

SeeBeyond ICAN Suite

IMS DB eWay Intelligent Adapter User's Guide

Release 5.0.1



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Contents

Chapter 1

Introducing the IMS DB eWay	6
Overview	6
Supported Operating Systems	7
System Requirements	7
Logical Host Requirements	7
Participating Host Requirements	7
External System Requirements	8

Chapter 2

Installing the IMS DB eWay	9
Installation Overview	9
Installing the eXadas Data Integrator	10
Installing the IMS DB eWay	10
Required Files	10
Sample Projects	10
Installing the eXadas DataMapper	11

Chapter 3

Setting Properties of IMS DB eWay	12
Creating and Configuring an IMS DB eWay	12
Configuring the eWay Connectivity Map Properties	13
Configuring the Outbound eWay Properties	14
ClassName	14
Description	15
InitialPoolSize	15
LoginTimeOut	15
MaxIdleTime	15
MaxPoolSize	15
MaxStatements	16
MinPoolSize	16
NetworkProtocol	16

PropertyCycle	16
RoleName	16
Configuring the Inbound eWay Properties	17
Pollmilliseconds	17
PreparedStatement	17
Configuring the Environment Properties	18
Outbound IMS DB eWay Environment Properties	19
DatabaseName	19
DataSourceName	19
Delimiter	20
Description	20
DriverProperties	20
Password	20
PortNumber	20
ServerName	21
User	21
Inbound IMS DB eWay Environment Properties	22
DatabaseName	22
Password	22
PortNumber	23
ServerName	23
User	23

Chapter 4

Using the OTD Database Wizard	24
Creating the OTD	24
Select Wizard Type	24
Connect to Database	26
Select Tables/Views	27
Add Prepared Statements	31
Specify the OTD Name	33

Chapter 5

Locating, Importing, and Using Sample Projects	35
Sample Project Overview	35
Locating and Importing the Sample Projects	36
Running Sample Projects	36
Setting the eWay Properties	36
Creating the Environment Profile	37
Deploying the Project	37
Running the Sample	37
Using the Sample Project in eInsight	37
The eInsight Engine and Components	38
The IMSDB_Sample_BPEL Sample Project	38
BusinessProcess_IMSDB	39

Working with Other Business Process Activities	40
Using the Sample Project in eGate	42
Project Overview	42

Chapter 6

Using IMS DB OTDs	43
Overview	43
Using Tables	44
Using the select Method	44
Select Operations	46
Insert Operations	48
Update Operations	51
Delete Operations	54
Using Views	54
Using Prepared Statements	55

Chapter 7

Using eWay Java Methods	59
Index	60

Introducing the IMS DB eWay

This guide explains how to install, configure, and operate SeeBeyond Technology Corporation's™ IMS DB eWay Intelligent Adapter, referred to as the IMS DB eWay throughout this document.

This chapter provides a brief overview of operations, components, general features, and system requirements of the IMS DB eWay.

Chapter Topics

- [“Overview” on page 6](#)
- [“Supported Operating Systems” on page 7](#)
- [“System Requirements” on page 7](#)
- [“External System Requirements” on page 8](#)

1.1 Overview

IMS is IBM's premier transactional and hierarchical database management system, which runs on IBM's mainframe OS/390 and z/OS systems. IMS is currently used by many banks and aerospace companies to process large amounts of data. IMS is known for high performance and reliable recovery.

An IMS database is organized hierarchically with levels of data, each dependent on the higher level. To access IMS/DB, a language known as DL/I is being used. You can access IMS/DB via IMS/DC and CICS. The IMS DB eWay allows you to access data in IMS/DB. For IMS/DC support, SeeBeyond also provides a separate eWay called IMS eWay.

Note: To find out more information about IMS/DB, go to <http://www.ibm.com>.

1.2 Supported Operating Systems

The IMS DB eWay is available for the following operating systems:

- Windows 2000, Windows XP, Windows Server 2003
- HP-UX 11.0 and 11i (RISC)
- AIX 5.1 and 5.2
- Red Hat Linux 8 (Intel)
- Red Hat Enterprise Linux Advanced Server 2.1 (Intel)
- Solaris 8 and 9

1.3 System Requirements

To use the IMS DB eWay, you need:

- An eGate Participating Host.
- A TCP/IP network connection.
- The eWay supports IMS version 6, 7, and 8.

Logical Host Requirements

To set up and run the IMS DB eWay with the eGate Enterprise Designer, you need:

- Windows Server 2003, Windows XP, or Windows 2000; this is a requirement for the user interface.
- Microsoft Internet Explorer version 6.0 or later.
- TCP/IP network connection.

If the GUI host machine is executing the IMS DB eWay, then that machine must also meet the Participating Host requirements listed in the next section.

Note: You must configure and administer the eWay using the Enterprise Designer.

Participating Host Requirements

The IMS DB eWay Installation program installs the CrossAccess JDBC driver, version 3.0.

Web Services

To enable Web services, you must install and configure eInsight Business Process Manager. See the *eInsight Business Process Manager User's Guide* for details.

1.4 External System Requirements

This section lists the eWay's external system requirements.

Additional Windows/UNIX Requirements

To enable eGate Enterprise Designer's editors to communicate with the IMS DB file system, you must install the following item on any host machines running the editors:

- CrossAccess eXadas DataMapper

For more information on this application, including installation serial numbers, see [Installing the eXadas DataMapper](#) on page 11.

Note: *The standard eGate and IMS DB eWay installations automatically installs the CrossAccess JDBC driver for you.*

z/OS External Requirements

- CrossAccess eXadas Data Integrator, version 3.0, installed via a 3480 cartridge tape
- The serial number for the installation, shipped with the tape

Installing the IMS DB eWay

This chapter explains how to install the IMS DB eWay.

Chapter Topics

- [“Installation Overview” on page 9](#)
- [“Installing the eXadas Data Integrator” on page 10](#)
- [“Installing the IMS DB eWay” on page 10](#)
- [“Installing the eXadas DataMapper” on page 11](#)

Open and review the **Readme.txt** file before installation, for any additional requirements. The **Readme.txt** file is located on the installation CD-ROM.

Note: See the *ICAN Installation Guide* for complete eGate installation instructions.

2.1 Installation Overview

This section provides a brief overview of the eWay’s installation components and the order of their installation.

Note: The eXadas Data Integrator and the CrossAccess eXadas Data Integrator are shipped with the eWay, but you must install them separately.

You must install the IMS DB eWay and its components in the following order:

- 1 CrossAccess eXadas Data Integrator
- 2 IMS DB eWay
- 3 CrossAccess eXadas DataMapper

Note: Once the installation operation is complete, you may choose to pass a small amount of data to ensure a working connection.

2.2 Installing the eXadas Data Integrator

The eXadas Data Integrator installation must be configured for IMS DB.

Complete details on how to install and configure the eXadas Data Integrator are located in the CrossAccess *eXadas Data Integrator, Getting Started* manual's mainframe installation chapter.

All eXadas software products, as well as additional information on each product, are available from the CrossAccess Corp. Visit their Web site at:

<http://www.crossaccess.com>

2.3 Installing the IMS DB eWay

During the eGate Integrator installation process, the Enterprise Manager, a web-based application, is used to select and upload eWays (eWay.sar files) from the eGate installation CD-ROM to the Repository.

Required Files

Use Enterprise Manager to upload the **eGate.sar** file, then select and upload the following files:

- ◆ **IMSDBeWay.sar** (to install the IMS DB eWay)
- ◆ **FileeWay.sar** (to install the File eWay, used in the sample Project)
- ◆ **IMSDBeWayDocs.sar** (to install the user guide and the sample Projects)

Sample Projects

The IMS DB eWay also includes sample Projects for demonstration purposes.

To Download Sample Projects

- 1 In the Enterprise Manager, click the **DOCUMENTATION** tab.
- 2 Click **IMSDB eWay**.
- 3 In the right window pane, click **Download Sample**, and select a location to save the .zip file.

Additional information about importing and using sample Projects are found in **"Locating and Importing the Sample Projects" on page 36**.

Refer to the *ICAN Installation Guide* for additional installation instructions.

2.4 Installing the eXadas DataMapper

This section describes installing eXadas DataMapper for Windows systems. This application must be installed on a Windows system.

Installing eXadas DataMapper

- 1 After installing the eWay, as explained in [Installing the IMS DB eWay](#) on page 10, insert the CD-ROM provided for installing the eXadas DataMapper.

The installation process automatically begins, and the **Welcome** dialogue box appears.

- 2 Click **Next**.

The **eXadas DataMapper Registration** dialog box appears.

- 3 Using this dialog box, register the eXadas DataMapper. In the appropriate text box, you must enter the following serial number:

ex58dw43

- 4 Click **Next**.

- 5 A dialog box appears asking you to confirm the information you just entered. Click **Yes**.

- 6 Follow the instructions on each wizard dialog box to complete the installation. When you are done with the final wizard, click **Finish** to complete the eWay installation.

The installation program returns you to the process explained under [Installing the IMS DB eWay](#) on page 10.

The eXadas DataMapper installation has the following optional sets of files:

- **Program Files:** The executable files and run-time system for running DataMapper.
- **Help Files:** Make up the online Help system for DataMapper.
- **Sample Files:** Including sample COBOL Copybooks and IMS/DL/I DBDs and IDMS schemas and sub-schemas for testing DataMapper's features. CrossAccess recommends installing all three sets of files. The minimum requirement is installing the program files in option 1.

When installation is complete, a program group named eXadas is created in Windows. The group contains the program items for DataMapper, the DataMapper Help system, and the DataMapper **Readme.txt** file. To start DataMapper, double-click the mouse on the DataMapper icon in the eXadas program group.

Refer to the eXadas DataMapper documentation located on the eGate installation CD-ROM for further instructions.

Setting Properties of IMS DB eWay

This chapter explains how to create and configure the IMS DB eWay.

Chapter Topics Include:

- [Creating and Configuring an IMS DB eWay](#) on page 12
- [Configuring the eWay Connectivity Map Properties](#) on page 13
- [Configuring the Environment Properties](#) on page 18

3.1 Creating and Configuring an IMS DB eWay

All eWays contain a unique set of configuration parameters. After the eWays are established and an IMS DB External System is created in the Project's Environment, the eWay parameters are modified for your specific system. The IMS DB eWay configuration parameters are modified from two locations:

- From the **Connectivity Map** – which contains parameters specific to the IMS DB eWay, and may vary from other eWays (of the same type) in the Project.
- From the **Environment Explorer tree** – which contains global parameters that commonly apply to all eWays in the Project. Saved parameters are shared by all eWays in the IMS DB External System window.

Note: You must set the configuration parameters for the IMS DB eWay in both locations.

3.2 Configuring the eWay Connectivity Map Properties

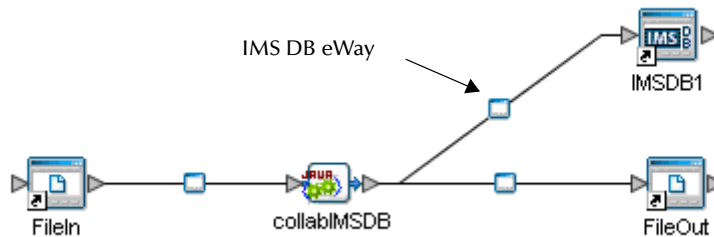
When you connect an external application with a Collaboration, Enterprise Designer automatically assigns an appropriate eWay to the link. Each eWay is supplied with a template containing the default configuration properties for the eWay.

- Outbound IMS DB eWay – referred to as IMSDB CP eWay.
- Inbound IMS DB eWay

To configure the eWay properties:

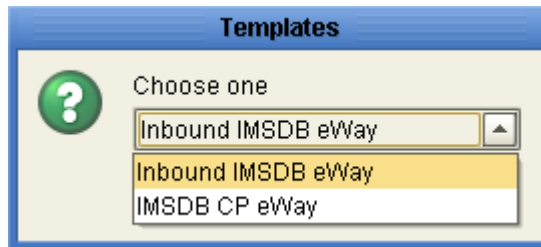
- 1 On the Enterprise Designer’s Connectivity Map (see Figure 1), double-click the IMS DB eWay icon. The Templates window appears.

Figure 1 Connectivity Map With Components



- 2 Select a parameter from the list and click OK.

Figure 2 Template window

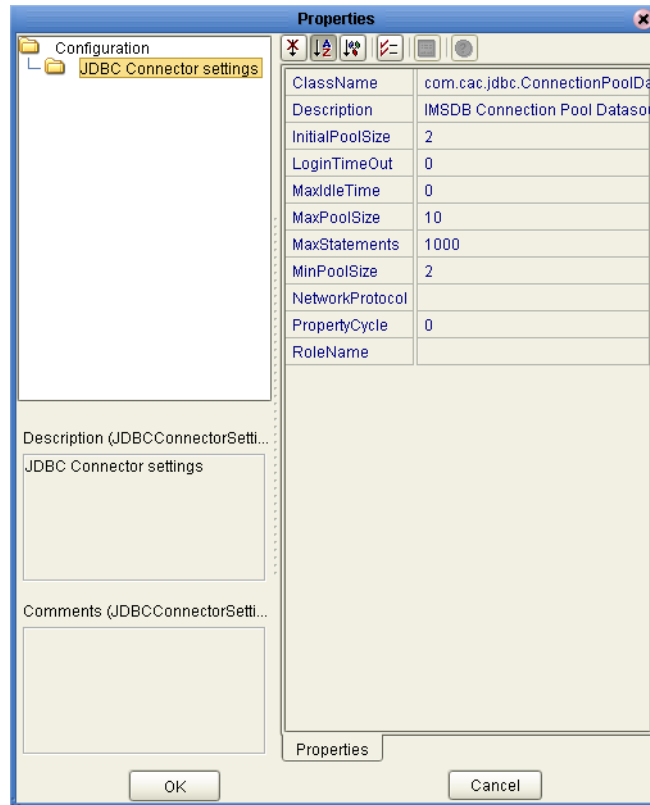


- 3 The Configuration properties window opens, displaying the default properties for the eWay (see Figure 3).

