SUN SEEBEYOND

eWAY™ ADAPTER FOR IMS USER'S GUIDE

Release 5.1.2

Sun
microsystems

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Introducing the IMS eWay

This document describes how to install and configure the IMS eWay Intelligent Adapter (called the IMS eWay throughout this document), as well as how to implement the eWay in a typical eGate environment.

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

What's in This Chapter

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1.1 About Information Management System (IMS)

IBM's IMS, is a database and transaction management system that provides an interface for users to access information in various databases via on-line transactions. The IMS/TM (Transaction Manager) is a message-based transaction processor, that handles the execution of specific business application programs. The IMS/DB (Database) is an entirely separate component providing access to the IMS hierarchical database for applications running under the IMS/TM, as well as IMS transaction monitor and OS/390 batch jobs.

1.2 About the IMS eWay

The IMS eWay enables eGate to connect with IBM's IMS/TM mainframe applications through IBM's IMS Connect. (See **Figure 1 on page 7**).

Figure 1 IMS eWay and the IMS Environment.
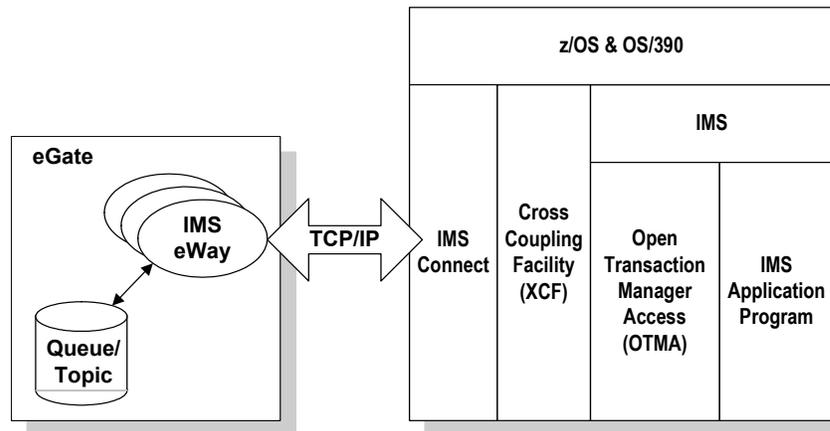
The eWay provides access to the Input and Output Descriptors (MID/MOD) of the IMS applications without requiring changes to the application. By capturing the field contents before screen formatting, the eWay is not affected by cosmetic changes to the application's screen design.

The eWay includes the IMS Message Format Service (MFS) Wizard conversion utility to facilitate the creation of input and output Object Type Definitions (OTDs) from IMS MFS files.

The implementation of the IMS eWay is in accordance with IBM's *IMS Connect Guide and Reference*. These documents describe the OTMA protocol and contain important prerequisite information for the configuration IMS Connect on the mainframe.

A sample project for the IMS eWay is included on the installation CD-ROM which demonstrates how a non-conversational scenario (simple send/response) is managed.

1.3 What's New in This Release

This 5.1.2 version release provides general maintenance fixes for the IMS eWay Intelligent Adapter. The IMS eWay also includes the following changes and new features:

New for Version 5.1.0

- **Version Control:** An enhanced version control system allows you to effectively manage changes to the eWay components.

- **Multiple Drag-and-Drop Component Mapping from the Deployment Editor:** The Deployment Editor now allows you to select multiple components from the Editor's component pane, and drop them into your Environment component.

- **Manual setting for IMS Connection Mode:** Allows you to explicitly call the connect and disconnect methods in their collaboration as business rules.

- **Dynamic Generation of IMS Client ID**: This parallel mode allows the IMS eWay to be configured to handle multiple requests simultaneously.

- **Support for Runtime LDAP Configuration:** Configuration properties now support LDAP key values.

- **Connection Pooling:** Connections can be reused to reduce the overhead of creating a physical connection.

- **Connection Retry Support:** Allows you to specify the number of attempts to reconnect, and the interval between retry attempts, in the event of a connection failure.

- **Wait Timeout**: A new Serial Mode parameter (part of the Environment Explorer properties) controls how long, in milliseconds, a request thread will wait for a request lock.

- **Relaunchable OTD Support:** An OTD can be rebuilt and saved (under the same name) then relaunched back to the same Java Collaboration or BPEL. This allows you to change the metadata in an OTD without having to completely recreate the business logic from scratch.

- **Connectivity Map Generator:** Generates and links your Project's Connectivity Map components using a Collaboration or Business Process.

- **IRM_TIMER Parameter:** Enhanced to provide additional flexibility, allowing the user to specify values ranging from .01 secs to 70 minutes.

- **Support for IMS Connect 9.1**

Many of these features are documented further in the *Sun SeeBeyond eGate Integrator User's Guide* or the *Sun SeeBeyond eGate Integrator System Administrator Guide*.

1.4 About This Document

This section provides a brief outline of the IMS eWay User's Guide.

1.4.1 What's in This Document

This book includes the following chapters:

- **Chapter 1 "Introducing the IMS eWay"** provides an overview of the IMS eWay Intelligent Adapter, including a brief description of the IMS. In addition, this chapter provides a brief outline of the eWay user's guide.

- **Chapter 2 "Installing the IMS eWay"** lists both the supported operating systems and system requirements for the IMS eWay. It also includes directions for installing the IMS eWay as well as the IMS eWay documentation and sample projects.

- **Chapter 3 "Configuring the IMS eWay"** describes the process of configuring the IMS eWay to run in your environment.

- **Chapter 4 "Using the IMS eWay With eInsight"** describes how to use the IMS eWay with the Sun Java Composite Application Platform Suite's eInsight Business Process Manager and the Web Services interface. Provides directions for importing

and running the eInsight sample project and step by step directions for creating the sample project manually.

- **Chapter 5** **"Implementing an IMS eWay Project"** describes the features and functionality of the IMS eWay using the eGate Integrator and the Collaboration Editor (Java). It also provides directions for importing and running the JCS and MFS sample projects and step by step directions for creating the sample projects manually.

1.4.2 Scope

This user's guide provides a description of the IMS eWay Intelligent Adapter. It includes directions for installing the eWay, configuring the eWay properties, and implementing the eWay's sample projects. This document is also intended as a reference guide, listing available properties, functions, and considerations. For a reference of available IMS eWay Java methods, see the associated Javadoc.

1.4.3 Intended Audience

This guide is intended for experienced computer users who have the responsibility of helping to set up and maintain a fully functioning ICAN Suite system. This person must also understand any operating systems on which the ICAN Suite will be installed (Windows or UNIX), and must be thoroughly familiar with Windows-style GUI operations.

1.4.4 Text Conventions

The following conventions are observed throughout this document.

Table 1 Text Conventions

Text Convention	Used For	Examples
Bold	Names of buttons, files, icons, parameters, variables, methods, menus, and objects	▪ Click **OK**. ▪ On the **File** menu, click **Exit**. ▪ Select the **eGate.sar** file.
Monospaced	Command line arguments, code samples; variables are shown in **bold italic**	`java -jar `**`filename`**`.jar`
Blue bold	Hypertext links within document	See **Text Conventions** on page 9
Blue underlined	Hypertext links for Web addresses (URLs) or email addresses	http://www.sun.com

1.4.5 Screenshots

Depending on what products you have installed, and how they are configured, the screenshots in this document may differ from what you see on your system.

1.5 Related Documents

The following Sun documents provide additional information about the Sun Java Composite Application Platform Suite:

- *eGate Integrator User's Guide*
- *Sun Java Composite Application Platform Suite Installation Guide*

1.6 Sun Microsystems, Inc. Web Site

The Sun Microsystems web site is your best source for up-to-the-minute product news and technical support information. The site's URL is:

http://www.sun.com

1.7 Documentation Feedback

We appreciate your feedback. Please send any comments or suggestions regarding this document to:

CAPS_docsfeedback@sun.com

Installing the IMS eWay

This chapter explains the procedures for installing the IMS eWay.

What's in This Chapter

- **Before You Install** on page 10
- **Installing the IMS eWay** on page 10
- **After Installation** on page 12
- **Extracting the Sample Projects and Javadocs** on page 12
- **ICAN 5.0 Project Migration Procedures** on page 12
- **Installing Enterprise Manager eWay Plug-Ins** on page 14

2.1 Before You Install

Open and review the **Readme.txt** file for the Oracle eWay for any additional information or requirements, prior to installation. The **Readme.txt file** is located on the installation CD-ROM.

2.2 Installing the IMS eWay

The Enterprise Manager, a web-based application, is used to select and upload eWays and add-on files during the installation process. The following section describes how to install the components required for this eWay.

Refer to the readme for the latest information on:

- Supported Operating Systems
- System Requirements
- External System Requirements

Note: *When the Repository is running on a UNIX operating system, the eWays are loaded from the Enterprise Manager running on a Windows platform connected to the Repository server using Internet Explorer.*

2.2.1 Installing the IMS eWay on an eGate Supported System

After you have installed Core Products, do the following:

1 From the Sun Java Composite Application Platform Suite Installer, click on the **Click to install additional products** link (on the Administration tab).

2 Expand the **eWay** option.

3 From **Select Sun Java Composite Application Platform Suite Products to Install**, select the products for your **Sun Java Composite Application Platform Suite** and include the following:

- ◆ **IMSeWay.sar** (to install the IMS eWay)
- ◆ **MFS.sar** (to install the MFS Wizard)
- ◆ FileeWay.sar (to install the File eWay, used with the sample project)

4 Once you have selected all of your products, click **Next** in the top-right or bottom-right corner of the **Select Sun Java Composite Application Platform Suite Products to Install** box.

5 From the **Selecting Files to Install** box, locate and select your first product's SAR file. Once you have selected the SAR file, click **Next**. Follow this procedure for each of your products. The Installing Files window appears after the last SAR file has been selected.

6 From the **Installing Files** window, review the product list. If it is correct, Click **Install Products**. The Enterprise Manager starts the installation.

7 When your product's installation is completed, click on the prompt, "**When installation completes, click here to continue**."

To upload the Sun SeeBeyond eWay™ Adapter for IMS User's Guide, Help file, Javadoc, Readme, and sample Projects, do the following:

A Expand the **Documentation** option.

B Select **IMSeWayDocs.**

C Click **Next** in the top-right or bottom-right corner of the **Select Sun Java Composite Application Platform Suite Products to Install** box.

2.2.2 Adding the eWay to an Existing Sun Java Composite Application Platform Suite Installation

It is possible to add the eWay to an existing Sun Java Composite Application Platform Suite installation.

Steps required to add an eWay to an Existing CAPS installation include:

1 Complete steps 1 through 6 on **Installing the IMS eWay on an eGate Supported System** on page 11.

2 Open the Enterprise Designer and select **Update Center** from the Tools menu. The Update Center Wizard appears.

3 For Step 1 of the wizard, simply click **Next**.

4 For Step 2 of the wizard, click the **Add All** button to move all installable files to the **Include in Install** field, then click **Next**.

5 For Step 3 of the wizard, wait for the modules to download, then click **Next**.

6 The wizard's Step 4 window displays the installed modules. Review the installed modules and click **Finish.**

7 When prompted, restart the IDE (Integrated Development Environment) to complete the installation.

2.3   After Installation

Once the eWay is installed and configured it must then be incorporated into a project before it can perform its intended functions. See the *eGate Integrator User's Guide* for more information on incorporating the eWay into an eGate project.

2.4   Extracting the Sample Projects and Javadocs

The IMS eWay includes sample Projects and Javadocs. The sample Projects are designed to provide you with a basic understanding of how certain database operations are performed using the eWay, while Javadocs provide a list of classes and methods exposed in the eWay.

Steps to extract the Sample Projects and Javadocs include:

1 From the Documentation tab of the Enterprise Manager, click **IMS** to view the list of files available for this product.

2 Click **Download Sample** to open the **IMS_eWay_Sample.zip** file.

3 Use WinZip to extract the sample files to a desired location. Note that the **IMS_eWay_Sample.zip** file contains two additional ZIP files for each sample Project.

4 Click Download Javadocs to open the **IMS_eWay_Javadoc.zip** file.

5 Use WinZip to extract the Javadocs files to a desired location.

Refer to **Importing a Sample Project** on page 46 for instructions on importing the sample Project into your repository via the Enterprise Designer.

2.5 ICAN 5.0 Project Migration Procedures

This section describes how to transfer your current ICAN 5.0 Projects to the Sun Java Composite Application Platform Suite 5.1.2. To migrate your ICAN 5.0 Projects to the Sun Java Composite Application Platform Suite 5.1.2, do the following:

Export the Project

1 Before you export your Projects, save your current ICAN 5.0 Projects to your Repository.

2 From the Project Explorer, right-click your Project and select **Export** from the shortcut menu. The Export Manager appears.

3 Select the Project that you want to export in the left pane of the Export Manager and move it to the Selected Projects field by clicking the **Add to Select Items** (arrow) button, or click **All** to include all of your Projects.

4 In the same manner, select the Environment that you want to export in the left pane of the Export Manager and move it to the Selected Environments field by clicking the **Add to Select Items** (arrow) button, or click **All** to include all of your Environments.

5 Browse to select a destination for your Project ZIP file and enter a name for your Project in the **ZIP file** field.

6 Click **Export** to create the Project ZIP file in the selected destination.

Install Sun Java Composite Application Platform Suite 5.1.2

1 Install the Sun Java Composite Application Platform Suite, including all eWays, libraries, and other components used by your ICAN 5.0 Projects.

2 Start the Composite Application Platform Suite 5.1.2 Enterprise Designer.

Import the Project

1 From the Composite Application Platform Suite 5.1.2 Enterprise Designer's Project Explorer tree, right-click the Repository and select **Import Project** from the shortcut menu. The Import Manager appears.

2 Browse to and select your exported Project file.

3 Click **Import**. A warning message, **"Missing APIs from Target Repository,"** may appear at this time. This occurs because various product APIs were installed on the ICAN 5.0 Repository when the Project was created, that are not installed on the Composite Application Platform Suite 5.1.2 Repository. These APIs may or may not apply to your Projects. You can ignore this message if you have already installed all of the components that correspond to your Projects. Click **Continue** to resume the Project import.

4 Close the Import Manager after the Project is successfully imported.

Deploy the Project

1 A new Deployment Profile must be created for each of your imported Projects. When a Project is exported, the Project's components are automatically *"checked in"* to Version Control to write-protected each component. These protected components

appear in the Explorer tree with a red padlock in the bottom-left corner of each icon. Before you can deploy the imported Project, the Project's components must first be *"checked out"* of Version Control from both the Project Explorer and the Environment Explorer. To *"check out"* all of the Project's components, do the following:

A From the Project Explorer, right-click the Project and select **Version Control > Check Out** from the shortcut menu. The Version Control - Check Out dialog box appears.

B Select **Recurse Project** to specify all components, and click **OK**.

C Select the Environment Explorer tab, and from the Environment Explorer, right-click the Project's Environment and select **Version Control > Check Out** from the shortcut menu.

D Select **Recurse Environment** to specify all components, and click **OK**.

2 If your imported Project includes File eWay External Systems in the Environment, the Project's Environment must be reconfigured prior to deploying the Project. To reconfigure your Environment, do the following:

A The properties file for the File External System now includes both inbound and outbound properties. If your Environment includes both inbound and outbound File External Systems, these can now be combined. Delete all but one of the File External Systems.

B From the Environment Explorer tree, right-click your remaining File External System, and select **Properties** from the shortcut menu. The Properties Editor appears.

C Set the inbound and outbound directory values, and click **OK**.

3 Deploy your Projects.

2.6 Installing Enterprise Manager eWay Plug-Ins

The **Sun SeeBeyond Enterprise Manager** is a Web-based interface that allows you to monitor and manage your Composite Application Platform Suite applications. The Enterprise Manager requires an eWay specific "plug-in" for each different eWay you install. These plug-ins enable the Enterprise Manager to target specific alert codes for each eWay type, as well as to start and stop the inbound eWays.

The *Sun Java Composite Application Platform Suite Installation Guide* describes how to install Enterprise Manager. The *Sun SeeBeyond eGate Integrator System Administration Guide* describes how to monitor servers, Services, logs, and alerts using the Enterprise Manager and the command-line client.

The **eWay Enterprise Manager plug-ins** are available from the **List of Components to Download** under the Sun Java Composite Application Platform Suite Installer's **DOWNLOADS** tab.

There are two ways to add the eWay Enterprise Manager plug-ins:

- From the **Sun SeeBeyond Enterprise Manager**
- From the **Sun Java Composite Application Platform Suite Installer**

To add plug-ins from the Enterprise Manager

1 From the **Enterprise Manager**'s Explorer toolbar, click **configuration**.

2 Click the **Web Applications Manager** tab, go to the **Auto-Install from Repository** tab, and connect to your Repository.

3 Select the application plug-ins you require, and click **Install**. The application plug-ins are installed and deployed.

To add plug-ins from the Sun Java Composite Application Platform Suite Installer

1 From the **Sun Java Composite Application Platform Suite Installer's Download tab**, select the Plug-Ins you require and save them to a temporary directory.

2 From the **Enterprise Manager**'s Explorer toolbar, click **configuration**.

3 Click the **Web Applications Manager** tab and go to the **Manage Applications** sub-tab.

4 Browse for and select the WAR file for the application plug-in that you downloaded, and click **Deploy**. The plug-in is installed and deployed.

Viewing Alert Codes

You can view and delete alerts using the Enterprise Manager. An alert is triggered when a specified condition occurs in a Project component. The purpose of the alert is to warn the administrator or user that a condition has occurred.

To View the eWay Alert Codes

1 Add the eWay Enterprise Manager plug-in for this eWay.

2 From the **Enterprise Manager**'s Explorer toolbar, click **configuration**.

3 Click the **Web Applications Manager** tab and go to the **Manage Alert Codes** tab.

4 Browse for and select the Alert Properties File for the application plug-in that you added. The Alert Properties Files are located in the **alertcodes** folder of your Sun Java Composite Application Platform Suite installation directory.

5 Click **Deploy**. The available alert codes for your application are displayed under **Results**. A listing of available alert codes is displayed in Table 2.

Table 2   IMS eWay Alert Codes

Alert Code	Description	User Action
IMSCLIENTEWAY-CONNECT -FAILED000002	Failed to connect to IMS.	- IMS is down. Verify that the system you are connecting to is running. - Properties are incorrect. Verify that your parameters are correct (host name, port, and so forth). - CTG configuration is incorrect. Verify CTG installation and configuration is correct.

For information on Managing and Monitoring alert codes and logs, see the *Sun SeeBeyond eGate Integrator System Administration Guide.*

Configuring the IMS eWay

This chapter describes how to configure the IMS eWay properties, and provides a list of the eWay properties and their required values.

