SeeBeyond ICAN Suite

COM/DCOM eWay Intelligent Adapter User's Guide

Release 5.0

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Contents

Chapter 1

Introducing the COM/DCOM eWay

This document describes how to install and configure the COM/DCOM eWay Intelligent Adapter (also called the COM/DCOM 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 COM/DCOM eWay.

This chapter includes

1.1 COM/DCOM Overview

The Microsoft™ *Component Object Model* (COM) is a component software architecture that allows developers to partition an application into multiple components that can be developed and installed independently of each other. COM is the underlying architecture that forms the foundation for higher-level software services, like those provided by OLE (Object Linking and Embedding). OLE services span various aspects of component software, including compound documents, custom controls, inter-application scripting, data transfer, and other software interactions. Using COM allows software objects to be reused for a variety of applications. Because of its binary standard, COM allows any two components to communicate regardless of the language in which they were written.

The Microsoft *Distributed Component Object Model* (DCOM) is an extension of COM, and supports communication among objects residing on different computers; LANs, WANs, and the Internet. With DCOM, these software objects can be reused over a distributed environment.

COM objects or components are individual modular software routines that can be reused within applications. COM objects are reusable compiled binary objects, as opposed to reusable sections of code. Creating an instance of a COM object provides a reference through which you can access the object's functionality.

1.2 The COM/DCOM eWay Intelligent Adapter

The COM/DCOM eWay allows the SeeBeyond Integrated Composite Application Network (ICAN) Suite to create an instance of an automation-compatible COM object and access the methods and properties of that object.

One aspect of COM is "automation" based on the **COM IDispatch interface**. Objects that implement the IDispatch interface are known to be automation-compatible. Automation-compatible components are said to be "scriptable" and/or are capable of being "driven" by an automation client. This is possible because the IDispatch interface is well-known and those components that implement this interface adhere to a strict contract that is based on a "**late binding**" concept. "Late binding" refers to a programming principle whereby the actual operation invoked is not determined until runtime. Objects that implement the IDispatch interface achieve this through the concept of the **Invoke** method on the IDispatch interface, which allows the user to call a method by name. The COM/DCOM eWay is designed to work with automation-compatible components: that is, those that implement the **IDispatch interface**.

1.3 Organization of Information

This document provides information about installing, configuring, and using the COM/DCOM eWay Intelligent Adapter and includes the following chapters:

- **Chapter 1 "Introducing the COM/DCOM eWay"** provides an overview of the Microsoft™ *Component Object Model* (COM) and the SeeBeyond COM/DCOM eWay Intelligent Adapter.
- **Chapter 2 "Installing the COM/DCOM eWay"** provides the supported operating systems and system requirements for the COM/DCOM eWay. It also includes directions for installing the COM/DCOM eWay and accessing the accompanying documentation and sample projects.
- **Chapter 3 "Configuring the eWay Properties"** describes the process of configuring the COM/DCOM eWay to run in your environment.
- **Chapter 4 "COM/DCOM eWay OTD Overview"** provides an overview of the Object Type Definitions (OTDs) created from the COM components Type Library files. It also describes how to use the COM OTD Wizard to create these OTDs.
- **Chapter 5 "Implementing a COM/DCOM eWay Project"** describes the features and functionality of the COM/DCOM eWay using the eGate Integrator and the Collaboration Editor (Java).
- **Chapter 6 "Java Methods and Classes for the COM/DCOM eWay"** describes the COM/DCOM eWay Java classes and provides directions for accessing the COM/DCOM eWay Javadoc.

1.4 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 and must be thoroughly familiar with Windows-style GUI operations.

1.5 Writing Conventions

The following writing conventions are observed throughout this document.

Table 1 Writing Conventions

Text	Convention	Example
Button, file, icon, parameter, variable, method, menu, and object names.	**Bold** text	▪ Click **OK** to save and close. ▪ From the **File** menu, select **Exit**. ▪ Select the **logicalhost.exe** file. ▪ Enter the **timeout** value. ▪ Use the **getClassName()** method. ▪ Configure the **Inbound** File eWay.
Command line arguments and code samples	`Fixed` font. Variables are shown in ***`bold italic`***.	`bootstrap -p` ***`password`***
Hypertext links	**Blue** text	**http://www.seebeyond.com**

1.6 SeeBeyond Web Site

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

http://www.seebeyond.com

Chapter 2

Installing the COM/DCOM eWay

This chapter explains the procedures for installing the COM/DCOM eWay.

Chapter Topics

2.1 Supported Operating Systems

The COM/DCOM eWay is available for the following operating systems:

- Windows XP, Windows 2000, and Windows Server 2003

2.2 System Requirements

The system requirements for the COM/DCOM 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 COM/DCOM 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.

2.2.1. External System Requirements

The COM/DCOM eWay has no external system requirements.

2.3 Installing the COM/DCOM 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.

2.3.1. Installing the COM/DCOM eWay

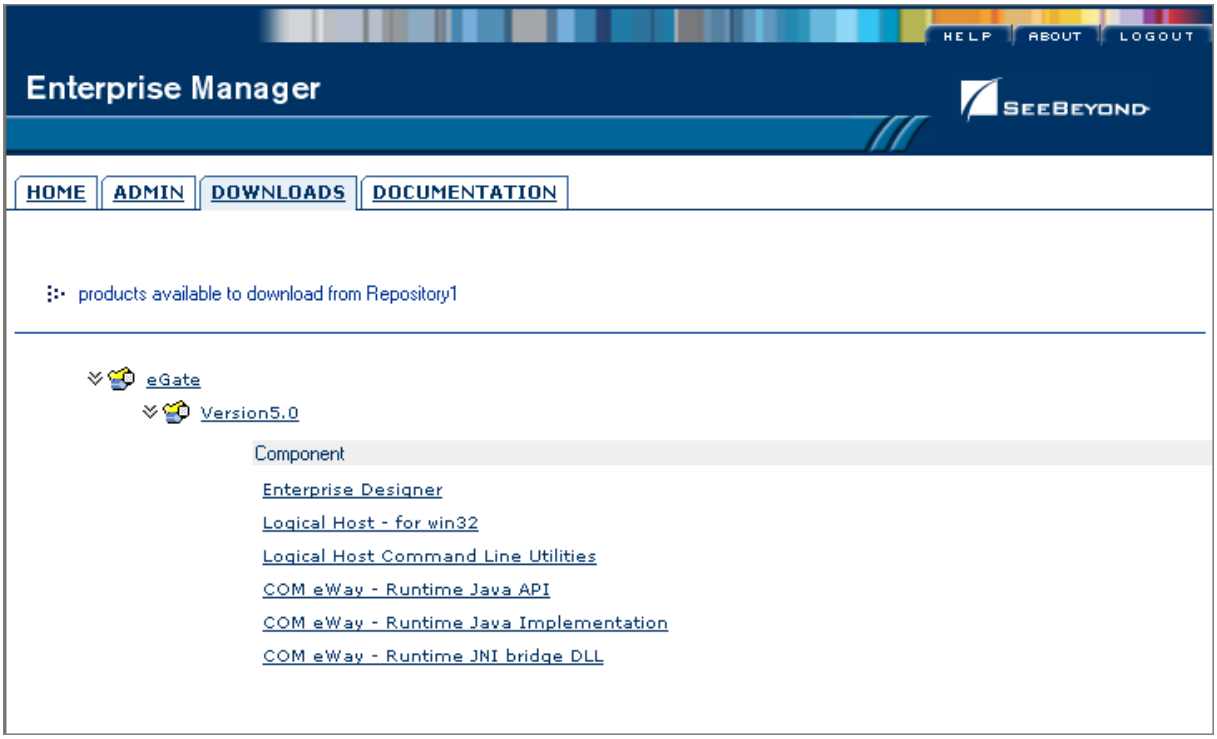
The ICAN Suite installation process includes the following operations:

- Install the eGate Repository
- Upload products to the Repository
- Download components (including the eGate Enterprise Designer and Logical Host)

Follow the directions for installing the ICAN Suite in the *SeeBeyond ICAN Suite Installation Guide.* After you have installed eGate and other purchased core products, do the following:

1. From the Enterprise Manager's **ADMIN** tab, browse to the **Add-ons** directory and select the **ProductsManifest.xml**, and click **Submit**. The available Add-on product list is now displayed.
2. Browse to and select the following files located in the **Add-ons** directory:
   - **FileeWay.sar** (to install the File eWay, used in the sample project)
   - **COMeWay.sar** (to install the COM/DCOM eWay)
3. Click on **upload now** to upload the selected products.
4. Click on the Manifest File field's **Browse** option, browse to the Add-on **Documentation** directory, select the **ProductsManifest.xml**, and click **Submit**. The available Add-on documentation list is now displayed.
5. Select and upload the following file:
   - **COMeWayDocs.sar** (to upload the COM/DCOM eWay User's Guide, Javadoc, and sample projects to the Enterprise Manager).
6. Click on **upload now** to upload the selected product.
7. Click on the Enterprise Manager's **DOWNLOADS** tab. The Component list, as displayed in **Figure 1 on page 11**, includes three COM eWay components:
   - **Runtime Java API** (stccomruntime.api.jar) and **Runtime Java Implementation** (stccomruntime.impl.jar) which must be copied to the Integration Server classpath.
   - **Runtime JNI bridge DLL** (comewayruntime.dll) which must be copied to the Integration Server Library path (see **Figure 1 on page 11**).

Figure 1 Enterprise Manager - DOWNLOADS



8 Download all three components to a temporary directory. To add the .jar files to the Integration Server classpath see **Adding JAR files to the Integration Server Classpath** on page 12. To add the .dll file to the Library classpath see **Adding DLL files to the Integration Server Library Path** on page 12

9 Continue installing the eGate Integrator as instructed in the *SeeBeyond ICAN Suite Installation Guide.*

Adding the eWay to an Existing ICAN Suite Installation

If you are installing the eWay to an existing ICAN installation, do the following:

1 Complete steps 1 through 8 above.

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. 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. Click **Finish.**

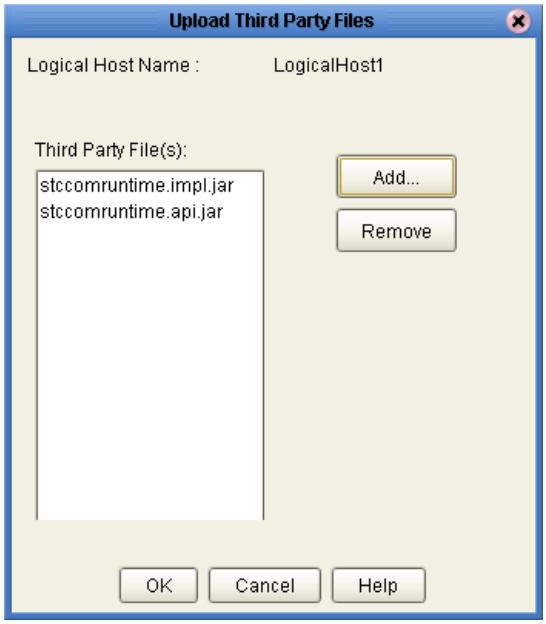
7 When prompted, click OK to restart IDE and complete the installation.

2.3.2. Adding JAR files to the Integration Server Classpath

The **Runtime Java API** (stccomruntime.api.jar) and **Runtime Java Implementation** (stccomruntime.impl.jar) can be added to the Integration Server classpath after you have created an **Environment** and added a **Logical Host** for your project. To add the .jar files to the Integration Server classpath, do the following:

1. From the Environment Explorer tree, right-click the **Logical Host** and select **Upload File** from the shortcut menu. The Upload Third Party Files dialog box appears.
2. Click **Add** and browse to the temporary directory to which you downloaded the .jar files. Add both **stccomruntime.api.jar** and **stccomruntime.impl.jar** to the **Third Party Files** field (see Figure 2).

Figure 2 Upload Third Party Files



3. Click **OK**.

2.3.3. Adding DLL files to the Integration Server Library Path

To add the **Runtime JNI bridge DLL** (comewayruntime.dll) to the Library path, do the following:

1. Copy the **comewayruntime.dll** file from the temporary directory to which you downloaded the file.
2. Paste the file to the following location:

   ```
   <ican50>\logicalhost\stcis\lib
   ```

   where <ican50> is your installed ICAN Suite.

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.

The eWay's User Guide, Javadoc, Readme, and sample projects, can be accessed from the Enterprise Manager's Documentation tab.

Chapter 3

Configuring the eWay Properties

This chapter describes how to create and configure the COM/DCOM eWay properties.

Chapter Topics

3.1 Configuring the COM/DCOM eWay

All eWays contain a set of properties unique to that eWay type. After the component eWays are created and a COM/DCOM External System is created in the project's Environment, the eWay properties can be modified for your specific system. The COM/DCOM eWay's properties are modified only from the Environment Explorer tree. These properties are commonly global, applying to all eWays (of the same type) in the project. The saved properties are shared by all eWays in the COM/DCOM External System.

3.1.1 Selecting COM/DCOM as the External Application

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

Modifying the COM/DCOM eWay (Environment Explorer) Properties

Once an Environment has been created and a new COM External System has been added, the COM/DCOM Environment properties can be modified.

1. From the Environment Explorer tree, right-click the COM/DCOM external system and select **Properties** from the shortcut menu. The **Properties Editor** appears.
2. Make any necessary modifications to the Environment parameters of the COM/DCOM eWay and click **OK** to save the settings.

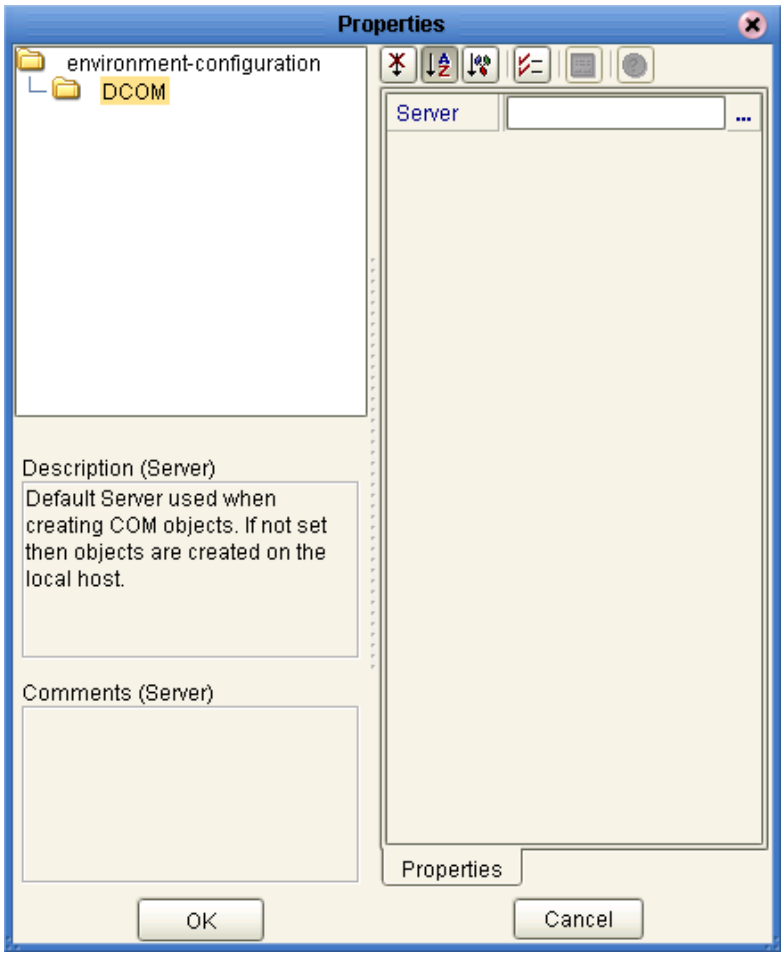
3.1.2. Using the Properties Editor

Modifications to the eWay configuration properties are made from the COM/DCOM eWay Properties Editor.

To modify the default eWay configuration properties

1 From the upper-left 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, clicking on the **DCOM** subdirectory displays the editable parameters in the right pane, as shown in Figure 3.

Figure 3 Properties Editor - COM/DCOM eWay Properties



2 The COM/DCOM eWay properties contain only one configurable parameter: **Server**. To edit this property, click on the property field.

To open a separate configuration dialog box, click on the ellipsis (. . .) in the properties field. 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.

3 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.

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

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

3.2 COM/DCOM eWay Properties

The COM/DCOM eWay contains only one configurable property: **Server**, an Environment property located under the DCOM subnode.

Server

Description

Specifies the default server used when creating an instance of a DCOM component. (that is, a remote server executable). This property is not required when using an in-process component (for example, a .dll)

Required Values

The name of the server on which the DCOM component is to be created. If the name is not specified, then objects are created on the local host.

Note: *This property can also be configured dynamically from the Collaboration. See* **Dynamic Configuration** *on page 16 for more information.*

3.3 Dynamic Configuration

The **Server** property can also be dynamically configured from the Collaboration at runtime. This automatically supersedes the current Environment property.

Dynamic configuration allows the user to change configuration settings (based on the data input or Collaboration Rule logic) on the fly. In this case, the **Server** property can be changed by specifying a different server in the Collaboration using the Collaboration Editor. From the point that you reset the Server property, all other DCOM objects will be created on the new server.

3.4 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 the configured severity level and higher. To enable Logging, please see the ***eGate Integrator User's Guide***.

The alerts/status notifications for the COM/DCOM eWay are currently limited to Started, Running, Stopping, and Stopped.

Chapter 4

COM/DCOM eWay OTD Overview

This chapter provides a short overview of the OTDS created from the COM components Type Library files by the COM OTD Wizard. This chapter also describes how to use the COM OTD Wizard to build an OTD.

This Chapter Includes:

4.1 Object Type Definitions

The basic functionality of eGate is to handle messages. It does this by means of Collaborations. To operate on a message, the Collaboration needs a description of the message format. The format description may follow a standard and be available in some standard metadata format, or it may not be, in which case, you need a convenient way to define the format. Object Type Definitions provide the solution.

OTDs describe external data formats that characterize the input and output data structures in a Collaboration Definition. OTDs typically have a specific external representation format that is used to store and transport the OTD contents through an eGate Project. The OTD defines both this external representation and the run-time data structure.

The COM OTDs

The COM OTD Wizard scans the Type Library for creatable coclasses. For every creatable coclass it finds, it creates a factory method named **create[*CoClass_name*]()**. These factory methods allow you to create instances of COM objects defined by those CoClasses. Each returns a Java interface, which is also generated by the OTD wizard. That interface contains the methods exposed on the corresponding COM interface. These methods can then be called like any normal Java method.

Interface instances can be acquired in a Collaboration in a number of ways:

- Through **Create methods** on the OTD
- Through **Query methods** on the OTD

- Through a **Return value**
- Through an **Output parameter**
- Through an **Input/Output parameter**

Regardless of how it is acquired, each of these acquired interfaces must be released after an application is finished using it. The **Release** method must be called to clear the local interface handle and remove the COM object from the server memory.

