula and Copy sources in later components. Any additions or changes to the other components are automatically updated in the aggregate component. For additional information on calculation commands, refer to the *Hyperion System 9 Analytic Services Technical Reference Guide*.
- 7 Select one of the following methods of calculating your database:
 - **Aggregate Missing Values in the Database (SET AGGMISSG)**—Specifies whether #MISSING values are aggregated in the database. If you select it, the component aggregates missing values. The default is determined by the database setting defined by the administrator. For additional information, see SET AGGMISSG in the *Hyperion System 9 Analytic Services Technical Reference Guide*.
 - **Aggregate Data up to Local Currency (SET UPTOLOCAL)**—Restricts aggregations to those parents with the same defined currency. The setting is only valid if the Analytic Services currency conversion module is installed and the database is associated to a currency database. This option is not selectable if none is detected. For example, all cities in France use the franc (FF) as the unit of currency. Therefore, all children of France, such as the cities Paris, Nancy, and Avignon, consolidate to France. Aggregation stops at this level, however, as Europe also contains countries that use other currencies. The option is set to Off by default if there is a currency dimension. For additional information, see SET UPTOLOCAL in the *Hyperion System 9 Analytic Services Technical Reference Guide*.
 - **Optimize the Calculation of Formulas on Sparse Dimensions (SET FRMLBOTTOMUP)**—Optimizes the calculation of formulas on sparse dimensions in large database outlines by turning on the bottom-up sparse formula calculation method. The default is Off or not selected as a calculation option. If you set it to On, you can use CALC DIM and CALC ALL commands to calculate large, flat dimensions of the database more efficiently. For more information, see SET FRMLBOTTOMUP in the *Hyperion System 9 Analytic Services Technical Reference Guide*.
 - **Use Calculator Cache (SET CACHE)**—Specifies the size of the calculator cache. The database uses the calculator cache to create and track data blocks during calculation. Using the calculator cache can significantly improve your calculation performance. The size of the performance improvement depends on the configuration of your database. The default is Not Selected which does not add a Set Cache command to the business rule. If you set it to On, there are five options: All, Default, High, Low, and Off. The size of the calculator cache at the levels is defined in the CALCCACHE {HIGH | DEFAULT | LOW} settings in the ESSBASE.CFG file. For more information, see SET CACHE in the *Hyperion System 9 Analytic Services Technical Reference Guide*.

- 8 **Optional:** On the **Range** tab, restrict the aggregation to a range of members and variables in one or more dimensions. For each dimension, enter a range of members and variables in the **Selected Values** text box, or double-click the magnifying glass button to select a range of members and variables. For more information on selecting members, see [“Selecting Members” on page 44](#).
- 9 Click **Save** to save your changes.

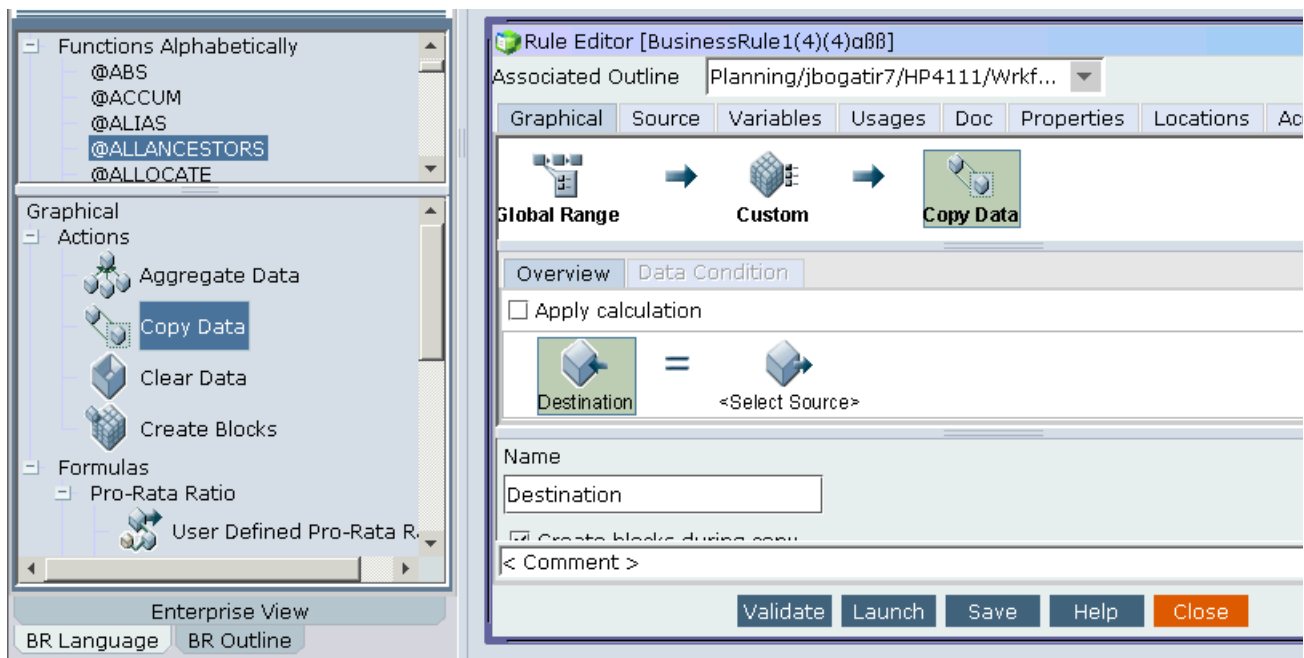
Adding a Copy Data Action

You can use the Copy Data action to copy data from one part of the database to another in the same database. Then you can calculate the data using addition, subtraction, multiplication, or division of a numeric value or a member. For additional information on this action, see the *Hyperion Analytic Services Technical Reference Guide*.

For example, in order to allocate your budget, you may want to initialize your data by last year’s actuals. To build your budget, you initialize it by copying last year’s actuals and increasing the budget by 30 percent, the growth rate of the company.

- To add a Copy Data action to your business rule:
 - 1 If it is not open, open the graphical business rule to which you want to add an Aggregate Data action.
 - 2 If the **BR Language** tab is not selected, select it in the bottom of the left frame of the Analytic Administration Services window.
 - 3 Expand the **Actions** folder and double-click the **Copy Data** action, or drag it to the desired location in the business rule on the **Graphical** tab.

The Copy Data action is added to the business rule and the Overview tab is displayed.



- 4 On the **Overview** tab, for the **Destination**, enter a name in the **Name** text box. (The default name is “Destination.”)
- 5 To create blocks of data during copy, select the **Create Blocks During Copy** check box.

Note: If you do not select the **Create Blocks During Copy** check box, a message informs you that no new destination blocks will be created during the data copy. If members are included in the source definition that do not exist in blocks, no values will be copied from those members. When the **Create Blocks During Copy** check box is not selected, you can also specify conditions under which the copy should take place using the **Data Condition** tab. See [“Specifying a Data Condition in a Formula” on page 72](#).

- 6 Either enter values in the **Selected Values** text box for each available dimension or use the **Member Selection** button to select members and variables as the target destinations for the copied data. For more information on selecting members, see [“Selecting Members” on page 44](#).
- 7 Select the **Select Source** icon. For each dimension in the list that you want to include, either enter the source value to copy in the **Selected Values** text box, or click the **Member Selection** button to select members and variables as the source values to be copied.

Note: If the source and destination are always the same, you can make the selection for destination and the source is automatically inherited from the destination.

- 8 To apply a calculation to the copied portion of the database, select the **Apply Calculation** check box.
An operator and number component is added to the formula.

- 9 To choose an operator other than the plus sign (the default), select the plus sign in the formula, then select one of the following operators from the **Select Operator** drop-down list: addition (+), subtraction (-), multiplication (x), or division (/). (You can also select the plus sign and use a right mouse click to select another operator.)

- 10 Enter the calculation to apply by doing one of the following:

- Select the 123 icon in the formula and enter a number in the **Specify Number** text box. Or click the **Member Selection** button next to the **Specify Number** text box to select a numeric variable. (For example, you may want to enter a numeric run-time prompt to allow the user to dynamically select the calculation to apply at run-time.)
- Right-click the 123 icon in the formula and select **Change to Typical Source**. Enter a name for the source in the **Name** text box. Then either enter values in the **Selected Values** text box for each available dimension or use the **Member Selection** button to select members and variables as the target destinations for the copied data.

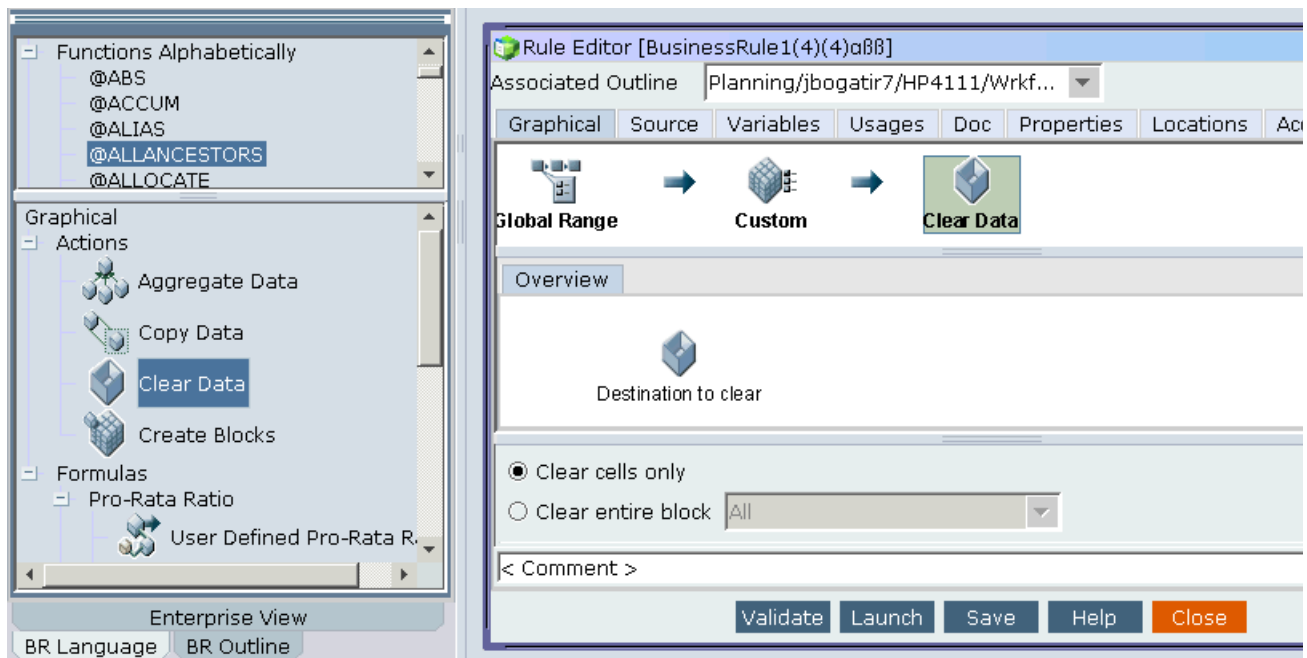
- 11 Click **Save** to save your changes.

Adding a Clear Data Action

You can use the Clear Data action to clear data from a specific portion of a database. This ensures that the destination is cleared before applying the next action or formula (or the *components* of a business rule). You can place the Clear Data action at any point in the business rule. For additional information on this action, see the *Hyperion Analytic Services Technical Reference Guide*.

- To add a Clear Data action to your business rule:
 - 1 If it is not open, open the graphical business rule to which you want to add a Clear Data action.
 - 2 If the **BR Language** tab is not selected, select it in the bottom of the left frame of the Analytic Administration Services window.
 - 3 Expand the **Actions** folder and double-click the **Clear Data** action, or drag it to the desired location in the business rule on the **Graphical** tab.

The Clear Data action is added to the business rule and the Overview tab is displayed.



- 4 On the **Overview** tab, specify whether you want to clear cells only or clear data blocks.
 - **Clear Cells Only**—Clears data cells from the database and sets them to #MISSING. For additional information, see the CLEARDATA command in the *Hyperion System 9 Analytic Services Technical Reference Guide*.
 - **Clear Entire Block**—Clears blocks of data and sets them to #MISSING. For additional information, see the CLEARBLOCK command in the *Hyperion System 9 Analytic Services Technical Reference Guide*. You can choose one of the following:
 - All (clears all data blocks)

- Dynamic Calc & Store (clear blocks containing values derived from Dynamic Calc and Store member combinations)
 - Non-Input Blocks (clears blocks containing values derived from calculations)
 - Upper Level Blocks (clears all consolidated level blocks)
- 5 For each dimension in the list that you want to include, select the values to be cleared by entering values in the **Selected Values** text box or by clicking the **Member Selection** button to select members and variables. For more information on selecting members, see [“Selecting Members” on page 44](#).

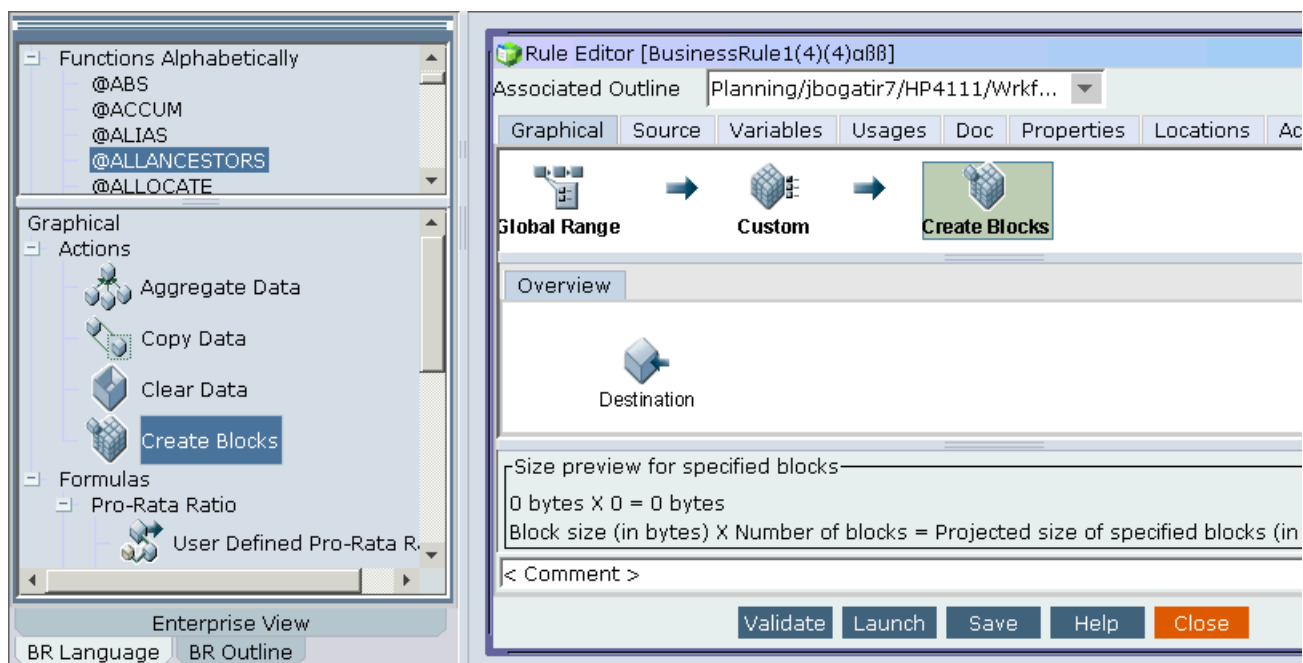
Values are cleared for the intersection of all specified dimensions for all values of the dimensions left <Not Specified>.

Adding a Create Blocks Action

You can use the Create Blocks action to make sure that blocks are created in the database for sparse member combinations in a specified slice of data. Since there is a potential for a large increase in the database size when creating blocks, be careful when adding this action to your business rule. To help you get an idea of the size, the system displays a calculation of the block size and maximum possible blocks that would exist for the specified data slice after the business rule is launched. Since some blocks may already exist in the database, this calculation does not represent the exact amount of the increase. For additional information on this action, see the *Hyperion System 9 Analytic Services Technical Reference Guide*.

- To add a Create Blocks component to your business rule:
 - 1 If it is not open, open the graphical business rule to which you want to add a Create Blocks action.
 - 2 If the **BR Language** tab is not selected, select it in the bottom of the left frame of the Analytic Administration Services window.
 - 3 Expand the **Actions** folder and double-click the **Create Blocks** action, or drag it to the desired location in the business rule on the **Graphical** tab.

The Create Blocks action is added to the business rule and the Overview tab is displayed.



- 4 For each dimension in the list that you want to include, enter a value in the Selected Values text box or click the magnifying glass icon to select the members and variables. (Only sparse dimensions are available for selection.) For more information on member selection, see [“Selecting Members” on page 44](#).

Note: You cannot use Create Blocks with Dynamic Calc or Label Only members.

- 5 Click **Update** to calculate the potential increase in database size.

If you make a change to any of the member values to be included, repeat this procedure to view the change in database storage size.

About Adding Formulas to Graphical Business Rules

A formula is a mathematical expression that performs a calculation. To make creating a business rule easier, Business Rules provides four different formulas that you can insert into your business rules:

- [“Adding a Pro-Rata Ratio Formula to a Graphical Business Rule” on page 73](#)
- [“Adding a Units-Rates Formula to a Graphical Business Rule” on page 77](#)
- [“Adding a Variable Formula to a Graphical Business Rule” on page 78](#)
- [“Adding a Custom Formula to a Graphical Business Rule” on page 79](#)

These formulas are the most common types of calculations you need your business rules to perform. All formulas provide you with a custom toolbar to enable you to customize any formula to suit your particular needs.

The common steps in defining formulas are:

1. Specify the destination and sources for the calculation.
2. Specify the formula range.
3. Specify any data condition under which the formula is calculated.

Each formula has the following three tabs:

- **Formula tab**—Use the Formula tab to enter destination and source details for each part of a formula. Each formula contains a destination and at least one source. You can add additional sources, calculation functions, number operands, operators, and parentheses using the custom toolbar.
- **Formula Range tab**—Use the Formula Range tab to define the range of members, functions, and/or run-time prompts common to this formula. The range tab more narrowly defines the business rule range.
- **Data Condition tab**—Use the Data Condition tab to specify certain data criteria that must be met before a calculation is performed.

Adding a Formula to a Graphical Business Rule

► To add a formula to your business rule:

- 1 If it is not open, open the graphical business rule to which you want to add a formula.
- 2 If the **BR Language tab** is not selected, select it in the bottom of the left frame of the Analytic Administration Services window.
- 3 Expand the **Formulas** folder. Select the type of formula to add, and double-click the formula or drag it to the desired location in the business rule on the **Graphical** tab.
 - For information on adding a pro-rata ration formula, see [“Adding a Pro-Rata Ratio Formula to a Graphical Business Rule”](#) on page 73.
 - For information on adding a pro-rata ration formula, see [“Adding a Units-Rates Formula to a Graphical Business Rule”](#) on page 77.
 - For information on adding a pro-rata ration formula, see [“Adding a Variable Formula to a Graphical Business Rule”](#) on page 78.
 - For information on adding a pro-rata ration formula, see [“Adding a Custom Formula to a Graphical Business Rule”](#) on page 79.

The Overview tab for the formula you selected is displayed.

- 4 Define the formula details by using the **Formula**, **Formula Range**, and **Data Condition** tabs. For more information, see the following topics:
 - [“Specifying a Source in a Formula”](#) on page 64
 - [“Specifying a Range in a Formula”](#) on page 65
 - [“Using the Custom Toolbar”](#) on page 67
 - [“Specifying a Data Condition in a Formula”](#) on page 72

Specifying a Destination in a Formula

The destination values defined in a formula represent the portion of the database that stores the calculated values. Any dimension values you specify in the business rule range or the formula range are already locked in for the destination and display in italics.

The name of the destination is “Destination” by default. To help document and maintain the business rule, change the default name to a description of what the formula calculates.

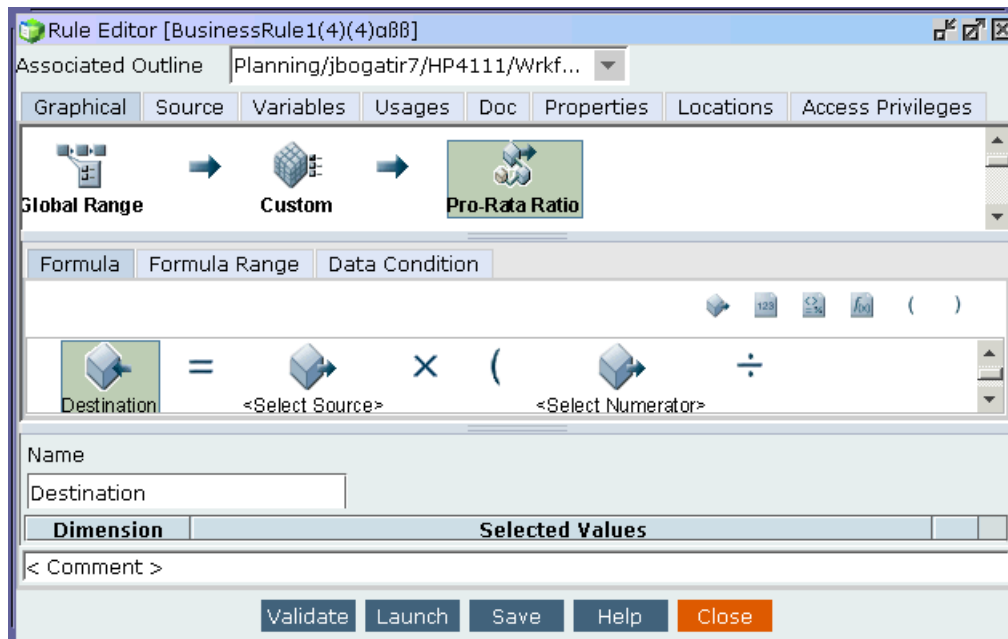
► To define a destination:

- 1 If it is not open, open the graphical business rule to which you want to add a formula.
- 2 If the **BR Language** tab is not selected, select it in the bottom of the left frame of the Analytic Administration Services window.
- 3 Expand the **Formulas** folder. Select the type of formula to add, and double-click the formula or drag it to the desired location in the business rule on the **Graphical** tab.

The Formula tab is displayed.

- 4 On the **Formula** tab, select the **Destination** icon.

The Destination icon is highlighted on the tab.



- 5 In the Name text box, enter a name for the destination.
- 6 For each available dimension in the list, do one of the following tasks:
 - Click the **Member Selection** button (magnifying glass) to the right of the **Selected Values** text box for the appropriate dimension. Use Multiple Member Selection to select members and/or variables to define the destination.
 - Select the **Selected Values** text box and enter a value next to the appropriate dimension.

- Leave the value **<All>** to use all members of a dimension.

Note: Member expressions in italics are inherited from the business rule range or the formula range. These values can only be changed or deleted for the business rule range or the formula range. For more information, see the discussion of a business rule range in “Creating a Business Rule” on page 24 or a formula range in “Specifying a Range in a Formula” on page 65.

Specifying a Source in a Formula

The source values defined in a formula represent the portion of the database referenced in the calculation. You can use the Add Source toolbar button to add another source or specify a source that is part of an existing formula.

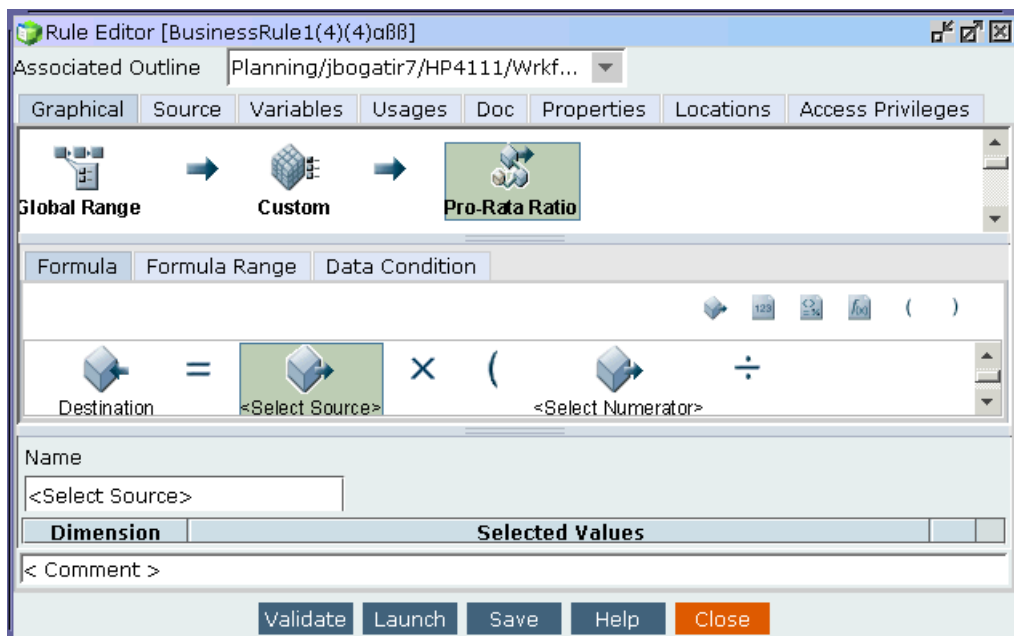
Source values default to members, expressions, or run-time prompts specified in the business rule range, formula range, and destination. The inherited/default values can be overridden by a single member, function, or member run-time prompt.

- To define a source in a formula:
 - 1 If it is not open, open the graphical business rule to which you want to add a formula.
 - 2 If the **BR Language** tab is not selected, select it in the bottom of the left frame of the Analytic Administration Services window.
 - 3 Expand the **Formulas** folder. Select the type of formula to add, and double-click the formula or drag it to the desired location in the business rule on the **Graphical** tab.

The Formula tab is displayed.

- 4 On the **Formula** tab, select the **Select Source** icon.

The Select Source icon is highlighted.



5 In the **Name** text box, enter a name describing the source.

6 For each available dimension in the list, do one of the following tasks:

- Click the **Member Selection** button (magnifying glass) to the right of the **Selected Values** text box for the appropriate dimension. Use Single Member Selection to select members and/or variables to define the source. If you select a member, specify whether to use alias tables by selecting an alias table and if so whether to use alias names for the members.
- Double-click on the value in the **Selected Values** text box and enter the value next to the appropriate dimension.
- Leave the value **<All>** to use all members of a dimension.

Note: Member expressions in italics are inherited from the business rule range or the formula range. These values can only be changed or deleted for the business rule range or the formula range. For more information, see [“Specifying a Range in a Formula” on page 65](#).

7 Right-click the **Source** icon in the Custom Toolbar, and select one of the following sources:

- For a **Typical** source, select the dimensions to be used in the calculation. (This is the default selection.)
- For a **Percent to Total** source, select the dimension to be used in the denominator of the calculation.
- For a **Percent to Parent** source, select the dimension and generation or level to be used in the denominator of the calculation.
- For a **Percent to Member** source, select the dimension and specific member to be used in the denominator of the calculation.
- For an **Evenly Split by Selected Members** source, select the dimension and specific members to be used in the calculation. Then select whether you want to divide the parent by the total number or selected members or number of selected members with data.
- For an **Evenly Split by Children** source, select the dimension to be used in the calculation. Then select to divide the parent value by the total number of children or number of children with data.
- You can use a **remote source** (XREF) to reference data in a remote cube.

8 Click **Save** to save the changes you made on the **Formula** tab.

Specifying a Range in a Formula

You can specify a formula range to define the portion of the database that is the same for the current formula. The formula range is processed in conjunction with the business rule range and displays the values defined in the business rule range as the default in italics. You can redefine values inherited from the business rule range in the formula range to more narrowly define the portion of the database for this formula.