What's in This Chapter

- **Creating and Configuring the IMS eWay** on page 17
- **IMS eWay Connectivity Map Properties** on page 20
- **IMS eWay Environment Explorer Properties** on page 21

3.1 Creating and Configuring the IMS eWay

All eWays contain a set of parameters with properties that are unique to that eWay type. The IMS eWay properties are modified from these locations:

- **Connectivity Map**: These parameters most commonly apply to a specific component eWay, and may vary from other eWays (of the same type) in the Project.
- **Environment Explorer**: These parameters are commonly global, applying to all eWays (of the same type) in the Project. The saved properties are shared by all eWays in the IMS External System window.
- **Collaboration or Business Process**: IMS eWay properties may also be set from your Collaboration or Business process, in which case the settings will override the corresponding properties in the eWay's configuration file. Any properties that are not overridden retain their configured default settings.

3.1.1 Selecting IMS as the External Application

To create an IMS eWay you must first create an IMS External Application in your Connectivity Map. IMS eWays are located between an IMS External Application and a Service. Services are containers for Java Collaborations, Business Processes, eTL processes, and so forth.

To create the IMS External Application

1 From the Connectivity Map toolbar, click the External Applications icon.

2 Select the **IMS External Application** from the menu (see **Figure 2 on page 18**). The selected IMS External Application icon appears on the Connectivity Map toolbar.

Figure 2 External Applications Selection Menu
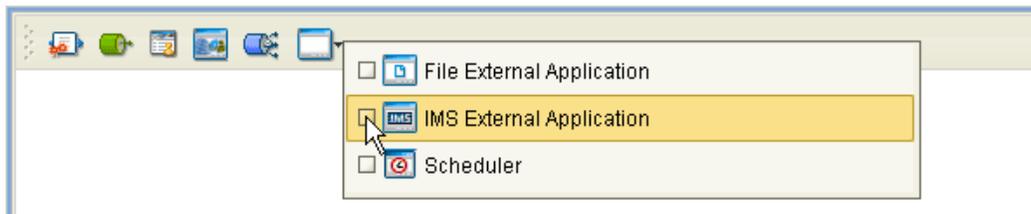
3 Drag the new **IMS External Application** from the toolbar onto the Connectivity Map canvas. This icon now represents an external IMS system.

From the Connectivity Map, you can associate (bind) the External Application to the Service to establish an eWay (see Figure 3).

Figure 3 eWay Location.
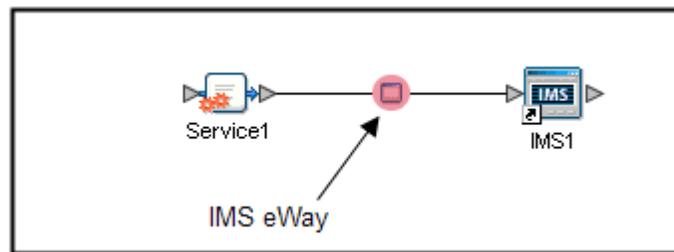
When IMS is selected as the External Application, it automatically applies the default IMS eWay properties, provided by the OTD, to the eWay that connects it with the Service. These properties can then be or modified for your specific system using the **Properties Editor**.

3.1.2 Configuring the IMS eWay Properties

A Project's eWay properties can be modified after the eWay has been established in the Connectivity Map and the Environment has been created.

Configuring the IMS eWay (Connectivity Map) Properties

1 From the **Connectivity Map**, double click the eWay icon located in the link between the associated External Application and the Service.

2 The eWay **Properties Editor** appears with a template containing the IMS eWay Connectivity Map properties. Make any necessary changes to the property values and click **OK** to save the settings.

Configuring the IMS eWay (Environment Explorer) Properties

1 From the **Environment Explorer** tree, right-click the IMS External System. Select **Properties** from the shortcut menu. The **Properties Editor** opens with the IMS eWay Environment properties.

2 Make any necessary changes to the Environment property values, and click **OK** to save the settings.

3.1.3 Using the Properties Editor

Modifications to the eWay properties are made using the IMS eWay Properties Editor.

A description of each property is displayed in the **Description** pane when that property is selected. This provides a brief explanation of the required settings or options.

The **Comments** pane provides an area to record notes and information regarding the currently selected property. These comments are saved when you close the editor.

After modifying the configuration properties, click **OK** to close the Properties Editor and save your changes.

Modifying the Default eWay Properties

1   From the Connectivity Map or the Environment Explorer, open the Properties Editor to the IMS eWay default properties.

2   From the upper-right pane of the Properties Editor, select a subdirectory of the configuration directory. The parameters contained in that subdirectory are now displayed in the Properties pane of the Properties Editor. For example, if you click on the **connector** subdirectory, the editable **connector** parameters are displayed in the right pane (see Figure 4).

Figure 4   Properties Editor -- IMS eWay Properties
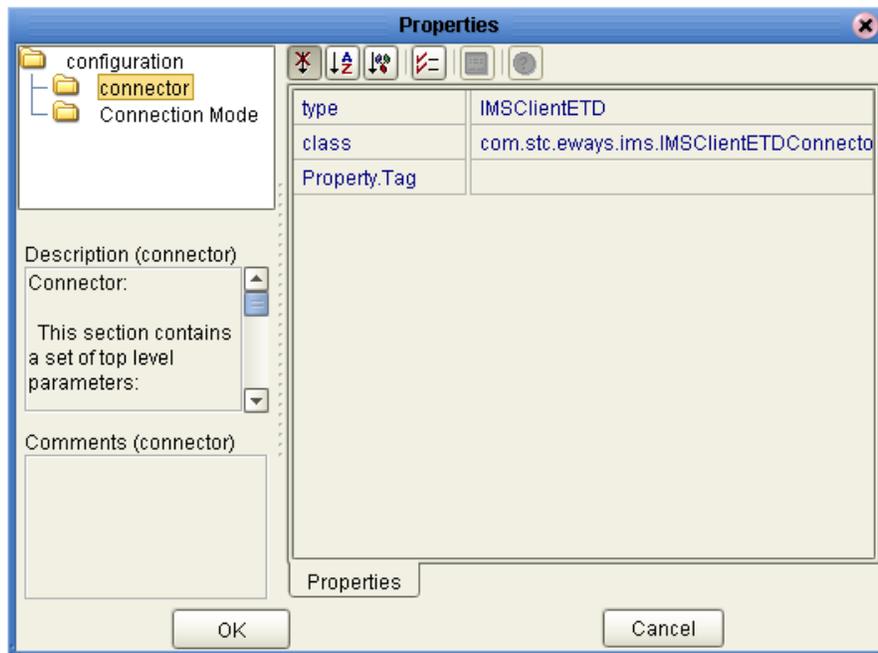
3   Click on any property field to make it editable. For example, click on the **class** property to edit the class value. If a property value is true/false or multiple choice, the field displays a submenu of property options.

4   Click on the ellipsis (**...**) in the properties field to open a separate configuration dialog box. This is helpful for large values that cannot be fully displayed in the parameter's property field. Enter the property value in the dialog box and click **OK**. The value is now displayed in the property field.

3.2 IMS eWay Connectivity Map Properties

The IMS eWay configuration parameters, accessed from the Connectivity Map, are organized into the following sections:

- **Outbound Connectivity Map Properties** on page 20

3.2.1 Outbound Connectivity Map Properties

The Outbound configuration parameters, accessed from the Connectivity Map, are organized into the following sections:

- **Connector** on page 20
- **Connection Mode** on page 20

Connector

The Connector section contains the top level parameters contained in Table 3.

Table 3   IMS eWay connector Parameter Settings

Name	Description	Required Value
Type	Specifies the connector type.	**IMSClientETD** by default for IMSClientETD connections.
Class	Specifies the class name of the ETD connector object.	A valid package name. The default is **com.stc.eways.ims.IMSClient ETDConnector**.

Connection Mode

The Connection Mode section contains the top level parameters contained in Table 4.

Table 4 IMS eWay Connection Mode Parameter Settings

Name	Description	Required Value
IMS Connection Mode	Specifies how a connection with the external system is established and closed. ▪ **Automatic** indicates that the connection is automatically established when the collaboration is started, and it keeps the connection alive as needed. OnDemand indicates that the connection will be established on demand, as business rules requiring a connection to the external system are performed. The connection will be closed after the methods are completed. ▪ **Manual** indicates that the user will explicitly call the connect and disconnect connection methods in their collaboration as business rules. Default is Automatic.	Either a **Manual** or **Automatic** setting. Default setting is **Manual**.

3.3 IMS eWay Environment Explorer Properties

The IMS eWay configuration parameters, accessed from the Environment Explorer tree, are organized into the following sections:

- **TCPIP Configuration** on page 22
- **IRM Header** on page 22
- **Connection Retry Settings** on page 30
- **Connection Pool Settings** on page 31

Figure 5 IMS eWay Environment Properties Editor
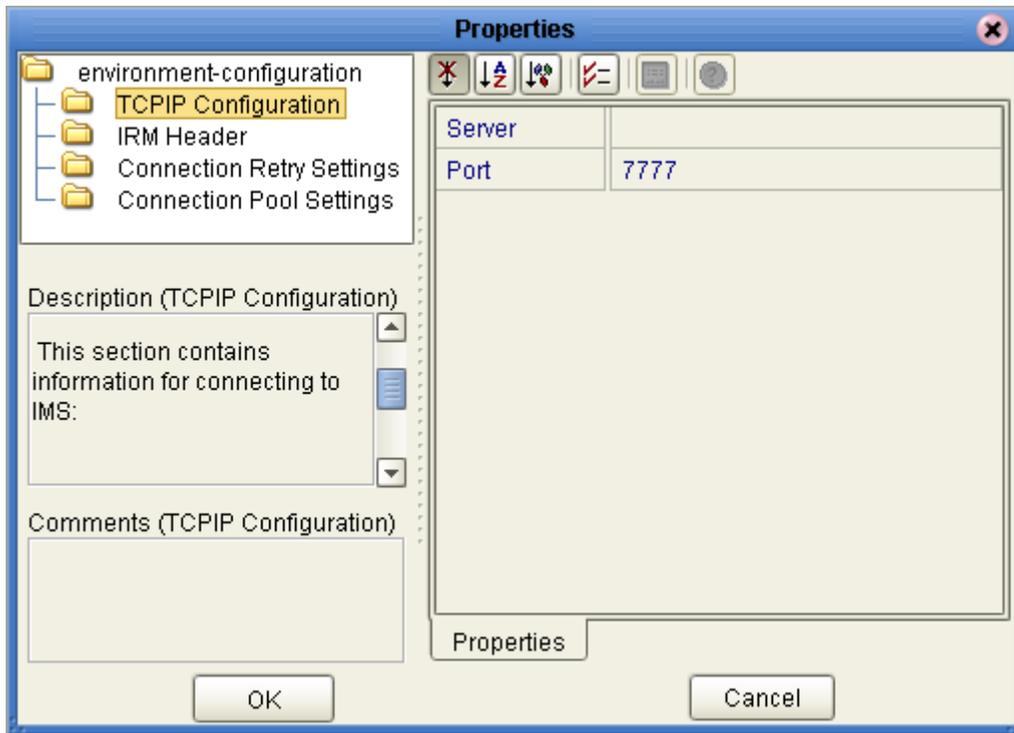
3.3.1 TCPIP Configuration

The TCPIP Configuration section contains information for connecting to the Portal Infranet. This section contains the top level parameters, as displayed in Table 5.

Table 5 Environment TCPIP Configuration Settings

Name	Description	Required Value
Server	Specifies the name of the server host. This parameter is mandatory.	The server host name.
Port	Specifies the port that IMS Connect is listening on. This parameter is mandatory.	A number indicating the port on which IMS Connect is listening. The default is **7777**.

3.3.2 IRM Header

The IRM (IMS Request Message) Header section contains the top level parameters: displayed in Table 6.

Note: *For a full description of the IRM header, see IBM's IMS Connect Guide and Reference (SC27-0946-00).*

Table 6 Environment IRM Header Settings

Name	Description	Required Value
IRM_LEN	Specifies the length of the IRM structure. The user written exits minimum size is **36**. HWSIMSO0 and HWSSMPL1 have a minimum IRM length of **80**.	An integer indicating valid IRM structure length. The configured default is **80**.
IRM_ID	Specifies the identifier (character string) of the user exit that is driven after the complete message is received. In a program, an exit is used to move from the called routine back to the calling routine. A routine can have more than one exit point, thus allowing termination based on various conditions. The following IDs are used by the IMS Connect-supplied user message exits: ▪ ***IRMREQ*** (for HWSIMSO0) ▪ ***SAMPL1*** (for HWSSMPL1)	The appropriate identifier character string. The configured default is ***SAMPL1***.
IRM_TIMER	Specifies the time delay for the receive to the Datastore after an ACK or RESUME TPIPE. One of following three predefined timer options can be selected: ▪ **.25 SEC**: .25 seconds. ▪ **No_Wait**: Timer is not set and no delay occurs. ▪ **Block**: The receive waits indefinitely. This setting is used to support the *Auto* option of the asynchronous output function. OR One of the following hex values can be entered as a timer value: ▪ **X01 - X19**: Range from 0.01 to 0.25 second, 0.01 second increments. ▪ **X19 - X28**: Range from 0.25 to 1 second, 0.05 second increments. ▪ **X28 - X63**: Range from 1 to 60 second, 1 second increments. ▪ **X63 - X9E**: Range from 1 to 70 minutes, 1 minute increments.	Select one of the three predefined options or enter a valid hex value. The configured default is **.25 SEC**. **Note**: The following hex values correspond to the three predefined choices in the drop-down menu: ▪ **X00** = **Default** - .25 secs ▪ **XE9** = **No_Wait** - does not set the timer ▪ **XFF** = **Block**

Table 6 Environment IRM Header Settings

Name	Description	Required Value
IRM_SOCT	Specifies the socket connection type. ▪ **Transaction**: Transaction socket. The socket connection lasts across a single transaction. ▪ **Persistent**: Persistent socket. The socket connection lasts across multiple transactions. ▪ **Non_Persistent**: Non-persistent socket. The socket connection lasts for a single exchange consisting of one input and one output. Do not use Non_Persistent when implementing conversational transactions because this type causes multiple connects and disconnects.	Select one of the three options. The configured default is **Persistent**. *Note:* The default for this property was changed from the previous version.
IRM_CLIENTID	Specifies the name of the client ID (character string) to be used by IMS Connect. For more information on configuring Client IDs refer to **Configuring the Client ID for the IMS eWay** on page 29 IMS eWay supports both Serial and Parallel mode. Serial mode is supported by specifying a ClientID, while Parallel mode is supported by specifying a ClientID with an *. *Important:* In each deployment, the ClientID must be unique.	The client ID to be used by IMS Connect.
IRM_F1 (MFS MOD Names)	Specifies whether the MFS Message Output Descriptor (MOD) is returned as part of the output. **MFS**: The user requests that MFS MOD name be returned. **NO_MFS**: The user requests that no MFS MOD name be returned. When MFS is specified, a Request Mod Message (RMM) is returned as the first structure of the output message. This structure contains an ID of *REQMOD* followed by the MFS MOD name. For details, see IBM's *IMS Connect Guide and Reference*, (SC27-0946-00), page 59.	**MFS** or **NO_MFS**. The default is **NO_MFS**.

Table 6 Environment IRM Header Settings

Name	Description	Required Value
IRM_F2 (COMMIT MODE)	Specifies the **Commit Mode**. • **COMMIT_MODE_0** - Also known as commit-then-send. • **COMMIT_MODE_1** - Also known as send-then-commit. *For a full description of the IRM header, see IBM's IMS Connect Guide and Reference (SC27-0946-00).*	**COMMIT_MODE_0** or **COMMIT_MODE_1**. The default is **COMMIT_MODE_1**. *Note:* The default for this property was changed from the previous version.
IRM_F3 (Sync Level)	Specifies whether the message is to be confirmed with an ACK for Commit Mode 1 processing. For Commit Mode 0, IRM_F3 must be set to **SYNC_LEVEL_CONFIRM**. • **SYNC_LEVEL_CONFIRM**: Must be used when the IRM_F2 parameter (commit mode) is set to COMMIT_MODE_0. • **SYNC_LEVEL_NONE**: No Sync level.	**SYNC_LEVEL_CONFIRM** or **SYNC_LEVEL_NONE.** If the **IRM_F2** property is set to **COMMIT_MODE_0**, the Sync level must be set to **SYNC_LEVEL_CONFIRM**. The default is **SYNC_LEVEL_NONE**. *Note:* The default for this property was changed from the previous version.

Table 6 Environment IRM Header Settings

Name	Description	Required Value
IRM_F4 (ACK/NAK/ Response)	Specifies the ACK/NAK (positive/negative acknowledgement) response expression sent to IMS Connect and forwarded to IMS. The ACK/NAK/DEALLOCATE / RESUME [A/N/D/R] values must be sent to IMS Connect with no data element. ▪ **NO_ACK**: No request for acknowledgment or deallocation. When a response mode transaction or conversational transaction is being sent to IMS Connect, IRM_F4 must be set to NO_ACK. ▪ **ACK**: Positive acknowledgment, used in response to a message sent to the client where the SYNC level is set to CONFIRM (SYNC _LEVEL_CONFIRM). ▪ **DEALLOCATE**: Deallocate connection. Used to terminate a conversation before the conversation is complete. ▪ **NACK**: Negative acknowledgment. Used in response to a message sent to the client where the SYNC level is set to CONFIRM (SYNC _LEVEL_CONFIRM). ▪ **RESUME**: Resume TPIPE. Used to request Asynchronous output data from IMS. Resume must execute on a transaction socket as COMMIT_MODE_0. ▪ **SENDONLY**: Send only, used for a non-response transaction and for sending data to IMS. SENDONLY must execute as COMMIT_MODE_0.	Select one of the six options. The configured default is **NO_ACK**.

Table 6 Environment IRM Header Settings

Name	Description	Required Value
IRM_F5 (Flow Control)	Specifies Flow Control properties. Sun recommends using the default value **No_Auto_Flow**. **Note**: *Contact Sun Support before using any value other than **No_Auto_Flow**.* ▪ **Client_Translation**: Translation is done by the client. ▪ **Single_Message**: Returns only one message on receive following the resume TPIPE. ▪ **No_Auto_Flow**: No message auto flow (see meaning for No_Auto_Flow_Out). ▪ **Auto_Flow_Out**: Auto message flow. Returns all current messages, one at a time, and waits on the last receive for the next message for IRM_TIMER value. Set the IRM_TIMER high. Use this only for a dedicated output client. ▪ **No_Auto_Flow_Out**: No message auto flow. Returns all current messages one at a time, and waits on the last receive for the next message for IRM_TIMER value. Set the IRM_TIMER low. Use this only for a dedicated output client. This value is similar to Auto_Flow_Out, as described above, except that the IRM_TIMER causes the last receive to terminate.	The recommended setting is **No_Auto_Flow** (default).
IRM_TRNCOD	Specifies the default IMS transaction code.	A valid transaction code.
IRM_TRNCOD_SRC	Specifies where the transaction code is taken. ▪ **CFG**: The transaction code is to be taken from the configuration file. ▪ **MESSAGE**: the transaction code is the first 8 bytes of the message.	Select one of the two options. The configured default is **CFG**.
IRM_DESTID	Specifies the Datastore name (IMS destination ID). This field is required.	String-set. A Datastore name/ IMS destination ID (character string).
IRM_LTERM	Specifies the IMS LTERM override name. This field can be set to a name or blank.	The appropriate LTERM name or blank.
IRM_RACF_GRNAME	Specifies the RACF Group Name. The client must provide the RACF group name if RACF is to be used.	The appropriate RACF group name.