Create Methods

The Create method allows the user to create an instance of a CoClass.

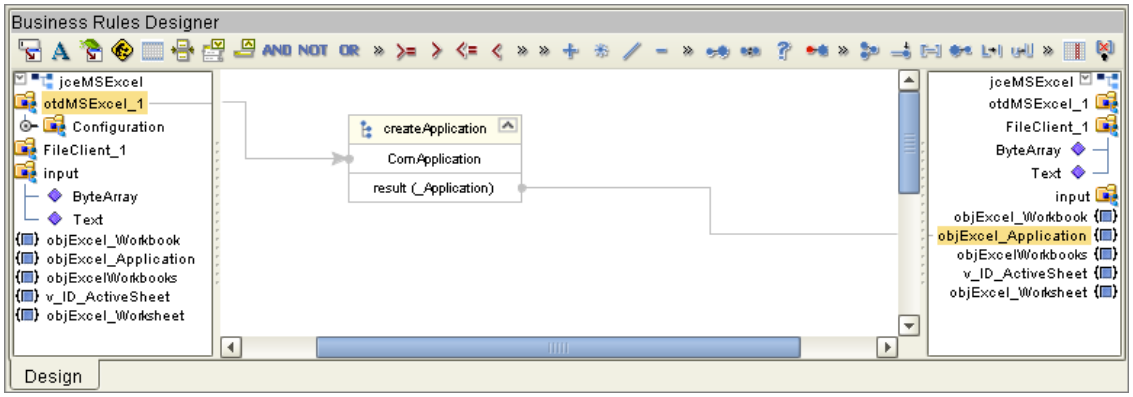
In COM, when you create an instance of a COM object, you get back is an interface for that object. The Create methods create instances of COM objects. When the OTD wizard scans the selected Type Library, it displays the Library's CoClasses. For each CoClass you select in the wizard (see **Select Classes** on page 22), a Create method is created on the OTD. These Create methods instantiate the CoClass.

Example of Create Method

An example of a Create method used in a Collaboration can be seen in the **COMeWay_MSExcel** sample project's **jceMSExcel** Collaboration.

1 In the Business Rule, **Copy otdMSExcel_1.createApplication to objExcel_Application**, the user calls the **createApplication()** method to create an instance of the Excel application (see Figure 4).

Figure 4 Copy otdMSExcel_1.createApplication to objExcel_Application Business Rule



2 From this instance interface, the user in now able to call various methods to access the functionality of the application (for example, the next four Business Rules in the Collaboration copy the application Name, Version to the output file).

Query Methods

Query methods allow you to convert a particular interface to another interface.

In some cases, COM servers declare their parameters to be simply IDispatch, but document that this parameter will return a particular interface in the Type Library. For each interface found in the Type Library, a Query method is created on the OTD. You

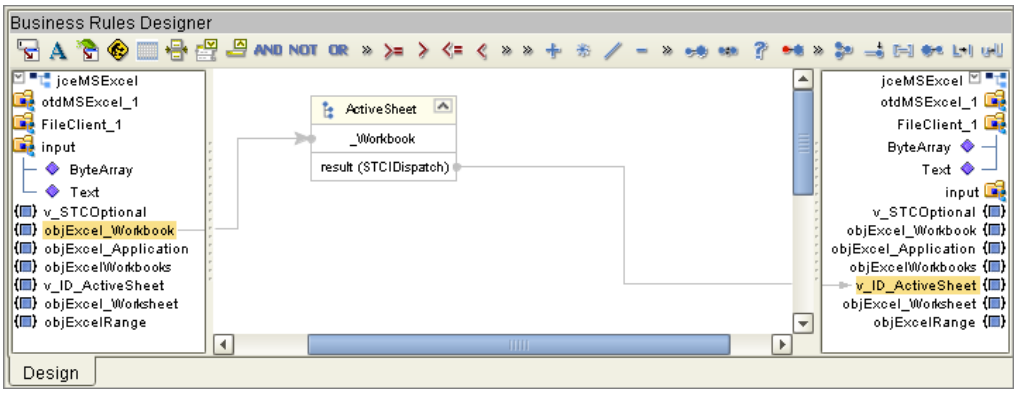
can then pass one of the IDispatch interfaces and convert it to the appropriate interface. The Query method returns the appropriate interface with relevant, useful, Java methods.

Example of Query Method

An example of Query method used in a Collaboration can be seen in the **COMeWay_MSExcel** sample project's **jceMSExcel** Collaboration Business Rules.

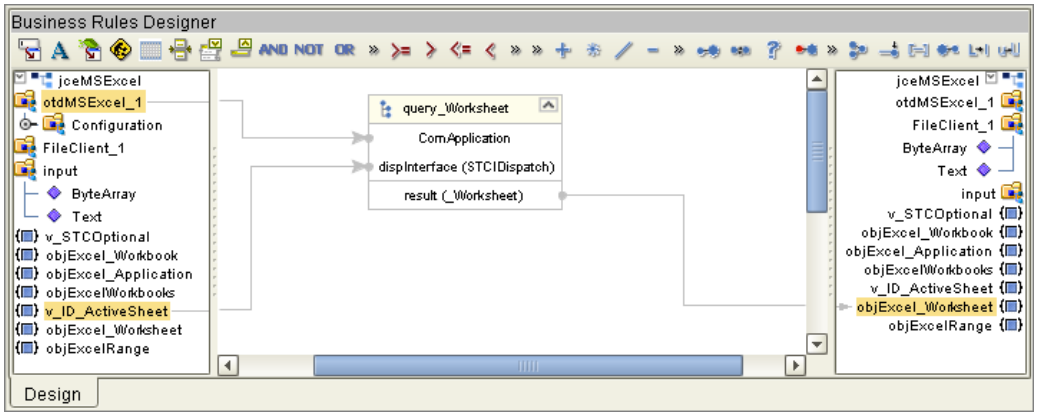
1 The user wants to select and copy an active Excel worksheet. In the Business Rule, **Copy objExcel_Workbook.ActiveSheet to v_ID_ActiveSheet**, When the objExcel_Workbook method, **ActiveSheet()** is called, the **STCIDsipatch** interface is returned (as seen in Figure 5) providing limited functionality.

Figure 5 Copy objExcel_Workbook.ActiveSheet to v_ID_ActiveSheet Business Rule



2 To provide a more useful interface, user selects the Query method, **query_Worksheet(com.stc.connector.comadapter.comruntime.STCIDispatch dispinterface**) from the otdMSExcel_1 OTD in the next Business Rule, **Copy otdMSExcel_1.query_Worksheet(v_ID_ActiveSheet) to objExcel_Worksheet**. As a result, the **Worksheet** interface is returned (see Figure 6).

Figure 6 Query Method



3 The Worksheet interface contains multiple methods that provide easy access to the COM object's functionality. For example, the user is able to call the **Range** method (in the **Copy objExcel_Worksheet.Range(v_position1, v_position2) to objExcelRange** Business Rule) to specify two cells in the active worksheet.

4.2 Using the COM OTD Wizard

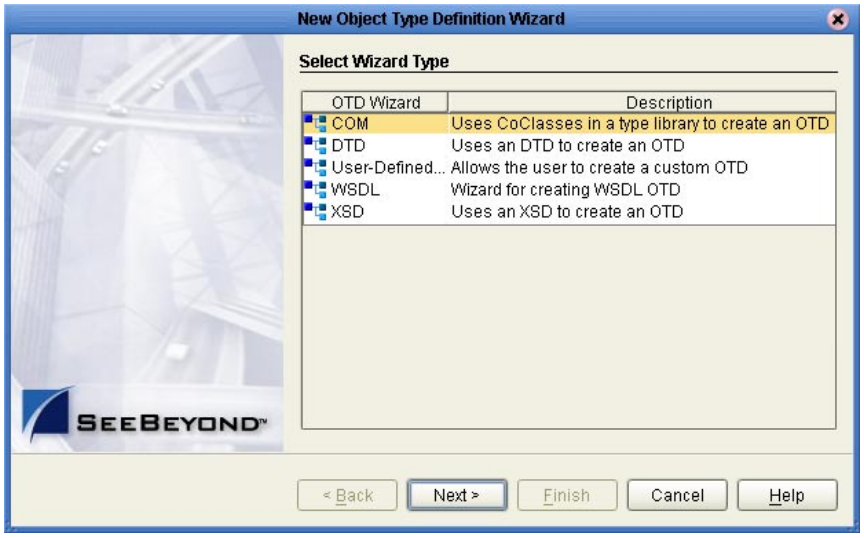
The COM OTD Wizard generates an OTD from a COM automation-compatible component's **Type Library** files. COM Type Library files describe the methods and properties exposed from an automation-compatible component. COM type libraries may have the file extension **.tlb** or **.olb**, however, most components typically embed the type library file in the **DLL**, **OCX**, or **EXE** file that contains the component.

To create an OTD using the COM OTD Wizard do the following:

Select Wizard Type

1. From the Project Explorer tree, right click your project and select **New > Object Type Definition** from the shortcut menu.
2. From the **Select Wizard Type** window of the **New Object Type Definition Wizard**, select the **COM** Wizard and click **Next**. See **Figure 7 on page 21**.

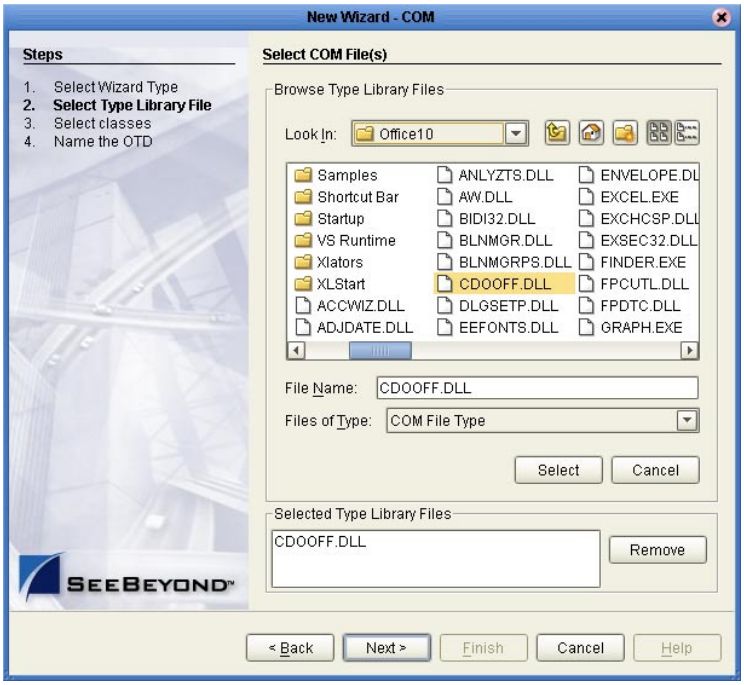
Figure 7 OTD Wizard Selection



Select Type Library File

3 Browse to the directory that contains the type library file from which the OTD will be created. You can only select one type library file at a time. Select your type library file and click the **Select** button (see Figure 8). Click **Next**.

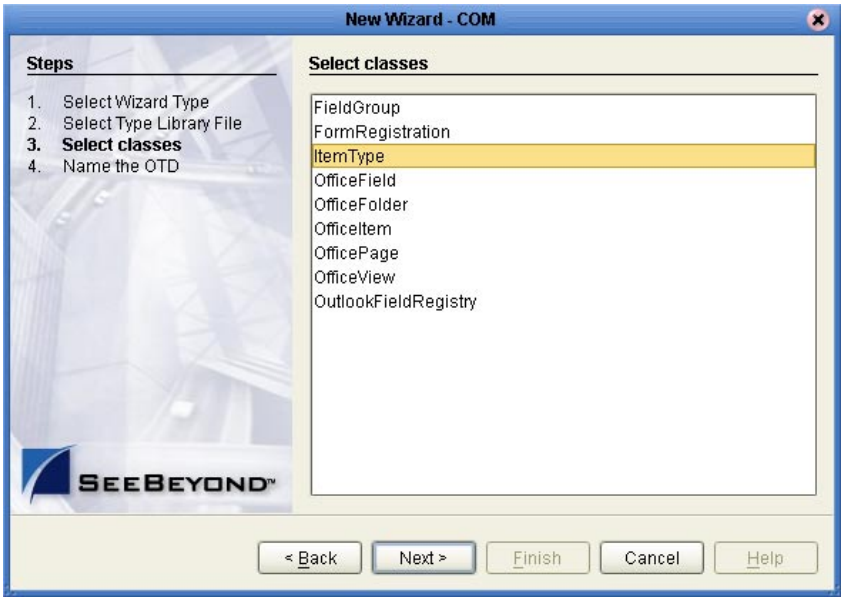
Figure 8 Select the Type Library



Select Classes

4 For Step 3 of the wizard, select one or more of the CoClasses from the type library and click **Next** (see Figure 9).

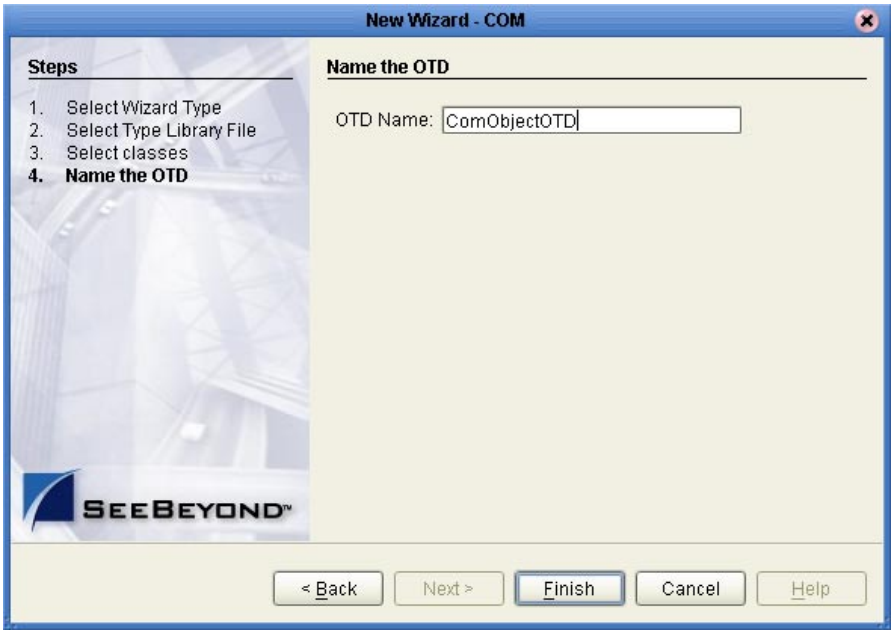
Figure 9 Select Classes



Name the OTD

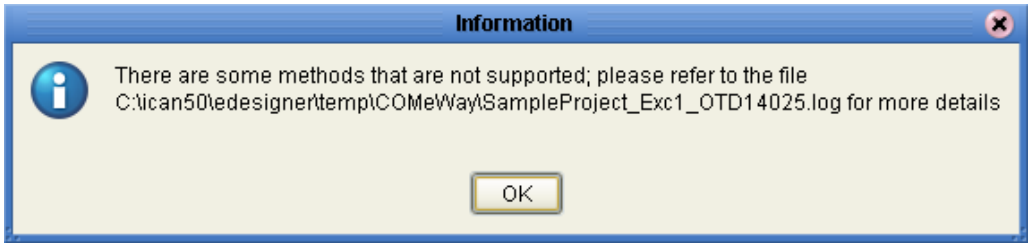
5 For Step 4 of the wizard, enter a name for the new OTD in the OTD Name field and click **Finish** (see Figure 10).

Figure 10 Name the OTD



6 If any of the selected CoClasses contain a method with an unsupported data type, an **Information** box appears (see Figure 11).

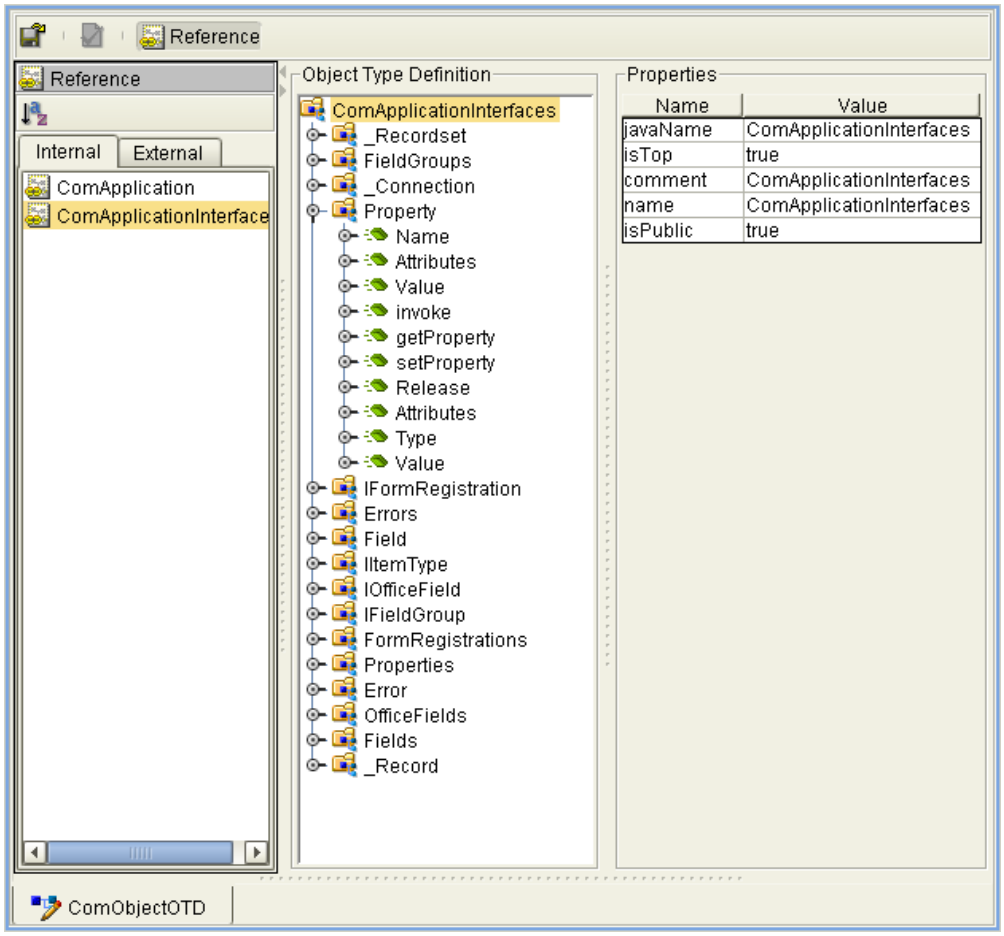
Figure 11 Information - Skipped Methods



The **Information** box indicates that some methods were not created in the OTD, and provides the location of the generated "Skipped Methods" log. This log provides a report of any methods that were skipped when the OTD was created (this information is also written to the IDE log file). Click **OK** to acknowledge and close the **Information** box.