3.2.1 Configuring the Outbound eWay Properties

The Outbound eWay Properties include outbound parameters used by the external database.

Figure 3 Configuration Editor: IMS DB outbound eWay



ClassName

Description

Specifies the Java class in the JDBC driver, which is used to implement the **ConnectionPoolDataSource** interface.

Required Values

A valid class name.

The default is **IMS DB.jdbc.pool.IMS DBConnectionPoolDataSource**.

Description

Description

Specifies a description for the database.

Required Values

A valid string.

InitialPoolSize

Description

Specifies a number for the physical connections that the pool must contain when it is created.

Required Values

A valid numeric value.

LoginTimeOut

Description

Specifies the number of seconds the driver waits before attempting to log on to the database before timing out.

Required Values

A valid numeric value.

MaxIdleTime

Description

Specifies the maximum number of seconds that a physical connection can remain unused before it is closed. A 0 (zero) indicates there is no limit.

Required Values

A valid numeric value.

MaxPoolSize

Description

Specifies the maximum number of physical connections the pool must keep available at all times. A 0 (zero) indicates there is no maximum.

Required Values

A valid numeric value.

MaxStatements

Description

Specifies the maximum total number of statements the pool must keep open. A 0 (zero) indicates the caching of statements is disabled.

Required Values

A valid numeric value.

MinPoolSize

Description

Specifies the minimum number of physical connections the pool must keep available at all times. A 0 (zero) indicates there are no physical connections in the pool, and the new connections are created as needed.

Required Values

A valid numeric value.

NetworkProtocol

Description

Specifies the network protocol used to communicate with the server.

Required Values

The network protocol (string).

PropertyCycle

Description

Specifies the interval, in seconds, which the pool waits before enforcing the current policy defined by the values of the other connection pool properties specified in the eWay's configuration.

Required Values

A valid numeric value.

RoleName

Description

Specifies an initial SQL role name.

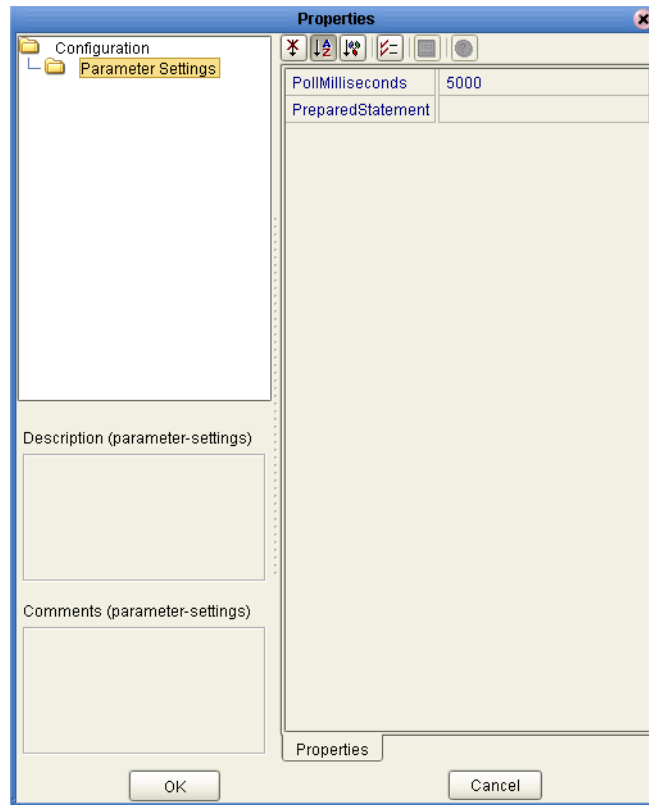
Required Values

a valid initial SQL role name (string).

3.2.2 Configuring the Inbound eWay Properties

The Inbound eWay Properties include outbound parameters used by the external database.

Figure 4 Configuration Editor: IMS DB inbound eWay



Pollmilliseconds

Description

Polling interval in milliseconds.

Required Values

A valid numeric value. The default is **5000**.

PreparedStatement

Description

The Prepared Statement used for polling against the database.

Required Values

The Prepared Statement must be the same Prepared Statement you created using the Database OTD Wizard. Only a SELECT Statement is allowed. Additionally, no place holders can be specified. Do not use “?” in the Prepared Query.

3.3 Configuring the Environment Properties

The eWay Environment Configuration properties contain the parameters that define how the eWay connects to and interacts with other eGate components within the Environment.

Available External Systems include:

- Outbound IMS DB eWay – referred to as **IMSDB CP** eWay
- Inbound IMS DB eWay

To Configure the Environment Properties:

- 1 In Enterprise Explorer, click the Environment Explorer tab.
- 2 Expand the Environment created for the IMS DB Project and locate the IMSDB External System.

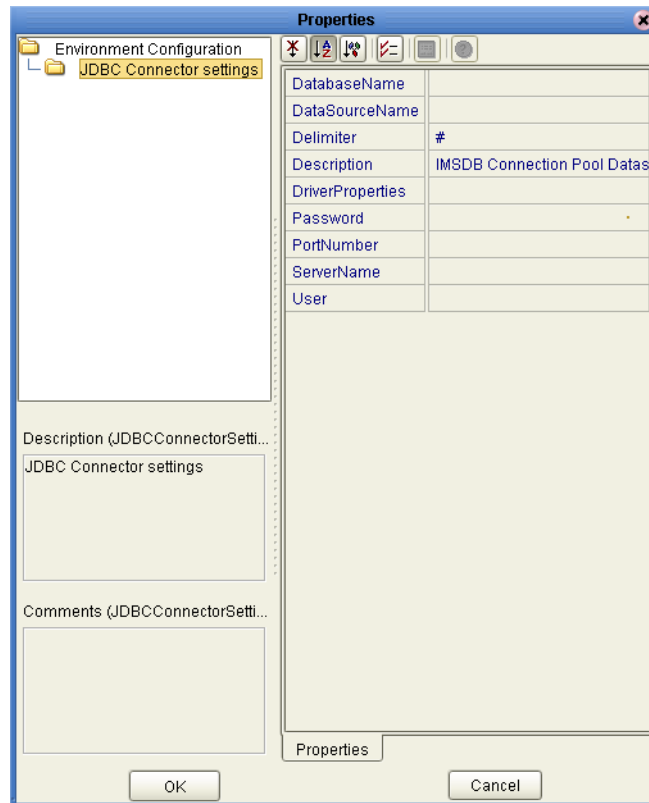
***Note:** For more information on creating an Environment, see the eGate Tutorial.*

- 3 Right-click the IMSDB External System and select Properties from the list box. The Environment Configuration Properties window appears.
- 4 Click on any folder to display the default configuration properties for that section.
- 5 Click on any property field to make it editable.
- 6 After modifying the configuration properties, click **OK** to save the changes.

3.3.1 Outbound IMS DB eWay Environment Properties

Before deploying your eWay, you will need to set the Environment properties. This section describes the External System properties used by the Inbound Informix eWay.

Figure 5 Environment Configuration outbound properties



DatabaseName

Description

Specifies the name of the database instance.

Required Values

Any valid string.

DataSourceName

Description

Specifies the name of the **ConnectionPoolDataSource** object that the **DataSource** object delegates behind the scenes when connection pooling or distributed transaction management is being done.

Required Values

Optional. In most cases, leave this box empty.

Delimiter

Description

Specifies the delimiter character used in the DriverProperties prompt.

Required Value

The default is #.

Description

Description

Specifies a description for the database.

Required Values

A valid string.

DriverProperties

Description

Allows you to enter the properties for the driver you are using; this property is optional.

You can also use this property to change some driver parameters “on the fly” such as turning on a driver trace (a description box that identifies a driver).

Required Values

Any valid delimiter and/or method as follows:

- **Delimiter:** Valid delimiters are:

```
<method-name-1>#<param-1>#<param-2>##.....<param-n>##<method-  
name-2>#<param-1>#<param-2>#.....<param-n>##.....##
```

- **Method:** For example: to execute the method `setURL()`, give the following method a string for the URL:

```
setURL#<url>##
```

Password

Description

Specifies the password the eWay must use to access the database.

Required Values

A database user password (string).

PortNumber

Description

Specifies the input-output port number on which the server is listening for connection requests.

Required Values

A valid port number. The default is 1521.

ServerName

Description

Specifies the host name of the external database server.

Required Values

A valid database server host name (string).

User

Description

Specifies the user name the eWay must use to access the database.

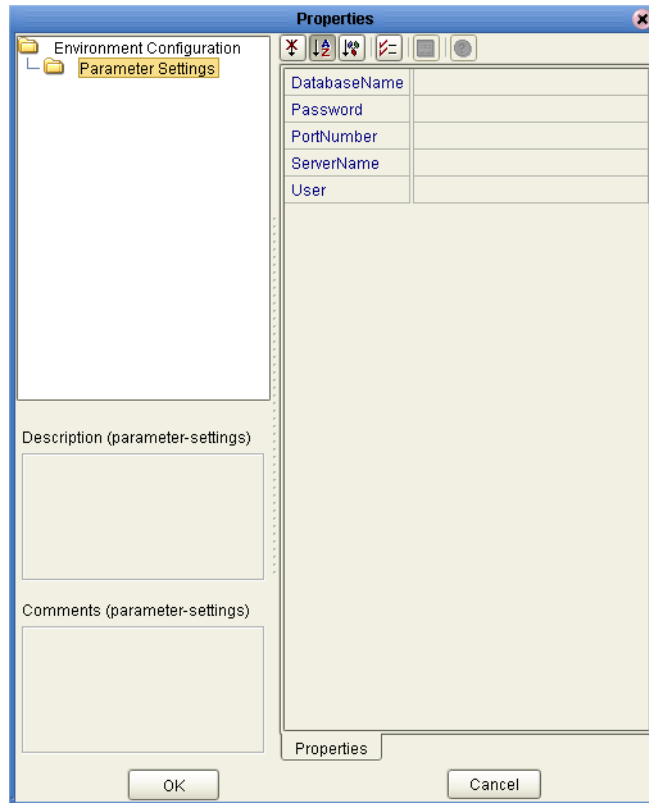
Required Values

A valid database user name (string).

3.3.2 Inbound IMS DB eWay Environment Properties

Before deploying your eWay, you will need to set the Environment properties. This section describes the External System properties used by the Inbound Informix eWay.

Figure 6 Environment Configuration outbound properties



DatabaseName

Description

Specifies the name of the database instance.

Required Values

Any valid string.

Password

Description

Specifies the password used to access the database.

Required Values

Any valid string.

PortNumber

Description

Specifies the input-output port number on which the server is listening for connection requests.

Required Values

A valid port number.

ServerName

Description

Specifies the host name of the external database server.

Required Values

Any valid string.

User

Description

Specifies the user name the eWay uses to connect to the database.

Required Values

Any valid string.

Using the OTD Database Wizard

This chapter describes how to build and use Object Type Definitions (OTDs) using the IMS DB eWay Database Wizard.

4.1 Creating the OTD

OTDs contain the data structure and rules that define an object. The OTD Wizard creates OTDs based on any combination of Tables and Prepared SQL Statements.

Field nodes are added to the OTD based on the Tables in the external data source. Java method and parameter nodes are added to provide the appropriate JDBC functionality. For more information about the Java methods, refer to your JDBC developer's reference.

***Note:** Database OTDs are not messagable. For more information on messagable OTDs, see the eGate Integrator User's Guide.*

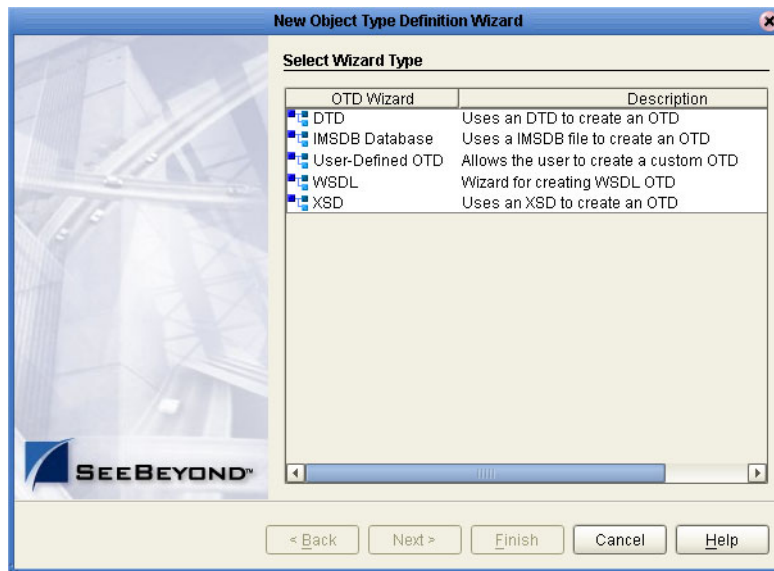
Steps required to create an OTD include:

- [Select Wizard Type](#) on page 24
- [Connect to Database](#) on page 26
- [Select Tables/Views](#) on page 27
- [Add Prepared Statements](#) on page 31
- [Specify the OTD Name](#) on page 33

Select Wizard Type

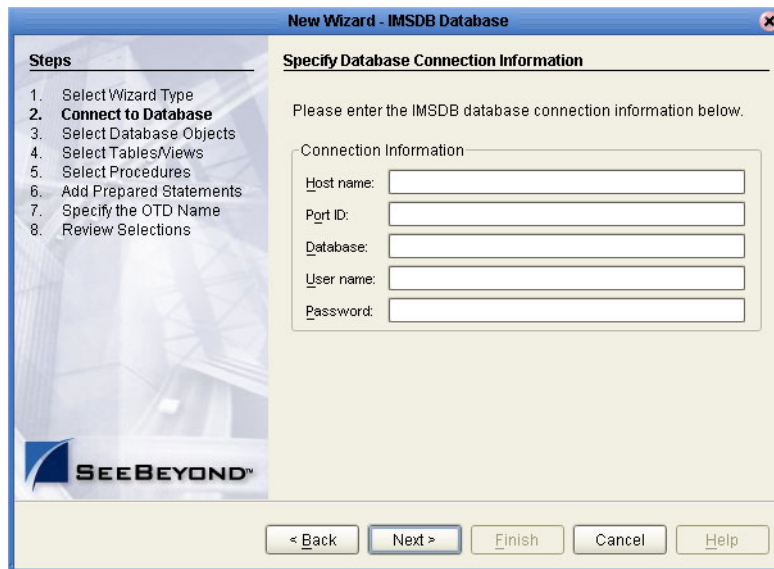
- 1 On the Enterprise Explorer, right click on the Project and select **New > Object Type Definition** from the menu.
- 2 The **Select Wizard Type** window appears, displaying the available OTD wizards. See [Figure 7 on page 25](#).

