

*SeeBeyond ICAN Suite*

# WebSphere MQ eWay Intelligent Adapter User's Guide

*Release 5.0.3*



The information contained in this document is subject to change and is updated periodically to reflect changes to the applicable software. Although every effort has been made to ensure the accuracy of this document, SeeBeyond Technology Corporation (SeeBeyond) assumes no responsibility for any errors that may appear herein. The software described in this document is furnished under a License Agreement and may be used or copied only in accordance with the terms of such License Agreement. Printing, copying, or reproducing this document in any fashion is prohibited except in accordance with the License Agreement. The contents of this document are designated as being confidential and proprietary; are considered to be trade secrets of SeeBeyond; and may be used only in accordance with the License Agreement, as protected and enforceable by law. SeeBeyond assumes no responsibility for the use or reliability of its software on platforms that are not supported by SeeBeyond.

SeeBeyond, e\*Gate, e\*Way, and e\*Xchange are the registered trademarks of SeeBeyond Technology Corporation in the United States and/or select foreign countries. The SeeBeyond logo, SeeBeyond Integrated Composite Application Network Suite, eGate, eWay, eInsight, eVision, eXchange, eView, eIndex, eTL, ePortal, eBAM, and e\*Insight are trademarks of SeeBeyond Technology Corporation. The absence of a trademark from this list does not constitute a waiver of SeeBeyond Technology Corporation's intellectual property rights concerning that trademark. This document may contain references to other company, brand, and product names. These company, brand, and product names are used herein for identification purposes only and may be the trademarks of their respective owners.

© 2004 by SeeBeyond Technology Corporation. All Rights Reserved. This work is protected as an unpublished work under the copyright laws.

**This work is confidential and proprietary information of SeeBeyond and must be maintained in strict confidence.**

Version 20040628170923.

# Contents

---

## Chapter 1

<b>Introducing the WebSphere MQ eWay</b>	<b>7</b>
Overview	7
Supported Operating Systems	8
System Requirements	8
External System Requirements	8
HP NonStop Server Requirements	9
Requirements for the Topic Publish/Subscribe Connection Type	9
Application Server Support	10

---

## Chapter 2

<b>Installing the WebSphere MQ eWay</b>	<b>11</b>
Installing the MQSeries eWay	11
Before installing the eWay	11
Installing the MQSeries eWay on an eGate supported system	11
After Installation	12
Copying the System Specific mq.jar File to the Websphere MQ eWay	12

---

## Chapter 3

<b>Configuring the eWay Properties</b>	<b>14</b>
Creating and Configuring the MQSeries eWay	14
Selecting WebSphere MQ as the External Application	14
Creating Custom Properties for a MQSeries eWay	15
Using the Properties Sheet	16
Outbound MQSeries eWay Connectivity Map Properties	17
General Settings	17
Transaction Type	17
Connector	18
class	18
Property.Tag	19
type	19
Inbound WebSphere eWay Connectivity Map Properties	19
Settings	19

Queue Name	19
Schedule Interval	20
<b>MQSeries eWay Environment Explorer Properties</b>	<b>20</b>
MQSeries	20
MQ Channel Name	20
MQ Host Name	21
MQ Queue Manager Name	21
Password	21
Port Number	21
UserID	21

## Chapter 4

<b>Using the WebSphere MQ eWay With eInsight</b>	<b>22</b>
eInsight Engine and Components	22
The MQSeries eWay With eInsight	23
MQSeries eWay eInsight Sample Projects	23
Importing a Sample Project	23
The MQ_BP_Get_ Sample Project	24
Creating a Project	24
Creating the BusinessProcess_MQGet Business Process	25
Configuring the Modeling Elements	26
Creating a Connectivity Map	28
Select the External Applications	28
Select the External Applications	28
Populate the Connectivity Map	29
Binding the Project Components	29
Creating an Environment	31
Configuring the eWay Properties	32
Configuring the File eWay Properties	32
Configuring the MQSeries eWay Properties	32
Creating and Activating the Deployment Profile	33
Running the Project	34
Alerting and Logging	34
The MQ_BP_Put_ Sample Project	35
Creating a Project	35
Creating the BusinessProcess_MQPut Business Process	35
Configuring the Modeling Elements	37
Creating a Connectivity Map	38
Select the External Applications	38
Populate the Connectivity Map	38
Binding the Project Components	39
Creating an Environment	40
Configuring the eWay Properties	40
Configuring the File eWay Properties	40
Configuring the MQSeries eWay Properties	40

Creating and Activating the Deployment Profile	41
Running the Project	41

---

## Chapter 5

<b>Implementing a WebSphere MQ eWay Project</b>	<b>43</b>
MQSeries eWay Components	43
MQSeries eWay Sample Projects	44
Importing a Sample Project	44
Create the WebSphere MQ Queue	44
The MQ_JCE_Get_Sample Project	45
Create a Project	45
Create a Connectivity Map	45
Creating the Collaboration Definition	47
Creating the Business Rules	48
Binding the eWay Components	49
Creating an Environment	50
Configuring the eWays	51
Configuring the File eWay Properties	51
Configuring the WebSphere MQ (MQSeries) eWay Properties	52
Creating and Activating the Deployment Profile	53
Running the Project	54
Alerting and Logging	54
The MQ_JCE_Put_Sample Project	55
Create a Project	55
Create a Connectivity Map	55
Select the External Applications	55
Populate the Connectivity Map	56
Creating the Collaboration Definition	56
Creating the Business Rules	57
Binding the Project Components	57
Creating an Environment	58
Configuring the eWay Properties	58
Configuring the File eWay Properties	58
Configuring the MQSeries eWay Properties	59
Creating and Activating the Deployment Profile	59
Running the Project	59

---

## Chapter 6

<b>Java Classes and Methods for the WebSphere MQ eWay</b>	<b>61</b>
MQSeries eWay Classes and Methods	61
WebSphere MQ Javadoc	61

Appendix A

**Mapping WebSphere MQ Header Fields** 62

Mapping Between JMS Standard Header Items and WebSphere MQ Header Fields 62

**Index** 63

# Introducing the WebSphere MQ eWay

This chapter introduces you to SeeBeyond™ eWay Intelligent Adapter for WebSphere MQ™. It includes an overview of this manual and a list of system requirements for installation.

---

## 1.1 Overview

WebSphere MQ (formerly MQSeries™) from IBM™ is a client-server message broker supporting an open API (application programming interface), available on a variety of operating systems including AIX™, Solaris™, HP-UX™, and Windows™. WebSphere MQ is “middleware” that provides commercial messaging and queuing services. Messaging enables programs to communicate with each other via messages rather than direct connection. Messages are placed in queues for temporary storage, freeing up programs to continue to work independently. This process also allows communication across a network of dissimilar components, processors, operating systems, and protocols.

The SeeBeyond eWay Intelligent Adapter for WebSphere MQ (referred to as the MQSeries eWay throughout this document) allows the eGate system to exchange data with IBM’s WebSphere MQ. The eGate Integrator, using the MQSeries eWay, uses business logic within a Collaboration or Business Process to perform operations for data identification, manipulation, and transformation. Messages are tailored to meet the communication requirements of specific applications or protocols. Queues or Topics provide non-volatile storage for data within the eGate system allowing applications to run independently of one another at different speeds and times.

The MQSeries eWay transparently integrates existing systems with IBM’s WebSphere MQ. This document explains how to install and configure the MQSeries eWay.

---

## 1.2 Supported Operating Systems

The MQSeries eWay is available on the following operating systems. See any notes below regarding your specific operating system.

- Windows 2000 and Windows 2003
- HP NonStop Server G06.22
- HP Tru64 5.1A
- HP-UX 11.0 and 11i (PA-RISC)
- IBM AIX 5.1L and 5.2
- Red Hat Linux 8 (Intel x86)
- Red Hat Enterprise Linux AS 2.1 (Intel x86)
- Sun Solaris 8 and 9
- Suse Linux Enterprise Server 8 (Intel x86)

*For AIX operating systems, the environmental variable LDR\_CNTRL for JVM may need to be adjusted in order to accommodate WebSphere MQ shared memory. Java uses 8 segments by default (this is the maximum value allowed; each segment is 256 MB). For example, the following setting changes the number of segments to 3:*

```
setenv LDR_CNTRL MAXDATA=0x30000000
```

*For HP-UX 11 operating systems, HP-UX Java binding support is only available for systems running the POSIX draft 10 threaded version of WebSphere MQ. The HP-UX Developers kit for Java 1.1.7, Release C.01.17.01 or above is also required.*

---

## 1.3 System Requirements

The system requirements for the WebSphere MQ eWay are the same as those for eGate Integrator. For more 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 WebSphere MQ eWay, the Repository, and Logical Hosts run on the platforms listed under Supported Operating Systems, the Enterprise Designer requires the Windows operating system. The Enterprise Manager can run on any platform that supports Internet Explorer 6.0.

### 1.3.1. External System Requirements

The WebSphere MQ eWay requires the following installed on the Logical Host:

- IBM WebSphere MQ V5.3 or MQSeries V5.2 with SP MA88



- The **com.ibm.mq.jar** file specific to the operating system on which WebSphere MQ is running. This must be copied to the **user/ext/mqserieseway** directory. See [Copying the System Specific mq.jar File to the Websphere MQ eWay](#) on page 12.

**Note:** *Install either the WebSphere MQ server or the WebSphere MQ client code. If the WebSphere MQ server is installed on the Logical Host, the eWay connects to the server in bindings mode. If the WebSphere MQ client code is installed on the Logical Host, the eWay connects to the server in client mode. A client mode connection cannot participate in XA transactions.*

Install the following after installing IBM MQSeries V5.2:

- IBM MQSeries classes for Java 5.2.0.
- Classes for Java Message Service 5.2.0.0

WebSphere MQ V5.3 includes the WebSphere MQ classes for Java and JMS. The use of SupportPac MA88 with WebSphere MQ V5.3 product is not supported. MQSeries V5.2 requires the installation of SupportPac MA88 for all supported platforms.

The **MA88 SupportPac** download and installation information can be found at: <http://www-4.ibm.com/software/ts/mqseries/txppacs/ma88.html>.

The MA88 patch includes updates for several jar files and DLL's/shared libraries. Most notably, **com.ibm.mq.jar**, **mqjbnd02.dll** and **mqxai01.dll**. It is important that the patch overwrites the existing versions of these files if they are present on your machine. Alternatively, if they do not overwrite the existing versions, it is important that the new versions of these files exist on your classpath and path before the old versions. Once you have downloaded the SupportPac, make sure that all .jar files installed as part of the SupportPac are included in the classpath.

### 1.3.2. HP NonStop Server Requirements

To connect to MQSeries for HP NonStop the following must be installed on your HP NonStop Server:

- MQSeries 5.1
- SupportPac MA88
- MQSeries V5.1 CSD02 (downloadable from IBM)
- C2EFIX5 from IBM (C2EFIX5 is not distributed on the IBM Web site. You must contact IBM directly for C2EFIX5.)

### Requirements for the Topic Publish/Subscribe Connection Type

IBM **SupportPac MAOC** is required by both MQSeries V5.2 and WebSphere MQ V5.3. The SupportPac MAOC installation information and download can be found at: <http://www-3.ibm.com/software/ts/mqseries/txppacs/ma0c.html>

---

## 1.4 Application Server Support

In addition to the above listed Operating Systems, this eWay in outbound mode is supported on WebSphere™ and WebLogic™ Application Servers when using Java Collaborations only. For additional information see the *eGate Integrator User's Guide*.

# Installing the WebSphere MQ eWay

This chapter explains how to install the MQSeries eWay.

## Chapter Topics

- [Before installing the eWay](#) on page 11
- [Installing the MQSeries eWay on an eGate supported system](#) on page 11
- [After Installation](#) on page 12

---

## 2.1 Installing the MQSeries eWay

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

When the Repository is run on a UNIX operating system, the eWays are loaded using the Enterprise Manager on a Windows computer connected to the Repository server using Internet Explorer.

### Before installing the eWay

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

### Installing the MQSeries eWay on an eGate supported system

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

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

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

- 1 During the procedures for uploading files to the eGate Repository using the Enterprise Manager, after uploading the **eGate.sar** file, select and upload the following files:
  - ♦ **MQSerieseWay.sar** (to install the MQSeries eWay)
  - ♦ **FileeWay.sar** (to install the File eWay, used in the sample project)
  - ♦ **MQSerieseWayDocs.sar** (to download the WebSphere MQ eWay User's Guide, Javadoc, and sample projects)
- 2 Continue installing the eGate Integrator as instructed in the *eGate Integrator Installation Guide*.

## After Installation

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

### 2.1.1. Copying the System Specific mq.jar File to the Websphere MQ eWay

The WebSphere MQ server uses a .jar file that is specific to the operating system on which it is running. This file, **com.ibm.mq.jar**, must be copied from the WebSphere MQ server to the Enterprise Designer's **user/ext/mqserieseway** directory.