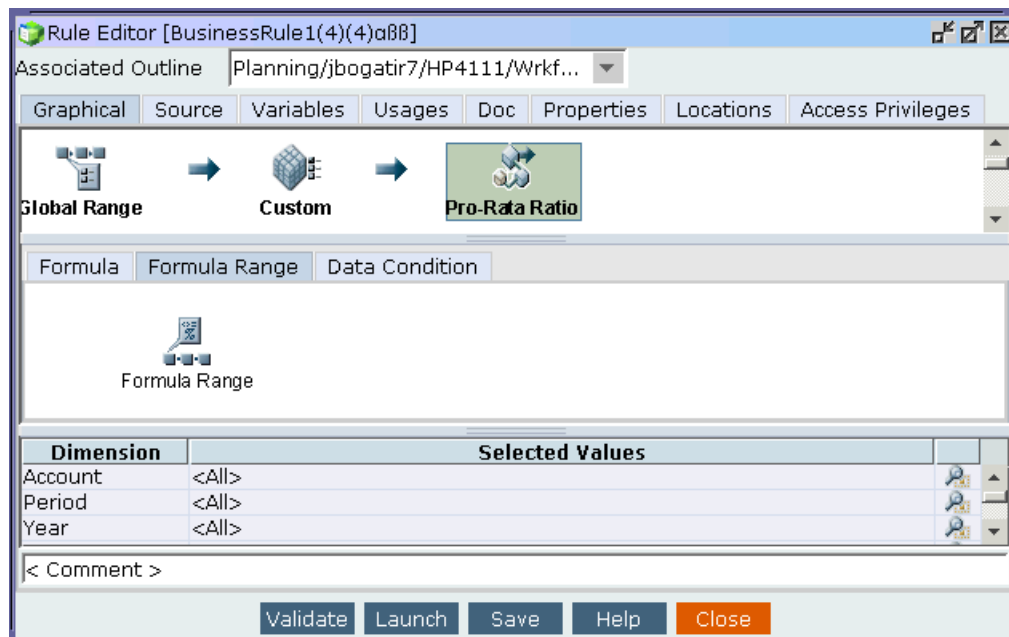
Note: If you define a formula range that is outside the scope of the business rule range, no members meet both criteria so the formula does not calculate.

➤ To specify a formula range:

- 1 If it is not open, open the graphical business rule for which you want to specify a formula range.
- 2 If the **BR Language tab** is not selected, select it in the bottom of the left frame of the Analytic Administration Services window.
- 3 Expand the **Formulas** folder. Select the type of formula to add, and double-click the formula or drag it to the desired location in the business rule on the **Graphical** tab.

The Formula tab is displayed.

- 4 If you did not select a source for the formula on the **Formula** tab, select a source. For more information, see [“Specifying a Source in a Formula”](#) on page 64.
- 5 Select the **Formula Range** tab, and do one of the following:
 - For each available dimension in the list, select **<ALL>** or the default value in the **Selected Values** text box and enter a member name.
 - Click the **Member Selection** button (magnifying glass) to the right of the **Selected Values** text box for the appropriate dimension. Use Member Selection to select members and variables to define the formula range.



- 6 Click **Save** to save the changes you made on the **Formula Range** tab.

Using the Custom Toolbar







Use the Custom Toolbar on the Formula tab or the Data Condition tab to help build and customize a formula. You can use the Custom Toolbar to add a source, a number operand, an operator, a calculation function, or parentheses to the formula or data conditions. Existing operands, operators, or parentheses can be deleted from the formula or data condition by right-clicking on the component and pressing the Delete button on your keyboard.

Figure 1 Custom Toolbar



Table 3 describes the buttons on the toolbar:

Table 3 Custom Toolbar Buttons

Item	Description
	Source
	Number
	Operator
	Function
	Left Parenthesis
	Right Parenthesis

The following topics describe how to use the buttons on the Custom Toolbar.

Adding a Source to a Formula

- To add a source, see [“Specifying a Source in a Formula”](#) on page 64.

Adding a Number Operand to a Formula

You can use the number operand in a formula to represent a number value or number run-time prompt. Number operands are part of some formulas by default. You can add number operands to any formula by using the custom toolbar.

- To define a number operand in a formula:
 - 1 If it is not open, open the graphical business rule to which you want to add an operand.
 - 2 If the **BR Language tab** is not selected, select it in the bottom of the left frame of the Analytic Administration Services window.
 - 3 Expand the **Formulas** folder. Select the type of formula to add, and double-click the formula or drag it to the desired location in the business rule on the **Graphical** tab.

The Formula tab is displayed.
 - 4 On the Formula tab, double-click the **Number** toolbar button on the Custom Toolbar.

The Number operand is inserted to the right of the last component in the formula.
 - 5 In the **Specify Number** text box, enter a value for the number operand. Or if you want to enter a numeric local or global variable, click the **Member Selection** button to search for one.
 - 6 Click **Save** to save the changes you made.

Adding an Operator to a Formula

- To add an operator to a formula:
 - 1 If it is not open, open the graphical business rule to which you want to add an operand.
 - 2 If the **BR Language tab** is not selected, select it in the bottom of the left frame of the Analytic Administration Services window.
 - 3 Expand the **Formulas** folder. Select the type of formula to add, and double-click the formula or drag it to the desired location in the business rule on the **Graphical** tab.

The Formula tab is displayed.
 - 4 On the Formula tab, double-click the **Operator** toolbar button in the Custom Toolbar.

A plus sign is inserted to the right of the last component in the formula. (The plus sign is the default operator.)
 - 5 In the **Select Operator** drop-down list, select another operator if you do not want to use the plus sign.

The following table describes the available operators for formulas and data conditions.

Type	Available Operators
Formulas	Addition (+) Subtraction (-) Multiplication (x) Division (/)
Data Condition	Addition (+) Subtraction (-) Multiplication (x) Division (/) Equal to (=) Greater than (>) Greater than or equal to (>=) Less than (<) Less than or equal to (<=) Boolean AND, OR, and NOT

Adding a Function to a Formula

You can add a function source to a formula using the Add Function toolbar button. The following types of functions are supported: Financial (Range) functions, Statistical functions, Math functions using Expression, Functions using ExpList, Functions using Variance, and Attribute Functions. For more information on these functions, see the *Hyperion System 9 Analytic Services Database Administrator's Guide* and the following topics:

- [“Relationship Functions” on page 70](#)
- [“Range and Financial Functions” on page 70](#)
- [“Mathematical Functions” on page 71](#)
- [“Statistical Functions” on page 71](#)

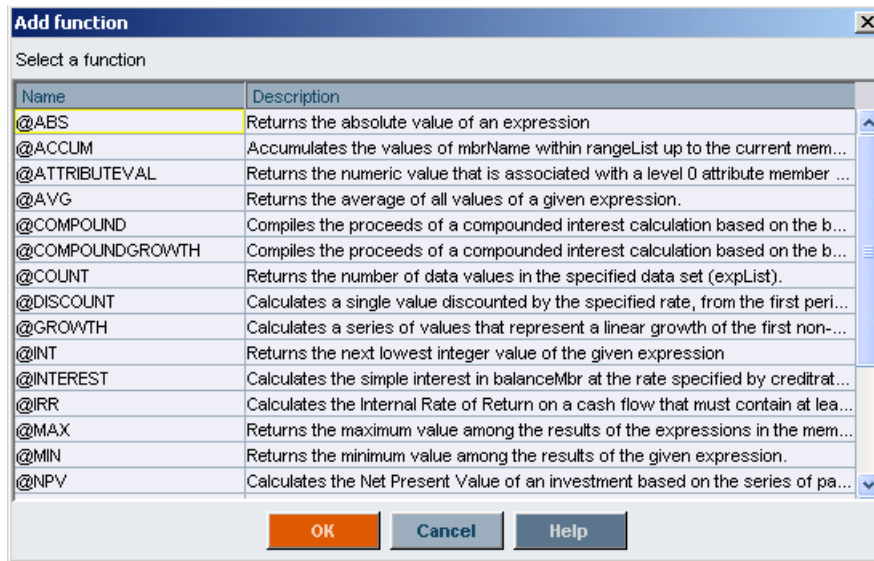
➤ To add a function to a formula:

- 1 If it is not open, open the graphical business rule to which you want to add a function.
- 2 If the **BR Language** tab is not selected, select it in the bottom of the left frame of the Analytic Administration Services window.
- 3 Expand the **Formulas** folder. Select the type of formula to add, and double-click the formula or drag it to the desired location in the business rule on the **Graphical** tab.

The Formula tab is displayed.

- 4 On the Formula tab, double-click the **Function** toolbar button on the Custom Toolbar.

The Add Function dialog box is displayed.



5 Select the function you want to add.

The list of available functions depends on what version of Analytic Services you are using. For a brief overview of each function, see the following sections:

- [“Relationship Functions” on page 70](#)
- [“Range and Financial Functions” on page 70](#)
- [“Mathematical Functions” on page 71](#)
- [“Statistical Functions” on page 71](#)

For a more detailed description of each function, see the *Hyperion System 9 Analytic Services Technical Reference Guide*.

6 Click OK to add the function.

The function is inserted to the right of the last component in the formula.

Note: The following functions cannot be used together with any other source type in the formula without receiving an error: @NPV, @ACCUM, @COMPOUND, @COMPOUNDGROWTH, @DISCOUNT, @INTEREST, @IRR, @SLN. For example, the function source should be the only block to the right of the equal sign. These financial functions never return a value. They calculate a series of values internally based on the range specified.

Relationship Functions

@ATTRIBUTEVAL(attDimName)—Returns the numeric value that is associated with a level 0 attribute member from the specific numeric, Boolean, or date attribute dimension, for the current member being calculated.

Range and Financial Functions

@ACCUM—Accumulates values across a time period. For example, calculate year-to-date values, or accumulated depreciation.

@COMPOUND—Calculates the proceeds of a compounded interest calculation based on the balances of a specified member at a specified rate across a specified range.

@COMPOUNDGROWTH—Models compound growth.

@DISCOUNT—Financial discounting as applied to calculating present value (PV).

@GROWTH—Models linear growth of a value.

@INTEREST—Calculates simple interest.

@IRR—Calculates the Internal Rate of Return of an investment.

@NPV—Calculates the Net Present Value.

@SLN—Calculates the amount per period that an asset in the current period may be depreciated, calculated across a range of periods.

Mathematical Functions

@ABS(expression)—Returns the absolute value of the expression.

@AVG(SKIP*,expList)—Returns the average of all the values of expList. SKIPNONE includes all cells specified in the average operations regardless of content. SKIPMISSING excludes all values that are #MISSING in the average operation. SKIPZERO excludes values of zero from the average calculation. SKIPBOTH excludes all values of zero or #MISSING from the average calculation.

@INT(expression)—Returns the next lowest integer value of the expression.

@MIN(expList)—Returns the minimum value with the results of the expressions in expList.

@MAX(expList)—Returns the maximum value with the results of the expressions in the member list.

@ROUND(expression)—Rounds the expression to an integer value.

@SUM(expList)—Returns the summation of all the values in expList.

@TRUNCATE(expression)—Removes the fractional part of the expression, returning the integer.

@VAR(mbrname1, mbrname2)—Calculates the variance (difference) between two members.

@VARPER(mbrname1, mbrname2)—Calculates the percent variance (difference) between two members.

Statistical Functions

@COUNT—Counts a member selection in a formula. For example, the headcount of the admin department may be calculated as a multiple of the number of other non-admin departments.

@RANK—Runs a calculation for those meeting a certain rank. For example, those departments that are in the top ten most profitable departments.

Inserting a Parenthesis in a Formula

- To insert a parenthesis:
 - 1 If it is not open, open the graphical business rule to which you want to add a parenthesis.
 - 2 If the **BR Language tab** is not selected, select it in the bottom of the left frame of the Analytic Administration Services window.
 - 3 Expand the **Formulas** folder. Select the type of formula to add, and double-click the formula or drag it to the desired location in the business rule on the **Graphical** tab.

The Formula tab is displayed.
 - 4 On the **Formula** tab, double-click the left or right parenthesis toolbar button on the Custom Toolbar.

The parenthesis is inserted to the right of the last component in the formula.

Specifying a Data Condition in a Formula

Use the Data Condition tab in a formula or the Copy Data action to define criteria for performing a calculation of the formula. If the condition or criteria you specify are met, the formula or Copy Data action calculates successfully. If the conditions are not met, the calculation is not performed.

Note: Data conditions are performed against data values only. Do not include user defined attributes or member names in the expression.

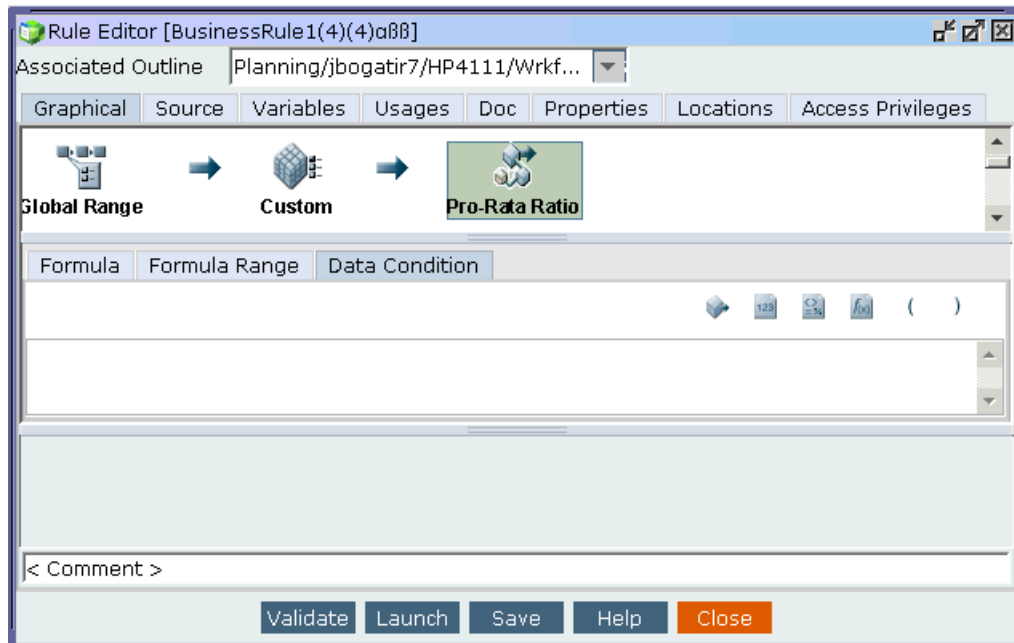
You can use the Custom Toolbar on the Data Condition tab to build expressions to use as the data condition. The Custom Toolbar contains the following buttons: Source, Number, Operator, Function, Left Parenthesis, and Right Parenthesis. To build an expression to use as a data condition you follow the same process as building a custom formula and filling in the formula details.

You can use any of the following operators to define a data condition: addition, subtraction, multiplication, division, less than, greater than, equal to, less than or equal to, greater than or equal to, and Boolean AND, OR, and NOT.

- To specify a data condition:
 - 1 If it is not open, open the graphical business rule for which you want to specify a data condition.
 - 2 If the **BR Language tab** is not selected, select it in the bottom of the left frame of the Analytic Administration Services window.
 - 3 Expand the **Formulas** folder. Select the type of formula to add, and double-click the formula or drag it to the desired location in the business rule on the **Graphical** tab.

The Formula tab is displayed.
 - 4 If you did not select a source for the formula on the **Formula** tab, select a source. For more information, see [“Specifying a Source in a Formula” on page 64](#).

- 5 If you did not specify a range for the formula on the Formula Range tab, specify a formula range. For more information, see [“Specifying a Range in a Formula” on page 65](#).
- 6 Select the **Data Condition** tab and enter any criteria that must be met for the formula to be calculated.



- 7 Build an expression using the Custom Toolbar.

You can add a source, number, operator, function, or parentheses. For additional information, see [“Using the Custom Toolbar” on page 67](#).

Adding a Pro-Rata Ratio Formula to a Graphical Business Rule

Use a Pro-Rata Ratio formula to calculate data based on results of a ratio of values. There are four types of Pro-Rata Ratio formulas to choose from:

- User Defined
- Percent to Total
- Percent to Parent
- Percent to Member

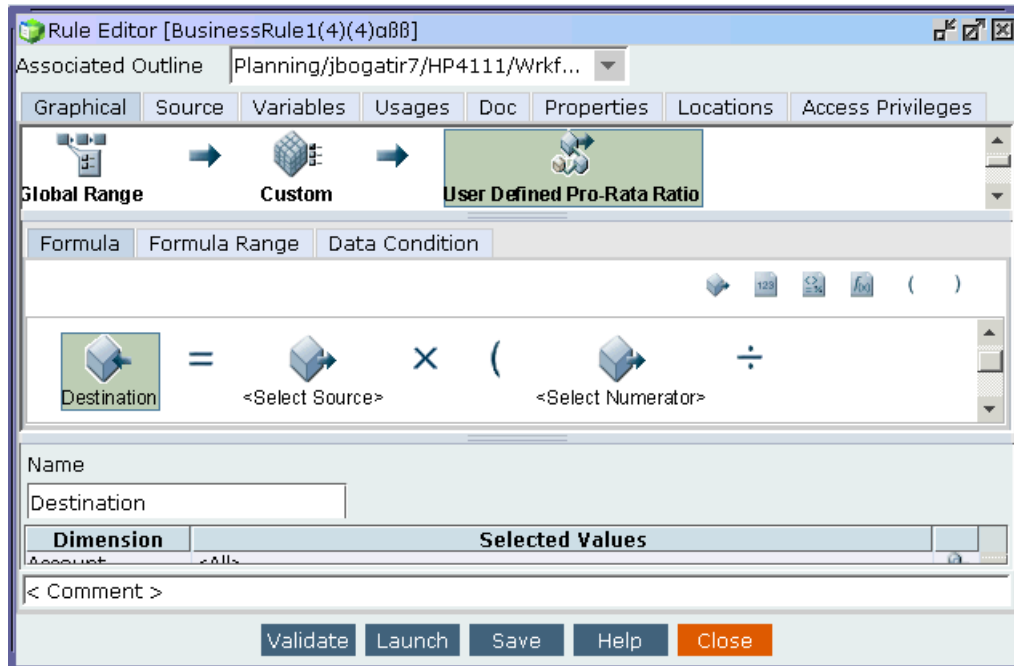
You can use the Pro-Rata Ratio Formula for profitability analysis or budgeting and planning purposes to allocate several types of centralized costs/expenses based on an inferred level of usage among various cost centers.

- ▶ To add a Pro-Rata Ratio formula to a business rule:

- 1 If it is not open, open the graphical business rule to which you want to add a Pro-Rata Ratio formula.

- 2 If the **BR Language** tab is not selected, select it in the bottom of the left frame of the Analytic Administration Services window.
- 3 Expand the **Formulas** folder, then expand the Pro-Rata Ratio folder. Select the type of Pro-Rata Ratio formula to add: User Defined, Percent to Total, Percent to Parent, or Percent to Member. Then double-click the formula or drag it to the desired location in the business rule on the **Graphical** tab.

The Formula tab is displayed.



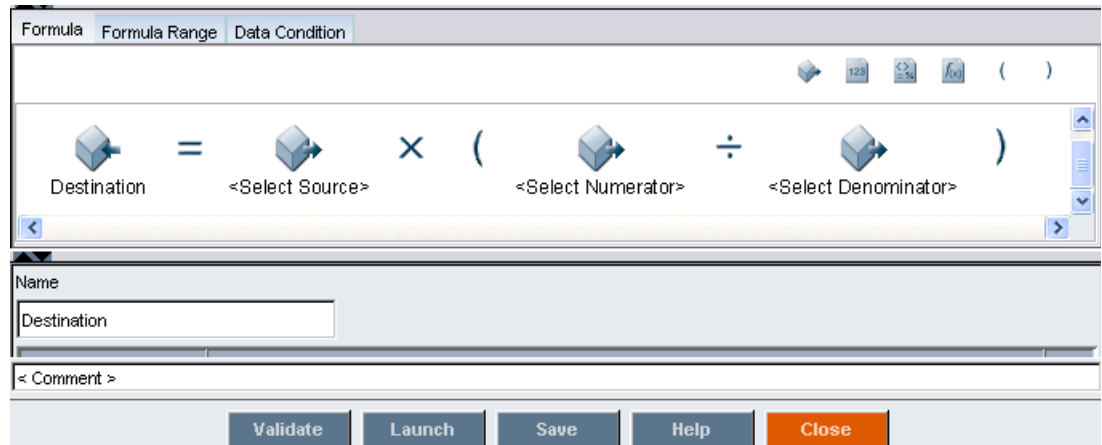
- 4 On the **Formula** tab, enter details for each operand of the formula. Do the following tasks:
 - a. Define the destination for the formula. The destination stores the calculated values from the formula. For more information, see [“Specifying a Destination in a Formula” on page 63](#).
 - b. Define the source for the formula. For more information, see [“Specifying a Source in a Formula” on page 64](#).
 - c. Define the ratio by specifying the numerator and denominator, percent to total, percent to parent, or percent to member. For more information, see [“Specifying a Source in a Formula” on page 64](#).
- 5 Select the **Formula Range** tab and specify the members that remain constant throughout the formula. The formula range more narrowly defines the business rule range. See [“Specifying a Range in a Formula” on page 65](#).
- 6 Select the **Data Condition** tab and enter any criteria that must be met for the formula to be calculated. For more information, see [“Specifying a Data Condition in a Formula” on page 72](#).

Review the following sections for examples of some Pro-Rata Ratio formulas.

User Defined Pro-Rata Ratio Formula

A User Defined type of Pro-Rata Ratio formula bases its calculation on the results of a ratio of values. [Figure 2](#) shows an example of a User Defined Pro-Rata Ratio formula:

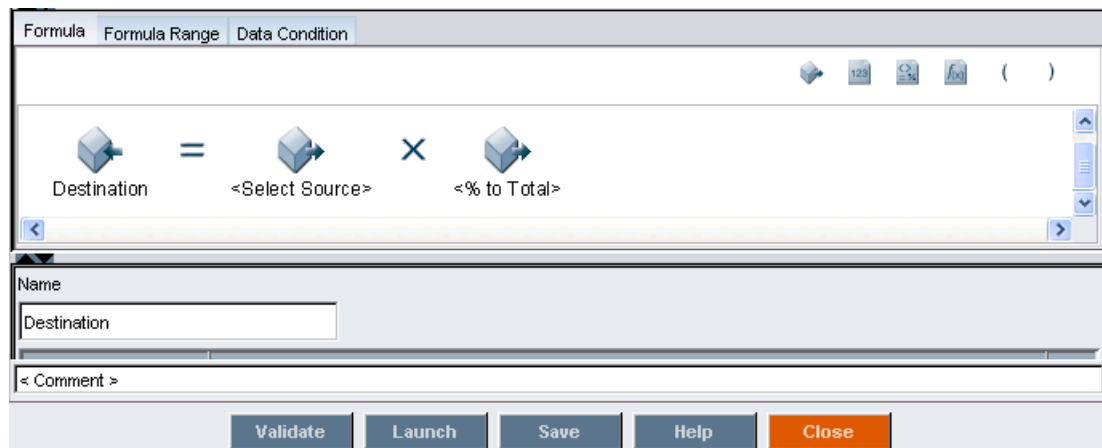
Figure 2 Pro-Rata Ratio User Defined Formula Example



Percent to Total Pro-Rata Ratio Formula

A Percent to Total type of Pro-Rata Ratio formula bases its ratio calculation on the total value for a particular dimension. It assumes the total value is stored in the generation 1 member of the dimension. The default calculation is: Destination = Source x Percent to Total. [Figure 3](#) shows an example of a Pro-Rata Ratio Percent to Total formula:

Figure 3 Pro-Rata Ratio Percent to Total Formula Example

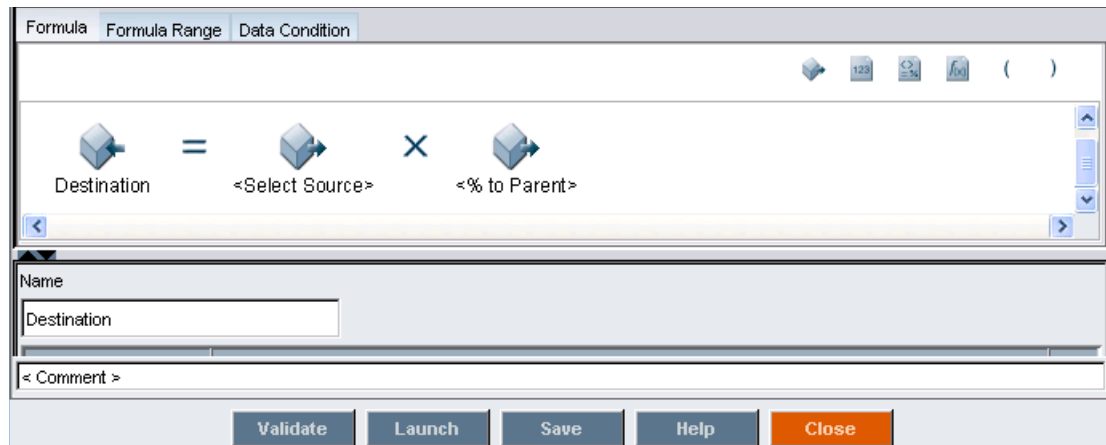


Percent to Parent Pro-Rata Ratio Formula

A Percent to Parent type of Pro-Rata Ratio formula bases its ratio calculation on the value of a member's parents within a dimension. You can select any generation or level of the dimension to represent the parent. The default calculation is: $\text{Destination} = \text{Source} \times \text{Percent to Parent}$.

Figure 4 shows an example of a Pro-Rata Ratio Percent to Parent formula:

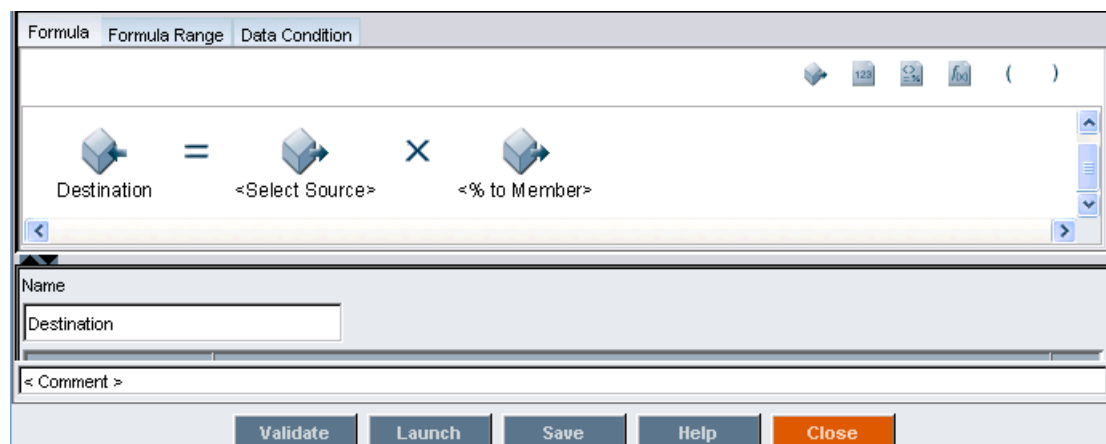
Figure 4 Pro-Rata Ratio Percent to Parent Formula Example



Percent to Member Pro-Rata Ratio Formula

A Percent to Member type of Pro-Rata Ratio formula bases its calculation on the value of a specific member within a dimension. You can select any dimension or member. The default calculation is: $\text{Destination} = \text{Source} \times \text{Percent to Member}$. Figure 5 shows an example of a Pro-Rata Ratio Percent to Member formula:

Figure 5 Pro-Rata Ratio Percent to Member Formula Example



Adding a Units-Rates Formula to a Graphical Business Rule

A Units-Rates formula calculates based on values of a designated unit, rate, and amount values. There are three types of units-rates formulas from which you can choose. The types are:

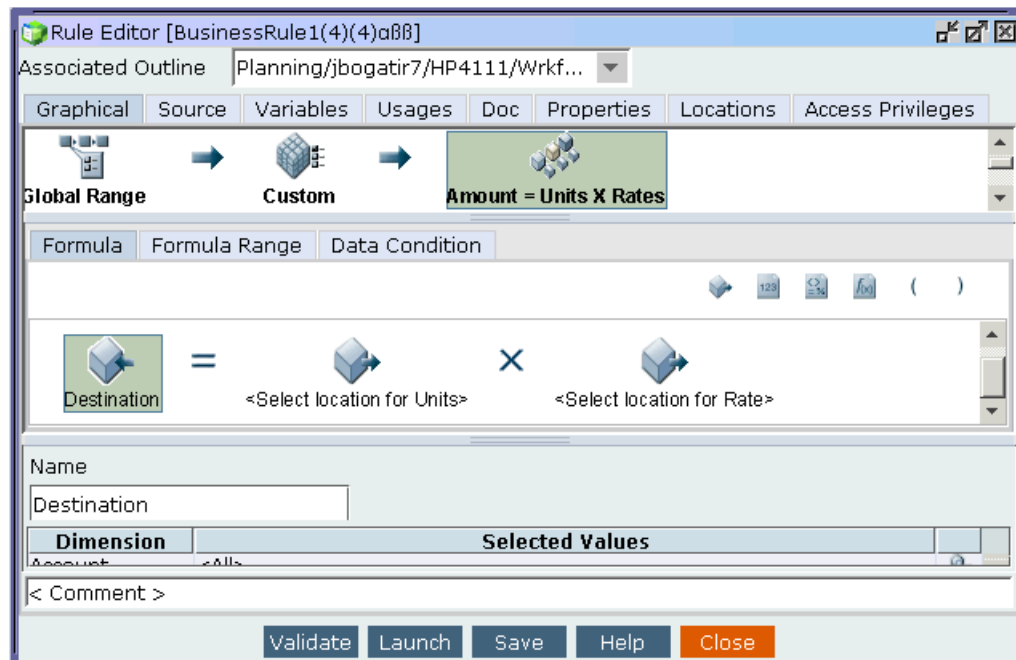
- Amount = Units x Rates—The default calculation is Destination = Unit x Rate.
- Rates = Amounts / Units—The default calculation is Destination = Amount / Unit.
- Units = Amount / Rates—The default calculation is Destination = Amount / Rate.

