SeeBeyond ICAN Suite

IMS eWay Intelligent Adapter User's Guide

Release 5.0.4

SeeBeyond®

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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.

Chapter Topics

1.1 Overview

1.1.1. Information Management System (IMS)

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

1.1.2. The eWay Intelligent Adapter for IMS

The IMS eWay enables eGate to connect with IBM's IMS/TM mainframe applications through IBM's IMS Connect. (See **Figure 1 on page 8**).

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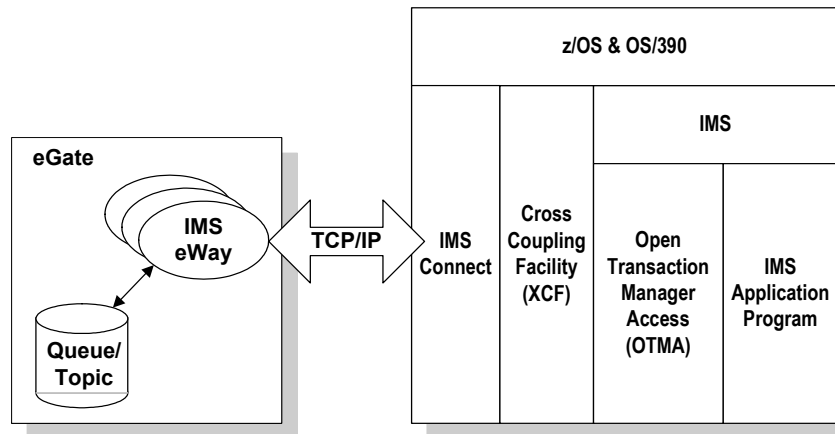
The eWay provides access to the Input and Output Descriptors (MID/MOD) of the IMS applications without requiring changes to the application. By capturing the field contents before screen formatting, the eWay is not affected by cosmetic changes to the application's screen design.

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

The implementation of the IMS eWay is in accordance with the IBM *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.

1.2   Supported Operating Systems

The IMS eWay is available for the following operating systems:

- Windows XP, Windows 2000, and Windows Server 2003

- Solaris 8 and 9

- AIX 5.1L and 5.2

- HP-UX 11.0, 11i (PA-RISC), and 11i V2 (11.23)

- HP Tru64 5.1A

- Red Hat Linux 8 (Intel)

- Red Hat Linux Advanced Server 2.1 (Intel)

1.3   System Requirements

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

- A TCP/IP network connection.
- Windows Server 2003, Windows 2000, or Windows XP. This is required for the User Interface.
- Microsoft Internet Explorer 6.0 or above.

The system requirements for the IMS eWay are the same as those for eGate Integrator. For information, refer to the *SeeBeyond ICAN Suite Installation Guide*. It is also helpful to review the **Readme.txt** for any additional requirements prior to installation. The **Readme.txt** is located on the installation CD-ROM.

Although the IMS eWay, the Repository, and Logical Hosts run on the platforms listed under Supported Operating Systems, the Enterprise Designer requires the Windows operating system. The Enterprise Manager can run on any platform that supports Internet Explorer 6.0.

1.4   External System Requirements

Software Requirements

- IMS Connect, Version 2.1 and above.

Note: *IMS Connect is an optional, purchasable, companion product to IMS. IMS Connect is not included with IMS.*

Software Requirements for IMS Connect:

- z/OS Version 1 Release 2, z/OS Version 1 Release 3, z/OS Version 1 Release 4.
- IMS Version 7, or 8, with the required maintenance APARs applied. See IMS Connect Guide and Reference, "IMS Connect and IMS Coexistence" for more information about IMS and IMS Connect coexistence.
- Resource Access Control Facility (RACF) or an equivalent product.

Note: *This document uses the term RACF when referring to RACF (Resource Access Control Facility) or equivalent products.*

Installing the IMS eWay

This chapter explains the procedures for installing the IMS eWay.

Chapter Topics

- **Installing the IMS eWay** on page 10
- **Before installing the eWay** on page 10
- **After Installation** on page 11

2.1   Installing the IMS eWay

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

When the Repository is running on an HP NonStop Server, or UNIX operating system, eGate and the eWays are installed using the Enterprise Manager on a computer running Windows connected to the Repository server.

Before installing the eWay

Open and review the **Readme.txt** prior to installation, for any additional information or requirements.

Installing the IMS eWay on an eGate supported system

The IMS eWay is installed during the installation of the eGate Integrator. The eGate installation process includes the following operations:

- Installing the eGate Repository
- Uploading products to the Repository
- Downloading components (including eGate Enterprise Designer and Logical Host)
- Viewing product information home pages

Follow the instructions for installing the eGate Integrator in the *eGate Integrator Installation Guide*, and include the following steps:

1 During the procedures for uploading files to the eGate Repository using the Enterprise Manager, after uploading the **eGate.sar** file, select and upload the following files:

   ◆ **IMSeWay.sar** (to install the IMS eWay)

   ◆ **MFS.sar** (to install the MFS Wizard)

   ◆ **FileeWay.sar** (to install the File eWay, used in the sample project)

   ◆ **IMSeWayDocs.sar** (to download the IMS eWay user's guide)

2 Continue installing the eGate Integrator as instructed in the *eGate Integrator Installation Guide.*

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.

Configuring the eWay Properties

This chapter describes how to create and configure the IMS eWay properties.

Chapter Topics

3.1 Creating and Configuring the IMS eWay

All eWays contain a set of parameters with properties unique to that eWay type. After the eWays are established and an IMS External System is created in the project's Environment, the eWay parameters can be modified for your specific system. The IMS eWay parameters are modified from two locations:

- From the **Connectivity Map**. These parameters most commonly apply to a specific eWay, and may vary from other eWays (of the same type) in the project.

- From the **Environment Explorer tree**. 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.

The properties for the IMS eWay must be set in both locations.

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 13**). The selected IMS External Application tool appears on the Connectivity Map toolbar.

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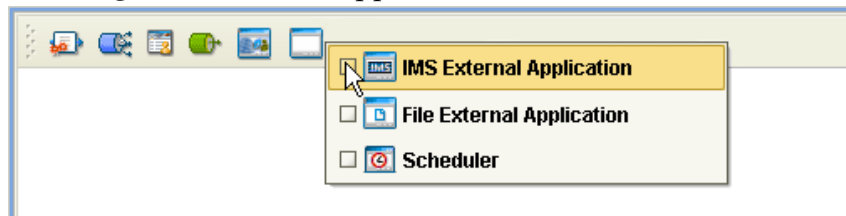
3 Drag the new **IMS External Application** from the toolbar onto the Connectivity Map canvas. This represents an external IMS system.

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

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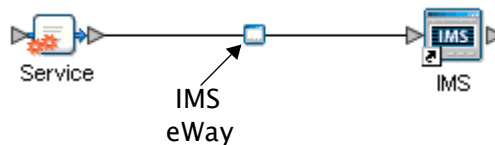
When IMS is selected as the External Application, it automatically applies the default IMS eWay properties, provided by the OTD, to the eWay that connects it to the Service. These properties can then be or modified for your specific system using the **Properties Sheet** .

3.1.2 Creating Custom Properties for an IMS eWay

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

Modifying 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 Sheet** opens to the eWay IMS Connectivity Map parameters. Make any necessary modifications and click **OK** to save the settings.

Modifying 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 Sheet** appears.

2 Make any necessary modifications to the Environment parameters of the IMS eWays, and click **OK** to save the settings.

3.1.3. Using the Properties Sheet

Modifications to the eWay configuration properties are made from the IMS eWay Properties Sheet .

To modify the default eWay configuration properties

1   Open the Properties Sheet to the IMS eWay default properties. An eWay has two different sets of parameters: those specific to that particular eWay (accessed from the Connectivity Map), and those that are common to all eWays of this type (accessed from the Environment Explorer tree).

2   From the upper-right pane of the Properties Sheet , select a subdirectory of the configuration directory. The parameters contained in that subdirectory are now displayed in the Properties pane of the Properties Sheet . For example, clicking on the **connector** subdirectory displays the editable parameters in the right pane, as shown in Figure 4.

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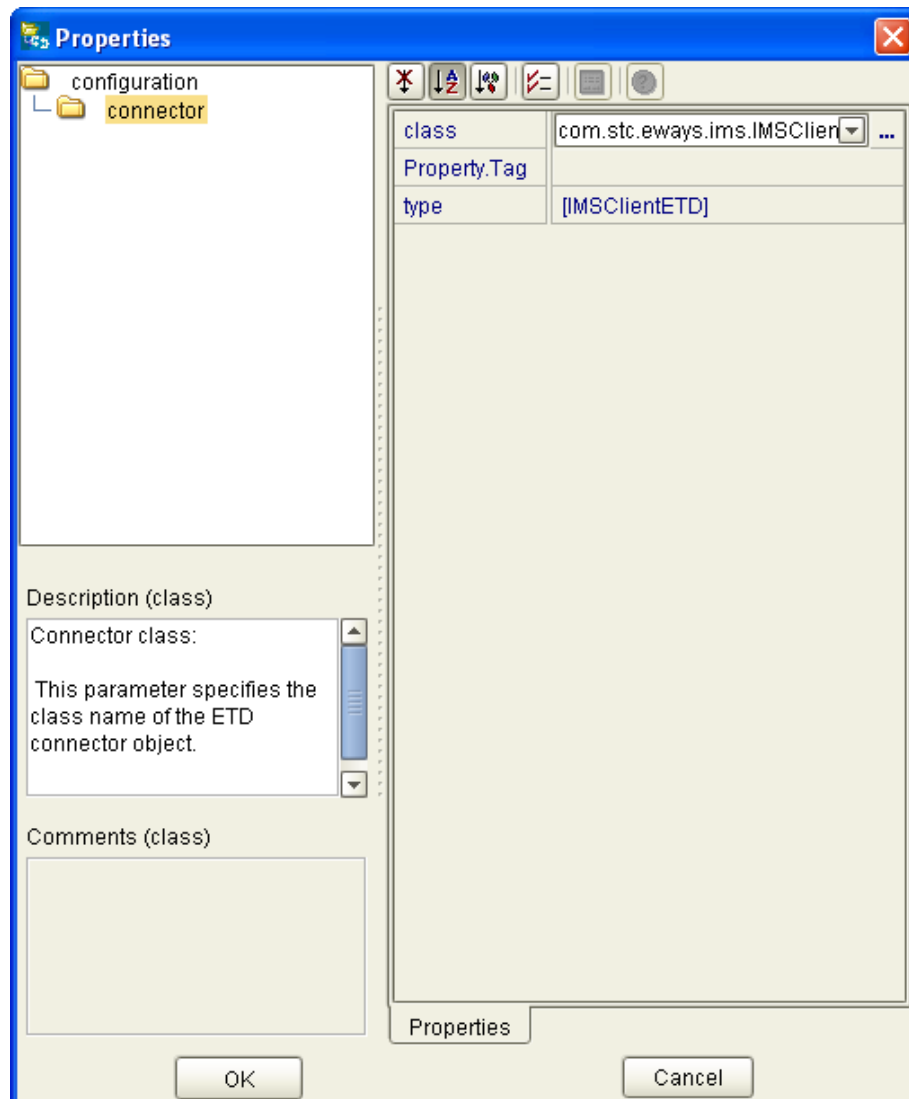
3   Click on any property field to make it editable. For example, click on the **class** parameter to edit the class value. If a parameter's value is true/false or multiple choice, the field reveals a submenu of property options.

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 parameter's property field.

4 A description of each parameter is displayed in the **Description** pane when that parameter is selected, providing an explanation of any required settings or options.

5 The **Comments** pane provides an area for recording notes and information regarding the currently selected parameter. This is saved for future referral.

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

3.2   IMS eWay Connectivity Map Properties

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

- **Connector** on page 15

3.2.1.   Connector

The Connector section contains the following top level parameters:

- **Class** on page 15
- **Property.Tag** on page 15
- **Type** on page 16

Class

Description

Specifies the class name of the ETD connector object.

Required Values

- String-set. A valid package name. The default is **com.stc.eways.ims.IMSClientETDConnector**.

Property.Tag

Description

Specifies the identity of the data source. This parameter is required by the current EBobConnectorFactory.

Required Values

String-set. A valid data source package name.

Type

Description

Specifies the connector type.

Required Values

String-set. The value is always **IMSClientETD by** default for IMSClientETD connections.

3.3 IMS eWay Environment Explorer Configuration Parameters

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

3.3.1. TCPIP Configuration

The TCPIP Configuration section contains information for connecting to Portal Infranet. This section contains the following top level parameters:

Port

Description

Specifies the port that IMS Connect is listening on. This parameter is mandatory.

Required Values

- String-set. The number for the port on which IMS Connect is listening.