To install the correct .jar file, do the following:

- 1 From the WebSphere MQ Server, copy the **com.ibm.mq.jar** file and paste it to the Enterprise Designer's **usrdir/ext/mqserieseway** directory.

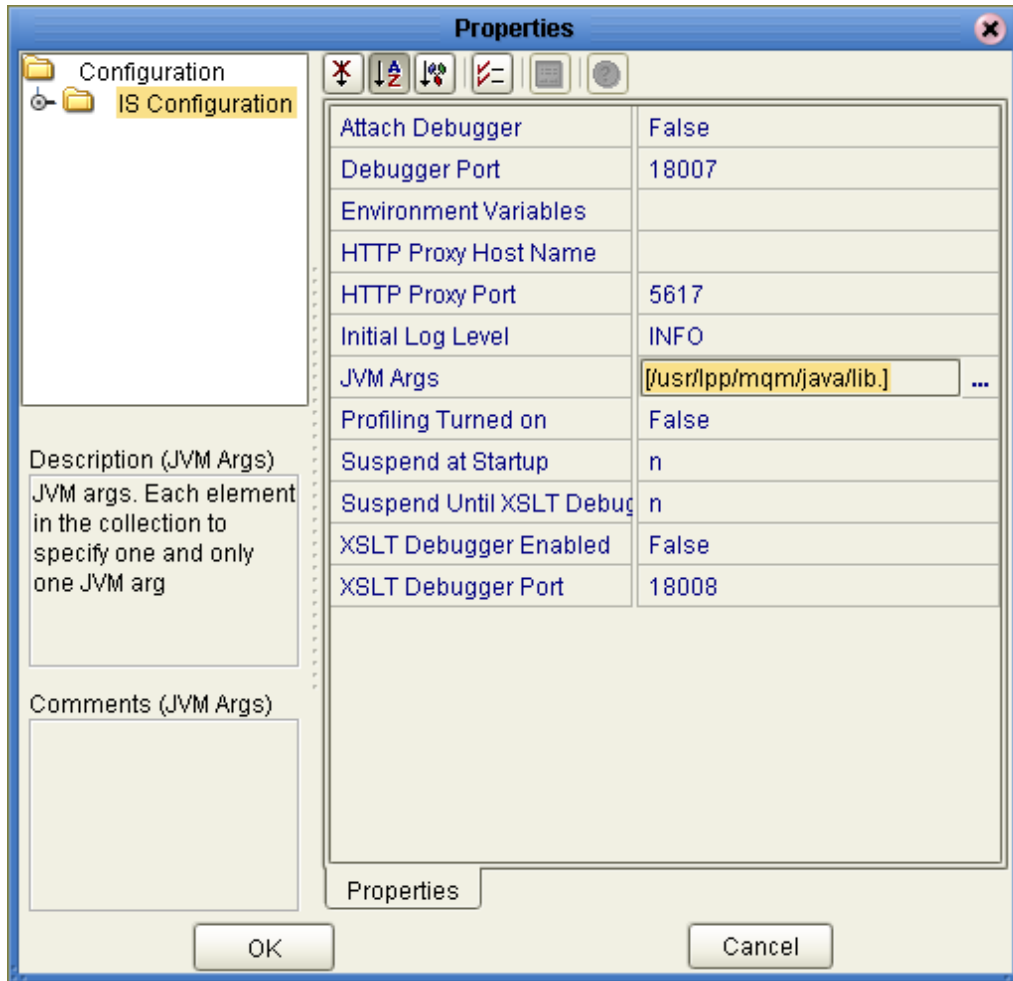
The **com.ibm.mq.jar** file must come from the MQ server you are running against. If a project is deployed to a different MQ server running on a different operating system, the .jar file on the Logical Host must be replaced with the .jar file from that specific MQ server's operating system.

- 2 After the correct .jar file is installed, restart the Enterprise Designer and activate the project.
- 3 From the Enterprise Designer's Environment Explorer, check the project's **Integration Server** properties (under the Logical Host in the Environment Explorer tree) to ensure that the **JVM Args** property is set as follows:

```
-Djava.library.path=<path>
```

where <path> is the location of the **libmqbnd05.so** file (See [Figure 1 on page 13](#)).

Figure 1 Integration Server Properties - JVM Args



- 4 If **libmqbnd05.so** does not exist, create a symbolic link to **libwmqjbind.so**.

# Configuring the eWay Properties

This chapter describes how to create and configure the MQSeries eWay.

## Chapter Topics

- [Creating and Configuring the MQSeries eWay](#) on page 14
- [Using the Properties Sheet](#) on page 16
- [Outbound MQSeries eWay Connectivity Map Properties](#) on page 17
- [MQSeries eWay Environment Explorer Properties](#) on page 20

---

## 3.1 Creating and Configuring the MQSeries eWay

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

- From the **Connectivity Map**. These properties most commonly apply to a specific eWay, and may vary from other eWays (of the same type) in the project. The MQSeries Connectivity Map properties will vary depending on whether the MQSeries is an Inbound or Outbound eWay
- 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 MQSeries External System window.

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

### 3.1.1 Selecting WebSphere MQ as the External Application

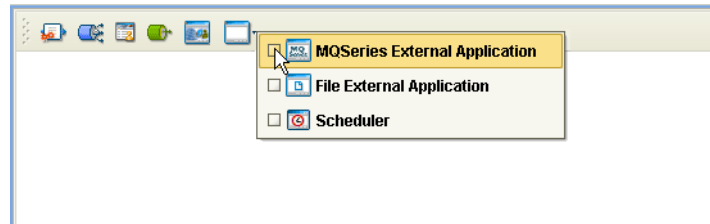
To create a MQSeries eWay, you must first create an MQSeries External Application in your Connectivity Map. MQSeries eWays are located between an MQSeries External Application and a Service. Services are containers for Collaborations, Business Processes, eTL processes, and so forth.

#### To create the MQSeries External Application

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

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

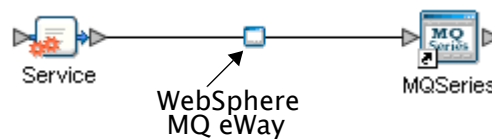
Figure 2 External Applications Selection Menu



- 3 Drag the new **MQSeries External Application** from the toolbar onto the Connectivity Map canvas. This represents an external WebSphere MQ system.

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

Figure 3 eWay Location



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

### 3.1.2 Creating Custom Properties for a MQSeries eWay

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

#### Modifying the MQSeries eWay (Connectivity Map) Properties

- 1 From the Connectivity Map, double click the eWay icon, located in the link between the associated External Application and the Service. A Templates dialog box appears.
- 2 From the Templates dialog box, select **Inbound** or **Outbound MQSeries eWay** and click **OK**.
- 3 The eWay **Properties Sheet** opens to the Inbound or Outbound MQSeries Connectivity Map properties. Make any necessary modifications and click **OK**.

#### Modifying the MQSeries eWay (Environment Explorer) Properties

- 1 From the Environment Explorer tree, right-click the Inbound or Outbound WebSphere MQ external system. Select **Properties** from the shortcut menu. The **Properties Sheet** appears.

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

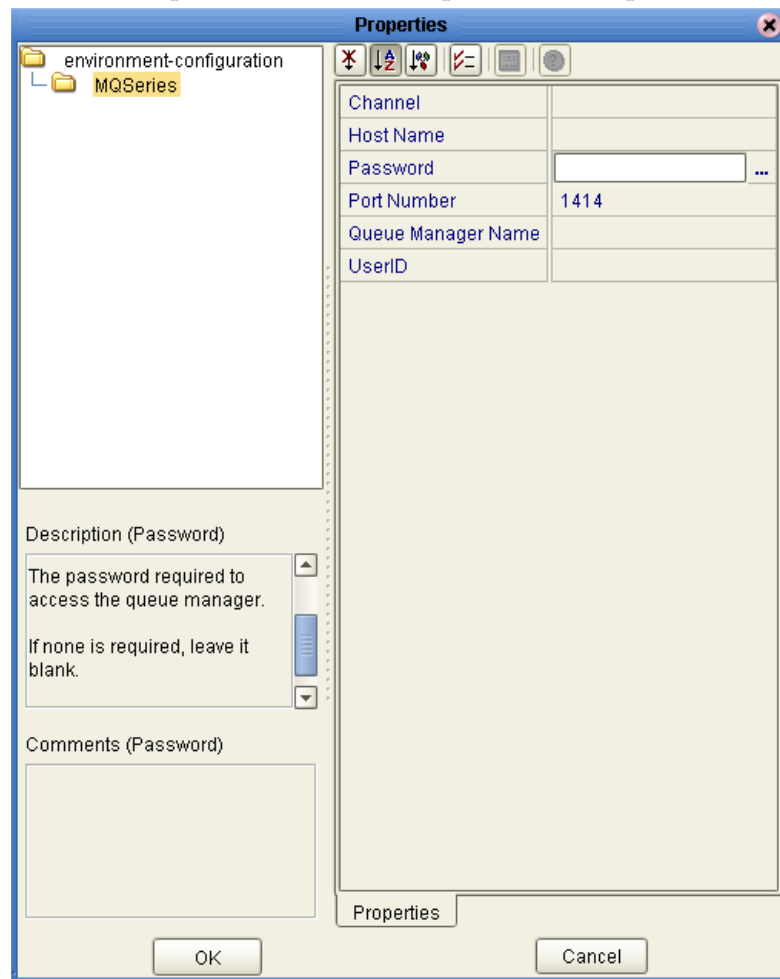
### 3.1.3. Using the Properties Sheet

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

To modify the default eWay configuration properties

- 1 Open the Properties Sheet to the MQSeries eWay default properties. An eWay has two different sets of parameters: those specific to that particular eWay (accessed from the Connectivity Map), and those that are common to all eWays of this type (accessed from the Environment Explorer tree).
- 2 From the upper-right pane of the Properties Sheet, select a section of the configuration directory. The parameters contained in that section are now displayed in the Properties pane of the Properties Sheet. For example, clicking on the **MQSeries** subdirectory displays the editable parameters in the right pane, as shown in Figure 4.

Figure 4 Properties Sheet -- WebSphere MQ Properties





- 3 Click on any property field to make it editable. For example, click on the **Password** parameter to edit the Password value. If a parameter's value is true/false or multiple choice, the field, when selected, reveals a submenu of property options .  
  
Click on the ellipsis (. . .) in the properties field to open a separate configuration dialog box. This is helpful for large values that cannot be fully displayed in the parameter's property field. Enter the property value in the dialog box and click **OK**. The value is now displayed in the parameter's property field.
- 4 A description of each parameter is displayed in the **Description** pane when that parameter is selected, providing an explanation of any required settings or options.
- 5 The **Comments** pane provides an area for recording notes and information regarding the currently selected parameter. This is saved for future referral.
- 6 After modifying the configuration properties, click **OK** to close the Properties Sheet and save the changes.

---

## 3.2 Outbound MQSeries eWay Connectivity Map Properties

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

- [General Settings](#) on page 17
- [Connector](#) on page 18

### 3.2.1. General Settings

This section contains the following parameters:

- [Transaction Type](#) on page 17

#### Transaction Type

*Note:* The XA-compliant Transaction Type is not supported for the WebSphere MQ eWay, version 50.

#### Description

String-set. Specifies the Transaction Type. There are two transaction types.

- **Non-Transactional.** Provides the highest level of performance, with the minimum level of message protection. No rollback is available during the send and receive period, causing the possible loss of data in the case of a system error. When the send() method is called the transaction is immediate. Non-Transactional (single-phase transaction) is subject to the user calling the commit and backout methods.
- **XA-compliant.** (two-phase transactional behavior) Highest level of transaction protection, providing rollback for internal and XA compliant transactions. The

transaction is also extended to other XA supported data exchange applications, such as Oracle, DB2, and WebSphere MQ. When the send() method is called the transaction takes place at the end of the Collaboration.

XA can only be used in Binding mode. This means that a Host Name is not entered in the properties. A Host Name in the properties implies that the API is setup in Client mode. XA cannot be used in Client mode. In addition, when using XA:

- ♦ There must be only one queue manager.
- ♦ The method **connectToQueueManager** cannot be called.
- ♦ The methods **commit** and **backout** cannot be called. In Bindings mode, eGate is the transaction coordinator and is in control of these methods.

*Note:* Consult the XA Transaction Processing section of the eGate Integrator User's Guide for information on XA use and restrictions.

#### Required Value

- Select Non-Transactional or XA-compliant. Non-Transactional is the configured default.

### 3.2.2. Connector

This section contains the following top level parameters:

- **class** on page 18
- **Property.Tag** on page 19
- **type** on page 19

*Note:* The Connector properties are not applicable for WebSphere MQ eWay, version 50.

#### class

*Note:* The Connector - class property is not applicable for WebSphere MQ eWay, version 50.