Table 6 Environment IRM Header Settings

Name	Description	Required Value
IRM_RACF_USERID	Specifies the RACF User ID. The client must provide the RACF user ID if RACF is used.	A valid RACF user ID.
IRM_RACF_PW	Specifies the RACF PASSTICKET. The client must provide the RACF PASSTICKET if RACF is to be used.	The appropriate RACF PASSTICKET.
IRM_HEADER_ENCODING	Specifies the encoding of the IRM Header properties sent to IMS Connect. ▪ Set the value to **ISO-8859-1** if the message body is ASCII text. The IMS Connect ***SAMPL1*** user exit converts the data to EBCDIC. ▪ Set the value to an EBCDIC code set, such as **cp500**, if the message is EBCDIC text or binary data. No data translation occurs.	**ISO-8859-1** for ASCII transaction content, or an EBCDIC code, such as **cp500**, for EBCDIC transaction content.
SEND_DATA_ENCODING	Specifies the encoding translation (if any) to apply to the message body sent to IMS Connect. ▪ Set to **NO TRANSLATION** to send the message body to IMS Connect without translation, or when using the ***SAMPL1*** user exit when the IRM Headers and message body are in ASCII. ▪ Set to an EBCDIC code, such as **cp500**, to translate the message body from ASCII to EBCDIC before sending to IMS Connect. ▪ If the content is a double-byte character set such as Japanese, set to the EBCDIC code page for that language (for example, **cp930** for Japanese).	Enter **NO TRANSLATION** or the appropriate code page as follows: ▪ Enter **NO TRANSLATION** when using the ***SAMPL1*** user exit and IRM Headers and message content is in ASCII. ▪ Enter an EBCDIC code, such as **cp500**, to translate ASCII message content to EBCDIC before sending it to IMS Connect. ▪ For double-byte character sets, enter the appropriate code page for that language (for example, **cp390** for Japanese).
REPLY_DATA_ENCODING	Specifies the encoding of the message body received back from IMS Connect. Set to **ISO-8859-1** if the message text is ASCII. ▪ Set to an EBCDIC code, such as **cp500**, if the return message is EBCDIC and/or no content translation is needed. ▪ If the content set is a double-byte character, such as Japanese, set the appropriate EBCDIC code page for that language (for example, **cp930** for Japanese).	The appropriate code page: For ASCII transactions, enter **ISO-8859-1.** ▪ For EBCDIC transactions, enter an EBCDIC code, such as **cp500.** ▪ For double-byte character sets, enter the appropriate code page for that language (for example, **cp390** for Japanese).

Configuring the Client ID for the IMS eWay

The following sections describe the configuration of Client IDs for the IMS eWay.

Dynamic Generation of IMS Client ID

In this mode, the IMS eWay is configured to handle multiple requests simultaneously (parallel mode). To configure the IMS eway for parallel processing, do the following:

1 Set the Client ID in the IRM_Header section to a string which contains one or more trailing asterisks; for example, "SUN*".

   The eWay will generate the rest of the Client ID string filling it with randomly generated alphanumeric characters. The length of the Client ID is 8. If you use a static Client ID, it must be unique (across deployments) if the IMS external systems which are being used are configured to connect to the same IMS Connect.

2 Set the IRM_SOCT in the IRM_Header section to Persistent.

   This allows the eway to retain the physical connection so that it can leverage the use of connection pooling as a resource adapter. If this is not set to Persistent and the Client ID is configured to use dynamic generation (i.e., with an "*"), then a protocol error will occur.

   No other IRM_SOCT type can be used in parallel mode; as noted a protocol error will result if Persistent is not used.

For the acknowledgement response expression (IRM_F4 - ACK/NAK Response), the following additonal parameters must be set (in addition to the above):

1 Set the IRM_F2 (commit mode) to COMMIT_MODE_0.

2 Set the IRM_F3 (sync level) to SYNC_LEVEL_CONFIRM.

Static IMS Client ID

In this mode, the IMS eWay is configured to handle one single request at a time. Multiple requests are serialized by the IMS eWay through an internal locking mechanism. To configure the IMS eway for serialized processing, do the following:

1 Set the Client ID in the IRM_Header section to a string which does NOT contain an asterisk; for example, "SUNIMS".

   The eWay will generate the rest of the Client ID string filling it with randomly generated alphanumeric characters. The length of the Client ID is 8. If you use a static Client ID, it must be unique (across deployments) if the IMS external systems which are being used are configured to connect to the same IMS Connect.

For the acknowledgement response expression (IRM_F4 - ACK/NAK Response), the following additional parameters must be set (in addition to the above):

1 Set the IRM_SOCT to Transaction.

2 Set the IRM_F2 (commit mode) to COMMIT_MODE_0.

3 Set the IRM_F3 (sync level) to SYNC_LEVEL_CONFIRM.

Duplicate Client IDs

When sending an IMS Connect interaction on a given port, an error will occur when using a ClientID which is already in use on that port. This can happen when you are

executing an interaction with a ClientID, which is the same as that used by another interaction that ended as a result of a socket timeout. If this new interaction is received by IMS Connect while IMS Connect is still waiting for a response from IMS for the original interaction that received the socket timeout, a duplicate ClientID error could occur.

This can also occur if the socket timeout being used for the original interaction is set to a value which is less than the timeout set by the IRM_TIMER or the IMS Connect default timeout (set in the HWSCFGxx member). IMS Connect is not aware that the original socket has been disconnected as a result of the socket timeout until it does a subsequent read on that socket. This means it would consider the original socket still active, even though that socket has already been disconnected from the client end. Once you get to this situation, you will receive DUPECLNT errors until the IRM_TIMER expires on the IMS Connect side.

Note: *For a full discussion of Client ID and timer issues, refer to "**IMS Connectivity in the On Demand Environment - A Practical Guide to IMS Connectivity**" (IBM Publication SG24-6794-00).*

3.3.3 Serial Mode Settings

The **Serial Mode Settings** section of the Outbound IMS Environment contains the top-level parameters displayed in Table 8.

Table 7 Outbound IMS eWay Environment - Serial Mode Settings

Name	Description	Required Value
Wait Timeout	When IRM_CLIENTID is static, which results in requests being serialized, multiple threads using the same Client ID will contend for a request lock. Threads contending for a request lock, being held by another thread, will wait until the pending request thread releases the lock. This parameter controls how long, in milliseconds, a request thread will wait for the lock.	An integer indicating the configured length of the time a thread will wait for the lock. The default is **6000** (milliseconds).

3.3.4 Connection Retry Settings

The **Connection Retry Settings** section of the Outbound IMS Environment contains the top-level parameters displayed in Table 8.

Table 8 Outbound IMS eWay Environment - Connection Retry Settings

Name	Description	Required Value
Maximum Retries	Specifies the number of retries to establish a connection with the IMS database upon a failure to acquire one.	an integer indicationg the number of attempts allowed to establish a connection. The configured default is **5**.

Table 8 Outbound IMS eWay Environment - Connection Retry Settings

Name	Description	Required Value
Retry Interval [ms]	Specifies the configured length of the pause before each reattempt to access the destination file. This property is used in conjunction with the property **Maximum Retries**.	An integer indicating the configured length of the time (in milliseconds) before each reattempt to access the destination file. The configured default is **5000** (1 second).

3.3.5 Connection Pool Settings

The **Connection Retry Settings** section of the Outbound IMS Environment contains the top-level parameters displayed in Table 8.

Table 9 Outbound IMS eWay Environment - Connection Pool Settings

Name	Description	Required Value
Steady Pool Size	Specifies the initial and minimum number of connections to be maintained.	A number indicating the initial and minimum number of connections to be maintained. The configured default is **2**.
MaxPoolSize	The maximum number of physical connections the pool keeps available at all times. 0 (zero) indicates that there is no maximum.	A valid numeric value. The default is **10**.

Using the IMS eWay With eInsight

This chapter describes how to use the IMS eWay with Sun Java Composite Application Platform Suite's eInsight Business Process Manager and its engine's Web Services interface.

Note: *You must have the* **eInsight.sar** *file installed to use the Web Services interface.*

What's in This Chapter

- **eInsight Engine and Components** on page 32
- **The IMS eWay With eInsight** on page 33
- **Steps Required to Run the Sample Projects** on page 33
- **Importing a Sample Project** on page 33
- **The prjIMS_BP_Sample Project** on page 34

4.1 eInsight Engine and Components

eGate components can be deployed as Activities in eInsight business processes. Once a component is associated with an Activity, eInsight invokes it using a Web Services interface. eGate components that can interface with eInsight in this way include:

- Object Type Definitions (OTDs)
- eWays
- Collaborations

Using the Enterprise Designer and eInsight, you can add an Activity to a Business Process, then associate that Activity with an eGate component, for example, an eWay. Once eInsight runs the Business Process, it automatically invokes that component via its Web Services interface. See the *eInsight Business Process Manager User's Guide* for details.

4.2 The IMS eWay With eInsight

An eInsight Business Process Activity can be associated with the IMS eWay during the system design phase. To make this association, select the desired operators under the eWay (in the Enterprise Explore) and drag it onto the eInsight Business Process Designer canvas. Currently, the IMS eWay has only the **IMSRequest** operator available.

The operation is automatically changed to an Activity with an icon identifying the component that is the basis for the Activity. At run time, eInsight invokes each step in the order defined in the Business Process. Using eInsight's Web Services interface, the Activity, in turn, invokes the IMS eWay.

4.3 Steps Required to Run the Sample Projects

The following steps are required to run the sample projects that are contained in the **IMSeWayDocs.sar** file.

1 Import the sample Projects.

2 Build, deploy, and run the sample Projects.

   You must do the following before you can run an imported sample Project:

   ◆ Create an Environment

   ◆ Configure the eWays

   ◆ Create a Deployment Profile

   ◆ Create and start a domain

   ◆ Deploy the Project

3 Check the output.

4.4 Importing a Sample Project

Sample eWay Projects are included as part of the installation CD-ROM package. To import a sample eWay Project to the Enterprise Designer do the following:

1 Extract the samples from the Enterprise Manager to a local file.

   Sample files are uploaded with the eWay's documentation SAR file, and then downloaded from the Enterprise Manager's Documentation tab. The **IMS_eWay_Sample.zip** file contains the various sample Project ZIP files.

Note: *Make sure you save all unsaved work before importing a Project.*

2 From the Enterprise Designer's Project Explorer pane, right-click the Repository and select **Import Project** from the shortcut menu. The **Import Manager** appears.

3 Browse to the directory that contains the sample Project ZIP file. Select the sample file and click **Import**.

Click **Close** after successfully importing the sample Project.

4.5 The prjIMS_BP_Sample Project

The **prjIMS_BP_Sample** project demonstrates connectivity with an external IMS system.

Sample Project Overview

1 The inbound File eWay receives a file from an external directory.

2 This file is published by the IMS eWay to an external IMS application.

3 The IMS eWay receives the file back from the external IMS application, and publishes the file to the outbound File eWay.

The outbound File eWay publishes the file to an external directory.

4.5.1 Creating a Project

The first step is to create a new project in the Sun Enterprise Designer.

1 Start the Enterprise Designer.

2 From the Enterprise Explorer's Project Explorer tab, right-click the Repository and select **New Project** (see **Figure 6 on page 34**). A new project (Project1) appears on the Project Explorer tree.

Figure 6   Enterprise Explorer - New Project
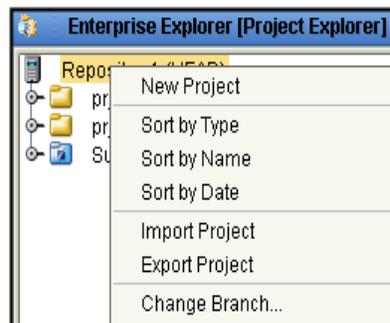
3 Click twice (not a double-click) on **Project1** and rename the project (for this sample, **prjIMS_BP_Sample**).

4.5.2 Creating a Business Process

To create the IMS eInsight Business Process, do the following:
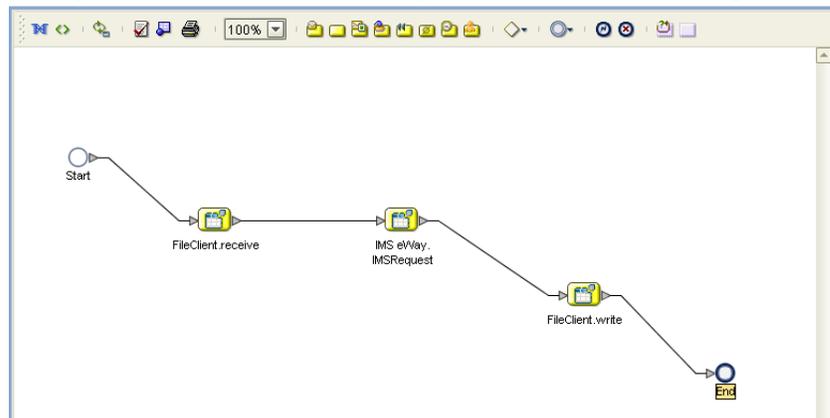
Creating the Business Process Flow

1 Right-click the existing project (for this sample **prjIMS_BP_Sample**) in the Project Explorer tree, and select **New** > **Business Process** from the shortcut menu. The eInsight Business Process Designer appears. Rename the new Business Process (BusinessProcess1) to **BP1.** BP1 will be added to the tree.

2 From the Project Explorer tree, expand both of the following **eWays** nodes (as displayed in Figure 7):

  ◆ IMSeWay > IMS_eWay

  ◆ File > FileClient

3 Populate the eInsight Business Process Designer's modeling canvas with the following activities from the Project Explorer tree (as displayed in Figure 7):

  ◆ receive, under Sun SeeBeyond> eWays >File > FileClient

  ◆ IMSRequest, under Sun SeeBeyond> eWays > IMSeWay > IMS_eWay

  ◆ write, under Sun SeeBeyond> eWays SeeBeyond>File > FileClient

Figure 7 eInsight Business Process Designer - Populate the Canvas
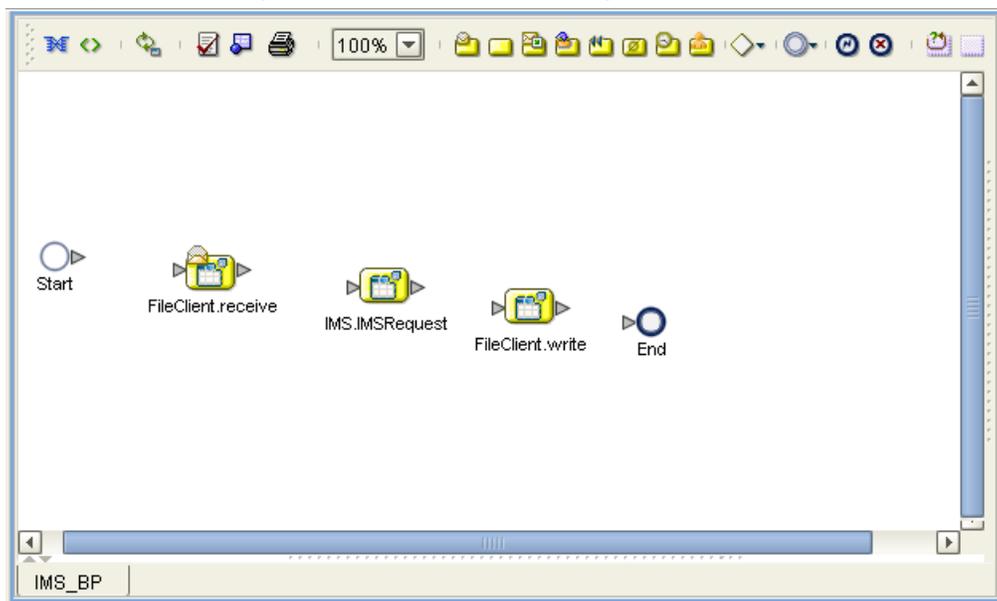
4 Link the modeling elements by clicking on the element's connector and dragging the cursor to the next element's connector, making the following links as displayed in Figure 8.

  ◆ Start -> FileClient.receive

  ◆ FileClient.receive -> IMS_eWay.IMSRequest

  ◆ IMS_eWay.IMSRequest ->FileClient.write

  ◆ FileClient.write -> End

Figure 8   eInsight Business Process Designer - Link the Modeling Elements


Configuring the Modeling Elements

Business Rules, created between the Business Process Activities, allow you to configure the relationships between the input and output attributes of the Activities using the Business Process Editor's Business Rules Designer.

Adding Business Rules

1   Right-click the link between the **FileClient.receive** and **IMS_eWay.request** Activities and select **Add Business Rule** from the shortcut menu.

2   Repeat step 1 for the link between **IMS_eWay.request** and **FileClient.write** (see Figure 9).

Figure 9   eInsight Business Process Designer - Adding Business Rules
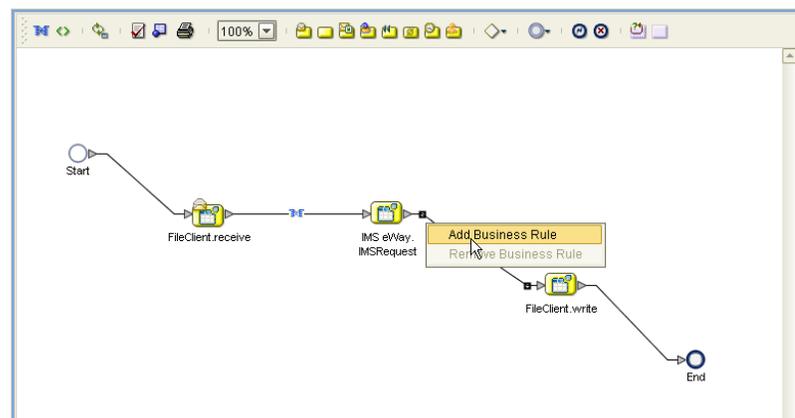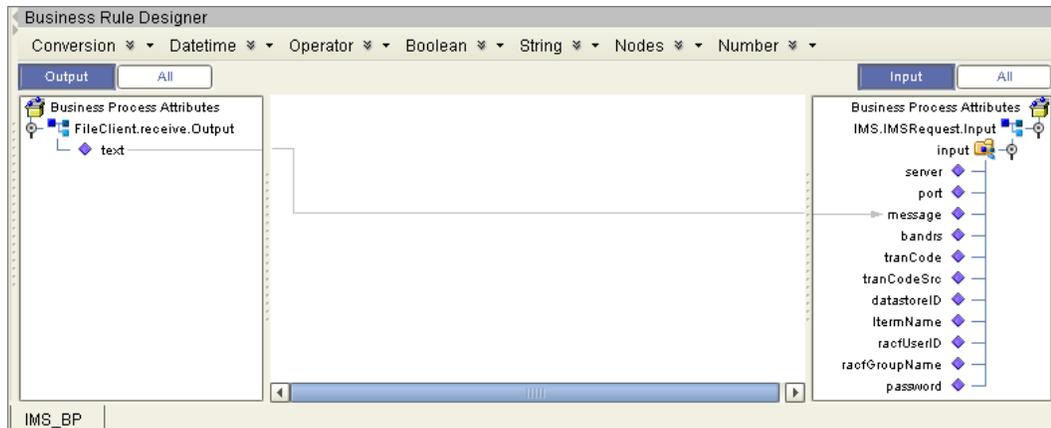

Using the Business Rules Designer

1   From the eInsight Business Process Designer toolbar, click the **Display Business Rules Designer** button. The Business Rules Designer appears at the bottom of the eInsight Business Process Designer.