Server

Description

Specifies the name of the server host. This parameter is mandatory.

Required Values

String-set. The computer name of the server.

3.3.2. IRM Header

The IRM (IMS Request Message) Header section contains the following top level parameters:

- **IRM_CLIENTID** on page 17
- **IRM_DESTID** on page 17
- **IRM_F1 (MFS MOD Names)** on page 18
- **IRM_F2 (COMMIT MODE)** on page 18
- **IRM_F3 (Sync Level)** on page 18
- **IRM_F4 (ACK/NAK/ Response)** on page 19
- **IRM_F5 (Flow Control)** on page 19
- **IRM_ID** on page 20
- **IRM_LEN** on page 20
- **IRM_LTERM** on page 20
- **IRM_RACF_GRNAME** on page 20
- **IRM_RACF_PW** on page 21
- **IRM_RACF_USERID** on page 21
- **IRM_SOCT** on page 21
- **IRM_TIMER** on page 21
- **IRM_TRNCOD** on page 22
- **IRM_TRNCOD_SRC** on page 22

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

IRM_CLIENTID

Description

Specifies the name of the client ID (character string) that is used by IMS Connect. If this string is not supplied from the client, then the user exit must generate it. The client ID is returned to IMS Connect from the exit in the EXIT PARMLIST field, EXPREA_CLID.

Required Values

String-set. A valid client ID used by IMS Connect. The configured default is STCEWAY.

IRM_DESTID

Description

Specifies the Datastore name (IMS destination ID). This field must be specified by the client.

Required Values

String-set. A valid Datastore name/IMS destination ID (character string).

IRM_F1 (MFS MOD Names)

Description

Specifies whether the MFS Message Output Descriptor (MOD) should be returned as part of the output.

- **MFS**: The user requests MFS MOD name to be returned.
- **NO_MFS**: The user requests no MFS MOD name to be returned.

When MFS is specified, a Request Mod Message (RMM) is returned as the first structure of the output message. This structure will have 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.

Required Values

Select one of the two options. The configured default is NO_MFS.

IRM_F2 (COMMIT MODE)

Description

Specifies the **Commit Mode**. If this value is not supplied from the client, the user exit must use a default value.

- **COMMIT_MODE_0**:
- **COMMIT_MODE_1**:

Required Values

Select one of the two options. The configured default is COMMIT_MODE_0.

IRM_F3 (Sync Level)

Description

Specifies the Sync Level. If this value is not supplied from the client, the user exit must use a default value. I

- **SYNC_LEVEL_CONFIRM**: Must be used when the IRM_F2 parameter (commit mode) is set to COMMIT_MODE_0.
- **SYNC_LEVEL_NONE**:

Required Values

Select one of the two options. If COMMIT_MODE_0 (IRM_F2) is used, the Sync level must be SYNC_LEVEL_CONFIRM. The configured default is SYNC_LEVEL_CONFIRM.

IRM_F4 (ACK/NAK/ Response)

Description

Specifies the ACK/NAK/response expression sent to IMS Connect and forwarded to IMS. When the value is received and passed to the user exit, the exit builds the appropriate OTMA structure and returns it to IMS Connect. The ACK/NAK/DEALLOCATE/RESUME [A/N/D/R] must be sent to IMS Connect with no data element.

- **ACK**: Positive acknowledgment, used in response to a message sent to the client where the SYNC level is CONFIRM (SYNC _LEVEL_CONFIRM).

- **NACK**: Negative acknowledgment, used in response to a message sent to the client where the SYNC level is CONFIRM (SYNC _LEVEL_CONFIRM).

- **DEALLOCATE**: Deallocate connection is used to terminate rather than complete the conversation.

- **RESUME**: Resume TPIPE is used to request Asynchronous output data from IMS. (Not yet implemented)

- **SENDONLY**: Send only, used for a non-response transaction and for sending data to IMS.

- **NO_ACK**: No request for acknowledgment or deallocation. When a response mode transaction or conversational transaction is being sent to IMS Connect, IRM_F4 should be set to NO_ACK.

Required Values

Select one of the six options. The configured default is NO_ACK.

IRM_F5 (Flow Control)

Description

Specifies Flow Control properties.

*Note: SeeBeyond recommends using the default value **No_Auto_Flow**. Contact SeeBeyond Support before using any value other than **No_Auto_Flow**.*

- **Client_Headers**: OTMA headers are built by the client.

- **Client_Translation**: Translation is done by the client.

- **Single_Message**: Only one message is returned on receive following the resume tpipe.

- **No_Auto_Flow**: No auto flow of messages (see meaning for No_Auto_Flow_Out).

- **Auto_Flow_Out**: Auto flow of messages. All current messages are returned, one at a time, and the last receive waits for the next message for the IRM_TIMER value. Set the IRM_TIMER to be a large value. Use only if the client is a dedicated output client.

- **No_Auto_Flow_Out**: No auto flow of messages. All current messages are returned, one at a time, and the last receive waits for the next message for the IRM_TIMER

value. Set the IRM_TIMER to be a small value. Use only if the client is a dedicated output client. This value is similar to Auto_Flow_Out, as described above, except that the IRM_TIMER will cause the last receive to terminate.

Required Values

The recommended setting is No_Auto_Flow (default).

IRM_ID

Description

Specifies the identifier (character string) of the user exit that is to be driven after the complete message has been received. The IMS Connect-supplied user message exits reserve and use these IDs:

- *IRMREQ* for HWSIMSO0
- *SAMPLE* for HWSSMPL0

Required Values

String-set. One of the three identifier character strings. The configured default is *SAMPLE*.

IRM_LEN

Description

Specifies the length of the IRM structure. The minimum size of the IRM for user written exits is 32. HWSIMSO0 and HWSSMPL0 have a minimum IRM length of 80.

Required Values

String-set. A valid IRM structure length. The configured default is 80.

IRM_LTERM

Description

Specifies the IMS LTERM override. This field can be set to a valid name or to blanks.

Required Values

String-set. A valid LTERM name or blanks.

IRM_RACF_GRNAME

Description

Specifies the RACF Group Name. The client must provide the RACF group name if RACF is to be used.

Required Values

String-set. A valid RACF group name.

IRM_RACF_PW

Description

Specifies the RACF PASSTICKET. The client must provide the RACF PASSTICKET if RACF is to be used.

Required Values

String-encrypt. A valid RACF PASSTICKET.

IRM_RACF_USERID

Description

Specifies the RACF User ID. The client must provide the RACF user ID if RACF is to be used.

Required Values

String-set. A valid RACF user ID.

IRM_SOCT

Description

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.

Note: *This socket type is not recommended when implementing conversational transactions due to the multiple connects and disconnects that would occur as a result.*

IRM_TIMER

Description

Specifies the time delay for the receive to the datastore after an ACK.

- **.25 SEC**: .25 seconds.
- **No_Wait**: Does not set the timer (no wait occurs).
- **Block**: The receive waits indefinitely.

Required Values

Select one of the three options. The configured default is .25 SEC.

Required Values

Select one of the three options. The configured default is Transaction.

IRM_TRNCOD

Description

Specifies the default IMS transaction code.

Required Values

String-set. A valid transaction code.

IRM_TRNCOD_SRC

Description

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.

Required Values

Select one of the two options. The configured default is CFG.

Using the IMS eWay With eInsight

This chapter describes how to use the IMS eWay with ICAN 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.*

Chapter Topics

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 the following:

- 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. Then, when 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 Explorer and drag it onto the eInsight Business Process Designer canvas.

The IMS eWay has the following operators available:

- IMSRequest

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 IMS eWay Considerations

The following items must be considered when implementing an IMS eWay project:

- The following error message may appear in the mainframe log, even when the IMS eWay runs successfully:

    HWSP1435E Socket closed; Request message incomplete; M=SDRC

    This is an erroneous error message that originates from IBM's IMS Connect program. The error message is resolved by the following PTFs from IBM:

    - PQ53848 (UQ68076) for IMS Connect 1.1
    - PQ62496 (UQ68078) for IMS Connect 1.2.

4.4 IMS eWay eInsight Sample Project

The following IMS eInsight Business Process sample carries out the same tasks as the IMS_Collab Collaboration used in IMS_BP_Sample sample project.

To create a sample project using a IMS eInsight Business Process, follow the directions for the IMS_BP_Sample sample project (see **The IMS_JCE_Sample Project** on page 40), but rather than creating and inserting the Java Collaboration, simply drag and drop the completed Business Process into the Connectivity Map, substituting it for the **IMS_Collab** Collaboration used in the existing project (see **Creating Collaboration Bindings** on page 47). Then complete and run the project as directed

4.5 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 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 (for this sample, **IMS_BP_Sample.zip**) 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 32)

  ◆ Configure the eWays properties for your specific system (see **Configuring the eWays** on page 33)

  ◆ Create a **Deployment Profile** (see **Creating and Activing the Deployment Profile** on page 35)

The following pages provide step by step directions for manually creating the IMS_BP_Sample project.

4.6 The IMS_BP_Sample Project

The **IMS_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 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.

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

4.6.1. Creating a Project

The first step is to create a new project in the SeeBeyond 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 5). A new project (Project1) appears on the Project Explorer tree.

Figure 5 Enterprise Explorer - New Project
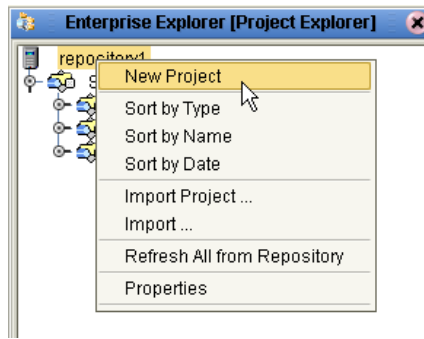
3 Click twice on **Project1** and rename the project (for this sample, **IMS_BP_Sample**).

4.6.2 Creating a Business Process

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

Creating the Business Process Flow

1 Right-click an existing project (for this sample **IMS_BP_Sample**) in the Enterprise Designer's Project Explorer, and select **New** > **Business Process** from the shortcut menu. The eInsight Business Process Designer appears and **IMS_BP** is added to the Project Explorer tree.

2 From the Project Explorer tree, expand the SeeBeyond > eWays > IMSeWay > IMS_eWay, and File > FileClient nodes.

3 Populate the eInsight Business Process Designer's modeling canvas with the following activities from the Project Explorer tree, as displayed in Figure 6:

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

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

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

Figure 6   eInsight Business Process Designer - Populate the Canvas
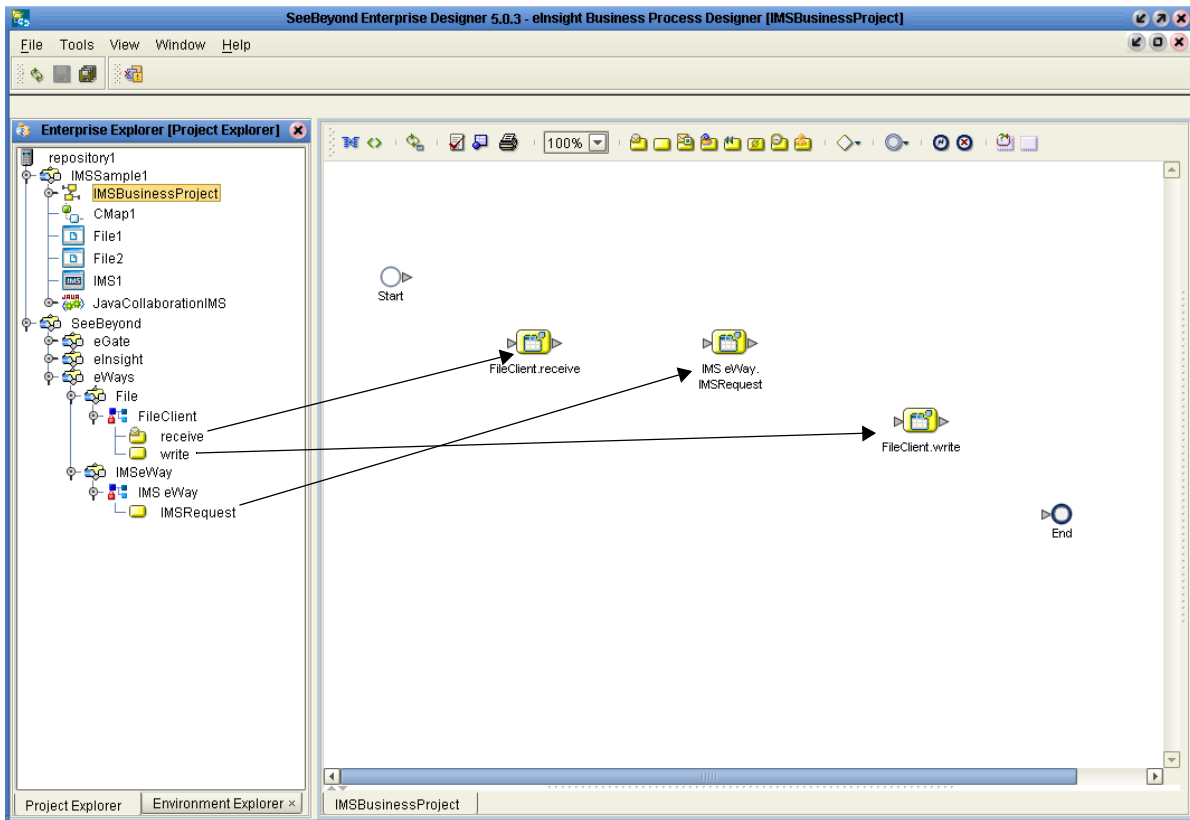
4   Link the modeling elements by clicking on the element's connector and dragging the cursor to the next element's connector, making the following links as displayed in Figure 7.