#### Description

Specifies the connector class for MQSeriesOTD. The default value should always be used.

#### Required Value

The configured default is **com.stc.eways.MQSeriesOTD.MQSeriesConnector**.

## Property.Tag

*Note:* The Connector - Property.Tag property is not applicable for WebSphere MQ eWay, version 50.

### Description

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

### Required Value

The data source package name.

## type

*Note:* The Connector - type property is not applicable for WebSphere MQ eWay, version 50.

### Description

Specifies the connector type for WebSphere MQ OTD. The default value should always be used.

### Required Value

The connector type. The default value should always be used. The configured default is **MQSeriesOTD**.

---

## 3.3 Inbound WebSphere eWay Connectivity Map Properties

The Inbound MQSeries eWay parameters, accessed from the Connectivity Map, are organized into the following sections:

- [Settings](#) on page 19

### 3.3.1. Settings

This section contains the following parameters:

- [Queue Name](#) on page 19
- [Schedule Interval](#) on page 20

## Queue Name

### Description

Specifies the IBM WebSphere MQ Queue name.

### Required Value

The name of the WebSphere MQ Queue.

## Schedule Interval

### Description

Specifies the polling interval by the number of milliseconds at which the WebSphere MQ Queue is polled for messages.

### Required Value

The number of milliseconds at which the WebSphere MQ Queue is polled. The configured default is 5000.

---

## 3.4 MQSeries eWay Environment Explorer Properties

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

- [MQSeries](#) on page 20

### 3.4.1. MQSeries

This section contains a set of top level parameters:

- [MQ Channel Name](#) on page 20
- [MQ Host Name](#) on page 21
- [MQ Queue Manager Name](#) on page 21
- [Password](#) on page 21
- [Port Number](#) on page 21
- [UserID](#) on page 21

## MQ Channel Name

### Description

Specifies the name of the channel being used. This option is only relevant with transport type 'Client' and is ignored for transport type 'Bindings'. If no channel is specified the default channel is used.

### Required Value

The name of the channel.

## MQ Host Name

### Description

Specifies the name of the host on which the Queue Manager resides. This option is only relevant with transport type "Client" and is ignored for transport type "Bindings". As for "Bindings", the Queue Manager must be on the same host.

### Required Value

The name of the specific Queue Manager host.

## MQ Queue Manager Name

### Description

Specifies the name of the IBM WebSphere MQ Queue Manager.

### Required Value

The name of the WebSphere MQ Queue Manager.

## Password

### Description

Specifies the user password required to access the Queue Manager. This parameter is optional.

### Required Value

A user password that grants access to a specific WebSphere MQ Queue Manager.

## Port Number

### Description

Specifies the number of the port to connect to. This option is only relevant with a transport type 'Client' and is ignored for transport type 'Bindings'. If this option is left empty the default port is used.

### Required Value

A port number, in the range of 1000 and 65536. The configured default is 1414.

## UserID

### Description

Specifies the User ID required to access the WebSphere MQ Queue Manager. This parameter is optional.

### Required Value

A User ID required for the Specific WebSphere MQ Queue Manager.

# Using the WebSphere MQ eWay With eInsight

This chapter describes how to use the MQSeries eWay with the ICAN Suite's eInsight Business Process Manager and its engine's Web Services interface.

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

## Chapter Topics

- [eInsight Engine and Components](#) on page 22
- [The MQSeries eWay With eInsight](#) on page 23
- [Importing a Sample Project](#) on page 23
- [The MQ\\_BP\\_Get\\_Sample Project](#) on page 24
- [The MQ\\_BP\\_Put\\_Sample Project](#) on page 35

---

## 4.1 eInsight Engine and Components

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

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

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

See the *eInsight Business Process Manager User's Guide* for details.

---

## 4.2 The MQSeries eWay With eInsight

An eInsight Business Process Activity can be associated with the MQSeries eWay during the system design phase. To make this association, select the desired operators under the eWay in the Enterprise Explorer and drag it onto the eInsight Business Process Designer canvas.

The MQSeries eWay has the following operators available:

- **receive**
- **mqget**
- **mqput**

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

---

## 4.3 MQSeries eWay eInsight Sample Projects

Two sample projects for the MQSeries eWay using eInsight Business Processes, are included with the installation. This chapter also walks you through the creation of these sample projects:

- [The MQ\\_BP\\_Get\\_Sample Project](#) on page 24
- [The MQ\\_BP\\_Put\\_Sample Project](#) on page 35

---

## 4.4 Importing a Sample Project

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

- 1 The sample files are uploaded with the eWay's documentation .sar file and downloaded from the Enterprise Manager's Documentation tab. Extract the samples from the Enterprise Manager to a local file.
- 2 From the Enterprise Designer's Project Explorer pane, right-click the Repository and select **Import** from the shortcut menu. The **Import Manager** appears.
- 3 Browse to the directory that contains the sample project zip file. Select the sample file (for this sample, **WebSphereMQSeries\_BPEL\_Get\_Sample.zip**) and click **Import**. After the sample project is successfully imported, click **Close**.
- 4 When the import has successfully completed, right-click the Repository and select **Refresh All from Repository** from the shortcut menu.

- 5 From the Project Explorer tree, rename the project to **MQ\_BP\_Get\_Sample**.
- 6 Before an imported sample project can be run you must do the following:
  - ♦ Install and configure a **WebSphere MQ Queue** on the localhost
  - ♦ Create an **Environment** (see [Creating an Environment](#) on page 31)
  - ♦ Configure the eWay properties for your specific system (see [Configuring the eWay Properties](#) on page 32)
  - ♦ Create a **Deployment Profile** (see [Creating and Activating the Deployment Profile](#) on page 33)

---

## 4.5 The MQ\_BP\_Get\_Sample Project

The **MQ\_BP\_Get\_Sample** project demonstrates the following:

- 1 The MQSeries eWay, in receive mode, retrieves a message from an MQ Queue. The message is published to an outbound File eWay.
- 2 The File eWay published the message to an external directory.

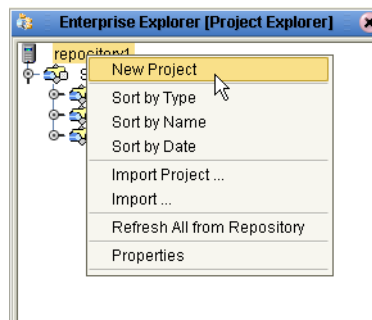
The following pages provide step by step directions for manually creating the **MQ\_BP\_Get\_Sample** project.

### 4.5.1. Creating a Project

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

- 1 Start the Enterprise Designer.
- 2 From the Enterprise Explorer's Project Explorer tab, right-click the Repository and select **New Project** (see Figure 5). A new project (Project1) appears on the Project Explorer tree.

**Figure 5** Enterprise Explorer - New Project



- 3 Click twice (not double-click) on **Project1** and rename the project (for this sample, **MQ\_BP\_Get\_Sample**).

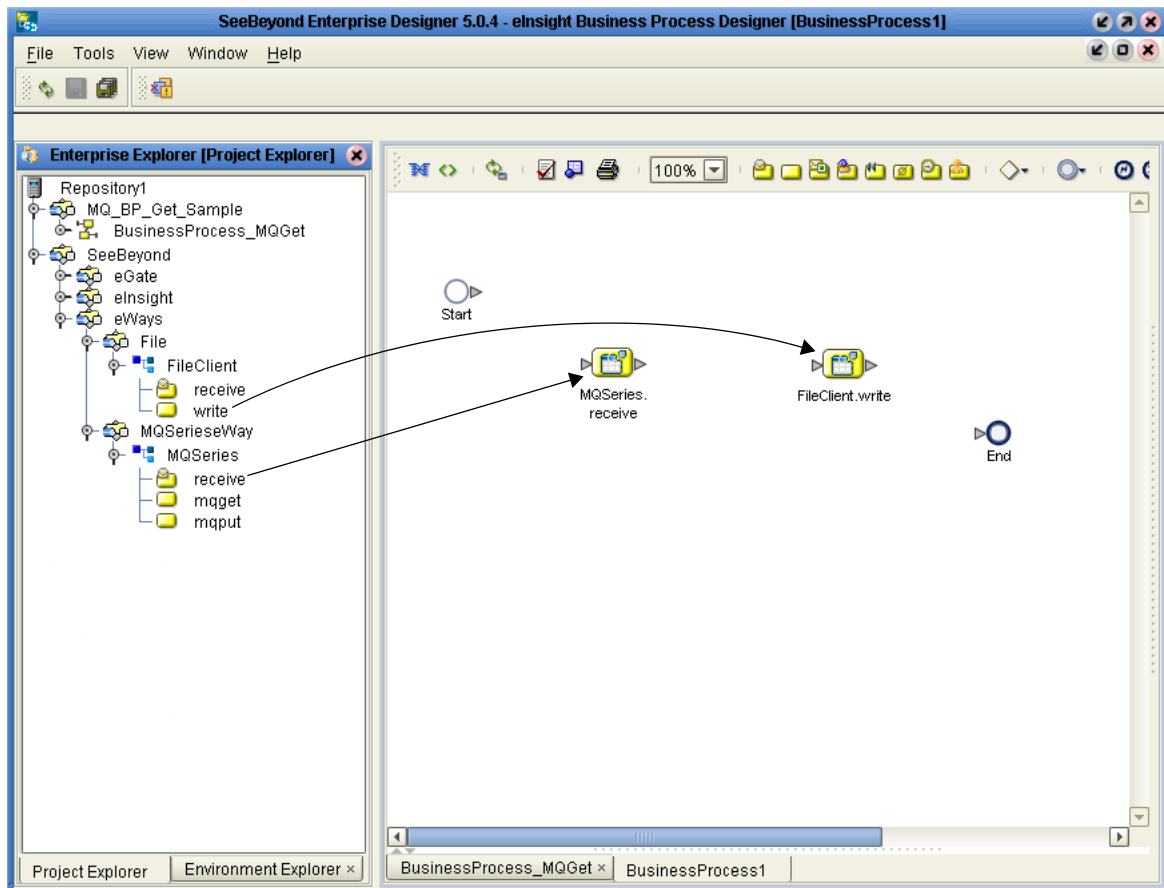


## 4.5.2 Creating the BusinessProcess\_MQGet Business Process

### Creating the Business Process Flow

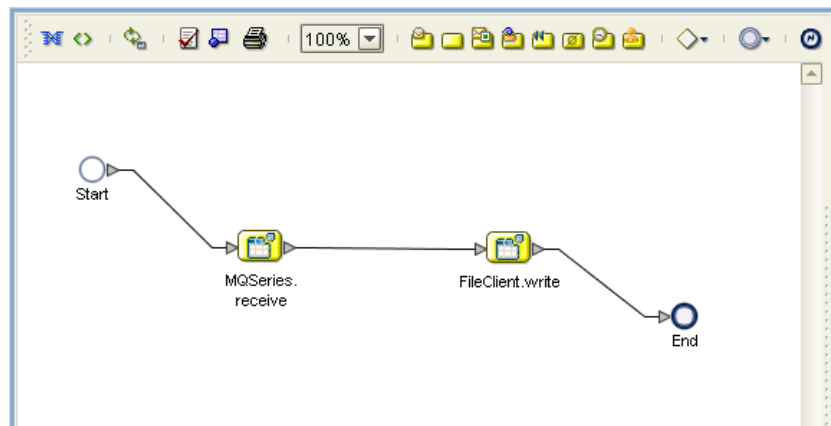
- 1 From the Enterprise Designer's Project Explorer tree, right-click **MQ\_BP\_Get\_Sample**, and select **New > Business Process** from the shortcut menu. The eInsight Business Process Designer appears and **BusinessProcess1** is added to the Project Explorer tree. Rename the Business Process to **BusinessProcess\_MQGet**.
- 2 From the Project Explorer tree, expand the **SeeBeyond > eWays > MQSerieseWay > MQSeries** nodes. In the same way, expand and **SeeBeyond > eWays > File > FileClient** nodes to expose the available Business Process elements.
- 3 Populate the eInsight Business Process Designer's canvas with the following elements from the Project Explorer tree, as displayed in Figure 6:
  - ♦ **receive**, under SeeBeyond > eWays > MQSerieseWay > MQSeries
  - ♦ **write**, under SeeBeyond > eWays > File > FileClient

**Figure 6** eInsight Business Process Designer - Populate the Canvas



- 4 Link the modeling elements by clicking on the element's connector and dragging the cursor to the next element's connector, making the following links as displayed in Figure 7.
  - ♦ Start -> MQSeries.receive
  - ♦ MQSeries.receive -> FileClient.write
  - ♦ FileClient.write -> End

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

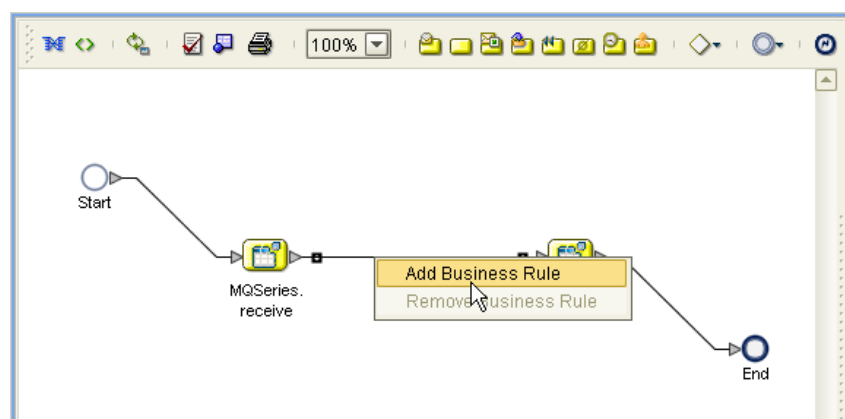


## Configuring the Modeling Elements

Business Rules, created between the Business Process elements, define the relationship between the input and output Attributes of the elements.