7 The OTD Editor appears displaying the new OTD (see **Figure 12 on page 24**).

Figure 12 OTD Editor - New OTD



The resulting OTD is now available for use in your Collaborations.

For more information on using the OTD Editor see the *eGate Integrator User's Guide*.

Chapter 5

Implementing a COM/DCOM eWay Project

This chapter provides an introduction to the COM/DCOM 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 COM/DCOM eWay Components

This chapter presents a sample COM/DCOM 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 COM/DCOM eWay include the following:

COM/DCOM eWay Configuration File

The properties file for the COM/DCOM eWay contains properties that are used to connecting with a specific external system. These parameters are set using the Properties Editor. For more information about the COM/DCOM eWay properties File and the Properties Editor see **Configuring the COM/DCOM eWay** on page 14.

ComApplication OTD

The ComApplication OTD, provided with the eWay, is for advanced use only. It allows for direct interaction with the COM Server without the need to create an OTD. This OTD's functionality is readily available from any of the COM builder based OTDs generated by the COM OTD Wizard. For more information on how to use the ComApplication OTD see the COM/DCOM eWay Javadoc.

COM OTD Wizard

The COM OTD Wizard builds an Object Type Definition (OTD) for COM object classes in a type library (see **COM/DCOM eWay OTD Overview** on page 18).

5.2 Supported Data Types

The COM/DCOM eWay supports the following data types:

Table 2 Supported Data Types

VARTYPE	Description	1 and 2 Dimension SAFEARRAY Support
VT_I2 (short)	2 byte signed integer	Yes - 1 and 2
VT_I4 (long) (See note below)	4 byte signed integer	Yes - 1 and 2
VT_R4 (float)	4 byte float	Yes - 1 and 2
VT_R8 (double)	8 byte double	Yes - 1 and 2
VT_DATE (Date)	Standard COM date type	Yes - 1 and 2
VT_BSTR (BSTR)	COM string type	Yes - 1 and 2
VT_BOOL (Boolean)	COM boolean type	Yes - 1 and 2
VT_DISPATCH	COM automation interface	Yes - 1
VT_VARIANT (VARIANT)	COM VARIANT type (which is a tagged union)	No
VT_USERDEFINED	Typedef enum myenum	Yes - 1
VT_USERDEFINED	dispinterface Typename	Yes - 1
VT_USERDEFINED	CoClass Typename	Yes - 1

Note: *In COM, at the C/C++ level, VT_I4 is a* ***long*** *integer type. For Win32 platforms, this is 4 bytes - unsigned. The Java mapping for a 4 byte integer is type* ***int****.*

5.2.1. SAFEARRAY Constraints

Zero-Based Indexes

Although COM technically allows SAFEARRAYs to use starting indexes other than zero, the COM/DCOM eWay supports zero-based indexes only.

2 Dimensional SAFEARRAYs

Internally, the eWay runtime supports 1 or 2 dimensional SAFEARRAYs. The eWay runtime only supports two dimensional arrays with equal array size in both dimensions. The builder, however, cannot store information about the array dimension in the OTD because the metadata is not available in the type library: that is, the type library relates that the parameter is a SAFEARRAY, but does not relate how many dimensions the array is.

The STCComSafeArray class was created to hold and exchange arrays with the methods of generated COM OTDs that have SAFEARRAY parameters. When using SAFEARRAY parameters, the user must consult the documentation for the component, then ensure that the STCComSafeArray class is created with the type and array dimensions that the component expects.

5.3 COM/DCOM eWay Considerations

The following items must be considered when implementing a COM/DCOM eWay project:

- After an application is finished using an acquired COM object, the **Release()** method must be called to clear the local interface handle and remove the COM object from the server memory.
- The COM/DCOM eWay supports outbound connection only.
- Method names used for a created custom COM object must not match names of final methods on the Java Object class (for example, the **wait()**, **notify()**, and so forth). If the COM object contains these methods it will cause a compile error.
- Characters used in COM Type Library names that are not acceptable in Java (such as dots "**.**") in the Java namespace will be translated as an underscore. For example: **com.seagull.fileInquiry** is translated `as` **com_seagull_fileInquiry**.
- The COM/DCOM eWay is a "JCE (Java Collaboration Editor) only" eWay, and does not directly support Business Process Execution Language (BPEL) for Web Services or SeeBeyond's eInsight Manager. To use the COM/DCOM eWay with eInsight requires the eInsight Business Process to first invoke a Java Collaboration. That Java Collaboration can then execute a call to the COM/DCOM eWay. For more information on calling a Java Collaboration from an eInsight Business Process, see the *eInsight Business Process Manager User's Guide*.
- **STCComVariant.getVartype()** returns the VARTYPE of the stored value and is one of the public constants defined in STCComVARTYPE.

5.4 COM/DCOM eWay Sample Projects

Three COM/DCOM eWay sample projects are included on the installation CD-ROM, that demonstrate how the eWay is implemented in a production environment.

- COMeWay_MSWord_Sample.zip
- COMeWay_MSExcel_Sample.zip
- COMeWay_MSDAO_Sample.zip

These sample projects, when imported to your Repository, are nearly complete. They require only that you create the Environments, Deployment Profiles, and configure the eWay properties for your system.

5.4.1. The COMeWay_MSWord Sample Project

The **COMeWay_MSWord** sample project demonstrates the following:

1. An input file triggers the eWay to connect to the COM server (If a COM server is not specified, the eWay uses your local host as the Com server).

2 The eWay searches the server for a specified application with a specific version number (in this case MS Word, version 10).

3 The eWay then creates a new Word document and adds the specified text to the document.

4 The eWay then saves the new document to the location specified in the input file.

5 The eWay writes the application name and version to the output file and publishes the file to an external directory.

The **COMeWay_MSWord** sample file includes:

- **COMeWay_MSWord_SampleProject.zip**: The sample file that is imported into the Repository.
- **input_MSWord_SaveAsFileName.~in**: The input (trigger) file. This is a text file that contains the location and file name where the testing doc will be saved.
- **MSWord_output1.dat**: The output file with the COM application name and version.
- **output_MSWordTesting.doc**: The testing doc.

For directions on creating the COMeWay_MSWord sample manually, see **Creating the COMeWay_MSWord Project** on page 30.

5.4.2. The COMeWay_MSExcel Sample Project

The **COMeWay_MSExcel** sample project demonstrates the following:

1 An input file triggers the eWay to connect to the COM server (If a COM server is not specified, the eWay uses your local host as the Com server). This input file contains the location and name of the Excel file.

2 The eWay searches the server for a specified Excel file and opens the file.

3 After 2 seconds, the eWay populates the message, “Hello World!”, into a range of two cells in the Excel file.

4 The eWay copies the value of a cell in the Excel file and writes the value to an output file.

5 The eWay closes the Excel file, without Saving, and publishes the output file to an external directory.

The **COMeWay_MSExcel** sample file includes:

- **COMeWay_MSExcel_SampleProject.zip**: The sample file that is imported into the Repository.
- **COMeWay_ExcelTest.xls** -The sample Excel file.
- **in_Excel.~in**: The sample input file.
- **MSExcel_output1.dat**: The sample output file.

For directions on creating the COMeWay_MSWord sample manually, see **Creating the COMeWay_MSExcel Sample Project** on page 57.

5.4.3. The COMeWay_MSDAO Sample Project

The **COMeWay_MSDAO** (Data Access Object) sample project demonstrates the following:

1. An input file triggers the eWay to connect to the COM server (If a COM server is not specified, the eWay uses your local host as the Com server). This input file contains the location and name of an Access MDB file.
2. The eWay searches the server for the specified Access MDB file and opens the file.
3. The eWay copies all rows of data from the specified recordset and writes it to an output file.
4. The eWay publishes the output file to an external directory.

The **COMeWay_MSDAO** sample file includes:

- **COMeWay_MSDAO_TestProject.zip**: The sample file that is imported into the Repository.
- **DAOTestDB.mdb** -The sample MDB file.
- **in_DAO.~in**: The sample input file.
- **MSDAO_output1.dat**: The sample output file.

For directions on implementing the COMeWay_MSDAO sample, see **Implementing the COMeWay_MSDAO Sample Project** on page 68.

5.5 Importing a Sample Project

To import the 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. This file should include three .zip files. Extract each of these for the sample .z and any additional sample files.
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 example, **COMeWay_MSWord_SampleProject.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 52)
   - Configure the eWays (see **Configuring the eWays** on page 53)
   - Create a **Deployment Profile** (see **Creating and Activating the Deployment Profile** on page 55)

5.6 Creating the COMeWay_MSWord Project

The sample projects provided with this eWay require very little setup. The following sections in this chapter are provided to demonstrate how the COMeWay_MSWord sample project's components are created.

5.6.1. 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 Project Explorer tree, right-click the Repository and select **New Project**. A new project (Project1) appears on the Project Explorer tree.
3. From the Project Explorer tree, select and rename **Project1** (for this sample, **COMeWay_MSWord**).

5.6.2 Create a Connectivity Map

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

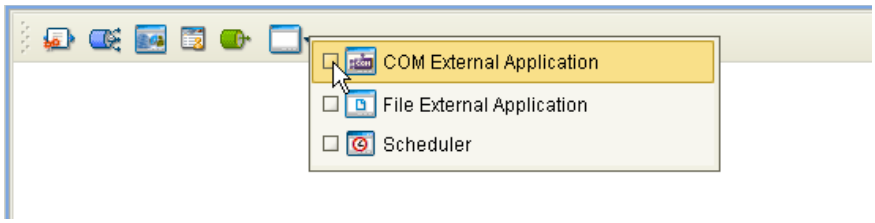
1. In Enterprise Explorer's Project Explorer, right-click the new project and select **New > New Connectivity Map** from the shortcut menu.
2. The New Connectivity Map appears and a node for the Connectivity Map is added to the Project Explorer tree labeled **CMap1**.

5.6.3. 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 an external COM server, you must first select COM/DCOM as an External Application to use in your Connectivity Map (see Figure 13). The COM/DCOM External Application icon is then added to the Connectivity Map toolbar.

Figure 13 Connectivity Map - External Applications



To add the External Applications used with the COMeWay_MSWord 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, **COM/DCOM** and **File**). Icons representing the selected external systems are added to the Connectivity Map toolbar.

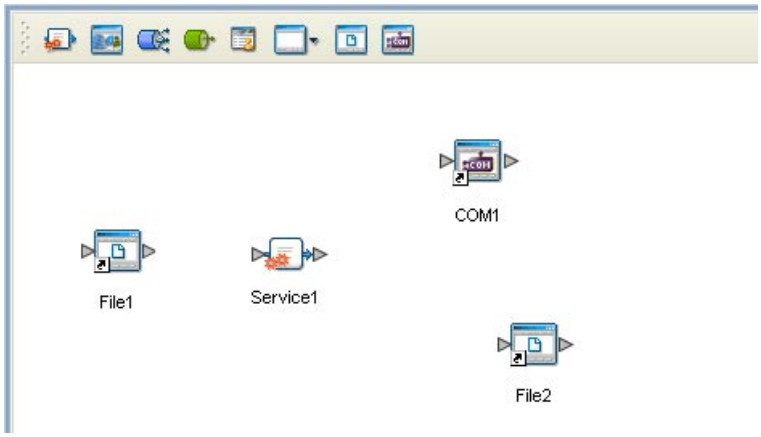
5.6.4. Populate the Connectivity Map

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 14:

- File External System (2)
- Service (A Service is a container for Java Collaborations, Business Processes, eTL processes, and so forth)
- COM/DCOM External System

Figure 14 Connectivity Map with Components



2 Save your current changes.

5.6.5. Creating the otdMSWord OTD

The COM OTD Wizard generates an OTD from a COM automation-compatible component's **type library**. The COM Type Library file used for this sample is the **MSWORD.OLB** file from Microsoft Word 2002.

To create an OTD using the COM OTD Wizard do the following:

1 From the Project Explorer tree, right click **COMeWay_MSWord** and select **New > Object Type Definition** from the shortcut menu.

2 From the **Select Wizard Type** window of the **New Object Type Definition Wizard**, select the **COM** Wizard and click **Next**.

3 Browse to the directory that contains the type library file, MSWORD.olb. For example:

```
C:\Program Files\Microsoft Office\Office10
```

Select the **MSWORD.olb** file and click the **Select** button, and click **Next**.

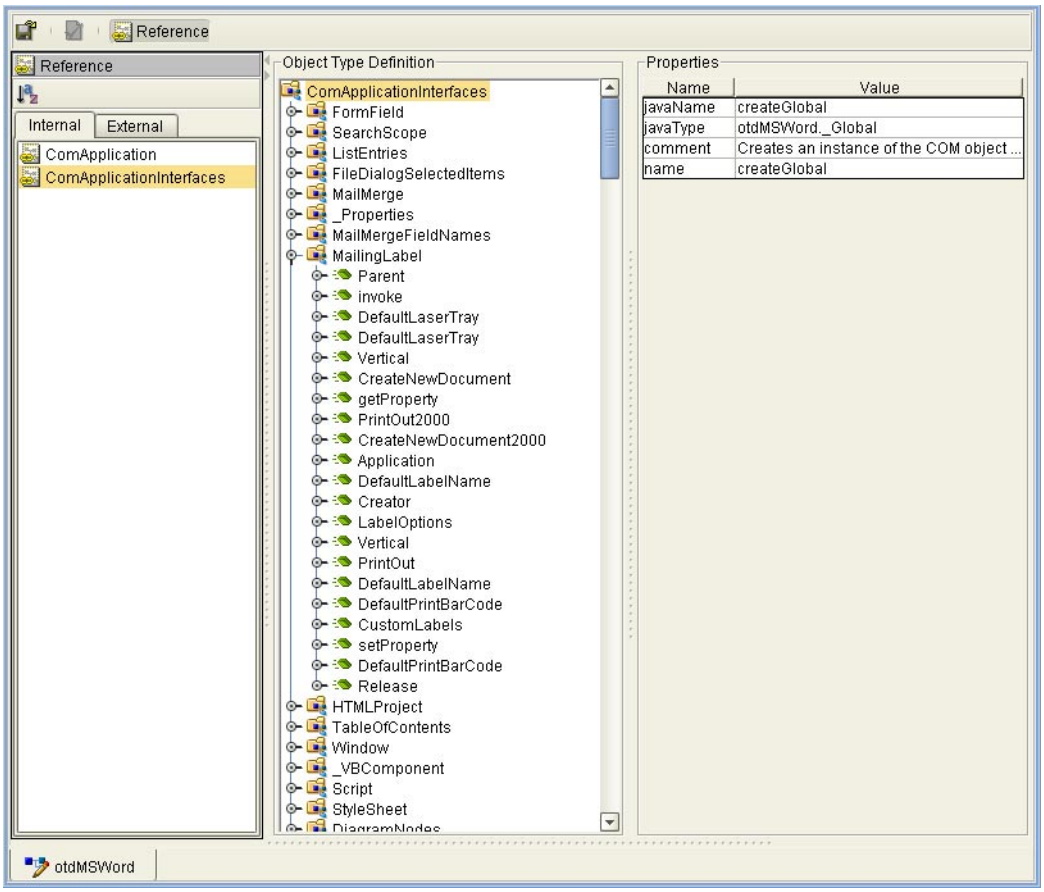
4 For **Step 3** of the wizard, select the classes you want from the type library (for this sample select all of the classes) and click **Next**.

5 For Step 4 of the wizard, enter **otdMSWord** as the name of the OTD, and click **Finish**.

6 An **Information** box is displayed indicating that some methods are not supported by the eWay. These methods will be skipped in the created OTD. The **Information** box also gives you the location of a generated "Skipped Methods" log that lists the methods skipped, as well as the issues that caused the method to be excluded.

7 The OTD Editor appears displaying the new OTD (see Figure 15).

Figure 15 OTD Editor - otdMSWord OTD



The new **otdMSWord** OTD is added to the Project Explorer tree. The OTD is now available to use in a Collaboration.

For more information on using the COM OTD Wizard, see **Using the COM OTD Wizard** on page 21.

5.6.6. Creating the Collaboration Definitions

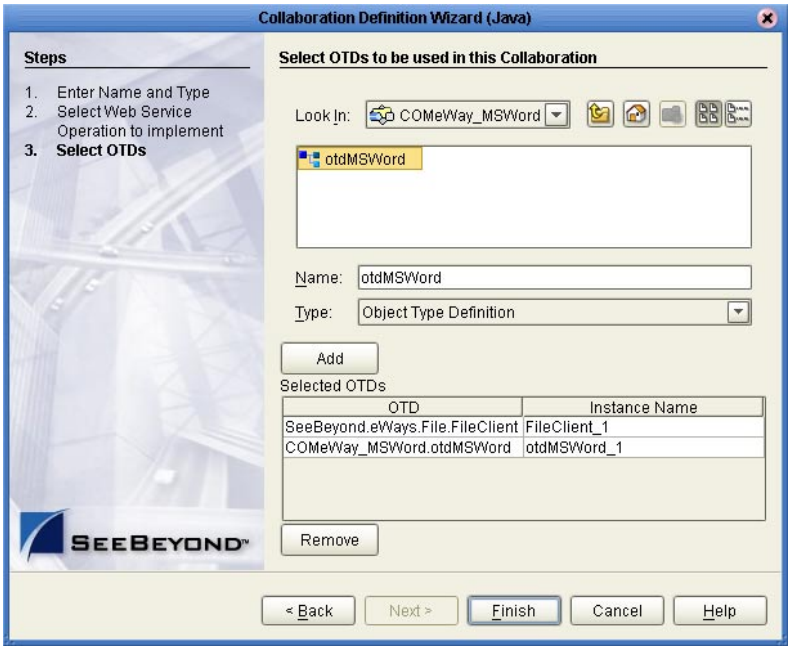
The next step in the sample is to create a Collaboration using the Collaboration Definition Wizard (Java). Once a Collaboration Definition has been created, the Business Rules of the Collaboration can be written using the Collaboration Editor (Java).

The jceMSWord Collaboration (Java)

The **jceMSWord** Collaboration defines transactions from the inbound File eWay to the COM/DCOM eWay and from the COM/DCOM application to the outbound File eWay.

1. From the Project Explorer, right-click the **COMeWay_MSWord** 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, **jceMSWord**) and click Next.
3. For Step 2 of the wizard, **Select a Web Services Operation**, double-click **SeeBeyond** > **eWays** > **File** > **FileClient** > **receive** to select the File eWay receive Web service. Click **Next**.
4. For Step 3 of the wizard, from the Select OTDs selection window, double-click **SeeBeyond** > **eWays** > **File** > **FileClient**. The **FileClient** OTD is added to the Selected OTDs field.
5. Click the **Up One Level** button to return to the Repository. Double-click **COMeWay_MSWord** > **otdMSWord**. The **otdMSWord** OTD is added to the Selected OTDs field (see **Figure 16 on page 33**).