- ◆ Start -> FileClient.receive

- ◆ FileClient.receive -> IMS_eWay.IMSRequest

- ◆ IMS_eWay.IMSRequest ->FileClient.write

- ◆ FileClient.write -> End

Figure 7   eInsight Business Process Designer - Link the Modeling Elements
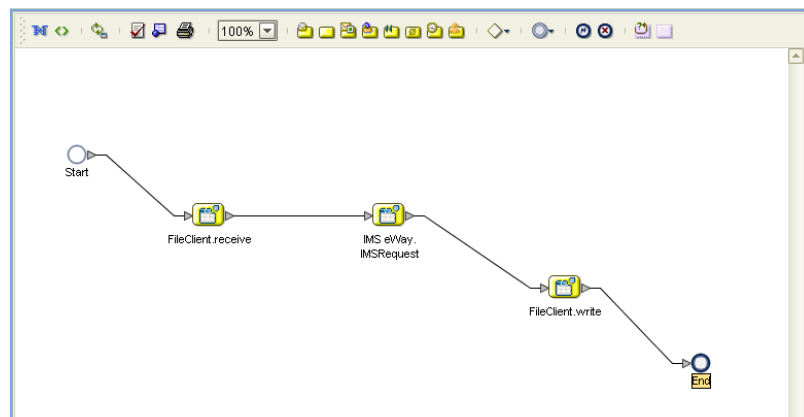
Configuring the Modeling Elements

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.execute** Activities and select **Add Business Rule** from the shortcut menu.

2 Repeat step 1 for the link between **IMS_eWay.execute** and **JMS.send** (see Figure 8).

Figure 8 eInsight Business Process Designer - Adding Business Rules
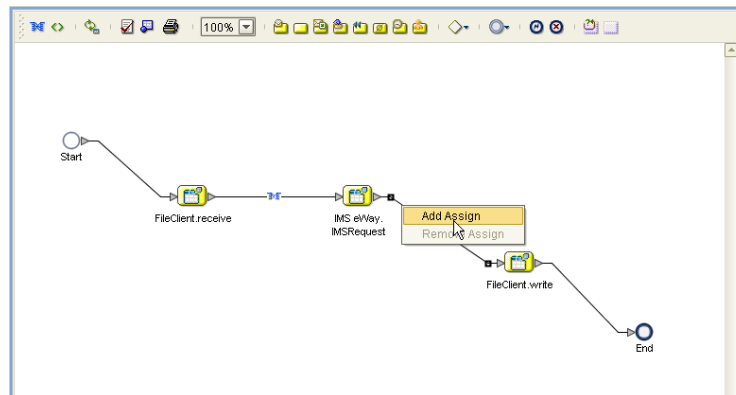
Using the Business Rules Designer

1 From the eInsight Business Process Designer toolbar, click the **Map Business Process Attributes** 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 from **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 9).

Figure 9 eInsight Business Rules Designer
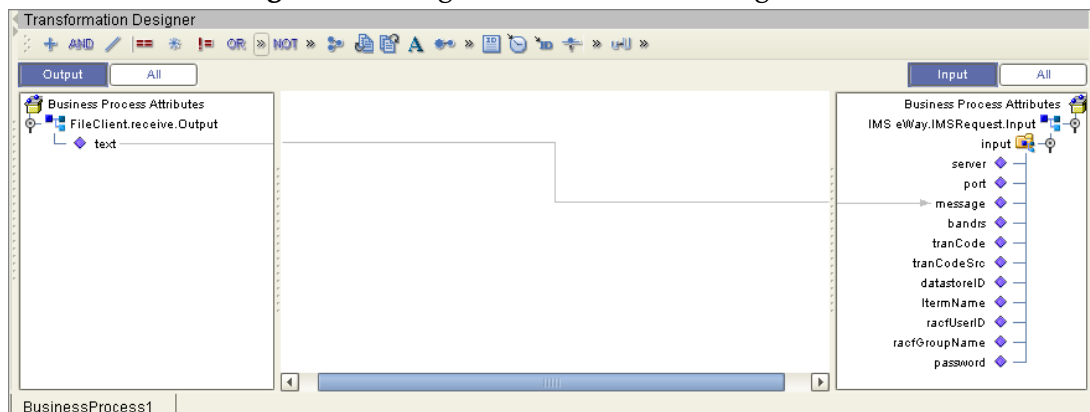
4 From the Enterprise Explorer, right-click the Repository and select **Save Changes into Repository** from the shortcut menu, to save your current changes.

5 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.

6 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 10 on page 29**.

Figure 10 eInsight Business Rules Designer
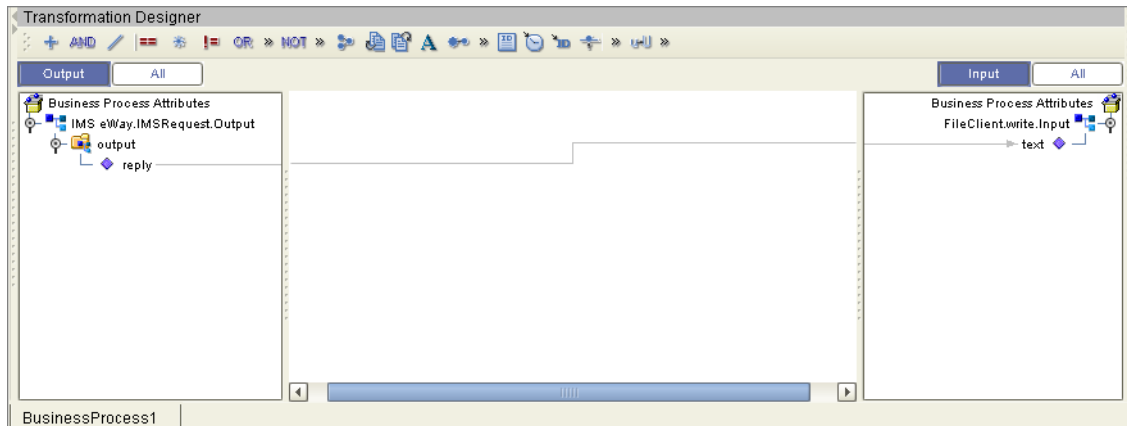
7 When the Business Process is complete, from the eInsight Business Process Designer toolbar, click the **Synchronize Graphical Model and Business Process** icon to synchronize the graphical interface to the Business Process code.

8 Save your current changes to the Repository.

4.6.3 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 **IMS_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 **IMS_BP_Sample_CM**.

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 11 on page 30**).

Figure 11 Connectivity Map - External Applications
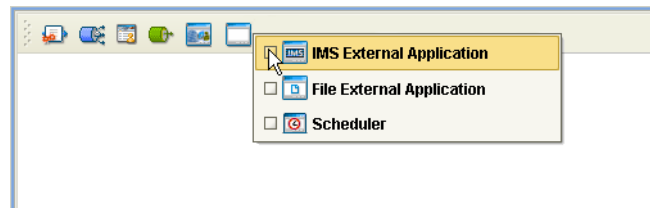
1 Click the **External Application** icon on the Connectivity Map toolbar,

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 12:

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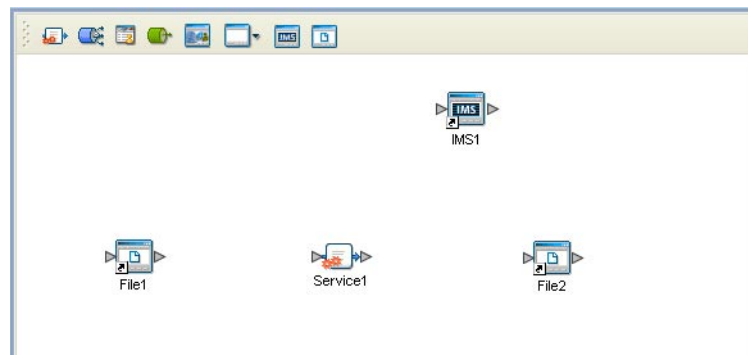
2 Rename the Connectivity Map objects by right-clicking the object's name, selecting **Rename** from the shortcut menu, and typing the new name. Rename the objexts as follows:

- ◆ **File1** to **FileIn**

- ◆ **Service1** to **IMSBP**

- ◆ **File2** to **FileOut**

3 Save your current changes to the Repository.

4.6.4. **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 **IMS_BP_Sample_CM**. The Enterprise Designer canvas now displays the Connectivity Map.

2 Drag and drop the **IMS_BP** Business Process from the Project Explorer onto the Service (**IMSBP**). If the Business Process was successfully associated, the Service's icon changes to a Business Process icon (see Figure 13).

Figure 13 Connectivity Map - Binding the eWay Components
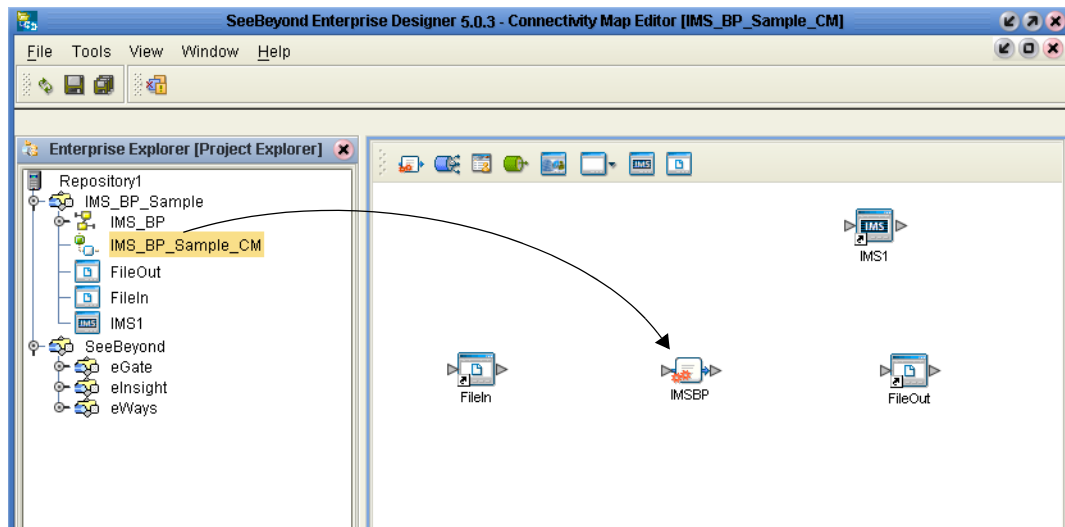
3 Double-click **IMSBP**. The **IMSBP Binding dialog box** appears using the **IMS_BP** Rule.

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

5 From the **IMSBP** Binding dialog box, drag **IMS_Receiver** (under Invoked Services) to the **IMS1** External Application.

6 From the **IMSBP** Binding dialog box, drag **FileReceiver** to the **FileOut** External Application (see **Figure 14 on page 32**). Minimize the **IMSBP** Binding dialog box by clicking the chevrons in the upper-right corner.

Figure 14 Connectivity Map - Associating (Binding) the Project's Components
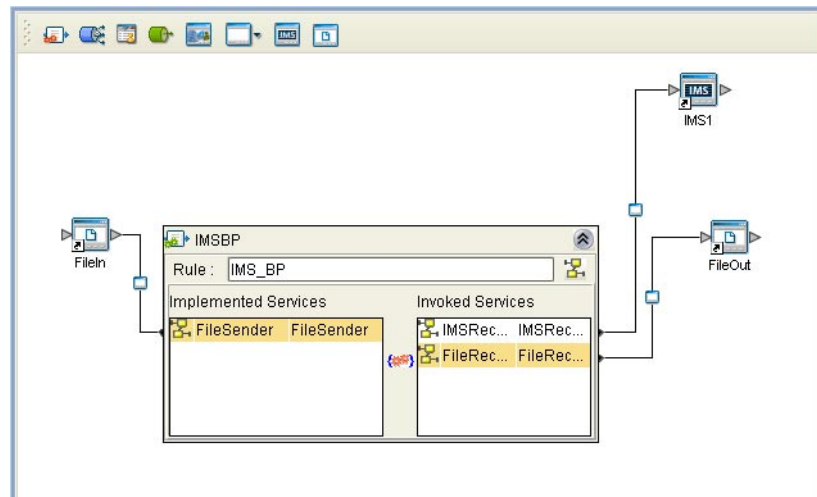
7   Save your current changes to the Repository.