Figure 7 OTD Wizard Selection



- 3 From the list, select the **IMSDB Database** OTD and click **Next**. The **Specify Database Connection Information** window appears.

Figure 8 Database Connection Information



Connect to Database

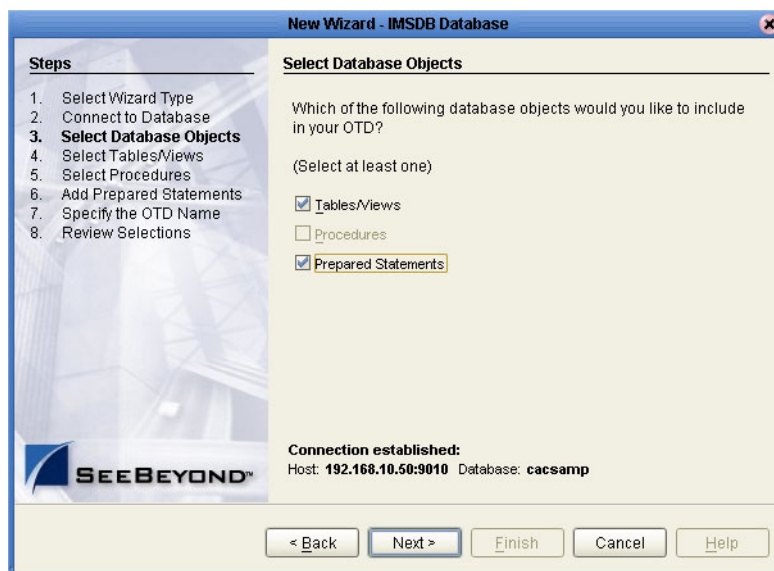
- 4 On the Specify Database Connection Information window, enter the following information:
 - ♦ **Host name:** The name of the host you are connecting to.
 - ♦ **Port ID:** The host port number.
 - ♦ **Database:** The name of the database you are connecting to.
 - ♦ **User name:** Your user ID.
 - ♦ **Password:** Your password.
- 5 Click **Next**. The Select Database Objects window appears.

Note: Views are read-only and are for informational purposes only.

Select Database Objects

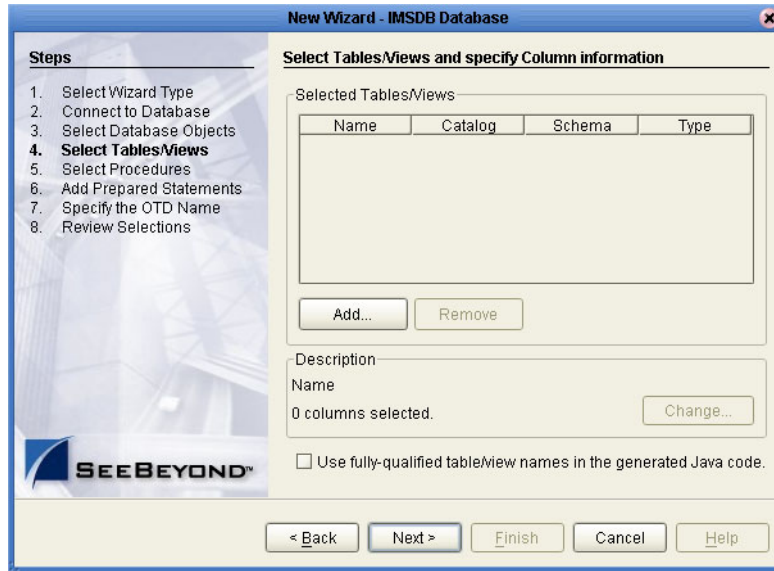
- 1 On the Select Database Objects window, select both the **Tables/Views** and the **Prepared Statements** checkboxes.

Figure 9 Select Database Objects



- 2 Click **Next**. The **Select Tables/Views** window appears. See [Figure 10 on page 27](#).

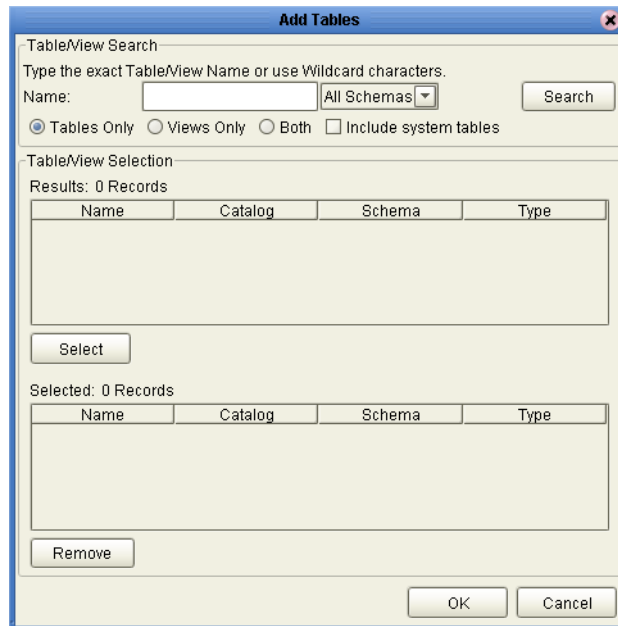
Figure 10 Select Tables/Views



Select Tables/Views

- 1 On the Select Tables/Views window, click the **Add** button. The **Add Tables** window appears.

Figure 11 Add Tables window

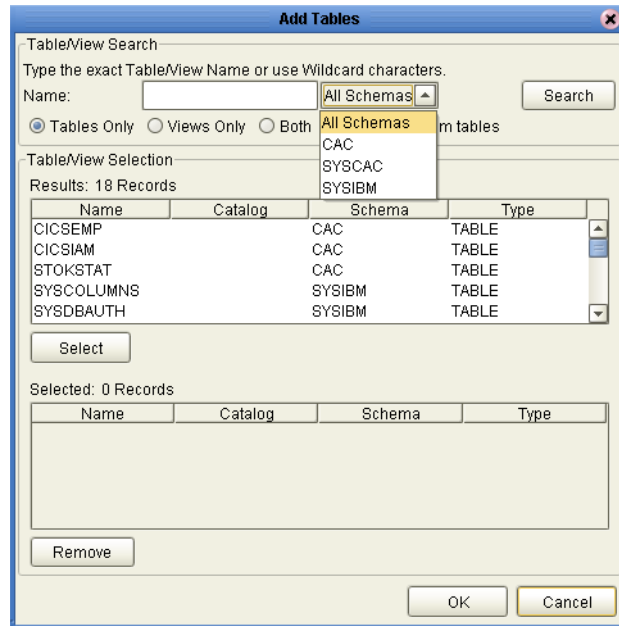


- 2 In the **Add Tables** window, select if your selection criteria includes table data, view only data, both, and/or system tables.

- 3 From the **Table/View Name** drop-down list, select the location the location of your database table and click **Search**.

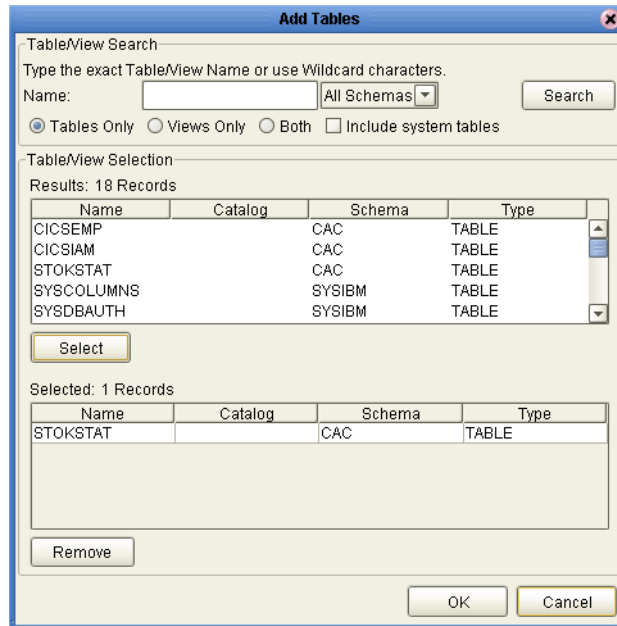
Note: Click **Search** to find the desired table or tables. You can also use wildcard characters to search for a table or view. Available wildcard characters include "?", "_", and "*". For example, you can use "AB?CD", "AB_CD," or "AB*CD". However, do not use "%". Using this character results in nothing being returned.

Figure 12 Database Wizard - Table/View Search



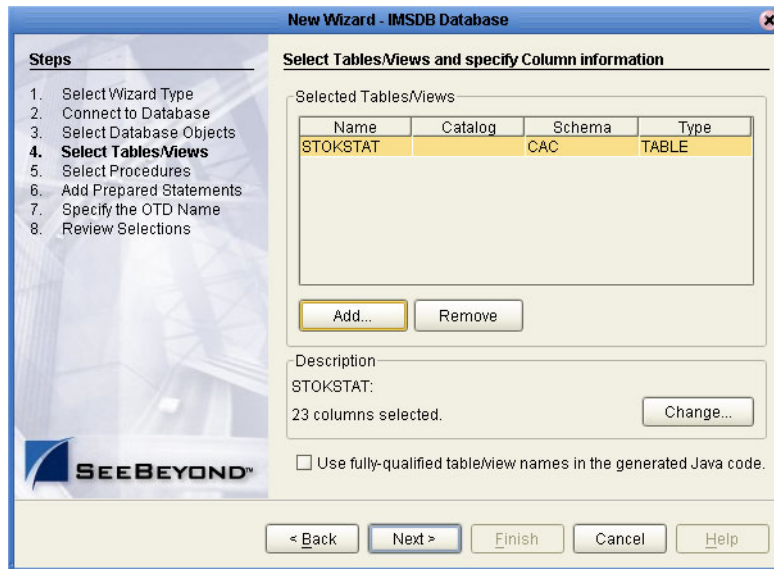
- 4 Choose a table and click **OK**. The selected table is added to the **Selected** window. See [Figure 13 on page 29](#).

Figure 13 Add Tables window with selected table



- 5 On the Selected Tables/Views window, review your selected tables. To make changes to the selected Table or View, click **Change**, or click **Next** if no additional changes are required.

Figure 14 Selected table and column window



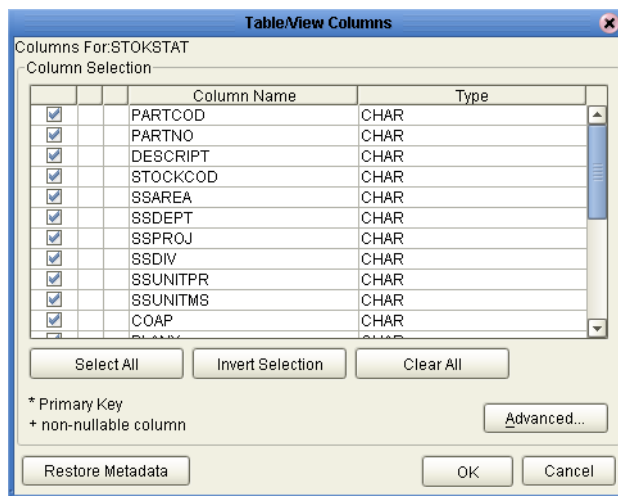
- 6 If you click Change, the **Table/View Columns** window appears, allowing you to select or deselect any table columns. You can also change the data type for each

table by highlighting the data type and selecting a different data type from the drop-down list.

The buttons in this window operate as follows:

- ♦ **Select All:** Allows you to select all columns.
- ♦ **Invert Selection:** Allows you to invert the order of the selected columns.
- ♦ **Clear All:** Allows you to deselect all columns.
- ♦ **Advanced:** Allows you to perform advanced operations with the columns. See the *eGate Integrator User's Guide* for details.
- ♦ **Restore Metadata:** Allows you to restore the data to its original state before you made any changes via the wizard; returns you to the **Specify Database Connection** window.

Figure 15 Table/View Columns window

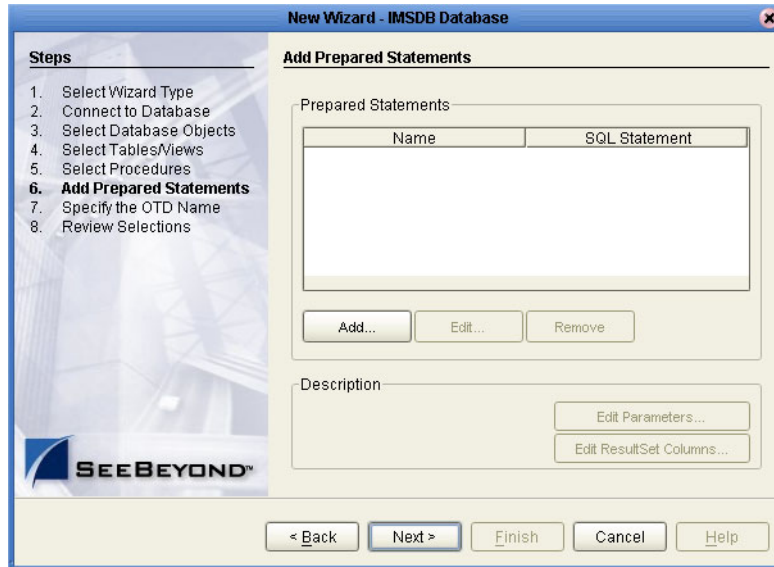


- 7 When you are finished using this window, click **OK** to save your changes and return to the **Select Tables/Views** window.