► To add a Units-Rates formula to a business rule:

- 1 If it is not open, open the graphical business rule to which you want to add a Units-Rates formula.
- 2 If the **BR Language** tab is not selected, select it in the bottom of the left frame of the Analytic Administration Services window.
- 3 Expand the **Formulas** folder, then expand the **Units-Rates** folder. Select the type of Units-Rates formula to add:
 - Amount = Units x Rates
 - Rates = Amounts / Units
 - Units = Amount / Rates
- 4 Double-click the formula or drag it to the desired location in the business rule on the **Graphical** tab.

The Formula tab is displayed. Figure 6 shows an example of a Units-Rates formula:

Figure 6 Units-Rates Formula Example



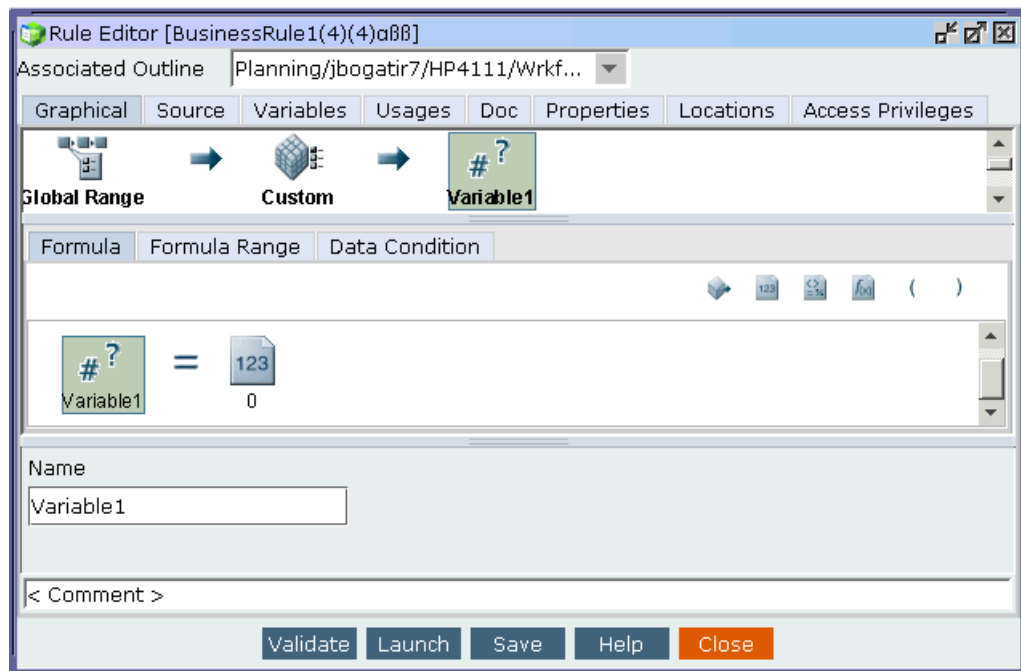
- 5 On the **Formula** tab, enter details for each operand of the formula. Do the following tasks:

- a. Define the destination for the formula. The destination stores the calculated values from the formula. For more information, see [“Specifying a Destination in a Formula” on page 63.](#)
 - b. Define the source for the formula. For more information, see [“Specifying a Source in a Formula” on page 64.](#)
 - c. Define the ratio by specifying the numerator and denominator. For more information, see [“Specifying a Source in a Formula” on page 64.](#)
- 6** Select the **Formula Range** tab and specify the members that remain constant throughout the formula. The formula range more narrowly defines the business rule range. See [“Specifying a Range in a Formula” on page 65.](#)
- 7** Select the **Data Condition** tab and enter any criteria that must be met for the formula to be calculated. For more information, see [“Specifying a Data Condition in a Formula” on page 72.](#)

Adding a Variable Formula to a Graphical Business Rule

Use a Variable formula to store the intermediary values results of calculations in a business rule. This is similar to the use of variables in Analytic Services. You may define multiple variables within a single business rule. A variable must be defined before it can be used in another component and it represents a single numeric value that is either specified directly or derived from a calculation.

- To add a Variable formula to a business rule:
- 1** If it is not open, open the graphical business rule to which you want to add a Variable formula.
 - 2** If the **BR Language** tab is not selected, select it in the bottom of the left frame of the Analytic Administration Services window.
 - 3** Expand the **Formulas** folder, and double-click the Variable formula or drag it to the desired location in the business rule on the **Graphical** tab. The Formula tab is displayed.



- 4 On the **Formula** tab, enter details for each operand of the formula. Do the following tasks:
 - a. Define the destination for the formula. The destination stores the calculated values from the formula. For more information, see [“Specifying a Destination in a Formula” on page 63](#).
 - b. Define the source for the formula. For more information, see [“Specifying a Source in a Formula” on page 64](#).
 - c. Define the ratio by specifying the numerator and denominator. For more information, see [“Specifying a Source in a Formula” on page 64](#).

- 5 Select the **Formula Range** tab and specify the members that remain constant throughout the formula. The formula range more narrowly defines the business rule range. See [“Specifying a Range in a Formula” on page 65](#).

Select the **Data Condition** tab and enter any criteria that must be met for the formula to be calculated. Define the destination for the variable by entering a name that describes the variable. For more information, see [“Specifying a Data Condition in a Formula” on page 72](#).

- 6 Define the numerical value you want to assign to this variable.

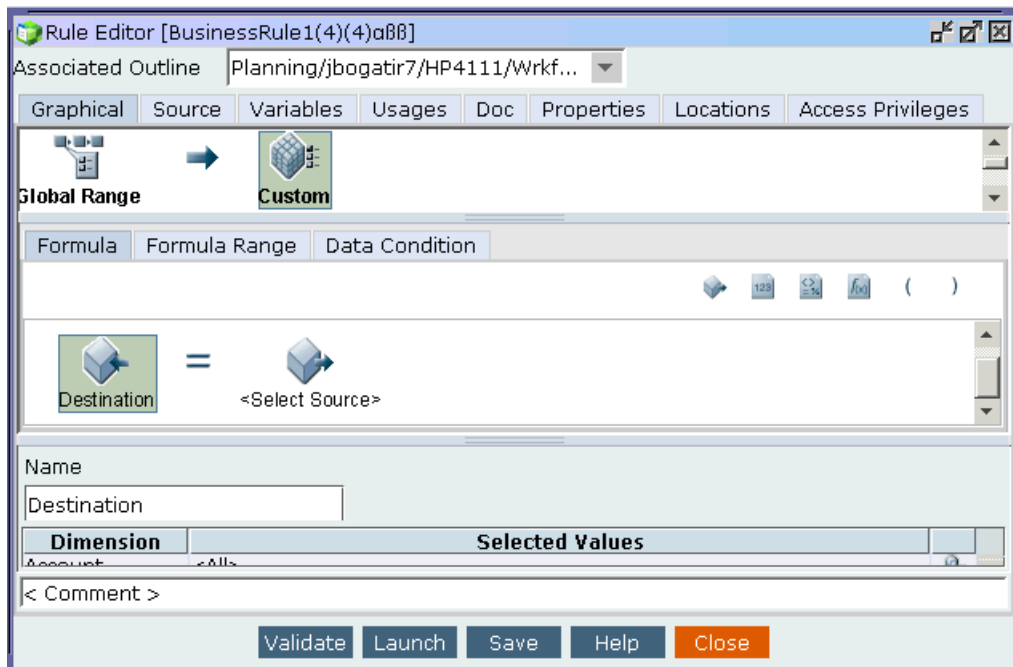
Note: You may delete a variable component from a business rule only if the variable is not used as a source in any other component.

Adding a Custom Formula to a Graphical Business Rule

Use a Custom formula to create your own formula starting with a destination and source. You can create any type of mathematical expression to suit your business needs. See [“Using the Custom Toolbar” on page 67](#) for instructions on adding a source, a function, a number operand, an operator, or parentheses. The default calculation is Destination = Source.

- To add a Custom formula to a business rule:
 - 1 If it is not open, open the graphical business rule to which you want to add a Custom formula.
 - 2 If the **BR Language** tab is not selected, select it in the bottom of the left frame of the Analytic Administration Services window.
 - 3 Expand the **Formulas** folder, and double-click the Custom formula or drag it to the desired location in the business rule on the **Graphical** tab.

The Formula tab is displayed.



- 4 On the **Formula** tab, enter details for each operand of the formula. Do the following tasks:
 - a. Define the destination for the formula. The destination stores the calculated values from the formula. For more information, see [“Specifying a Destination in a Formula” on page 63](#).
 - b. Define the source for the formula. For more information, see [“Specifying a Source in a Formula” on page 64](#).
 - c. Define the ratio by specifying the numerator and denominator, percent to total, percent to parent, or percent to member. For more information, see [“Specifying a Source in a Formula” on page 64](#).
- 5 Select the **Formula Range** tab and specify the members that remain constant throughout the formula.

The formula range more narrowly defines the business rule range. See [“Specifying a Range in a Formula” on page 65](#).
- 6 Select the **Data Condition** tab and enter any criteria that must be met for the formula to be calculated.

For more information, see [“Specifying a Data Condition in a Formula” on page 72](#).

Deleting a Business Rule

Deleting a business rule deletes the rule from the repository and any projects in which it is used. If a rule is part of a sequence, you must remove the rule from the sequence before deleting it.

Note: You cannot delete a business rule that you have open for editing or browsing.

► To delete a business rule:

- 1 Launch the Administration Console by selecting **Start > Programs > Hyperion System 9 BI+ > Analytic Administration Services > Administration Console**.
- 2 In the **Analytic Administration Services Login** dialog box, enter a server name and your user name and password to log on to Analytic Administration Services.
- 3 In the left navigation frame of Analytic Administration Services, expand the **Business Rules** node. Then expand the **Repository View** node.
- 4 Expand the **Rules** node. Right-click the business rule you want to delete, and select **Delete Rule**.

The Delete Confirmation dialog box is displayed.

- 5 In the **Delete Confirmation** dialog box, click **Yes** to confirm deletion of the business rule, or click **No** to cancel deletion and return to the Rule Editor.

The business rule is deleted from the system and is removed from the Rules list in Business Rules.

Deleting a Sequence

Deleting a business rule sequence deletes it from the repository and any projects in which it is used. If a sequence is referenced in another sequence, you must remove it from the sequence before deleting it.

Note: You cannot delete a business rule sequence that you have open for editing or browsing.

► To delete a business rule sequence:

- 1 Launch the Administration Console by selecting **Start > Programs > Hyperion System 9 BI+ > Analytic Administration Services > Administration Console**.
- 2 In the **Analytic Administration Services Login** dialog box, enter a server name and your user name and password to log on to Analytic Administration Services.
- 3 In the left navigation frame of Analytic Administration Services, expand the **Business Rules** node. Then expand the **Repository View** node.
- 4 Expand the **Sequences** node. Then right-click the sequence you want to delete and select **Delete Sequence**.

You are prompted to confirm deletion of the sequence.

- 5 Click **Yes** to confirm deletion of the sequence.

Deleting Macros

When you delete a macro, you delete all instances of the macro from all projects. If a macro is referenced in a rule or another macro, you must remove the macro before you can delete it.

Note: You cannot delete a macro that you have open for editing or browsing.

➤ To delete a macro:

- 1 Launch the Administration Console by selecting **Start > Programs > Hyperion System 9 BI+ > Analytic Administration Services > Administration Console**.
- 2 In the **Analytic Administration Services Login** dialog box, enter a server name and your user name and password to log on to Analytic Administration Services.
- 3 In the left navigation frame of Analytic Administration Services, expand the **Business Rules** node. Then expand the **Repository View** node.
- 4 Expand the **Macros** node. Then right-click the macro you want to delete and select **Delete Macro**.

You are prompted to confirm deletion of the macro.

- 5 Click **Yes** to confirm deletion of the macro.

Deleting Global Variables

When you delete a global variable (that is, a variable that is used in more than one business rule or macro), you delete all instances of the variable from all projects. If a variable is part of a rule or macro, you must remove the variable before deleting it.

Note: You cannot delete a global variable that you have open for editing or browsing.

➤ To delete a global variable:

- 1 Launch the Administration Console by selecting **Start > Programs > Hyperion System 9 BI+ > Analytic Administration Services > Administration Console**.
- 2 In the **Analytic Administration Services Login** dialog box, enter a server name and your user name and password to log on to Analytic Administration Services.
- 3 In the left navigation frame of Analytic Administration Services, expand the **Business Rules** node. Then expand the **Repository View** node.
- 4 Expand the **Global Variables** node. Then right-click the variable you want to delete and select **Delete Variable**.

You are prompted to confirm deletion of the variable.

- 5 Click **Yes** to confirm deletion of the variable.

3

Assigning Access Privileges

You assign access privileges to repository objects such as business rules, business rule sequences, macros, variables, and projects. This chapter contains information and instructions for assigning access privileges for business rules, sequence, macros, variables, and projects.

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About Access Privileges for Business Rules.....	86
About Access Privileges for Variables	90
About Access Privileges for Macros.....	92
About Access Privileges for Business Rule Sequences.....	96
About Access Privileges for Projects	99

About Adding Access Privileges

Note: Before you can grant users and groups access privileges to repository objects, you need to provision them for use in Business Rules and assign a Business Rules role to them using Hyperion System 9 Shared Services User Management Console. For more information on provisioning users and groups, see the *Hyperion System 9 Shared Services User Management Guide*.

You add access privileges for repository objects, such as business rules, sequences, macros, variables, and projects. Access privileges control what users can and cannot perform on these objects. For example, you can assign a privilege that prohibits a user (or group of users) from modifying a business rule, but permits the same user (or groups of users) to launch that business rule.

- For information on adding access privileges for business rules, see [“Adding or Editing Access Privileges for a Business Rule” on page 86](#).
- For information on adding access privileges for variables, see [“Adding or Editing Access Privileges for a Variable” on page 90](#).
- For information on adding access privileges for macros, see [“Adding or Editing Access Privileges for a Macro” on page 93](#).
- For information on adding access privileges for sequences, see [“Adding or Editing Access Privileges for a Business Rule Sequence” on page 96](#).
- For information on adding access privileges for a project, see [“Adding Access Privileges to a Project” on page 99](#).

About Access Privileges for Business Rules

Access privileges determine which users and groups can validate, launch, and/or modify business rules. You can specify any of the following privileges for users and groups who use a business rule:

- Validate or launch
- Cannot validate or launch
- Modify
- Cannot modify

You can also specify whether users can validate and run the business rule against a specific database location or cluster, or against all database locations and clusters.

Adding or Editing Access Privileges for a Business Rule

Note: You cannot add multiple access privileges at one time. You must add access privileges one at a time.

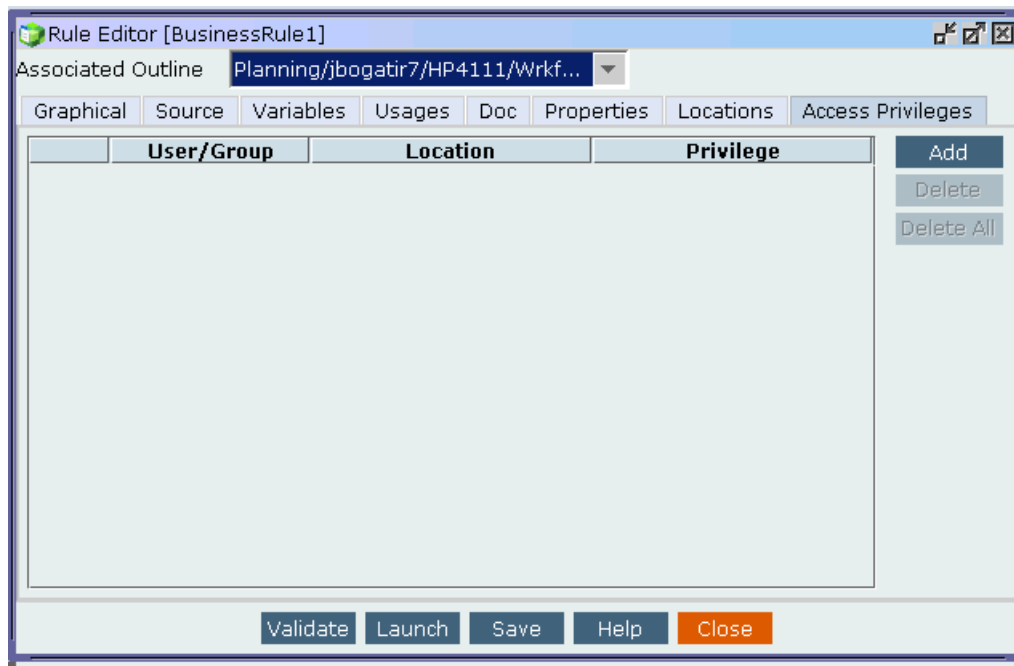
► To add access privileges for a business rule:

- 1 Launch the Administration Console by selecting **Start > Programs > Hyperion System 9 BI+ > Analytic Administration Services > Administration Console**.
- 2 In the **Analytic Administration Services Login** dialog box, enter a server name and your user name and password to log on to Analytic Administration Services.
- 3 In the left navigation frame of Analytic Administration Services, expand the **Business Rules** node. Then expand the **Repository View** node.
- 4 Expand the **Rules** node and double-click the business rule for which you want to add access privileges.

If the business rule is a graphical business rule, the text of the business rule is displayed on the Graphical tab; if the business rule is a non-graphical business rule (that is, an enhanced calc script) the text of the business rule is displayed on the Source tab.

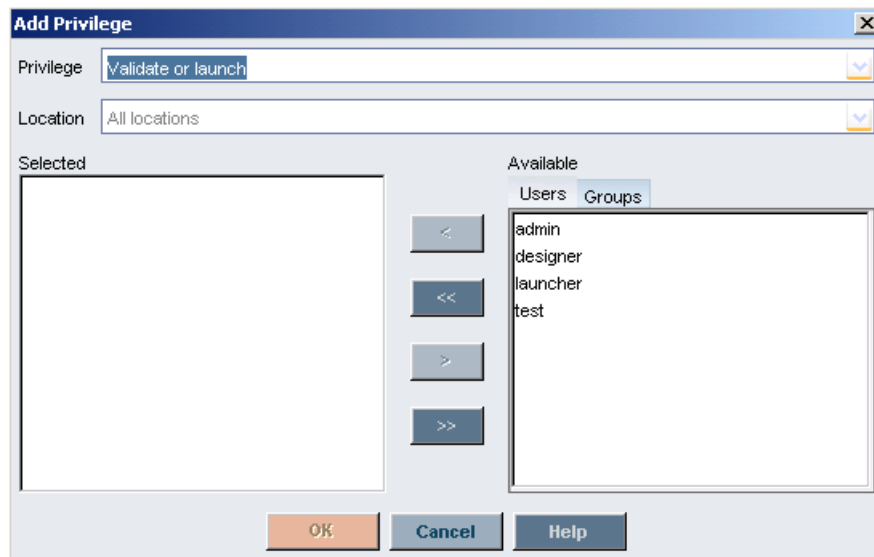
- 5 Select the **Access Privileges** tab.

Any existing access privileges are displayed on the Access Privileges tab. If you have not previously added access privileges, none are displayed on this tab.



- 6 On the **Access Privileges** tab, click **Add** to add a new access privilege.

The Add Privilege dialog box is displayed.



7 In the Add Privilege dialog box, do the following:

- a. From the **Privilege** drop-down list, select the type of privilege you want to grant:

Note: The contents of the Privilege drop-down list vary according to whether you are adding access privileges for a business rule, sequence, macro, variable, or project. For example, if you are adding access privileges for a business rule, sequence, or project, the Privilege drop-down list contains all four of the types of privileges in the following list. If you are adding access privileges for a macro or variable, however, the Privilege drop-down list contains only the “Modify rule repository objects” and “Cannot modify rule repository objects” privileges.

- **Validate or launch** - enables a users or users you specify to validate and launch the business rule
 - **Modify rule repository objects** - enables a user or users you specify to modify the business rule
 - **Cannot validate or launch** - prevents the user or users you specify from validating or launching the business rule
 - **Cannot modify rule repository objects** - prevents the user or users you specify from modifying the business rule
- b. If you selected **Validate or launch** or **Cannot Validate or Launch** in step a, from the **Location** drop-down list, do one of the following:

Note: The locations and clusters that are available from the Location drop-down list are dependent on the locations you assigned to the rule on the Locations tab. For example, if you did not add Cluster1 on the Locations tab (or click Allow All Locations), Cluster1 is not available from the Location drop-down list.

- Choose **All Locations** to enable the user to validate and launch the business rule against all database locations and clusters assigned to the rule. (This is the default selection.)

- Choose a specific cluster to enable the user to validate and/or launch the business rule against this cluster only. The user can validate and/or run the rule against any location in the cluster. For more information on clusters, see [“Managing Clusters” on page 139](#).
 - Choose a specific database location to enable the user to validate and/or launch the business rule against this location only. For more information on locations, see [“Managing Database Locations” on page 133](#).
 - Choose **Select Location** to select a particular database against which the user can validate and launch the business rule. Then in the **Select Database Outline** dialog box, drill down to select a Planning or Analytic Services database and click **OK**.
- c. In the **Available** area, select users and/or groups of users for whom you want to add this access privilege. (You can select multiple users and groups using **Shift + Click**.) Then use the arrow keys to move users and groups among the **Selected** and **Available** areas of the dialog box. When you move users and groups to the **Selected** area of the dialog box, these users and groups have the access privilege you assigned.

Note: The users and groups that are listed in the Available area are provisioned for use in Business Rules using the Hyperion System 9 Shared Services User Management Console. Provisioning is the process of assigning roles and access privileges to users and groups for Business Rules. For more information about provisioning users for use in Business Rules, see the *Hyperion System9 Shared Services User Management Guide*.

If new users are provisioned after the Analytic Administration Services server is started, you may need to refresh the list of users on the Users tab in the Available area of the Add Privilege dialog box. To refresh the list of users on the Users tab, right-click Administration, and select Refresh User List.

d. Click **OK** to save the access privilege and return to the **Access Privileges** tab.

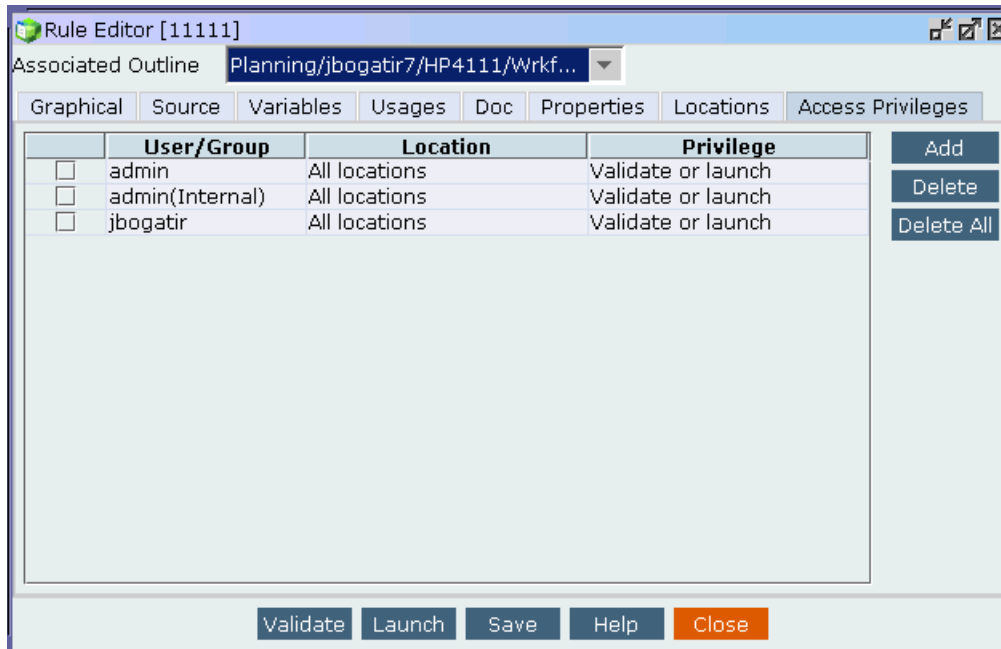
8 On the **Access Privileges** tab, click **Save** to save the new access privilege.

Deleting Access Privileges for a Business Rule

► To delete access privileges for a business rule:

- 1** Launch the Administration Console by selecting **Start > Programs > Hyperion System 9 BI+ > Analytic Administration Services > Administration Console**.
- 2** In the **Analytic Administration Services Login** dialog box, enter a server name and your user name and password to log on to Analytic Administration Services.
- 3** In the left navigation frame of Analytic Administration Services, expand the **Business Rules** node. Then expand the **Repository View** node.
- 4** Expand the **Rules** node and double-click the business rule for which you want to delete access privileges.
If the business rule is a graphical business rule, the text of the business rule is displayed on the Graphical tab; if the business rule is a non-graphical business rule the text of the business rule is displayed on the Source tab.
- 5** Select the **Access Privileges** tab.

Any existing access privileges are displayed on the Access Privileges tab.



- 6 On the **Access Privileges** tab, do one of the following:
 - Select the check boxes next to the access privileges you want to delete, and click **Delete**.
 - Click **Delete All** to delete all of the access privileges for this business rule.

The access privileges you selected are deleted from the business rule.
- 7 Click **Save** to save the changes you made to the business rule's access privileges.

About Access Privileges for Variables

Access privileges for variables let you specify which users and groups can and cannot modify variables.

Adding or Editing Access Privileges for a Variable

Note: You cannot add multiple access privileges at one time. You must add access privileges one at a time.

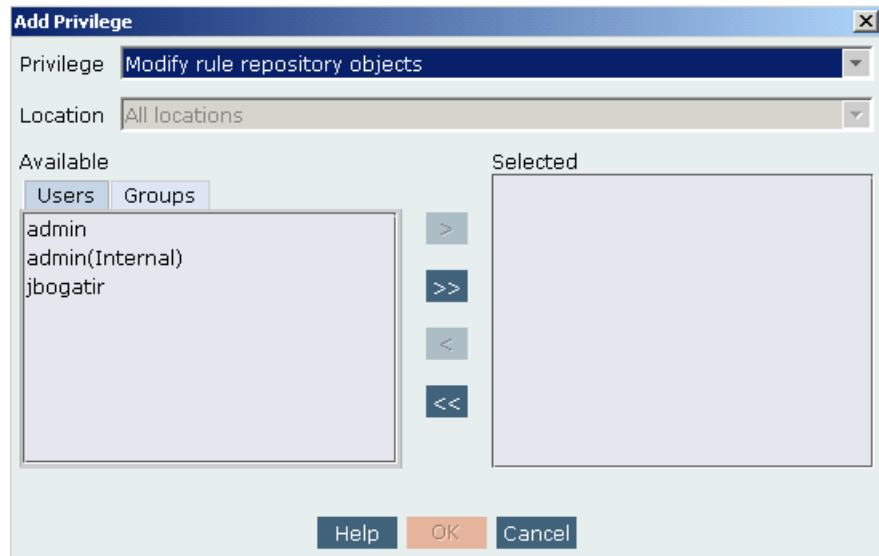
- To add access privileges for a variable:
 - 1 Launch the Administration Console by selecting **Start > Programs > Hyperion System 9 BI+ > Analytic Administration Services > Administration Console**.
 - 2 In the **Analytic Administration Services Login** dialog box, enter a server name and your user name and password to log on to Analytic Administration Services.
 - 3 In the left navigation frame of Analytic Administration Services, expand the **Business Rules** node. Then expand the **Repository View** node.

- 4 Expand the **Global Variables** node and double-click the variable to which you want to add access privileges.
- 5 Select the **Access Privileges** tab.

Any existing access privileges are displayed on the Access Privileges tab. If you have not created access privileges for this variable previously, none are displayed on this tab.

- 6 On the **Access Privileges** tab, click **Add** to add a new access privilege.