4.6.5. 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 **FileExtSysIn** and select **Inbound File eWay** as the **External System Type**. Click **OK**. **FileExtSysIn** is added to the Environment Editor.

6   Right-click **IMS_BP_Sample_ENV** and select **New File External System**. Name this External System **FileExtSysOut** and select Outbound File eWay as the **External System Type**. **FileExtSysOut** is added to the Environment Editor.

7   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.

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

9 Save changes to the repository. The Environment Explorer and Environment Editor now appear as displayed in **Figure 15 on page 33**.

Figure 15 Environment Editor
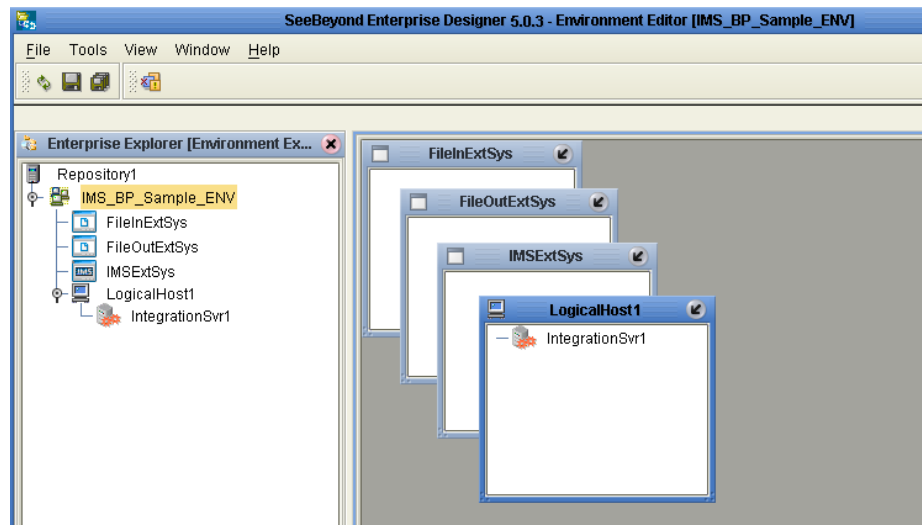
4.6.6. Configuring the eWays

The IMS_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 16). eWays facilitate communication and movement of data between the external applications and the eGate system.

Figure 16 eWays
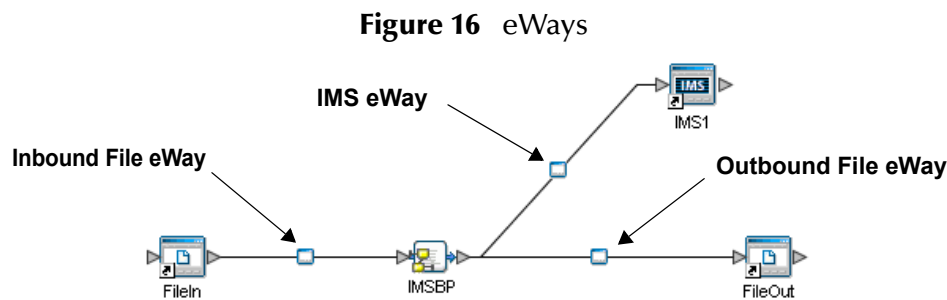
The File eWay properties are configured from the Connectivity Map. The IMS eWay properties are set from both the Project Explorer's Connectivity Map and the Environment Explorer. To configure the eWays do the following:

Configuring the File eWays

1 Double-click the inbound **File eWay**, select **Inbound File eWay** in the Templates dialog box and click **OK**.

2 The **Properties Sheet** opens to the inbound File eWay properties. Modify the properties for your system, including the settings for the inbound File eWay in Table 1, and click **OK**.

Table 1   Inbound File eWay Settings

Inbound eWay Connection Parameters	
Directory	C:/temp
Input file name	Input*.txt

3 In the same way, modify the outbound File eWay configuration for your system, including the settings in Table 2, and click **OK**.

Table 2   Outbound File eWay Settings

Outbound eWay Connection Parameters	
Directory	C:/temp
Output file name	output%.dat

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 Sheet, see **Configuring the eWay Properties** on page 12 or see the *eGate Integrator User's Guide*.

For the IMS_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 Sheet** opens to the IMS eWay project configuration properties.

2 Modify the IMS eWay (Project Explorer) configuration for your system, including the settings in **Table 3 on page 34**, and click **OK**.

Table 3   IMS Project Explorer eWay Settings

IMS eWay Connectivity Map Properties	
Connector Set as directed, otherwise use the default settings	
Class	com.stc.eways.IMS.IMSClientConnector
Property.Tag	The data source
Type	IMSClientETD

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 Sheet** opens to the IMS eWay Environment Explorer properties.

2 Modify the IMS eWay Environment Explorer properties for your system, including the settings in Table 4, and click **OK**.

Table 4 IMS Environment Explorer eWay Settings

IMS eWay Environment Explorer Properties	
TCPIP Configuration Set as directed, otherwise use the default settings	
Port	*7777*
Server	*Server host name*
IRM Header Set as directed, otherwise use the default settings.	
IRM_CLIENTID	*The name of the client ID that is used by IMS Connect*
IRM_DESTID	*The Datastore name*
IRM_RACF_GRNAME	*The RACF group name - if RACF is to be used*
IRM_RACF_PW	*The RACF PASSTICKET - if RACF is to be used*
IRM_RACF_USERRID	*The RACF user ID - if RACF is to be used*

4.6.7 Creating and Activing the Deployment Profile

A Deployment Profile is used to assign Collaborations and message destinations to the integration server and JMS IQ Manager. Deployment profiles are created using the Deployment Editor.

To create the IMS_BP_Sample Deployment Profile do the following:

1   From the Enterprise Explorer's Project Explorer, right-click the project (**IMS_BP_Sample**) and select **New** > **Deployment Profile** from the shortcut menu.

2   Enter a name for the Deployment Profile (for this sample **IMS_BP_Sample_DP**). Make sure that the selected Environment is **IMS_BP_Sample_ENV**. Click **OK**. The Deployment Profile Editor appears.

3   From the left pane of the Deployment Editor, drag the **FileIn -> IMSBP** (external application) object to the **FileExtSysIn** window.

4   Drag the **IMSBP -> FileOut** (external application) object to the **FileExtSysOut** window.

5   Drag the **IMSBP -> IMS1** (external application) to the **IMSExtSys** window.

6   Drag the **IMSBP** Business Process to **IntegrationSvr1** in the **LogicalHost1** window (see Figure 17).

Figure 17   Deployment Profile
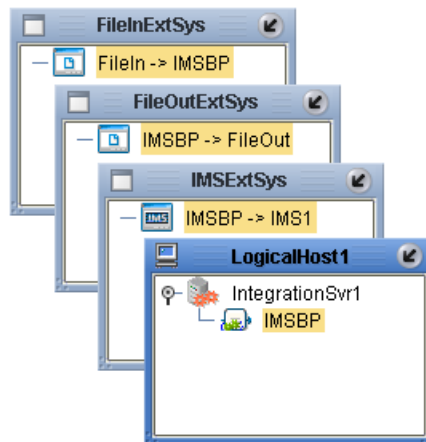
7   Click **Activate**. When activation succeeds, save the changes to the Repository.

4.6.8. **Running the Project**

The following directions assume that the Enterprise Designer was downloaded to C:\ican50. If this is not the case, replace that location in the following directions with the appropriate location.

1   From the Enterprise Manager Downloads tab, double-click **Logical Host - for win32**.

2   Extract the file to the **C:\ican50\logicalhost1** directory. You must specify the **logicalhost1** directory for it to be created.

3   Navigate to the **C:\ican50\logicalhost1\logicalhost\bootstrap\config** directory and open the logical-host.properties file using Notepad™.

4   Enter and save the following information in the appropriate fields:

- Logical Host root directory: **C:\ican50\logicalhost1\logicalhost**
- Repository URL: **http://localhost:***port number/repository name*
- Repository user name and password: *Your user name and password*
- Logical Host Environment name: **IMS_BP_Sample_Env**
- Logical Host name: **logicalhost1**

Save your changes to **logical-host.properties** and close the file.

5   Run the **bootstrap.bat** file located in the **C:\ican50\logicalhost1\logicalhost\bootstrap\bin** directory.

6   Copy the sample input data file to the input directory.

4.7   Alerting and Logging

eGate provides an alerting and logging feature. This allows monitoring of messages, and captures any adverse messages in order of severity based on configured severity level and higher. To enable Logging, please see the *eGate Integrator User's Guide*.

Note: The alerts/status notifications for the IMS eWay are currently limited to Started, Running, Stopping, and Stopped.

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 SeeBeyond Enterprise Designer. For more information on creating an eGate project see the *eGate Tutorial* and the *eGate Integrator User's Guide*.

Chapter Topics

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 connecting with a specific external system. These parameters are set using the Properties Sheet. For more information about the IMS eWay properties File and the Properties Sheet see **Creating and Configuring the IMS eWay** on page 12.

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.

5.2   IMS eWay Considerations

The following items must be considered when implementing an IMS eWay project:

- The following error message may appear in the mainframe log, even when the IMS eWay runs successfully:

  HWSP1435E Socket closed; Request message incomplete; M=SDRC

  This is an erroneous error message that originates from IBM's IMS Connect program. The error message is resolved by the following PTFs from IBM:

  - PQ53848 (UQ68076) for IMS Connect 1.1
  - PQ62496 (UQ68078) for IMS Connect 1.2.

5.3   IMS eWay Sample Projects

Two sample projects are provided in the following section that demonstrate how the eWay components are created and implemented in a production environment.

- **The IMS_JCE_Sample Project** on page 40, demonstrates connectivity with an IMS system.
- **The IMS_MFS_Sample Project** on page 54, demonstrates the IMS MFS Builder.
- **The MFS_IMS_Sample Project** on page 63, demonstrates the use of the MFS OTD to compose IVTNO transaction messages.

5.4   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 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 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 (for this sample, **IMS_JCE_Sample.zip**) 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 49)

◆ Configure the eWays for your specific system (see **Configure the eWays** on page 50)

◆ Create a **Deployment Profile** (see **Creating and Activating the Deployment Profile** on page 52)

5.5 The IMS_JCE_Sample Project

The **IMS_JCE_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.

5.5.1. 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 18). A new project (Project1) appears on the Project Explorer tree.

Figure 18 Enterprise Explorer - New Project
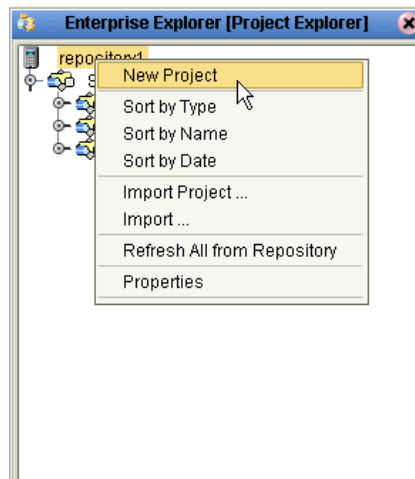
3 Click twice (not double-click) on **Project1** and rename the project (for this sample, **IMS_JCE_Sample**).

5.5.2 **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 **IMS_JCE_Sample_CM**.

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 19). The IMS External Application icon is then added to the Connectivity Map toolbar.