Add Prepared Statements

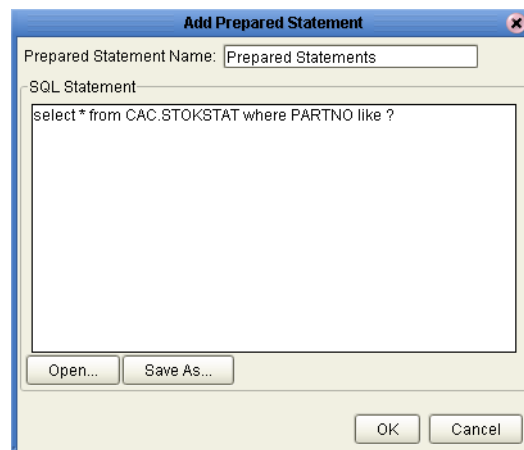
- 1 On the **Add Prepared Statements** window, click **Add**.

Figure 16 Add Prepared Statements window



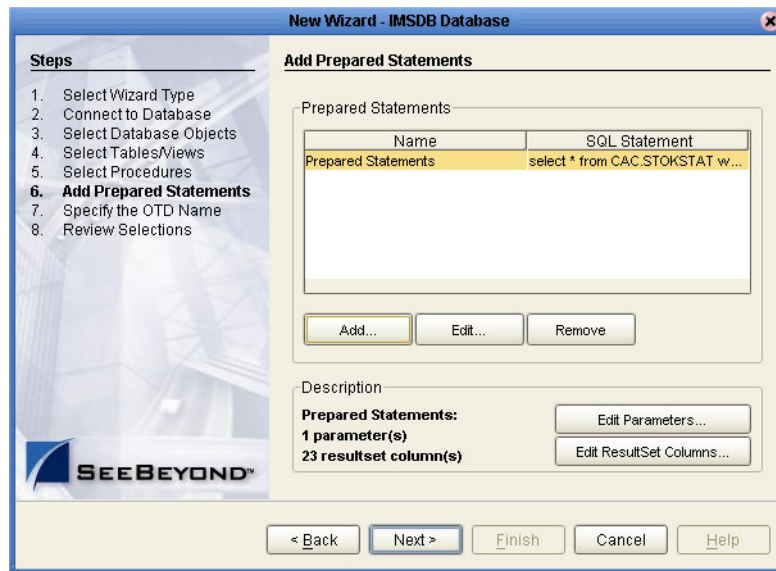
- 2 Enter the name of a Prepared Statement and create a SQL statement using the SQL Statement window.
- 3 After creating the statement, you can click **Save As** and give the statement a name. This name appears as a node in the OTD.
- 4 Click the **OK** button to exit the window.

Figure 17 Add Prepared Statement - SQL Statement window



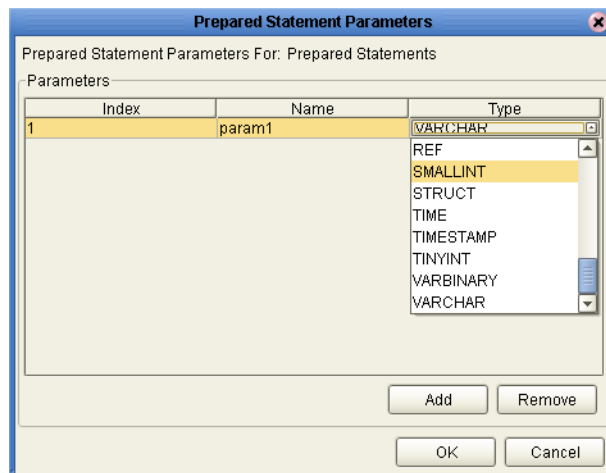
The name you assigned to the Prepared Statement appears on the **Add Prepared Statement** window. See [Figure 18 on page 32](#).

Figure 18 Add Prepared Statement window



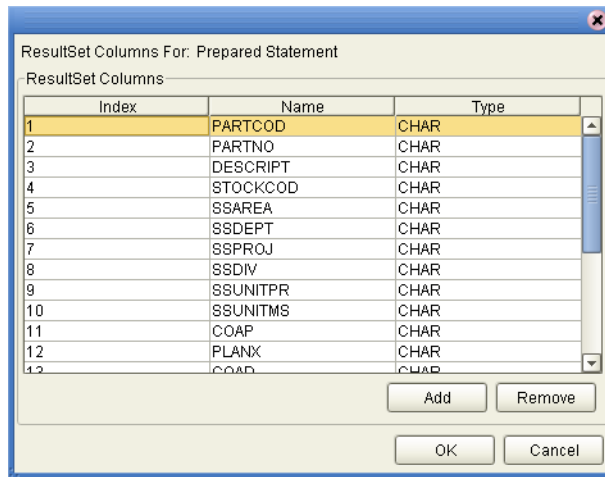
- 5 To edit the parameters, click **Edit Parameters**. You can change the datatype by clicking in the **Type** field and selecting a different type from the list.
- 6 Click **Add** if you want to add additional parameters to the Statement or highlight a row and click **Remove** to remove it. Click **OK** to close the window.

Figure 19 Prepared Statement Parameters window



- 7 To edit the Resultset Columns, from the **Add Prepared Statements** window, click **Edit Resultset Columns**. Both the Name and Type are editable. Click **OK** to close the window.

Figure 20 ResultSet Columns



- 8 On the Add Prepared Statements window, click the **OK** button.

Specify the OTD Name

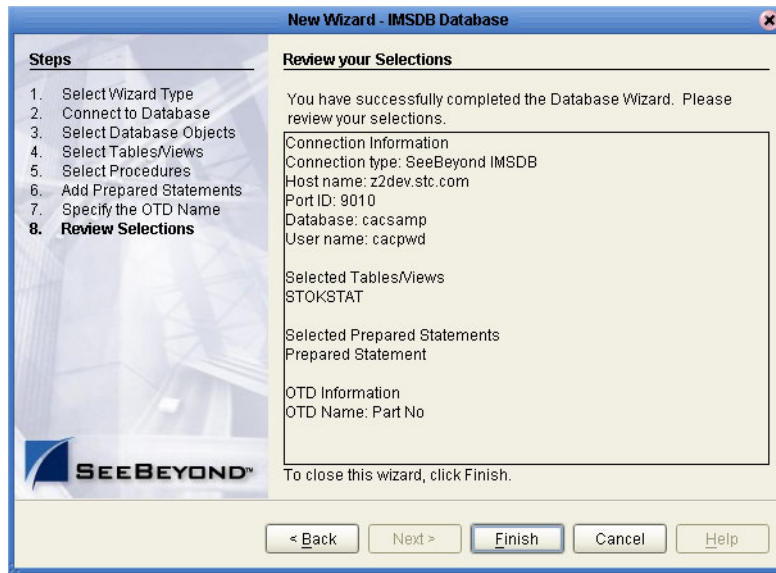
- 1 On the **Specify the OTD Name** window, enter a name for the OTD. The OTD contains the selected tables and the package name of the generated classes.

Figure 21 Specify the OTD window



- 2 View the OTD summary, then click the **Finish** button to generate the OTD. See [Figure 22 on page 34](#).

Figure 22 Review your Selections window



Locating, Importing, and Using Sample Projects

This chapter describes how to use the sample Projects included in the installation CD-ROM package.

Chapter Topics

- [“Sample Project Overview” on page 35](#)
- [“Locating and Importing the Sample Projects” on page 36](#)
- [“Running Sample Projects” on page 36](#)
- [“Using the Sample Project in eInsight” on page 37](#)
- [“Working with Other Business Process Activities” on page 40](#)
- [“Using the Sample Project in eGate” on page 42](#)

Note: While several key steps are required to create, activate, and deploy a Project, only steps containing information relevant to the IMS DB eWay are included in this chapter. For more detailed information on how to complete a sample Project, see the *eGate Integrator Tutorial*.

5.1 Sample Project Overview

Sample Projects are designed to provide an overview of the basic functionality found in the IMS DB eWay by detailing how information is passed between eGate and the IMS DB database.

Sample Projects Include:

IMSDB_Sample_BPEL – demonstrates an end-to-end data exchange using an eInsight business process to retrieve employee names from the IMS database.

IMSDB_Sample_JCE – demonstrates an end-to-end data exchange using Java Collaborations in eGate to retrieve employee names from the IMS database.

5.2 Locating and Importing the Sample Projects

The eWay sample Projects are included in **IMSDBeWayDocs.sar**. This file is uploaded separately from the **IMSDBeWay.sar** file during installation. For additional information, refer to [“Installing the IMS DB eWay” on page 10](#).

After uploading the **IMSDBeWayDocs.sar** to the Repository, you can begin downloading the sample Projects from the **DOCUMENTATION** tab on Enterprise Manager, to a folder of your choosing.

Before using the sample Project, first import it into the Project into SeeBeyond Enterprise Designer using the Enterprise Designer Project Import utility.

To Import the Sample Project:

- 1 From the Enterprise Designer’s Project Explorer pane, right-click the Repository and select **Import**.
- 2 In the **Import Manager** window, browse to the directory that contains the sample Project zip file.
- 3 Select the sample file and then click **Open**.
- 4 Click the **Import** button. If the import was successful, then click the **OK** button on the **Import Status** window.

5.3 Running Sample Projects

Steps required to run a sample Project include:

- Setting the eWay Properties
- Creating the Environment Profile
- Deploying the Project
- Running the Sample

5.3.1 Setting the eWay Properties

Sample Projects use an inbound and an outbound File eWay, as well as an outbound IMS DB eWay. Use the following information to configure a sample Project eWay. Additional information on eWay property parameters are found in [Setting Properties of IMS DB eWay](#) on page 12.

To Configure the File eWays

- 1 On the Connectivity Map, double-click the Inbound File eWay.
- 2 The **Properties** window for the Inbound File eWay opens. Modify any parameter settings necessary for your system, then change the Directory and Input file name to match the location and name of the sample data file.
- 3 Click **OK** to close the **Properties** window.

- 4 On the Connectivity Map, double-click the Outbound File eWay. The **Properties** window for the Outbound File eWay opens. Modify the parameter settings for your system, including the target directory and output file name.
- 5 Click **OK** to close the **Properties** window.

To Configure the Outbound IMS DB eWay

- 1 On the Connectivity Map, double-click the **IMS DB** eWay.
- 2 The **Properties** window for the IMS DB eWay opens. Modify any parameter settings necessary for your system. Click **OK** to close the **Properties** window.

5.3.2 Creating the Environment Profile

An eGate Environment represents the physical system required to implement a Project. A typical Environment contains several components, including Logical Hosts, Integration Servers, Message Servers, and External Systems. Environments are created using the Enterprise Designer's Environment Explorer.

To Create a New Environment

- 1 On the Environment Explorer, select and right-click the eWay profile.
- 2 The **Properties** window for the IMS DB eWay opens. Modify any parameter settings necessary for your system and then click **OK** to close the Properties window. For more information, see [“Configuring the Environment Properties” on page 18](#).

5.3.3 Deploying the Project

To deploy a Project, please see the *Gate Integrators User's Guide*.

5.3.4 Running the Sample

For instruction on how to run the Sample Project, see the *eGate Integrator Tutorial*.

After completing the process, the Output file in the target directory—configured in the Outbound File eWay—contains all records retrieved from the database in .xml format.

5.4 Using the Sample Project in eInsight

This section provides an overview of how to use the **IMSDB_Sample_BPEL** sample Project with the SeeBeyond ICAN Suite's eInsight Business Process Manager and its Web Services interface. This section *does not* provide explanation on creating a Project that uses an eInsight business process. For these instructions, you should refer to the eInsight User's Guide.

Before running a sample Project, you must:

- Import the sample Project
- Create an Environment for the sample Project
- Configure the eWay properties for your specific system (see [“Creating and Configuring an IMS DB eWay” on page 12](#))
- Create a Deployment Profile

5.4.1 The eInsight Engine and Components

You can deploy an eGate component as an Activity in an eInsight Business Process. Once you have associated the desired component with an Activity, the eInsight engine can invoke it using a Web Services interface. Examples of eGate components that can interface with eInsight in this way are:

- Java Messaging Service (JMS)
- Object Type Definitions (OTDs)
- An eWay
- Collaborations

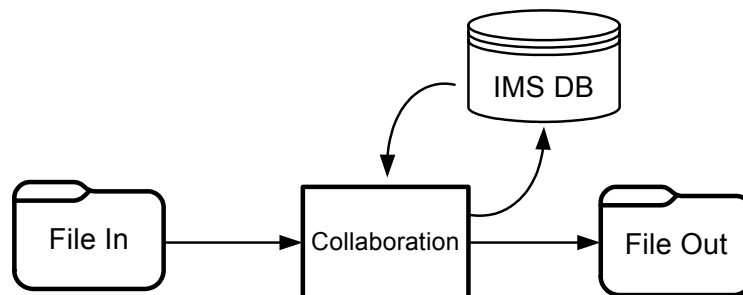
Using the eGate Enterprise Designer and eInsight, you can add an Activity to a Business Process, then associate that Activity—such as an eWay—with an eGate component. When eInsight runs the Business Process, it automatically invokes that component via its Web Services interface.

5.4.2 The IMSDB_Sample_BPEL Sample Project

The `IMSDB_Sample_BPEL` sample Project describes how to retrieve employee names from the IMS database, using eInsight’s business process engine. In this sample, specific employee information is retrieved by passing specific conditions into an OTD Collaboration, which then queries the database and extracts results in the form of an output file.

Figure 23 illustrates the business process used by the sample Project.

Figure 23 Sample Project Data Exchange

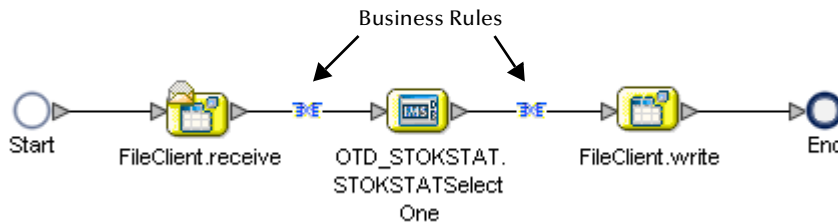


Note: Refer to the *eInsight Business Process Manager User's Guide* for specific information on creating and using a Business Process in eInsight.