The Add Privilege dialog box is displayed.



- 7 In the **Add Privilege** dialog box, do one of the following:

- a. From the **Privilege** drop-down list, select the type of privilege you want to grant:

Note: The contents of the Privilege drop-down list vary according to whether you are adding access privileges for a business rule, sequence, macro, variable, or project. For example, if you are adding access privileges for a business rule, sequence, or project, the Privilege drop-down list contains all four of the types of privileges in the following list. If you are adding access privileges for a macro or variable, however, the Privilege drop-down list contains only the “Modify rule repository objects” and “Cannot modify rule repository objects” privileges.

- o **Modify rule repository objects** - enables a user or users you specify to modify the variable
 - o **Cannot modify rule repository objects** - prevents the user or users you specify from modifying the variable
- b. In the **Available** area, select users and/or groups of users for whom you want to add this access privilege. (You can select multiple users and groups using **Shift + Click**.) Then use the arrow keys to move users and groups among the Selected and Available areas of the dialog box. When you move users and groups to the Selected area of the dialog box, these users and groups have the access privilege you assigned for the variable.

Note: The users and groups that are listed in the Available area are provisioned for use in Business Rules using the Hyperion System 9 Shared Services User Management Console. Provisioning is the process of assigning roles and access privileges to users and groups for Business Rules. For more information about provisioning users for use in Business Rules, see the *Hyperion System9 Shared Services User Management Guide*.

If new users are provisioned after the Analytic Administration Services server is started, you may need to refresh the list of users on the Users tab in the Available area of the Add Privilege dialog box. To refresh the list of users on the Users tab, right-click Administration, and select Refresh User List.

c. Click OK to save the access privilege and return to the **Access Privileges** tab.

8 On the **Access Privileges** tab, click **Save** to save the new access privilege.

Deleting Access Privileges for a Variable

When you delete access privileges to a variable, you delete them for all instances of the variable in business rules and sequences. Before you delete an access privilege to a variable, you should review the list of business rules and sequences that use the variable on the Usages tab.

► To delete access privileges for a variable:

1 Launch the Administration Console by selecting **Start > Programs > Hyperion System 9 BI+ > Analytic Administration Services > Administration Console**.

2 In the **Analytic Administration Services Login** dialog box, enter a server name and your user name and password to log on to Analytic Administration Services.

3 In the left navigation frame of Analytic Administration Services, expand the **Business Rules** node. Then expand the **Repository View** node.

4 Expand the **Global Variables** node and double-click the variable for which you want to delete access privileges.

5 Select the **Access Privileges** tab.

Any existing access privileges are displayed on the Access Privileges tab. If you have not created access privileges for this variable previously, none are displayed on this tab.

6 On the **Access Privileges** tab, do one of the following:

- Select the check boxes next to the access privileges you want to delete, and click **Delete**.
- Click **Delete All** to delete all of the access privileges for this variable.

The access privileges you selected are deleted from all uses of the variable in business rules, macros, and business rule sequences.

7 Click **Save** to save the changes you made to the variable's access privileges.

About Access Privileges for Macros

Access privileges for macros let you specify which users and groups can and cannot modify macros.

Adding or Editing Access Privileges for a Macro

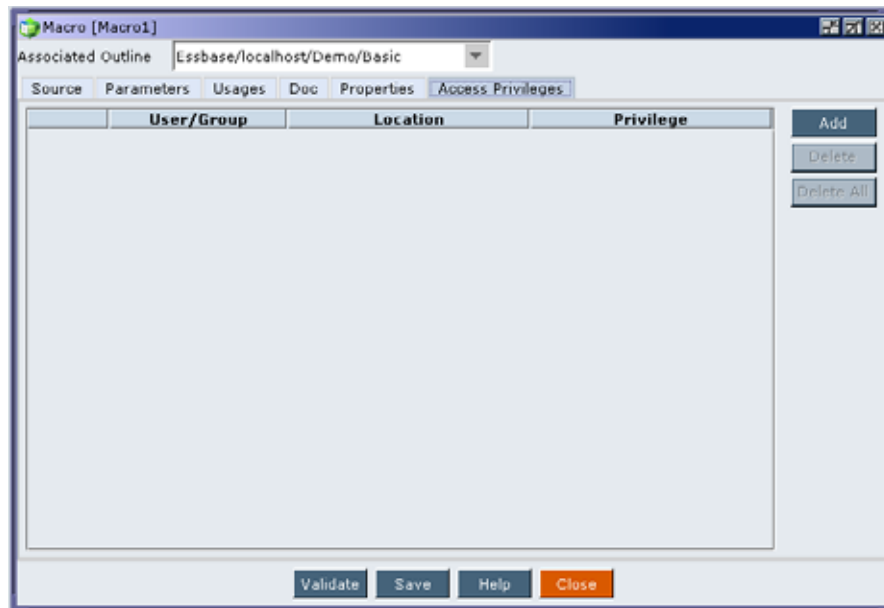
Note: You cannot add multiple access privileges at one time. You must add access privileges one at a time.

- ▶ To add access privileges for a macro:
 - 1 Launch the Administration Console by selecting **Start > Programs > Hyperion System 9 BI+ > Analytic Administration Services > Administration Console**.
 - 2 In the **Analytic Administration Services Login** dialog box, enter a server name and your user name and password to log on to Analytic Administration Services.
 - 3 In the left navigation frame of Analytic Administration Services, expand the **Business Rules** node. Then expand the **Repository View** node.
 - 4 Expand the **Macros** node and double-click the macro to which you want to add access privileges.

If the macro contains a graphical business rule, the macro is displayed on the Graphical tab; if the macro contains a non-graphical business rule, the macro is displayed on the Source tab.

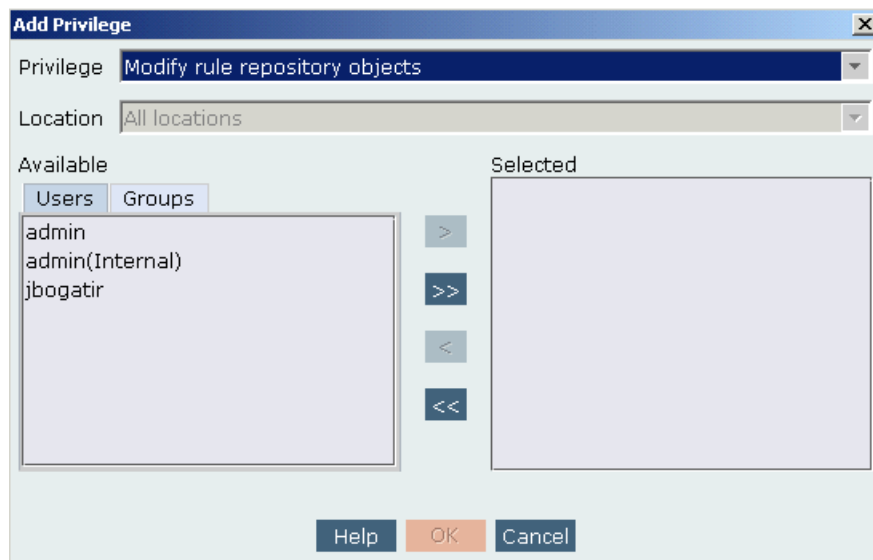
- 5 Select the **Access Privileges** tab.

Any existing access privileges are displayed on the Access Privileges tab. If you have not created access privileges for this macro previously, none are displayed on this tab.



- 6 On the **Access Privileges** tab, click **Add** to add a new access privilege.

The Add Privilege dialog box is displayed.



7 In the Add Privilege dialog box, do one of the following:

- a. From the **Privilege** drop-down list, select the type of privilege you want to grant:

Note: The contents of the Privilege drop-down list vary according to whether you are adding access privileges for a business rule, sequence, macro, variable, or project. For example, if you are adding access privileges for a business rule, sequence, or project, the Privilege drop-down list contains all four of the types of privileges in the following list. If you are adding access privileges for a macro or variable, however, the Privilege drop-down list contains only the “Modify rule repository objects” and “Cannot modify rule repository objects” privileges.

- **Modify rule repository objects** - enables a user or users you specify to modify the macro
 - **Cannot modify rule repository objects** - prevents the user or users you specify from modifying the macro
- b. In the **Available** area, select users and/or groups of users for whom you want to add this access privilege. (You can select multiple users and groups using **Shift + Click**.) Then use the arrow keys to move users and groups among the **Selected** and **Available** areas of the dialog box. When you move users and groups to the **Selected** area of the dialog box, these users and groups have the access privilege you assigned for the macro.

Note: The users and groups that are listed in the Available area are provisioned for use in Business Rules using the Hyperion System 9 Shared Services User Management Console. Provisioning is the process of assigning roles and access privileges to users and groups for Business Rules. For more information about provisioning users for use in Business Rules, see the *Hyperion System9 Shared Services User Management Guide*.

If new users are provisioned after the Analytic Administration Services server is started, you may need to refresh the list of users on the Users tab in the Available area of the Add Privilege dialog box. To refresh the list of users on the Users tab, right-click Administration, and select Refresh User List.

- c. Click **OK** to save the access privilege and return to the **Access Privileges** tab.

- 8 On the **Access Privileges** tab, click **Save** to save the new access privilege.

Deleting Access Privileges for a Macro

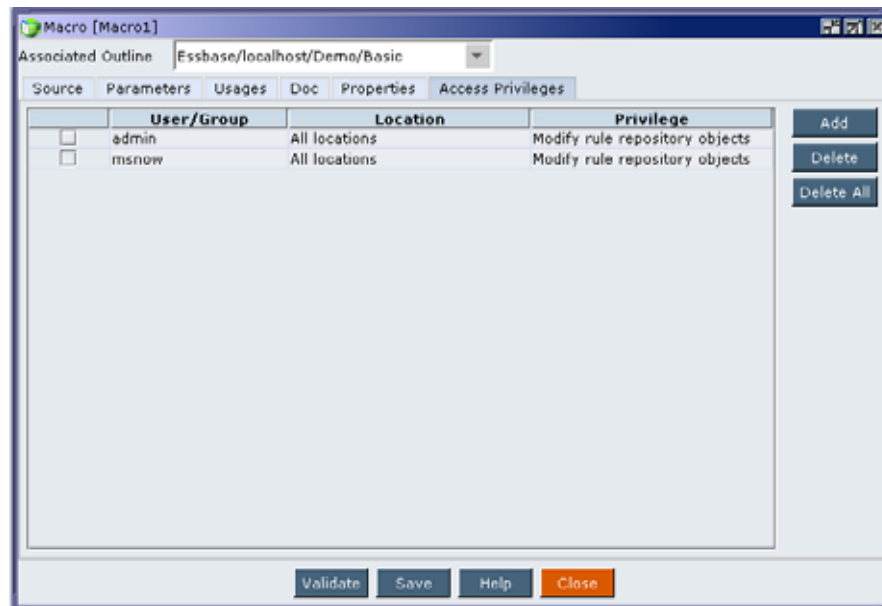
When you delete access privileges to a macro, you delete them for all instances of the macro being used in business rules, sequences, and other macros. Before you delete an access privilege to a macro, you should review the list of business rules, sequences, and other macros that reference the macro on the Usages tab.

- To delete access privileges for a macro:
 - 1 Launch the Administration Console by selecting **Start > Programs > Hyperion System 9 BI+ > Analytic Administration Services > Administration Console**.
 - 2 In the **Analytic Administration Services Login** dialog box, enter a server name and your user name and password to log on to Analytic Administration Services.
 - 3 In the left navigation frame of Analytic Administration Services, expand the **Business Rules** node. Then expand the **Repository View** node.
 - 4 Expand the **Macros** node and double-click the macro for which you want to delete access privileges.

If the macro contains a graphical business rule, the macro is displayed on the Graphical tab; if the macro contains a non-graphical business rule, the macro is displayed on the Source tab.

- 5 Select the **Access Privileges** tab.

Any existing access privileges are displayed on the Access Privileges tab. If you have not created access privileges for this macro previously, none are displayed on this tab.



- 6 On the **Access Privileges** tab, do one of the following:
 - Select the check boxes next to the access privileges you want to delete, and click **Delete**.

- Click **Delete All** to delete all of the access privileges for this macro.

The access privileges you selected are deleted from all uses of the macro in business rules, other macros, and business rule sequences.

- 7 Click **Save** to save the changes you made to the macro's access privileges.

About Access Privileges for Business Rule Sequences

Access privileges for business rule sequences determine which users and groups can validate, launch, and/or modify the sequence. You can specify any of the following privileges for users and groups who use a sequence:

- Validate or launch
- Cannot validate or launch
- Modify
- Cannot modify

You can also specify whether users can run the business rule sequence against a specific database only or against any database during validation and launch.

Adding or Editing Access Privileges for a Business Rule Sequence

Note: You cannot add multiple access privileges at one time. You must add access privileges one at a time.

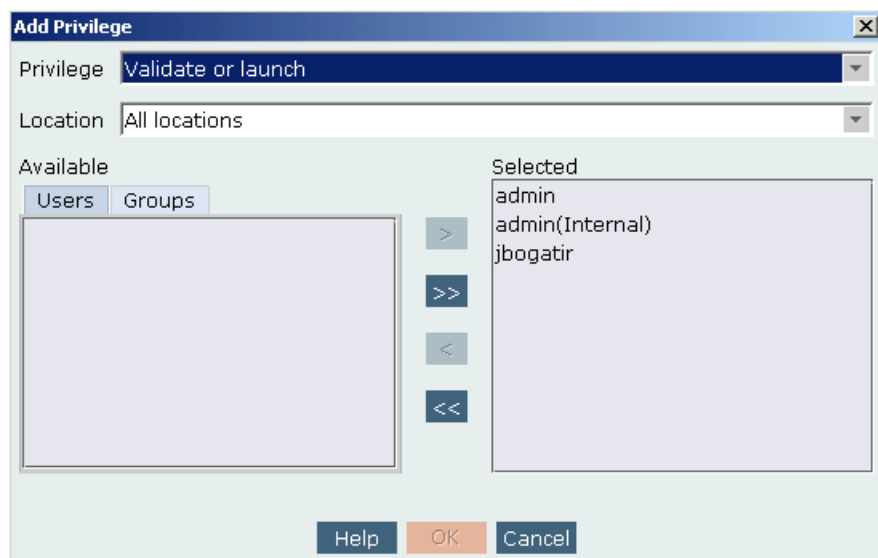
- To add or edit access privileges for a business rule sequence:

- 1 Launch the Administration Console by selecting **Start > Programs > Hyperion System 9 BI+ > Analytic Administration Services > Administration Console**.
- 2 In the **Analytic Administration Services Login** dialog box, enter a server name and your user name and password to log on to Analytic Administration Services.
- 3 In the left navigation frame of Analytic Administration Services, expand the **Business Rules** node. Then expand the **Repository View** node.
- 4 Right-click **Sequences**, and double-click the sequence for which you want to add new or editing existing access privileges.

The Sequence Editor is displayed showing the Sequence tab.

- 5 On the **Access Privileges** tab, click **Add** to add a new access privilege.

The Add Privilege dialog box is displayed.



6 In the Add Privilege dialog box, do the following:

- a. From the **Privilege** drop-down list, select the type of privilege you want to grant:

Note: The contents of the Privilege drop-down list vary according to whether you are adding access privileges for a business rule, sequence, macro, variable, or project. For example, if you are adding access privileges for a business rule, sequence, or project, the Privilege drop-down list contains all four of the types of privileges in the following list. If you are adding access privileges for a macro or variable, however, the Privilege drop-down list contains only the “Modify rule repository objects” and “Cannot modify rule repository objects” privileges.

- **Validate or launch** - enables a users or users you specify to validate and launch the business rule sequence
 - **Modify rule repository objects** - enables a user or users you specify to modify the business rule sequence
 - **Cannot validate or launch** - prevents the user or users you specify from validating or launching the business rule sequence
 - **Cannot modify rule repository objects** - prevents the user or users you specify from modifying the business rule sequence
- b. If you selected **Validate or launch** or **Cannot Validate or Launch** in step a, from the **Location** drop down list, do one of the following:

Note: The locations and clusters that are available from the Location drop-down list are dependent on the locations you assigned to the rules in the sequence. For example, if you did not add Cluster1 to any of the rules in the sequence (or click Allow All Locations), Cluster1 is not available from the Location drop-down list.

- Choose **All Locations** to enable the user to validate and launch the sequence against all database locations and clusters assigned to the rules in the sequence. (This is the default selection.)

- Choose a specific cluster to enable the user to validate and/or launch the sequence against this cluster only. The user can validate and/or launch the sequence against any location in the cluster. For more information on clusters, see “[Managing Clusters](#)” on page 139.
 - Choose a specific database location to enable the user to validate and/or launch the sequence against this location only. For more information on locations, see “[Managing Database Locations](#)” on page 133.
 - Choose **Select Location** to select a particular database against which the user can validate and launch the sequence. Then in the **Select Database Outline** dialog box, drill down to select a Planning or Analytic Services database and click **OK**.
- c. In the **Available** area, select users and/or groups of users for whom you want to add this access privilege. (You can select multiple users and groups using **Shift + Click**.) Then use the arrow keys to move users and groups among the **Selected** and **Available** areas of the dialog box. When you move users and groups to the **Selected** area of the dialog box, these users and groups have the access privilege you assigned.

Note: The users and groups that are listed in the Available area are provisioned for use in Business Rules using the Hyperion System 9 Shared Services User Management Console. Provisioning is the process of assigning roles and access privileges to users and groups for Business Rules. For more information about provisioning users for use in Business Rules, see the *Hyperion System9 Shared Services User Management Guide*.

If new users are provisioned after the Analytic Administration Services server is started, you may need to refresh the list of users on the Users tab in the Available area of the Add Privilege dialog box. To refresh the list of users on the Users tab, right-click Administration, and select Refresh User List.

d. Click **OK** to save the access privilege and return to the Access Privileges tab.

7 Click **Save** to save the changes you made to the business rule sequence's access privileges.

Deleting Access Privileges from a Business Rule Sequence

➤ To delete access privileges for a business rule sequence:

- 1** Launch the Administration Console by selecting **Start > Programs > Hyperion System 9 BI+ > Analytic Administration Services > Administration Console**.
- 2** In the **Analytic Administration Services Login** dialog box, enter a server name and your user name and password to log on to Analytic Administration Services.
- 3** In the left navigation frame of Analytic Administration Services, expand the **Business Rules** node. Then expand the **Repository View** node.
- 4** Expand the **Sequences** node and double-click the business rule sequence for which you want to delete access privileges.

The rules and other sequences that comprise the sequence are listed on the Sequence tab.

5 Select the **Access Privileges** tab.

Any existing access privileges are displayed on the Access Privileges tab.

- 6 On the **Access Privileges** tab, do one of the following:
 - Select the check boxes next to the access privileges you want to delete, and click **Delete**.
 - Click **Delete All** to delete all of the access privileges for this business rule sequence.The access privileges you selected are deleted from the business rule sequence.
- 7 Click **Save** to save the changes you made to the business rule sequence's access privileges.

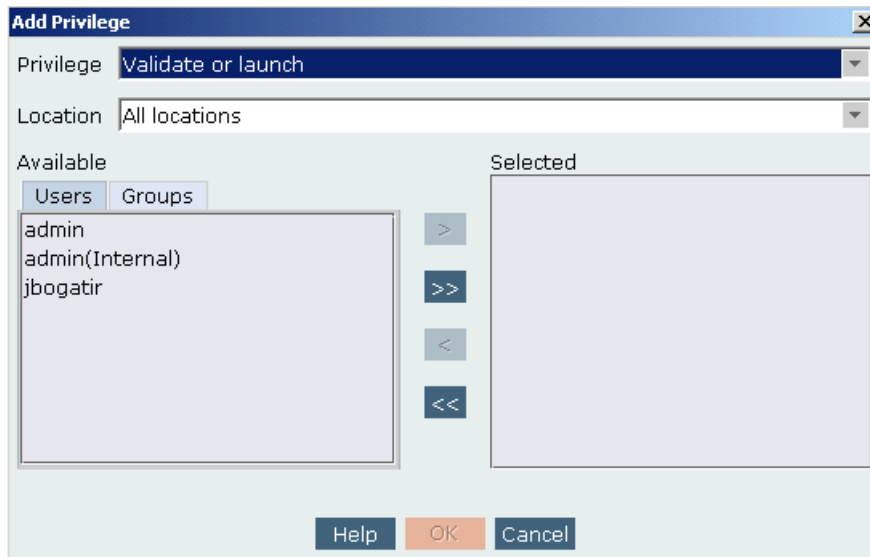
About Access Privileges for Projects

Access privileges for projects determine what users and groups can access a project and what tasks they can perform on the objects in the project.

Adding Access Privileges to a Project

If you are the owner of a project, and you grant a user access to that project, by default the user is granted access to all of the business rules, sequences, macros, and variables in that project. However, if the user to whom you grant access to the project has been denied access to some of the individual objects in that project previously, then the user is only granted access to the objects in the project for which he/she was not previously denied access.

- To grant users and groups access to a project:
- 1 Launch the Administration Console by selecting **Start > Programs > Hyperion System 9 BI+ > Analytic Administration Services > Administration Console**.
 - 2 In the **Analytic Administration Services Login** dialog box, enter a server name and your user name and password to log on to Analytic Administration Services.
 - 3 In the left navigation frame of Analytic Administration Services, expand the **Business Rules** node. Then expand the **Repository View** node.
 - 4 Expand the **Projects** folder. Double-click the project to which you want to grant users and groups access. The contents of the project are displayed on the Contents tab.
 - 5 Select the **Access Privileges** tab.
 - 6 On the **Access Privileges** tab, click **Add** to add grant users and groups access to the project. The Add Privilege dialog box is displayed.



7 In the Add Privilege dialog box, do the following:

- a. From the **Privilege** drop-down list, select the type of privilege you want to grant:

Note: The contents of the Privilege drop-down list vary according to whether you are adding access privileges for a business rule, sequence, macro, variable, or project. For example, if you are adding access privileges for a business rule, sequence, or project, the Privilege drop-down list contains all four of the types of privileges in the following list. If you are adding access privileges for a macro or variable, however, the Privilege drop-down list contains only the “Modify rule repository objects” and “Cannot modify rule repository objects” privileges.

- **Validate or launch** - enables a users or users you specify to validate and launch the business rules and sequences in the project
 - **Modify rule repository objects** - enables a user or users you specify to modify the business rules, sequences, macros, and variables in the project
 - **Cannot validate or launch** - prevents the user or users you specify from validating or launching the business rules and sequences in the project
 - **Cannot modify rule repository objects** - prevents the user or users you specify from modifying the business rules, sequences, macros, and variables in the project
- b. If you selected **Validate or launch** or **Cannot Validate or Launch** in step a, from the **Location** drop down list, do one of the following:

Note: The locations and clusters that are available from the Location drop-down list are dependent on the locations you assigned to the rules in the project. For example, if you did not add Cluster1 to any of the rules in the project (or click Allow All Locations), Cluster1 is not available from the Location drop-down list.

- Choose **All Locations** to enable the user to validate and/or launch the rules and sequences in the project against all database locations and clusters assigned to the rules in the project. (This is the default selection.)

- Choose a specific cluster to enable the user to validate and/or launch the rules and sequences in the project against this cluster only. The user can validate and/or launch the rules and sequences in the project against any location in the cluster. For more information on clusters, see “[Managing Clusters](#)” on page 139.
 - Choose a specific database location to enable the user to validate and/or launch the rules and sequences in the project against this location only. For more information on locations, see “[Managing Database Locations](#)” on page 133.
 - Choose **Select Location** to select a particular database against which the user can validate and/or launch the rules and sequences in the project. Then in the **Select Database Outline** dialog box, drill down to select a Planning or Analytic Services database and click **OK**.
- c. In the **Available** area, select users and/or groups of users for whom you want to add this access privilege. (You can select multiple users and groups using **Shift + Click**.) Then use the arrow keys to move users and groups among the **Selected** and **Available** areas of the dialog box. When you move users and groups to the **Selected** area of the dialog box, these users and groups have access to the project.

Note: The users and groups that are listed in the Available area are provisioned for use in Business Rules using the Hyperion System 9 Shared Services User Management Console. Provisioning is the process of assigning roles and access privileges to users and groups for Business Rules. For more information about provisioning users for use in Business Rules, see the *Hyperion System9 Shared Services User Management Guide*.

If new users are provisioned after the Analytic Administration Services server is started, you may need to refresh the list of users on the Users tab in the Available area of the Add Privilege dialog box. To refresh the list of users on the Users tab, right-click Administration, and select Refresh User List.

- d. Click **OK** to save the access privilege and return to the **Access Privileges** tab.

8 Click **Save** to save the changes to the project.

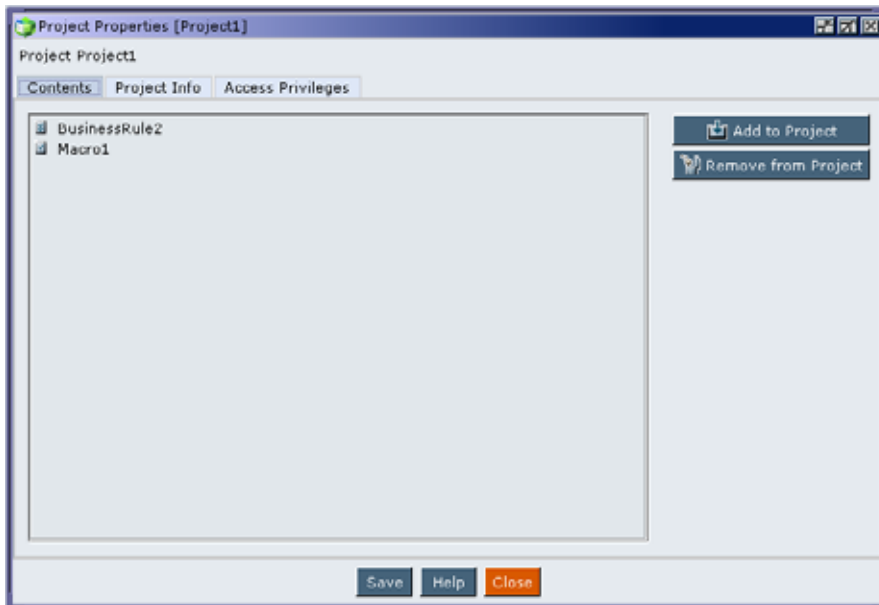
Deleting Access Privileges to a Project

You might want to delete a user’s or group’s access to a project when the user’s or group’s role changes and they no longer need access to the project.

➤ To delete a user or group’s access from a project:

- 1** Launch the Administration Console by selecting **Start > Programs > Hyperion System 9 BI+ > Analytic Administration Services > Administration Console**.
- 2** In the **Analytic Administration Services Login** dialog box, enter a server name and your user name and password to log on to Analytic Administration Services.
- 3** In the left navigation frame of Analytic Administration Services, expand the **Business Rules** node. Then expand the **Repository View** node.
- 4** Expand the **Projects** folder. Double-click the project from which you want to delete a user or group’s access.

The contents of the project are displayed on the Contents tab.



- 5 On the **Access Privileges** tab, select the user or group whose access privileges you want to delete from the project. (You can select multiple users and groups by using **Shift + Click**.)
- 6 Do one of the following:
 - Click **Delete** to delete the users and groups you selected on the **Access Privileges** tab.
 - Click **Delete All** to delete all of the users and groups that display on the **Access Privileges** tab.

The access privileges of the users and groups you selected are deleted from the project, and the users and groups no longer display on the Access Privileges tab.

- 7 Click **Save** to save the changes to the project.

4

Validating and Launching Business Rules and Sequences

You can launch a business rule or sequence from Business Rules within Analytic Administration Services, the Business Rules Web Launcher, or the Business Rules Command Line Launcher. This chapter contains information and instructions for launching a business rule or sequence from Business Rules within Analytic Administration Services and from the Command Line Launcher (also known as launching from a shortcut). For information on launching a business rule or sequence from the Web Launcher, see the *Hyperion System 9 Business Rules Web Launcher User's Guide* or the *Hyperion System 9 Business Rules Web Launcher Online Help*.