2   Click on the **Business Rule** icon in the link between **FileClient.receive** and **IMS_eWay.IMSRequest** to display the Business Rule Input and Output Attributes in the Business Rules Designer. These attributes can now be modified.

3 Map **text**, under FileClient.receive.Output in the Output pane, to **message** under IMS eWay.IMSRequest.Input > input in the Input pane. This is done by clicking on **text** and dragging the cursor to **message** (see Figure 10).

Figure 10   eInsight Business Rules Designer

4 To configure the second Business Rule, click on the Business Rule in the link between the **IMS_eWay.IMSRequest** and **FileClient.write** Activities. This Business Rule is now displayed in the Business Rules Designer.

5 Map **reply**, under **IMS_eWay.IMSRequest.Output > output** in the Output pane of the Business Rules Designer, to **text**, under **FileClient.write.Input** in the Input pane as displayed in Figure 11.

Figure 11   eInsight Business Rules Designer
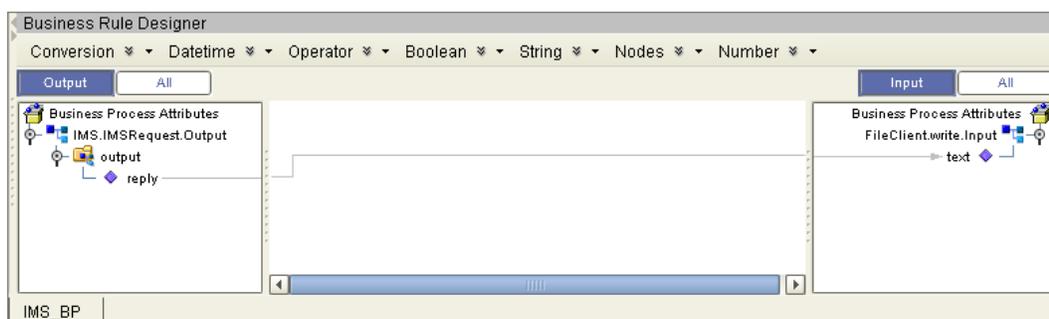
6 When the Business Process is complete, from the eInsight Business Process Designer toolbar, click the **Synchronize Graphical Model and Business Process Code** icon to synchronize the graphical interface to the Business Process code.

7 Save your changes to the Repository.

4.5.3 Creating a Connectivity Map

The Connectivity Map provides a canvas for assembling and configuring a project's components.

1 From the Project Explorer tree, right-click the new **prjIMS_BP_Sample** project and select **New > Connectivity Map** from the shortcut menu.

2   The New Connectivity Map appears and a node for the Connectivity Map is added under the project on the Project Explorer tree labeled **CMap1**. Rename the Connectivity Map **cmIMS_BP**.

The icons in the toolbar represent the available components used to populate the Connectivity Map canvas.

Selecting the External Applications

In the Connectivity Map, the eWays are associated with External Systems. For example, to establish a connection to IMS, you must first select IMS as an External System to use in your Connectivity Map (see Figure 12).

**Figure 12**   Connectivity Map - External Applications
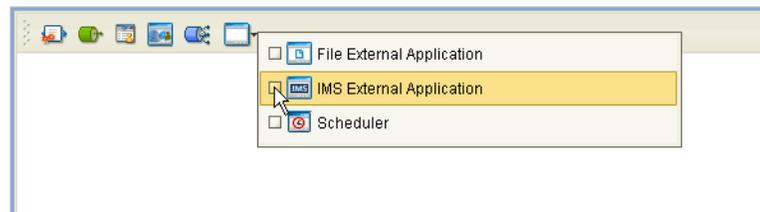
1   Click the **External Application** icon on the Connectivity Map toolbar.

2   Select the external systems needed for your project (for this sample, **IMS** and **File**). Icons representing the selected external systems are added to the Connectivity Map toolbar.

Populating the Connectivity Map

Add the project components to the Connectivity Map by dragging the icons from the toolbar to the canvas.

1   For this sample, drag the following components onto the Connectivity Map canvas as displayed in Figure 13:

- File External System (2)

- **Service** (A service is a container for Java Collaborations, Business Processes, eTL processes, and so forth) This can also be created by dragging the Business Process over from the Project Explorer tree.

- **IMS External System**

Figure 13   Connectivity Map with Components
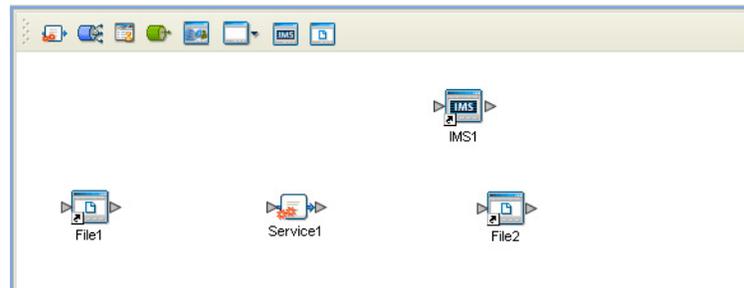
2   Rename the Connectivity Map objects by right-clicking the object's name, selecting **Rename** from the shortcut menu, and typing the new name. Rename the objects as follows:

   ◆ **File1** to **eaFileIn**

   ◆ **Service1** to **BP_IMS**

   ◆ **IMS1** to **eaIMS**

   ◆ **File2** to **eaFileOut**

3   Save your changes to the Repository.

4.5.4   Binding the eWay Components

After the Business Processes have been written, the components are associated and bindings are created in the Connectivity Map.

1   From the Project Explorer, double-click the Connectivity Map **cmIMS_BP**. The Enterprise Designer canvas now displays the Connectivity Map.

2   Drag and drop the **BP1** Business Process from the Project Explorer onto the Service (**BP_IMS**). If the Business Process was successfully associated, the Service's icon changes to a Business Process icon (see Figure 14).

Figure 14   Connectivity Map - Binding the eWay Components
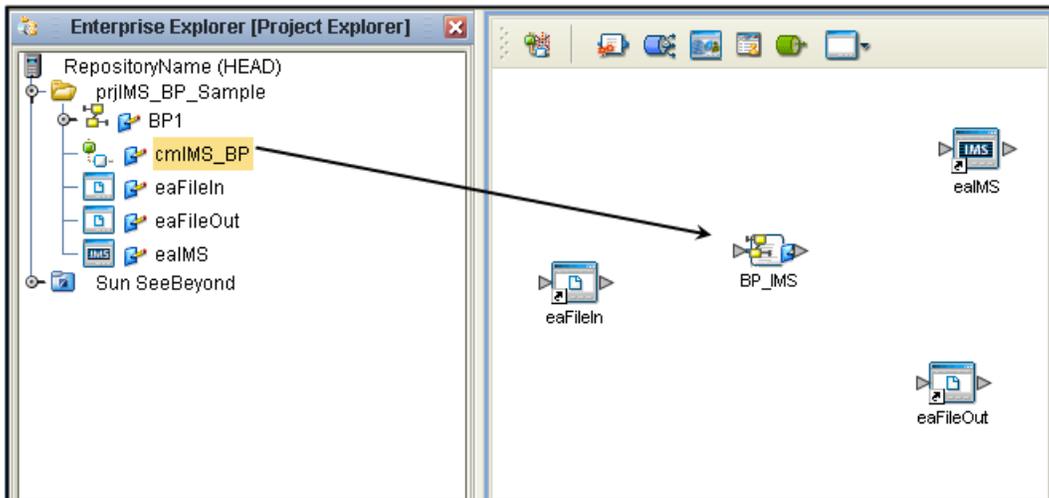
3   Double-click **cmIMS_BP**. The **BP_IMS_Service Binding dialog box** appears using the **IMS_BP** Rule.

4   From the **BP_IMS_Service** Binding dialog box, drag **FileSender** (under Implemented Services) to the **eaFileIn** (File) External Application.

5   From the **BP_IMS_Service** Binding dialog box, drag **IMS_Receiver** (under Invoked Services) to the **IMS** External Application.

6   From the **BP_IMS_Service** Binding dialog box, drag **FileReceiver** to the **eaFileOut** External Application (see Figure 15). Minimize the **BP_IMS_Service** Binding dialog box by clicking the chevrons in the upper-right corner.

Figure 15   Connectivity Map - Associating (Binding) the Project's Components
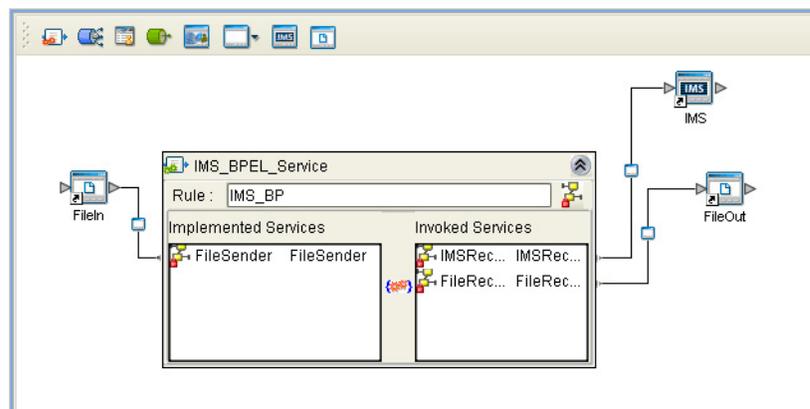
7   Save your current changes to the Repository.

4.5.5 Creating an Environment

Environments include the external systems, Logical Hosts, integration servers, and JMS IQ Managers used by a project, and contain the configuration information for these

components. Environments are created using the Enterprise Designer's Environment Explorer and Environment Editor.

1 From the Enterprise Designer's Enterprise Explorer, click the **Environment Explorer** tab.

2 Right-click the Repository and select **New Environment**. A new Environment is added to the Environment Explorer tree.

3 Rename the new Environment to **IMS_BP_Sample_ENV**.

4 Right-click **IMS_BP_Sample_ENV** and select **New IMS External System**. Name the External System **IMSExtSys**. Click **OK**. **IMSExtSys** is added to the Environment Editor.

5 Right-click **IMS_BP_Sample_ENV** and select **New File External System**. Name the External System **FileExtSysInOut** and Click **OK**. **FileExtSysInOut** is added to the Environment Editor. Modify both the Inbound and Outbound properties of the File eWay and click **OK**.

6 Right-click **IMS_BP_Sample_ENV** and select **New Logical Host**. The **LogicalHost1 box** is added to the Environment and **LogicalHost1** is added to the Environment Editor tree.

7 From the Environment Explorer tree, right-click **LogicalHost1** and select **Sun SeeBeyond Integration Server**. A new Integration Server (**IntegrationSvr1**) is added to the Environment Explorer tree under LogicalHost1.

8 Save changes to the repository. The Environment Explorer and Environment Editor now appear as displayed in Figure 16.
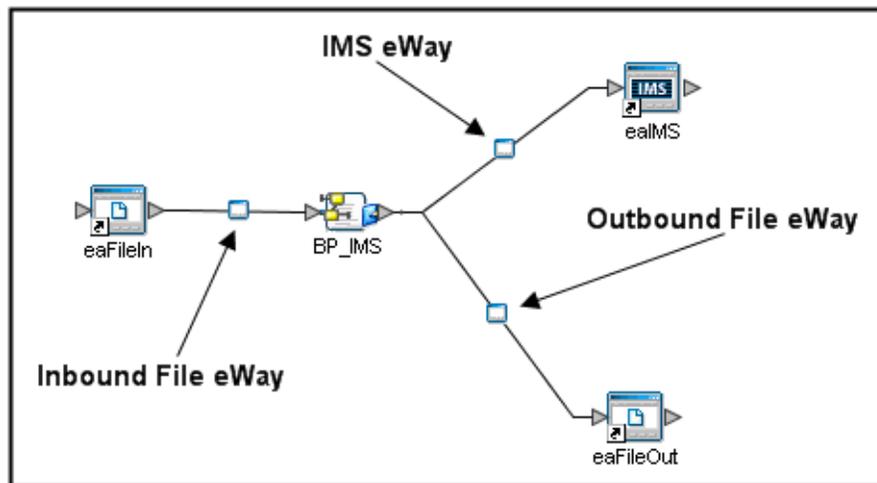
Figure 16 Environment Editor
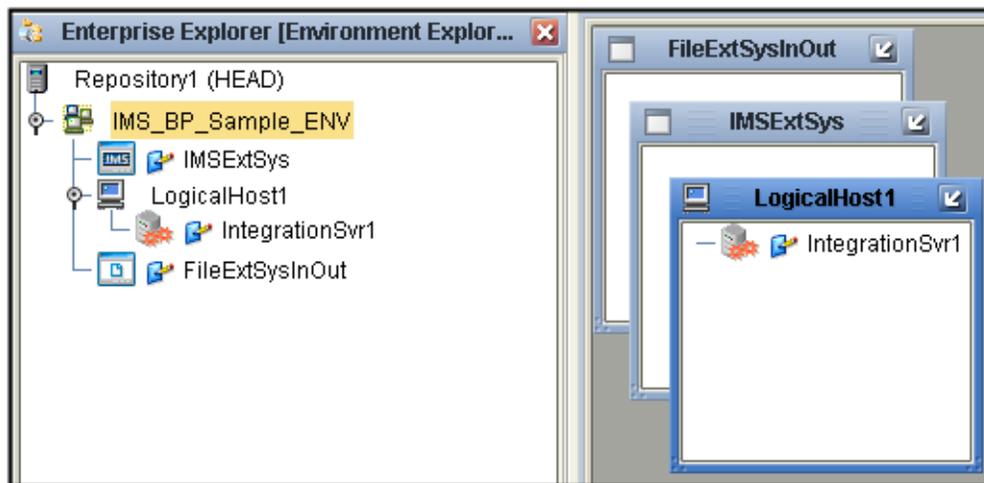
4.5.6 Configuring the eWays

The prjIMS_BP_Sample project uses three eWays, each represented in the Connectivity Map as a node between an External Application and a Business Process (see Figure 17). eWays facilitate communication and movement of data between the external applications and the eGate system.

Figure 17 eWays

The File eWay properties are configured from the Connectivity Map. The IMS eWay properties are set from both the Project Explorer's Connectivity Map and the Environment Explorer.

Note: *For information on configuring the File eWay nodes, refer to the eWay File Adapter User's Guide.*

Configuring the IMS eWay

The IMS eWay properties must be set in both the Project Explorer and Environment Explorer. For more information on the IMS eWay properties and the Properties Window, see **Configuring the eWay Properties** on page 15 or see the *eGate Integrator User's Guide*.

For the **prjIMS_BP_Sample** project, do the following:

Modifying the IMS eWay Connectivity Map Properties

1 From the **Connectivity Map**, double-click the **IMS eWay**. The **Properties Window** opens to the IMS eWay project configuration properties.

2 Modify the IMS eWay (Project Explorer) configuration for your system and click **OK**. For more information on these properties, refer to **IMS eWay Connectivity Map Properties** on page 20.
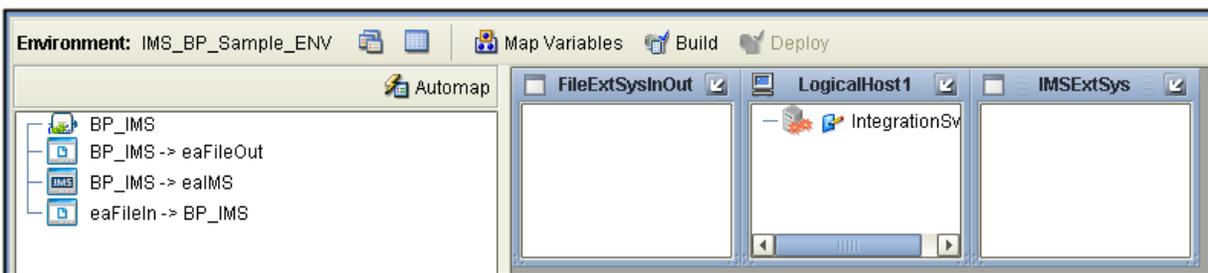
Modifying the IMS eWay Environment Explorer Properties

1 From the **Environment Explorer** tree, right-click the IMS External System (**IMSExtSys** in this sample), and select **Properties** from the shortcut menu. The **Properties Window** opens to the IMS eWay Environment Explorer properties.

2 Modify the IMS eWay Environment Explorer properties for your system and click **OK**. For more information on these properties, refer to **IMS eWay Environment Explorer Properties** on page 21.

4.5.7 Creating the Deployment Profile

A Deployment Profile is used to assign services and message destinations to the integration server and message server. Deployment profiles are created using the Deployment Editor.

1 From the Enterprise Explorer's Project Explorer, right-click the **prjIMS_BP_Sample** Project and select **New** > **Deployment Profile**.

2 Enter a name for the Deployment Profile (for this sample **dpIMS_BPEL**). Select **IMS_BP_Sample_ENV** as the Environment, insure the correct connectivity map is selected, and click **OK**.

3 From the Deployment Editor toolbar, click the **Automap** icon. The Project's components are automatically mapped to their system windows, as seen in Figure 18.

Figure 18 Deployment Profile - Auto Map

4.5.8 Creating and Starting the Domain

To build and deploy your Project, you must first create a domain. A domain is an instance of a Logical Host. After the domain is created, the Project is built and then deployed.

Note: *You are only required to create a domain once when you install the Composite Application Platform Suite.*

Steps required to create and start the domain:

1 Navigate to your **<caps51>\logicalhost** directory (where <caps51> is the location of your Sun Java Composite Application Platform Suite installation).

2 Double-click the **domainmgr.bat** file. The **Domain Manager** appears.

3 If you have already created a domain, select your domain in the Domain Manager and click the **Start an Existing Domain** button. Once your domain is started, a green check mark indicates that the domain is running.