Figure 16 Collaboration Definition Wizard (Java) - Select OTDs



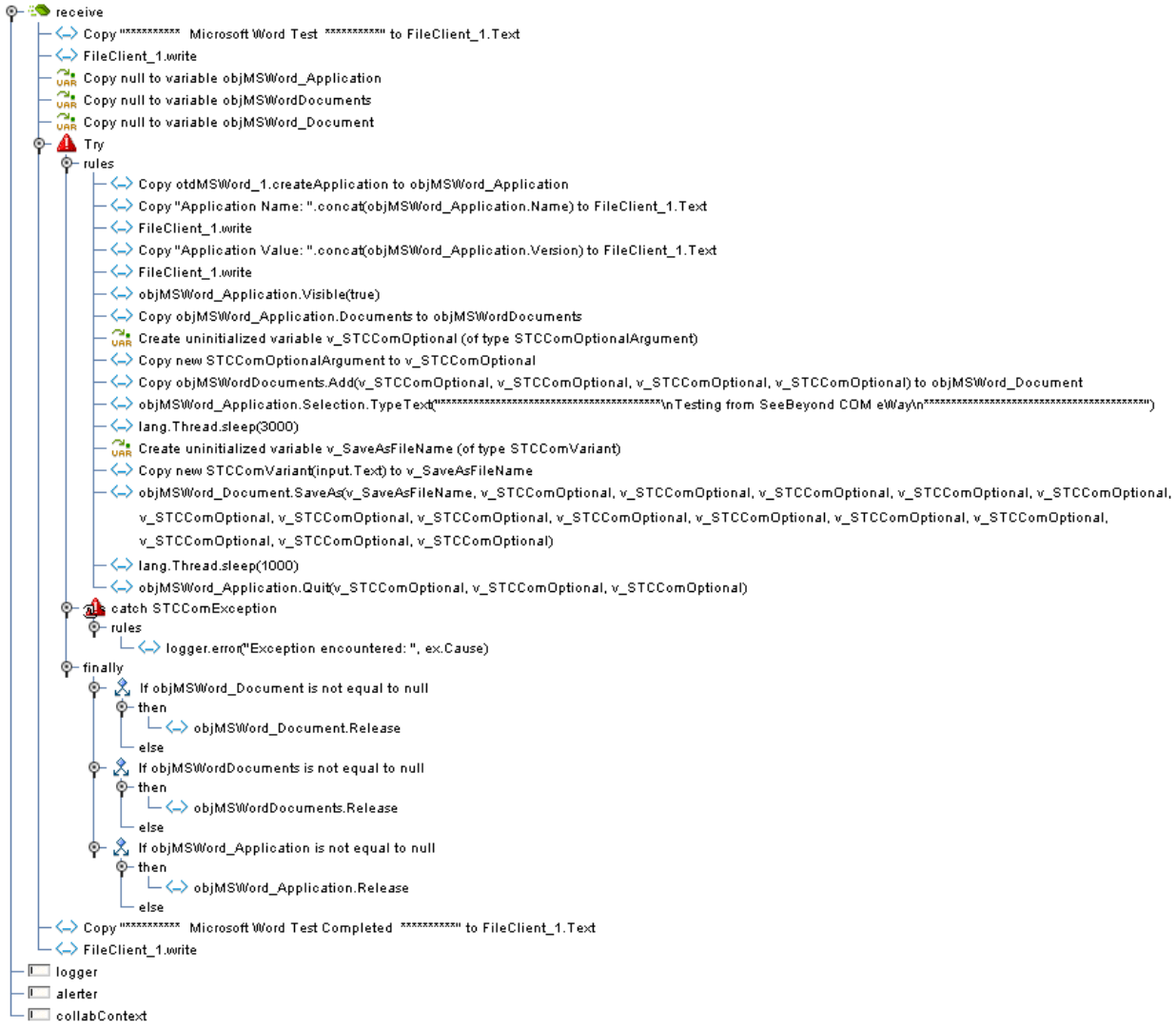
6 Click **Finish**. The Collaboration Editor (Java) appears in the left pane of the Enterprise Designer and the **jceMSWord** Collaboration is added to the Project Explorer tree.

5.6.7. Using the Collaboration Editor (Java)

The next step in the sample is to create the Business Rules of the Collaboration using the Collaboration Editor. The the COMeWay_MSWord sample project uses one Collaboration created in the previous section, **jceMSWord**.

The **jceMSWord** Collaboration contains the Business Rules displayed in **Figure 17 on page 34**.

Figure 17 jceMSWord Collaboration Business Rules



Note: *Business Rules are wrapped in Figure 17 for display purposes only.*

To create the **jceMSWord** Collaboration Business Rules, do the following:

1 From the Project Explorer tree, double-click **jceMSWord to open the** Collaboration Editor (Java) to the **jceMSWord** Collaboration.

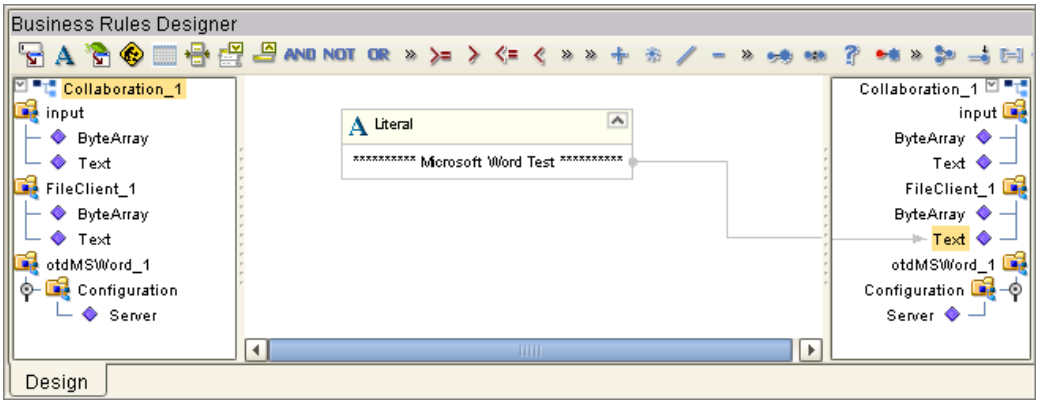
2 The **Copy "********** Microsoft Word Test **********" to FileClient_1.Text** rule, along with the **FileClient_1.write** rule, adds the leading “test” note to the output file. To create this rule, do the following:

A From the Business Rules Designer toolbar, click **Create Literal**. The **Create Literal** dialog box appears.

B Select **String** as the type and enter ********** **Microsoft Word Test** ********** as the value. Click **OK.**

C Map the ********** **Microsoft Word Test** ********** output node of the **Literal** method box to **Text**, under the FileClient1 node in the right pane of the Business Rules Designer. To do this, click on the ********** Microsoft Word Test ********** output node of the Literal method box and drag the cursor to **Text**, under the FileClient1 node in the right pane of the Business Rules Designer (see Figure 18).

Figure 18 Collaboration Editor (Java) - Business Rules Designer



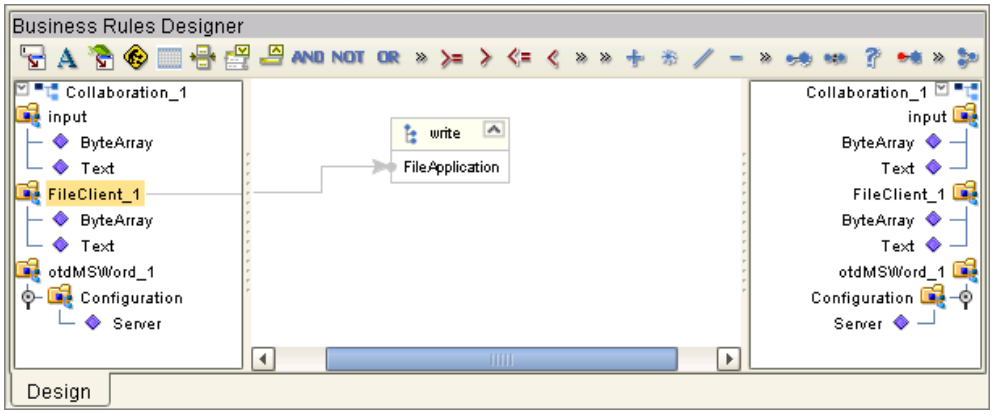
3 To create the **FileClient1_Write** rule do the following:

A Click **rule** on the Business Rules toolbar to add a new rule to the Business Rules tree.

B Right-click **FileClient1** in the left pane of the Business Rules Designer, and click **Select a method to call** from the shortcut menu. The **method selection** window appears.

C Select **write()** from the method selection window. The **write** method box appears in the Business Rules Designer canvas (see **Figure 19 on page 36**).

Figure 19 Collaboration Editor (Java) - Business Rules Designer



4 The **Copy null to variable objMSWord_Application** rule, is the first of three declared COM variables created in the **Try** block. These COM objects, placed before the **Try** bock, are released by the three "release" rules in the **finally** block. To create this rule, do the following:

A From the Business Rules toolbar, click **local variable**. The **Create Variable** dialog box appears.

B Enter **objMSWord_Application** as the variable name.

C Select **Class** as the type and click the ellipsis (...) button. The **Find Class** dialog box appears.

D Select **_Application** under **All Classes**, and click **OK**.

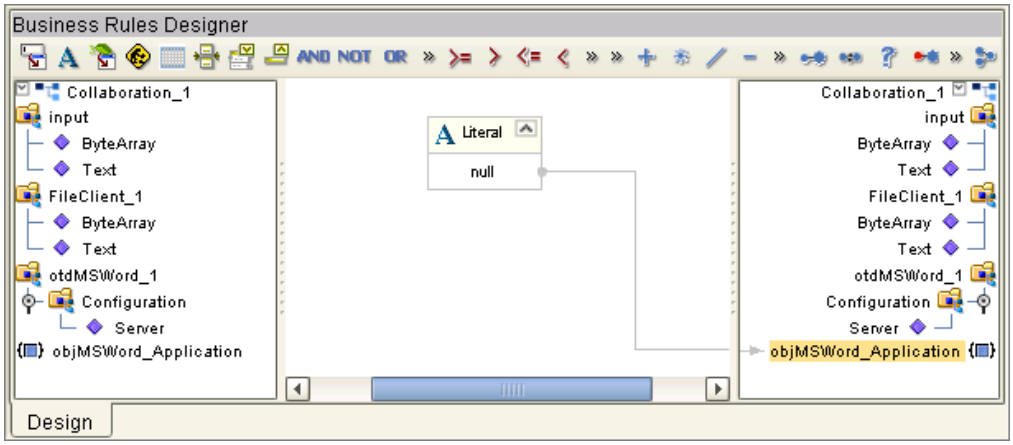
E Click **OK** to close the **Create Variable** dialog box and create your variable.

F From the Business Rules Designer toolbar, click **Create Literal**. The **Create Literal** dialog box appears.

G Select **null** as the type. The value defaults to **null** also. Click **OK**.

H The **Literal** method box appears. Map the **null** output node of the **Literal** method box to the **objMSWord_Application** field in the right pane of the Business Rules Designer (see Figure 20).

Figure 20 Collaboration Editor (Java) - Business Rules Designer



5 To create the **Copy null to variable objMSWordDocuments** rule do the following:

A From the Business Rules toolbar, click **local variable**. The **Create Variable** dialog box appears.

B Enter **objMSWordDocuments** as the variable name.

C Select **Class** as the type and click the ellipsis (...) button. The **Find Class** dialog box appears.

D Select **Documents** under **All Classes**, and click **OK**.

E Click **OK** to close the **Create Variable** dialog box and create your variable.

F From the Business Rules Designer toolbar, click **Create Literal**. The **Create Literal** dialog box appears.

G Select **null** as the type. The value defaults to **null** also. Click **OK**.

H The **Literal** method box appears. Map the **null** output node of the **Literal** method box to the **objMSWordDocuments** field in the right pane of the Business Rules Designer.

6 To create the **Copy null to variable objMSWord_Document** rule do the following:

A From the Business Rules toolbar, click **local variable**. The **Create Variable** dialog box appears.

B Enter **objMSWord_Document** as the variable name.

C Select **Class** as the type and click the ellipsis (...) button. The **Find Class** dialog box appears.

D Select **_Document** under **All Classes**, and click **OK**.

E Click **OK** to close the **Create Variable** dialog box and create your variable.

F From the Business Rules Designer toolbar, click **Create Literal**. The **Create Literal** dialog box appears.

G Select **null** as the type. The value defaults to **null** also. Click **OK**.

H The **Literal** method box appears. Map the **null** output node of the **Literal** method box to the **objMSWord_Document** field in the right pane of the Business Rules Designer.

7 The **Try** block is used to create an exception handling mechanism. The Try block encloses sections of code that may throw exceptions, and provides a **catch** clause that catches and handles the exception. To create the **Try** block, do the following:

A From the Business Rules toolbar, click **Try**. a Try node is added to the Business Rules tree.

8 The **Copy otdMSWord_1.createApplication to objMSWord_Application** rule creates an application object. To create this rule, do the following:

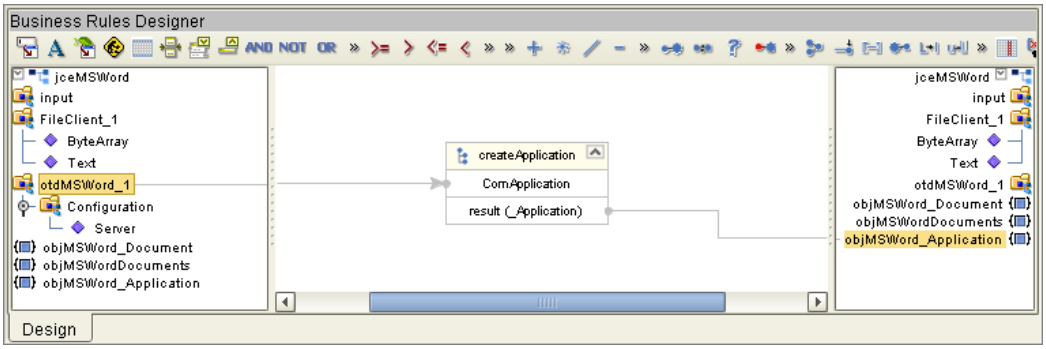
A From the Business Rules tree, select **rules** under the **Try** block and click **rule** on the Business Rules toolbar to add a new rule.

B Right-click **otdMSWord_1** in the left pane of the Business Rules Designer, and click **Select a method to call** from the shortcut menu. The **method selection** window appears.

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

D Map the **result (_Application)** output node of the **createApplication** method box to the **objMSWord_Application** field in the right pane of the Business Rules Designer (see Figure 21).

Figure 21 Collaboration Editor (Java) - Business Rules Designer



9 The **Copy "Application Name: ".concat(objMSWord_Application.Name) to FileClient_1.Text** rule, along with the **FileClient_1.write** rule, provides the application name and writes it to the output file. To create this rule, do the following:

A Click **rule** on the Business Rules toolbar to add a new rule to the Business Rules tree.

B From the Business Rules Designer toolbar, click **Create Literal**. The **Create Literal** dialog box appears.

C Select **String** as the type and enter **Application Name:** as the value. Click **OK**. The **Literal** method box appears.

D From the Business Rules Designer toolbar, Drag and drop the **concat** icon to the Business Rules Designer canvas. The **concat** method box appears.

E Right-click the **objMSWord_Application field** in the left pane of the Business Rules Designer, and click **Select a method to call** from the shortcut menu. The **method selection** window appears.

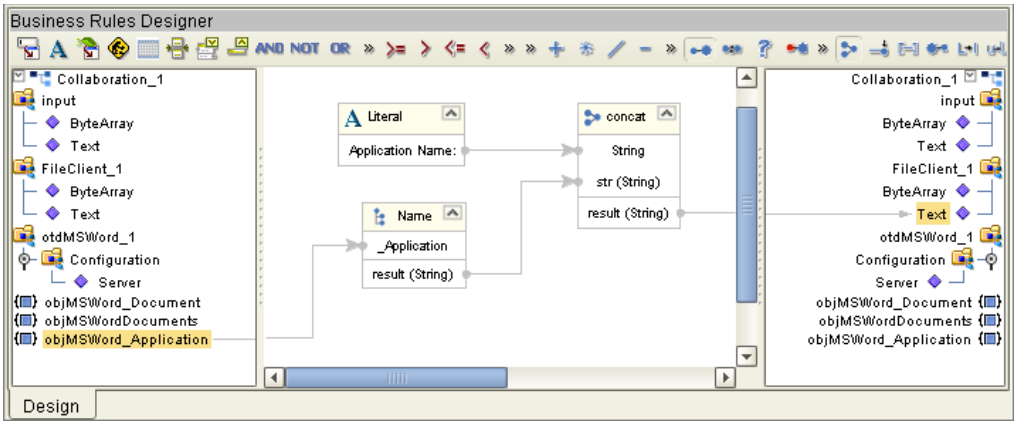
F Select **name()** from the method selection window. The **Name** method box appears in the Business Rules Designer canvas.

G Map the **result (String)** output node of the **Name** method box to the **String** input node of the **concat** method box.

H Map the **Application Name:** output node of the **Literal** method box to the **str (String)** input node of the **concat** method box.

I Map the **result (String)** output node of the **concat** method box to **Text** under FileClient_1 under the right pane of the Business Rules designer (see **Figure 22 on page 39**).

Figure 22 Collaboration Editor (Java) - Business Rules Designer



10 To create the **FileClient1_Write** rule, do the following:

A Click **rule** on the Business Rules toolbar to add a new rule to the Business Rules tree.

B Right-click **FileClient1** in the left pane of the Business Rules Designer, and click **Select a method to call** from the shortcut menu. The **method selection** window appears.

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

11 The **Copy "Application Value: ".concat(objMSWord_Application.Version) to FileClient_1.Text** rule, along with the **FileClient_1.write** rule, provides the application version (value) and writes it to the output file. To create this rule, do the following:

A Click **rule** on the Business Rules toolbar to add a new rule to the Business Rules tree.

B From the Business Rules Designer toolbar, click **Create Literal**. The **Create Literal** dialog box appears.

C Select **String** as the type and enter **Application Value:** as the value. Click **OK**. The **Literal** method box appears.

D From the Business Rules Designer toolbar, Drag and drop the **concat** icon to the Business Rules Designer canvas. The **concat** method box appears.

E Right-click the **objMSWord_Application** field in the left pane of the Business Rules Designer, and click **Select a method to call** from the shortcut menu. The **method selection** window appears.