- 1 Right-click the link between the **MQSeries.receive** and **FileClient.write** Activities and select **Add Business Rules** from the shortcut menu as displayed in Figure 8.

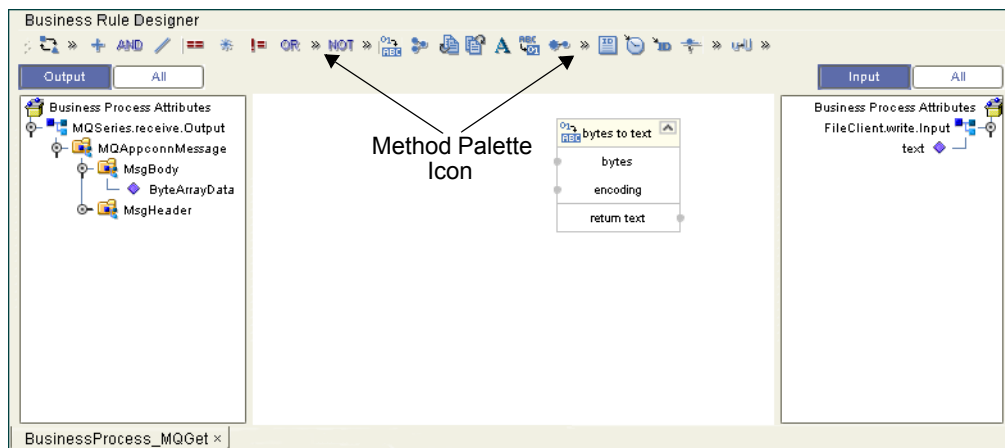
**Figure 8** eInsight Business Process Designer - Adding Business Rules



- 2 From the eInsight Business Process Designer toolbar, click the **Map Business Process Attributes** button. The Business Rule Designer appears at the bottom of the eInsight Business Process Designer.

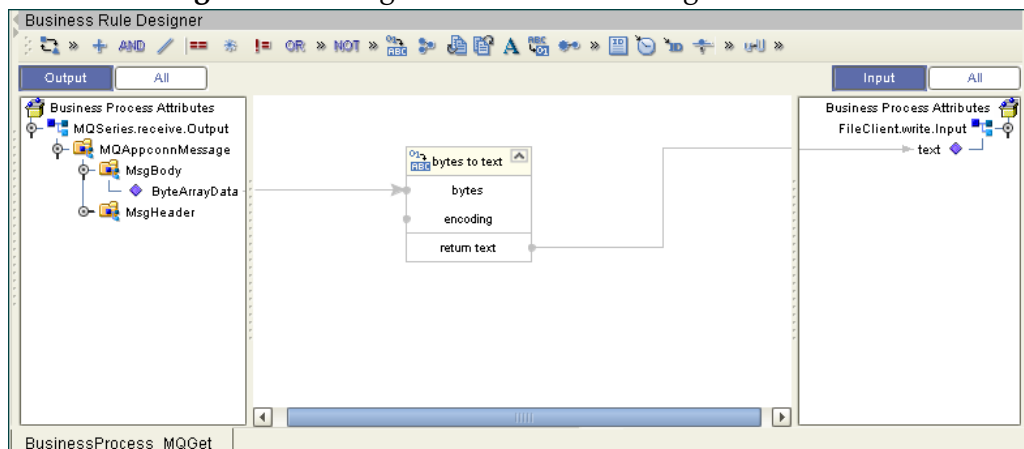
- 3 Click on the **Business Rules** icon in the link between **MQSeries.receive** and **FileClient.write** to display the Business Rule Output and Input Attributes in the Business Rule Designer. These Attributes can now be modified.
- 4 From the Business Rule Designer toolbar, click the Method Palette icon (see Figure 9). The Method Palette appears. From the **String** tab of the Method Palette, select **bytes to text** and click **Close**. The **bytes to text** icon is added to the toolbar.
- 5 From the Business Rule Designer toolbar, drag and drop the **bytes to text** icon onto the Business Rule Designer canvas. The **bytes to text** method box appears (see Figure 9).

Figure 9 eInsight Business Rule Designer



- 6 Map **ByteArrayData**, under **MQAppconnMessage > MsgBody** in the Output pane of the Business Rule Designer, to the **bytes** input node of the **bytes to text** method box. This is done by clicking on **ByteArrayData** and dragging the cursor to the **bytes** input node of the **bytes to text** method box.
- 7 Map the **return text** output node of the **bytes to text** method box to **text**, under **FileClient.write.input** in the Input pane of the Business Rule Designer. The Business Process Designer (see Figure 10).

Figure 10 eInsight Business Rule Designer



- 8 From the Business Process Designer toolbar, click the **Synchronize Graphical Model and Business Process Code** icon to synchronize the graphical interface to the Business Process code.
- 9 Click the Enterprise Designer's **Save All** icon to save your current changes.

### 4.5.3 Creating a Connectivity Map

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

- 1 From the Project Explorer tree, right-click the **MQ\_BP\_Get\_Sample** project and select **New > Connectivity Map** from the shortcut menu.
- 2 The new Connectivity Map appears and the **CMap1** (Connectivity Map) node is added Project Explorer tree. Rename the **CMap1** Connectivity Map to **CMap\_BPEL\_MQGet**.

### Select the External Applications

In the Connectivity Map, eWays are associated with the External Applications. To create the External Applications used by the **MQ\_BP\_Get\_Sample** project do the following:

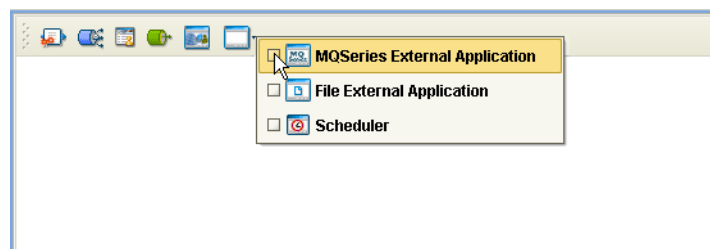
- 1 Click the **External Application** icon on the Connectivity Map toolbar (see Figure 11).

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

### Select the External Applications

When creating a Connectivity Map, the eWays are associated with External Systems. For example, to establish a connection to WebSphere MQ, you must first select MQSeries as an External System to use in your Connectivity Map (see Figure 11).

**Figure 11** Connectivity Map - External Applications



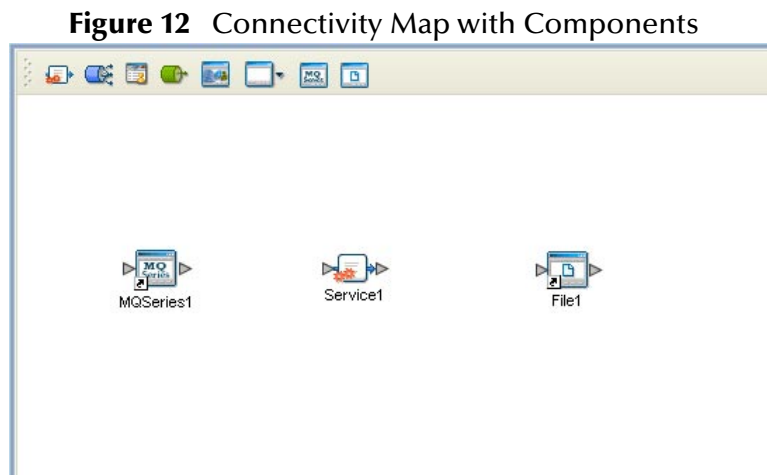
To create the External Applications used by the **MQ\_BP\_Get\_Sample** project do the following:

- 1 Click the **External Application** icon on the Connectivity Map toolbar.
- 2 Select the applications needed for your project (for this sample, the **File** and **MQSeries** External Applications). Icons representing the selected applications are added to the Connectivity Map toolbar.

## Populate the Connectivity Map

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

- 1 Drag the following components onto the Connectivity Map canvas as displayed in Figure 12:
  - ♦ **MQSeries External Application**
  - ♦ **Service** (A service is a container for Collaborations, Business Processes, eTL processes, and so forth) The Service may also be created by dragging the Business Process to the Connectivity Map canvas from the Project Explorer tree.
  - ♦ **File External Application**



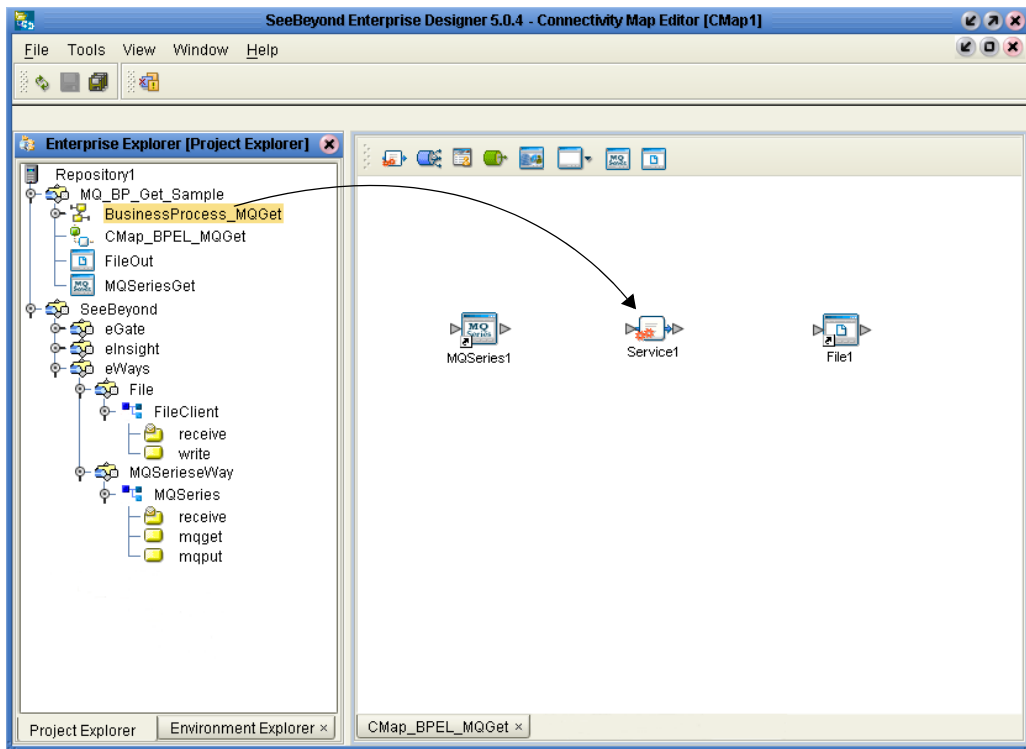
- 2 Rename the **MQSeries1** External Application to **MQSeriesGet** by right-clicking the object, selecting **Rename** from the shortcut menu, and typing in the new name.
- 3 Rename the **File1** External Application to **FileOut**.
- 4 Rename **Service1** to **BusinessProcess\_MQGet1**.
- 5 Save your current changes to the Repository.

### 4.5.4. Binding the Project Components

Components are associated and the bindings are created from the Connectivity Map.