BusinessProcess_IMSDB

The BusinessProcess_IMSDB business process describes the account retrieval process seen in Figure 24.

Figure 24 Sample Project Business Process



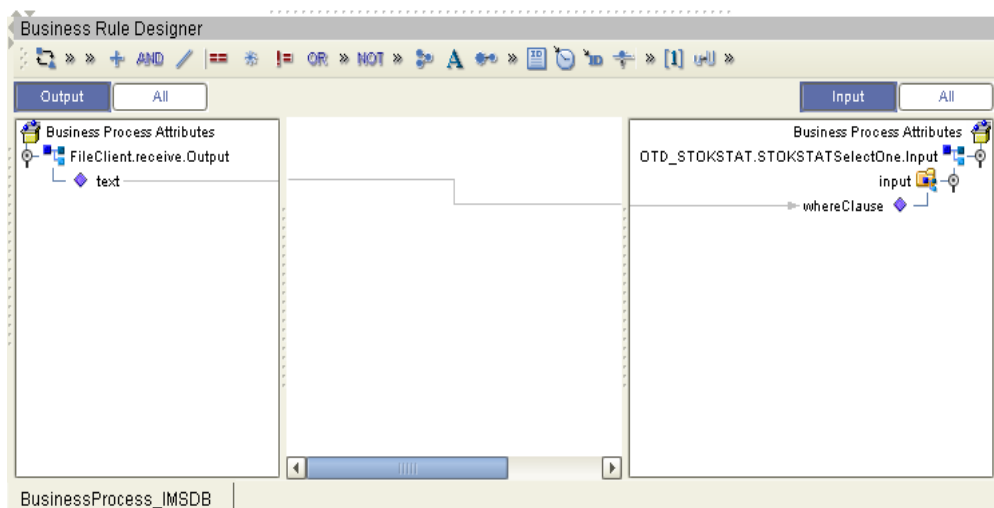
Business rules are defined and configured on the modeling canvas. To review a business rule, double-click the business rule icon located between the business process activities.

Note: A detailed description of the steps required to configure modeling elements are found in the *eGate Integrator's User's Guide*.

The eInsight sample Project business process includes the following steps:

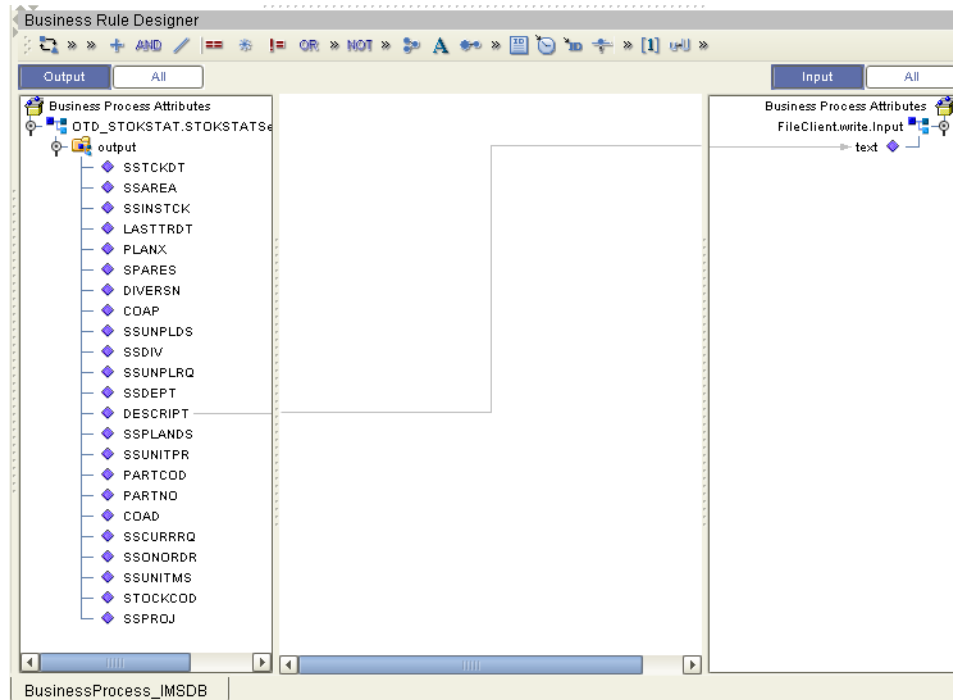
- 1 The file eWay first subscribes to an external directory, picks up the text request for **PARTNO is not null**, and then queries a **whereClause** in the OTD input container. The sample Project uses this text request to acquire data from the IMS DB database.

Figure 25 Copying the Output File



- 2 The OTD output container queries the IMS DB database for all text values of the type **ENAME** that have employee IDs that fit the condition (**PARTNO is not null**), then writes the resulting value to a text file using the **FileClient.write.Input** container.

Figure 26 Returning the Requested Value



5.5 Working with Other Business Process Activities

You can add IMS DB eWay objects to an eInsight Business Process during the system design phase. To make this association, first select an operation under the eWay in the Enterprise Explorer, and then drag it onto the eInsight Business Process canvas.

The following operations are available for IMS DB:

- SelectAll
- SelectMultiple
- SelectOne
- Insert
- Update
- Delete

When you drag an operation onto the eInsight Business Process canvas, it automatically changes to an Activity with an icon identifying the type of operation used.

At run time, the eInsight Engine invokes each step in the order you defined in the Business Process. Using the engine's BPEL interface, the Activity then invokes the eWay. Table 1 shows the eInsight Business Process operations available to the IMS DB eWay, as well as the inputs and outputs to each of these operations.

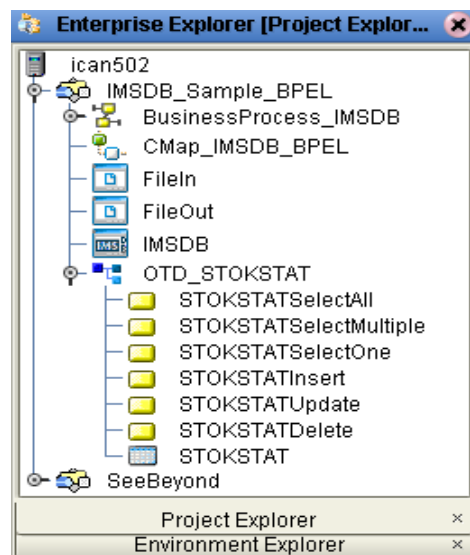
Table 1 Available eInsight IMS DB Business Process Operations

eInsight Business Process Operation	Input	Output
Select All	where() clause (optional)	Returns all rows that fit the condition of the where() clause.
Select Multiple	Number of rows where() clause (optional)	Returns the number of rows specifies that fit the condition of the where() clause.
Select One	where() clause (optional)	Returns the first row that fits the condition of the where() clause.
Insert	Definition of new item to be inserted	Returns status of the insert operation.
Update	where() clause	Returns status of the update operation.
Delete	where() clause	Returns status of the delete operation.

Note: You can leave the *where* clause blank for *SelectAll*, *SelectMultiple*, and *SelectOne*. If this clause is imbedded in an input file, the file can contain nothing (empty). If the clause is imbedded in a *Literal*, it can be a blank *Literal*.

Figure 27 on page 41 shows the Enterprise Designer's Project Explorer with all the IMS DB eWay Business Process operations exposed under the OTD icon.

Figure 27 Project Explorer with Business Process Operations



5.6 Using the Sample Project in eGate

This section describes how to use the IMS DB eWay with the eGate Integrator. This section *does not* provide explanation of how to create a Project. For these instructions, you should refer to the “*eGate Integrators User’s Guide*”.

Section Topics Include:

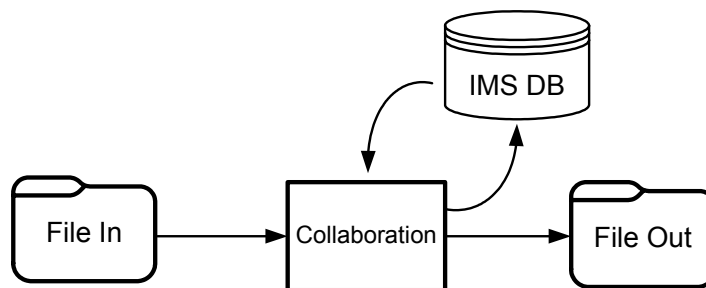
- “Project Overview” on page 42
- “Setting the eWay Properties” on page 36
- “Creating the Environment Profile” on page 37
- “Deploying the Project” on page 37
- “Running the Sample” on page 37

5.6.1 Project Overview

Like the sample Project demonstrated previously in the eInsight business process ([Using the Sample Project in eInsight](#) on page 37), the **IMSDB_Sample_JCE** sample Project also demonstrates a similar end-to-end data exchange using java Collaborations.

Figure 28 illustrates the business process used by the sample Project.

Figure 28 Sample Project Data Exchange



Using IMS DB OTDs

This chapter describes operations you can perform using IMS DB Object Type Definitions (OTDs) in eGate.

Chapter Topics

- [“Overview” on page 43](#)
- [“Using Tables” on page 44](#)
- [“Using Views” on page 54](#)
- [“Using Prepared Statements” on page 55](#)

6.1 Overview

This section explains the types of IMS DB OTDs used with the eWay within the Java Collaboration Editor, including the OTD’s methods.

You can use IMS DB OTD methods with:

- Tables (table OTD)
- Views (view OTD)
- Prepared statements (prepared statement OTD)

Note: *Views are read-only and for informational purposes only. Use the OTD wizard (see [Chapter 4](#)) to create the IMS DB Database OTDs.*

User-defined OTD

You can use the OTD wizard to create an eGate User-defined OTD. See the *eGate Integrator User’s Guide* for a complete explanation of how to create a User-defined OTD.

6.2 Using Tables

A table OTD represents a database table. It consists of fields and methods. Fields correspond to the columns of a table, while methods are the operations that you can apply to the OTD. This setup allows you to perform select, query, update, insert, and delete SQL operations in a table.

6.2.1 Using the select Method

The **select** method returns result sets according to a group of predefined defaults. However, you can change these defaults, if desired. In using the **select** method, you can specify the following types of result sets:

- TYPE_FORWARD_ONLY
- TYPE_SCROLL_INSENSITIVE
- TYPE_SCROLL_SENSITIVE

You can also specify the following result sets with a type of concurrency:

- CONCUR_READ_ONLY
- CONCUR_UPDATABLE

To perform an update, insert or delete operation, the type of the result set returned by the **select** method must be CONCUR_UPDATABLE.

Instead of specifying the type of result set and concurrency in the **select** method, you can also use the following methods:

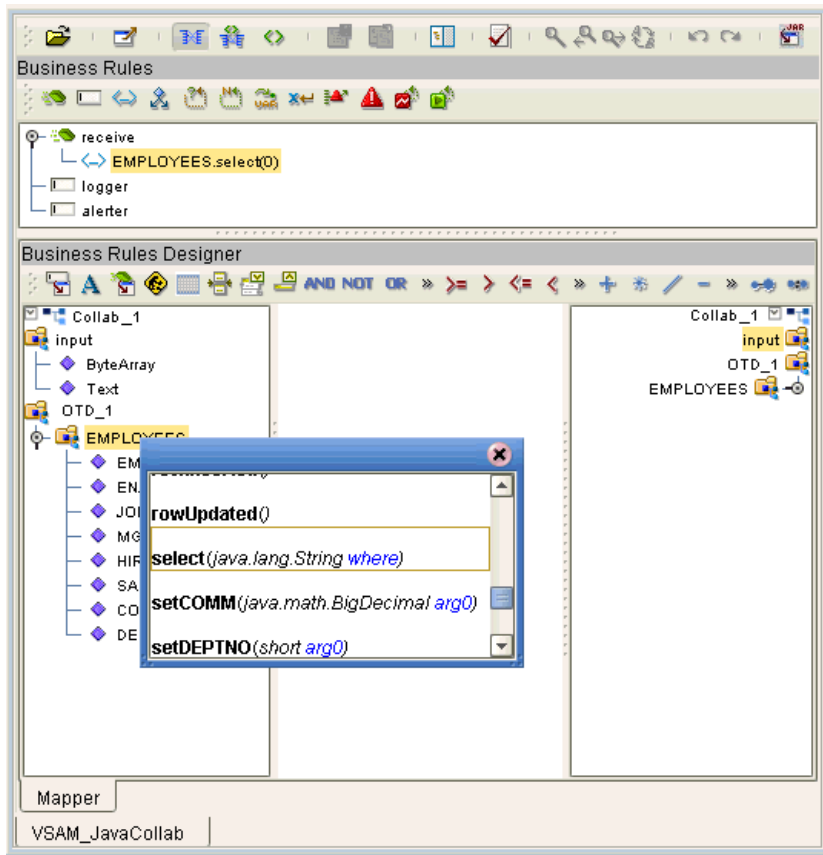
- **setConcurrencytoUpdatable**
- **setConcurrentlytoReadOnly**
- **setScrollTypetoForwardOnly**
- **setScrollTypetoScrollSensitive**
- **setScrollTypetoInsensitive**

To call a method in the Java Collaboration Editor

- 1 Open the eGate Enterprise Designer's Java Collaboration Editor for the desired Collaboration Definition.
- 2 In the editor, navigate to the Business Rules Designer.
- 3 Right-click on the desired node (right or left pane) where you want to call the method.

A pop-up **Method** selection menu appears, showing the methods available for the node. See Figure 29.

Figure 29 Method Selection Menu for the select Method



- 4 Select the desired method.