F Select **version()** from the method selection window. The **Version** method box appears in the Business Rules Designer canvas.

G Map the **result (String)** output node of the **Version** method box to the **String** input node of the **concat** method box.

H Map the **Application Value:** output node of the **Literal** method box to the **str (String)** input node of the **concat** method box.

I Map the **result (String)** output node of the **concat** method box to **Text** under FileClient_1 under the right pane of the Business Rules designer.

12 To create the next **FileClient_1.write** rule, follow the steps for **Step 10** on page 39.

13 The **objMSWord_Application.Visible(true)** rule allows the user to see the application running. To create this rule, do the following:

A Click **rule** on the Business Rules toolbar to add a new rule to the Business Rules tree.

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

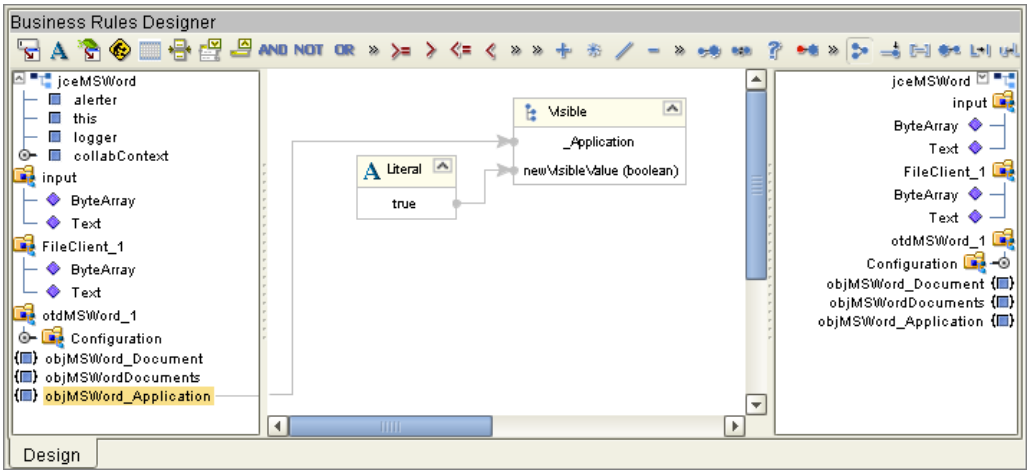
C Select **visible*(boolean newVisibleValue)*** from the method selection window. The **Visible** method box appears.

D From the Business Rules Designer toolbar, click **Create Literal**. The **Create Literal** dialog box appears.

E Select **boolean** as the type and select **True** as the value. Click **OK**. The **Literal** method box appears.

F Map the **True** output node of the **Literal** method box to the **newVisableValue (boolean)** input node of the **Visible** method box (see Figure 23).

Figure 23 Collaboration Editor (Java) - Business Rules Designer



14 The **Copy objMSWord_Application.Documents to objMSWordDocuments** rule creates a new Word document. To create this rule, do the following:

A Click **rule** on the Business Rules toolbar to add a new rule to the Business Rules tree.

B Right-click the **objMSWord_Application** field in the left pane of the Business Rules Designer, and click **Select a method to call** from the shortcut menu.

C Select **Documents()** from the method selection window. The **Documents** method box appears.

D Map the **result (Documents)** output node of the **Documents** method box to the **objMSWordDocuments** field in the right pane of the Business Rules designer.

15 The **Create uninitialized variable v_STCComOptional (of type STCComOptionalArgument)** variable creates an optional argument. To create this rule, do the following:

A From the Business Rules toolbar, click **local variable**. The **Create Variable** dialog box appears.

B Enter **v_STCComOptional** as the variable name.

C Select **Class** as the type and click the ellipsis (...) button. The **Find Class** dialog box appears.

D Select **STCComOptionalArgument** under **All Classes**, and click **OK**.

E Click **OK** to close the **Create Variable** dialog box and create your variable.

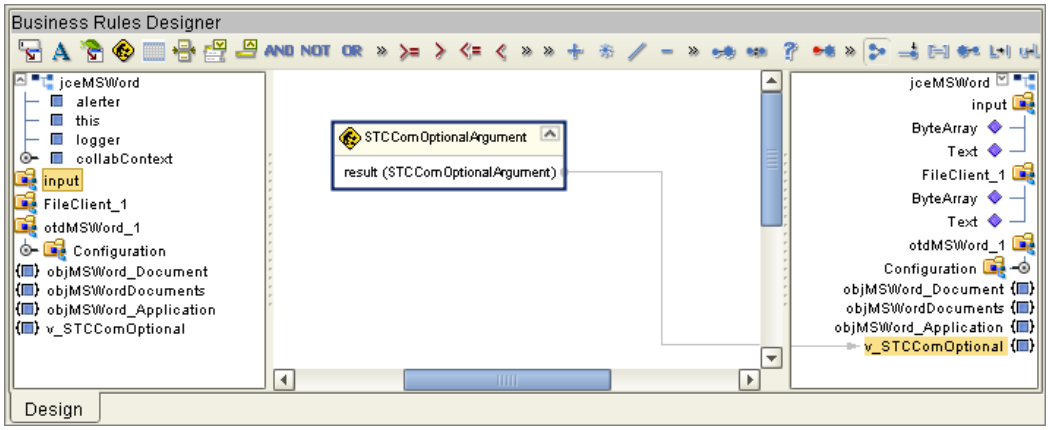
16 The **Copy new STCComOptionalArgument to v_STCComOptional** rule copies the optional argument to the methods. To create this rule, do the following:

A From the Business Rules Designer toolbar, click the **Call Constructor** icon. The **Call Constructor** dialog box appears.

B Select **STCComOptionalArgument** in the **All Classes** field and click **OK**. The **STCComOptionalArgument** method box appears.

C Map the **result (STCComOptionalArgument)** output node of the **Call Constructor** method box to the **v_STCComOptional** field in the right pane of the Business Rules designer (see Figure 24).

Figure 24 Collaboration Editor (Java) - Business Rules Designer



17 The **Copy objMSWordDocuments.Add(v_STCComOptional, v_STCComOptional, v_STCComOptional, v_STCComOptional) to objMSWord_Document** rule creates the new Word document. To create this rule, do the following:

A Click **rule** on the Business Rules toolbar to add a new rule to the Business Rules tree.

B Right-click the **objMSWordDocuments** field in the left pane of the Business Rules Designer, and click **Select a method to call** from the shortcut menu.

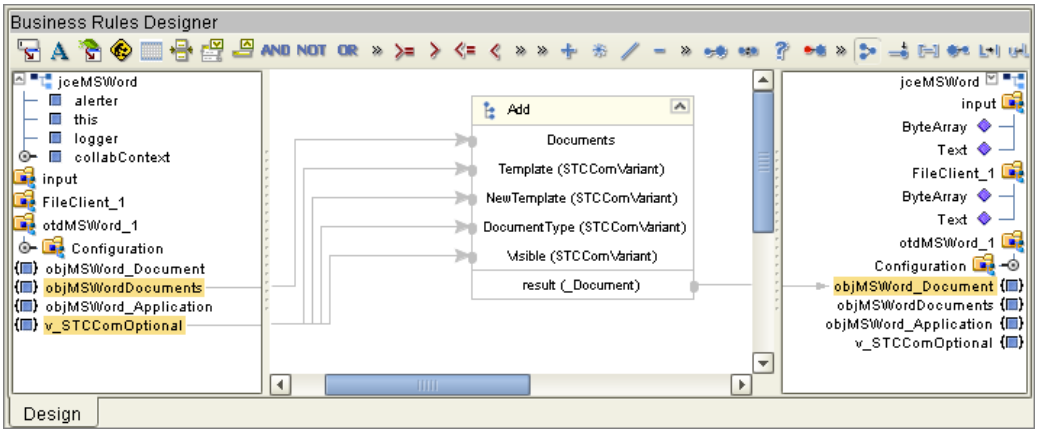
C Select **Add(com.stc.connector.comadapter.STCComVariant Template...)** from the method selection window. The **Add** method box appears.

D Map the **v_STCComOptional** field in the left pane of the Business Rules Designer, to each of the following input nodes of the **Add** method box:

- Template (STCComVariant)
- New Template (STCComVariant)
- Document Type (STCComVariant)
- Visible (STCComVariant)

E Map the **result (_Document)** output node of the **Add** method box to the **objMSWord_Document** field in the right pane of the Business Rules designer (see Figure 25).

Figure 25 Collaboration Editor (Java) - Business Rules Designer



18 The **objMSWord_Application.Selection.TypeText("********** **********\nTesting from SeeBeyond COM eWay\n********** **********")** rule adds this text string to the document. To create this rule, do the following:

A Click **rule** on the Business Rules toolbar to add a new rule to the Business Rules tree.

B Right-click the **objMSWord_Application** field in the left pane of the Business Rules Designer, and click **Select a method to call** from the shortcut menu.

C Select **Selection()** from the method selection window. The **Selection** method box appears.

D Right-click the **result (Selection)** output node of the **Selection** method box, and click **Select a method to call** from the shortcut menu.

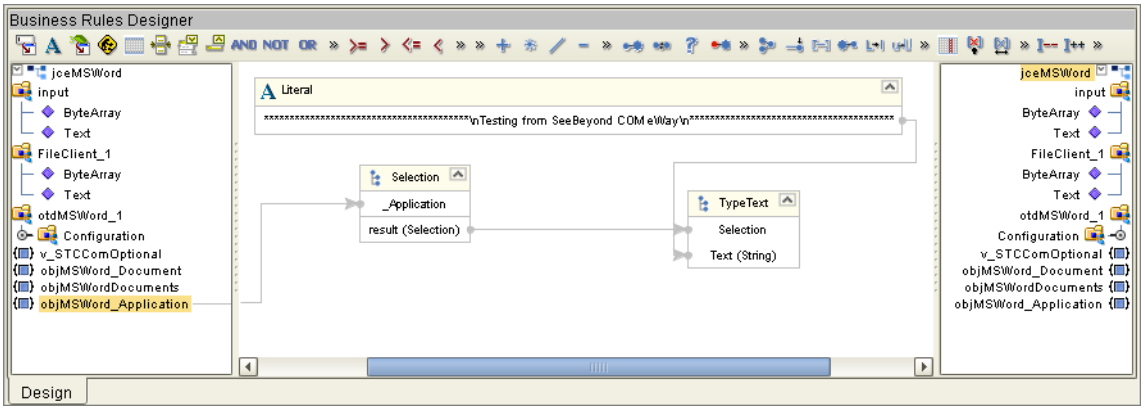
E Select **TypeText()** from the method selection window. The **TypeText** method box appears.

F From the Business Rules Designer toolbar, click **Create Literal**. The **Create Literal** dialog box appears.

G Select **String** as the type and enter ********** **\nTesting from SeeBeyond COM eWay\n********** ******* as the value. Click **OK**.

H Map the output node of the **Literal** method box to the **Text (String)** input node of the TextType method box (see Figure 26).

Figure 26 Collaboration Editor (Java) - Business Rules Designer



19 The **lang.Thread.sleep(3000)** rule adds a three second delay so that the user can watch the operation as the document is created. To create this rule, do the following:

A From the Business Rules Designer toolbar, click **Create Literal**. The **Create Literal** dialog box appears.

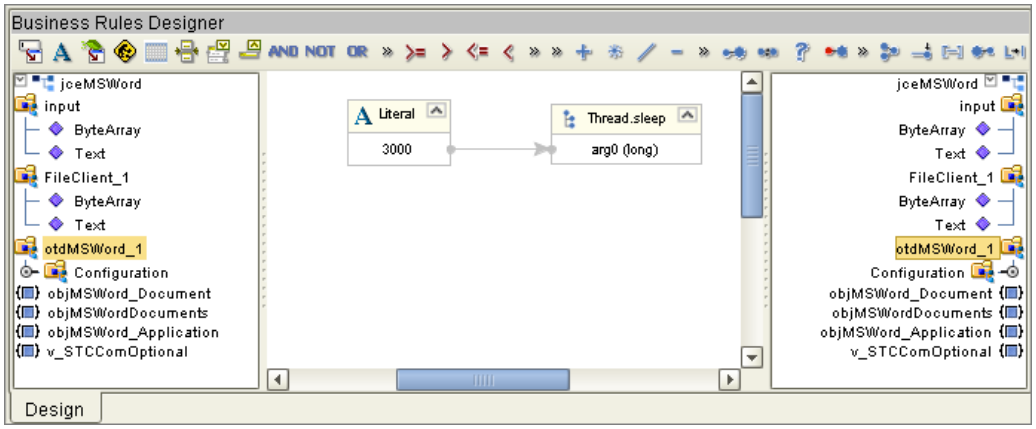
B Select **long** as the type and enter **3000** as the value. Click **OK**. The **Literal** method box appears.

C From the Business Rules Designer toolbar, click **Call Java Method**. The **Call Method** dialog box appears.

D From the **Call Method** dialog box, select **Thread** in the **All Classes** field, select **sleep (long arg0)** in the **Methods** field, and click **OK**. The **Thread.sleep** method box appears.

E Map the **3000** output node of the **Literal** method box to the **Arg0 (long)** input node of the **Thread.sleep** method box (see Figure 27).

Figure 27 Collaboration Editor (Java) - Business Rules Designer



20 The **Create uninitialized variable v_SaveAsFileName (of type STCComVariant)** variable creates a variable for the file name and location that uses the name/location string from the input file. To create this rule, do the following:

A From the Business Rules toolbar, click **local variable**. The **Create Variable** dialog box appears.

B Enter **v_SaveAsFileName** as the variable name.

C Select **Class** as the type and click the ellipsis (...) button. The **Find Class** dialog box appears.

D Select **STCComVariant** under **All Classes**, and click **OK**.

E Click **OK** to close the **Create Variable** dialog box and create your variable.

21 The **Copy new STCComVariant(input.Text) to v_SaveAsFileName** rule copies the file name and location from the input file as the name and save location of the new document. To create this rule, do the following:

A From the Business Rules Designer toolbar, click the **Call New Constructor** icon. The **Call New Constructor** dialog box appears. Select **STCComVariant** in the **All Classes** window, select **STCComVariant (String s)** in the **Constructors** window, and click **OK**. The **STCComVariant** method box appears in the Business Rules Designer canvas.

B Map **Text** under **input** in the left pane of the Business Rules Designer, to the **s (String)** input node of the **STCComVariant** method box.

C Map the **result (STCComVariant)** output node of the **STCComVariant** method box to the **v_SaveAsFileName** field in the right pane of the Business Rules Designer.

22 The **objMSWord_Document.SaveAs(v_SaveAsFileName, v_STCComOptional, v_STCComOptional, ...)** rule provides 15 options for associated arguments to save the new document. v_SaveAsFileName, created in step 21, is used for the FileName argument. To create this rule, do the following:

A Click **rule** on the Business Rules toolbar to add a new rule to the Business Rules tree.

B Right-click the **objMSWord_Document** field in the left pane of the Business Rules Designer, and click **Select a method to call** from the shortcut menu.

C Select **SaveAs(com.stc.connector.comadapter.comruntime.STCComVariant...)** from the method selection window. The **SaveAs** method box appears.

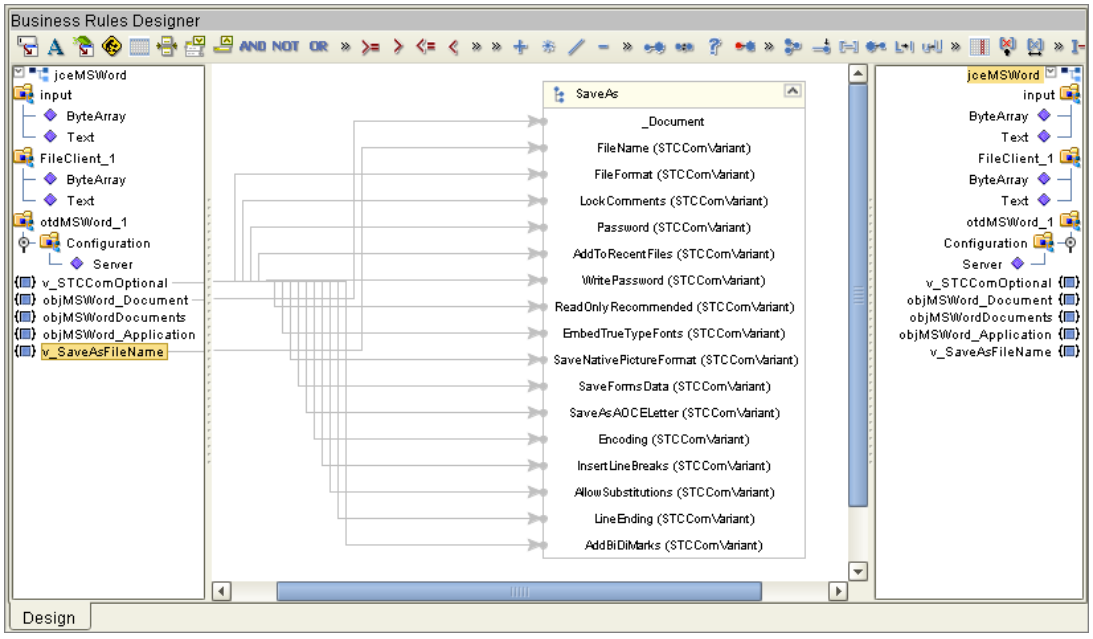
D Map the **v_SaveAsFileName** field in the left pane of the Business Rules Designer, to the **FileName (STCComVariant)** input node of the SaveAs method box.

E Map the **v_STCComOptional** field in the left pane of the Business Rules Designer, to each of the following input nodes of the **SaveAs** method box as displayed in **Figure 28 on page 45**.

- FileFormat (STCComVariant)
- LockComments (STCComVariant)

- Password (STCComVariant)
- AddToRecentFiles (STCComVariant)
- WritePassword (STCComVariant)
- ReadOnlyRecommended (STCComVariant)
- EmbedTrueTypeFonts (STCComVariant)
- SaveNativePictureFormat (STCComVariant)
- SaveFormsData (STCComVariant)
- SaveAsOAOCELetter (STCComVariant)
- Encoding (STCComVariant)
- InsertLineBreaks (STCComVariant)
- AllowSubstitutions (STCComVariant)
- LineEnding (STCComVariant)
- AddBiDiMarks (STCComVariant)

Figure 28 Collaboration Editor (Java) - Business Rules Designer



23 The **lang.Thread.sleep(1000)** provides a one second delay to allow the user to observe the operation. To create this rule, do the following:

A From the Business Rules Designer toolbar, click **Create Literal**. The **Create Literal** dialog box appears.

B Select **long** as the type and enter **1000** as the value. Click **OK**. The **Literal** method box appears.

C From the Business Rules Designer toolbar, click **Call Java Method**. The **Call Method** dialog box appears.