4 If there are no existing domains, a dialog box indicates that you can create a domain now. Click **Yes**. The **Create Domain** dialog box appears.

5 Make any necessary changes to the **Create Domain** dialog box and click **Create**. The new domain is added to the Domain Manager. Select the domain and click the **Start**

an Existing Domain button. Once your domain is started, a green check mark indicates that the domain is running.

Note: *For more information about creating and managing domains see the eGate Integrator System Administration Guide.*

4.5.9 Building and Deploying the Project

The Build process compiles and validates the Project's Java files and creates the Project EAR file.

Build the Project

   1   From the Deployment Editor toolbar, click the **Build** icon.

   2   If there are any validation errors, a **Validation Errors** pane will appear at the bottom of the Deployment Editor and displays information regarding the errors. Make any necessary corrections and click **Build** again.

   3   After the Build has succeeded you are ready to deploy your Project.

Deploy the Project

   1   From the Deployment Editor toolbar, click the **Deploy** icon. Click **Yes** when the **Deploy** prompt appears.

   2   A message appears when the project is successfully deployed. You can now test your sample.

4.5.10 Running the Sample Project

To run your deployed sample Project do the following

   1   From your configured input directory, paste (or rename) the sample input file to trigger the eWay.

   2   From your output directory, verify the output data.

Implementing an IMS eWay Project

This chapter provides an introduction to the IMS eWay components and information on how these components are created and implemented in an eGate project. It is assumed that the reader understands the basics of creating a project using the Sun Enterprise Designer. For more information on creating an eGate project see the *eGate Tutorial* and the *eGate Integrator User's Guide*.

What's in This Chapter

5.1 IMS eWay Components

This chapter presents a sample IMS eWay project created using the same procedures as the sample end-to-end project provided in the *eGate Integrator Tutorial*. The eWay components that are unique to the IMS eWay include the following:

IMS eWay Configuration File

The properties file for the IMS eWay contains the parameters that are used to connect with a specific external system. These parameters are set using the Properties Window. For more information about the IMS eWay properties File and the Properties Window see **Creating and Configuring the IMS eWay** on page 15.

IMSClientETD OTD

The IMSClientETD OTD is provided with the eWay and contains methods and attributes that are used to create the Business Rules that invoke the IMS program. The nodes of the OTD take their initial value from the eWay Connection configuration parameters, but can be changed in the Collaboration.

IMS MFS Wizard

The IMS MFS Wizard builds an Object Type Definition from an IMS message format service (MFS) file. The wizard generates Object Type Definitions (OTDs) that map input

and output message segments at the field level. The two sample projects that employ the IMS MFS Wizard are described in the following sections:

- The MFS IMS JCD Project on page 61
- The MFS JCD Project on page 71

5.2 IMS eWay Sample Projects

Three sample projects are described in this chapter to demonstrate how eWay components are created and implemented in a production environment. These sample eWay projects are included as part of the installation CD-ROM package.

- **The prjIMS_JCD_Sample Project** on page 47, demonstrates connectivity with an IMS system.
- **The prjMFS_IMS_JCD_Sample Project** on page 59, demonstrates the IMS MFS Builder.
- **The prjMFS_JCD_Sample Project** on page 69, demonstrates the use of the MFS OTD to compose IVTNO transaction messages.

5.3 Importing a Sample Project

To import a sample eWay project to the Enterprise Designer do the following:

1 The sample files are uploaded with the eWay's documentation .sar file and downloaded from the Enterprise Manager's **Documentation** tab. Extract the samples from the Enterprise Manager to a local file.

2 Save all unsaved work in Enterprise Designer before importing a sample project.

3 From the Enterprise Designer's Project Explorer pane, right-click the Repository and select **Import** from the shortcut menu. The **Import Manager** appears.

4 Browse to the directory that contains the sample project zip file. Select the sample file and click **Import**. After the sample project is successfully imported, click **Close**.

5 Before an imported sample project can be run you must do the following:

- ◆ Create an **Environment** (see **Creating an Environment** on page 55)
- ◆ Configure the eWays for your specific system (see **Configure the eWays** on page 56)
- ◆ Create a **Deployment Profile** (see **Creating the Deployment Profile** on page 57)

5.4 The prjIMS_JCD_Sample Project

The **prjIMS_JCD_Sample** project demonstrates connectivity with an external IMS system.

Sample Project Overview

1 The inbound File eWay receives a file from an external directory.

2 This file is the published by the IMS eWay to an external IMS application.

3 The IMS eWay receives the file back from the external IMS application, and publishes the file to the outbound File eWay.

4 The outbound File eWay publishes the file to an external directory.

5.4.1 Create a Project

The first step is to create a new project in the eGate Enterprise Designer.

1 Start the Enterprise Designer.

2 From the Enterprise Explorer's Project Explorer tab, select your Repository on the Project Explorer tree, right-click the Repository and select **New Project** (see Figure 19). A new project (**Project1**) appears on the Project Explorer tree.

Figure 19 Enterprise Explorer - New Project
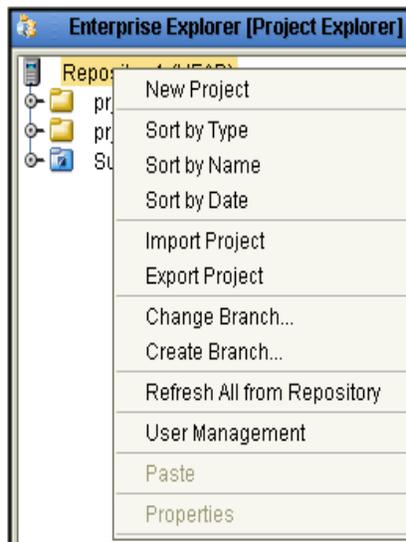
3 Click twice (not a double-click) on **Project1** and rename the project (for this sample, **prjIMS_JCD_Sample**).

5.4.2 **Create a Connectivity Map**

The Connectivity Map provides a canvas for assembling and configuring a project's components.

1 In Enterprise Explorer's Project Explorer, right-click the new project and select **New > New Connectivity Map** from the shortcut menu.

2 The New Connectivity Map appears and a node for the Connectivity Map is added to the Project Explorer tree labeled **CMap1**. Rename the Connectivity Map **cmIMS_JCD**.

Select the External Applications

The icons on the Connectivity Map toolbar represent the available components used to populate the Connectivity Map canvas.

When creating a Connectivity Map, the eWays are associated with external systems. For example, to establish a connection to IMS, you must first select IMS as an External Application to use in your Connectivity Map (see Figure 20). The IMS External Application icon is then added to the Connectivity Map toolbar.

Figure 20   Connectivity Map - External Applications
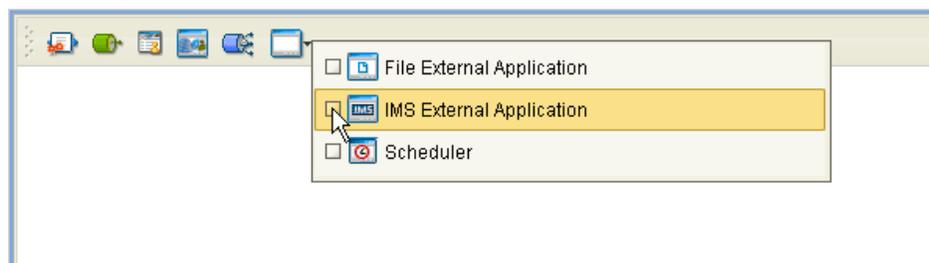
To add the External Applications used with the IMS_JCD_Sample project, do the following:

1 Click the **External Application** icon on the Connectivity Map toolbar.

2 Select the external systems that are necessary for your project (for this sample, **IMS** and **File**). Icons representing the selected external systems are added to the Connectivity Map toolbar.

Populate the Connectivity Map

Add the project components to the Connectivity Map by dragging the icons from the toolbar to the canvas.

1 For this sample, drag the following components onto the Connectivity Map canvas as displayed in Figure 21:

   ◆ File External System (2)

   ◆ Service (A Service is a container for Java Collaborations, Business Processes, eTL processes, and so forth.)

   ◆ IMS External System

Figure 21   Connectivity Map with Components
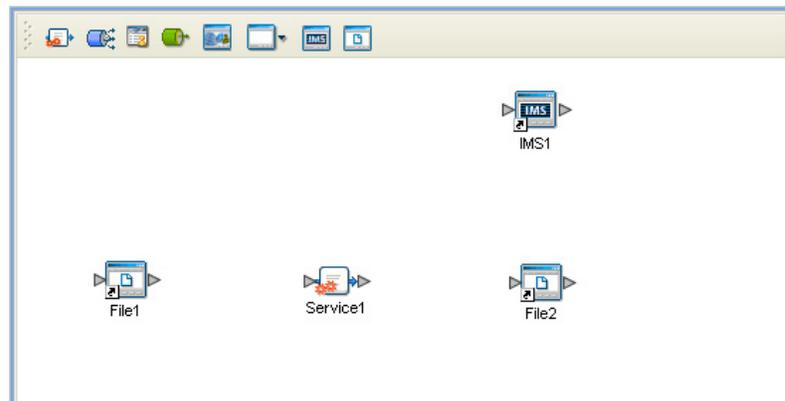
2 Rename the objects by right-clicking the object, selecting **Rename** from the shortcut menu, and typing in the new name. Change the names as follows:

- **File1** to **eaFileIn**
- **Service1** to **jcolIMS**
- **File2** to **eaFileOut**
- **IMS1** to **eaIMS**

3 Save your current changes to the Repository.

5.4.3 Creating the Collaboration Definitions

The next step in the sample is to create one Collaboration using the Collaboration Definition Wizard (Java). Once a Collaboration Definition has been created, the Business Rules of the Collaboration can be written using the Collaboration Editor (Java).
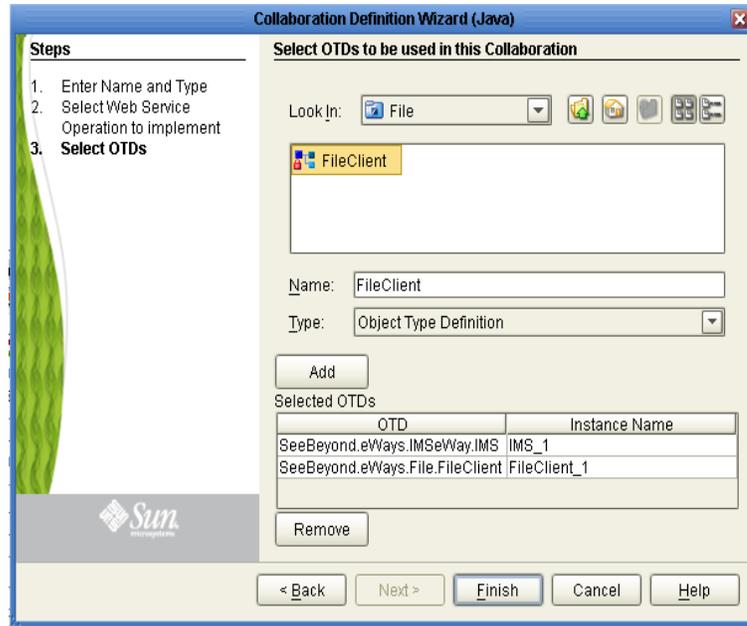
The IMS_Collab Collaboration (Java)

The **jcdIMS** Collaboration defines transactions from the inbound File eWay to the IMS eWay and from the IMS application to the outbound File eWay.

1 From the Project Explorer, right-click the **prjIMS_JCD_Sample** project and select **New** > **Collaboration Definition (Java)** from the shortcut menu. The **Collaboration Definition Wizard (Java)** appears.

2 Enter a Collaboration Definition name (for this project, **jcdIMS**) and click **Next**.

3 For Step 2 of the wizard, **Select a Web Services Operation**, Double-click **Sun SeeBeyond**> **eWays** > **File** > **FileClient** > **receive**. The File Name field now displays **receive.** Click **Next**.

4 For Step 3 of the wizard, from the **Select OTDs to be used in this collaboration** window, double-click **Sun SeeBeyond**> **eWays** > **IMSeWay** > **IMS**. The **IMS** OTD is added to the Selected OTDs field.

5 Click the **Up One Level** button to return to the Repository. Double-click **Sun SeeBeyond**> **eWays** > **File** > **FileClient**. The **FileClient** OTD is added to the Selected OTDs field (see Figure 22).

Figure 22 Collaboration Definition Wizard (Java) - Select OTDs

6 Click **Finish**. The Collaboration Editor (Java) appears in the left pane of the Enterprise Designer and the **jcdIMS** Collaboration is added to the Project Explorer tree.
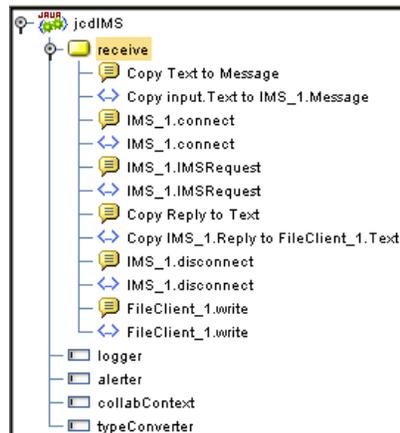
5.4.4 Using the Collaboration Editor (Java)

The next step in the sample is to create the Business Rules of the Collaborations using the Collaboration Editor.

Creating the IMS_Java_Collab Collaboration

Be mindful to open all nodes specified in the directions, so all connections are made to the correct items. The **jcdIMS** Collaboration contains the Business Rule displayed in Figure 23.

Figure 23   IMS_Java_Collab Collaboration Business Rules

To create the **jcdIMS** Collaboration Collaboration Business Rules do the following:

1   From the Project Explorer tree, double-click the **jcdIMS** Collaboration to open the Collaboration Editor to the IMS_Java_Collab Collaboration.

2   To create comments for the Business Rules, from the Business Rules toolbar, click the **Comment** icon. The **Create Comment** dialog box appears. Enter the comment and click **OK**. The comment is placed on the Business Rules tree under the last selected item. Once the comment is created, it can be moved by clicking the comment and dragging it up or down the Business Rules tree to a new location.

3   Create the **Copy input.Text to IMS_1.Message** rule by mapping the **Text** node, to the **Message** node. To do this, click on **Text** (under **Input** in the left pane of the Business Rules Designer) and drag the cursor to the **Message** node (under **IMS_1** in the right pane. See Figure 24).
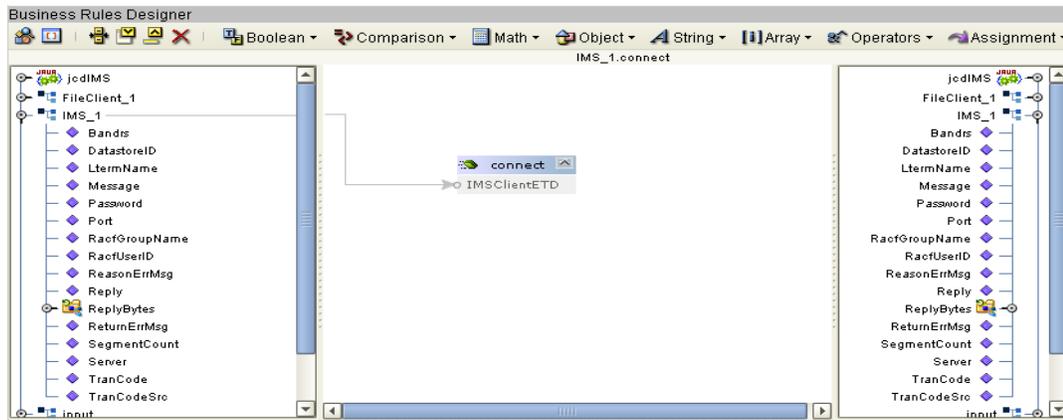
Figure 24   Copy input.Text to IMS_1.Message Business Rule
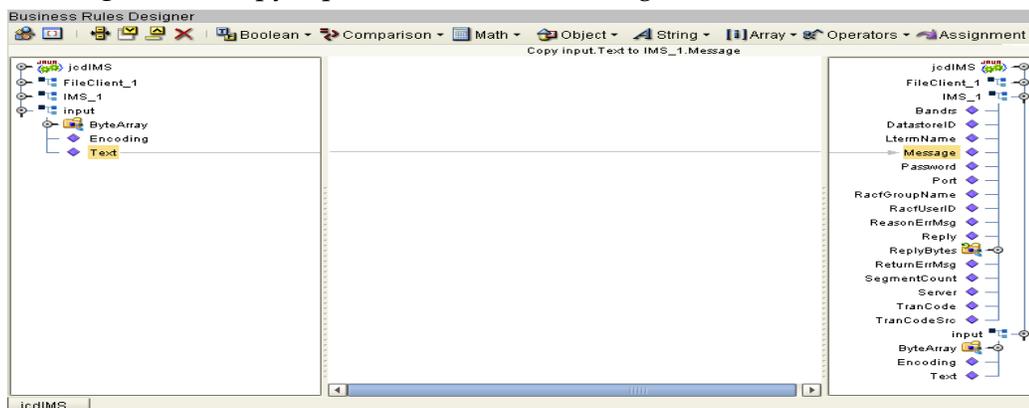
4   To create the **IMS_1.connect** rule do the following:

   A   From the Business Rules toolbar click the **Rule** button to add a new rule.

   B   Right-click the **IMS_1** node in the left pane of the Business Rules Designer and select **Select method to call** from the shortcut menu. The method selection box appears.
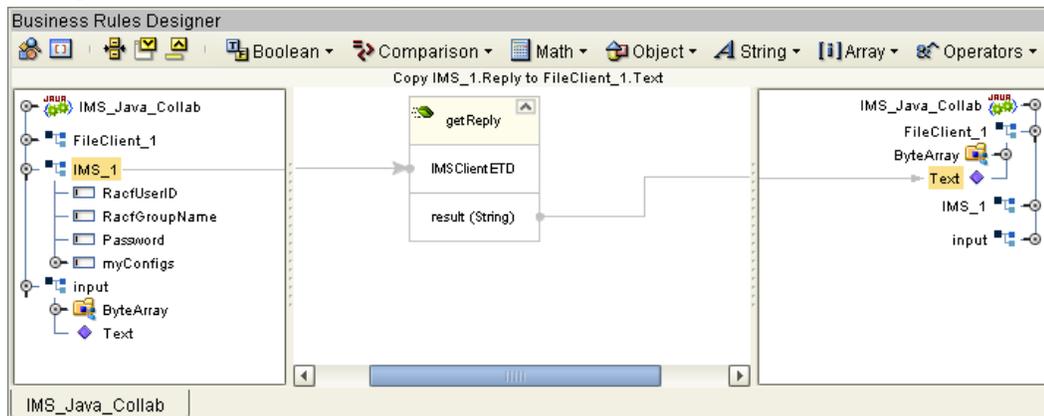
C Select **connect()** from the method selection box. The **connect** method box appears in the Business Rules Designer canvas (see **Figure 25 on page 52**).