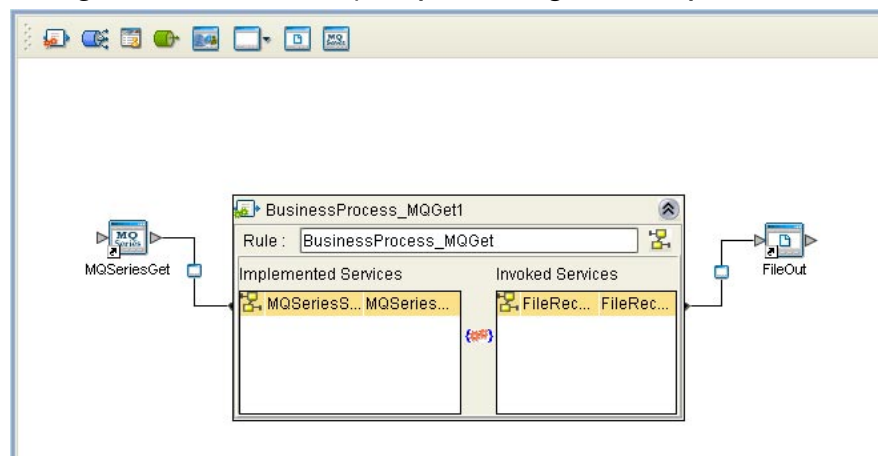
- 1 Open the **CMap\_BPEL\_MQGet** Connectivity Map.
- 2 Drag and drop the **BusinessProcess\_MQGet** Business Process from the Project Explorer tree to the **BusinessProcess\_MQGet1** service (see [Figure 13 on page 30](#)).

Figure 13 Connectivity Map - Binding the Components



- 3 Double-click the **BusinessProcess\_MQGet1** service. The **BusinessProcess\_MQGet1** binding box appears with the **BusinessProcess\_MQGet** Rule.
- 4 From the **BusinessProcess\_MQGet1** binding box, map **MQSeriesSender** (under Implemented Services) to the **MQSeriesGet** application.
- 5 From the **BusinessProcess\_MQGet1** binding box, map **FileReceiver** (under Invoked Services) to the **FileOut** External Application (see Figure 14). .

Figure 14 Connectivity Map - Binding the Components



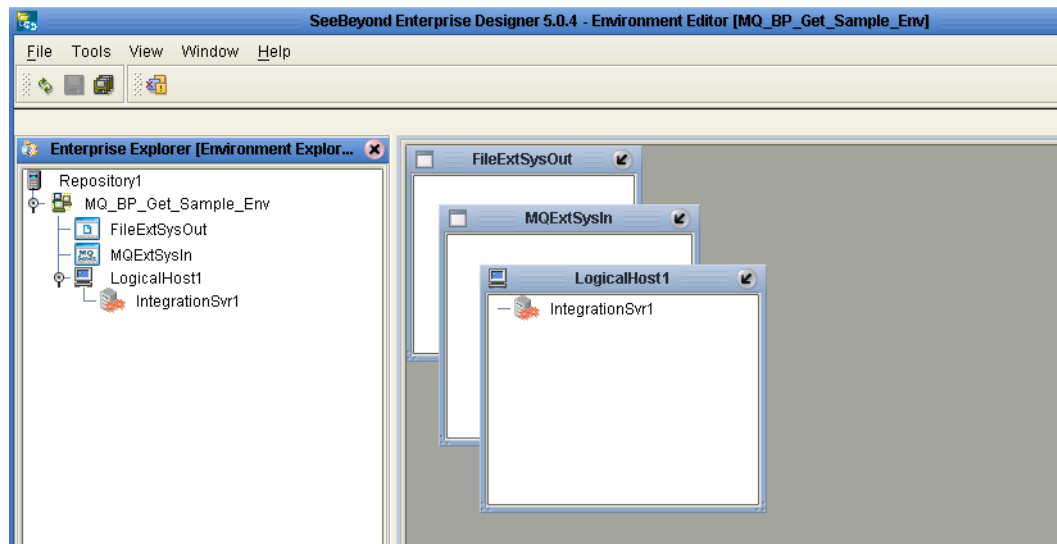
- 6 Minimize the **BusinessProcess\_MQGet1** binding box by clicking the chevrons in the upper-right corner and save your current changes to the Repository.

## 4.5.5. Creating an Environment

Environments include the external systems, logical hosts, integration servers and JMS IQ Managers used by a project and contain the configuration information for these components. Environments are created using the Enterprise Designer's Environment Explorer and Environment Editor.

- 1 From the Enterprise Designer's Enterprise Explorer, click the **Environment Explorer** tab.
- 2 Right-click the Repository and select **New Environment**. A new Environment is added to the Environment Explorer tree.
- 3 Rename the new Environment to **MQ\_BP\_Get\_Sample\_Env**.
- 4 From the Project Explorer tree, right-click **MQ\_BP\_Get\_Sample\_Env** and select **New File External System**. Name this External System **FileExtSysOut** and select **Outbound File eWay** as the External System Type. The **FileExtSysOut** window is added to the Environment Editor.
- 5 From the Project Explorer tree, right-click **MQ\_BP\_Get\_Sample\_Env** and select **New MQSeries External System**. Name this External System **MQExtSysIn** and select **Inbound MQSeries eWay** as the External System Type. The **MQExtSysIn** window is added to the Environment Editor.
- 6 From the Project Explorer tree, right-click **MQ\_BP\_Get\_Sample\_Env** and select **New Logical Host**. The **LogicalHost1** box is added to the Environment and **LogicalHost1** is added to the Environment Editor tree.
- 7 From the Environment Explorer tree, right-click **LogicalHost1** and select **New SeeBeyond Integration Server**. A new Integration Server (**IntegrationSvr1**) is added to the Environment Explorer tree under **LogicalHost1**.
- 8 Save changes to the Repository. The Environment Explorer and Environment Editor now appear as displayed in Figure 15.

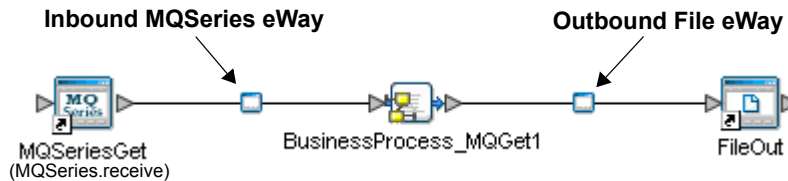
Figure 15 Environment Editor



### 4.5.6. Configuring the eWay Properties

The **MQ\_BP\_Get\_Sample** project contains two eWays, each represented in the Connectivity Map as a node between an External Application and a Service. eWays facilitate communication and movement of data between the external applications and the eGate system (see Figure 16).

**Figure 16** eWay Configurations



The File eWay properties are configured from the Connectivity Map. The MQSeries eWay properties are set from both the Project Explorer’s Connectivity Map and the Environment Explorer tree. To configure the eWays do the following:

### Configuring the File eWay Properties

- 1 Double-click the **Outbound File eWay**, select **Outbound File eWay** in the Templates dialog box and click **OK**.
- 2 The Properties Sheet opens to the Outbound File eWay properties. Modify the properties for your system, including the settings for the **Outbound File eWay** in Table 1, and click **OK**. The properties are saved for the eWay.

**Table 1** Outbound File eWay Settings

Outbound File eWay Properties	
Directory	C:/temp
Output file name	output%.dat

### Configuring the MQSeries eWay Properties

The MQSeries eWay properties must be set in both the Project Explorer and Environment Explorer. For more information on the MQSeries eWay properties and the Properties Sheet, see [Creating and Configuring the MQSeries eWay](#) on page 14 or see the *eGate Integrator User’s Guide*.

#### Modifying the MQSeries eWay Connectivity Map Properties

- 1 From the Connectivity Map, double-click the **MQSeries** eWay. The Properties Sheet opens to the MQSeries eWay Connectivity Map properties.
- 2 Modify the **MQSeries** eWay properties for your system and click **OK**.

#### Modifying the MQSeries eWay Environment Explorer Properties

- 1 From the **Environment Explorer** tree, right-click the Inbound MQSeries External System (**MQSeriesExtSysIn** in this sample), and select **Properties**. The Properties Sheet opens to the MQSeries eWay environment properties.



- 2 Modify the **MQSeries** eWay environment properties for your system, including the settings in Table 2, and click **OK**.

**Table 2** MQSeries Environment Explorer eWay Settings

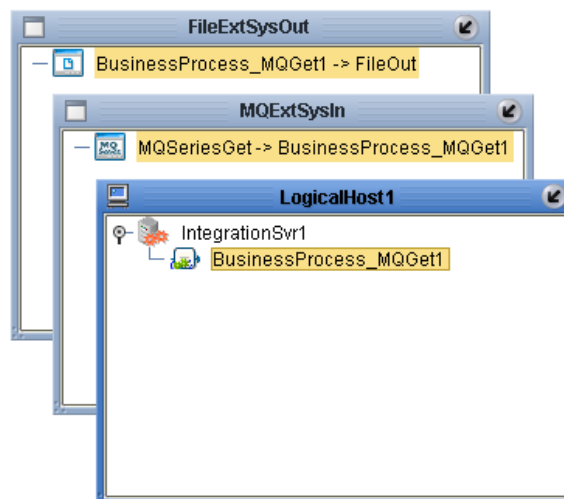
MQSeries eWay Environment Explorer Properties	
<b>MQSeries</b> Set as directed, otherwise use the default settings.	
MQ Host Name	<i>The name of the specific Queue Manager host</i>
MQ Queue Manager Name	<i>The name of the WebSphere MQ Queue Manager</i>
Port Number	<i>Port number to use to connect to the MQ Queue Manager. The default is 1414.</i>

### 4.5.7 Creating and Activating the Deployment Profile

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

- 1 From the Enterprise Explorer's Project Explorer, right-click the project (**MQ\_BP\_Get\_Sample**) and select **New > Deployment Profile**.
- 2 Enter a name for the Deployment Profile (for this sample **MQ\_BP\_Get\_Sample\_DP**). Make sure that the selected Environment is **MQ\_BP\_Get\_Sample\_Env**. Click **OK**.
- 3 From the left pane of the Deployment Editor, drag **BusinessProcess\_MQGet1 -> FileOut** (External Application) to the **FileExtSysOut** window.
- 4 From the left pane of the Deployment Editor, drag the **MQSeriesGet -> BusinessProcess\_MQGet1** (External Application) to the **MQExtSysIn** window.
- 5 From the left pane of the Deployment Editor, drag the **BusinessProcess\_MQGet1** (Business Process) to **IntegrationSvr1** in the **LogicalHost1** window (see Figure 17).

**Figure 17** Deployment Profile



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

### 4.5.8. Running the Project

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

- 1 From the Enterprise Manager Downloads tab, download **Logical Host - for win32**.
- 2 Extract the file to the **ican50\LogicalHost1** directory. You must specify the **LogicalHost1** directory for it to be created.
- 3 Navigate to **C:\ican50\LogicalHost1\bootstrap\config** directory and open the **logical-host.properties** file using Notepad™.
- 4 Enter the following information in the appropriate fields:
  - ♦ Logical Host root directory: **ican50\LogicalHost1**
  - ♦ Repository URL: **http://localhost:port number/repository name**
  - ♦ Repository user name and password: *Your user name and password*
  - ♦ Logical Host Environment name: **MQ\_BP\_Get\_Sample\_Env**
  - ♦ Logical Host name: **LogicalHost1**

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

- 5 Run the **bootstrap.bat** file in the **ican50\LogicalHost1\bootstrap\bin** directory.
- 6 Copy the sample input data file to the input directory.

For more information on running a project that utilizes eInsight from the SeeBeyond Enterprise Designer see the *eInsight Business Process Manager User's Guide* and the *eGate Integrator User's Guide*.

---

## 4.6 Alerting and Logging

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

**Note:** *The alerts/status notifications for the WebSphere MQ eWay version 50 are currently limited to Started, Running, Stopping, and Stopped.*

## 4.7 The MQ\_BP\_Put\_Sample Project

The **MQ\_BP\_Put\_Sample** project demonstrates the following:

- 1 The inbound File eWay subscribes to an external directory. The received message is the name of an MQ Queue.
- 2 The message is concatenated with the string "**This is a message for queue**" and the message from the file.
- 3 The queueName is set to the message from the file.
- 4 The message is published by the outbound MQSeries eWay to an external directory.

The **MQ\_BP\_Put\_Sample** is found in the Samples file as **WebSphereMQSeries\_BPEL\_Put\_Sample.zip**. To Import the project, see [Importing a Sample Project](#) on page 23.

The following pages provide step by step directions for manually creating the **MQ\_BP\_Put\_Sample** project components.