D From the **Call Method** dialog box, select **Thread** in the **All Classes** field, select **sleep (long arg0)** in the **Methods** field, and click **OK**. The **Thread.sleep** method box appears.

E Map the **1000** output node of the **Literal** method box to the **Arg0 (long)** input node of the **Thread.sleep** method box.

24 The **objMSWord_Application.Quit(v_STCComOptional, v_STCComOptional, v_STCComOptional)** rule ends the operation and closes the document. To create this rule, do the following:

A Click **rule** on the Business Rules toolbar to add a new rule to the Business Rules tree.

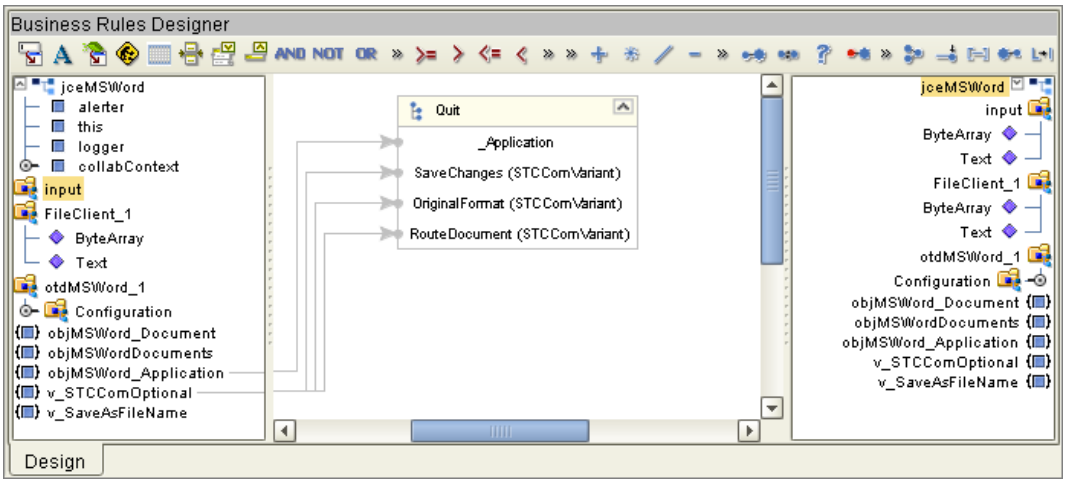
B Right-click the **objMSWord_Application** field in the left pane of the Business Rules Designer, and click **Select a method to call** from the shortcut menu.

C Select **Quit(com.stc.connector.comadapter.comruntime.STCComVariant SaveChanges, com.stc.connector.comadapter.comruntime.STCComVariant RouteDocument)** from the method selection window. The **Quit** method box appears.

D Map the **v_STCComOptional** field in the left pane of the Business Rules Designer, to each of the following input nodes of the **Quit** method box as displayed in Figure 29).

- SaveChanges (STCComVariant)
- OriginalFormat (STCComVariant)
- RouteDocument (STCComVariant)

Figure 29 Collaboration Editor (Java) - Business Rules Designer



25 The **STCComException catch block** provides error handling for the Collaboration. To create this rule, do the following:

A From the Business Rules pane, collapse all of the rules under the **Try** on the Business Rules tree. To do this, right-click **Try** on the Business Rules tree, and select **Collapse All Rules** from the shortcut menu.

B From the Business Rules tree, right-click **Try** and select **catch** from the shortcut menu. The **Create Exception Variable** dialog box appears.

C From the **Create Exception Variable** dialog box, enter **STCComException** as the **Name**.

D Select **Class** as the type and click the ellipsis (...) button. The **Find Class** dialog box appears. Select **STCComException** under **All Classes** and click **OK**.

E Click OK to close the **Create Exception Variable** dialog box.

26 The **logger.error("Exception encountered: ", ex.Cause)** rule under **catch**, catches an error if one is thrown in the **Try** block, and writes the error to the log file. To create this rule, do the following:

A From the Business Rules tree, expand **catch** and select **rules** under the **catch**.

B Click **rule** on the Business Rules toolbar to add a rule to the Business Rules tree.

C Right-click the **logger** field in the left pane of the Business Rules Designer, and click **Select a method to call** from the shortcut menu.

D Select **error(object arg0, Throwable arg1)** from the method selection window. The **error** method box appears.

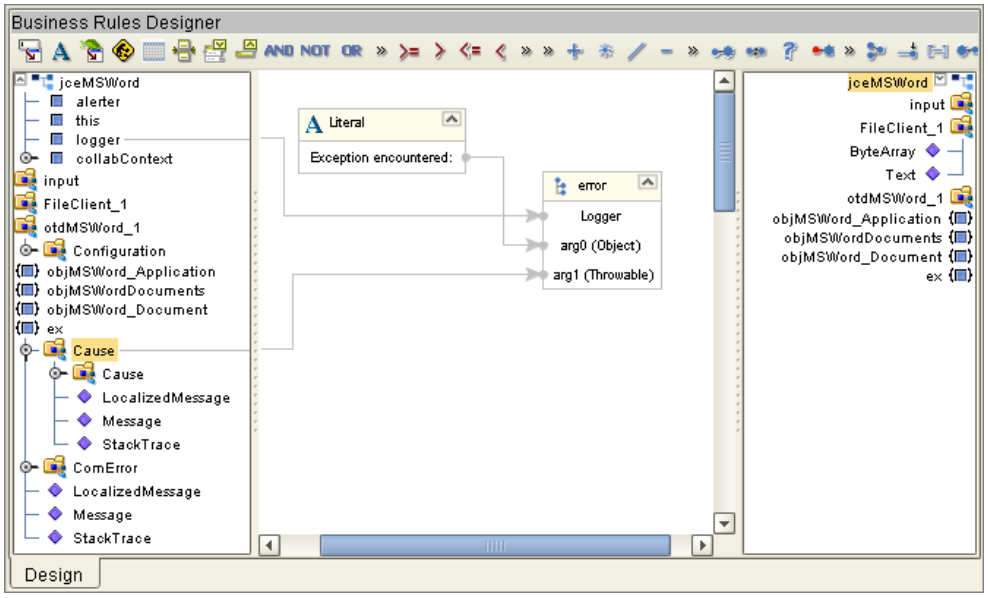
E From the Business Rules Designer toolbar, click **Create Literal**. The **Create Literal** dialog box appears.

F Select **String** as the type and enter **Exception encountered:** as the value. Click **OK**. The **Literal** method box appears.

G Map **the Exception encountered:** output node of the Literal method box, to the **arg0 (Object)** input node of the **error** method box.

H Map **Cause,** under the **ex** field in the left pane of the Business Rules Designer, to the **arg1 (Throwable)** input node of the **error** method box (see Figure 30).

Figure 30 Collaboration Editor (Java) - Business Rules Designer



27 The **If objMSWord_Document is not equal to null** rule, along with the **then** rule, **objMSWord_Document.Release** (under **finally**), releases the local interface handle and removes the **objMSWord_Document** COM object from the server's task manager list. To create this rule, do the following:

A Select the **finally** node on the Business Rules tree.

B Click the **if** icon on the Business Rules toolbar to add a new **if** statement to the Business Rules tree.

C From the Business Rules Designer toolbar, click the double greater-than icon (>>). The **Method Palette** dialog box appears. From here you can add additional tools to the Business Rules Designer toolbar. Click the Comparison tab, and select the **! = not equal tool**. Click Close. The new tool is now added to the toolbar.

D From the Business Rules toolbar, click on and drag the **! = not equal** icon to the Business Rules Designer canvas. The **! = not equal** method box is added to the canvas.

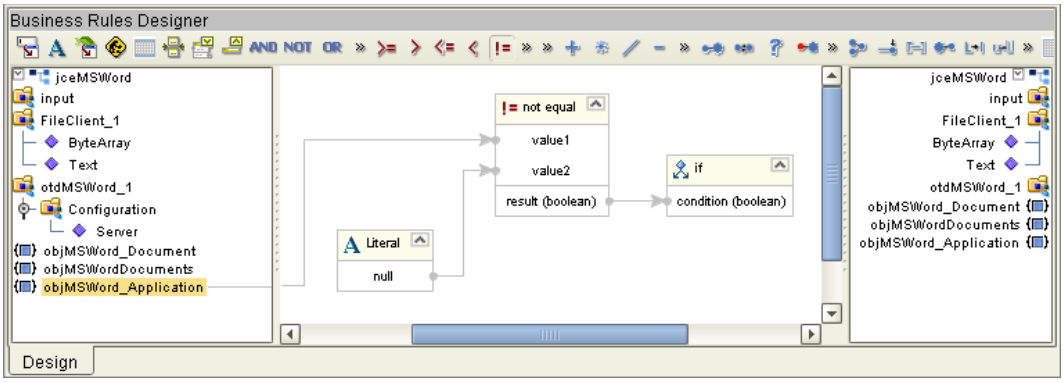
E From the Business Rules Designer toolbar, click the **Create Literal** icon. The **Create Literal** dialog box appears. Select null as the Type and Value, and click OK.

F Map **objMSWord_Document** in the left pane of the Business Rules Designer to the **value1** input node of the ! = not equal method box.

G Map the **null** output node of the Literal method box to the **value2** input node of the ! = not equal method box.

H Map the **result (boolean)** output node of the ! = not equal method box to the **condition (boolean)** input node of the if method box (see Figure 31).

Figure 31 Collaboration Editor (Java) - Business Rules Designer



28 To create the **then** statement rule, **objMSWord_Document.Release,** under the **If objMSWord_Document is not equal to null** rule, do the following:

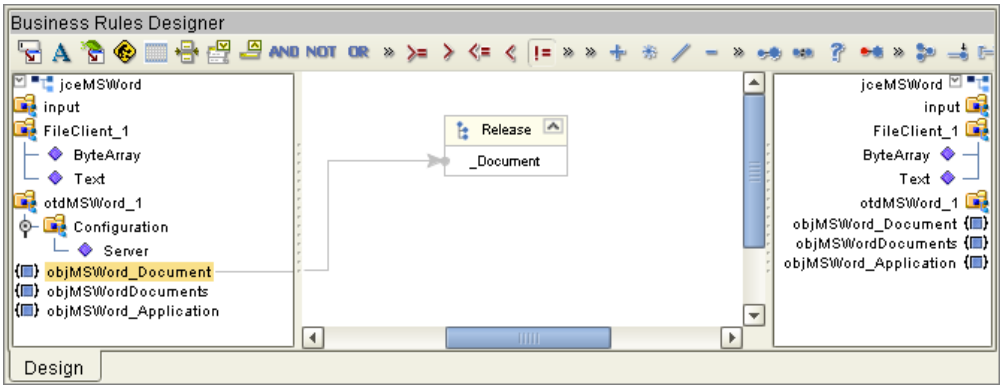
A Select the **then** under the **If objMSWord_Document is not equal to null** rule on the Business Rules tree.

B Click **rule** on the Business Rules toolbar to add a rule under the **then** statement.

C Right-click **objMSWord_Document** in the left pane of the Business Rules Designer, and click **Select a method to call** from the shortcut menu.

D Select **Release()** from the method selection window. The **Release** method box appears (see Figure 32).

Figure 32 Collaboration Editor (Java) - Business Rules Designer



29 The **If objMSWordDocuments is not equal to null** rule, along with the **then** rule, **objMSWordDocuments.Release** (under **finally**), releases the local interface handle and removes the **objMSWordDocuments** COM object from the server's task manager list. To create this rule, do the following:

A Click the **if** icon on the Business Rules toolbar to add a new **if** statement to the Business Rules tree.

B From the Business Rules toolbar, click on and drag the **! = not equal** icon to the Business Rules Designer canvas. The **! = not equal** method box is added to the canvas.

C From the Business Rules Designer toolbar, click the **Create Literal** icon. The **Create Literal** dialog box appears. Select null as the Type and Value, and click OK.

D Map **objMSWordDocuments** in the left pane of the Business Rules Designer to the **value1** input node of the ! = not equal method box.

E Map the **null** output node of the Literal method box to the **value2** input node of the ! = not equal method box.

F Map the **result (boolean)** output node of the ! = not equal method box to the **condition (boolean)** input node of the if method.

30 To create the **then** statement rule, **objMSWordDocuments.Release**, under the **If objMSWordDocuments is not equal to null** rule, do the following:

A Select the **then** under the **If objMSWordDocuments is not equal to null** rule on the Business Rules tree.

B Click **rule** on the Business Rules toolbar to add a rule under the **then** statement.

C Right-click **objMSWordDocuments** in the left pane of the Business Rules Designer, and click **Select a method to call** from the shortcut menu.

D Select **Release()** from the method selection window. The **Release** method box appears

31 The **If objMSWord_Application is not equal to null** rule, along with the **then** rule, **objMSWord_Application.Release** (under **finally**), releases the local interface handle and removes the **objMSWord_Application** COM object from the server's task manager list. To create this rule, do the following:

A Click the **if** icon on the Business Rules toolbar to add a new **if** statement to the Business Rules tree.

B From the Business Rules toolbar, click on and drag the **! = not equal** icon to the Business Rules Designer canvas. The **! = not equal** method box is added to the canvas.

C From the Business Rules Designer toolbar, click the **Create Literal** icon. The **Create Literal** dialog box appears. Select null as the Type and Value, and click OK.

D Map **objMSWord_Application** in the left pane of the Business Rules Designer to the **value1** input node of the ! = not equal method box.

E Map the **null** output node of the Literal method box to the **value2** input node of the ! = not equal method box.

F Map the **result (boolean)** output node of the ! = not equal method box to the **condition (boolean)** input node of the if method.

32 To create the then rule **objMSWord_Application.Release** under the **If objMSWord_Application is not equal to null** rule, do the following:

A Select the **then** under the **If objMSWord_Application is not equal to null** rule on the Business Rules tree.

B Click **rule** on the Business Rules toolbar to add a rule under the **then** statement.

C Right-click **objMSWord_Application** in the left pane of the Business Rules Designer, and click **Select a method to call** from the shortcut menu.

D Select **Release()** from the method selection window. The **Release** method box appears

33 The **Copy "********** Microsoft Word Test Completed **********" to FileClient_1.Text** rule, along with the **FileClient_1.write** rule, adds the "completed" text string to the output file. To create this rule, do the following:

A Select the **receive** method at the top of the Business Rules tree.

B From the Business Rules toolbar, click **rule**. An empty rule is added at the bottom of the Business Rules tree.

C From the Business Rules Designer toolbar, click **Create Literal**. The **Create Literal** dialog box appears.

D Select **String** as the type and enter ********** **Microsoft Word Test Completed** ********** as the value. Click **OK**. The **Literal** method box appears.

E Map the ********** **Microsoft Word Test Completed** ********** output node of the **Literal** method box to **Text** under **FileClient_1** in the right pane of the Business Rules Designer.

34 To create the next **FileClient_1.write** rule, follow the steps for **Step 10** on page 39.

35 Save your current changes to the Repository.

Note: *For more information on creating Business Rules using the Collaboration Editor See the eGate Integrator User's Guide.*

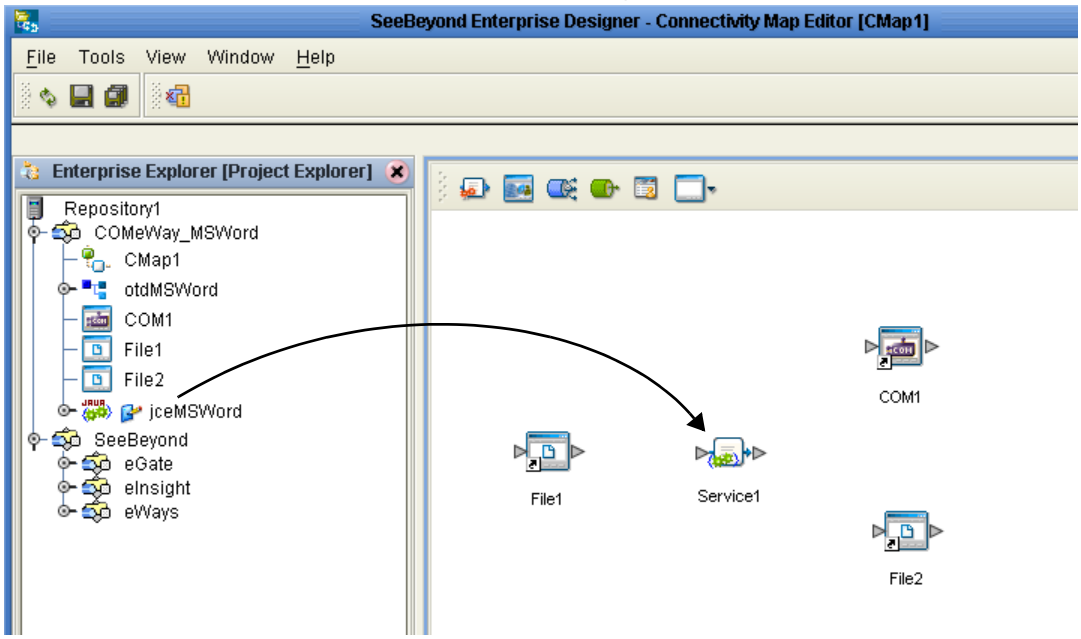
5.6.8. Creating Collaboration Bindings

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 **CMap1** to display the Connectivity Map.

2 Drag and drop the **jceMSWord** Collaboration from the Project Explorer tree to **Service1** in the Connectivity Map. If the Collaboration is successfully associated, the Service icon's "gears" change from red to green (see Figure 33).

Figure 33 Connectivity Map - Binding the Collaborations



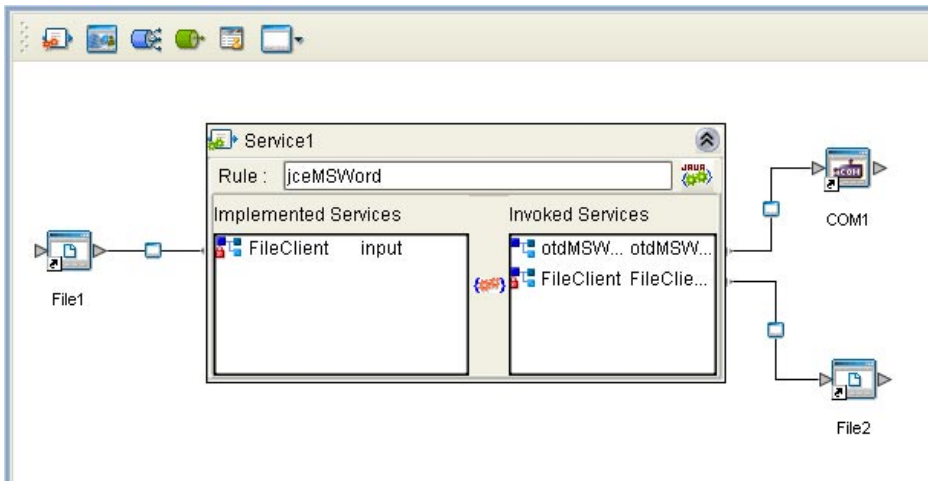
3 Double-click **Service1** in the Connectivity Map. The **Service1** dialog box appears.