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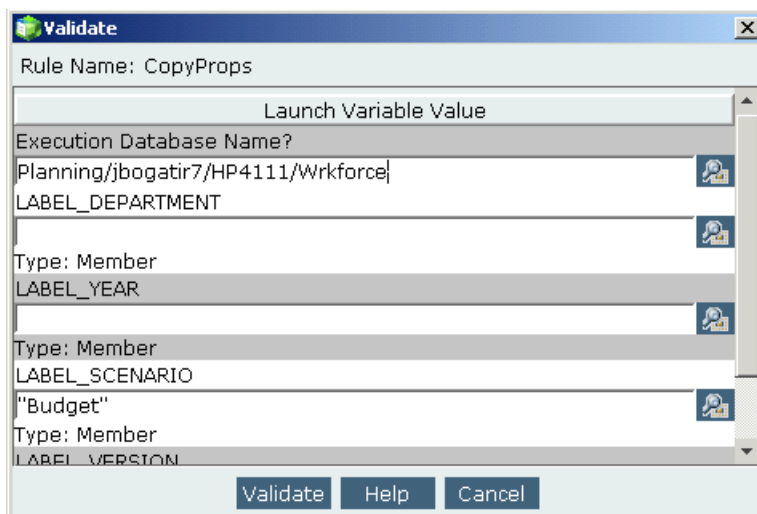
Validating a Business Rule

When you validate a business rule, Business Rules determines whether the member or members you select exist in the database and whether the syntax of the business rule is correct. If a members or members do not exist in the database or the syntax of the business rule is incorrect, Business Rules returns an error message when you validate the rule.

Note: You need to have access privileges to a business rule before you can validate it. For more information about granting access privileges to a rule, see [“Adding or Editing Access Privileges for a Business Rule” on page 86](#).

► To validate a business rule:

- 1 Launch the Administration Console by selecting **Start > Programs > Hyperion System 9 BI+ > Analytic Administration Services > Administration Console**.
- 2 In the **Analytic Administration Services Login** dialog box, enter a server name and your user name and password to log on to Analytic Administration Services.
- 3 In the left navigation frame of Analytic Administration Services, expand the **Business Rules** node. Then expand the **Repository View** node.
- 4 Expand the **Rules** node, and do one of the following:
 - Double-click the business rule you want to validate. When the business rule opens in the Rule Editor with the syntax of the rule displayed, click **Validate**.
The Validate dialog box is displayed.
 - Right-click the business rule you want to validate, and select **Validate**.
The Validate dialog box is displayed.



- 5 In the **Validate** dialog box, do the following:
 - a. In the **Execution Database Name** text box, enter the name of the database against which you want to validate the business rule. Or click the **Search** button to search for a database.

- b. If the business rule contains one or more run-time prompts, enter values for them, or click the **Search** button to search for values.

Note: A value for a run-time prompt may be entered by default. If so, you can accept the default, enter a new value, or search for a new value.

- 6 Click **Validate**. If there are any validation errors, Business Rules displays error messages for them. If you want more information about the error messages, click **Get Detail**.
- 7 Click **OK** to return to the Rule Editor.

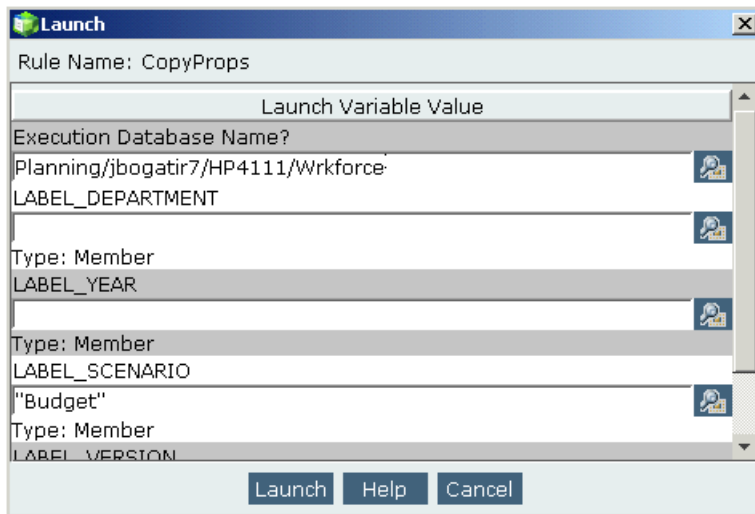
Launching a Business Rule

While you are working in Business Rules, you can launch a business rule that you have already saved. You select the business rule from the list of business rules under the Rules node, enter any required run-time prompts, and then launch the business rule.

Note: You need to have access privileges to a business rule before you can launch it. For more information about granting access privileges to a rule, see [“Adding or Editing Access Privileges for a Business Rule”](#) on page 86.

➤ To launch a business rule:

- 1 Launch the Administration Console by selecting **Start > Programs > Hyperion System 9 BI+ > Analytic Administration Services > Administration Console**.
- 2 In the **Analytic Administration Services Login** dialog box, enter a server name and your user name and password to log on to Analytic Administration Services.
- 3 In the left navigation frame of Analytic Administration Services, expand the **Business Rules** node. Then expand the **Repository View** node.
- 4 Expand the **Rules** node, and do one of the following:
 - Double-click the business rule you want to launch. When the business rule opens in the Rule Editor with the syntax of the rule displayed, click **Launch**.
The Launch dialog box is displayed.
 - Right-click the business rule you want to launch, and select **Launch**.
The Launch dialog box is displayed.



5 In the **Launch** dialog box, do the following:

- a. In the **Execution Database Name** text box, enter the name of the database against which you want to launch the business rule. Or click the **Search** button to search for a database.
- b. If the business rule contains one or more run-time prompts, enter values for them, or click the **Search** button to search for values.

Note: A value for a run-time prompt may be entered by default. If so, you can accept the default, enter a new value, or search for a new value.

- 6** Click **Launch**. If there are any launch errors, **Business Rules** displays error messages for them. If you want more information about the error messages, click **Get Detail**.
- 7** Click **OK** to return to the Rule Editor.

Validating a Business Rule Sequence

As you are creating a business rule sequence, you may want to validate portions of it (or all of it) to determine whether there are any problems with the sequence before you launch it. If there are problems, you can view the log file for a description of the problems, and rewrite the portion of the sequence that caused the validation error.

Note: You need to have access privileges to all rules in the sequence before you can validate it. For more information about granting access privileges to a sequence, see [“Adding or Editing Access Privileges for a Business Rule Sequence” on page 96](#).

➤ To validate a business rule sequence:

- 1** Launch the Administration Console by selecting **Start > Programs > Hyperion System 9 BI+ > Analytic Administration Services > Administration Console**.

- 2 In the **Analytic Administration Services Login** dialog box, enter a server name and your user name and password to log on to Analytic Administration Services.
- 3 In the left navigation frame of Analytic Administration Services, expand the **Business Rules** node. Then expand the **Repository View** node.
- 4 Expand the **Sequences** node, and double-click the sequence you want to validate.

The Sequence Editor is displayed showing the Sequence tab. The business rules and sequences that comprise the sequence are listed on this tab.

Note: You cannot validate a sequence that contains business rules that are associated with both an outline from Analytic Services and an outline from Planning.

- 5 Click **Validate** to validate the business rule sequence.

The Validate dialog box is displayed.

Index	Launch Variable Value
1	Execution Database Name?
2	Execution Database Name?

Buttons: Validate, Help, Cancel

- 6 In the **Validate** dialog box, do the following:
 - a. In the **Execution Database Name** text box, enter the name of the database against which you want to validate the business rule sequence. Or click the **Search** button to search for a database.
 - b. If the business rule sequence contains one or more run-time prompts, enter values for them, or click the **Search** button to search for values.

Note: A value for a run-time prompt may be entered by default. If so, you can accept the default, enter a new value, or search for a new value.

- 7 Click **Validate** to validate the sequence.

Launching a Business Rule Sequence

There may be times that you want to launch a business rule sequence while you are creating it to check the results of the sequence before you finish designing it. For example, if you are creating a complex business rule sequence that uses many different rules, you might want to validate the results as you include each rule.

Note: You need to have access privileges to all rules in the sequence before you can launch it. For more information about granting access privileges to a sequence, see [“Adding or Editing Access Privileges for a Business Rule Sequence” on page 96](#).

➤ To launch a business rule sequence:

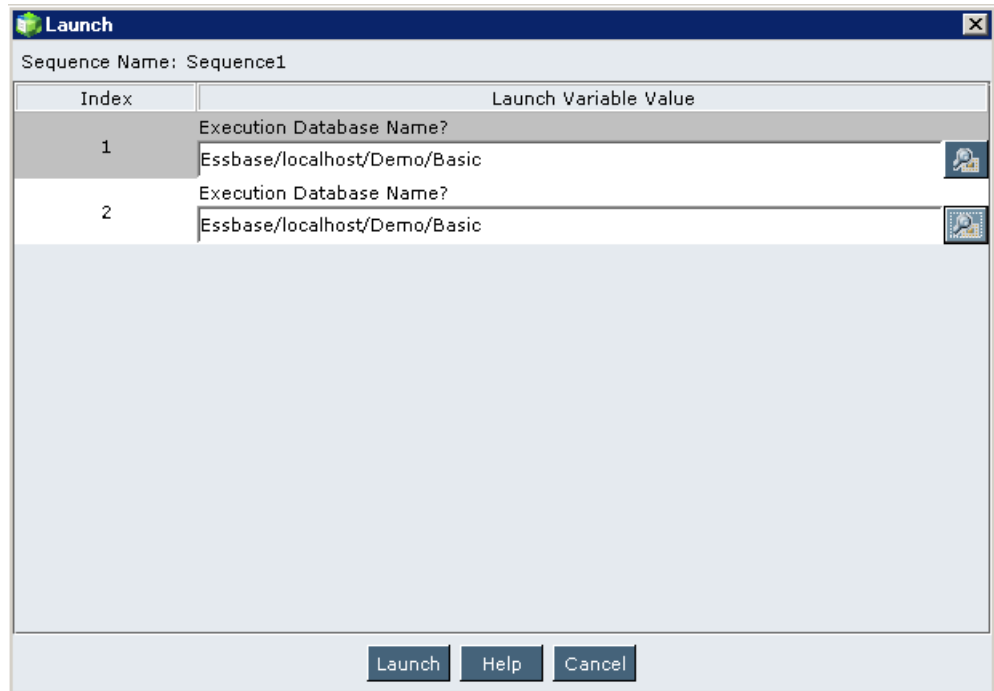
- 1 Launch the Administration Console by selecting **Start > Programs > Hyperion System 9 BI+ > Analytic Administration Services > Administration Console**.
- 2 In the **Analytic Administration Services Login** dialog box, enter a server name and your user name and password to log on to Analytic Administration Services.
- 3 In the left navigation frame of Analytic Administration Services, expand the **Business Rules** node. Then expand the **Repository View** node.
- 4 Expand the **Sequences** node, and double-click the sequence you want to launch.

The Sequence Editor is displayed showing the Sequence tab. The business rules and sequences that comprise the sequence are listed on this tab.

Note: You cannot launch a sequence that contains business rules that are associated with both an outline from Analytic Services and an outline from Planning.

- 5 Click **Launch** to launch the business rule sequence.

The Launch dialog box is displayed.



6 In the **Launch** dialog box, do the following:

- a. In the **Execution Database Name** text box, enter the name of the database against which you want to launch the business rule sequence. Or click the **Search** button to search for a database.
- b. If the business rule sequence contains one or more run-time prompts, enter values for them, or click the **Search** button to search for values.

Note: A value for a run-time prompt may be entered by default. If so, you can accept the default, enter a new value, or search for a new value.

7 Click **Launch** to launch the sequence.

Launching from a Shortcut

As an administrator, you can schedule business rules to run from outside of Business Rules by creating a shortcut (also known as a command line launch) on your desktop.

You can schedule business rules to calculate in a particular order by creating a shortcut on your desktop that represents the launching of either a particular business rule, a business rule with run-time prompts defined, an Analytic Services calc script, or a batch of several business rules (that is, a sequence), run-time prompt files, or calc scripts.

The target directory for the shortcut should include the path to the `CmdLnLauncher.exe` program with a space followed by the parameters listed below:

- `-Sservername`

- *-Username*
- *-Ppassword*
- *-rBusiness Rule Name* or *-sSequence Name* (This is an either/or option---specify only one.)
- *-fRun Time Prompts file* (If this file is not in the same directory as `CmdLnLauncher.exe`, specify the full run-time prompt file name with the location. You can only use the run-time prompt file name to launch business rules; it is ignored for launching sequences. Instead, the sequence's default launch values are used. You set up default launch values when you create a sequence from within the Business Rules Administration Console.)
- *-validate* (Use this parameter to validate the business rule or sequence, but not run it. For sequences, each rule is validated and any errors are written to the Business Rules log file.)

Note: By default, validation is turned off. You need to include the validation parameter to turn it on.

Command Line Launch Example

Here is how to launch a business rule called Budget with the run-time prompt information for the month of the year stored in a file called MONTH.

Target:

```
"C:\Hyperion\eas\console\bin\CmdLnLauncher.exe" -Sserver1 -Uadmin -
Ppassword -rBudget
-fmonth.rtp
```

Start in:

```
"C:\Hyperion\eas\console\bin"
```

Each command line option should be separated by spaces.

Example:

```
"C:\Hyperion\eas\console\bin\CmdLnLauncher.exe" -Sserver1 -Uadmin -
Ppassword -rBudget
-fmonth.rtp
```

Start in:

```
"C:\Hyperion\eas\console\bin"
```

Note: The letters before the parameters are required. For example the "S" is required before the server name in the following: `CmdLnLauncher.exe -Smyserver`

Launching Several Business Rules from a Shortcut

► To launch several business rules from a shortcut:

- 1 Add `java.exe` to your system path.

- 2 **Change to the directory in which the file `CmdLnLauncher.bat` is located. By default, it is in `c:\Hyperion\eam\console\bin`.**
- 3 **Create a batch file defining all the business rules you want to launch, and define it in the `Target` section of the shortcut.**

Make sure that if you are using different processes (for example, business rules, business rules with run-time prompts, sequences, and so on) that you use the appropriate variable (`-r` for business rules without run-time prompts, `-s` for sequences, and `-r` and `-f` for business rules with run-time prompts).

- 4 **Create a new shortcut or modify your existing shortcut by setting the `Target` and `Start in` fields to point to the location of your batch file.**

Batch File Example

The following is an example of running a batch file, called `Budget05.bat`, located on the local drive.

Target:

`C:\Budget05.bat`

Start in: `C:\`

The `Budget05.bat` file looks like the following:

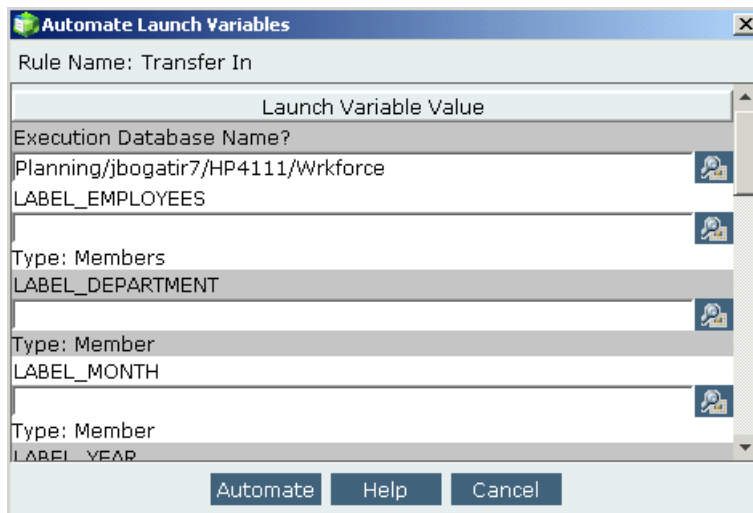
```
cd c:\hyperion\eam\console\bin
call CmdLnLauncher -Sserver1 -Uadmin -Ppassword -rBudget_2001
call CmdLnLauncher -Sserver1 -Uadmin -Ppassword -sBudget_2001
```

Automating Business Rules with Run-Time Prompts

You can automate a business rule that contains run-time prompts so it can be launched from the command line launcher in batch mode.

- To automate business rules with run-time prompts:
 - 1 **Launch the Administration Console by selecting `Start > Programs > Hyperion System 9 BI+ > Analytic Administration Services > Administration Console`.**
 - 2 **In the `Analytic Administration Services Login` dialog box, enter a server name and your user name and password to log on to Analytic Administration Services.**
 - 3 **In the left navigation frame of Analytic Administration Services, expand the `Business Rules` node. Then expand the `Repository View` node.**
 - 4 **Expand the `Rules` node.**
 - 5 **Right-click the rule you want to automate and select `Automate Launch Variables`.**

The Automate Launch Variables dialog box is displayed.



- a. In the **Execution Database Name** text box, enter the name of the database against which you want to launch the business rule. Or click the **Search** button to search for a database.
- b. If the business rule contains one or more run-time prompts, enter values for them, or click the **Search** button to search for values.

6 Click **Automate**.

The Save dialog box is displayed.

7 Enter a name for the file and give it an xml extension. Then click **Save**.

The file is saved to the location you specified. The file contains the name of the business rule, the database you want to launch it against, and any run-time prompts.

Note: The file must be an xml file.

5

Using Projects to Manage Repository Objects

Projects help you organize business rules, business rule sequences, macros, and variables into logical groupings of repository objects. This chapter contains information on creating and managing projects in Business Rules.

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	Adding Business Rules, Sequences, Macros, and Variables to a Project.	117
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About Projects

Projects help you organize business rules, business rule sequences, macros, and variables. For example, you might create a project that contains the business rules, sequences, macros, and variables that you work with most often. You might also group business rules into projects to help identify and manage individual business rules for each Analytic Services server.

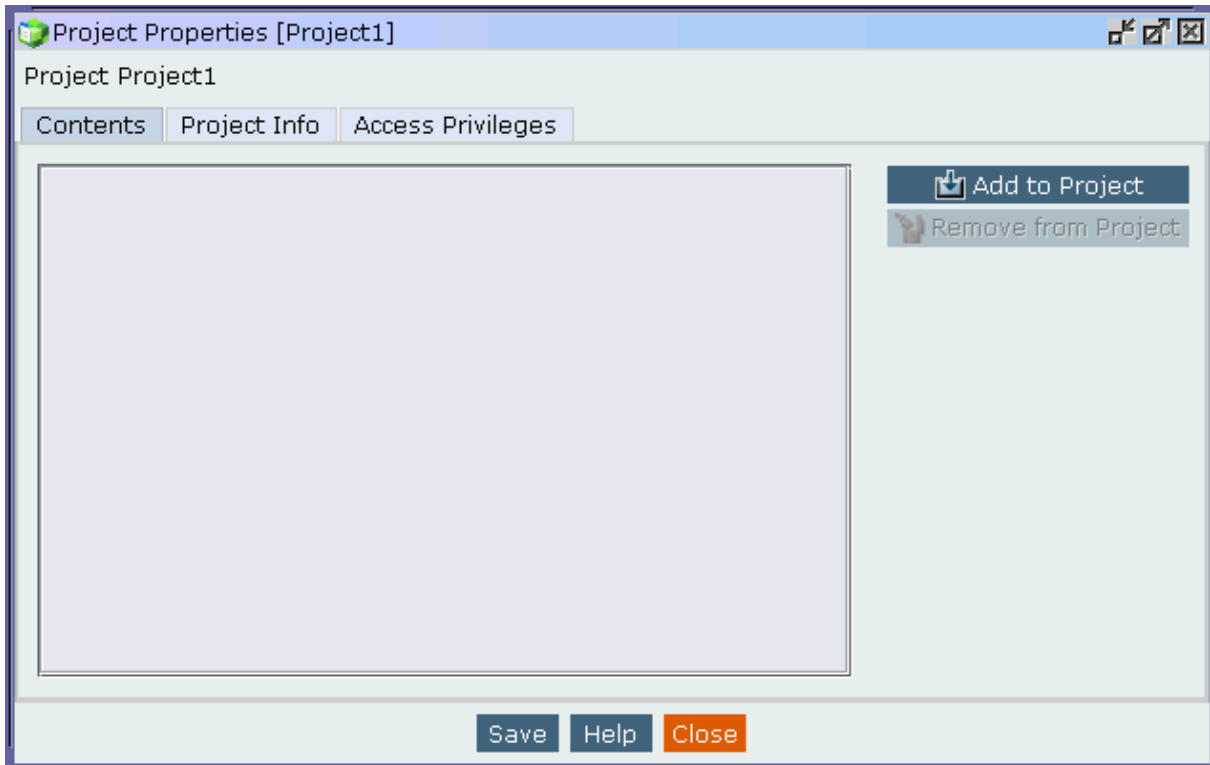
Using descriptive names for your projects makes finding the business rules and other objects that belong to them easier. For example, you might group business rules in a project called “Yearly Budget,” “Three Year Plan,” or “Monthly Reporting.” Or if you create some business rules using the Formula Guide, you might create a project that you identify by the type of formula used, such as “Fixed Facilities/Lease Costs” or “Operating Expense Business Rule.”

Creating Projects

► To create a project:

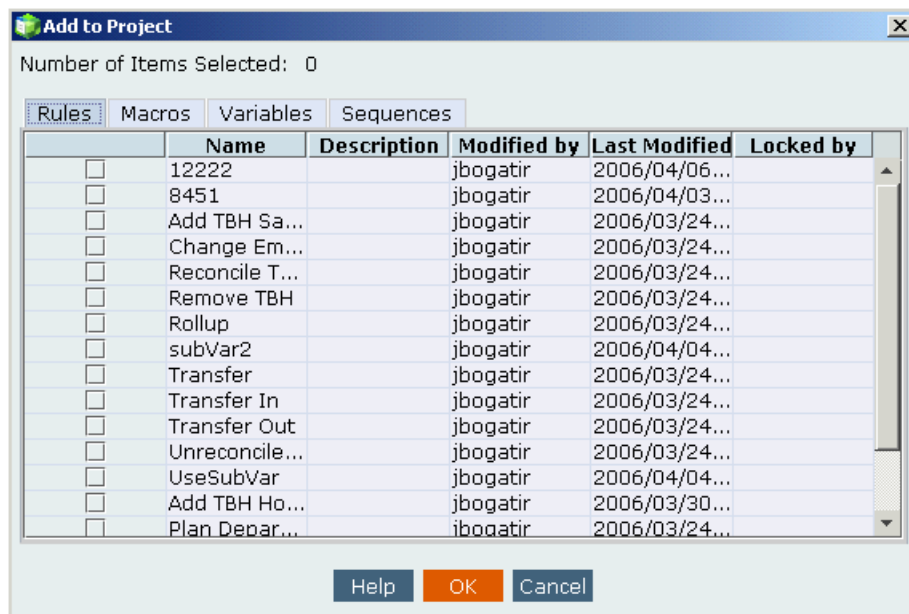
- 1 Launch the Administration console by selecting **Start > Programs > Hyperion System 9 BI+ > Analytic Administration Services > Administration Console**.
- 2 In the **Analytic Administration Services Login** dialog box, enter a server name and your user name and password to log on to Analytic Administration Services.
- 3 In the left navigation frame of Analytic Administration Services, expand the **Business Rules** node. Then expand the **Repository View** node.
- 4 From the **Projects** folder, select **New Project**.

The Contents tab for the project is displayed.



- 5 Click the **Add to Project** button to add rules, sequences, macros, and variables to the project.

The Add to Project dialog box is displayed. It contains lists of the business rules, sequences, macros, and variables that you can add to the project.



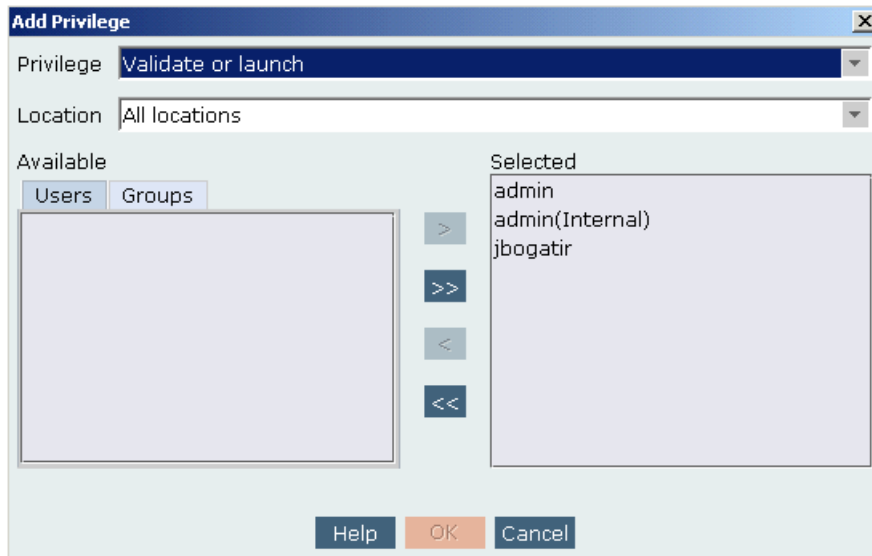
- 6 In the **Add to Project** dialog box, select the rules, sequences, macros, and variables that you want to add to the project by selecting the check boxes next to their names. Then click **OK**.

The objects that you select are listed on the Contents tab.

- 7 On the **Project Info** tab, enter a name, description, and owner for the project. Also, specify whether the project should be locked from editing by selecting the **Locked** check box.

- 8 On the **Access Privileges** tab, click the **Add** button to grant access to the project.

The Add Privilege dialog box is displayed.



- 9 In the **Add Privilege** dialog box, do the following:

- a. From the **Privilege** drop-down list, select the type of privilege you want to grant:
 - **Validate or launch** – Enables users to validate and launch the business rules and sequences in the project.
 - **Modify rule repository objects** – Enables users to modify the business rules, sequences, macros, and variables in the project.
 - **Cannot validate or launch** – Prevents users from validating or launching the business rules and sequences in the project.
 - **Cannot modify rule repository objects** – Prevents users from modifying the business rules, sequences, macros, and variables in the project.
- b. If you selected **Validate or launch** or **Cannot Validate or Launch** in step a, from the **Location** drop down list, do one of the following:
 - Choose **All Locations** to enable the users to validate and launch the business rules and sequences against all databases on the server. (This is the default selection.)
 - Choose **Select Location** to select a particular database against which the users can validate and launch the business rules and sequences. Then in the **Select Database Outline** dialog box, select a database and click **OK**.

- c. In the **Available** area, select users and/or groups of users for whom you want to add this access privilege. (You can select multiple users and groups using **Shift + Click**.) Then use the arrow keys to move users and groups among the **Selected** and **Available** areas of the dialog box. When you move users and groups to the **Selected** area of the dialog box, these users and groups have access to the project.
- d. Click **OK** to save the access privilege and return to the **Access Privileges** tab.

10 Click **Save** to save the new project.

Editing Projects

You can edit any of the following properties of a project:

- The name of the project
- The description of the project
- The owner of the project
- The Locked status of the project
- The contents of the project (that is, the business rules, sequences, macros, and variables) of the project
- The users and groups who have access to the project
- The access privileges for the project

Adding Business Rules, Sequences, Macros, and Variables to a Project

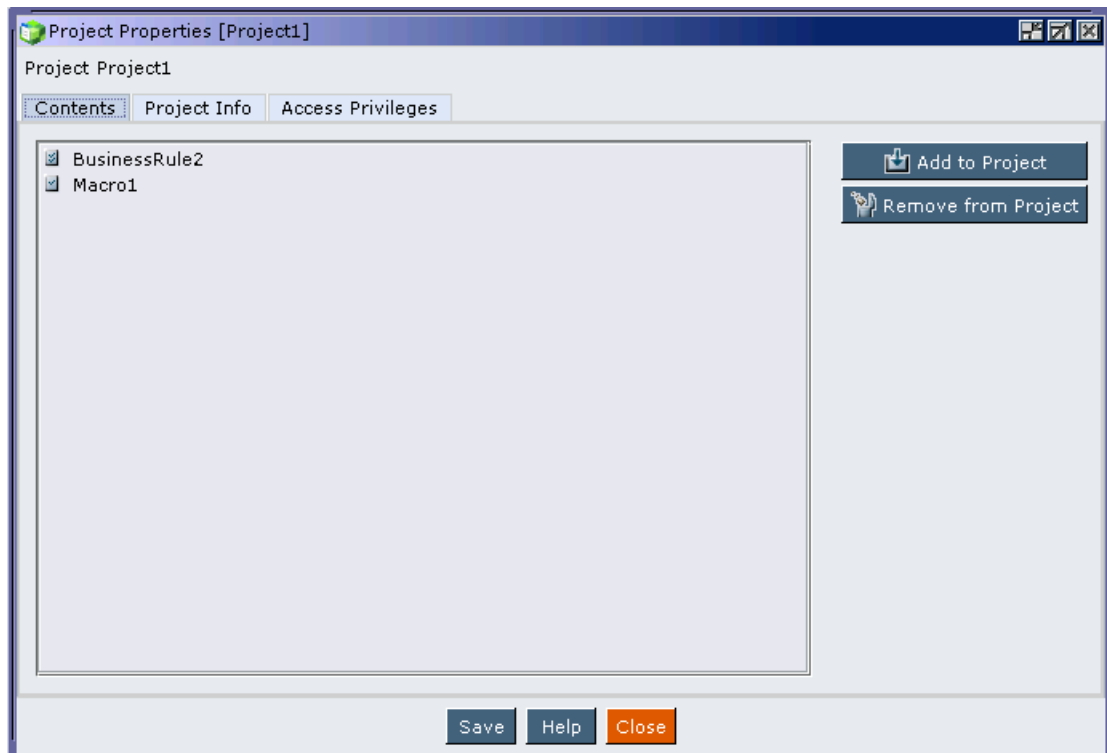
You can add business rules, sequences, macros, and variables to as many projects as you want.