Figure 25 IMS_1.connect Business Rule


5 To create the **IMS_1.IMSRequest** Business Rule do the following:

A From the Business Rules toolbar click the **rule** button to add a new rule.

B Right-click the **IMS_1** node in the left pane of the Business Rules Designer, and select **Select a method to call** from the shortcut menu. The method selection box appears.

C Select **IMSRequest()** from the method selection box. The **IMSRequest** method box appears in the Business Rules Designer canvas.

6 To create the **Copy IMS_1.Reply to FileClient_1.Text** rule do the following:

A From the Business Rules toolbar click the **rule** button to add a new rule.

B Right-click the **IMS_1** node in the left pane of the Business Rules Designer, and select **Select a method to call** from the shortcut menu. The method selection box appears.

C Select **IMSReply()** from the method selection box. The **IMSReply** method box appears in the Business Rules Designer canvas.

D Map the **Result (String)** output node of the **IMSReply** method box to **Text**, under **FileClient_1** in the right pane of the Designer (see Figure 26).

Figure 26 Copy IMS_1.Reply to FileClient_1.Text Business Rule

7 To create the **IMS__1.disconnect** rule do the following:

A From the Business Rules toolbar click the **rule** button to add a new rule.

B Right-click **IMS_1** in the left pane of the Business Rules Designer, and select **Select a method to call** from the shortcut menu. The method selection box appears.

C Select **disconnect()** from the method selection box. The **disconnect** method box appears in the Business Rules Designer canvas.

8 To create the **FileClient_1.write** Business Rule do the following:

A From the Business Rules toolbar click the **rule** button to add a new rule.

B Right-click the **FileClient_1** node in the left pane of the Business Rules Designer, and select **Select a method to call** from the shortcut menu. The method selection box appears.

C Select **write()** from the method selection menu. The **write** method box appears in the Business Rules Designer canvas (see Figure 27).

**Figure 27** FileClient_1.write Business Rule
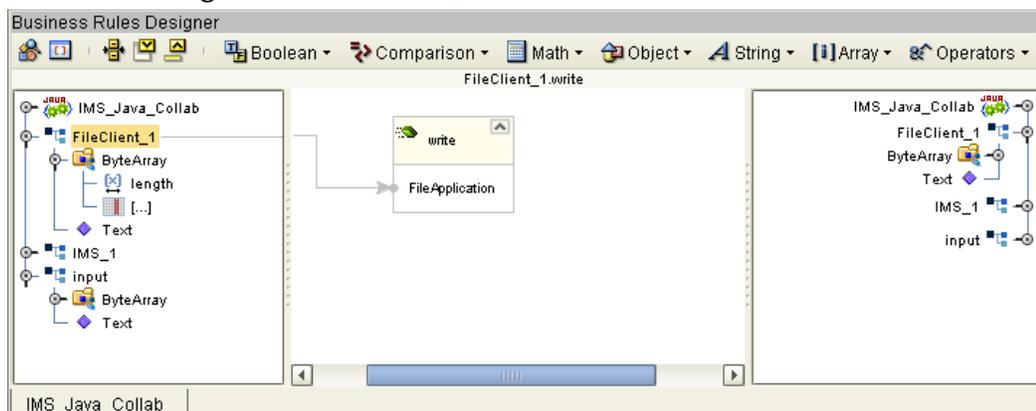
9 From the Collaboration Editor toolbar, click **Validate** to check the Collaboration for errors.

10 Save your current changes to the Repository.

5.4.5 **Creating Collaboration Bindings**

After the Collaboration has been written, the components are associated and Bindings are created in the Connectivity Map.

1 From the Project Explorer tree, double-click **cmIMS_JCD** to display the Connectivity Map.

2 Drag and drop the IMS Java Collaboration (**jcdIMS**)from the Project Explorer tree to the IMS Service (**jcolIMS**). If the Collaboration is successfully associated, the Service icon's "gears" change from red to green (see Figure 28).

Figure 28 Connectivity Map - Binding the Collaborations
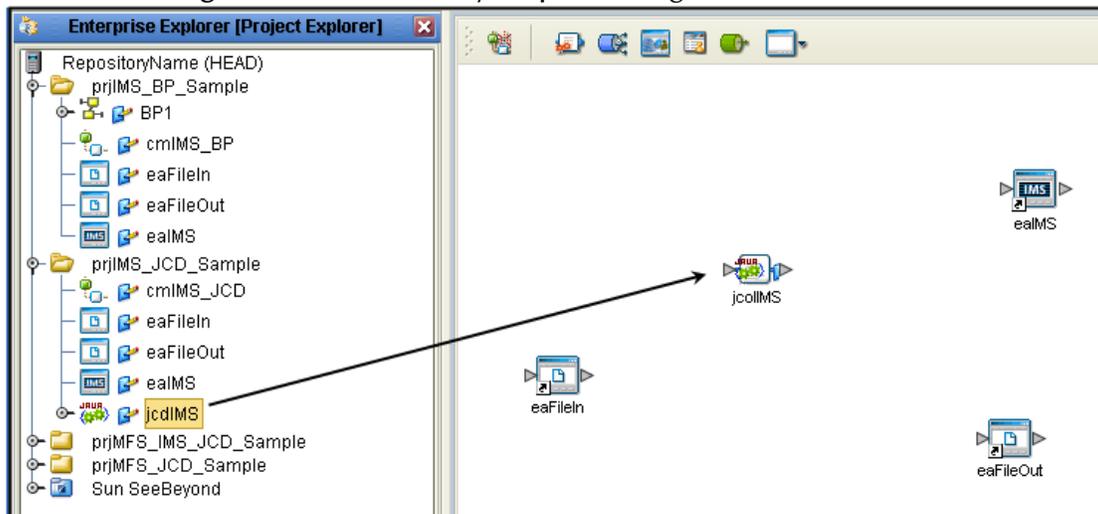
3 Double-click **jcolIMS** in the Connectivity Map. The **jcolIMS** Binding dialog box appears.

4 From the **jcolIMS** Binding dialog box, map **FileClient input** (under Implemented Services) to the **FileIn** External Application, by clicking on **input** and dragging the cursor to the **FileIn** application.

5 From the **jcolIMS** Binding dialog box, map **IMS IMS_1** (under Invoked Services) to the **IMS** External Application.

6 From the **jcolIMS** Binding dialog box, map **FileClient FileClient_1** to the **File2** External Application (see Figure 29).

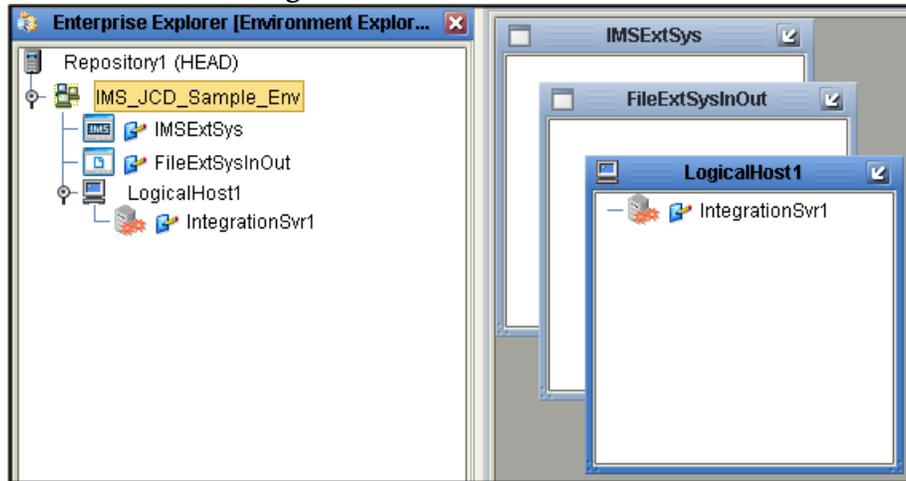**Figure 29**   Connectivity Map - Connecting the Project's Components
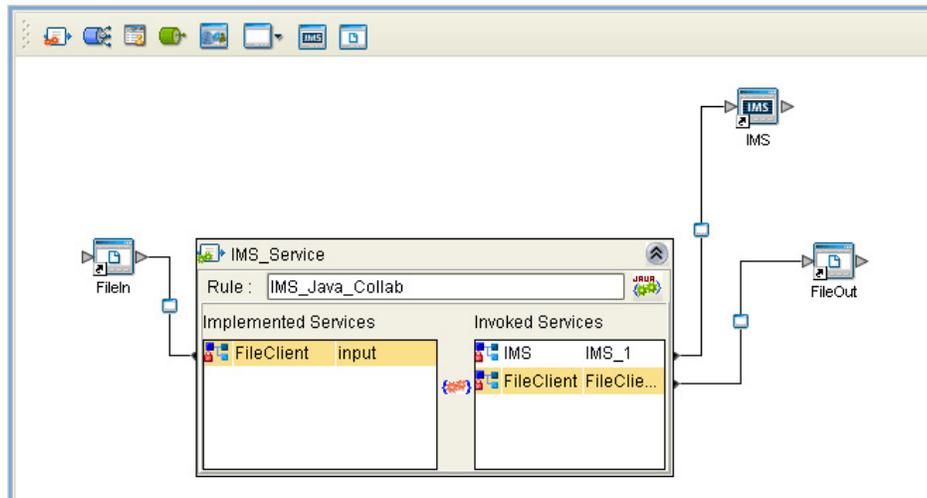
7   Minimize the **IMS_Service** dialog box, and save your current changes.

5.4.6   Creating an Environment

Environments include the external systems, Logical Hosts, integration servers and message servers used by a project, as well as containing the configuration information for these components. Environments are created using the Enterprise Designer's Environment Explorer and Environment Editor.

1   From the Enterprise Designer's Enterprise Explorer, click the **Environment Explorer** tab.

2   Right-click the Repository and select **New Environment**. A new Environment is added to the Environment Explorer tree.

3   Rename the new Environment to **IMS_JCD_Sample_Env**.

4   Right-click **IMS_JCD_Sample_Env** and select **New IMS External System**. Name the External System **IMSExtSys**. **IMSExtSys** is added to the Environment Editor.

5   Right-click **IMS_JCD_Sample_Env** and select **New File External System**. Name the External System **FileExtSysInOut** and Click **OK**. **FileExtSysInOut** is added to the Environment Editor. Modify both the Inbound and Outbound properties of the File eWay and click **OK**.

6   Right-click **IMS_JCD_Sample_Env** and select **New Logical Host**. The **LogicalHost1 box** is added to the Environment and **LogicalHost1** is added to the Environment Editor tree.

7   From the Environment Explorere tree, right-click **LogicalHost1** and select **New > Sun SeeBeyond Integration Server** from the shortcut menu. A new Integration Server (**IntegrationSvr1**) is added to the Environment Explorer tree under LogicalHost1 (see Figure 30).

Figure 30 Environment Editor

8 Save your current changes to the Repository.

5.4.7 Configure the eWays

The **prjIMS_JCD_Sample** project uses three eWays, each represented in the Connectivity Map as a node between an External Application and the Collaboration (see Figure 31). eWays facilitate communication and movement of data between the External Applications and the eGate system.

Note: *For information on configuring the File eWay nodes, refer to the eWay File Adapter User's Guide.*

Figure 31 eWays Nodes
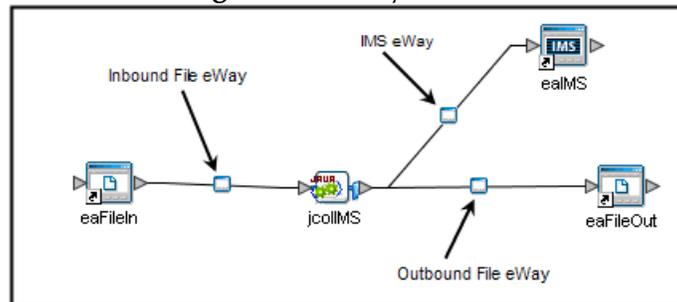
Configuring the IMS eWay

The IMS eWay properties must be set in both the Project Explorer and Environment Explorer. For more information on the IMS eWay configuration properties and the Properties Window, see **Creating and Configuring the IMS eWay** on page 17, or refer to the *eGate Integrator User's Guide*.

Modifying the IMS eWay Connectivity Map Properties

1 From the **cmIMS_JCD** Connectivity Map, double-click the **IMS eWay**. The Properties Window opens to the IMS eWay Project Explorer configuration properties.

2   Modify the **IMS eWay** (Project Explorer) properties for your system and click **OK**. For more information on these properties, refer to **IMS eWay Connectivity Map Properties** on page 20.

3   Double-click the **IMS eWay** located between the **jcolIMS** service and the **eaIMS** External Application. Modify the IMS eWay configuration for your system and click **OK**.

Modifying the IMS eWay Environment Explorer Properties

1   From the **Environment Explorer** tree, right-click the IMS External System (**IMSExtSys** in this sample), and select **Properties**. The Properties Window opens to the IMS eWay environment-configuration properties.

2   Modify the IMS eWay environment-configuration for your system and click **OK**. For more information on these properties, refer to **IMS eWay Environment Explorer Properties** on page 21.

5.4.8 Configuring the Integration Server

You must set your SeeBeyond Integration Server Password property before deploying your Project.

1   From the Environment Explorer, right-click **IntegrationSvr1** under your **Logical Host**, and select **Properties** from the shortcut menu. The Integration Server Properties Editor appears.

2   Click the **Password** property field under **SeeBeyond Integration Server Configuration**. An ellipsis appears in the property field.

3   Click the ellipsis. The **Password Settings** dialog box appears. Enter **STC** as the **Specific Value** and as the **Confirm Password**, and click **OK**.

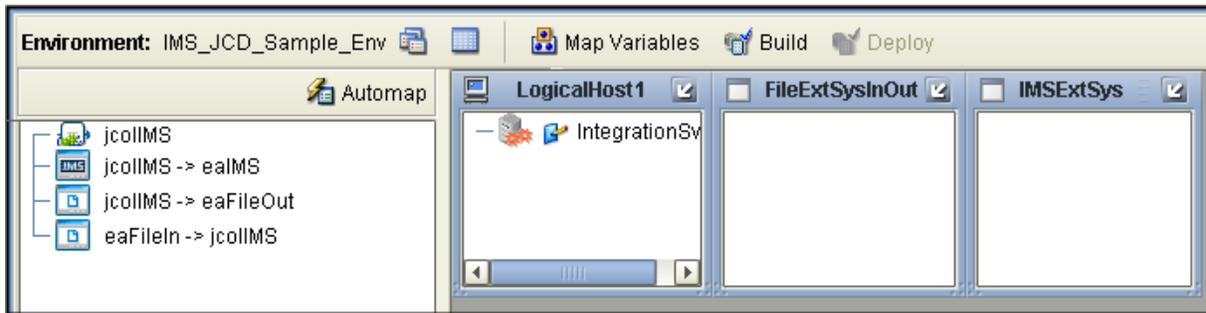4   Click **OK** to accept the new property and close the Properties Editor.

For more information on deploying a Project see the *Sun SeeBeyond Java™ Composite Application Platform Suite Deployment Guide*.

5.4.9 Creating the Deployment Profile

A Deployment Profile is used to assign services and message destinations to the integration server and message server. Deployment profiles are created using the Deployment Editor.

1   From the Enterprise Explorer's Project Explorer, right-click the **prjIMS_JCD_Sample** Project and select **New** > **Deployment Profile**.

2   Enter a name for the Deployment Profile (for this sample **dpIMS_JCD**). Select **IMS_JCD_Sample_ENV** as the Environment, insure the correct connectivity map is selected, and click **OK**.

3   From the Deployment Editor toolbar, click the **Automap** icon. The Project's components are automatically mapped to their system windows, as seen in Figure 32.

Figure 32 Deployment Profile - Auto Map

5.4.10 Creating and Starting the Domain

To build and deploy your Project, you must first create a domain. A domain is an instance of a Logical Host. After the domain is created, the Project is built and then deployed.

Note: *You are only required to create a domain once when you install the Composite Application Platform Suite.*

Steps required to create and start the domain:

1 Navigate to your **<caps51>\logicalhost** directory (where <caps51> is the location of your Sun Java Composite Application Platform Suite installation.

2 Double-click the **domainmgr.bat** file. The **Domain Manager** appears.

3 If you have already created a domain, select your domain in the Domain Manager and click the **Start an Existing Domain** button. Once your domain is started, a green check mark indicates that the domain is running.

4 If there are no existing domains, a dialog box indicates that you can create a domain now. Click **Yes**. The **Create Domain** dialog box appears.

5 Make any necessary changes to the **Create Domain** dialog box and click **Create**. The new domain is added to the Domain Manager. Select the domain and click the **Start an Existing Domain** button. Once your domain is started, a green check mark indicates that the domain is running.

Note: *For more information about creating and managing domains see the eGate Integrator System Administration Guide.*

5.4.11 Building and Deploying the Project

The Build process compiles and validates the Project's Java files and creates the Project EAR file.

Build the Project

1 From the Deployment Editor toolbar, click the **Build** icon.

2 If there are any validation errors, a **Validation Errors** pane will appear at the bottom of the Deployment Editor and displays information regarding the errors. Make any necessary corrections and click **Build** again.

3 After the Build has succeeded you are ready to deploy your Project.

Deploy the Project

1 From the Deployment Editor toolbar, click the **Deploy** icon. Click **Yes** when the **Deploy** prompt appears.

2 A message appears when the project is successfully deployed. You can now test your sample.

5.4.12 Running the Sample Project

To run your deployed sample Project do the following

1 From your configured input directory, paste (or rename) the sample input file to trigger the eWay.

2 From your output directory, verify the output data.

5.5 The prjMFS_IMS_JCD_Sample Project

The **prjMFS_IMS_JCD_Sample** project uses the MFS OTD to compose IVTNO transaction messages.

1 An inbound File eWay supplies last names with which to create IVTNO "DISPLAY" transactions.

2 The MFS OTD is used to compose a transaction message for each supplied name, populating the OTD with the data and the transaction command "DISPLAY"

3 The OTD formats the message, which is passed through the IMS eWay to the IMS application.

4 The response is sent back to the MFS OTD, allowing field-by-field access to its content.

5 An outbound File eWay spools select portions of each transaction response to a flat file.

IMS Application Response Error Messages

The Java Collaboration in the **prjMFS_IMS_JCD_Sample** project includes a rule that causes each IMS application response to be logged as an error message in the Integration Server's log. This it is not an actual error, but is logged as such to display the response content as part of the demonstration without the need for the user to enable debug logging and contend with more extraneous messages.

5.5.1 Create a project

The first step is to create and name a new project in eGate Enterprise Designer.

1 From the Enterprise Explorer pane of the Enterprise Designer, right-click the **Repository** and select **New Project**. A new project appears on the Project Explorer tree.