Figure 19 Connectivity Map - External Applications
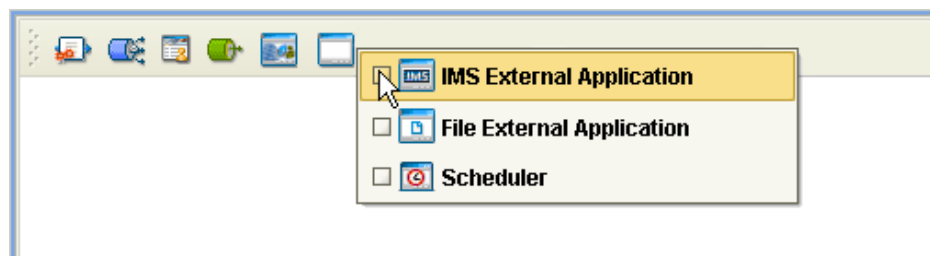
To add the External Applications used with the IMS_JCE_Sample project, do the following:

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 20 on page 42**:

- ◆ File External System (2)

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

- ◆ IMS External System

Figure 20 Connectivity Map with Components
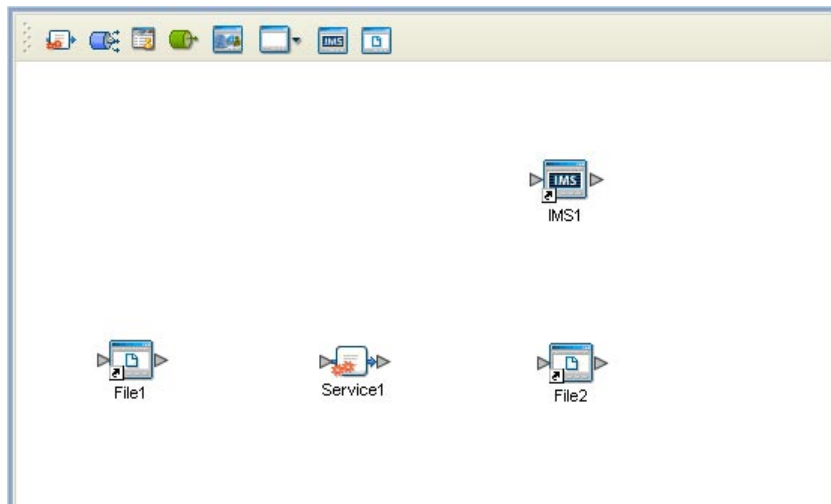
2 Rename the objects by right-clicking the object, selecting **Rename** from the shortcut menu, and typing in the new name. Change the names as follows:

- **File1** to **FileIn**
- **Service1** to **IMS_Service**
- **File2** to **FileOut**
- **IMS1** to **IMS**

3 Save your current changes to the Repository.

5.5.3. 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 IMS_Collab 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 **IMS_JCE_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 sample, **IMS_Java_Collab**) and click Next.

3 For Step 2 of the wizard, **Select a Web Services Operation**, Double-click **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 **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 **SeeBeyond** > **eWays** > **File** > **FileClient**. The **FileClient** OTD is added to the Selected OTDs field (see Figure 21).

Figure 21 Collaboration Definition Wizard (Java) - Select OTDs
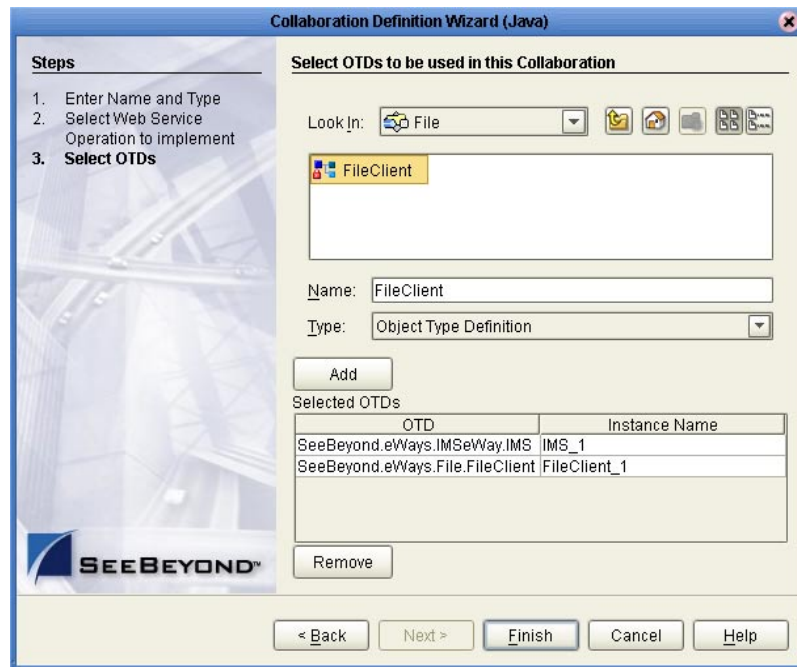
6 Click **Finish**. The Collaboration Editor (Java) appears in the left pane of the Enterprise Designer and the **IMS_Java_Collab** is added to the Project Explorer tree.

5.5.4. 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 careful to open all nodes specified in the directions to connect to the correct item. The **IMS_Java_Collab** Collaboration contains the Business Rule displayed in Figure 22.

Figure 22 IMS_Java_Collab Collaboration Business Rules
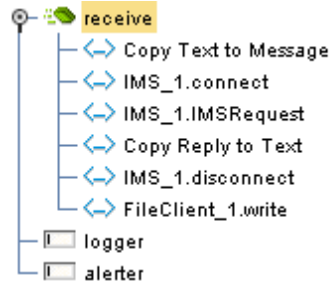
A To create the **IMS_Java_Collab** Collaboration Business Rules do the following:

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

7 To create the **Copy Text to Message** Business Rule do the following:

A Map **Text**, under **input** in the left pane of the Business Rules Designer, to **Message**, under **IMS_1** in the right pane of the Collaboration Editor. To do this, click on **Text**, under **input** in the left pane of the Business Rules Designer, and drag the cursor to **Message**, under **IMS_1** in the right pane of the Collaboration Editor.

B An arrow appears from **Text** to **Message** in the Business Rules Designer pane and **Copy Text to Message** appears as a Business Rule in the Business Rules pane (see Figure 23).

Figure 23 Copy Text to Message Business Rule
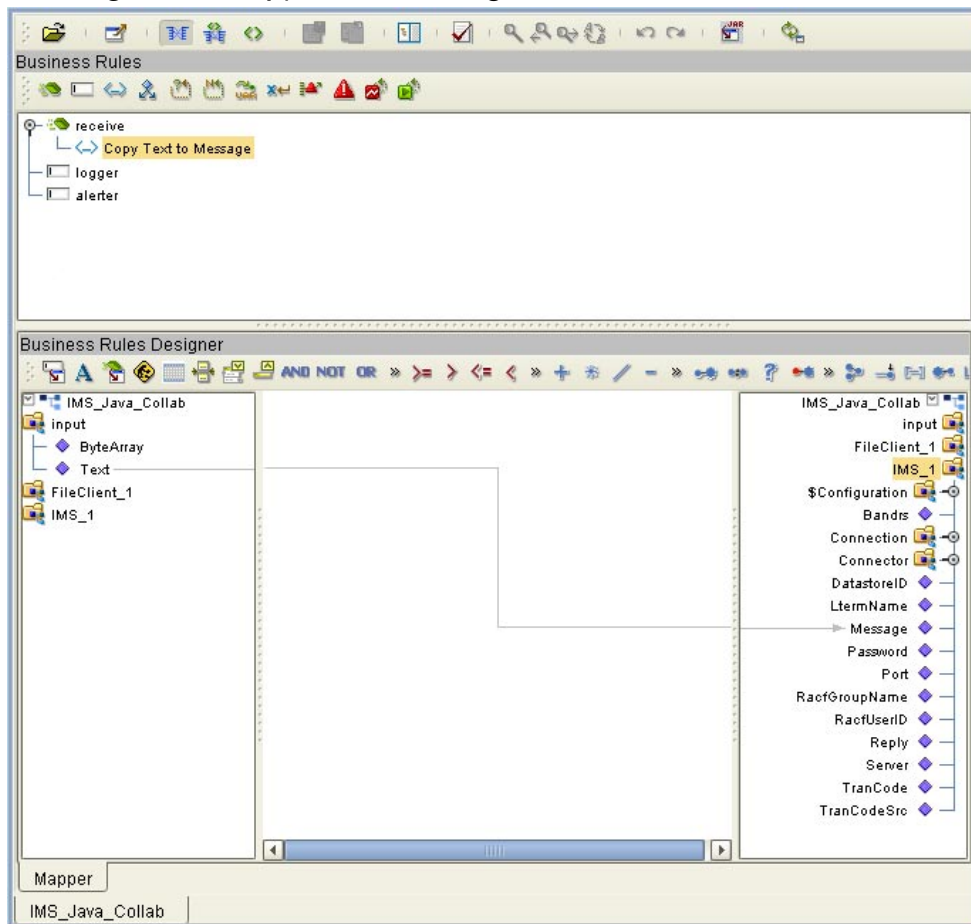
8   To create the **IMS_1.connect** Business Rule do the following:

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 **connect()** from the method selection box. The **connect** method box appears in the Business Rules Designer canvas (see Figure 24).

Figure 24   IMS_1.connect Business Rule
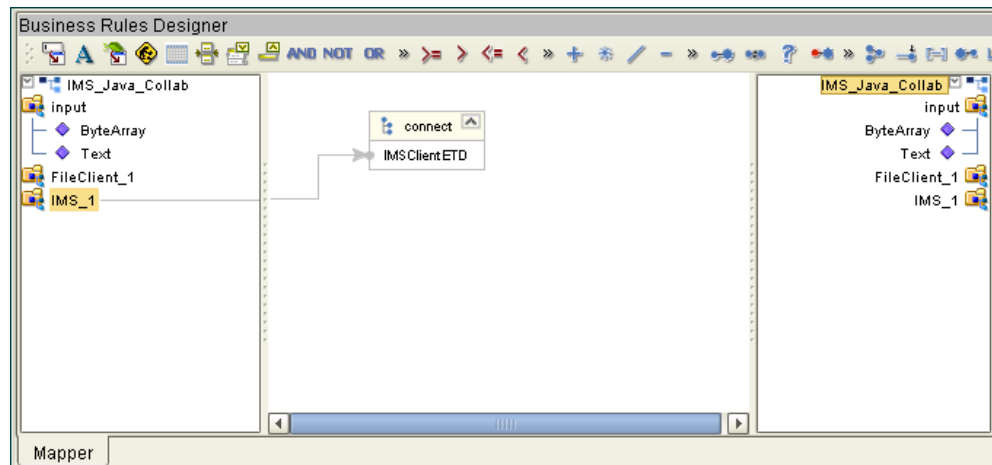
9   To create the **IMS_1.IMSRequest** Business Rule do the following:

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.

10   To create the **Copy Reply to Text** Business Rule do the following:

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

B   Map **Reply**, under **IMS_1** in the left pane of the Business Rules Designer, to **Text**, under **FileClient_1** in the right pane of the Collaboration Editor.

11   To create the **IMS__1.disconnect** Business 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

12   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 25).

Figure 25   FileClient_1.write Business Rule
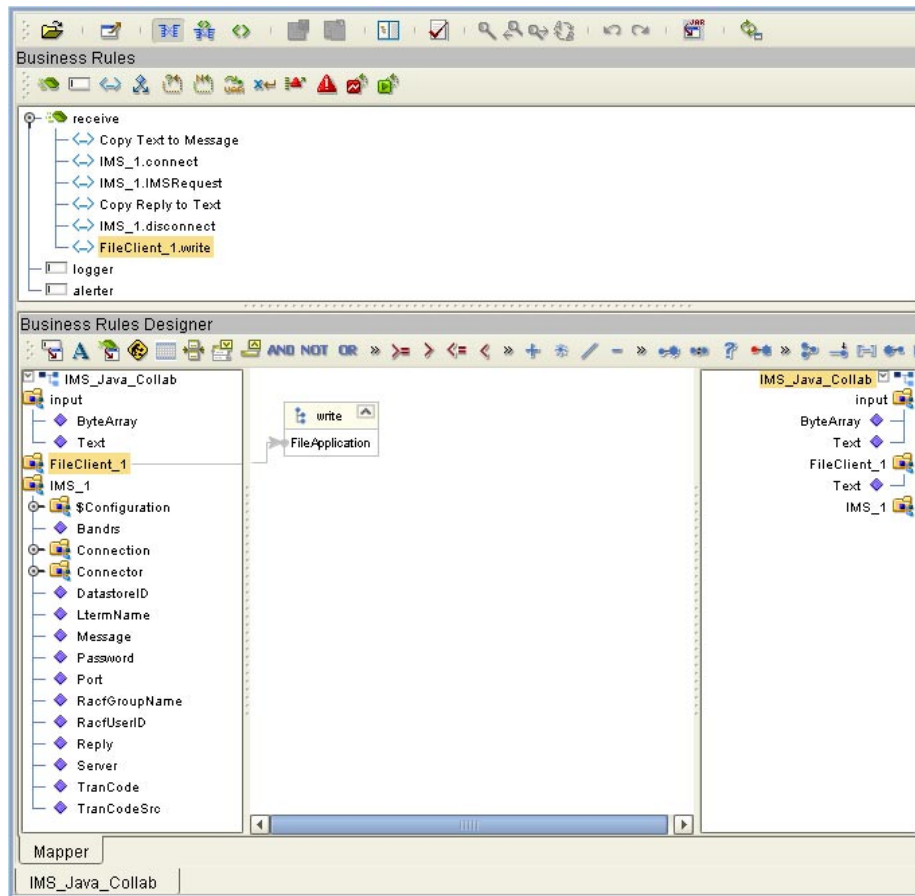
13   Save your current changes to the Repository.