### 4.7.1 Creating a Project

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

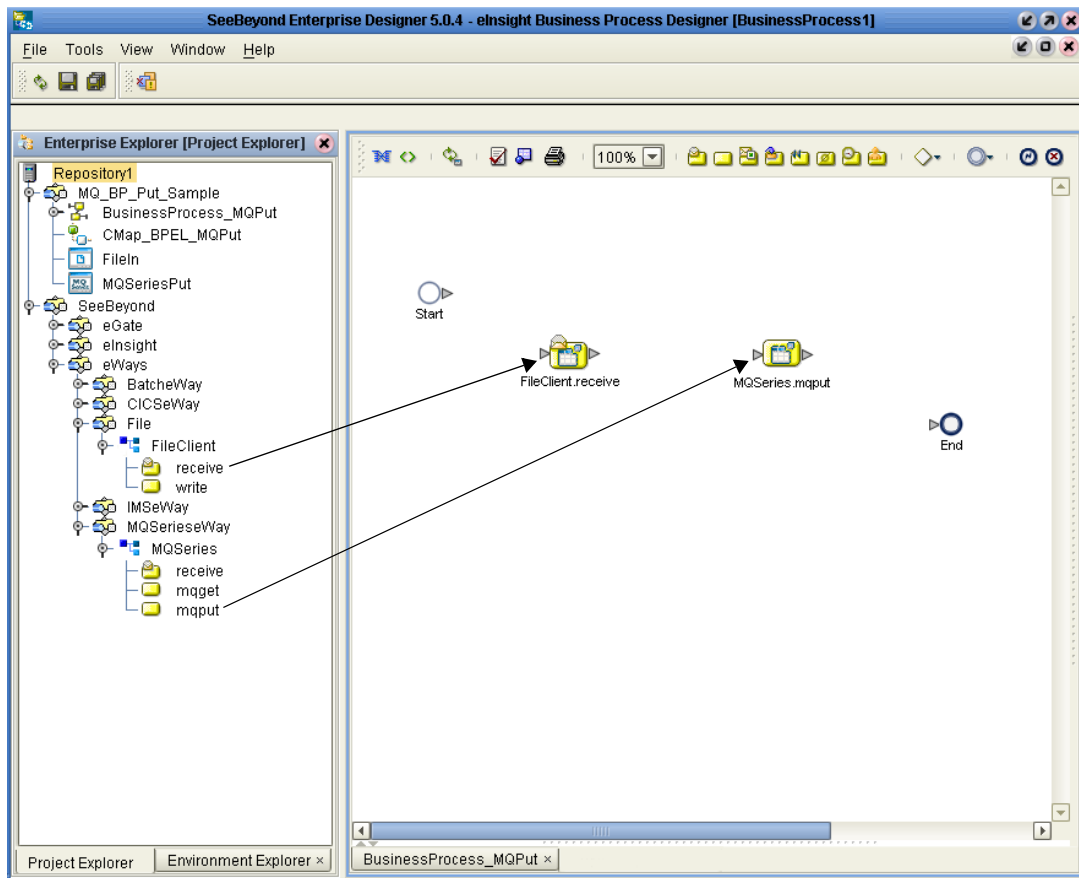
- 1 Start the Enterprise Designer.
- 2 From the Enterprise Explorer's Project Explorer tab, select your Repository on the Project Explorer tree, right-click the Repository and select **New Project**. A new project appears on the Project Explorer tree.
- 3 Click twice on **Project1** and rename the project (for this sample, **MQ\_BP\_Put\_Sample**).

### 4.7.2 Creating the BusinessProcess\_MQPut Business Process

Creating the Business Process Flow

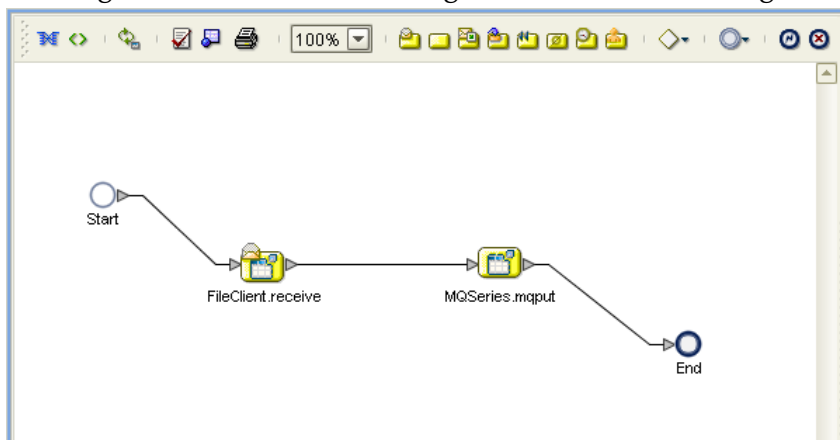
- 1 From the Enterprise Designer's Project Explorer tree, right-click **MQ\_BP\_Put\_Sample**, and select **New > Business Process** from the shortcut menu. The eInsight Business Process Designer appears and **BusinessProcess1** is added to the Project Explorer tree. Rename the Business Process to **BusinessProcess\_MQPut**.
- 2 Populate the eInsight Business Process Designer's modeling canvas with the following elements from the Project Explorer tree, as displayed in [Figure 18 on page 36](#):
  - ♦ **receive**, under SeeBeyond > eWays > File > FileClient
  - ♦ **mput**, under SeeBeyond > eWays > MQSeriesWay > MQSeries

**Figure 18** eInsight Business Process Designer - Populate the Canvas



- 3 Link the modeling elements by clicking on the element's connector and dragging the cursor to the next element's connector, making the following links as displayed in Figure 19.
  - ◆ Start -> FileClient.receive
  - ◆ FileClient.receive -> MQSeries.mqput
  - ◆ MQSeries.mqput -> End

**Figure 19** eInsight Business Process Designer - Link the Modeling Elements

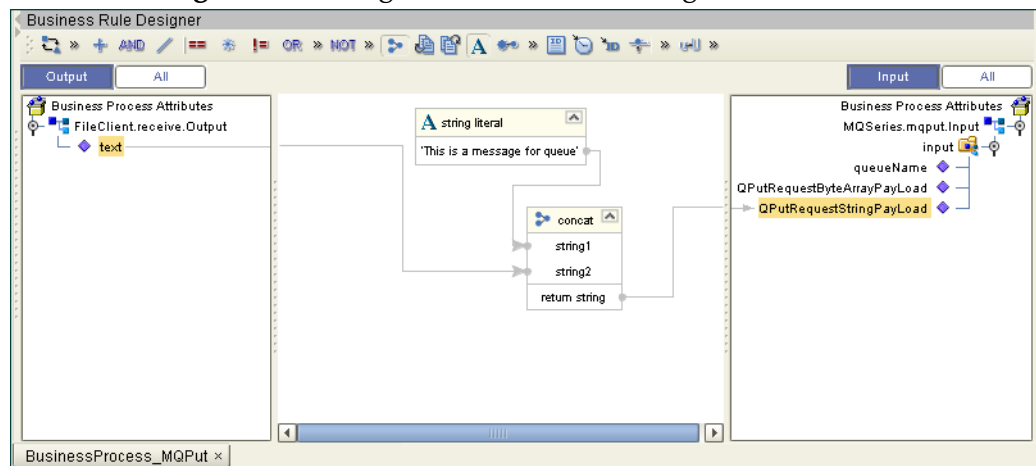


## Configuring the Modeling Elements

Business Rules, created between the Business Process elements, define the relationship between the input and output Attributes of the elements.

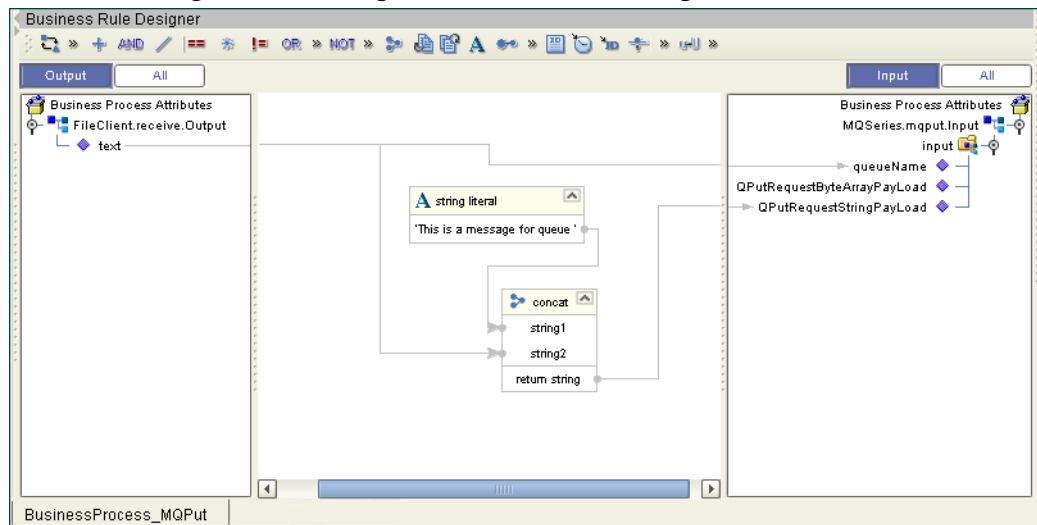
- 1 Right-click the link between the **FileClient.receive** and **MQSeries.mqput** Activities and select **Add Business Rule** from the shortcut menu.
- 2 From the eInsight Business Process Designer toolbar, click the **Map Business Process Attributes** button. The Business Rule Designer appears at the bottom of the eInsight Business Process Designer.
- 3 Click on the **Business Rules** icon in the link between **FileClient.receive** and **MQSeries.mqput** to display the Business Process Output and Input Attributes in the Business Rule Designer. These Attributes can now be modified.
- 4 From the Business Rule Designer toolbar, drag and drop the **concat** icon to the Business Rules Designer canvas. The **concat** method box appears.
- 5 From the Business Rule Designer toolbar, drag and drop the **string literal** icon to the Business Rules Designer canvas. The **string literal** method box appears.
- 6 Map **text** under FileClient.receive.Output in the Output pane of the Business Rule Designer, to the **string2** input node of the **concat** method box.
- 7 Map the 'This is a message for queue' output node of the **string literal** method box, to the **string1** input node of the **concat** method box.
- 8 Map the **return string** output node of the **concat** method box, to **QPutRequestStringPayload** under MQSeries.mqput.Input > input in the Input pane of the Business Rule Designer (see Figure 20).

**Figure 20** eInsight Business Rule Designer



- 9 Map **text** under FileClient.receive.Output in the Output pane of the Business Rule Designer, to **queueName** under MQSeries.mqput.Input > input in the Input pane of the Business Rule Designer (see Figure 21).

**Figure 21** eInsight Business Rule Designer



- 10 From the Business Process Designer toolbar, click the **Synchronize Graphical Model and Business Process Code** icon to synchronize the graphical interface to the Business Process code.
- 11 Click the Enterprise Designer's **Save All** icon to save your current changes.

### 4.7.3 Creating a Connectivity Map

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

- 1 In Enterprise Explorer's Project Explorer, right-click the new project (**MQ\_BP\_Put\_Sample**) and select **New > Connectivity Map** from the shortcut menu.
- 2 The New Connectivity Map appears and a node for the Connectivity Map is added under the project on the Project Explorer tree labeled **CMap1**. Rename the Connectivity Map **CMap\_BPEL\_MQPut**.

#### Select the External Applications

- 1 Click the **External Application** icon on the Connectivity Map toolbar,
- 2 Select the applications needed for your project (for this sample, **MQSeries External Application** and **File External Application**). Icons representing the selected applications are added to the Connectivity Map toolbar.

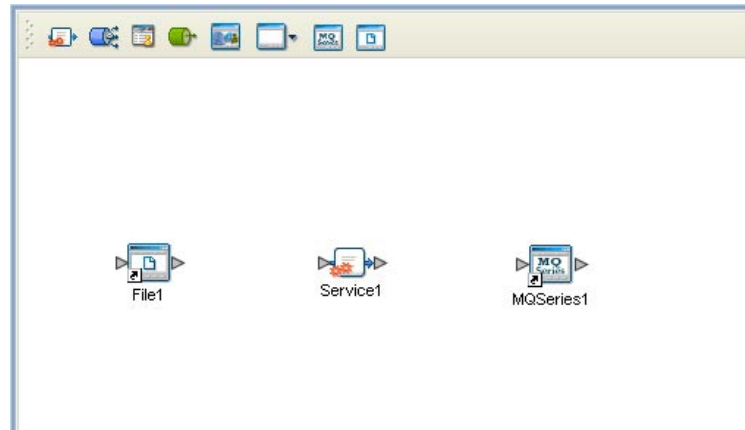
#### Populate the Connectivity Map

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

- 1 For the MQ\_BP\_Put\_Sample project, drag the following components onto the Connectivity Map canvas as displayed in Figure 22:
  - ◆ **Service**
  - ◆ **MQSeries External System**

◆ File External System

**Figure 22** CMap\_BPEL\_MQPut Connectivity Map with Components



- 2 Rename the **File1** External Application to **FileIn** by right-clicking the object, selecting **Rename** from the shortcut menu, and typing in the new name.
- 3 Rename the **Service1** External Application to **BusinessProcess\_MQPut1**.
- 4 Rename **MQSeries1** to **MQSeriesPut**.
- 5 Save your current changes to the Repository

#### 4.7.4. Binding the Project Components

The components are associated and the bindings are created in the Connectivity Map.