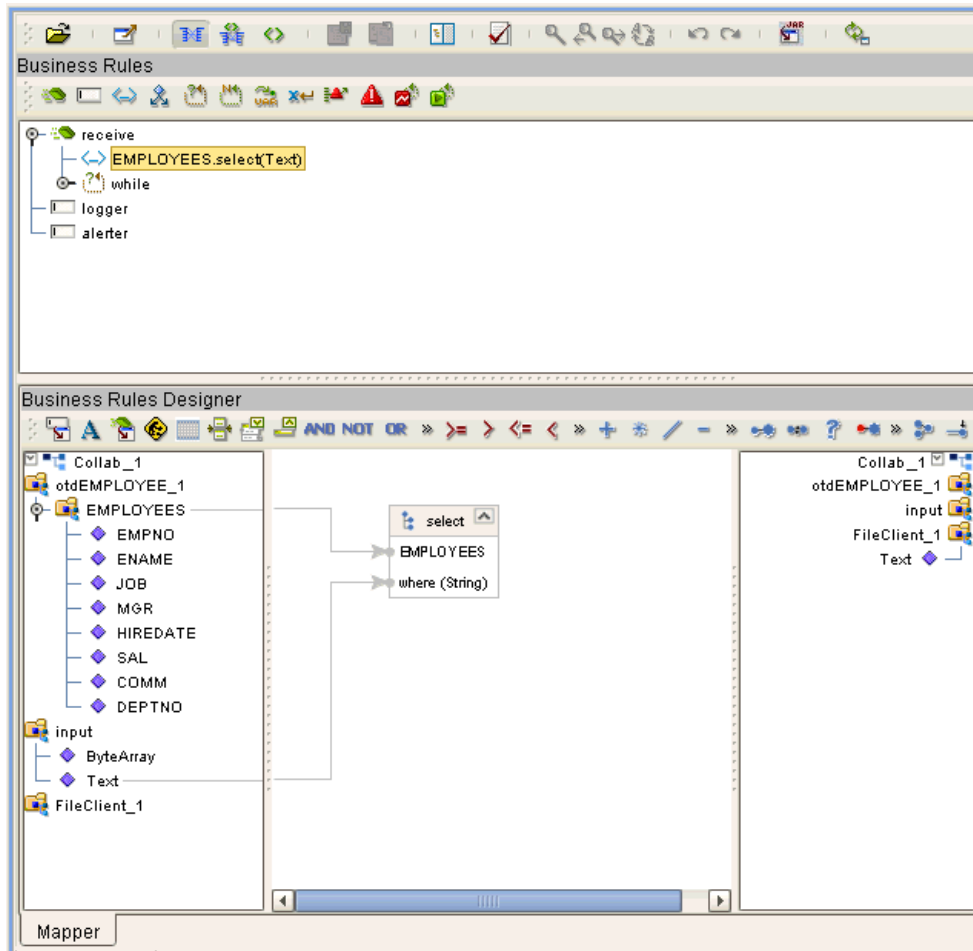
A **Method** box appears in the center pane of the Business Rules Designer. This box represents the chosen method.

6.2.2 Select Operations

To perform a select operation on a table:

- 1 Call the **select** method with the **where** clause specified (if necessary). See Figure 30.

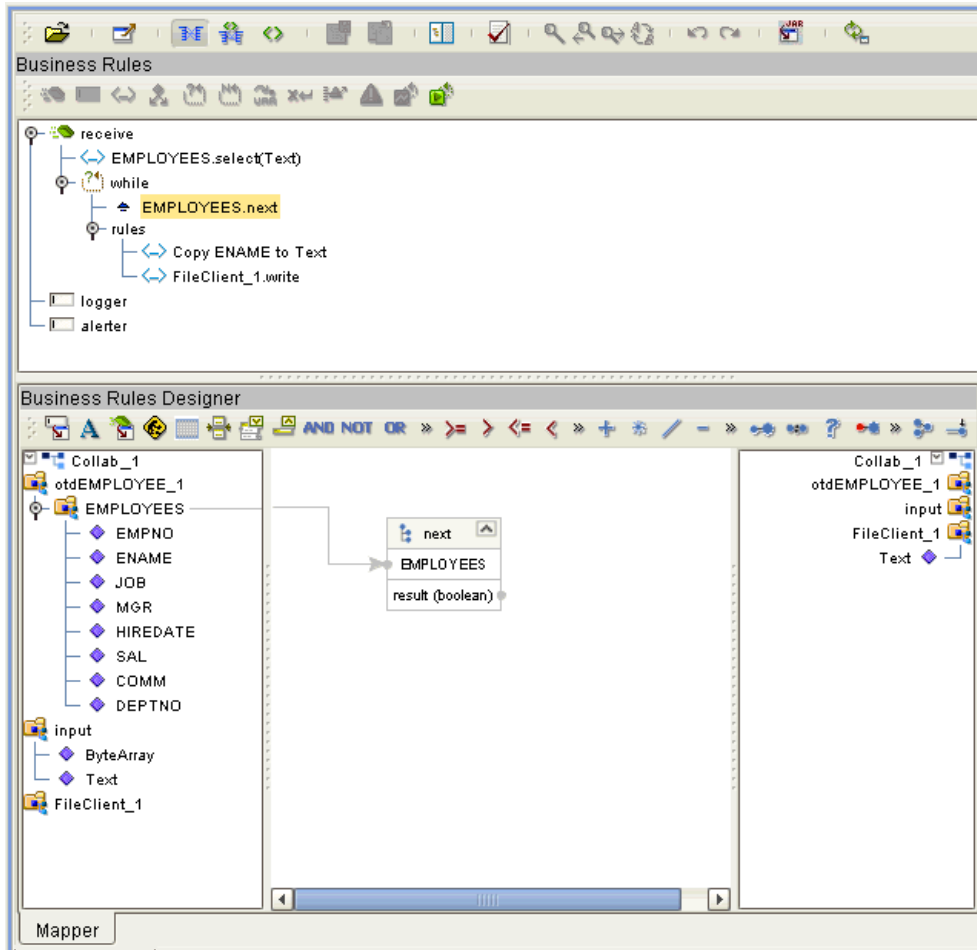
Figure 30 Select Operation: select Method



The text from the **Text** node instructs the Business Process exactly which data needs to be selected. For example, the content of the input text could be **EMPNO>100**.

- 2 Loop through the result set using the **next** method. See Figure 31.

Figure 31 Query Operation: next Method



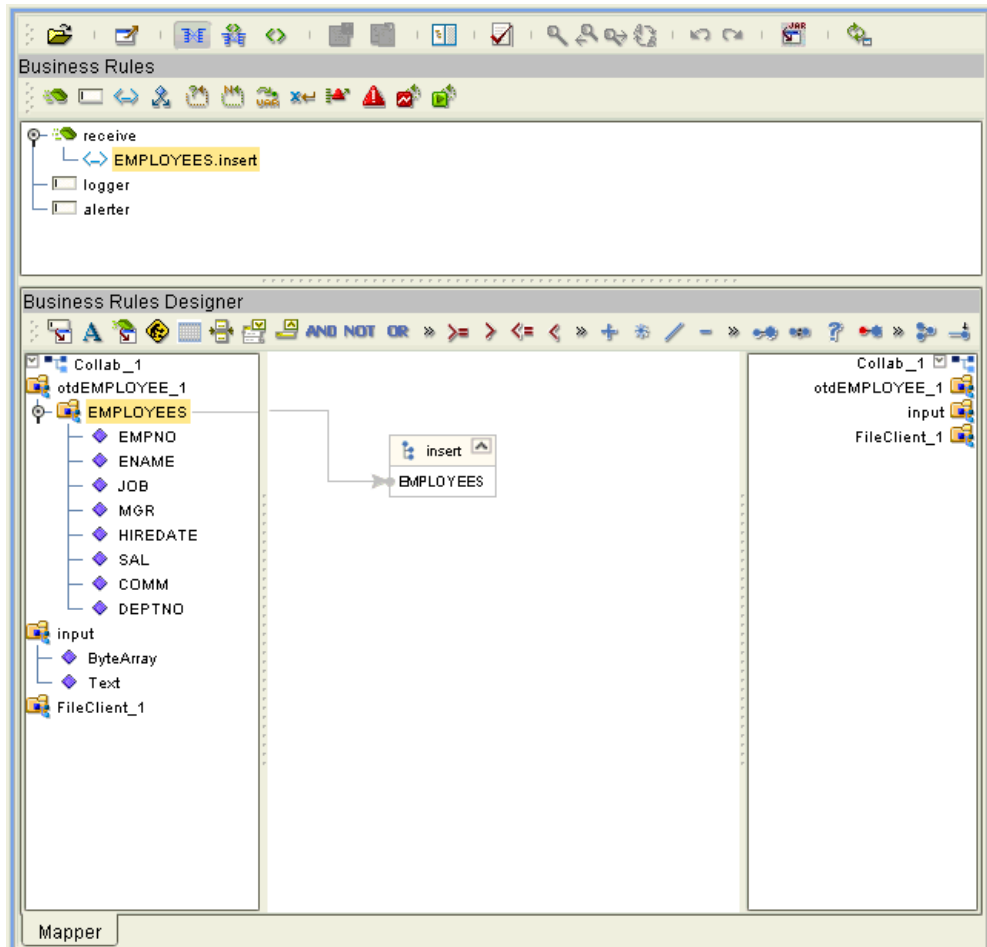
- 3 For each loop, process the return record.

6.2.3 Insert Operations

To perform an insert operation on a table:

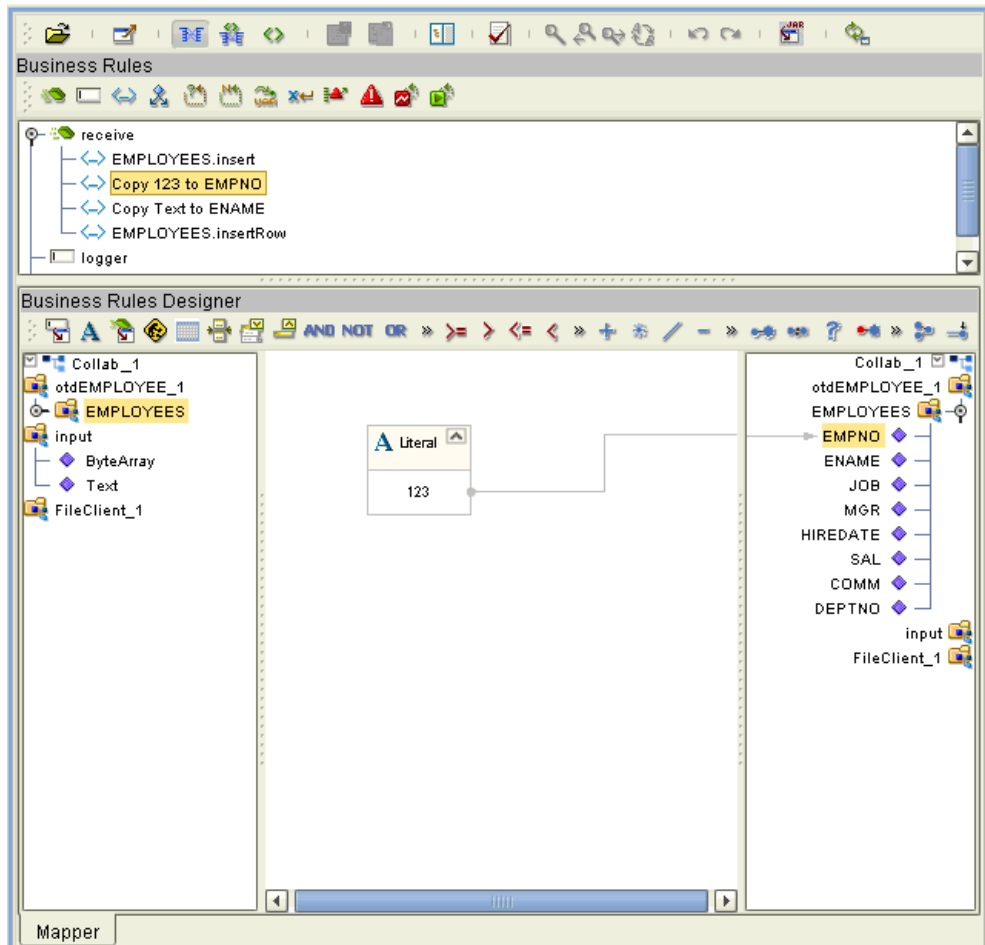
- 1 Call the **insert** method. See Figure 32.

Figure 32 Insert Operation: insert Method



- 2 Set the fields of the table OTD where you want to do the insertion and insert the row using a **Literal**. See Figure 33.

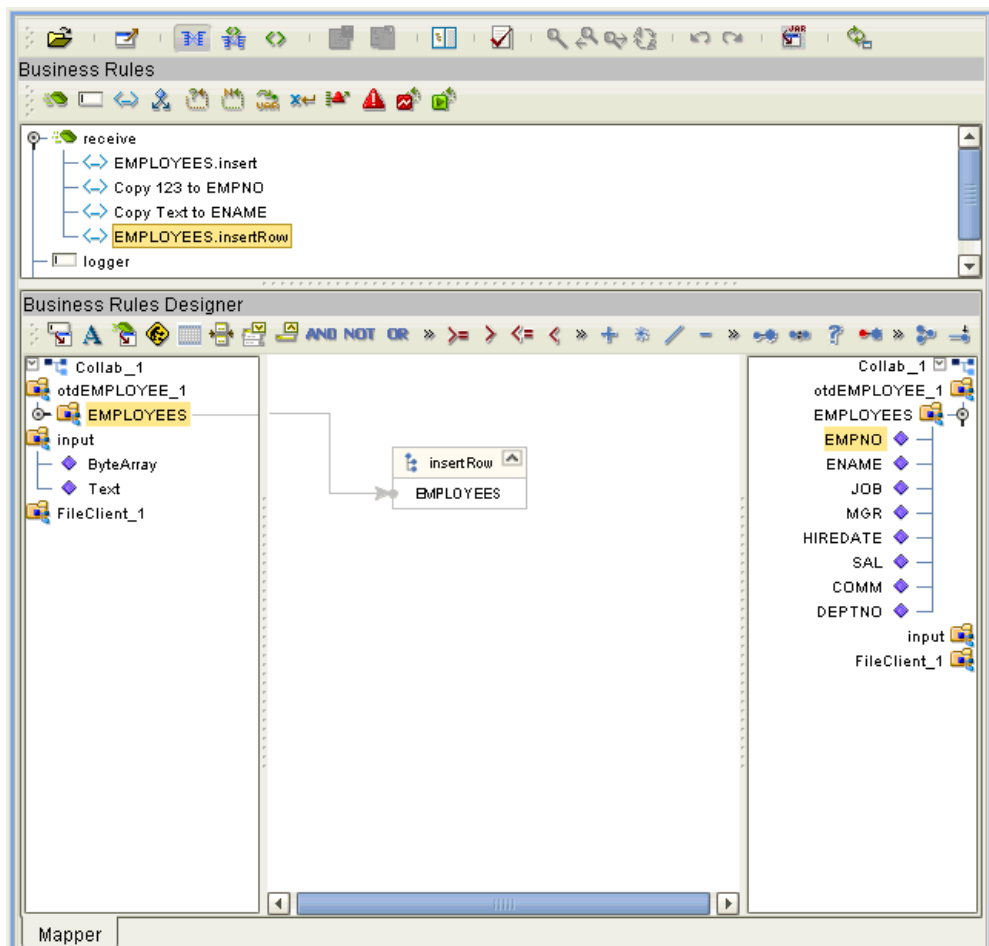
Figure 33 Insert Operation: Literal Indicates the Value Inserted



If you want to update multiple columns, you can repeat the **Copy** rule, as desired.