5.5.5. 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 **IMS_JCE_Sample_CM** to display the Connectivity Map.

2   Drag and drop the **IMS_Java_Collab** Collaboration from the Project Explorer tree to the **IMS_Service**. If the Collaboration is successfully associated, the Service icon's "gears" change from red to green (see Figure 26).

Figure 26 Connectivity Map - Binding the Collaborations
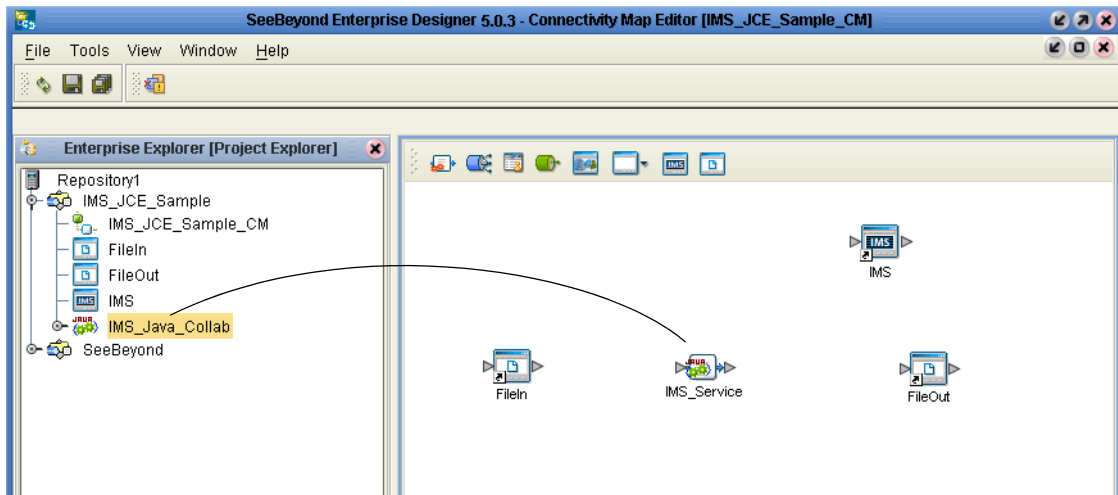
3   Double-click **IMS_Service** in the Connectivity Map. The **IMS_Service** Binding dialog box appears.

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

6   From the **IMS_Service** Binding dialog box, map **FileClient_1 FileClient_1** to the **File2** External Application (see **Figure 27 on page 48**).

Figure 27 Connectivity Map - Connecting the Project's Components
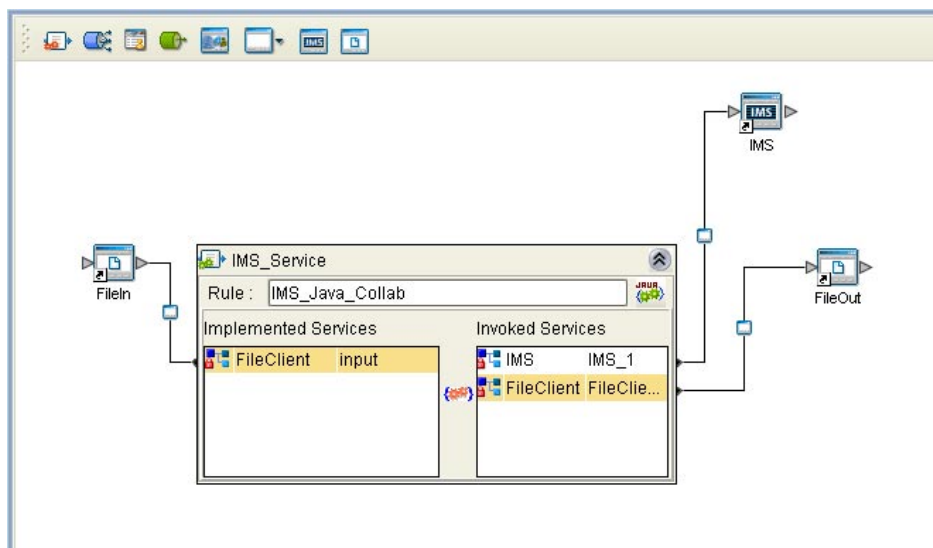
7   Minimize the **IMS_Service** Binding dialog box, and save your current changes to the Repository.

5.5.6. **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. 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_JCE_Sample_Env**.

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

5 Right-click **IMS_JCE_Sample_Env** and select **New File External System**. From the **Create an External System** dialog box, enter **FileExtSysIn** as the name and select **Inbound File eWay** as the type. Click **OK**. **FileExtSysIn** is added to the Environment Editor.

6 Right-click **IMS_JCE_Sample_Env** and select **New File External System** again. Enter **FileExtSysOut** as the name and select **Outbound File eWay** as the type. **FileExtSysOut** is added to the Environment Editor.

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

8 From the Environment Explorere tree, right-click **LogicalHost1** and select **New SeeBeyond Integration Server** from the shortcut menu. A new Integration Server (**IntegrationSvr1**) is added to the Environment Explorer tree under LogicalHost1 (see **Figure 28 on page 49**).

Figure 28   Environment Editor
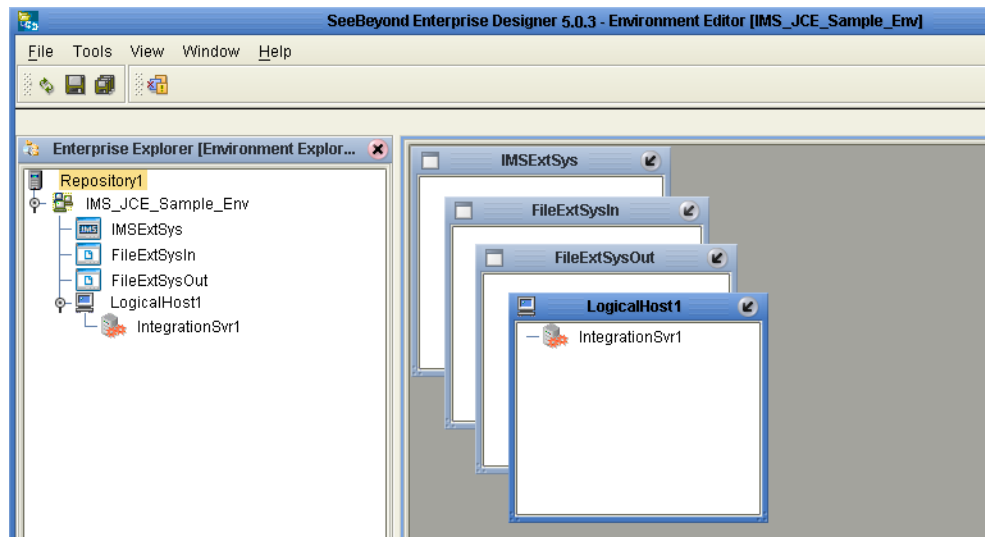
9 Save your current changes to the Repository.

5.5.7. **Configure the eWays**

The IMS_JCE_Sample project uses three eWays, each represented in the Connectivity Map as a node between an External Application and the Collaboration (see Figure 29). eWays facilitate communication and movement of data between the External Applications and the eGate system.
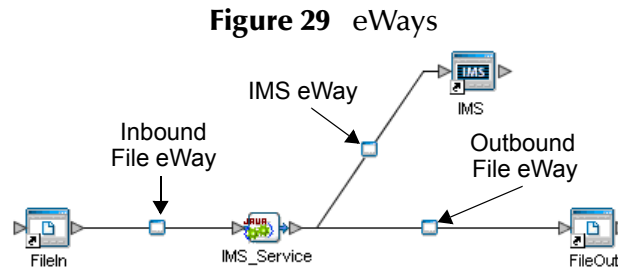
Figure 29   eWays

Configuring the File eWays

1 Double-click the **inbound File eWay** (see Figure 29). The Templates dialog box appears. Select **Inbound File eWay** in the Templates dialog box and click **OK**.

2 The Properties Sheet opens to the inbound File eWay properties. Modify the properties for your system, including the settings in Table 5, and click **OK**. The properties settings are saved for the eWay.

Table 5   Inbound File eWay Settings

Inbound eWay Configuration Parameters	
Directory	C:/temp
Input file name	Input*.txt

3 Double-click the **outbound File eWay** located between **IMS_Service** and the outbound **File2** External Application, and select **Outbound File eWay**. Modify the outbound File eWay configuration for your system, including the settings in Table 6, and click **OK**.

Table 6   Outbound File eWay Settings

Outbound eWay Configuration Parameters	
Directory	C:/temp
Output file name	output%.dat

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 Sheet, see **Creating and Configuring the IMS eWay** on page 12, or see the *eGate Integrator User's Guide*.

Modifying the IMS eWay Connectivity Map Properties

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

2 Modify the **IMS** eWay (Project Explorer) properties for your system, including the settings in Table 7, and click **OK**.

3 Double-click the **IMS eWay** located between **IMS_Service** and the **IMS1** External Application. Modify the IMS eWay configuration for your system, including the settings in Table 7, and click **OK**.

Table 7 IMS eWay Project Explorer Configuration Settings

IMS eWay (Project Explorer) Configuration Parameters	
Connector Set as directed, otherwise use the default settings	
class	com.stc.eways.ims.IMSClientETDConnector
type	IMSClientETD

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 Sheet opens to the IMS eWay environment-configuration properties.

2 Modify the IMS eWay environment-configuration for your system, including the settings in Table 8, and click **OK**.

Table 8 IMS eWay Environment Explorer Configuration Settings

| IMS eWay (Environment Explorer) Configuration Parameters	
TCPIP Configuration Set as directed, otherwise use the default settings	
Port	*7777*
Server	*Server name*
IRM Header Settings Set as directed, otherwise use the default settings.	
IRM_RACF_GRNAME	*The RACF group name - if RACF is to be used*
IRM_RACF_PW	*The RACF PASSTICKET - if RACF is to be used*
IRM_RACF_USERRID	*The RACF user ID - if RACF is to be used*

5.5.8 Creating and Activating the Deployment Profile

Deployment Profiles are specific instances of a project in a particular Environment. A Deployment Profile is created using the Enterprise Designer's Deployment Editor.

To create the IMS_JCE_Sample_DP Deployment Profile do the following:

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

2 From the **Create Deployment Profile for IMS_JCE_Sample** dialog box, enter a name for the Deployment Profile (for this sample **IMS_JCE_Sample_DP**), and select **IMS_JCE_Sample_Env** as the Environment. Click **OK**.

3 From the left pane of the Deployment Editor, drag **IMS_Service -> IMS** to the **IMSExtSys** window.

4 From the left pane of the Deployment Editor, drag **FileIn -> IMS_Service** to the **FileExtSysIn** window.

5 From the left pane of the Deployment Editor, drag **IMS_Service -> FileOut** to the **FileExtSysOut** window.

6 Drag **IMS_Service** to **IntegrationSvr1** in the **LogicalHost1** window (see **Figure 30 on page 52**).

Figure 30 Deployment Profile
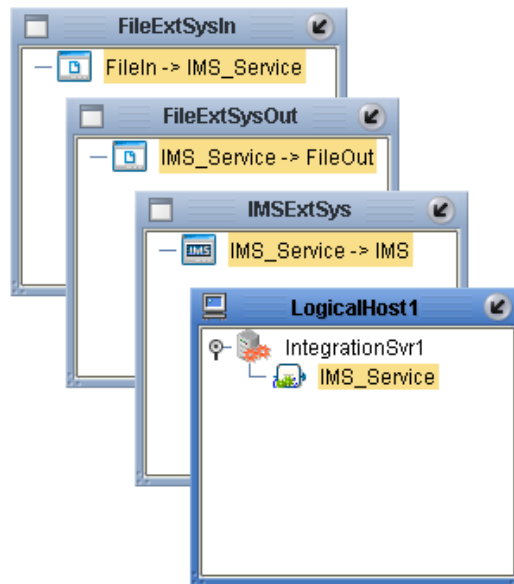
7 Click **Activate**, then save the changes to the Repository.

5.5.9. Running the Project

The following directions assume that the Enterprise Designer was downloaded to C:\ican50. If this is not the case, replace that location in the following directions with the appropriate location.

1 From the Enterprise Manager Downloads tab, double-click **Logical Host - for win32**.

2 Extract the file to the **C:\ican50\logicalhost2** directory. You must specify the **logicalhost2** directory for it to be created.

3 Navigate to the **C:\ican50\logicalhost2\logicalhost\bootstrap\config** directory and open the logical-host.properties file using Notepad™.