2 Rename the project (for this sample, **prjMFS_IMS_JCD_Sample**).

5.5.2 Create a Connectivity Map

1 In Enterprise Explorer, right-click the new project and select **New > Connectivity Map** from the shortcut menu.

2 The new Connectivity Map appears. From the Project Explorer, rename the new Connectivity Map **cmMFS_IMS_JCD**.

Select the External Applications

To add the External Applications used with the MFS_IMS_JCD_Sample project, do the following:

1 Click the **External Application** icon on the Connectivity Map toolbar.

2 Select the **File External Application** from the selection menu. The File External System is added to the Connectivity Map toolbar.

Populate the Connectivity Map

Add the project components to the Connectivity Map by dragging and dropping the icons from the toolbar to the Connectivity Map canvas.

1 For this project, add the following components to the Connectivity Map canvas as displayed in Figure 33:

- File External System (2)

- Service (A Service is a container for Java Collaborations, Business Processes, eTL processes, and so forth.)

- IMS External System

**Figure 33** Connectivity Map with Components
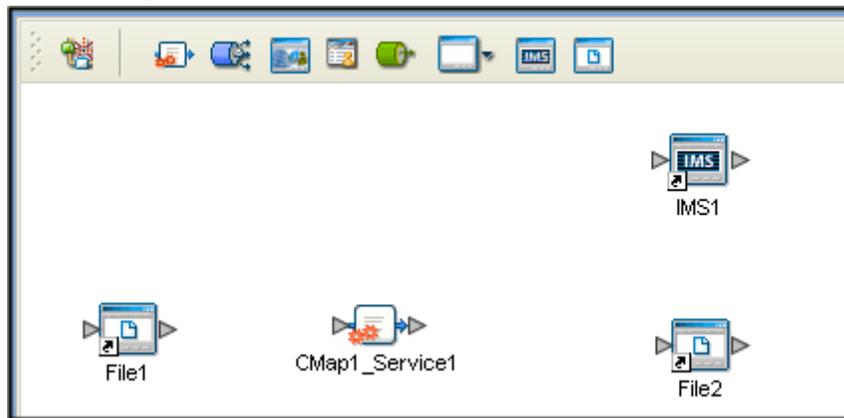
2 Save your current changes to the Repository.

5.5.3 Create an OTD Using the IMS MFS Wizard

The IMS MFS Wizard creates an OTD from an MFS data file. Sample MFS files, are provided with the IMS eWay sample, on the Installation CD-ROM. For this sample copy the **dfsivf.mfs** file to a temporary directory.

1 From the Project Explorer tree, right-click the **prjMFS_IMS_JCD_Sample** project and select **New** > **Object Type Definition** from the shortcut menu. The **Object Type Definition Wizard** appears.

2 From the Select Wizard Type box, select **IMS MFS Wizard** and click **Next** (see Figure 34).

Figure 34   IMS MFS Wizard - Select Wizard Type
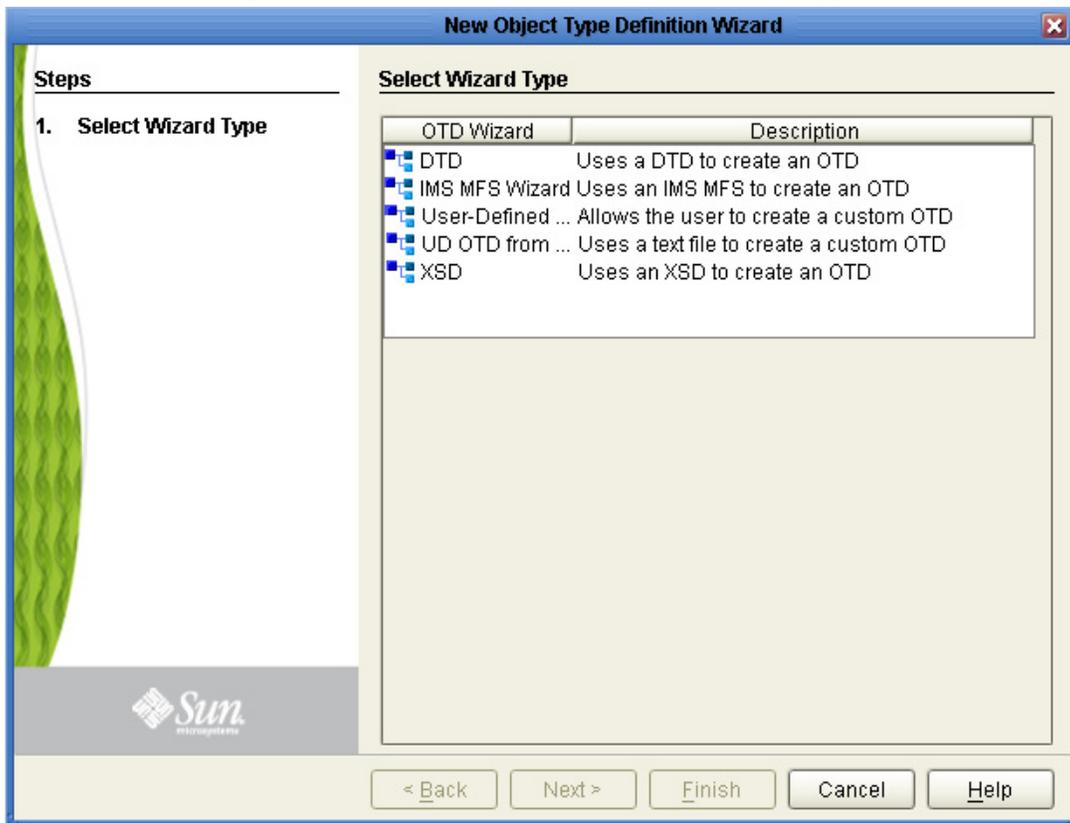
3   For step two of the wizard, **Select Input Files**, browse to the sample MFS file,
    dfsivf.mfs. Click **Select** to add the file to the Selected Files box (see Figure 35).

Figure 35 IMS MFS Wizard - Select MSF file
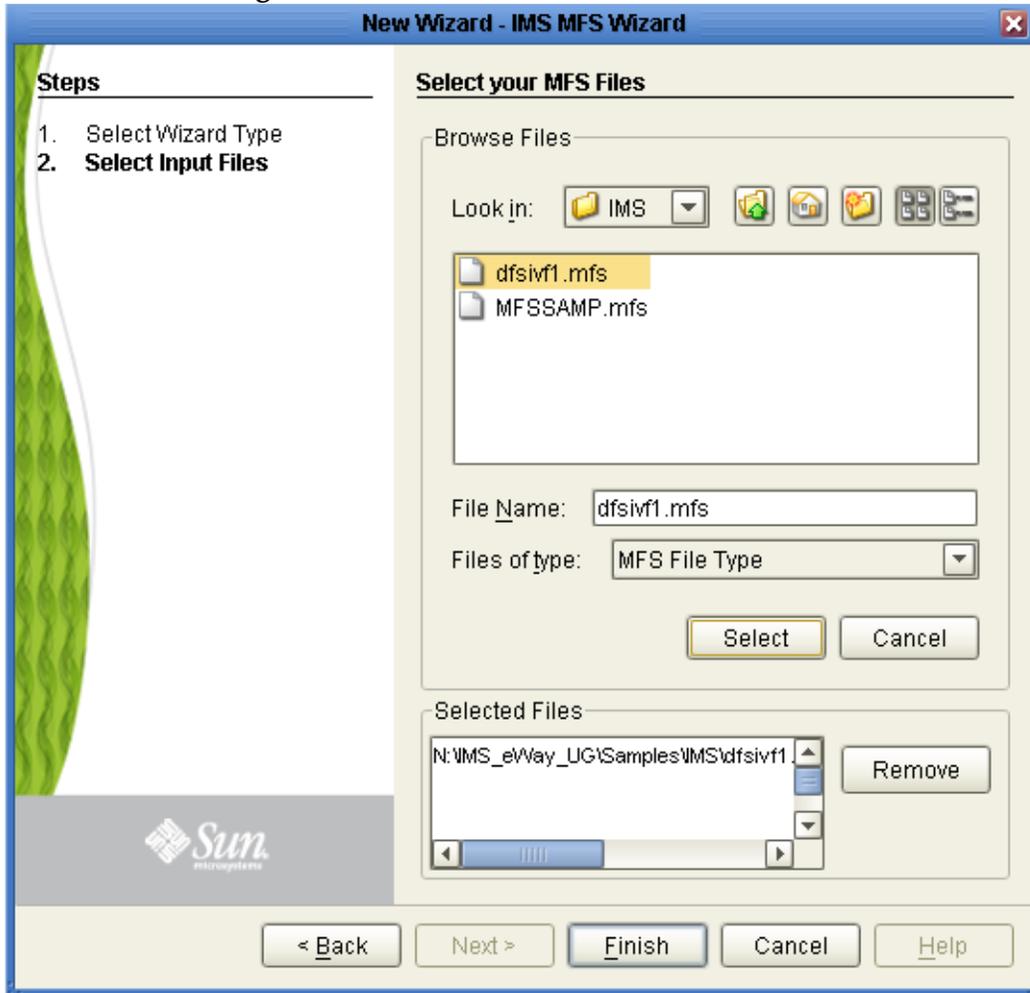
4   Click **Finish** and save your changes to the Repository. The OTD Editor now displays the successfully created **dfsivf** OTD and the OTD is added to the Project Explorer tree.

5.5.4 Create the Collaboration Definitions

The next step in the sample is to create a Collaboration using the Collaboration Definition Wizard (Java), and Business Rules using the Collaboration Editor.
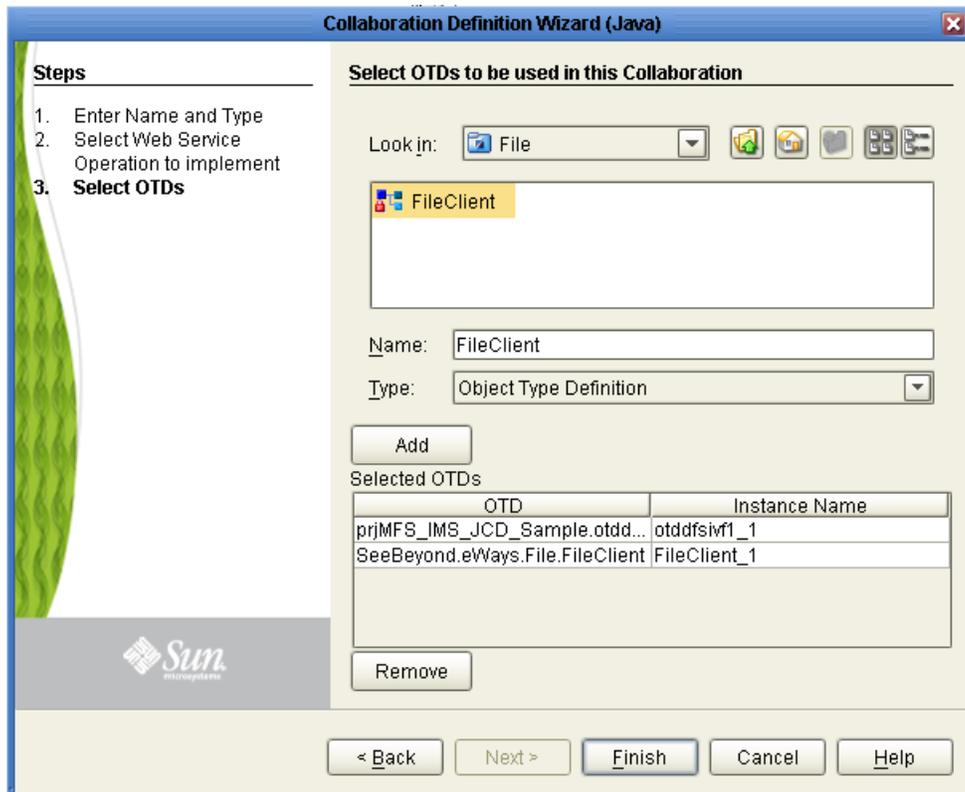
The JavaCollaborationMFS Collaboration

The **JavaCollaborationMFS** Collaboration defines transactions from the inbound File application, converts the MFS data and sends the data to the outbound File application.

1   From the Project Explorer, right-click the current project and select **New** > **Collaboration Definition (Java)** from the shortcut menu. The **Collaboration Definition Wizard** appears.

2   Enter a Collaboration Definition name (for this project, **jcdMFS_IMS**) and click **Next**.

3   For Step 2 of the wizard, **Select a Web Services Operation**, double-click **Sun SeeBeyond** > **eWays** > **File** > **FileClient** > **receive**. The File Name field now displays **receive.** Click **Next**.

4   For Step 3 of the wizard, from the Select OTDs selection window, double-click **IMS_MFS_Sample** > **dfsivf1.** The **dfsivf1** OTD is added to the Selected OTDs field.

5   Click the **Up One Level** button to return to the Repository. From the Select OTDs selection window, double-click **Sun SeeBeyond** > **eWays** > **File > FileClient.** The **FileClient** OTD is added to the Selected OTDs field (see Figure 36).

Figure 36   Collaboration Definition Wizard (Java) - Select OTDs

6   Click **Finish**. The Collaboration Editor (Java) appears in the left pane of the Enterprise Designer and the **jcdMFS_IMS** Collaboration (Java) is added to the Project Explorer tree.

5.5.5 The MFS_IMS_Collab Business Rules

The the **prjIMS_MFS_Sample** project uses one Collaboration created in the previous section, **jcdMFS_IMS**.

jcdMFS_IMS Business Rules

The **jcdMFS_IMS** Collaboration contains the Business Rules created using the Collaboration Editor.

```
String auditTransactStr;
String auditoTransactReply;
```

```
StringBuffer outputBuffer = new StringBuffer();
dfsivf1_1.getIVTNOMI1().getIVTNOMI1_SEG1().setIVTNOMI1_SEG1_MFLD2_DEV
_CMD( "DISPLAY " );
dfsivf1_1.getIVTNOMI1().getIVTNOMI1_SEG1().setIVTNOMI1_SEG1_MFLD3_DEV
_NAME1( input.getText() );
auditTransactStr = dfsivf1_1.marshalToString();
IMS_1.setMessage( auditTransactStr );
IMS_1.connect();
IMS_1.IMSRequest();
auditoTransactReply = IMS_1.getReply().substring( 1,
IMS_1.getReply().length() - 11 );
dfsivf1_1.unmarshalFromString( auditoTransactReply );
outputBuffer = outputBuffer.append( "FIRST NAME=" ).append(
dfsivf1_1.getIVTNO().getIVTNO_SEG1().getIVTNO_SEG1_MFLD4_DEV_NAME2()
);
outputBuffer = outputBuffer.append( "LAST NAME=" ).append(
dfsivf1_1.getIVTNO().getIVTNO_SEG1().getIVTNO_SEG1_MFLD3_DEV_NAME1()
);
outputBuffer = outputBuffer.append( "EXT #=" ).append(
dfsivf1_1.getIVTNO().getIVTNO_SEG1().getIVTNO_SEG1_MFLD5_DEV_EXT_()
);
outputBuffer = outputBuffer.append( "ZIP=" ).append(
dfsivf1_1.getIVTNO().getIVTNO_SEG1().getIVTNO_SEG1_MFLD6_DEV_ZIP() );
FileClient_1.setText( outputBuffer.toString() );
IMS_1.disconnect();
FileClient_1.write();
```

For more information on how to create Business Rules using the Collaboration Editor see **Using the Collaboration Editor (Java)** on page 50 or refer to the *eGate Integrator User's Guide*.

5.5.6 Creating Collaboration Bindings

After the Collaboration has been written, the components are associated and Bindings are created in the Connectivity Map.

1 From the Project Explorer tree, double-click **cmMFS_IMS_JCD** to display the Connectivity Map.

2 Drag and drop the **jcdMFS_IMS** Collaboration from the Project Explorer onto the Service (**Service1**).

3 Double-click **Service1** in the Connectivity Map. The **Service1** Binding dialog box appears.

4 From the **Service1** Binding dialog box, drag **FileClient input** (under Implemented Services) to the FileIn External Application.

5 From the **Service1** Binding dialog box, drag **FileClient_1** (under Invoked Services) to the FileOut External Application (see **Figure 37 on page 66**).

Figure 37   Connectivity Map - Connecting the Project's Components
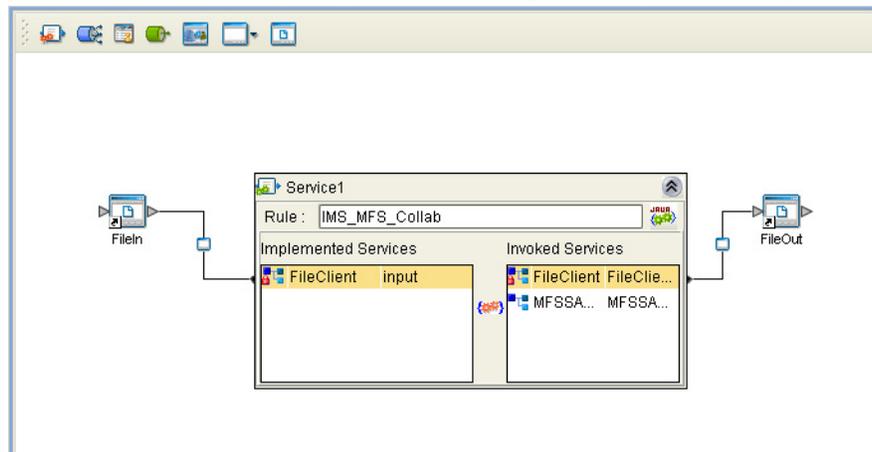

6   Minimize the **Service1** Binding dialog box and save your current changes to the Repository.

5.5.7 Creating an Environment

Environments include the external systems, Logical Hosts, integration servers and message servers used by a project and contain the configuration information for these components.

1   From the Enterprise Designer's Enterprise Explorer, click the **Environment Explorer** tab.

2   Right-click the Repository and select **New Environment**. A new Environment is added to the Environment Explorer tree.

3   Rename the new Environment to **MFS_IMS_Sample_Env**.

4   Right-click **MFS_IMS_Sample_Env** and select **New File External System**. Name the External System **FileExtSysInOut** and Click **OK**. **FileExtSysInOut** is added to the Environment Editor. Modify both the Inbound and Outbound properties of the File eWay and click **OK**.

5   Right-click **MFS_IMS_Sample_Env** and select **New Logical Host**. The **LogicalHost1 box** is added to the Environment and **LogicalHost1** is added to the Environment Editor tree.

6   Right-click **LogicalHost1** and select **Sun SeeBeyond Integration Server** from the shortcut menu. A new Integration Server (**IntegrationSvr1**) is added to the Environment Explorer tree under LogicalHost (see Figure 38).