- 3 Activate the insertion by calling the **insertRow** method. See Figure 34.

Figure 34 Insert Operation: insertRow Method

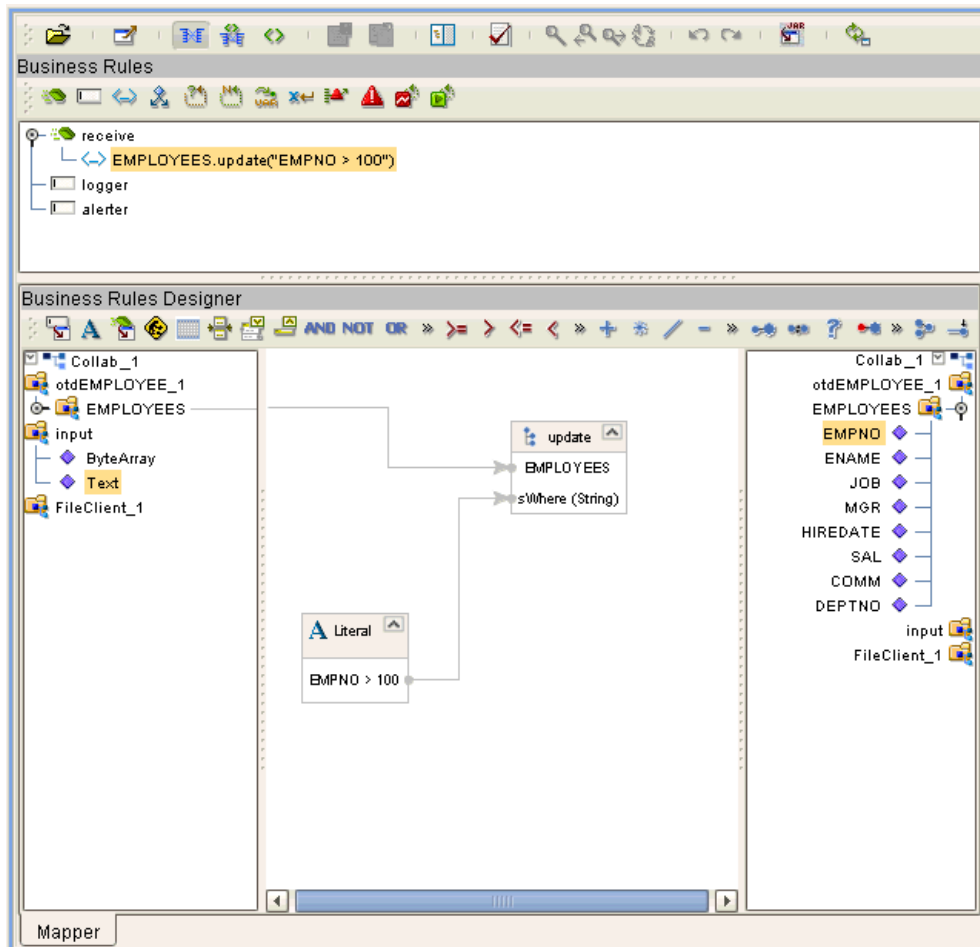


6.2.4 Update Operations

To perform an update operation on a table:

- 1 Call the **select** method with the **where** clause specified, if necessary. See Figure 35.

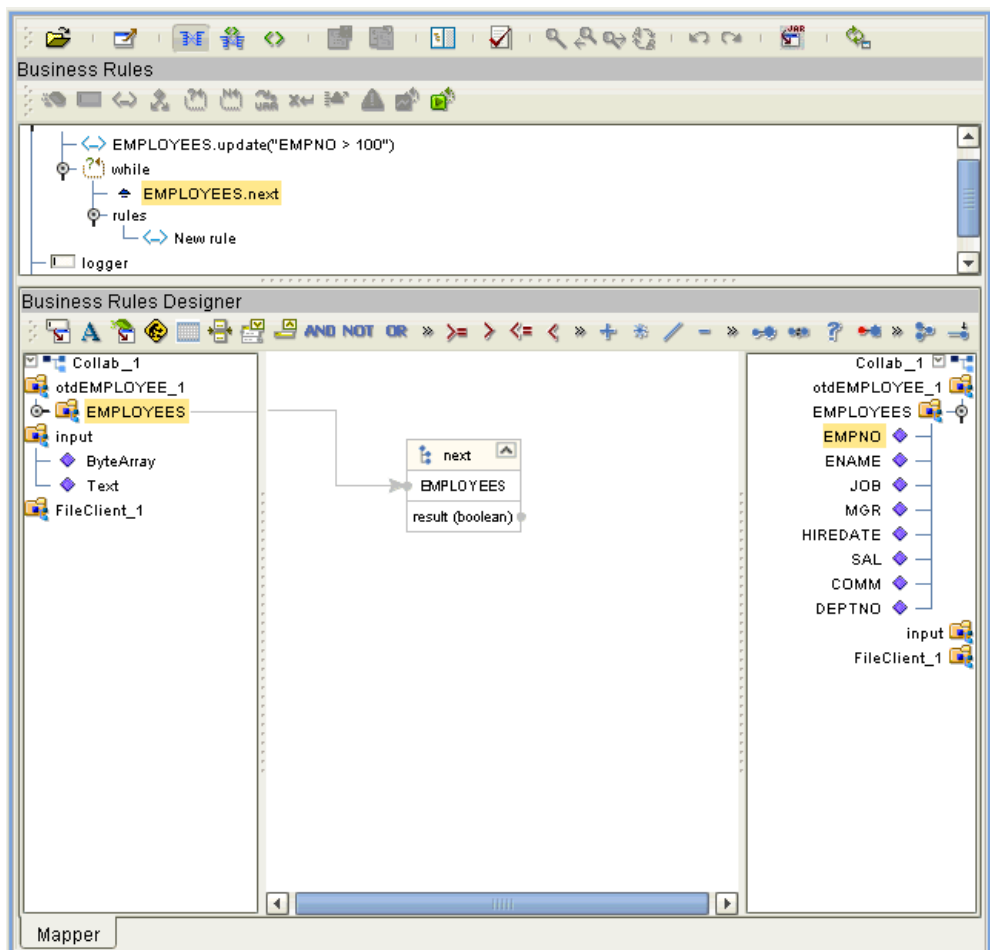
Figure 35 Update Operation: select Method With Literal



In this case, a **Literal** is used instead of the text node as shown in [Figure 32 on page 48](#). Either way of specifying the **where** clause is acceptable.

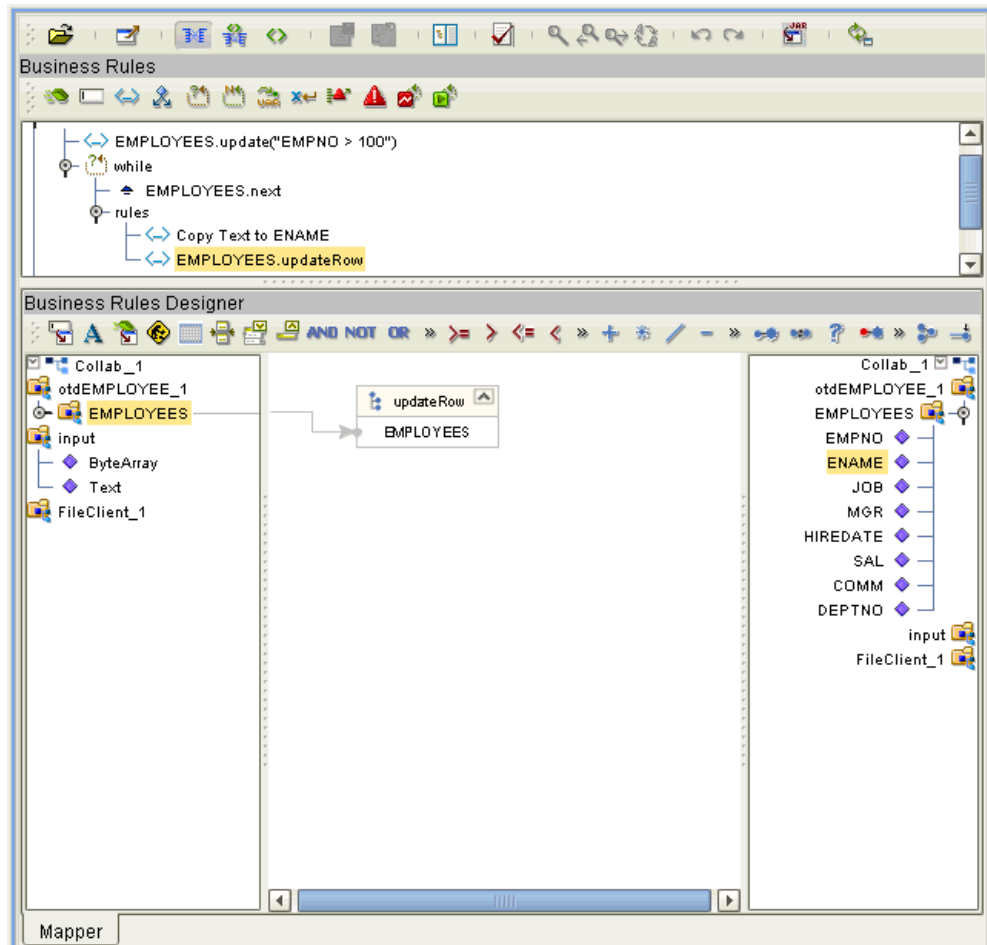
- 2 Call the **next** method. See Figure 36.

Figure 36 Update Operation: next Method



- 3 After assigning a value to the column(s), you must update the row by calling the **EMPLOYEES.updateRow** method. To update more than one column, you can repeat the copy rule.
- 4 Update the row by calling **updateRow**. See Figure 37.

Figure 37 Update Operation: updateRow Method

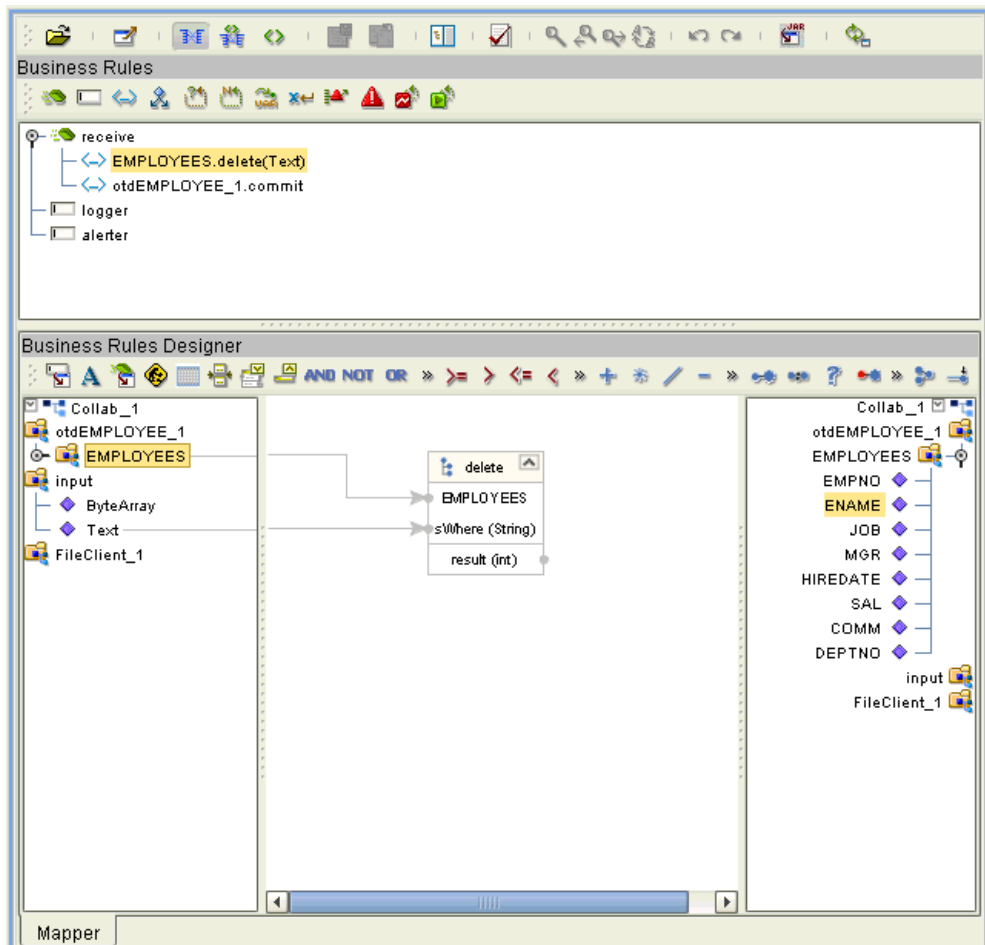


6.2.5 Delete Operations

To perform a delete operation on a table

- 1 Call the **delete** method with the **where** clause specified, if necessary. See Figure 38.