4 Enter and save the following information in the appropriate fields:

   ◆ Logical Host root directory: **C:\ican50\logicalhost2\logicalhost**

   ◆ Repository URL: **http://localhost:***port number/repository name*

   ◆ Repository user name and password: *Your user name and password*

   ◆ Logical Host Environment name: **IMS_JCE_Sample_Env**

   ◆ Logical Host name: **logicalhost2**

   Save your changes to **logical-host.properties** and close the file.

5 Run the **bootstrap.bat** file located in the **C:\ican50\logicalhost2\logicalhost\bootstrap\bin** directory.

6 Copy the sample input data file to the input directory.

5.5.10 Alerting and Logging

eGate provides an alerting and logging feature. This allows monitoring of messages, and captures any adverse messages in order of severity based on configured severity level and higher. To enable Logging, please see the *eGate Integrator User's Guide*.

Note: *The alerts/status notifications for the IMS eWay are currently limited to Started, Running, Stopping, and Stopped.*

5.6 The IMS_MFS_Sample Project

The IMS_MFS_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. 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, **IMS_MFS_Sample**).

5.6.2 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 **IMS_MFS_Sample_CM**.

Select the External Applications

For this sample, 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.
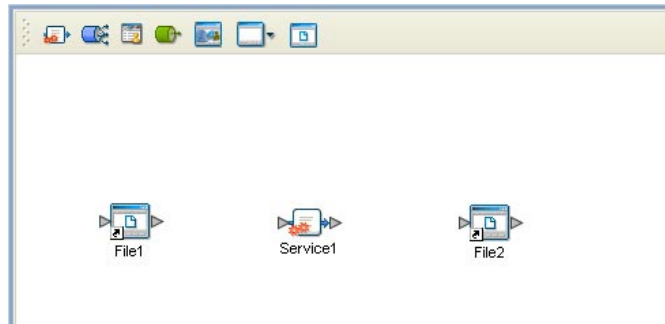
Populate the Connectivity Map

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 sample, add the following components to the Connectivity Map canvas as displayed in **Figure 31 on page 55**:

♦ File External System (2)

♦ Service

**Figure 31**   Connectivity Map with Components

2 Save your current changes to the Repository.

5.6.3. **Create an OTD Using the IMS MFS Wizard**

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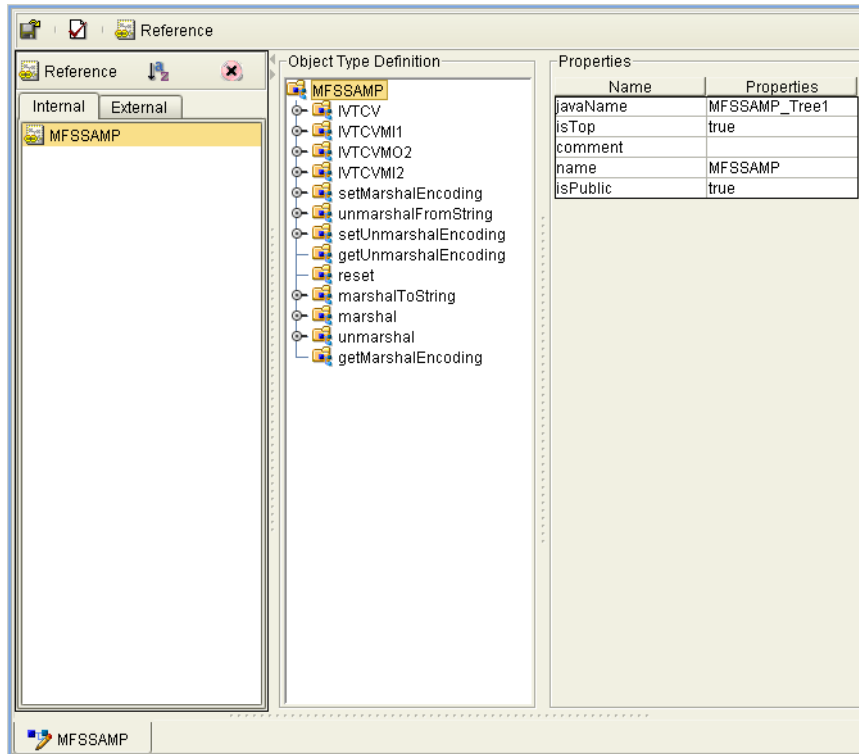
1 From the Project Explorer tree, right-click the **IMS_MFS_Sample** project and select **New** > **Object Type Definition** from the shortcut menu. The **Object Type Definition Wizard** appears.

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

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 32).

Figure 32   IMS MFS Wizard - Select MSF file
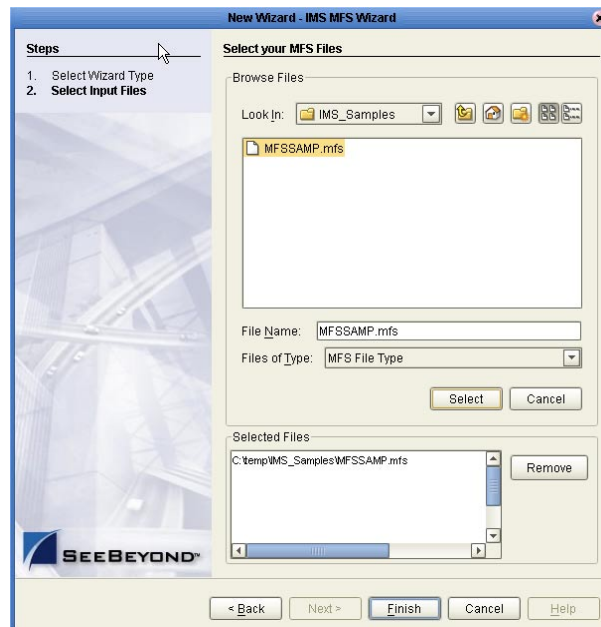
4   Click Finish and save your changes to the Repository. The OTD Editor now displays the successfully created MFSSAMP OTD and the OTD is added to the Project Explorer tree (see Figure 33).

Figure 33   OTD Editor - MFSSAMP OTD

5.6.4. 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.
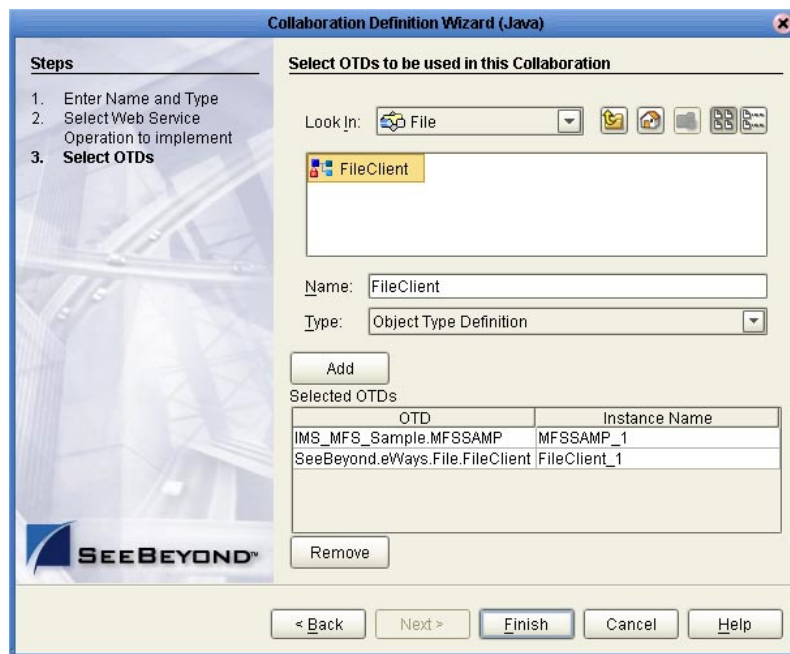
The JavaCollaborationMFS Collaboration

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 sample **JavaCollaborationMFS**) and click **Next**.

3   For Step 2 of the wizard, **Select a Web Services Operation**, double-click **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** > **MFSSAMP.** The **MFSSAMP** 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 **SeeBeyond** > **eWays** > **File > FileClient.** The **FileClient** OTD is added to the Selected OTDs field (see Figure 34).

Figure 34   Collaboration Definition Wizard (Java) - Select OTDs

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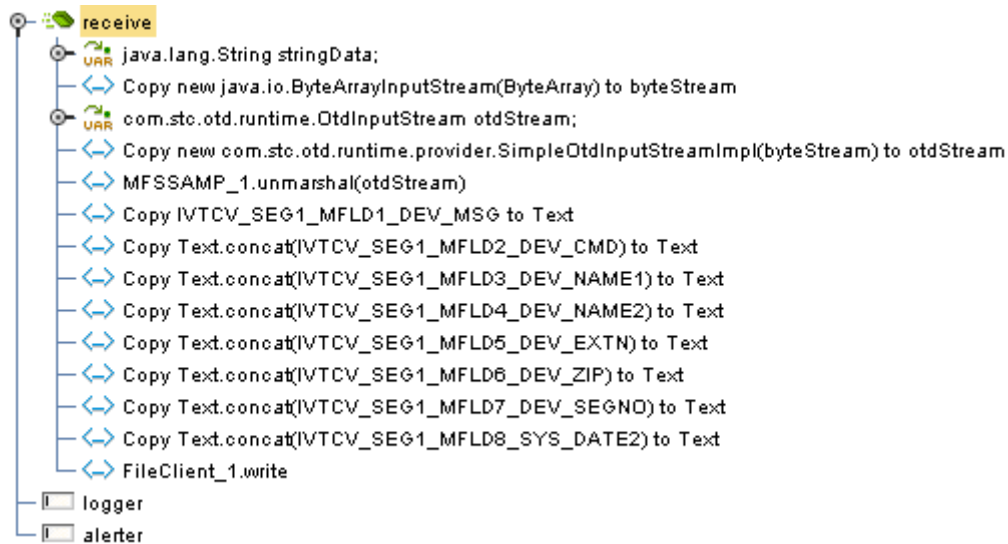
5.6.5. The IMS_MFS_Collab Business Rules

The the **IMS_MFS_Sample** project uses one Collaboration created in the previous section, **IMS_MFS_Collab**.

IMS_MFS_Collab Business Rules

The IMS_MFS_Collab Collaboration contains the Business Rules displayed in **Figure 35 on page 58**. These rules are created using the Collaboration Editor.

Figure 35   IMS_MFS_Collab Collaboration Business Rules

```
○─ ▶ receive
  ○─ ↻ java.lang.String stringData;
    ─ ↔ Copy new java.io.ByteArrayInputStream(ByteArray) to byteStream
  ○─ ↻ com.stc.otd.runtime.OtdInputStream otdStream;
    ─ ↔ Copy new com.stc.otd.runtime.provider.SimpleOtdInputStreamImpl(byteStream) to otdStream
    ─ ↔ MFSSAMP_1.unmarshal(otdStream)
    ─ ↔ Copy IVTCV_SEG1_MFLD1_DEV_MSG to Text
    ─ ↔ Copy Text.concat(IVTCV_SEG1_MFLD2_DEV_CMD) to Text
    ─ ↔ Copy Text.concat(IVTCV_SEG1_MFLD3_DEV_NAME1) to Text
    ─ ↔ Copy Text.concat(IVTCV_SEG1_MFLD4_DEV_NAME2) to Text
    ─ ↔ Copy Text.concat(IVTCV_SEG1_MFLD5_DEV_EXTN) to Text
    ─ ↔ Copy Text.concat(IVTCV_SEG1_MFLD6_DEV_ZIP) to Text
    ─ ↔ Copy Text.concat(IVTCV_SEG1_MFLD7_DEV_SEGNO) to Text
    ─ ↔ Copy Text.concat(IVTCV_SEG1_MFLD8_SYS_DATE2) to Text
    ─ ↔ FileClient_1.write
  ─ □ logger
  ─ □ alerter
```

7   For more information on how to create Business Rules using the Collaboration Editor see **Using the Collaboration Editor (Java)** on page 43 or see the *eGate Integrator User's Guide*.

5.6.6. 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 **IMS_MFS_Sample_CM** to display the Connectivity Map.