Note: You cannot add a project to another project.

► To add business rules, sequences, macros, and variables to a project:

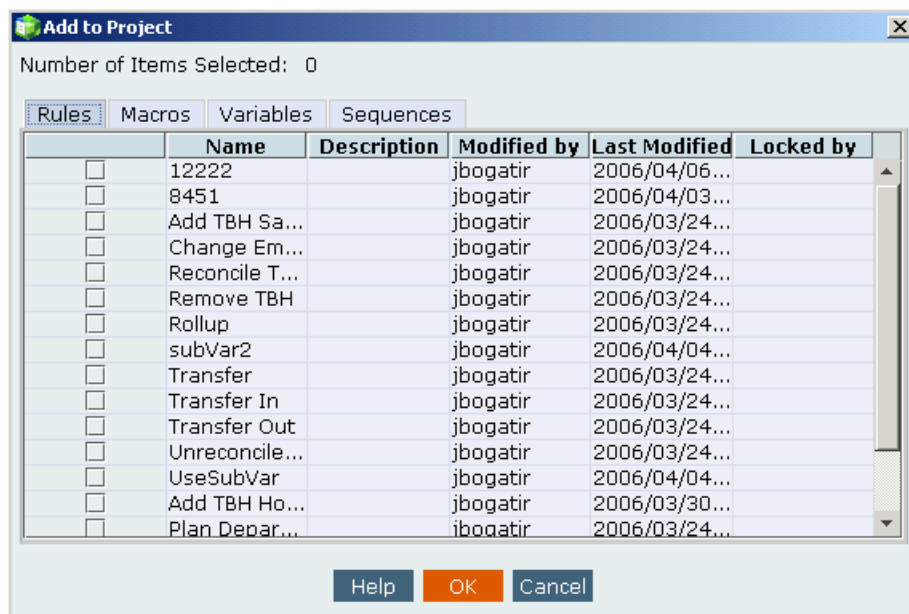
- 1** Launch the Administration console by selecting **Start > Programs > Hyperion System 9 BI+ > Analytic Administration Services > Administration Console**.
- 2** In the **Analytic Administration Services Login** dialog box, enter a server name and your user name and password to log on to Analytic Administration Services.
- 3** In the left navigation frame of Analytic Administration Services, expand the **Business Rules** node. Then expand the **Repository View** node.
- 4** Expand the **Projects** folder. Double-click the project to which you want to add a business rule, sequence, macro, or variable.

The contents of the project are displayed on the Contents tab.



- 5 Click **Add to Project** to add a business rule, sequence, macro, or variable to the project.

The Add to Project dialog box is displayed. It contains lists of the business rules, sequences, macros, and variables that you can add to the project.



- 6 In the **Add to Project** dialog box, select the business rules, sequences, macros, and variables that you want to add to the project by selecting the check boxes next to their names. Then click **OK**.

The objects that you select are listed on the Contents tab of the project.

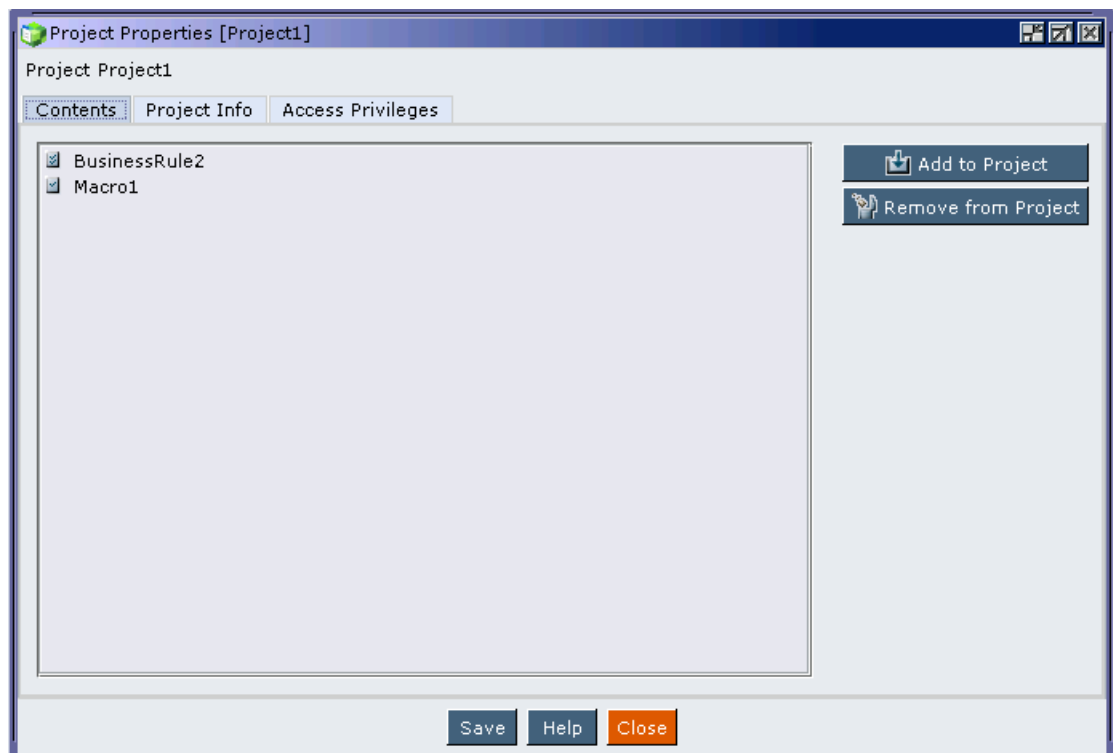
- 7 Click **Save** to save the changes to the project.

Deleting Business Rules, Sequences, Macros, and Variables from a Project

When you delete business rules, sequences, macros, or variables from a project, they are not deleted from the Business Rules repository; they still exist in the repository and are displayed in the Repository View node within Business Rules.

- To delete business rules, sequences, macros, and variables from a project:
 - 1 Launch the Administration console by selecting **Start > Programs > Hyperion System 9 BI+ > Analytic Administration Services > Administration Console**.
 - 2 In the **Analytic Administration Services Login** dialog box, enter a server name and your user name and password to log on to Analytic Administration Services.
 - 3 In the left navigation frame of Analytic Administration Services, expand the **Business Rules** node. Then expand the **Repository View** node.
 - 4 Expand the **Projects** folder. Double-click the project from which you want to delete a business rule, sequence, macro, or variable.

The contents of the project are displayed on the Contents tab.



- 5 On the **Contents** tab, select the business rules, sequences, macros, and variables you want to delete from the project. (You can select multiple objects by using **Shift + Click**.)
- 6 Click **Remove From Project** to delete the business rules, sequences, macros, and variables you selected from the project.

The objects you selected are deleted from the project and no longer display on the Contents tab.
- 7 Click **Save** to save the changes to the project.

Deleting Projects

You can delete a project when you no longer need to use it. When you delete a project, none of the business rules, sequences, macros, or variables that you added to the project are deleted. They continue to exist as individual objects in the Business Rules repository.

Note: You cannot delete a project that you have open for editing or browsing.

➤ To delete a project:

- 1 Launch the Administration console by selecting **Start > Programs > Hyperion System 9 BI+ > Analytic Administration Services > Administration Console**.
- 2 In the **Analytic Administration Services Login** dialog box, enter a server name and your user name and password to log on to Analytic Administration Services.
- 3 In the left navigation frame of Analytic Administration Services, expand the **Business Rules** node. Then expand the **Repository View** node.
- 4 Expand the **Projects** folder. Right-click the project you want to delete, and select **Delete Project**.

The Delete Confirmation dialog box is displayed.
- 5 In the **Delete Confirmation** dialog box, click **Yes** to confirm deletion of the project.

The project is deleted from the repository.

6

Importing and Exporting

You can import and export business rules, sequences, macros, variables, and projects. You can also import and export the access privileges and database locations you assigned to them. This chapter contains instructions for, and information about, importing and exporting business rules.

Note: You cannot import or export database locations or access privileges by themselves; you can only import or export database locations or access privileges as part of a business rule that you are importing or exporting.

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Exporting Business Rules, Macros, Variables, Sequences, and Projects

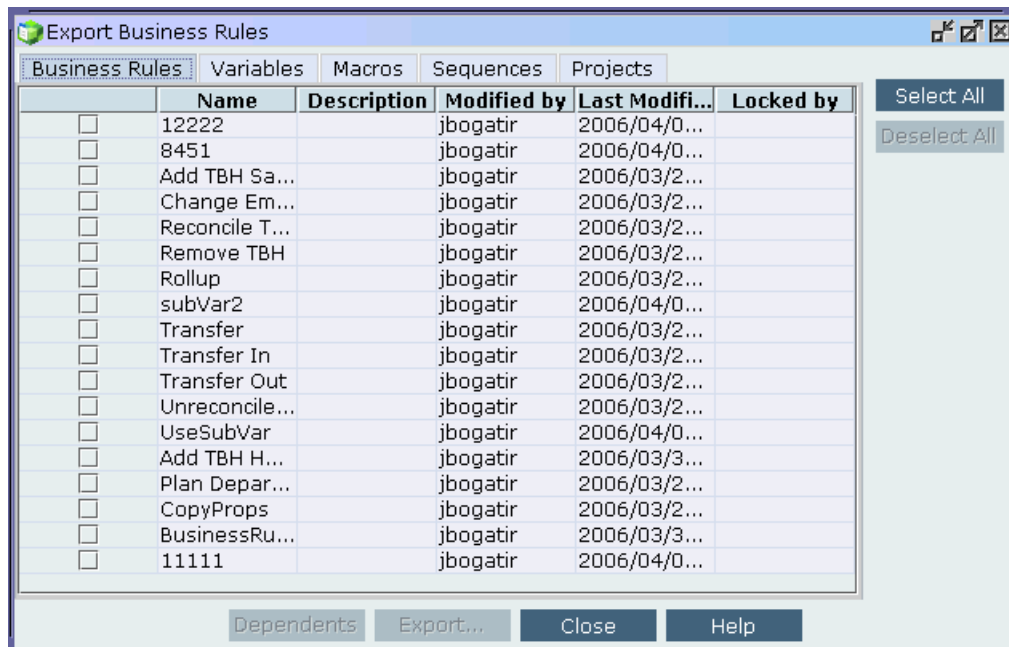
You can export repository objects such as business rules, macros, sequences, variables and projects. You can also export any access privileges and database locations that you specified for them. You may want to export objects from the repository to use them as backup copies or to move them to another repository. You export repository objects to an xml file.

Note: You can export only repository objects created in this release of Business Rules.

► To export repository objects:

- 1 Launch the Administration Console by selecting **Start > Programs > Hyperion System 9 BI+ > Analytic Administration Services > Administration Console**.
- 2 In the **Analytic Administration Services Login** dialog box, enter a server name and your user name and password to log on to Analytic Administration Services.
- 3 In the left navigation frame of Analytic Administration Services, right-click the **Business Rules** node, and select **Export Business Rules**.

The Export Business Rule frame is displayed. Initially, these tabs are empty until you connect to a repository from which you want to export.



4 On the Enter Source Repository Information dialog box, do the following:

Note: You can only export business rules, sequences, macros, variables, and projects that were created in this release of Business Rules.

- a. From the **Repository Type** drop-down list, select one of the following repository types from which to export:
 - o Microsoft SQL
 - o Oracle
 - o DB2
 - o My SQL
- b. Enter the name and port number of the server on which the repository resides. If you are using an Oracle repository, enter the instance.
- c. For My SQL and DB2, enter the database name (this is the empty Business Rules database that was created in Microsoft SQL Server or DB2 during configuration) followed by the user name and password for that database.
- d. Click **Test Connection** to test the connection to the database. If the connection fails, make any necessary changes until you can connect successfully.
- e. Click **Connect** to connect to the server.

If the connection is successful, the business rules, sequences, macros, variables, and projects that you can export are listed on the Business Rules, Sequences, Variables, Macros, and Projects tabs.

- 5 On the **Business Rules, Variables, Macros, Sequences, and Projects** tabs, select the check boxes next to the names of the business rules, variables, macros, sequences, and projects you want to export. Or click the **Select All** button to export all of them.

Note: If you want to export all of the items listed on each tab, click the Select All button for each tab.

- 6 Click the **Dependents** button to export the variables and macros that are associated with the business rules you selected.

The variables and macros associated with the business rules you selected are listed on the Variables and Macros tabs.

- 7 Click **Export** to export the objects you selected.

The Save dialog box is displayed.

- 8 In the **Save** dialog box, create a new export file in which to save the exported objects by entering a name for the file in the **File Name** text box.

Note: The file to which you export must be an xml file.

- 9 Click **Save**.

The business rules, variables, macros, sequences, and projects you selected are exported to the xml file.

Importing Business Rules, Macros, Variables, Sequences, and Projects

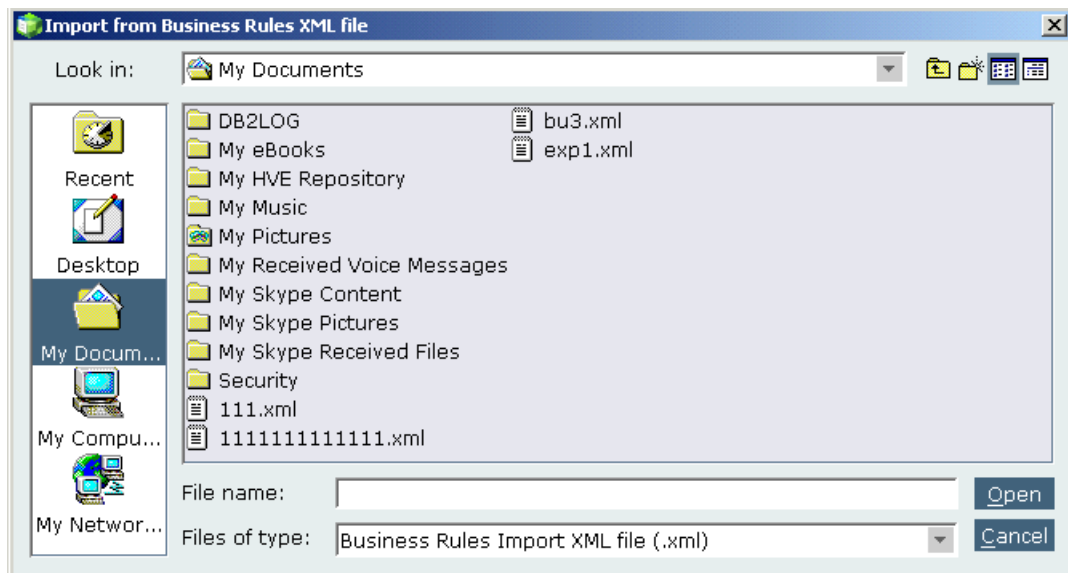
You can import repository objects such as business rules, macros, sequences, variables and projects. You can also import any access privileges and database locations that you specified for them. You may want to import objects into the Business Rules repository when you need to move them from another Business Rules repository on another server. You import repository objects from an xml file.

Note: You can import only repository objects created in this release of Business Rules. You cannot import repository objects that were exported from a previous release of Business Rules.

► To import repository objects:

- 1 Launch the Administration Console by selecting **Start > Programs > Hyperion System 9 BI+ > Analytic Administration Services > Administration Console**.
- 2 In the **Analytic Administration Services Login** dialog box, enter a server name and your user name and password to log on to Analytic Administration Services.
- 3 In the left navigation frame of Analytic Administration Services, right-click the **Business Rules** node, and select **Import Business Rules**.

The Import from Business Rules XML File dialog box is displayed.



- 4 Navigate to the xml file you want to import, select the file, and click **Open**.

If the import is successful, a message is displayed.

Note: If the import is not successful, see the Business Rules log file, `hbrclient.log`, for details.

- 5 If the xml file is imported successfully, you can refresh each of the nodes in Business Rules to see the new business rules, macros, variables, sequences, and projects that you imported.

7

Managing the System

This chapter contains information on administration tasks in Business Rules: migrating the Business Rules repository, changing the level of error reporting, viewing information in the `HBRServer` and `HBRClient` properties files, and managing database locations.

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Migrating the Repository

The repository stores all repository objects (including business rules, sequences, macros, and variables) defined in Business Rules. To migrate the repository from a previous release of Business Rules to the repository for this release of Business Rules, or to migrate a repository to a new server, you can use the Migrate Repository feature. To do so, you need to set up a connection to the server from which you want to migrate, test the connection, and then select the business rules, variables, macros, sequences, and projects you want to migrate.

To create a new repository for this release of Business Rules, use the Hyperion Configuration Utility. For more information, see the *Hyperion System 9 BI+ Analytic Administration Services Installation Guide* for this release.

Note: You need to migrate any existing graphical repositories (from release 2.x forward) and any existing Business Rules repositories (from release 4.x forward) to the Business Rules repository for this release in order to work with business rules using this version of Business Rules.

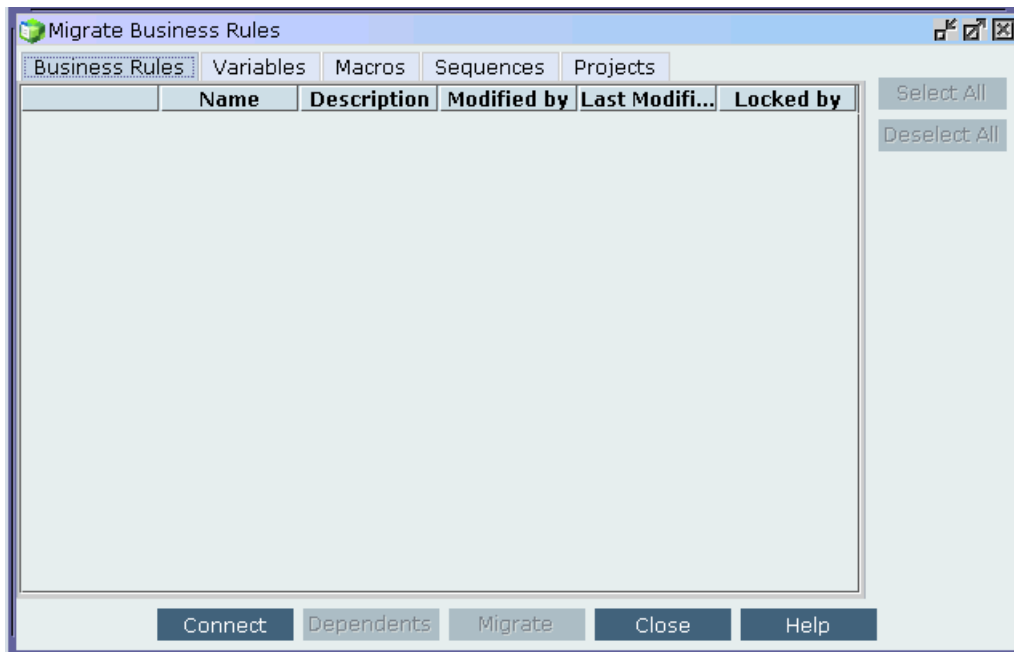
➤ To migrate the repository:

- 1 Launch the Administration Console by selecting **Start > Programs > Hyperion System 9 BI+ > Analytic Administration Services > Administration Console**.
- 2 In the **Analytic Administration Services Login** dialog box, enter a server name and your user name and password to log on to Analytic Administration Services.

- 3 In the left navigation frame of Analytic Administration Services, expand the **Business Rules** node. Then expand the **Administration** node.
- 4 Right-click **Administration** and select **Migrate Repository**.

The Migrate Business Rules window is displayed with the Business Rules tab selected; this tab is empty initially. After you connect to a server, database, and repository from which to migrate, this tab lists the business rules that you can migrate.

Note: You cannot migrate any access privileges that are associated with business rules, variables, macros, sequences, or projects.



- 5 Click **Connect** to connect to the repository from which you want to migrate repository objects.
- 6 On the **Enter Source Repository Information** dialog box, do the following:

Note: You cannot use the Migrate Repository feature in Business Rules to migrate a 4.1 repository to a repository for this release. You need to upgrade the 4.1 repository to a repository for this release using the Hyperion Configuration Utility. For more information, see the *Hyperion System 9 BI+ Analytic Administration Services Installation Guide*.

- a. From the **Repository Version** drop-down list, select one of the following repository versions from which to migrate:
 - o **Current Version:** Select this option if your repository is upgraded to a repository for this release (using the Hyperion Configuration Utility), and you want to migrate business rules and other repository objects such as variables, macros, sequences, and projects, as well as any database locations and access privileges assigned to them, to another repository for this release.

- **Business Rules 4.0 Repository:** If you are migrating a 4.0 repository to a repository for this release, run the Externalize Users utility in Analytic Administration Services first. When you run this utility, all native Analytic Administration Services and Business Rules users from the previous release are migrated from the Analytic Administration Services/Business Rules repository into the Shared Services repository. For more information on using the Externalize Users utility to migrate users to Shared Services, see the *Hyperion System 9 BI+ Analytic Administration Services Installation Guide*.

Select this option to migrate non-graphical business rules and other repository objects such as variables, macros, sequences, and projects, as well as any database locations and access privileges assigned to them, from a Business Rules 4.0 repository into a Business Rules repository for this release.

When you migrate your Business Rules 4.0 repository to a repository for this release, all Business Rules repository objects including rules, sequences, variables, macros, and projects, as well as any database locations and access privileges assigned to them, are migrated to Shared Services automatically. During migration, any Business Rules roles assigned to users are migrated and assigned equivalent roles in Shared Services. In addition, any Business Rules groups are migrated to Shared Services. If the groups have roles assigned to them, these roles are also migrated and assigned equivalent roles in Shared Services. If a Business Rules group does not exist in Shared Services, it is created.

After they are migrated to the Shared Services repository, existing Business Rules users and groups are automatically provisioned for use in Business Rules. You can work with Business Rules users and groups, and assign roles to them, in Hyperion System 9 Shared Services User Management Console. For an overview of Hyperion System 9 Shared Services User Management Console, Hyperion's new centralized interface for managing users, groups, and roles for all Hyperion products, see the *Hyperion System 9 Shared Services User Management Guide*.

- **Graphical Repository:** Select this option to migrate graphical business rules from a graphical repository (from 2.x through 4.0.1) into a Business Rules repository for this release. All of your graphical business rules remain graphical business rules in the upgraded repository.

Note: You cannot convert non-graphical business rules into graphical business rules by migrating to a new repository. Also, you cannot migrate rules from an active repository to another repository. For example, if you have repositories A and B, and A is the active repository, you cannot migrate rules from the A repository into the B repository, though you can migrate rules from the B repository into the A repository.

- b. From the **Repository Type** drop-down list, select one of the following repository types from which to migrate:
 - Microsoft SQL
 - Oracle
 - DB2
 - Microsoft Access

Note: You can only select Microsoft Access if you are migrating from a graphical repository.

- c. Enter the name and port number of the server on which the repository resides. If you are using an Oracle repository, enter the instance.
- d. For SQL and DB2, enter the database name (this is the empty Business Rules database that was created in Microsoft SQL Server or DB2 during configuration) followed by the username and password for that database.
- e. Click **Test Connection** to test the connection to the database. If the connection fails, make any necessary changes until you can connect successfully.
- f. Click **Connect** to connect to the server.

Note: Select Current if you want to connect to the server that you are connected to currently.

The business rules and sequences that you can migrate to this release of Business Rules are listed on the Business Rules tab and the Sequences tabs, respectively. If you are migrating a 4.0 or later repository, any variables, macros, and projects that you can migrate are listed on their respective tabs.

7 Do one of the following:

- If you are migrating a 4.0 or later database, on the **Business Rules, Variables, Macros, Sequences, and Projects** tabs, select the check boxes next to the names of the business rules, variables, macros, sequences, and projects you want to migrate. Or click the **Select All** button to migrate all of them.
- If you are migrating a graphical repository, select the check boxes next to the names of the business rules and sequences you want to migrate. Or click the **Select All** button to migrate all of them. Go to [step 9](#).

Note: If you want to migrate all of the items listed on each tab, click the Select All button for each tab.

8 If you are migrating a 4.0 or later database, click the Dependents button to migrate the variables and macros that are associated with the business rules you selected.

The variables and macros associated with the business rules you selected are listed on the Variables and Macros tabs.

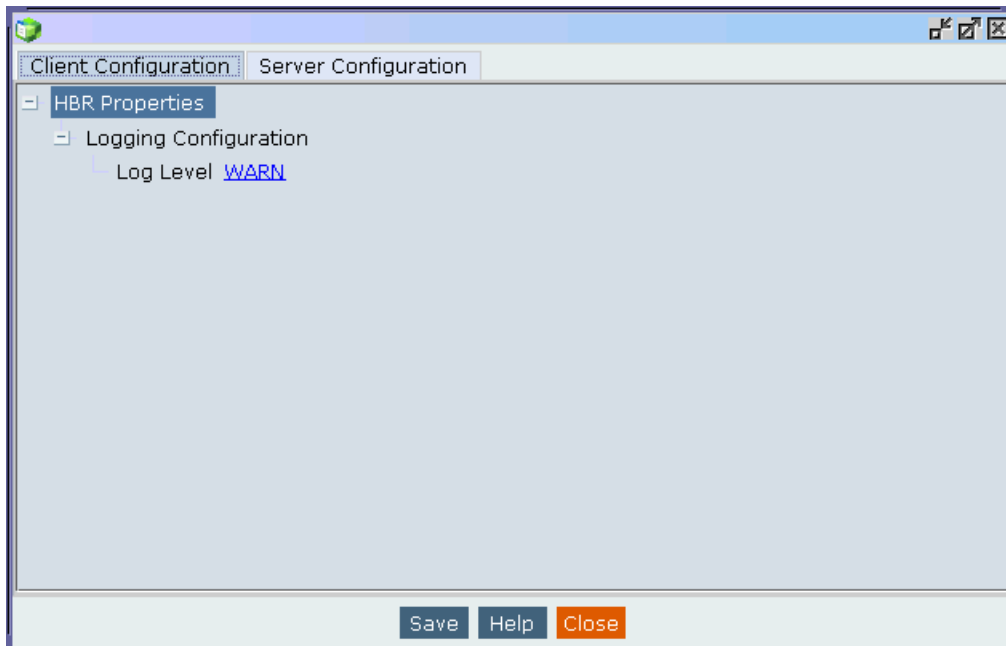
9 Click Migrate to migrate the objects you selected.

Viewing Information from Properties Files

You can view information about the configuration of the Business Rules server and client generated from the `HBRServer.properties` and the `HBRClient.properties` files. This information includes repository connection information and error log configuration information.

- To view information about the Business Rules client and server configurations:
 - 1 Launch the Administration Console by selecting **Start > Programs > Hyperion System 9 BI+ > Analytic Administration Services > Administration Console**.
 - 2 In the **Analytic Administration Services Login** dialog box, enter a server name and your user name and password to log on to Analytic Administration Services.
 - 3 In the left navigation frame of Analytic Administration Services, expand the **Business Rules** node. Then expand the **Administration** node.
 - 4 Double-click the **Properties** node.

The properties of the Business Rules client configuration are displayed.



- 5 Select the **Server Configuration** tab to view properties of the server configuration.
- 6 When you finish viewing the information, click **Close**.

Changing the Level of Message Reporting in the Log File

The log file contains information about the contents and processes run in the Business Rules client, such as the date a business rule was run, the values entered by users at run-time, and any errors. By default, Business Rules records warning level messages in the `log.txt` file, but you can change the level of the messages that are recorded.