Figure 38   Environment Editor
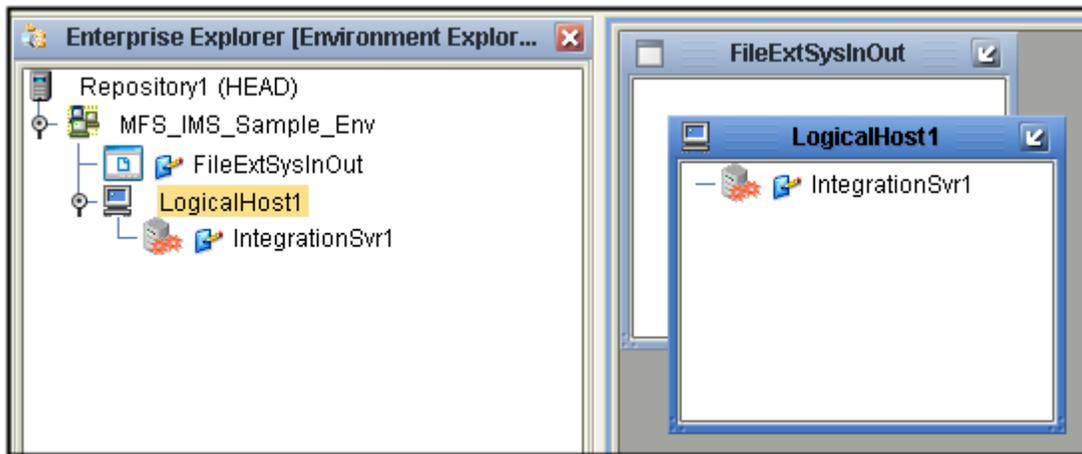
7   Save changes to the Repository.

5.5.8 Configure the eWays

The IMS eWay properties must be set in both the Project Explorer and Environment Explorer. For more information on the IMS eWay configuration properties and the Properties Window, see **Creating and Configuring the IMS eWay** on page 15, or refer to the *eGate Integrator User's Guide*.

Note: For information on configuring the File eWay nodes, refer to the eWay File Adapter User's Guide.

Modifying the IMS eWay Connectivity Map Properties

1   From the **cmMFS_IMS_JCD** Connectivity Map, double-click the **IMS eWay**. The Properties Window opens to the IMS eWay Project Explorer configuration properties.

2   Modify the **IMS eWay** (Project Explorer) properties for your system and click **OK**. For more information on these properties, refer to **IMS eWay Connectivity Map Properties** on page 20.

3   Double-click the **IMS eWay** located between **IMS_Service** and the **IMS1** External Application. Modify the IMS eWay configuration for your system and click **OK**. .

**Modifying the IMS eWay Environment Explorer Properties**

1   From the **Environment Explorer** tree, right-click the IMS External System (**IMSExtSys** in this sample), and select **Properties**. The Properties Window opens to the IMS eWay environment-configuration properties.

2   Modify the IMS eWay environment-configuration for your system and click **OK**. For more information on these properties, refer to **IMS eWay Environment Explorer Properties** on page 21.

5.5.9 **Creating the Deployment Profile**

A Deployment Profile is used to assign services and message destinations to the integration server and message server. Deployment profiles are created using the Deployment Editor.

1   From the Enterprise Explorer's Project Explorer, right-click the **prjMFS_IMS_JCD_Sample** Project and select **New** > **Deployment Profile**.

2   Enter a name for the Deployment Profile (for this sample **dpMFS_IMS_JCD**). Select **MFS_IMS_JCD_Sample_ENV** as the Environment, insure the correct connectivity map is selected, and click **OK**.

3   From the Deployment Editor toolbar, click the **Automap** icon. The Project's components are automatically mapped to their system windows, as seen in Figure 39.

Figure 39   Deployment Profile
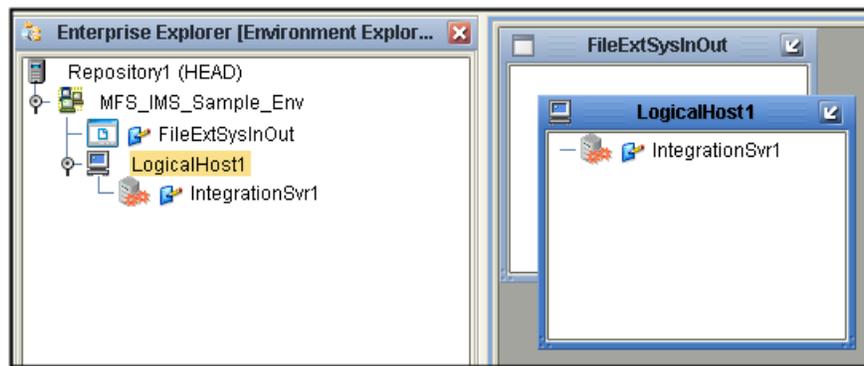
4   Click **Activate**. When activation succeeds, save the changes to the Repository.

5.5.10 **Creating and Starting the Domain**

To build and deploy your Project, you must first create a domain. A domain is an instance of a Logical Host. After the domain is created, the Project is built and then deployed.

Note: *You are only required to create a domain once when you install the Composite Application Platform Suite.*

Steps required to create and start the domain:

1   Navigate to your **<caps51>\logicalhost** directory (where <caps51> is the location of your Sun Java Composite Application Platform Suite installation).

2   Double-click the **domainmgr.bat** file. The **Domain Manager** appears.

3   If you have already created a domain, select your domain in the Domain Manager and click the **Start an Existing Domain** button. Once your domain is started, a green check mark indicates that the domain is running.

4 If there are no existing domains, a dialog box indicates that you can create a domain now. Click **Yes**. The **Create Domain** dialog box appears.

5 Make any necessary changes to the **Create Domain** dialog box and click **Create**. The new domain is added to the Domain Manager. Select the domain and click the **Start an Existing Domain** button. Once your domain is started, a green check mark indicates that the domain is running.

Note: *For more information about creating and managing domains see the eGate Integrator System Administration Guide.*

5.5.11 Building and Deploying the Project

The Build process compiles and validates the Project's Java files and creates the Project EAR file.

Build the Project

1 From the Deployment Editor toolbar, click the **Build** icon.

2 If there are any validation errors, a **Validation Errors** pane will appear at the bottom of the Deployment Editor and displays information regarding the errors. Make any necessary corrections and click **Build** again.

3 After the Build has succeeded you are ready to deploy your Project.

Deploy the Project

1 From the Deployment Editor toolbar, click the **Deploy** icon. Click **Yes** when the **Deploy** prompt appears.

2 A message appears when the project is successfully deployed. You can now test your sample.

5.5.12 Running the Sample Project

To run your deployed sample Project do the following

1 From your configured input directory, paste (or rename) the sample input file to trigger the eWay.

2 From your output directory, verify the output data.

5.6 The prjMFS_JCD_Sample Project

The **prjMFS_JCD_Sample** project demonstrates the use of the IMS MFS builder to create an OTD from an MFS file and use it in a simple project.

1 Input data, formatted as content to an MFS message output control block, is subscribed to by the inbound File eWay from an external directory.

2 This data (message) is deserialized into an OTD generated from an MFS message specification.

3 The Collaboration demonstrates field-level data access to the message, concatenates and spools specific field values. The output produced by the Collaboration is the concatenation of all 8 message fields in the output control block, producing content identical to the input data.

4 The outbound receives the input data and publishes the message to an external directory.

5.6.1 Importing the prjMFS_JCD_Sample Project

To import the **prjMFS_JCD_Sample** project follow the directions from **Importing a Sample Project** on page 46, using the **prjMFS_JCD_Sample.zip** file.

5.6.2 Create a project

The first step is to create and name a new project in eGate Enterprise Designer.

1 From the Enterprise Explorer pane of the Enterprise Designer, right-click the **Repository** and select **New Project**. A new project appears on the Project Explorer tree.

2 Rename the project (for this sample, **prjMFS_JCD_Sample**).

5.6.3 Create a Connectivity Map

1 In Enterprise Explorer, right-click the new project and select **New > Connectivity Map** from the shortcut menu.

2 The new Connectivity Map appears. From the Project Explorer, rename the new Connectivity Map **cmMFS_JCD**.

Select the External Applications

For this sample project, only the File External Application is required.

1 Click the **External Application** icon on the Connectivity Map toolbar.

2 Select the **File External Application** from the selection menu. The File External System is added to the Connectivity Map toolbar.

Populate the Connectivity Map

Add the project components to the Connectivity Map by dragging and dropping the icons from the toolbar to the Connectivity Map canvas.

1 For this project, add the following components to the Connectivity Map canvas as displayed in Figure 33:

  ◆ File External System (2)

  ◆ Service

**Figure 40** Connectivity Map with Components

2   Save your current changes to the Repository.

5.6.4 Creating an OTD Using the IMS MFS Wizard

The IMS MFS Wizard creates an OTD from an MFS data file. A sample MFS file, **MFSSAMP.mfs** is provided on the Installation CD-ROM with the IMS eWay sample at ..\samples\ewims.. Copy this file to a temporary directory.

1   From the Project Explorer tree, right-click the **prjMFS_JCD_Sample** project and select **New** > **Object Type Definition** from the shortcut menu. The **Object Type Definition Wizard** appears.

2   From the Select Wizard Type box, select **IMS MFS Wizard** and click **Next**.

Figure 41   IMS MFS Wizard - Select Wizard Type
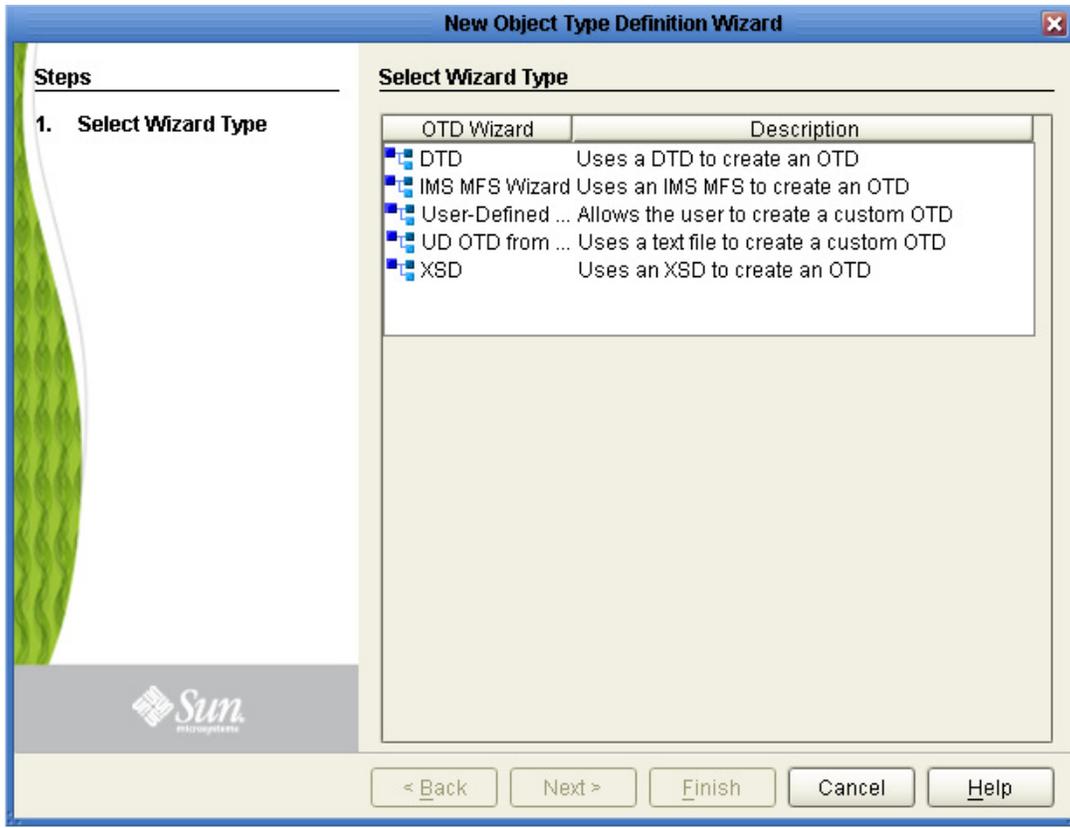
3   For step two of the wizard, Select Input Files, browse to the sample MFS file, **MFSSAMP.mfs**. Click **Select** to add the file to the Selected Files box (see Figure 42).

Figure 42   IMS MFS Wizard - Select MSF file
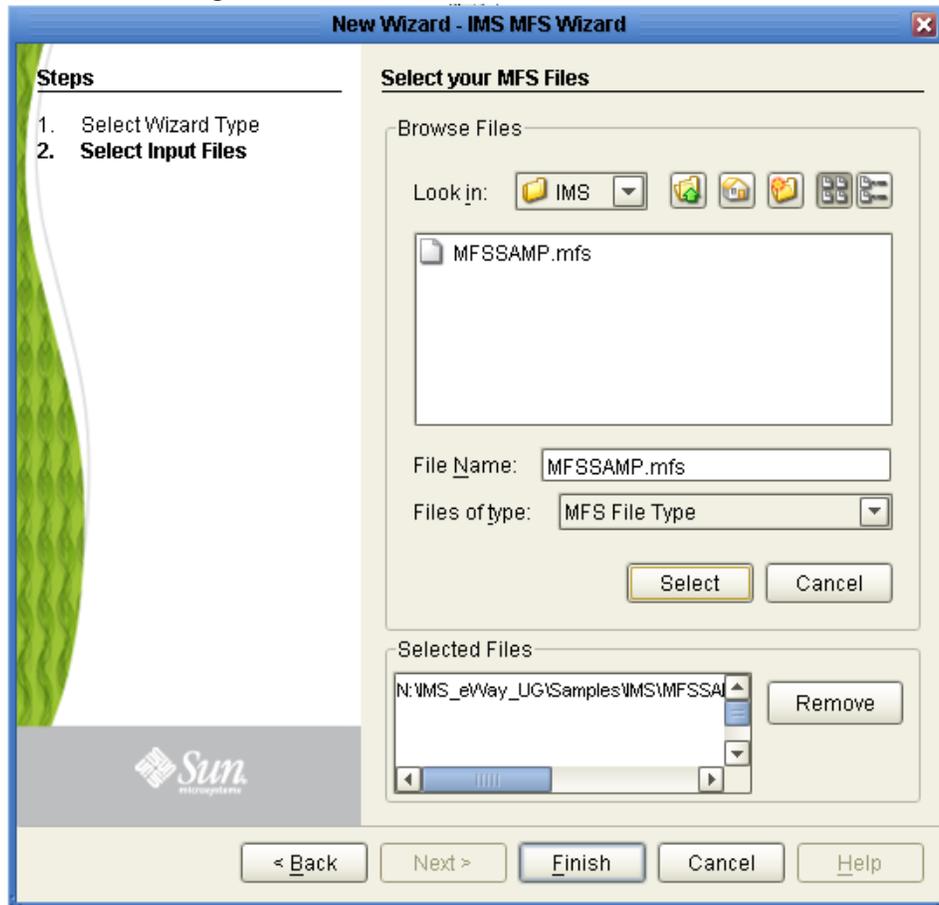
4   Click **Finish** and save your changes to the Repository. The OTD Editor now displays the successfully created **MFSSAMP** OTD and the OTD is added to the Project Explorer tree.

5.6.5 Creating the Environment

Environments include the external systems, Logical Hosts, integration servers and message servers used by a project, as well as containing the configuration information for these components.

1   From the Enterprise Designer's Enterprise Explorer, click the **Environment Explorer** tab.

2   Right-click the Repository and select **New Environment**. A new Environment is added to the Environment Explorer tree.

3   Rename the new Environment to **MFS_JCD_Sample_Env**.

4   Right-click **MFS_JCD_Sample_Env** and select **New IMS External System**. Name the External System **IMSExtSys**. **IMSExtSys** is added to the Environment Editor.

5   Right-click **MFS_JCD_Sample_Env** and select **New File External System**. Name the External System **FileExtSysInOut** and Click **OK**. **FileExtSysInOut** is added to

the Environment Editor. Modify both the Inbound and Outbound properties of the File eWay and click **OK**.

6 Right-click **MFS_JCD_Sample_Env** and select **New Logical Host**. The **LogicalHost1** box is added to the Environment and **LogicalHost1** is added to the Environment Editor tree.

7 Right-click **LogicalHost1** and select **Sun SeeBeyond Integration Server** from the shortcut menu. A new Integration Server (**IntegrationSvr1**) is added to the Environment Explorer tree under LogicalHost.

5.6.6 Configure the eWays

The **prjMFS_JCD_Sample** project uses three eWays, each represented in the Connectivity Map as a node between an External Application and the Collaboration. eWays facilitate communication and movement of data between the External Applications and the eGate system.

Note: For information on configuring the File eWay nodes, refer to the eWay File Adapter User's Guide.

Modifying the IMS eWay Connectivity Map Properties

1 From the **Connectivity Map**, double-click the **IMS eWay**. The **Properties Window** opens to the IMS eWay project configuration properties.

2 Modify the IMS eWay (Project Explorer) configuration for your system and click **OK**. For more information on these properties, refer to **IMS eWay Connectivity Map Properties** on page 20.

Modifying the IMS eWay Environment Explorer Properties

1 From the **Environment Explorer** tree, right-click the IMS External System (**IMSExtSys** in this sample), and select **Properties** from the shortcut menu. The **Properties Window** opens to the IMS eWay Environment Explorer properties.

2 Modify the IMS eWay Environment Explorer properties for your system and click **OK**. For more information on these properties, refer to **IMS eWay Environment Explorer Properties** on page 21.

5.6.7 Creating the Deployment Profile

A Deployment Profile is used to assign services and message destinations to the integration server and message server. Deployment profiles are created using the Deployment Editor.

1 From the Enterprise Explorer's Project Explorer, right-click the **prjMFS_JCD_Sample** Project and select **New** > **Deployment Profile**.

2 Enter a name for the Deployment Profile (for this sample **dpMFS_JCD_Sample**). Select **MFS_JCD_Sample_Env** as the Environment, insure the correct connectivity map is selected, and click **OK**.

3 From the Deployment Editor toolbar, click the **Automap** icon. The Project's components are automatically mapped to their system windows.

4 Click **Activate**. When activation succeeds, save the changes to the Repository.

5.6.8 Creating and Starting the Domain

To build and deploy your Project, you must first create a domain. A domain is an instance of a Logical Host. After the domain is created, the Project is built and then deployed.

Note: *You are only required to create a domain once when you install the Composite Application Platform Suite.*

Steps required to create and start the domain:

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Note: *For more information about creating and managing domains see the eGate Integrator System Administration Guide.*

5.6.9 Building and Deploying the Project

The Build process compiles and validates the Project's Java files and creates the Project EAR file.

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1 From the Deployment Editor toolbar, click the **Build** icon.

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3 After the Build has succeeded you are ready to deploy your Project.

Deploy the Project

1 From the Deployment Editor toolbar, click the **Deploy** icon. Click **Yes** when the **Deploy** prompt appears.

> **2** A message appears when the project is successfully deployed. You can now test
> your sample.

5.6.10 Running the Sample Project

To run your deployed sample Project do the following

1 From your configured input directory, paste (or rename) the sample input file to
trigger the eWay.

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