- 1 From the Project Explorer, double-click the Connectivity Map **CMap\_BPEL\_MQPut**. The Enterprise Designer canvas now displays the **CMap\_BPEL\_MQPut** Connectivity Map.
- 2 Drag and drop the **BusinessProcess\_MQPut** Business Process from the Project Explorer onto **BusinessProcess\_MQPut1** in the **CMap\_BPEL\_MQPut** Connectivity Map.
- 3 Double-click **BusinessProcess\_MQPut1**. The **BusinessProcess\_MQPut1** binding dialog box appears.
- 4 From the **BusinessProcess\_MQPut1** binding box, map **FileSender** (under Implemented Services) to the **FileIn** application.
- 5 From the **BusinessProcess\_MQPut1** binding box, map the **MQSeriesReceiver** (under Invoked Services) to the **MQSeriesPut** External Application.
- 6 Minimize the **BusinessProcess\_MQPut1** binding box, and save the current changes to your Repository.

## 4.7.5. Creating an Environment

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

- 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 **MQ\_BP\_Put\_Sample\_Env**.
- 4 Right-click **MQ\_BP\_Put\_Sample\_Env** and select **New MQSeries External System**. Name the External System **MQExtSysOut** and select **Outbound MQSeries eWay** as the External System Type. The **MQExtSysOut** window is added to the Environment Editor.
- 5 Right-click **MQ\_BP\_Put\_Sample\_Env** and select **New File External System**. Name this External System **FileExtSysIn** and select **Inbound File eWay** as the External System Type. The **FileExtSysIn** window is added to the Environment Editor.
- 6 Right-click **MQ\_BP\_Put\_Sample\_Env** and select **New Logical Host**. The **LogicalHost1** box is added to the Environment and **LogicalHost1** is added to the Environment Editor tree.
- 7 From the Environment Explorer tree, right-click **LogicalHost1** and select **New SeeBeyond Integration Server**. A new Integration Server (**IntegrationSvr1**) is added to the Environment Explorer tree under Localhost2.
- 8 Save your current changes to the Repository.

## 4.7.6. Configuring the eWay Properties

The MQ\_BP\_Put\_Sample project uses two eWays, each represented in the Connectivity Map as a node between an External Application and a Service.

The File eWay properties are only configured from the Connectivity Map. The MQSeries eWay, is configured from the Project Explorer's Connectivity Map, and the Environment Explorer. To configure the eWays do the following:

### Configuring the File eWay Properties

- 1 Double-click the **inbound File eWay**, select **inbound File eWay** in the Templates dialog box, and click **OK**.
- 2 The Properties Sheet opens to the Inbound File eWay properties. Modify the properties for your system.

### Configuring the MQSeries eWay Properties

The WebSphere MQ (MQSeries) eWay properties must be set in both the Project Explorer and Environment Explorer. For more information on the MQSeries eWay



properties and the Properties Sheet, see [Creating and Configuring the MQSeries eWay](#) on page 14 or see the *eGate Integrator User's Guide*.

#### Modifying the MQSeries eWay Connectivity Map Properties

- 1 From the Connectivity Map, double-click the **MQSeries eWay**. The Properties Sheet opens to the MQSeries eWay Connectivity Map properties.
- 2 Modify the MQSeries eWay properties for your system and click **OK**.

#### Modifying the MQSeries eWay Environment Explorer Properties

- 1 From the Environment Explorer tree, right-click the Inbound MQSeries External System (**MQSeriesExtSysOut** in this sample), and select **Properties**. The Properties Sheet opens to the MQSeries eWay environment properties.
- 2 Modify the MQSeries eWay environment properties for your system and click **OK**.

### 4.7.7 Creating and Activating the Deployment Profile

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

- 1 From the Enterprise Explorer's Project Explorer, right-click the project (**MQ\_BP\_Put\_Sample**) and select **New > Deployment Profile**.
- 2 Enter a name for the Deployment Profile (for this sample **MQ\_BP\_Put\_Sample\_DP**). Make sure that the selected Environment is **MQ\_BP\_Put\_Sample\_Env**. Click **OK**.
- 3 From the left pane of the Deployment Editor, drag **FileIn -> BusinessProcess\_MQPut1** (External Application) to the **FileExtSysIn** window.
- 4 From the left pane of the Deployment Editor, drag the **BusinessProcess\_MQPut1 -> MQSeriesPut** (External Application) to the **MQExtSysOut** window.
- 5 From the left pane of the Deployment Editor, drag **BusinessProcess\_MQPut1** (Business Process) to **IntegrationSvr1** in the **LogicalHost1** window.
- 6 Click **Activate**. When activation succeeds, save the changes to the Repository.

### 4.7.8. Running the Project

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

- 1 From the Enterprise Manager Downloads tab, click on **Logical Host - for win32**.
- 2 Extract the file to the **ican50\LogicalHost2** directory. You must specify the **LogicalHost2** directory for it to be created.
- 3 Navigate to **C:\ican50\LogicalHost2\bootstrap\config** directory and open the **logical-host.properties** file using Notepad™.
- 4 Enter the following information in the appropriate fields:

- ♦ Logical Host root directory: **ican50\LogicalHost2**
- ♦ Repository URL: **http://localhost:port number/repository name**
- ♦ Repository user name and password: *Your user name and password*
- ♦ Logical Host Environment name: **MQ\_BP\_Put\_Sample\_Env**
- ♦ Logical Host name: **LogicalHost2**

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

- 5 Run the **bootstrap.bat** file in the **ican50\LogicalHost2\bootstrap\bin** directory.
- 6 Copy the sample input data file to the input directory.

# Implementing a WebSphere MQ eWay Project

This chapter provides an introduction to the MQSeries eWay components and information about 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

- [MQSeries eWay Components](#) on page 43
- [MQSeries eWay Sample Projects](#) on page 44
- [Importing a Sample Project](#) on page 44

---

## 5.1 MQSeries eWay Components

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

### MQSeries eWay Properties file

The Properties file for the MQSeries eWay contains the parameters necessary to connect with a specific external system. These parameters are set using the Properties dialog box. For more information about the MQSeries eWay Properties file and the Properties dialog box see [Configuring the eWay Properties](#) on page 14.

### MQSeriesETD OTD

The MQSeriesETD OTD is provided with the eWay and contains methods and attributes used to create the Business Rules that invoke the WebSphere MQ program.

---

## 5.2 MQSeries eWay Sample Projects

Two sample projects for the MQSeries eWay using Collaborations, are included with the installation. This chapter also walks you through the creation of these sample projects:

- [The MQ\\_JCE\\_Get\\_Sample Project](#) on page 45
- [The MQ\\_JCE\\_Put\\_Sample Project](#) on page 55

---

## 5.3 Importing a Sample Project

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

- 1 The sample files are uploaded with the eWay's documentation .sar file and downloaded from the Enterprise Manager's Documentation tab. Extract the samples from the Enterprise Manager to a local file.
- 2 From the Enterprise Designer's Project Explorer pane, right-click the Repository and select **Import** from the shortcut menu. The **Import Manager** appears.
- 3 Browse to the directory that contains the sample project zip file. Select the sample file (for this sample, **WebSphereMQSeries\_JCE\_Get\_Sample.zip**) and click **Import**. After the sample project is successfully imported, click **Close**.
- 4 When the import has successfully completed, right-click the Repository and select **Refresh All from Repository** from the shortcut menu.
- 5 From the Project Explorer tree, rename the project to **MQ\_JCE\_Get\_Sample**.
- 6 Before an imported sample project can be run you must do the following:
  - ♦ Install and configure a **WebSphere MQ Queue** on the localhost
  - ♦ Create an **Environment** (see [Creating an Environment](#) on page 50)
  - ♦ Configure the eWays properties for your specific system (see [Configuring the eWays](#) on page 51)
  - ♦ Create a **Deployment Profile** (see [Creating and Activating the Deployment Profile](#) on page 53)

---

## 5.4 Create the WebSphere MQ Queue

The first step in creating the sample project is to install and configure **IBM's WebSphere MQ Server** and **MQ Queue Manager** on the localhost.

It is assumed that the reader is experienced in the use of the WebSphere MQ Queue Manager. For more information on the MQ Queue Manager see the MQ Queue Related

Commands section of the SeeBeyond Message Server Reference Guide. For the sample implementation do the following:

- 1 Open IBM WebSphere MQ Explorer.
- 2 Create a new Queue Manager.
- 3 From the WebSphere MQ Queue Manager create a new queue.

#### IBM WebSphere MQ Server and Queue Manager Limits and Settings

- When using MQSeries Queue Manager on UNIX, the user must be a member of the mqm group to create and start the MQ Queue Manager.
- It is essential that the WebSphere MQ Administrator regularly monitor the number of messages in the queue. Message expiration settings should be set to allow for extended storage.
- WebSphere MQ is limited in the number of messages that can be sent before a commit is executed, and the number of physical messages that can exist on the queue at any one time. This can result in exception errors when upper limits for these numbers are exceeded. Memory and performance of the specific server may also effect the results.

---

## 5.5 The MQ\_JCE\_Get\_Sample Project

The MQSeries eWay **MQ\_JCE\_Get\_Sample** project demonstrates the following:

- 1 The MQSeries eWay, in receive mode, retrieves a message from an MQ Queue. The message is published to an outbound File eWay.
- 2 The File eWay published the message to an external directory.

The following pages provides step by step procedures for building the **MQ\_JCE\_Get\_Sample** project.

### 5.5.1. Create a Project

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

- 1 From the Project Explorer tree, right-click the Repository and select **New Project**. A new project (**Project1**) appears on the Project Explorer tree.
- 2 Click twice (not double-click) **Project1** to rename the project (for this sample, **MQ\_JCE\_Get Sample**).

### 5.5.2 Create a Connectivity Map

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

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

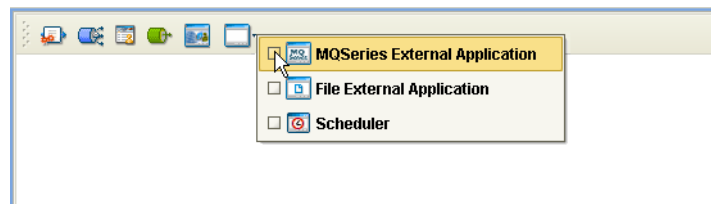
- 2 The New Connectivity Map appears and a node is added under the project on the Project Explorer tree labeled **CMap1**. From the Project Explorer tree, rename the Connectivity Map to **CMap\_JCE\_MQGet**.

### Select the External Applications

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

eWays in the Connectivity Map are associated with External Systems. For example, to establish a connection to WebSphere MQ (MQSeries), you must first select MQSeries as an External System to use in your Connectivity Map (see Figure 23).

**Figure 23** Connectivity Map - External Applications



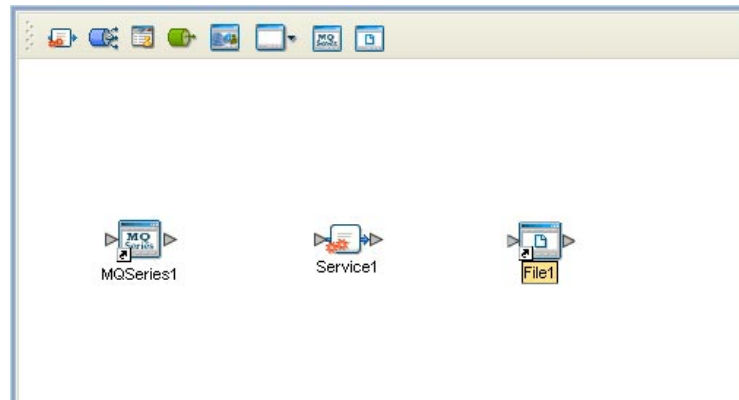
- 1 Click the **External Application** icon on the Connectivity Map toolbar,
- 2 Select the external systems needed for your project (for this sample, the **Scheduler**, and **WebSphere MQ**, and **File** External Applications). Icons representing the selected external systems are added to the Connectivity Map toolbar.

### Populate the Connectivity Map

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

- 1 For this sample, drag and drop the following components onto the canvas as displayed in [Figure 24 on page 47](#):
  - ♦ **MQSeries External System**
  - ♦ **Service** (A service is a container for Collaborations, Business Processes, eTL processes, and so forth)
  - ♦ **File External System**

**Figure 24** Connectivity Map with Components



- 2 Rename the objects by right-clicking the object, selecting **Rename** from the shortcut menu, and typing in the new name. Change the names as follows:
- 3 **MQSeries1** to **MQSeriesGet**
- 4 **Service1** to **Service\_JCE\_MQGet**
- 5 **File1** to **FileOut**
- 6 Click the **Save All** icon to save your current changes to the Repository.