Figure 38 Delete Operation: delete Method



6.3 Using Views

Views are used to look at data from selected columns within selected tables. View OTDs are read-only.

For select operations, see [“Select Operations” on page 46](#).

6.4 Using Prepared Statements

You can perform table operations with prepared statements with the same method nodes you use for the regular table operations, that is, select, update, insert, and delete SQL operations.

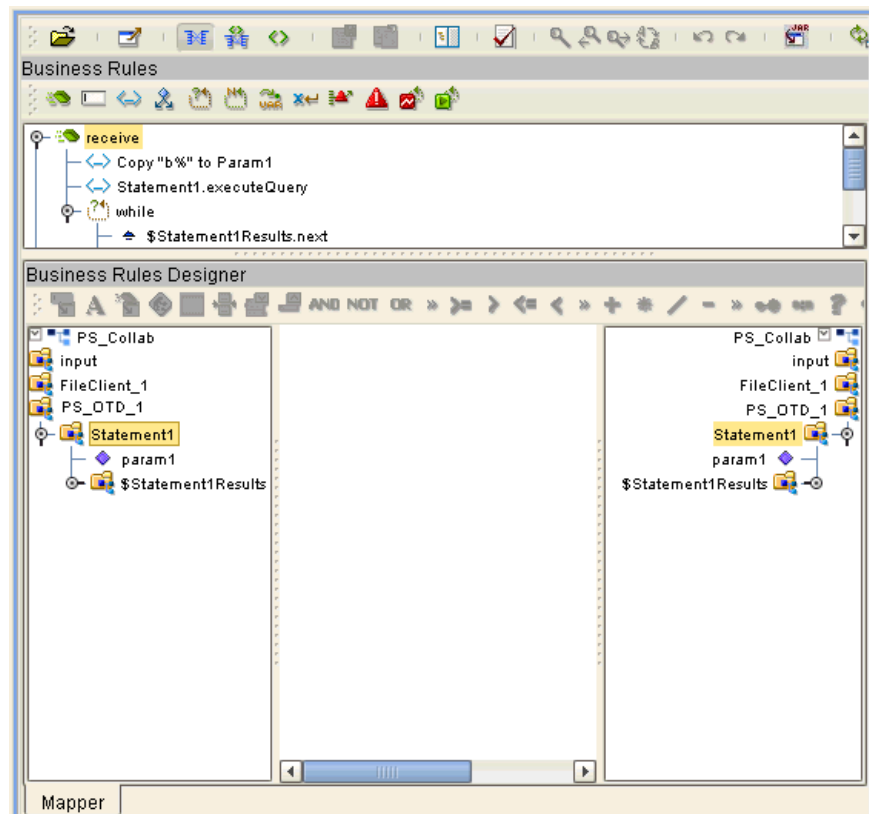
Any prepared statement you create shows up in the Java Collaboration Editor on the OTD where it was created, as a node with the name you assigned to it. You can implement the statement by dragging its node onto the method box for the operation (the desired select, update, insert, or delete) in which you want the statement to be used.

To use a prepared statement in a Java Collaboration

- 1 Using the Enterprise Designer and IMS DB OTD wizard, create an OTD that contains a prepared statement. See [“Add Prepared Statements” on page 31](#) for details.
- 2 Create the desired Java Collaboration Definition using this OTD.

The Java Collaboration Editor displays the OTD with a **Prepared Statement** node as shown in [Figure 39 on page 55](#).

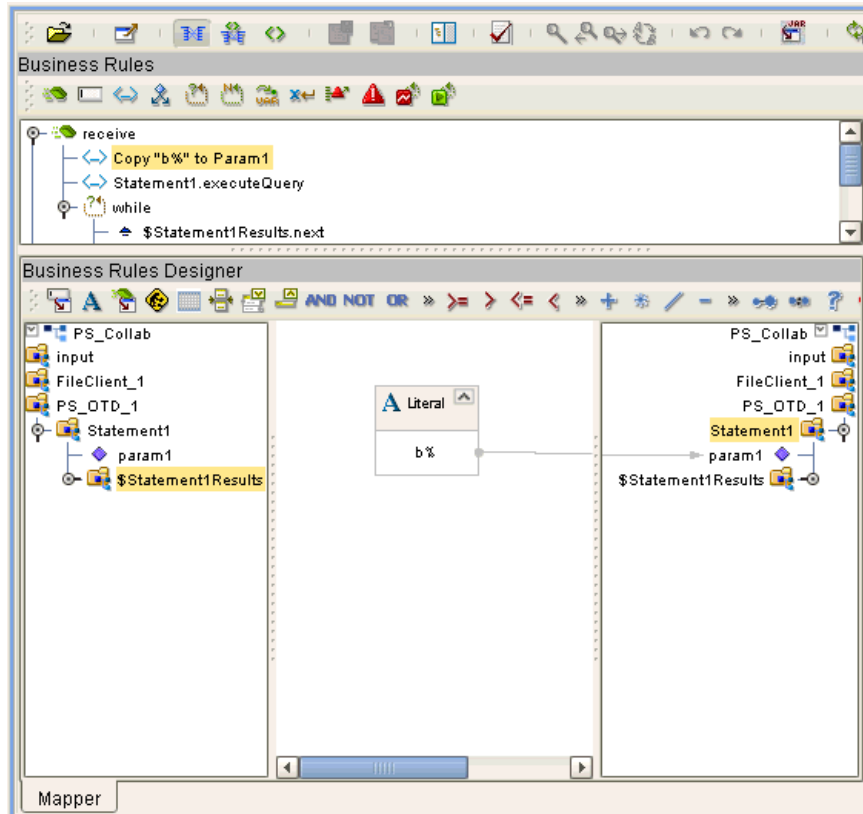
Figure 39 Prepared Statement Collaboration



In the OTD structure, you can see both the input parameter and the result set represented as nodes.

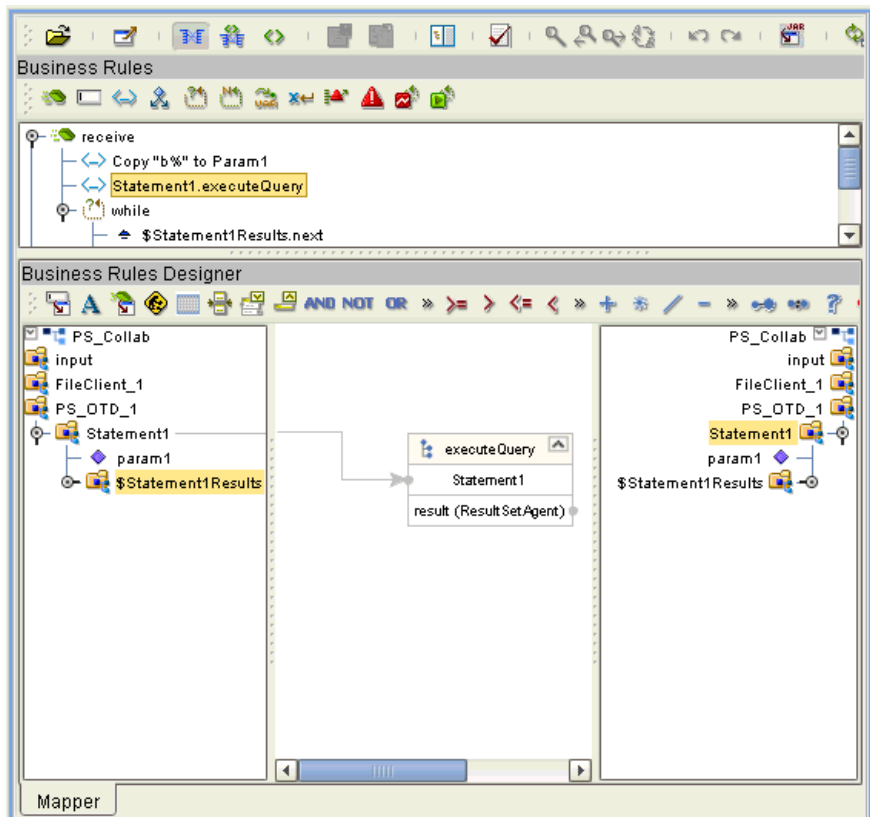
- 3 You can assign a **Literal** value or the input from another OTD to the parameter. In the example shown in Figure 40, the **Literal** value assigned to the parameter is **b%**.

Figure 40 Prepared Statement Collaboration: Assigning a Literal Value



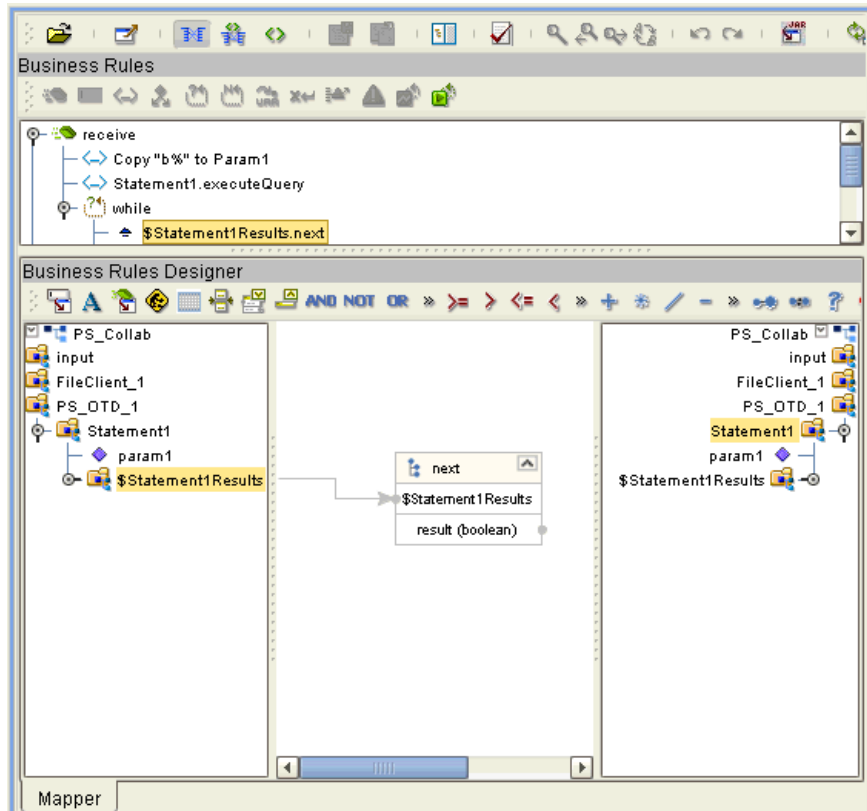
- 4 To run the prepared statement, select the **executeQuery** method from the **Prepared Statement** node. See Figure 41.

Figure 41 Prepared Statement Collaboration: Running the Statement



- 5 To view the result set after the query is finished, create a **while** rule. For the condition, create a **next** method from the result set node (**\$\$Statement1Results** in the example). See Figure 42.

Figure 42 Prepared Statement Collaboration: Viewing Results



You can continue creating your business logic by adding more Business Rules, if desired.

Using eWay Java Methods

IMS DB exposes various Java methods to add extra functionality, and make it easier to set, and get information in the IMS DB eWay OTDs.

For a complete list of the Java methods, refer to the **Javadoc**.

Classes referenced in the Javadoc include:

- IMSDBApplicationConnection
- IMSDBApplicationConnectionFactory
- IMSDBCallableStatementAgent
- IMSDBConnector
- IMSDBCManagedConnectionFactoryExt
- IMSDBPreparedStatementAgent
- IMSDBPreparedStatementResultSet
- IMSDBSession
- IMSDBTableResultSet
- IMSDBXAManagedConnectionFactoryExt

You can find the **Javadoc** in the **IMSDBeWayDocs.sar** file. Open the **index.html** file located in the **html** folder to access information in the Javadoc.

Note: *For complete instructions on uploading files to the repository, see the SeeBeyond ICAN Suite Installation Guide.*

Index

C

ClassName parameter 14
Connect to Database 25

D

DatabaseName 22
DatabaseName parameter 19
DataSourceName parameter 19
Delimiter 20
Description parameter 15, 20
driver class, JDBC 14

E

eWay Database Wizard 24

H

host system requirements 8

I

Inbound Environment Properties
 Database 22
 Password 22
 PortNumber 23
 ServerName 23
 User 23
InitialPoolSize parameter 15

J

JDBC
 driver class 14

L

Logical Host requirements 7
LoginTimeOut parameter 15

M

MaxIdleTime parameter 15

MaxPoolSize parameter 15
MaxStatements parameter 16
MinPoolSize parameter 16

N

NetworkProtocol parameter 16

O

operating systems
 supported 7

P

parameter
 ClassName 14
 DatabaseName 19
 DataSourceName 19
 Description 15, 20
 InitialPoolSize 15
 LoginTimeOut 15
 MaxIdleTime 15
 MaxPoolSize 15
 MaxStatements 16
 MinPoolSize 16
 NetworkProtocol 16
 Password 20
 PortNumber 20
 PropertyCycle 16
 RoleName 16
 ServerName 21
 User 21
Participating Host requirements 7
Password 22
Password parameter 20
PortNumber 23
PortNumber parameter 20
Property settings, Inbound Environment
 Database 22
 Password 22
 PortNumber 23
 ServerName 23
 User 23
PropertyCycle parameter 16

R

Readme.txt
 file 9
 on installation CD-ROM 9
requirements
 host system 8

Index

RoleName parameter 16

S

Select Wizard Type 24

ServerName 23

ServerName parameter 21

supported operating systems 7

system requirements 7

system requirements, external 8

U

User 23

User parameter 21

using IMSDB OTDs, overview 43

W

Web services 7