4 From the **Service1** dialog box, map **FileClient input** (under Implemented Services) to the **File1** inbound External Application, by clicking on **FileClient input** in the Service1 dialog box and dragging the cursor to the **File1** application.

5 From the **Service1** dialog box, map **otdMSWord_1, otdMSWord** (under Invoked Services) to the **COM1** External Application.

6 From the **Service1** dialog box, map **FileClient_1 FileClient** (under Invoked Services) to the **File2** outbound External Application (see Figure 34).

Figure 34 Connectivity Map - Connecting the Project's Components



7 Minimize the **Service1** dialog box, and save your current changes to the Repository.

5.6.9. 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 **COMeWay_MSWord_Env**.

4 Right-click **COMeWay_MSWord_Env** and select **New COM/DCOM External System**. Name the External System **ComExtSys**. **ComExtSys** is added to the Environment Editor.

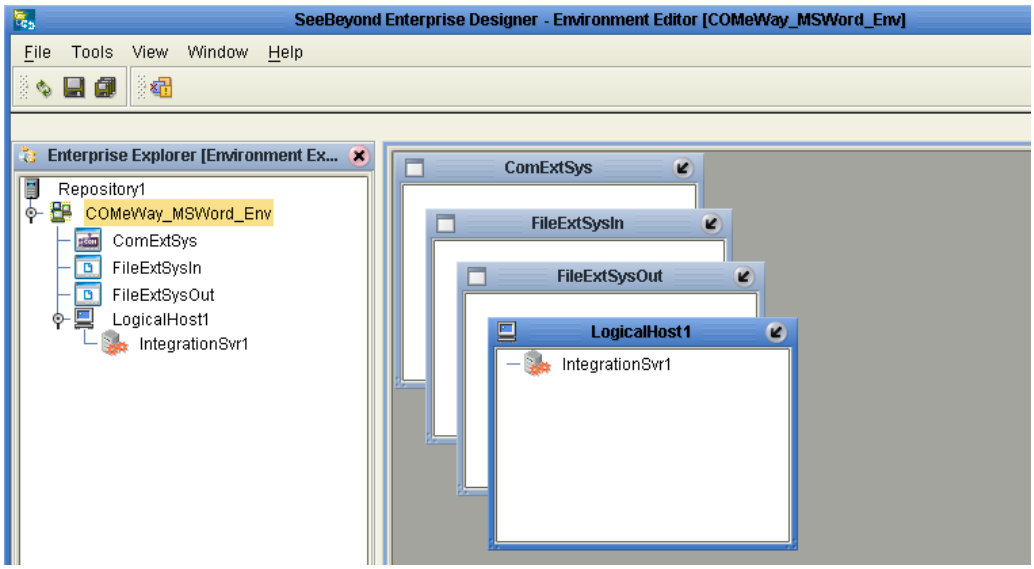
5 Right-click **COMeWay_MSWord_Env** and select **New File External System**. From the **Create an External System** dialog box, enter **FileExtSysIn** as the name and select **Inbound File eWay** as the type. Click **OK**. **FileExtSysIn** is added to the Environment Editor.

6 Right-click **COMeWay_MSWord_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 **COMeWay_MSWord_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 35 on page 53**).

Figure 35 Environment Editor - COMeWay_MSWord_Env



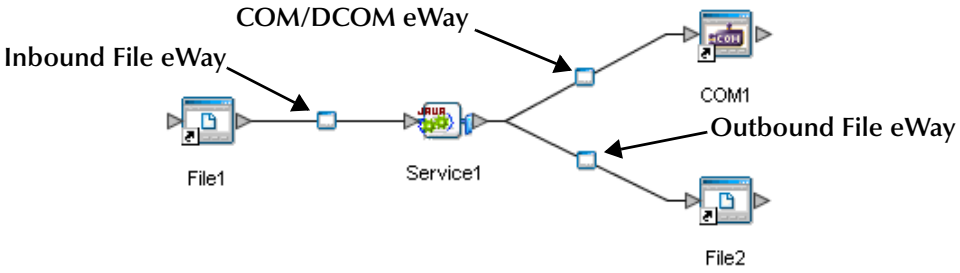
9 At this point, upload the JAR files (see **Adding JAR files to the Integration Server Classpath** on page 12)

10 Save your current changes to the Repository.

5.6.10. Configuring the eWays

The **COMeWay_MSWord** sample project uses three eWays, each represented in the Connectivity Map as a node between an External Application and the Collaboration (see Figure 36). The eWays facilitate communication and movement of data between the External Applications and the eGate system.

Figure 36 eWays



Configuring the File eWays

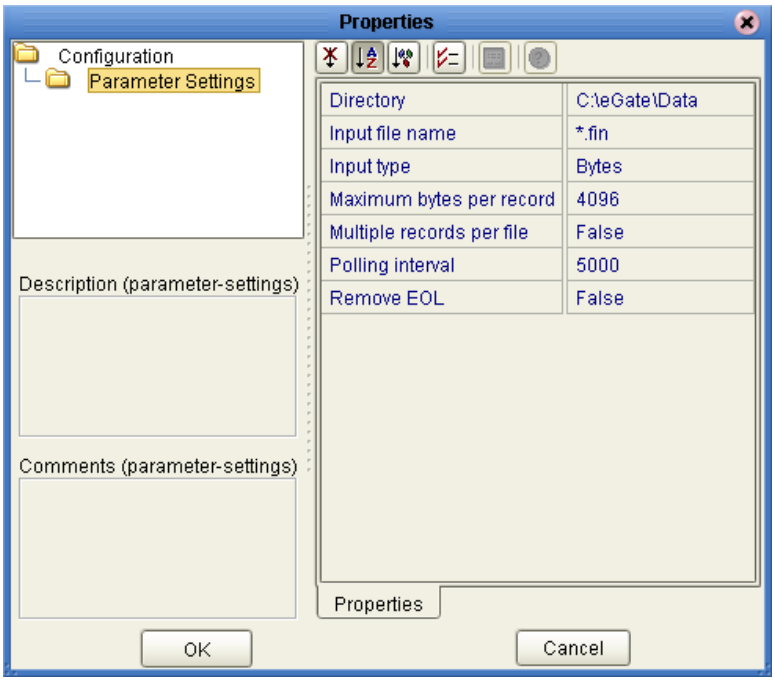
File eWays only possess Connectivity Map properties. These are accessed by double-clicking the eWay node in the Connectivity map.

Inbound File eWay (File1) Properties

1 Double-click the inbound File eWay (see Figure 36). The Templates dialog box appears. Select **Inbound File eWay** in the Templates dialog box and click **OK**.

2 The Properties Editor opens to the inbound File eWay properties. Modify the properties for your system as displayed in Figure 37.

Figure 37 Properties Editor - Inbound File eWay (File1) Properties



3 Click **OK**. The properties settings are saved for the eWay.

Outbound File eWay (File2) Properties

1 Double-click the outbound File eWay located between **Service1** and the outbound **File2** External Application. Select **Outbound File eWay** from the Templates dialog box. The Properties Editor appears.

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

Table 3 Outbound File eWay Settings

Outbound eWay Configuration Parameters	
Add EOL	True
Directory	C:\eGate\Data
Multiple records per file	True
Output file name	output%.dat

Configuring the COM/DCOM eWay

The COM/DCOM eWay properties are set from Environment Explorer only (the COM.DCOM eWay does not possess Connectivity Map Properties.

Modifying the COM/DCOM eWay Environment Explorer Properties

1. From the **Environment Explorer** tree, right-click the COM/DCOM External System (**COMExtSys** in this sample), and select **Properties**. The Properties Editor opens to the COM/DCOM eWay properties.
2. Modify the **Server** property. If this property is left blank, the value defaults to your logical host.
3. Click OK to save your settings and close the editor.
4. For more information on the COM/DCOM eWay configuration properties see **Configuring the COM/DCOM eWay** on page 14.

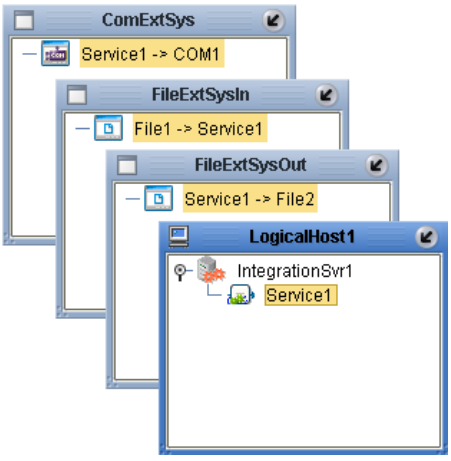
5.6.11. Creating and Activating the Deployment Profile

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 **COMeWay_MSWord** sample Deployment Profile do the following:

1. From the Enterprise Explorer's Project Explorer, right-click the project (**COMeWay_MSWord**) and select **New** > **Deployment Profile**.
2. From the **Create Deployment Profile for COMeWay_MSWord** dialog box, enter a name for the Deployment Profile (for this sample **COMeWay_MSWord_DP**), and select **COMeWay_MSWord_Env** as the Environment. Click **OK**.
3. From the left pane of the Deployment Editor, drag **Service1 -> COM1** to the **ComExtSys** 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 (see Figure 38).

Figure 38 Deployment Profile



7. Click **Activate**, then save the changes to the Repository.

5.6.12. Running the Project

Designate the Input and Output Directories

Before starting the eWay, create the input and output directories. For this sample, input and output share the same directory: **C:\eGate\Data**. You can designate any directories as the input and output directories, but the File eWay properties must be configured to use those directories before running the eWay. For more information on configuring these properties see **Configuring the eWays** on page 53.

Starting 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\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**
   - Repository URL: **http://localhost:*port number/repository name***
   - Repository user name and password: ***Your user name and password***
   - Logical Host Environment name **COMeWay_MSWord_Env**
   - Logical Host name: **Localhost**

   Save your changes to **logical-host.properties** and close the file.
5. Run the **bootstrap.bat** file located in the **C:\ican50\LogicalHost1\bootstrap\bin** directory.
6. Copy the sample input data file to the input directory, with the correct extension.

5.7 Creating the COMeWay_MSExcel Sample Project

The following sections in this chapter describe how the COMeWay_MSExcel sample project's components are created.

5.7.1. 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 Project Explorer tree, right-click the Repository and select **New Project**. A new project (Project1) appears on the Project Explorer tree.
3. From the Project Explorer tree, select and rename **Project1** (for this sample, **COMeWay_MSExcel**).

5.7.2 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**.

5.7.3. Select the External Applications

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

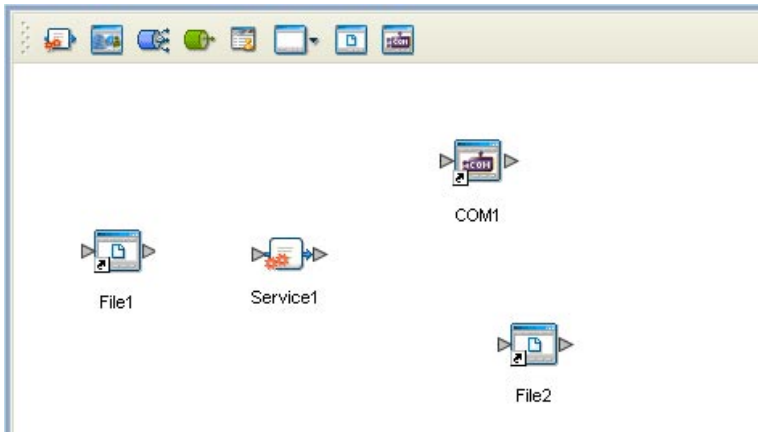
1. Click the **External Application** icon on the Connectivity Map toolbar.
2. Select the external systems that are necessary for your project (for this sample, **COM/DCOM** and **File**). Icons representing the selected external systems are added to the Connectivity Map toolbar.

5.7.4. 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 39 on page 58**:
   - File External System (2)
   - Service (A Service is a container for Java Collaborations, Business Processes, eTL processes, and so forth.)
   - COM/DCOM External System

Figure 39 Connectivity Map with Components



2 Save your current changes.

5.7.5. Creating the otdMSExcel OTD

The COM OTD Wizard generates an OTD from a COM automation-compatible component's **type library**. The COM Type Library file used for this sample is the **EXCEL.EXE** file from Microsoft Excel 2002.

To create an OTD using the COM OTD Wizard do the following:

1 From the Project Explorer tree, right click **COMeWay_MSExcel** and select **New > Object Type Definition** from the shortcut menu.

2 From the **Select Wizard Type** window of the **New Object Type Definition Wizard**, select the **COM Wizard** and click **Next**.

3 Browse to the directory that contains the type library file, **EXCEL.EXE**. For example:

```
C:\Program Files\Microsoft Office\Office10
```

Select the **EXCEL.EXE** file and click the **Select** button, and click **Next**.

4 For **Step 3** of the wizard, select the classes you want from the type library (for this sample select all of the classes) and click **Next**.

5 For Step 4 of the wizard, enter **otdMSExcel** as the name of the OTD, and click **Finish**.

6 An **Information** box is displayed indicating that some methods are not supported by the eWay. These methods will be skipped in the created OTD. The **Information** box also gives you the location of a generated "Skipped Methods" log that lists the methods skipped, as well as the issues that caused the method to be excluded.

7 The OTD Editor appears displaying the new OTD. The new **otdMSExcel** OTD is added to the Project Explorer tree. The OTD is now available to use in a Collaboration.

For more information on using the COM OTD Wizard, see **Using the COM OTD Wizard** on page 21.

5.7.6. Creating the Collaboration Definitions

The next step in the sample is to create a 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 jceMSExcel Collaboration (Java)

The **jceMSExcel** Collaboration defines transactions from the inbound File eWay to the COM/DCOM eWay and from the COM/DCOM application to the outbound File eWay.

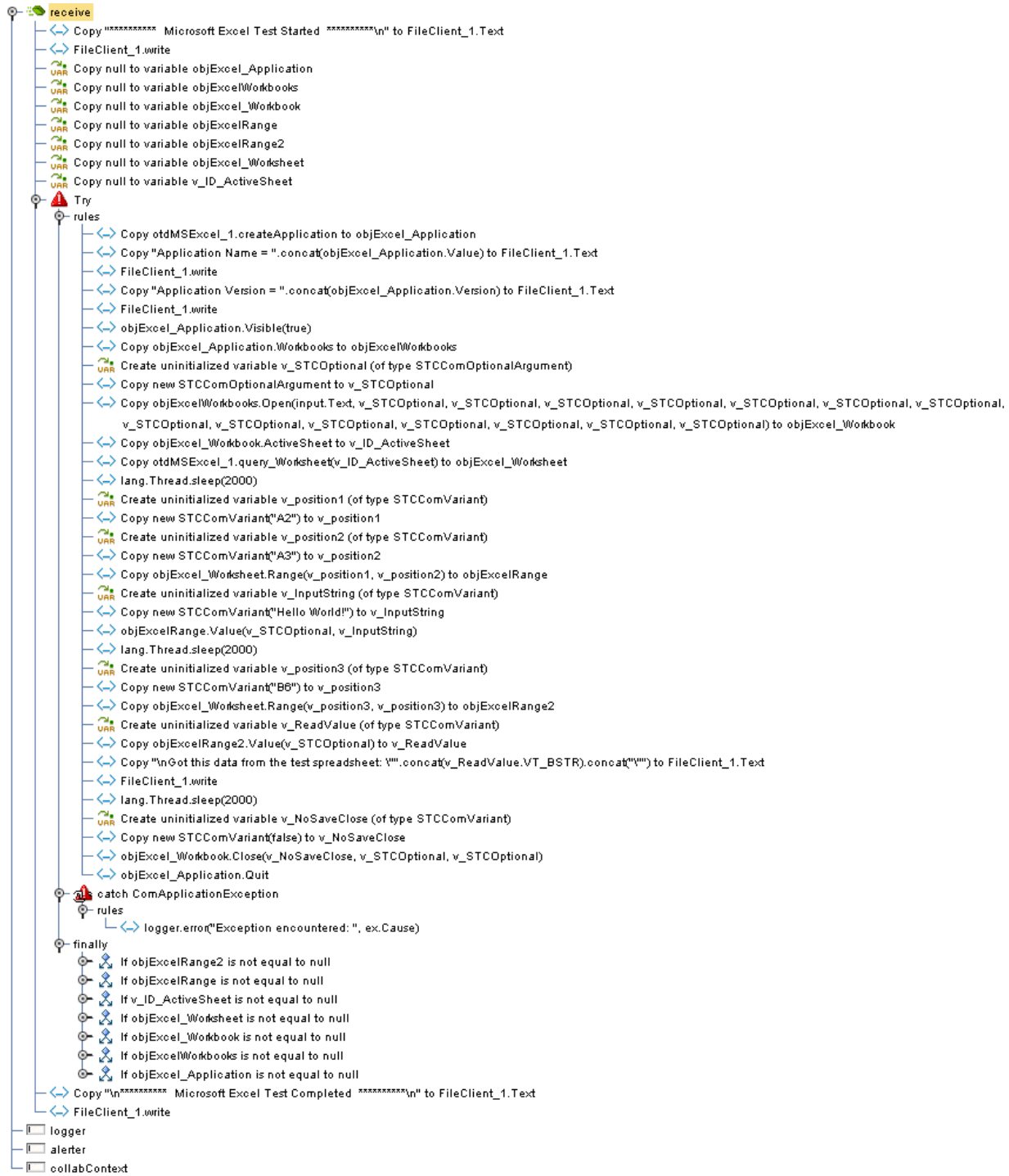
1. From the Project Explorer, right-click the **COMeWay_MSExcel** Sample project and select **New** > **Collaboration Definition (Java)** from the shortcut menu. The **Collaboration Definition Wizard (Java)** appears.
2. Enter a Collaboration Definition name (for this sample, **jceMSExcel**) and click Next.
3. For Step 2 of the wizard, **Select a Web Services Operation**, double-click **SeeBeyond** > **eWays** > **File** > **FileClient** > **receive** to select the File eWay receive Web service. Click **Next**.
4. For Step 3 of the wizard, from the Select OTDs selection window, double-click **SeeBeyond** > **eWays** > **File** > **FileClient**. The **FileClient** OTD is added to the Selected OTDs field.
5. Click the **Up One Level** button to return to the Repository. Double-click **COMeWay_MSExcel** > **otdMSExcel**. The **otdMSExcel** OTD is added to the Selected OTDs field.
6. Click **Finish**. The Collaboration Editor (Java) appears in the left pane of the Enterprise Designer and the **jceMSExcel** Collaboration is added to the Project Explorer tree.