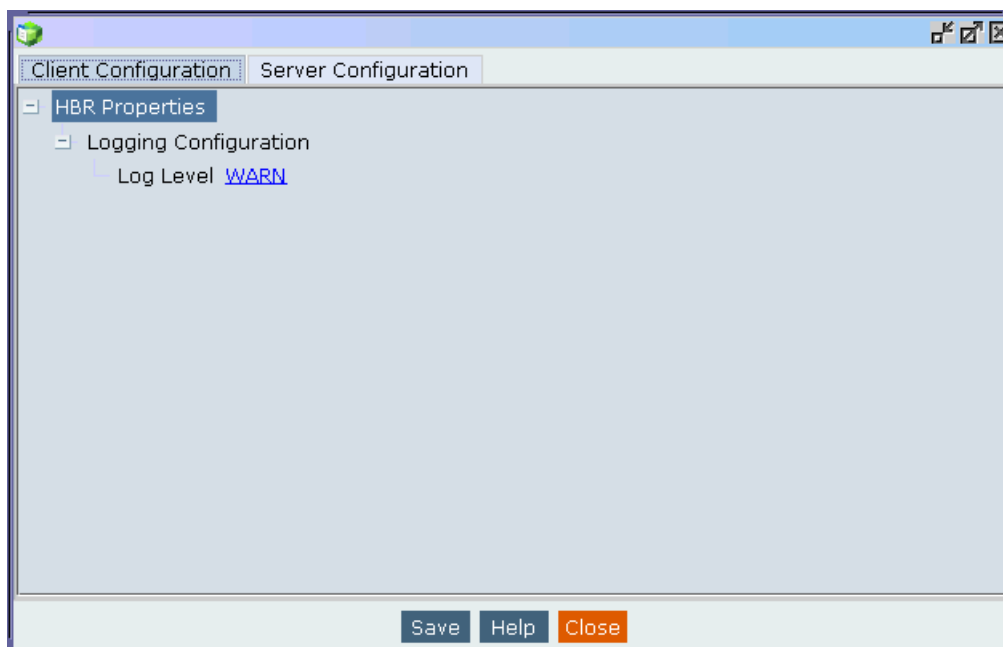
- To change the level of messages recorded in the `log.txt` file:
 - 1 Launch the Administration Console by selecting **Start > Programs > Hyperion System 9 BI+ > Analytic Administration Services > Administration Console**.

- 2 In the **Analytic Administration Services Login** dialog box, enter the Analytic Administration Services server name and your user name and password to log on to Analytic Administration Services. Then click **OK**.

Note: If the Analytic Administration Services port was changed from the default port during Analytic Administration Services installation, enter the port information before the Analytic Administration Services server name as follows: port number name:port#

- 3 In the left navigation frame of Analytic Administration Services, expand the **Business Rules** node. Then expand the **Administration** node.
- 4 Double-click the **Properties** node.

The properties of the Business Rules client configuration are displayed.



- 5 To change the level of error reporting for the client on the **Client Configuration** tab, select one of the following error levels from the **Log Level** drop-down list:
 - Severe - Select to record only severe errors in the log file
 - Warning (default) - Select to record only warning messages in the log file
 - Info - Select to record only informational messages in the log file
 - Config - Select to record only configuration errors in the log file
 - All - Select to record all messages and errors in the log file
- 6 To change the level of error reporting for the server on the **Server Configuration** tab, select one of the error levels described in step 5 from the **Log Level** drop-down list.

Note: After you change the level of error reporting for the server, you need to restart it.

- 7 Click **Save** to save the changes.

Managing Database Locations

You can manage database locations, and the access privileges of repository objects that are assigned to them, using the Location Editor. You can use the Location Editor to create, edit, and copy database locations, assign new access privileges to locations, copy access privileges from one location to another, and copy business rules from one location to another.

If you are moving from a test to a production environment, you can use the Location Editor to create a new database location for the production environment. Then you can copy all of your business rules and access privileges from the database location in the test environment to the new database location in the production environment. This prevents you from having to assign access privileges to each business rule individually after you copy them to the production environment.

Similarly if your company changes its server name, you can use the Location Editor to add a new database location for the new server name and then copy all of the business rules to that new location. This saves you from having to edit the database location for each business rule individually.

Adding a New Database Location

You can add a new database location to the Locations node. After you add the new location, you can edit it by copying access privileges for repository objects to it or deleting access privileges for repository objects from it.

Note: Before you begin creating new locations, the Locations node lists only locations for the previous release of Business Rules. As you add new locations, you can refresh the Locations node to display all of your locations.

► To create a new database location:

- 1 Launch the Administration Console by selecting **Start > Programs > Hyperion System 9 BI+ > Analytic Administration Services > Administration Console**.
- 2 In the **Analytic Administration Services Login** dialog box, enter the Analytic Administration Services server name and your user name and password to log on to Analytic Administration Services. Then click **OK**.
- 3 In the left navigation frame of Analytic Administration Services, expand the **Business Rules** node. Then expand the **Administration** node.
- 4 Under the Administration node, right-click **Locations** and select **New Location**.
The Select Location dialog box is displayed.
- 5 In the **Select Location** dialog box, drill down to select a Planning or Analytic Services database location to copy.
- 6 Click **OK**.

The new location is added to the Locations node.

Note: If the new location is not displayed under the Locations node, select Locations > Refresh to refresh the list of locations.

Editing a Location

► To edit a database location:

- 1 Launch the Administration Console by selecting **Start > Programs > Hyperion System 9 BI+ > Analytic Administration Services > Administration Console**.
- 2 In the **Analytic Administration Services Login** dialog box, enter the Analytic Administration Services server name and your user name and password to log on to Analytic Administration Services. Then click **OK**.
- 3 In the left navigation frame of Analytic Administration Services, expand the **Business Rules** node. Then expand the **Administration** node.
- 4 Expand the **Locations** node.
- 5 Under the **Locations** node, right-click the location you want to edit and select **Open**.

The Location Editor is displayed. It lists the user/group types, the specific user/group names, the repository object types, the repository objects names, and the access privileges for this location.

- 6 Do any or all of the following:
 - a. Click **Add Access Privileges** to add access privileges. For information on adding access privileges to this location, see [“Adding Access Privileges to a Location” on page 134](#).
 - b. Click **Add Rules** to add rules to this location. For information on adding rules to a location, see [“Adding Rules to a Location” on page 136](#).
 - c. Click **Delete** or **Delete All** to delete some or all access privileges for this location. For information on deleting access privileges from a location, see [“Deleting Access Privileges from a Location” on page 137](#).
- 7 Click **Save** to save the changes you make to the database location.

Adding Access Privileges to a Location

You can add access privileges for existing rules, sequences, and projects to a new location simultaneously. This prevents you from having to edit each rule, sequence, and project individually to add their access privileges to the new location.

► To add access privileges to a database location:

- 1 Launch the Administration Console by selecting **Start > Programs > Hyperion System 9 BI+ > Analytic Administration Services > Administration Console**.
- 2 In the **Analytic Administration Services Login** dialog box, enter the Analytic Administration Services server name and your user name and password to log on to Analytic Administration Services. Then click **OK**.
- 3 In the left navigation frame of Analytic Administration Services, expand the **Business Rules** node. Then expand the **Administration** node.

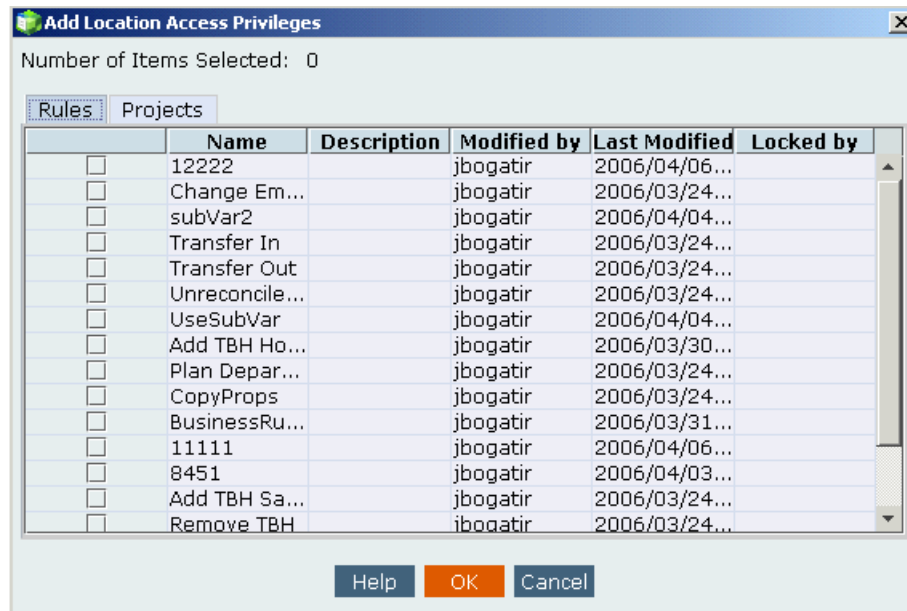
4 Expand the **Locations** node.

5 Under the **Locations** node, right-click the location to which you want to add access privileges and select **Open**.

The Location Editor is displayed. It lists the user/group types, the specific user/group names, the repository object types, the repository objects names, and the access privileges for this location.

6 Click **Add Access Privileges**.

The Add Location Access Privileges dialog box is displayed. It lists all of the rules, sequences, and projects whose access privileges you can add to this location.



7 In the **Add Access Privileges** dialog box, select the rules, sequences, and projects whose access privileges you want to assign to the location. Then click **OK**.

Note: You can add sequences to the “All Locations” node only.

The Add Privilege dialog box is displayed.

8 In the **Add Privilege** dialog box, do the following:

- a. From the **Privilege** drop-down list, select the type of privilege you want to grant:
 - o **Validate or launch** - enables a users or users you specify to validate and launch the business rules and sequences in the database location.
 - o **Cannot validate or launch** - prevents the user or users you specify from validating or launching the business rules or sequences in the database location.

- b. In the **Available** area, select users and/or groups of users for whom you want to add this access privilege. (You can select multiple users and groups using **Shift + Click**.) Then use the arrow keys to move users and groups among the **Selected** and **Available** areas of the dialog box. When you move users and groups to the **Selected** area of the dialog box, these users and groups have the access privilege you assigned.

Note: The users and groups that are listed in the Available area are provisioned for use in Business Rules using the Hyperion System 9 Shared Services User Management Console. Provisioning is the process of assigning roles and access privileges to users and groups for Business Rules. For more information about provisioning users for use in Business Rules, see the *Hyperion System9 Shared Services User Management Guide*.

If new users are provisioned after the Analytic Administration Services server is started, you may need to refresh the list of users on the Users tab in the Available area of the Add Privilege dialog box. To refresh the list of users on the Users tab, right-click Administration, and select Refresh User List.

- c. Click **OK** to save the access privilege and return to the **Access Privileges** tab.
- 9 Click **Save** to save the changes to the access privileges of the location.

Adding Rules to a Location

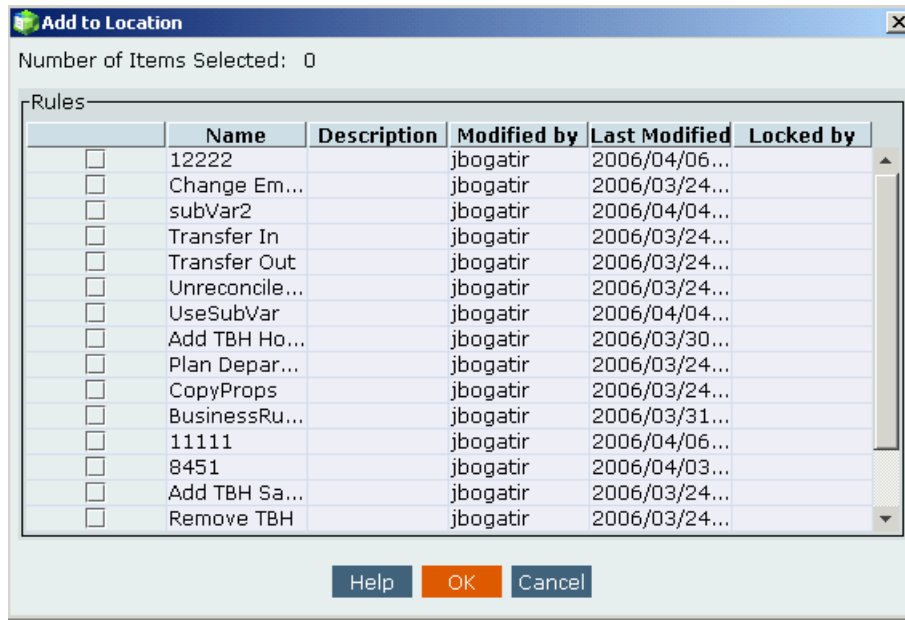
You can add multiple rules to a location at once. For example, if your company changes the name of its server, you can create a new location for the new server name, then copy all of the business rules from the old location to the new location. This prevents you from having to open each rule individually, and add the new location to it on the Locations tab.

- To add business rules to a database location:
 - 1 Launch the Administration Console by selecting **Start > Programs > Hyperion System 9 BI+ > Analytic Administration Services > Administration Console**.
 - 2 In the **Analytic Administration Services Login** dialog box, enter the Analytic Administration Services server name and your user name and password to log on to Analytic Administration Services. Then click **OK**.
 - 3 In the left navigation frame of Analytic Administration Services, expand the **Business Rules** node. Then expand the **Administration** node.
 - 4 Expand the **Locations** node.
 - 5 Under the **Locations** node, right-click the particular location for which you want to add business rules and select **Open**.

The Location Editor is displayed. It lists the user/group types, the specific user/group names, the repository object types, the repository objects names, and the access privileges for this location.

- 6 Click **Add Rules**.

The Add to Location dialog box is displayed. It lists all of the rules you can add to this location.



- 7 In the **Add to Location** dialog box, select the check boxes next to the names of the business rules you want to add to this location.
- 8 Click **OK** to add the rules you selected.

Note: When rules are added to a new location, they are not copied to it. Only their access privileges are copied to the new location.

Deleting Access Privileges from a Location

You can delete access privileges for some or all of the repository objects assigned to a database location. When you delete access privileges, you delete them only for the repository objects assigned to the location you select. If the repository objects are assigned to other locations, their access privileges remain.

- To delete access privileges from a database location:
 - 1 Launch the Administration Console by selecting **Start > Programs > Hyperion System 9 BI+ > Analytic Administration Services > Administration Console**.
 - 2 In the **Analytic Administration Services Login** dialog box, enter the Analytic Administration Services server name and your user name and password to log on to Analytic Administration Services. Then click **OK**.
 - 3 In the left navigation frame of Analytic Administration Services, expand the **Business Rules** node. Then expand the **Administration** node.
 - 4 Expand the **Locations** node.
 - 5 Under the **Locations** node, right-click the location for which you want to delete access privileges and select **Open**.

The Location Editor is displayed. It lists the user/group types, the specific user/group names, the repository object types, the repository objects names, and the access privileges for this location.

6 Do one of the following:

- To delete access privileges for particular repository objects assigned to the location, select the check boxes next to their names, and click **Delete**.
- To delete access privileges for all repository objects assigned to the location, click **Delete All**. Confirm deletion of all of the access privileges from the repository objects.

7 Click OK to save the changes.

Copying Access Privileges to a Location

You can copy the access privileges of all or a subset of the repository objects that are assigned to a database location from that location to another location or multiple locations.

► To copy access privileges to a location:

- 1 Launch the Administration Console by selecting Start > Programs > Hyperion System 9 BI+ > Analytic Administration Services > Administration Console.**
- 2 In the Analytic Administration Services Login dialog box, enter the Analytic Administration Services server name and your user name and password to log on to Analytic Administration Services. Then click OK.**
- 3 In the left navigation frame of Analytic Administration Services, expand the Business Rules node. Then expand the Administration node.**
- 4 Expand the Locations node.**
- 5 Under the Locations node, right-click the particular location from which you want to copy access privileges and select Copy Access Privileges.**

The Copy Access Privileges dialog box is displayed.

- 6 In the Copy Location Access Privileges dialog box, from the Destination Location drop-down list, select a destination location to which you want to copy the access privileges. Or accept the default selection, All locations, to copy the access privileges to the All locations node.**
- 7 Click OK to copy the access privileges to the locations you selected.**

Deleting a Location

You can delete locations from the database that you no longer use. When you delete a location, none of the repository objects is deleted from the repository; only the objects' access privileges to the particular location are deleted.

Note: You can only delete one location at a time.

- To delete a location from the database:
 - 1 Launch the Administration Console by selecting **Start > Programs > Hyperion System 9 BI+ > Analytic Administration Services > Administration Console**.
 - 2 In the **Analytic Administration Services Login** dialog box, enter the Analytic Administration Services server name and your user name and password to log on to Analytic Administration Services. Then click **OK**.
 - 3 In the left navigation frame of Analytic Administration Services, expand the **Business Rules** node. Then expand the **Administration** node.
 - 4 Expand the **Locations** node.
 - 5 Under the **Locations** node, right-click the particular location you want to delete, and select **Delete Location**.

A message is displayed asking you to confirm deletion of the location and all of its access privileges.

- 6 Click **Yes** to delete the location from the database.

Managing Clusters

A cluster is a database location that functions as a container for other database locations. You can assign access privileges for a cluster; when you do, all of the locations in the cluster inherit the access privileges you assign to the cluster as a whole.

Creating a Cluster

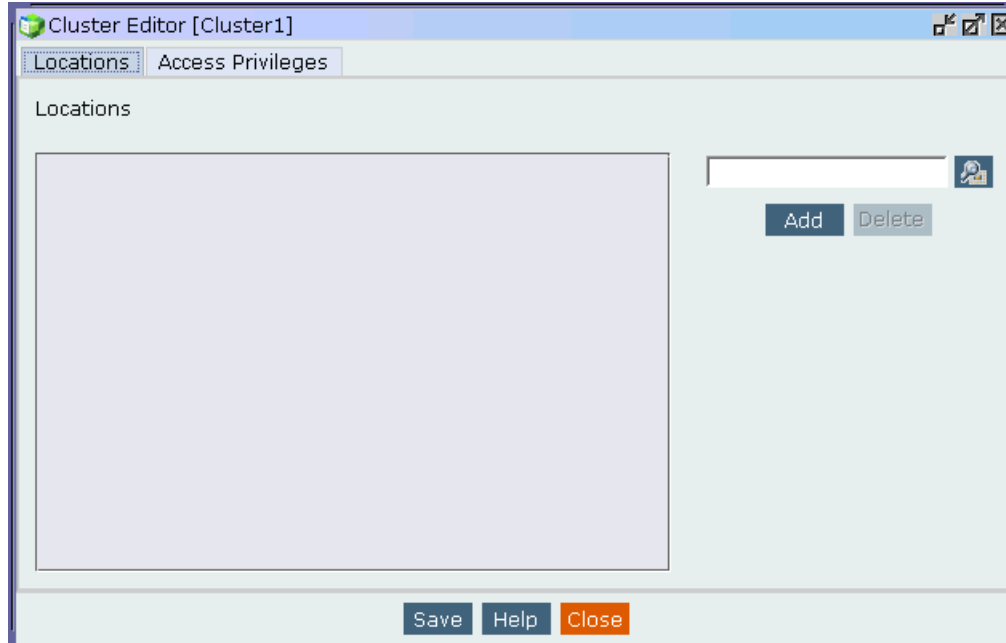
You can create a cluster of database locations in the Clusters node. After you create the cluster, you can add locations to it, and add access privileges or copy access privileges from another cluster.

Note: Before you begin creating new clusters, the Clusters node is empty. As you add clusters, you can refresh the Clusters node to display all of the clusters. Each cluster in the Clusters node contains a list of the locations within the cluster.

Clusters are also displayed in the Locations node. Each cluster in the Locations node contains a list of all of the repository objects to which the cluster has access.

- To create a new cluster:
 - 1 Launch the Administration Console by selecting **Start > Programs > Hyperion System 9 BI+ > Analytic Administration Services > Administration Console**.
 - 2 In the **Analytic Administration Services Login** dialog box, enter the Analytic Administration Services server name and your user name and password to log on to Analytic Administration Services. Then click **OK**.
 - 3 In the left navigation frame of Analytic Administration Services, expand the **Business Rules** node. Then expand the **Administration** node.
 - 4 Under the **Administration** node, right-click **Clusters** and select **New Cluster**.

The Cluster Editor is displayed. The Locations and Access Privileges tabs are empty until you add locations and access privileges to the cluster.



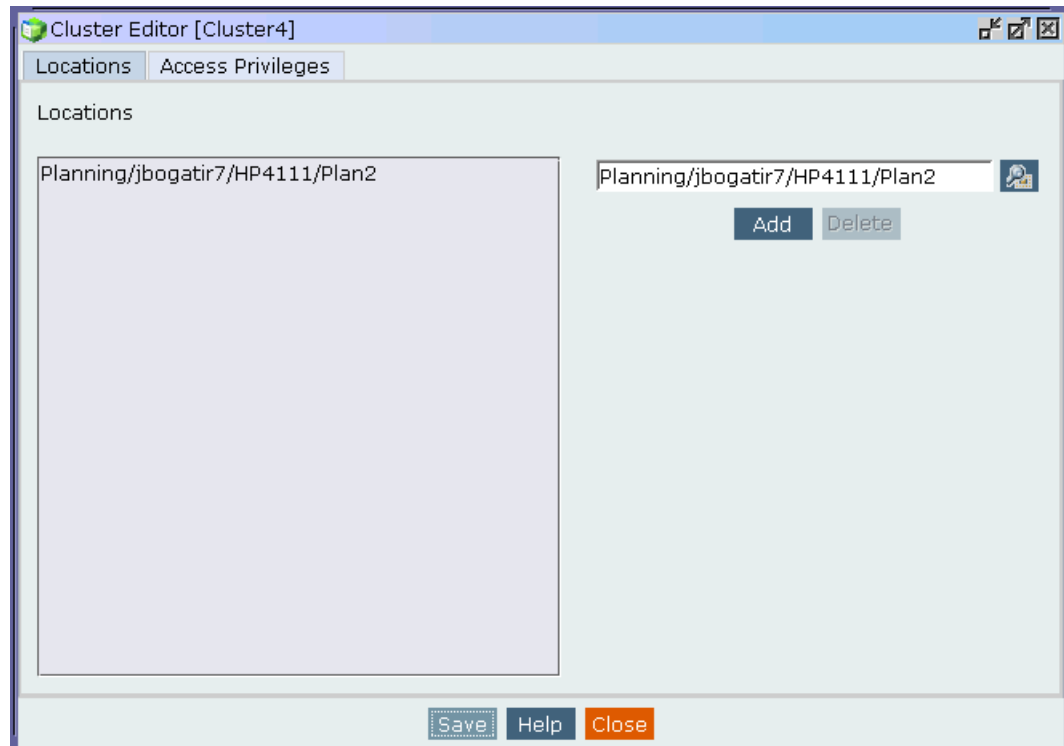
- 5 On the **Locations** tab, select a location by typing the location name in the text box or by clicking the **Lookup** button and selecting a location. Then do either of the following:
 - To add the location to the cluster, click **Add**. For information on adding locations, see [“Adding Locations to a Cluster” on page 142](#).
 - To delete the location from the cluster, click **Delete**. For information on deleting locations from a cluster, see [“Deleting Locations from a Cluster” on page 143](#).
- 6 On the **Access Privileges** tab, select an access privilege by typing it in the text box or by clicking the **Lookup** button and selecting an access privilege. Then do either of the following:
 - Add the access privilege to the cluster by clicking **Add**. For more information, see [“Adding Access Privileges to a Cluster” on page 144](#).
 - Delete the access privilege from the cluster by clicking **Delete**. For more information, see [“Deleting Access Privileges from a Cluster” on page 146](#).
- 7 Click **Save** to save the cluster.

Editing a Cluster

- To edit a cluster:
 - 1 Launch the Administration Console by selecting **Start > Programs > Hyperion System 9 BI+ > Analytic Administration Services > Administration Console**.
 - 2 In the **Analytic Administration Services Login** dialog box, enter the Analytic Administration Services server name and your user name and password to log on to Analytic Administration Services. Then click **OK**.

- 3 In the left navigation frame of Analytic Administration Services, expand the **Business Rules** node. Then expand the **Administration** node.
- 4 Expand the **Clusters** node.
- 5 Under the **Clusters** node, right-click the cluster you want to edit and select **Open**.

The Cluster Editor is displayed. The Locations tab lists the locations in the cluster. The Access Privileges tab lists the access privileges for the cluster.



- 6 On the **Locations** tab, select a location by typing the location name in the text box or by clicking the **Lookup** button and selecting a location. Then do either of the following:
 - To add the location to the cluster, click **Add**. For information on adding locations, see [“Adding Locations to a Cluster”](#) on page 142.
 - To delete the location from the cluster, click **Delete**. For information on deleting locations from a cluster, see [“Deleting Locations from a Cluster”](#) on page 143.
- 7 On the **Access Privileges** tab, select an access privilege by typing it in the text box or by clicking the **Lookup** button and selecting an access privilege. Then do either of the following:
 - Add the access privilege to the cluster by clicking **Add**. For more information, see [“Adding Access Privileges to a Cluster”](#) on page 144.
 - Delete the access privilege from the cluster by clicking **Delete**. For more information, see [“Deleting Access Privileges from a Cluster”](#) on page 146.
- 8 Click **Save** to save the changes you make to the cluster.

Adding Locations to a Cluster

You can add locations to a cluster. The locations you add to the cluster allow the repository objects assigned to the cluster to be launched at all of the assigned locations.

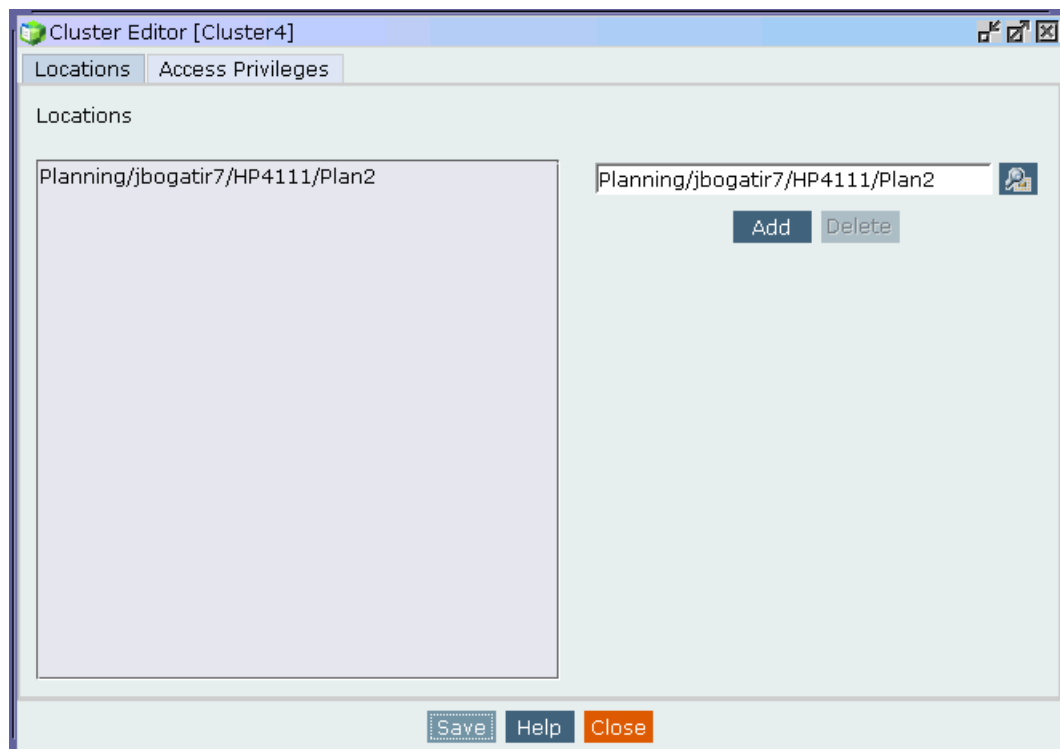
You may want to use clusters if your company horizontally scales Planning or Analytic Services servers where users log on to a proxy that may connect to one of many servers for failover or load balancing reasons.

A cluster allows you to assign launch locations and access privileges, for all locations in the cluster, to rules in a single setting, without having to add multiple locations to each business rule.

► To add locations to a cluster:

- 1 Launch the Administration Console by selecting **Start > Programs > Hyperion System 9 BI+ > Analytic Administration Services > Administration Console**.
- 2 In the **Analytic Administration Services Login** dialog box, enter the Analytic Administration Services server name and your user name and password to log on to Analytic Administration Services. Then click **OK**.
- 3 In the left navigation frame of Analytic Administration Services, expand the **Business Rules** node. Then expand the **Administration** node.
- 4 Expand the **Clusters** node.
- 5 Under the **Clusters** node, right-click the cluster to which you want to add a location and select **Open**.

The Cluster Editor is displayed. The Locations tab lists the locations in the cluster. The Access Privileges tab lists the access privileges for the cluster.