2   Drag and drop the **IMS_MFS_Collab** 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 36 on page 59**).

Figure 36   Connectivity Map - Connecting the Project's Components
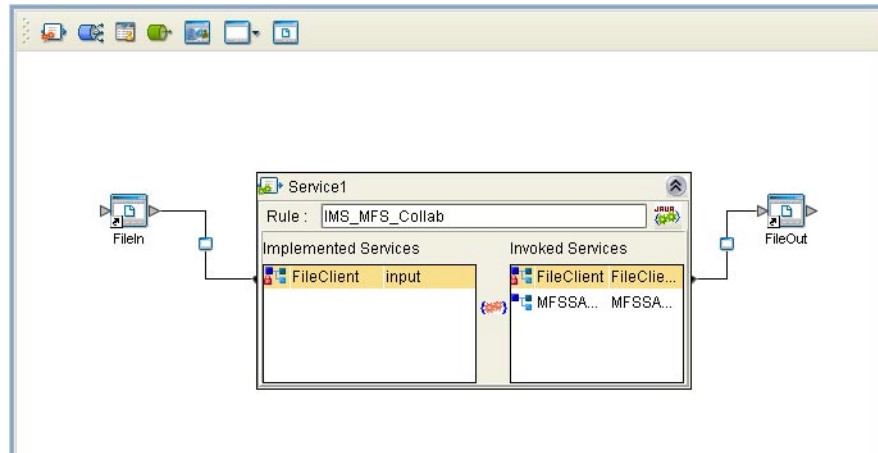
6   Minimize the Service1 Binding dialog box and save your current changes to the Repository.

5.6.7. Configure the eWays

The IMS_MFS_Sample project uses two eWays, each represented in the Connectivity Map as a node between an External Application and the Collaboration.

1   Double-click the inbound **File eWay** located between the File1 External Application and the Collaboration in the Connectivity Map. Select **Inbound File eWay** in the Templates dialog box and click **OK**.

2   The Properties Sheet opens to the Inbound File eWay properties. Modify the properties for your system, include the settings for the **Inbound** File eWay in Table 9, and click **OK**.

Table 9   Inbound File eWay Settings

Inbound eWay Connection Parameters	
Directory	C:/temp
Input file name	Input*.txt

3   Double-click the **Outbound** File eWay located between Service and the outbound File External Application, and select **Outbound File eWay**. Modify the File eWay properties for your system, including the settings in Table 10, and click **OK**.

**Table 10**   Outbound File eWay Settings

Outbound eWay Connection Parameters	
Directory	C:/temp
Output file name	output%.dat

5.6.8. 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 **IMS_MFS_Sample_Env**.

4 Right-click **IMS_MFS_Sample_Env** and select **New File External System**. Name the External System **FileExtSysIn** and select **Inbound File eWay** as the External System Type.

5 Right-click **IMS_MFS_Sample_Env** and select **New File External System**. Name the External System **FileExtSysOut** and select **Outbound File eWay** as the External System Type.

6 Right-click **IMS_MFS_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 **New SeeBeyond Integration Server** from the shortcut menu. A new Integration Server (**IntegrationSvr1**) is added to the Environment Explorer tree under LogicalHost (see Figure 37).

**Figure 37**   Environment Editor
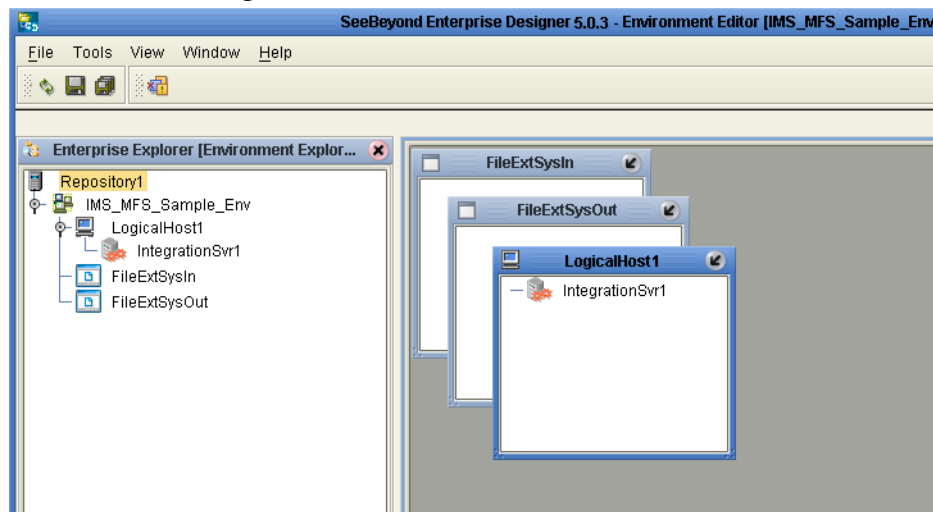
8 Save changes to the repository.

5.6.9 **Creating and Activating the Deployment Profile**

A Deployment Profile is used to assign services and message destinations to the integration server and message server.

1 From the Project Explorer tree, right-click the **IMS_MFS_Sample** project and select **New** > **Deployment Profile**.

2 Enter a name for the Deployment Profile (for this sample **IMS_MFS_Sample_DP**). Make sure that the selected Environment is **IMS_MFS_Sample_Env**. Click **OK**.

3 From the left pane of the Deployment Editor, drag the **FileIn -> Service1** to the **FileExtSysIn** box.

4 From the left pane of the Deployment Editor, drag the **Service1 -> FileOut** to the **FileExtSysOut** box.

5 Drag **Service1** to **IntegrationSvr1** in the **LogicalHost1** box (see Figure 38).

Figure 38 Deployment Profile
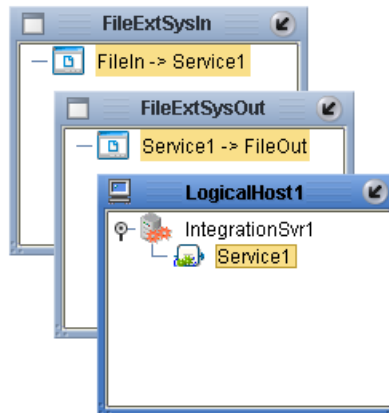
6 Click **Activate**. When activation succeeds, save the changes to the Repository.

5.6.10. **Running the Project**

The following directions assume that the Enterprise Designer was downloaded to C:\ican50. If this is not the case, replace that location in the following directions with the appropriate location.

1 From the Enterprise Manager Downloads tab, double-click **Logical Host - for win32**.

2 Extract the file to the **C:\ican50\logicalhost3** directory. You must specify the **logicalhost3** directory for it to be created.

3 Navigate to the **C:\ican50\logicalhost3\logicalhost\bootstrap\config** directory and open the logical-host.properties file using Notepad™.

4 Enter and save the following information in the appropriate fields:

   ◆ Logical Host root directory: **C:\ican50\logicalhost3\logicalhost**

   ◆ Repository URL: **http://localhost:***port number/repository name*

◆ Repository user name and password: *Your user name and password*

◆ Logical Host Environment name: **IMS_MFS_Sample_Env**

◆ Logical Host name: **logicalhost3**

Save your changes to **logical-host.properties** and close the file.

5 Run the **bootstrap.bat** file located in the
C:\ican50\logicalhost3\logicalhost\bootstrap\bin directory.

6 Copy the sample input data file to the input directory.

5.7 The MFS_IMS_Sample Project

The MFS_IMS_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 thru 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 MFS_IMS_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.

5.7.1. Importing the MFS_IMS_Sample Project

To import the MFS_IMS_Sample project follow the directions from **Importing a Sample Project** on page 39, using the MFS_IMS_Sample.zip file.

5.7.2. Creating the 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 IMS External System**. Name the External System **IMSExtSys**. **IMSExtSys** is added to the Environment Editor.

5 Right-click **MFS_IMS_Sample_Env** and select **New File External System**. Name the External System **FileExtSysIn** and select **Inbound File eWay** as the External System Type.

6   Right-click **MFS_IMS_Sample_Env** and select **New File External System**. Name
     the External System **FileExtSysOut** and select **Outbound File eWay** as the External
     System Type.

7   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.

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

5.7.3. Configure the eWays

The MFS_IMS_Sample project uses three eWays, each represented in the Connectivity
Map as a node between an External Application and the Collaboration (see Figure 39).
eWays facilitate communication and movement of data between the External
Applications and the eGate system.
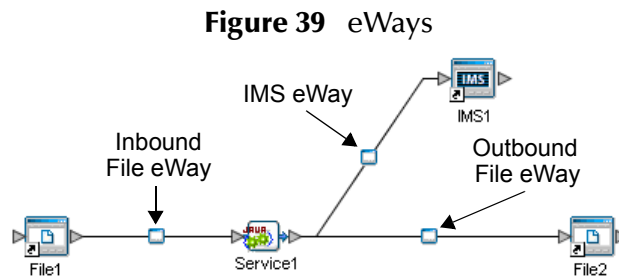
Figure 39   eWays

Configuring the File eWays

1   Double-click the **inbound File eWay** (see Figure 39). The Templates dialog box
     appears. Select **Inbound File eWay** in the Templates dialog box and click **OK**.

2   The Properties Sheet opens to the inbound File eWay properties. Modify the
     properties for your system, including the settings in Table 11, and click **OK**. The
     properties settings are saved for the eWay.

Table 11   Inbound File eWay Settings

Inbound eWay Configuration Parameters	
Directory	C:/temp
Multiple records per file	True

3   Double-click the **outbound File eWay** located between **Service1** and the outbound
     File2 External Application, and select **Outbound File eWay**. Modify the outbound
     File eWay configuration for your system, including the settings in Table 12, and
     click **OK**.

Table 12 Outbound File eWay Settings

Outbound eWay Configuration Parameters	
Directory	C:/temp
Multiple records per file	True
Output file name	output%.dat

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 Sheet, see **Creating and Configuring the IMS eWay** on page 12, or see the *eGate Integrator User's Guide*.

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 Sheet opens to the IMS eWay environment-configuration properties.

2 Modify the IMS eWay environment-configuration for your system, including the settings in Table 13, and click **OK**.

Table 13 IMS eWay Environment Explorer Configuration Settings

IMS eWay (Environment Explorer) Configuration Parameters	
TCPIP Configuration Set as directed, otherwise use the default settings	
Port	*Server port number*
Server	*Server name*
IRM Header Settings Set as directed, otherwise use the default settings.	
IRM_TRNCOD	IVTNO
IRM_TRNCOD_SRC	MESSAGE

5.7.4 Creating and Activating the Deployment Profile

Deployment Profiles are specific instances of a project in a particular Environment. A Deployment Profile is created using the Enterprise Designer's Deployment Editor.

To create the **MFS_IMS_Sample_DP** Deployment Profile do the following:

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

2 From the **Create Deployment Profile for MFS_IMS_Sample** dialog box, enter a name for the Deployment Profile (for this sample **MFS_IMS_Sample_DP**), and select **MFS_IMS_Sample_Env** as the Environment. Click **OK**.

3   From the left pane of the Deployment Editor, drag **Service1 -> IMS1** to the **IMSExtSys** window.

4   From the left pane of the Deployment Editor, drag **File1 -> Service1** to the **FileExtSysIn** window.

5   From the left pane of the Deployment Editor, drag **Service1 -> File2** to the **FileExtSysOut** window.

6   Drag **Service1** to **IntegrationSvr1** in the **LogicalHost1** window.

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

5.7.5. Running the Project

The following directions assume that the Enterprise Designer was downloaded to C:\ican50. If this is not the case, replace that location in the following directions with the appropriate location.

1   From the Enterprise Manager Downloads tab, double-click **Logical Host - for win32**.

2   Extract the file to the **C:\ican50\logicalhost4** directory. You must specify the **logicalhost4** directory for it to be created.

3   Navigate to the **C:\ican50\logicalhost4\logicalhost\bootstrap\config** directory and open the **logical-host.properties** file using Notepad™.

4   Enter and save the following information in the appropriate fields:

    ◆ Logical Host root directory: **C:\ican50\logicalhost4\logicalhost**

    ◆ Repository URL: **http://localhost:***port number/repository name*

    ◆ Repository user name and password: *Your user name and password*

    ◆ Logical Host Environment name: **MFS_IMS_Sample_Env**

    ◆ Logical Host name: **logicalhost4**

    Save your changes to **logical-host.properties** and close the file.

5   Run the **bootstrap.bat** file located in the **C:\ican50\logicalhost4\logicalhost\bootstrap\bin** directory.

6   Copy the sample input data file to the input directory.

Java Methods and Classes for the IMS eWay

The IMS eWay contains Java methods that are used to extend the functionality of the eWay. These methods are contained in the following class

6.1 The IMSClientETD Class

```
java.lang.Object
    |
    + -- com.stc.eways.ims.EwayConnectionETDImpl
            |
            + -- com.stc.eways.ims.IMSClientETD.
```

public class **IMSClientETD**

Extends com.stc.eway.ims.EwayConnectionETDImpl.

Implements com.stc.jcsre.ETDExt.

All implemented interfaces: com.stc.jcsre.ETD, com.stc.jcsre.ETDConstants, com.stc.jcsre.ETDExt.

IMS Javadoc

The Javadoc is uploaded with the eWay's documentation file (**IMSeWayDocs.sar**) and downloaded from the Documentation tab of the Enterprise Manager. To access the full Javadoc, extract the Javadoc to an easily accessible folder, and double click the **index.html** file.

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