5.7.7. Using the Collaboration Editor (Java)

The next step in the sample is to create the Business Rules of the Collaboration using the Collaboration Editor. The the COMeWay_MSExcel sample project uses one Collaboration created in the previous section, **jceMSExcel**.

The **jceMSExcel** Collaboration contains the Business Rules displayed in Figure 40.

Figure 40 jceMSExcel Collaboration Business Rules



Note: *Business Rules are wrapped in Figure 40 for display purposes only.*

The Collaboration Editor (Java) allows you to create Business Rules using the **Business Rules Designer**, a graphical, drag-and-drop, interface. In addition, if a user is familiar with Java code, the editor also provides a **Java Source Editor**, which allows you to enter Java code directly, or display the code created when using the **Business Rules Designer** to create Business Rules. The completed Business Rules are displayed in the **Business Rules** pane of the editor (as displayed in **Figure 40 on page 60**).

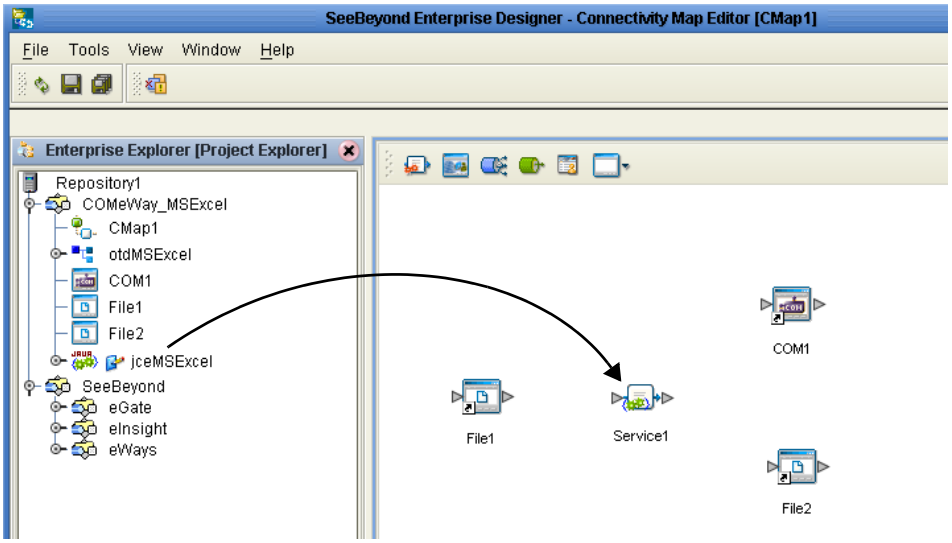
For more information on Creating Collaboration Business Rules see the *eGate Integrator User's Guide*.

5.7.8. 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 **CMap1** to display the Connectivity Map.
2. Drag and drop the **jceMSExcel** Collaboration from the Project Explorer tree to **Service1** in the Connectivity Map. If the Collaboration is successfully associated, the Service icon's "gears" change from red to green (see Figure 41).

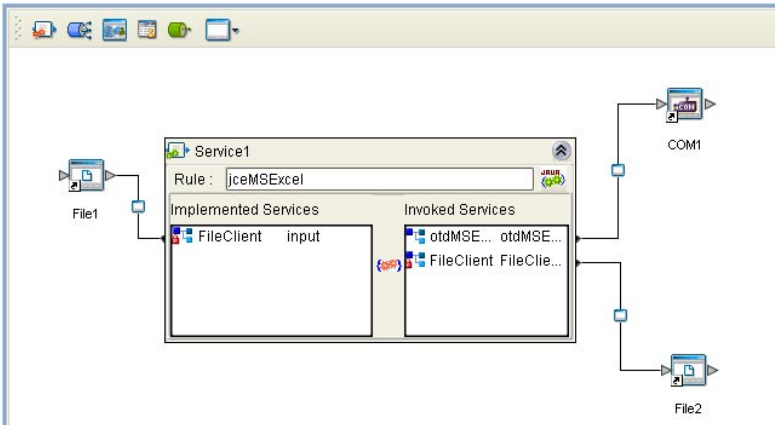
Figure 41 Connectivity Map - Binding the Collaborations



3. Double-click **Service1** in the Connectivity Map. The **Service1** dialog box appears.
4. From the **Service1** dialog box, map **FileClient input** (under Implemented Services) to the **File1** inbound External Application, by clicking on **FileClient input** in the Service1 dialog box and dragging the cursor to the **File1** application.
5. From the **Service1** dialog box, map **otdMSExcel_1, otdMSExcel** (under Invoked Services) to the **COM1** External Application.

6 From the **Service1** dialog box, map **FileClient_1 FileClient** (under Invoked Services) to the **File2** outbound External Application (see Figure 42).

Figure 42 Connectivity Map - Connecting the Project's Components



7 Minimize the **Service1** dialog box, and save your current changes to the Repository.

5.7.9. 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 **COMeWay_MSExcel_Env**.

4 Right-click **COMeWay_MSExcel_Env** and select **New COM/DCOM External System**. Name the External System **ComExtSys**. **ComExtSys** is added to the Environment Editor.

5 Right-click **COMeWay_MSExcel_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.

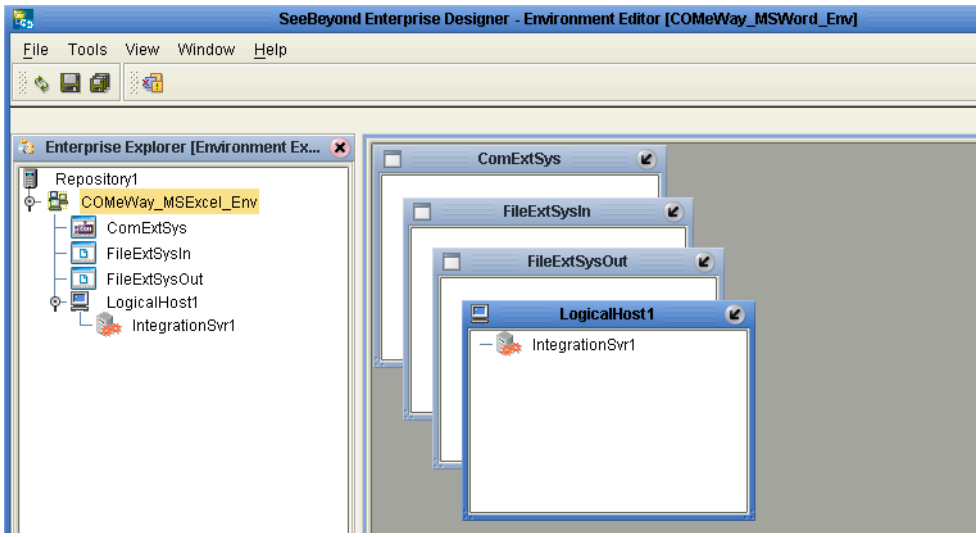
6 Right-click **COMeWay_MSExcel_Env** and select **New File External System** again. Enter **FileExtSysOut** as the name and select **Outbound File eWay** as the type. **FileExtSysOut** is added to the Environment Editor.

7 Right-click **COMeWay_MSExcel_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 43).

Figure 43 Environment Editor - COMeWay_MSExcel_Env



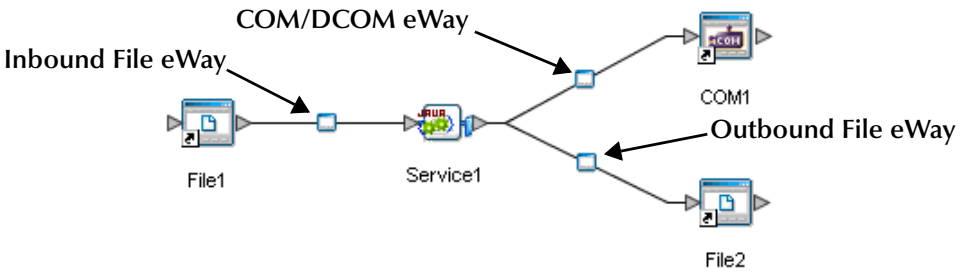
9 At this point, upload the JAR files (see **Adding JAR files to the Integration Server Classpath** on page 12)

10 Save your current changes to the Repository.

5.7.10. Configuring the eWays

The **COMeWay_MSExcel** sample project uses three eWays, each represented in the Connectivity Map as a node between an External Application and the Collaboration (see Figure 44). The eWays facilitate communication and movement of data between the External Applications and the eGate system.

Figure 44 eWays



Configuring the File eWays

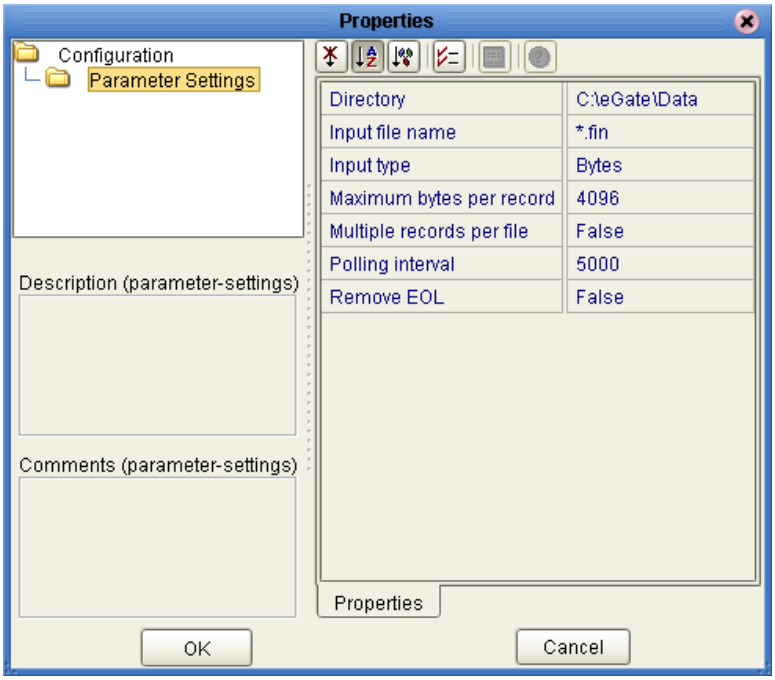
File eWays only possess Connectivity Map properties. These are accessed by double-clicking the eWay node in the Connectivity map.

Inbound File eWay (File1) Properties

1 Double-click the inbound File eWay (see Figure 44). The Templates dialog box appears. Select **Inbound File eWay** in the Templates dialog box and click **OK**.

2 The Properties Editor opens to the inbound File eWay properties. Modify the properties for your system as displayed in Figure 37.

Figure 45 Properties Editor - Inbound File eWay (File1) Properties



3 Click **OK**. The properties settings are saved for the eWay.

Outbound File eWay (File2) Properties

1 Double-click the outbound File eWay located between **Service1** and the outbound **File2** External Application. Select **Outbound File eWay** from the Templates dialog box. The Properties Editor appears.

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

Table 4 Outbound File eWay Settings

Outbound eWay Configuration Parameters	
Add EOL	True
Directory	C:\eGate\Data
Multiple records per file	True
Output file name	MSExcel_output%d.dat

Configuring the COM/DCOM eWay

The COM/DCOM eWay properties are set from Environment Explorer only (the COM.DCOM eWay does not possess Connectivity Map Properties.

Modifying the COM/DCOM eWay Environment Explorer Properties

1. From the **Environment Explorer** tree, right-click the COM/DCOM External System (**COMExtSys** in this sample), and select **Properties**. The Properties Editor opens to the COM/DCOM eWay properties.
2. Modify the **Server** property. If this property is left blank, the value defaults to your logical host. Click OK to save your settings and close the editor.
3. For more information on the COM/DCOM eWay configuration properties see **Configuring the COM/DCOM eWay** on page 14.

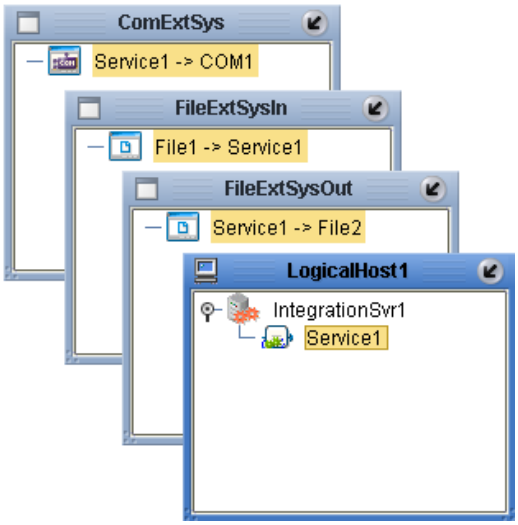
5.7.11. Creating and Activating the Deployment Profile

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 **COMeWay_MSExcel** sample Deployment Profile do the following:

1. From the Enterprise Explorer's Project Explorer, right-click the project (**COMeWay_MSExcel**) and select **New** > **Deployment Profile**.
2. From the **Create Deployment Profile for COMeWay_MSExcel** dialog box, enter a name for the Deployment Profile (for this sample **COMeWay_MSExcel_DP**), and select **COMeWay_MSExcel_Env** as the Environment. Click **OK**.
3. From the left pane of the Deployment Editor, drag **Service1 -> COM1** to the **ComExtSys** 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 (see **Figure 38 on page 55**).

Figure 46 Deployment Profile



7 Click **Activate**, then save the changes to the Repository.

5.7.12. Running the Project

Designate the Input and Output Directories

Before starting the eWay, create the input and output directories. For this sample, these files are created as follows

- Input directory: **C:\eGate\Data**
- Output directory: **MSExcel_output%d.dat.**

You can designate any directories as the input and output directories, but the File eWay properties must be configured to use those directories before running the eWay. For more information on configuring these properties see **Configuring the eWays** on page 63.

Starting 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\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**
- Repository URL: **http://localhost:*port number/repository name***

- Repository user name and password: ***Your user name and password***
- Logical Host Environment name **COMeWay_MSExcel_Env**
- Logical Host name: **Localhost**

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

5 Run the **bootstrap.bat** file located in the **C:\ican50\LogicalHost2\bootstrap\bin** directory.

6 Copy the sample input data file to the input directory, with the correct extension.

5.8 Implementing the COMeWay_MSDAO Sample Project

The **COMeWay_MSDAO** (Data Access Object) sample project demonstrates how the eWay, using an OTD created from the file, **dao360.dll**, can access and modify a specified MSAccess MDB file.

5.8.1. Preparing the Imported COMeWay_MSDAO Sample Project

To run the **COMeWay_MSDAO** sample project, do the following:

1. Import the sample to the Repository (see **Importing a Sample Project** on page 29).
2. Create an Environment similar to those created for the other sample projects (see **Creating an Environment** on page 52).
3. Configure the eWay properties (see **Configuring the eWays** on page 53). Edit the input and output directories as suitable to your specific system.
4. Create a Deployment Profile similar to those created for the other sample projects (see **Creating and Activating the Deployment Profile** on page 55)

5.8.2. Running the Project

Designate the Input and Output Directories

Before starting the eWay, create the input and output directories. For this sample, these files are created as follows

- Input directory: **C:\eGate\Data**
- Output directory: **MSDAO_output%d.dat.**

You can designate any directories as the input and output directories, but the File eWay properties must be configured to use those directories before running the eWay. For more information on configuring these properties see **Configuring the eWays** on page 53.

Starting 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\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**

- Repository URL: **http://localhost:*port number/repository name***
- Repository user name and password: ***Your user name and password***
- Logical Host Environment name **COMeWay_MSDAO_Env** (or the name that you specified for the Environment).
- Logical Host name: **Localhost**

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

5 Run the **bootstrap.bat** file located in the **C:\ican50\LogicalHost3\bootstrap\bin** directory.

6 Copy the sample input data file to the input directory, with the correct extension.

Chapter 6

Java Methods and Classes for the COM/DCOM eWay

This chapter provides an overview of the Java classes and methods contained in the COM/DCOM eWay. These methods are used to extend the functionality of the eWay.

Chapter Topics

6.1 COM/DCOM eWay Classes

The COM/DCOM eWay exposes a number of Java methods to extend the functionality of the eWay. These methods are contained in the following class:

- **ComApplication:** Implements ConnectionAssociation.
- **ComApplicationException:** Exception type that can be thrown from methods on the COM AppConn interfaces.
- **ComConfiguration:** Used to access the configuration parameters given by the user.
- **STCComException:** Exception type thrown from methods on the STCDispatchDriver.
- **STCComOptionalArgument:** An extension of the STCComVariant with the appropriate error code.
- **STCComSafeArray:** Used to exchange arrays with the methods of generated COM OTDs.
- **STCComVariant:** Wraps the concept of the COM VARIANT type.
- **STCComVARTYPE:** Defines the VARTYPEs used internally in the implementation.
- **STCHResult:** Wraps the COM HRESULT type.
- **STCIDispatch:** Extends STCIUnknown.
- **BooleanRef:** Used in cases where the method parameter is an [in, out] or [out] type.

- **DoubleRef:** Used in cases where the method parameter is an [in, out] or [out] type.
- **FloatRef:** Used in cases where the method parameter is an [in, out] or [out] type.
- **IntRef:** Used in cases where the method parameter is an [in, out] or [out] type.
- **ShortRef:** Used in cases where the method parameter is an [in, out] or [out] type.
- **STCIDispatchRef:** Used in cases where the method parameter is an [in, out] or [out] type.
- **StringRef:** Used in cases where the method parameter is an [in, out] or [out] type.

6.1.1. COM/DCOM Javadoc

The COM/DCOM eWay Javadoc is an API document in HTML format that provides information on the various methods available with the COM/DCOM eWay. The Javadoc is accessed by selecting and uploading **COMeWayDocs.sar** from the **ADMIN** tab of the Enterprise Manager. The Javadoc can then be accessed 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.

6.1.2. COM/DCOM Runtime Exceptions

The COM/DCOM eWay can be conceptually divided into two layers. The low-level JNI code that wraps the COM STCIDispatch interface and the high-level OTD code that is generated by the builder.

At the lower level, all methods accessed via the IDispatch interface return an HRESULT error code. In C Programming Language, this type is a long. In Java, it is an integer, but it is wrapped by the STCHresult java class. In general, a value of zero indicates success, greater than zero indicates a warning, and less than zero indicates an error.

To provide the user with more control over this type of situation, an exception type, STCComException, has been added to the low level JNI code. This exception class is derived from the java.lang.RuntimeException. If a method fails on the component (or if the creation of the component fails) an exception of this type is thrown. The exception is passed up through the builder generated OTD code (because the OTD code does not catch it), up to the Collaboration code where the user can catch the exception if desired. Access to the underlying HRESULT is provided. The getMessage method has been overridden and provides a brief contextual string indicating the operation that failed.

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