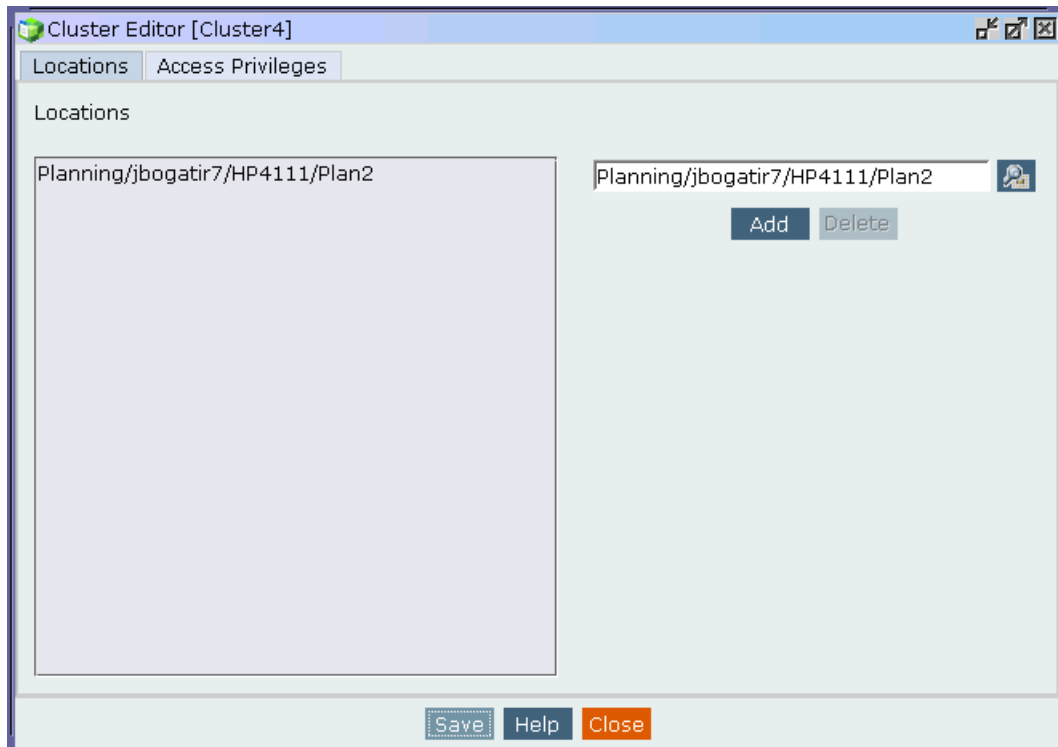
- 6 On the **Locations** tab, enter the location you want to add by typing the location name in the text box or by clicking the **Lookup** button and selecting a location.
- 7 To add the location to the cluster, click **Add**.
- 8 In the Cluster Editor, click **Save** to save the cluster with the locations you added.

Deleting Locations from a Cluster

You can delete locations that you no longer use from a cluster. When you delete a location from a cluster, you do not delete the location, or the repository objects assigned to the location, from the database; you delete the access privileges of the location to the cluster.

- To delete a location from a cluster:
 - 1 Launch the Administration Console by selecting **Start > Programs > Hyperion System 9 BI+ > Analytic Administration Services > Administration Console**.
 - 2 In the **Analytic Administration Services Login** dialog box, enter the Analytic Administration Services server name and your user name and password to log on to Analytic Administration Services. Then click **OK**.
 - 3 In the left navigation frame of Analytic Administration Services, expand the **Business Rules** node. Then expand the **Administration** node.
 - 4 Expand the **Clusters** node.
 - 5 Under the **Clusters** node, right-click the cluster from which you want to delete a location and select **Open**.

The Cluster Editor is displayed. The Locations tab lists the locations in the cluster. The Access Privileges tab lists the access privileges for the cluster.



- 6 On the **Locations** tab, select the locations you want to delete from the **Locations** list.
- 7 To delete the locations from the cluster, click **Delete**.
The Confirm Deletion dialog box is displayed.
- 8 Confirm deletion of the locations from the cluster by clicking **Yes**.
- 9 In the Cluster Editor, click **Save** to save the cluster.

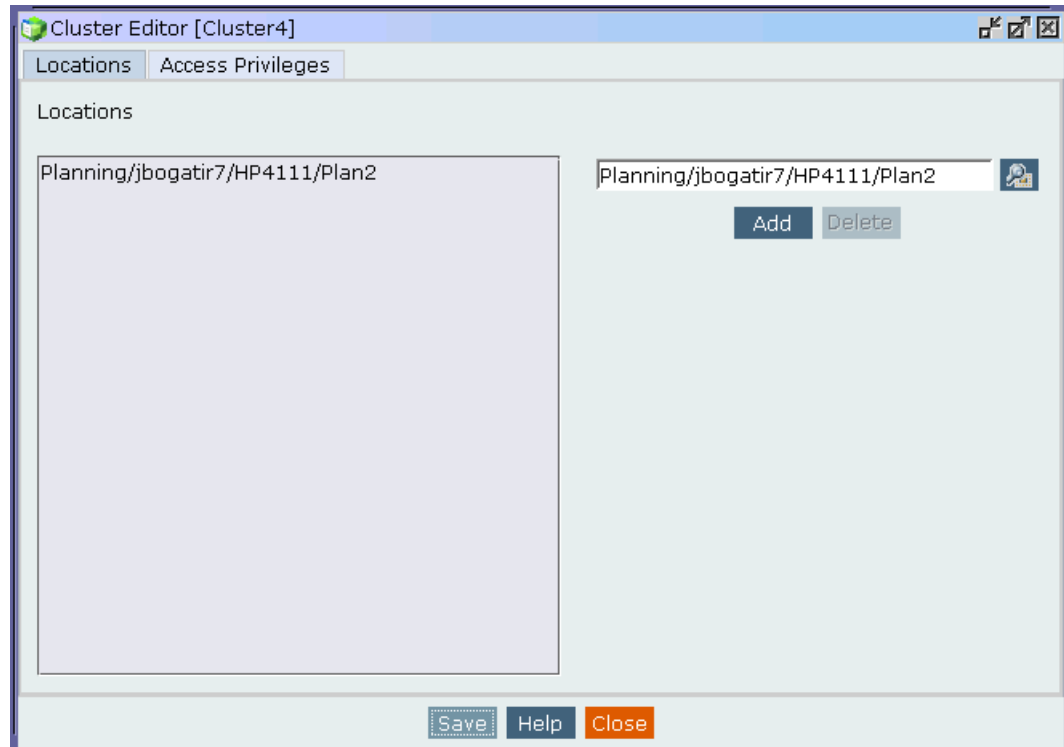
Adding Access Privileges to a Cluster

You can add access privileges to all of the locations in a cluster simultaneously. This prevents you from having to edit the access privileges of the rules, sequences, and projects in each location of the cluster individually.

- To add access privileges to a cluster:
 - 1 Launch the Administration Console by selecting **Start > Programs > Hyperion System 9 BI+ > Analytic Administration Services > Administration Console**.
 - 2 In the **Analytic Administration Services Login** dialog box, enter the Analytic Administration Services server name and your user name and password to log on to Analytic Administration Services. Then click **OK**.
 - 3 In the left navigation frame of Analytic Administration Services, expand the **Business Rules** node. Then expand the **Administration** node.
 - 4 Expand the **Clusters** node.

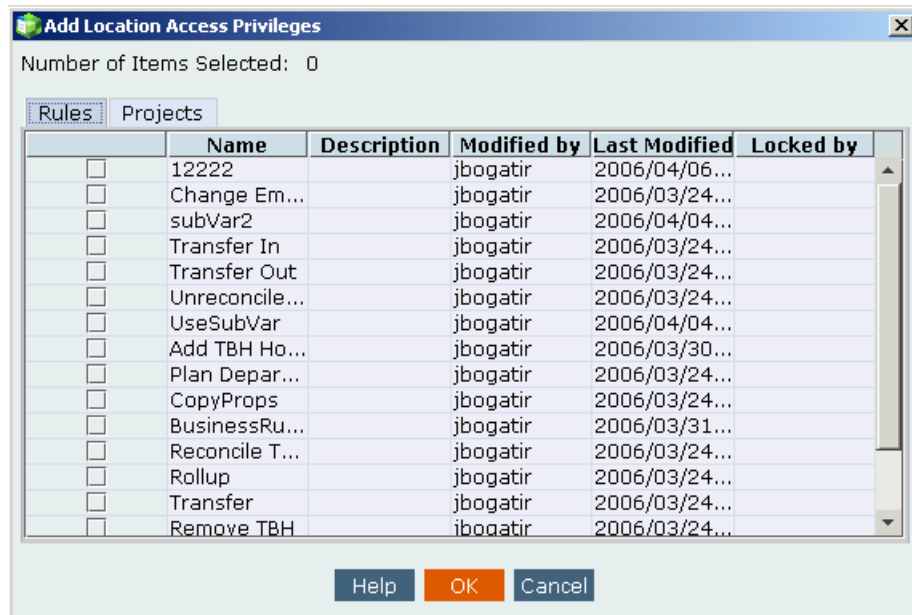
- Under the **Clusters** node, right-click the cluster for which you want to assign access privileges and select **Open**.

The Cluster Editor is displayed. The Locations tab lists the locations in the cluster. The Access Privileges tab lists the access privileges for the cluster.



- Select the **Access Privileges** tab and click **Add Access Privileges**.

The Add Location Access Privileges dialog box is displayed.



- 7 In the **Add Access Privileges** dialog box, select the rules and projects whose access privileges you want to assign to the cluster. Then click **OK**.

The Add Privilege dialog box is displayed.

- 8 In the **Add Privilege** dialog box, do the following:
 - a. From the **Privilege** drop-down list, select the type of privilege you want to grant:
 - **Validate or launch** - enables a users or users you specify to validate and launch the business rules and sequences in each of the database locations in the cluster.
 - **Cannot validate or launch** - prevents the user or users you specify from validating or launching the business rules or sequences in each of the database locations in the cluster.
 - b. In the **Available** area, select users and/or groups of users for whom you want to add this access privilege. (You can select multiple users and groups using **Shift + Click**.) Then use the arrow keys to move users and groups among the **Selected** and **Available** areas of the dialog box. When you move users and groups to the **Selected** area of the dialog box, these users and groups have the access privilege you assigned.

Note: The users and groups that are listed in the Available area are provisioned for use in Business Rules using the Hyperion System 9 Shared Services User Management Console. Provisioning is the process of assigning roles and access privileges to users and groups for Business Rules. For more information about provisioning users for use in Business Rules, see the *Hyperion System9 Shared Services User Management Guide*.

If new users are provisioned after the Analytic Administration Services server is started, you may need to refresh the list of users on the Users tab in the Available area of the Add Privilege dialog box. To refresh the list of users on the Users tab, right-click Administration, and select Refresh User List.

- c. Click **OK** to save the access privilege and return to the **Access Privileges** tab.
- 9 Click **Save** to save the changes to the access privileges of the cluster.

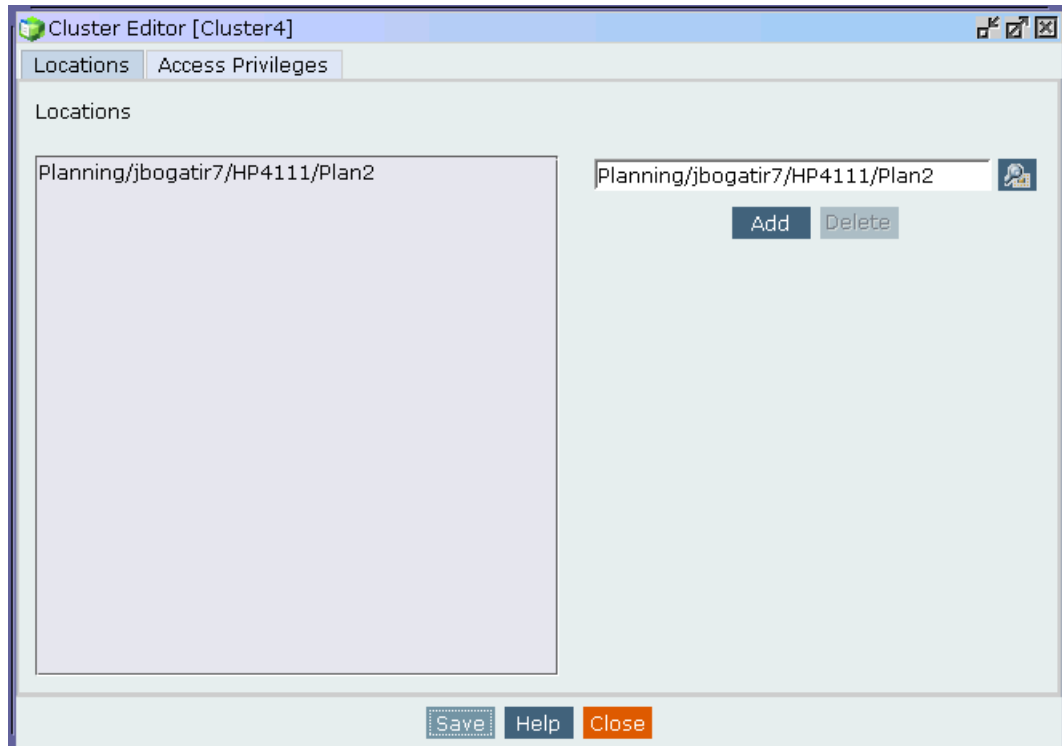
Deleting Access Privileges from a Cluster

You can delete access privileges for the repository objects assigned to the database locations in a cluster. When you delete access privileges, you delete them only for the repository objects in the locations of the cluster you select. If the repository objects are assigned to locations in another cluster, their access privileges remain.

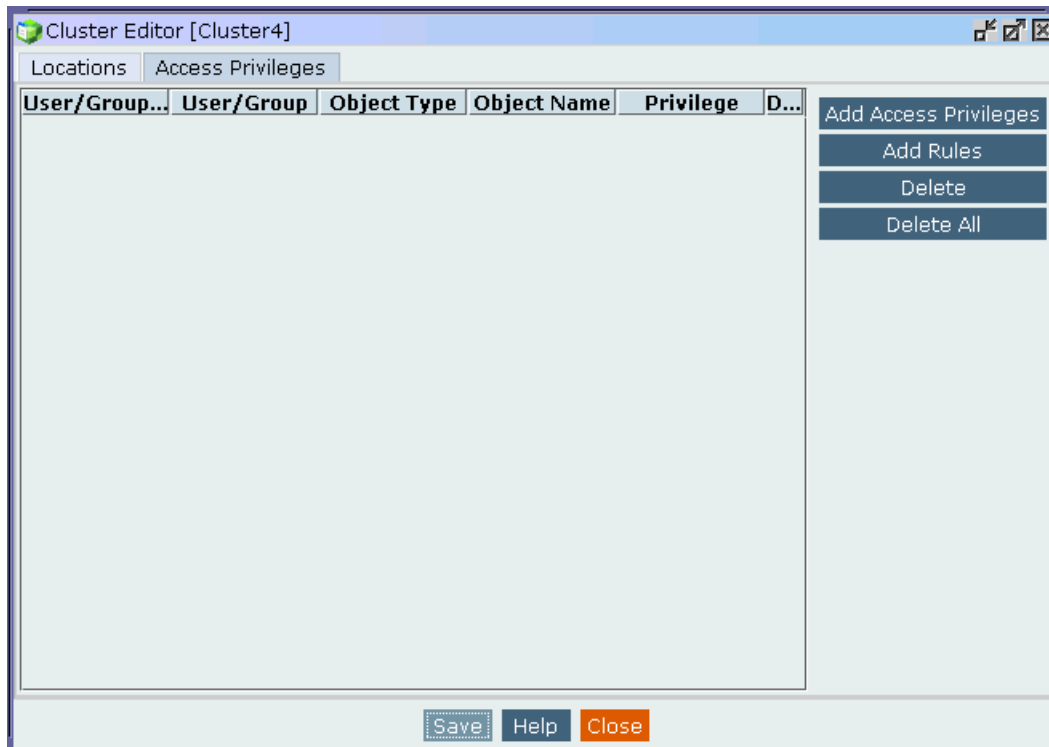
- To delete access privileges from a cluster:
 - 1 Launch the Administration Console by selecting **Start > Programs > Hyperion System 9 BI+ > Analytic Administration Services > Administration Console**.
 - 2 In the **Analytic Administration Services Login** dialog box, enter the Analytic Administration Services server name and your user name and password to log on to Analytic Administration Services. Then click **OK**.
 - 3 In the left navigation frame of Analytic Administration Services, expand the **Business Rules** node. Then expand the **Administration** node.

- 4 Expand the **Clusters** node.
- 5 Under the **Clusters** node, right-click the cluster for which you want to delete access privileges and select **Open**.

The Cluster Editor is displayed. The Locations tab lists the locations in the cluster. The Access Privileges tab lists the access privileges for the cluster.



- 6 Select the **Access Privileges** tab.



7 Do one of the following:

- To delete one or more access privileges for the cluster, select the **Delete** check box next to the names of the privileges you want to delete and click **Delete**.
- To delete all access privileges for the cluster, click **Delete All**.

8 Confirm that you want to delete the access privileges.

9 Click **Save to save the changes to the access privileges of the cluster.**

Adding Rules to a Cluster

You can add multiple business rules to a cluster simultaneously. You may want to do this if, for example, your company decides to add another server to the network to help balance the performance load from additional users. After creating the new cluster and adding the old and new servers to it, you can add all of the rules to the cluster so users logging on to either server can launch business rules.

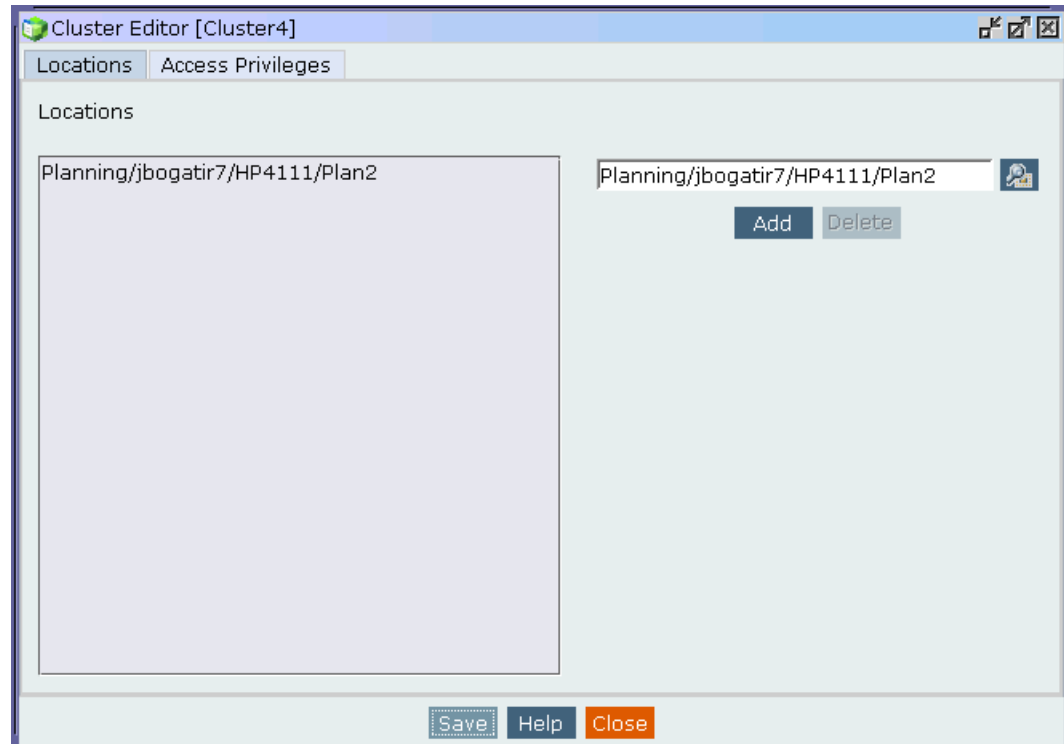
When you add a rule to a cluster, all locations within that cluster inherit the rule's access privileges. This prevents you from having to assign access privileges for each location in the cluster individually.

► To add business rules to a cluster:

- 1 Launch the Administration Console by selecting **Start > Programs > Hyperion System 9 BI+ > Analytic Administration Services > Administration Console**.**

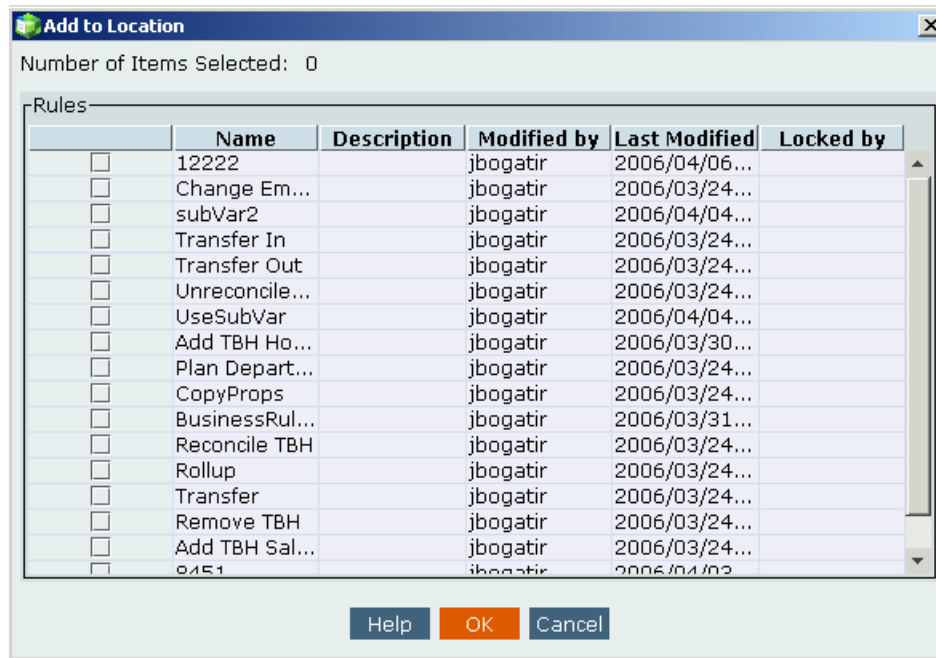
- 2 In the **Analytic Administration Services Login** dialog box, enter the Analytic Administration Services server name and your user name and password to log on to Analytic Administration Services. Then click **OK**.
- 3 In the left navigation frame of Analytic Administration Services, expand the **Business Rules** node. Then expand the **Administration** node.
- 4 Expand the **Clusters** node.
- 5 Under the **Clusters** node, right-click the cluster for which you want to add business rules and select **Open**.

The Cluster Editor is displayed. The Locations tab lists the locations in the cluster. The Access Privileges tab lists the access privileges for the cluster.



- 6 Select the **Access Privileges** tab.
- 7 Click **Add Rules**.

The Add to Location dialog box is displayed. It lists all of the rules you can add to this location.



- 8 In the **Add to Location** dialog box, select the check boxes next to the names of the business rules you want to add to this location.
- 9 Click **OK** to add the rules you selected.

Note: When rules are added to a cluster, they are not copied to it. Only their access privileges are copied to the cluster.

Copying Access Privileges to a Cluster

You can copy the access privileges of the repository objects that are assigned to a location from that location to another cluster or clusters.

- To copy access privileges to a cluster:
 - 1 Launch the Administration Console by selecting **Start > Programs > Hyperion System 9 BI+ > Analytic Administration Services > Administration Console**.
 - 2 In the **Analytic Administration Services Login** dialog box, enter the Analytic Administration Services server name and your user name and password to log on to Analytic Administration Services. Then click **OK**.
 - 3 In the left navigation frame of Analytic Administration Services, expand the **Business Rules** node. Then expand the **Administration** node.
 - 4 Expand the **Clusters** node.
 - 5 Under the **Clusters** node, right-click the cluster from which you want to copy access privileges and select **Copy Access Privileges**.

The Copy Location Access Privileges dialog box is displayed.

- 6 In the **Copy Location Access Privileges** dialog box, from the **Destination Location** drop-down list, select a destination cluster to which you want to copy the access privileges. Or accept the default selection, **All Locations**, to copy the access privileges to the **All Locations** node.
- 7 Click **OK** to copy the access privileges to the clusters you selected.

Deleting a Cluster

You can delete clusters that you no longer use from the database. When you delete a cluster, none of the locations in the cluster, or repository objects in the locations, are deleted from the repository; only the objects' access privileges to the cluster are deleted.

Note: You can only delete one cluster at a time.

- To delete a cluster from the database:
 - 1 Launch the Administration Console by selecting **Start > Programs > Hyperion System 9 BI+ > Analytic Administration Services > Administration Console**.
 - 2 In the **Analytic Administration Services Login** dialog box, enter the Analytic Administration Services server name and your user name and password to log on to Analytic Administration Services. Then click **OK**.
 - 3 In the left navigation frame of Analytic Administration Services, expand the **Business Rules** node. Then expand the **Administration** node.
 - 4 Expand the **Clusters** node.
 - 5 Under the **Clusters** node, right-click the cluster you want to delete, and select **Delete Cluster**.

A message is displayed asking you to confirm deletion of the cluster and all of its access privileges.

- 6 Click **Yes** to delete the cluster from the database.

Glossary

Access Privileges A The authorization to create, edit, validate, launch, and/or manage business rules, sequences, macros, variables, and projects. Access privileges are granted by the administrator or by the creator of the business rule, sequence, macro, variable, or project.

Administrators Users that can create, edit, launch, document, and manage business rules. Administrators can also set up security, assign access privileges, and set up the repository and log file.

Aggregation A method of computing the data relationships for all parent/child combinations in a dimension. An aggregation is typically additive, but can be any type of calculation. For example, if the dimension Year consists of the members Qtr1, Qtr2, Qtr3, and Qtr4, its aggregation would be contained in Year.

Block. The primary storage unit in Analytic Services. A data block is a multidimensional array representing the cells of all dense dimensions.

Business Rule A series of components that may include parameters, functions, calculation commands, variables, and/or macros. The components are designed to perform a calculation that answers a business question (for example, what is the annual profitability of a product line). A business rule can be saved as either a graphical business rule or an enhanced calc script.

Business Rule Range A selected portion of the database that represents the dimensions that are common throughout a business rule

Business Users Users who run business rules that were saved by an administrator. Before running a business rule, a business user may be prompted to fill in certain values in order to run that business rule.

Calc Script A text file containing a set of Analytic Services commands that tell Analytic Services how to calculate a database.

Calc Script Experts Users that are skilled at writing and reading basic Analytic Services calc scripts, enhanced calc scripts and optimizing calc scripts to obtain the best performance possible. Calc script experts can also perform the tasks of an administrator.

Cell A unit of data representing the intersection of each dimension in a multidimensional database. Also, the intersection of a row and a column in a spreadsheet.

Clear Data A component that removes data from a destination.

Copy Data A component that copies a block of data from one area of the database to another area in the same database.

Cube A block of data that contains three or more dimensions. An Analytic Services database consists of miniature cubes that make up a larger cube, or hypercube. The database also consists of indexes that assist in data retrieval and a variety of additional files such as a database outline that defines the structure of the database, load rules, a security file, log files, and calculation and report scripts.

Enhanced Calc Script A calc script created with Business Rules that contains run-time prompts.

Hyperion Essbase Calc Script See [Calc Script](#).

Lock A security mechanism to prevent two people from simultaneously changing the same repository object (that is, a business rule, sequence, macro, variable, or project). As the creator or a repository object, you can lock it to prevent other users from viewing, editing, or launching it.

Macro A reusable part of a business rule that can be referenced by other business rules and macros to save users time when they are writing their business rules. Macros can contain variables and other macros, but they cannot contain themselves.

Power Users Users that can create, edit, launch, document, and manage business rules. A power user may also be the administrator.

Project A grouping of business rules, sequences, macros, variables, and other projects.

Repository A central container that stores business rules and allows controls management of the business rules.

Run-time Prompt A system variable that allows values to be entered upon selecting a business rule. Values can be a member, multiple members, strings, numbers, or a dimension.

Saved Selection An explicitly defined set of members across multiple dimensions. The selection does not change as the dimension is maintained.

Sequence A series of business rules that can be launched at a predefined time through scheduling software.

Source A slice of the database or a number that is referenced in a calculation.

Users See [Administrators](#), [Power Users](#), and [Business Rule](#).

Variable A quantity that can assume any of a set of values that you define for it. Designers can use variables to help design business rules and macros. At run-time, users may be prompted to supply values for variables in order to launch business rules and sequences.

Web Launcher A module in Business Rules that you use to enter run-time prompts and execute business rules via a Web interface.

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