### 5.5.3. Creating the Collaboration Definition

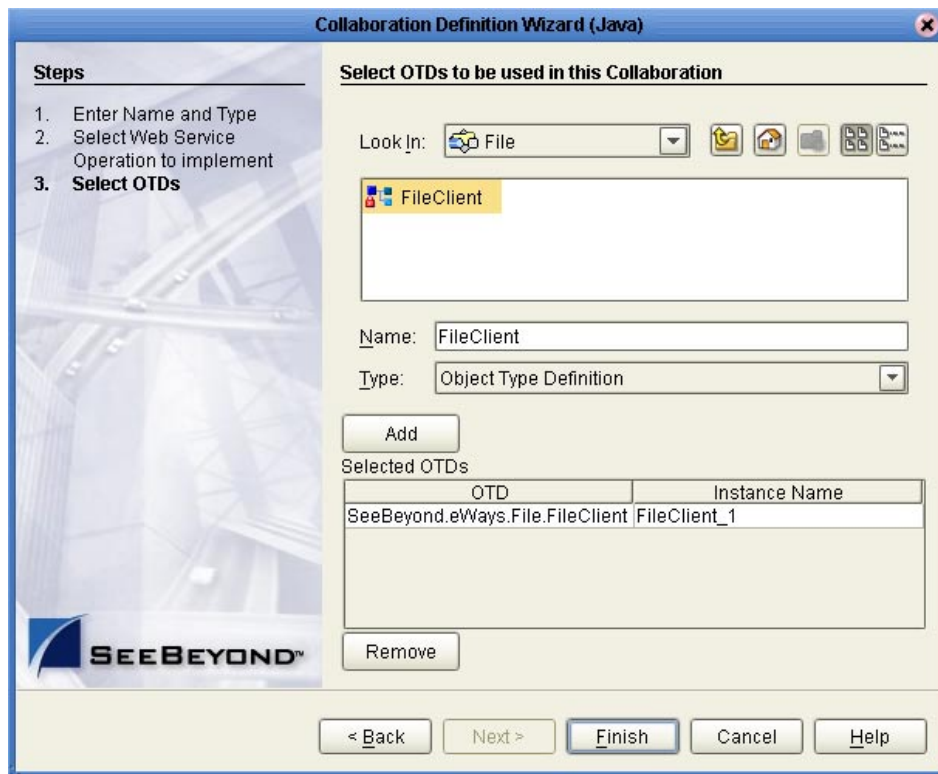
The next step in the sample is to create a Collaboration using the **Collaboration Definition Wizard (Java)**. Once the Collaboration Definition has been created, the Business Rules of the Collaboration are written using the Collaboration Editor.

#### Creating the jcd\_MQGet Collaboration

The jcd\_MQGet Collaboration defines transactions from the WebSphere MQ External Application to the outbound File External Application.

- 1 From the Project Explorer, right-click the **MQ\_JCE\_Get\_Sample** project and select **New > Collaboration Definition (Java)** from the shortcut menu. The **Collaboration Definition Wizard** appears.
- 2 Enter a Collaboration name (for this sample **jcd\_MQGet**) and click **Next**.
- 3 For Step 2 of the wizard, from the Web Services Interfaces selection window, double-click **SeeBeyond > eWays > MQSeriesWay > MQSeries > receive**. The File Name field now displays **receive**. Click **Next**.
- 4 For Step 3 of the wizard, double-click **SeeBeyond > eWays > File > FileClient**. The **FileClient\_1** OTD is added to the Selected OTDs field (see [Figure 25 on page 48](#)).

**Figure 25** Collaboration Definition Wizard (Java) - Select Web Service Interface



- 5 Click **Finish**. The Collaboration Editor (Java) with the new **jcd\_MQGet** Collaboration appears in the right pane of the Enterprise Designer.

### 5.5.4. Creating the Business Rules

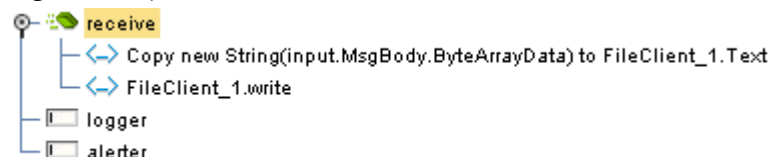
The Business Rules for the **jcd\_MQGet** Collaboration are created using the Collaboration Editor (Java). To open the Collaboration Editor to the **jcd\_MQGet** Collaboration, from the Project Explorer tree, double-click the **jcd\_MQGet** Collaboration. The Collaboration Editor opens, to the selected Collaboration.

#### The **jcd\_MQGet** Collaboration Business Rule

The the **WebSphereMQSeries\_JCE\_Get\_Sample** project uses one Collaboration created in the previous section, **jcd\_MQGet**.

The **jcd\_MQGet** Collaboration contains the Business Rules displayed in Figure 26.

**Figure 26** **jcd\_MQGet** Collaboration Business Rules



For information on how to create Business Rules using the Collaboration Editor see the *eGate Integrator User's Guide*.

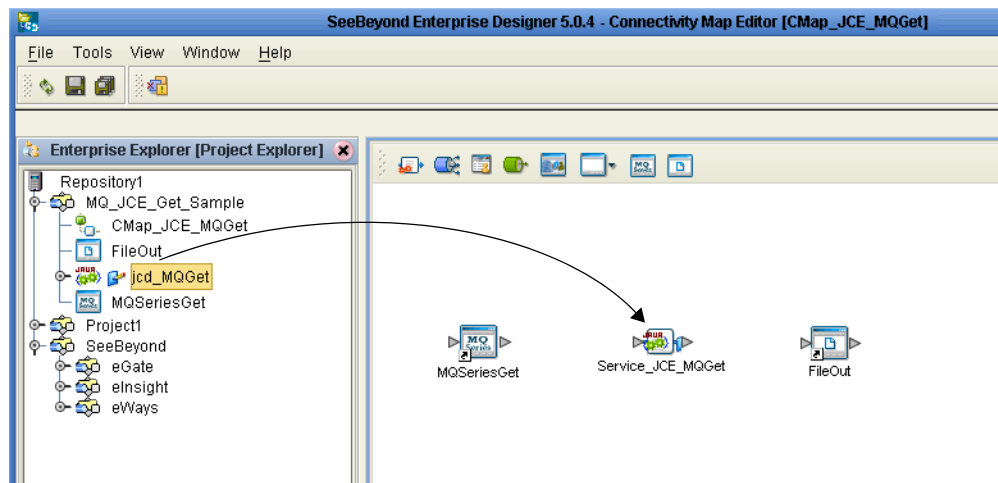


### 5.5.5. Binding the eWay Components

After the Collaborations have been written, the components are associated and Bindings are created in the Connectivity Map.

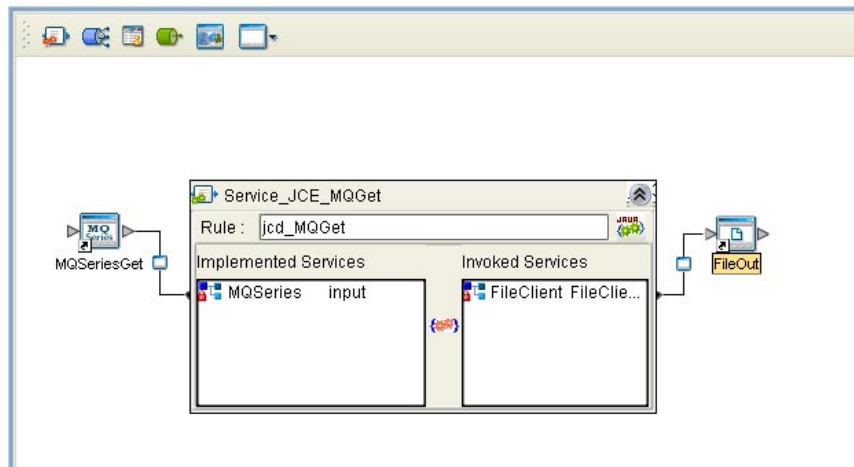
- 1 From the Project Explorer, double-click **CMap\_JCE\_MQGet**. The Enterprise Designer canvas now displays the Connectivity Map.
- 2 Drag and drop the **jcd\_MQGet** Collaboration from the Project Explorer tree onto the **Service\_JCE\_MQGet** service. If the Collaboration was successfully associated, the Service's "gears" icon changes from red to green (see [Figure 27 on page 49](#)).

**Figure 27** Connectivity Map - Binding the Collaborations



- 3 Double-click **Service\_JCE\_MQGet**. The **Service\_JCE\_MQGet** Binding dialog box appears using **jcd\_MQGet** as the rule.
- 4 From the **Service\_JCE\_MQGet** Binding dialog box, drag **MQSeries input** (Implemented Services) to the **MQSeriesGet** External Application.
- 5 From the **Service\_JCE\_MQGet** Binding dialog box, drag **FileClient\_1 FileClient** (under Invoked Services) to the **FileOut** External Application (see [Figure 28](#)).

**Figure 28** Connectivity Map - Binding the Components



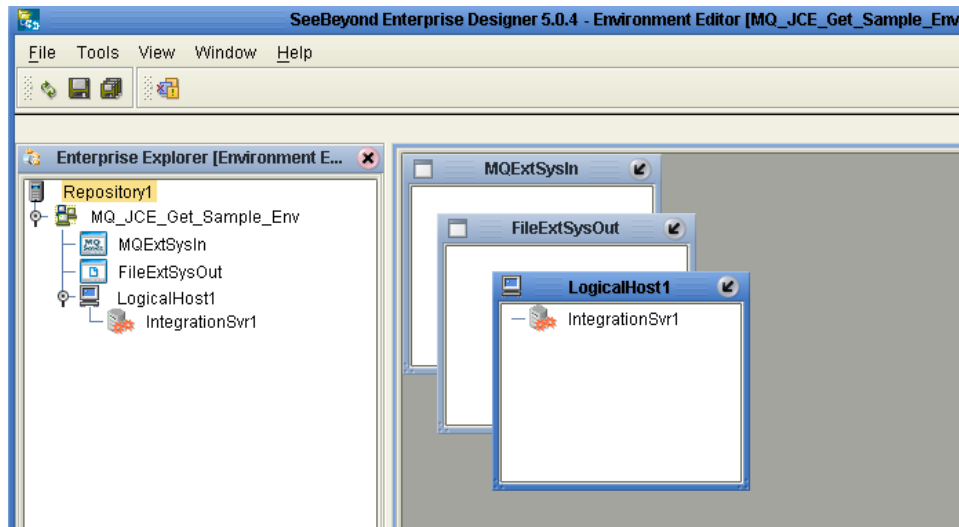
- 6 Click the chevrons in the upper-right corner of the **Service\_JCE\_MQGet** Binding dialog box to minimize the **Service\_JCE\_MQGet**.

### 5.5.6. Creating an Environment

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

- 1 From the Enterprise Designer's Enterprise Explorer, click the **Environment Explorer** tab.
- 2 Right-click the Repository and select **New Environment**. A new Environment is added to the Environment Explorer tree.
- 3 Rename the new Environment to **MQ\_JCE\_Get Sample\_Env**.
- 4 Right-click **MQ\_JCE\_Get Sample\_Env** and select **New MQSeries External System**. Name the External System **MQExtSysIn** and select **Inbound MQSeries eWay** as the type. Click **OK**.
- 5 Right-click **MQ\_JCE\_Get Sample\_Env** and select **New File External System**. From the Create an External System dialog box, name the External System **FileExtSysOut**, and select **Outbound File eWay** as the type. Click **OK**.
- 6 Right-click **MQ\_JCE\_Get SampleEnv** and select **New Logical Host**. The **LogicalHost1** box is added to the Environment and **LogicalHost1** is added to the Environment Editor tree.
- 7 From the Environment Explorer tree, right-click the Logical Host environment, **LogicalHost1**, and select **New SeeBeyond Integration Server**. A new Integration Server, **IntegrationSvr1**, is added to the **LogicalHost1** box (see Figure 29).

Figure 29 Environment Editor

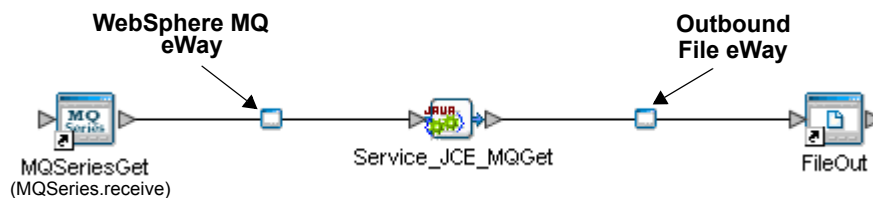


- 8 Save your current changes to the Repository.

### 5.5.7. Configuring the eWays

The MQ\_JCE\_Sample project uses two component eWays, each represented in the Connectivity Map as a node between its associated External Application and a Service (see Figure 30 on page 51). eWays facilitate communication and movement of data between the External Applications and the eGate system.

Figure 30 eWays



The File eWay properties and the Scheduler parameters are configured from the Connectivity Map. The MQSeries eWay properties are set in both the Project Explorer's Connectivity Map and the Environment Explorer. To configure the eWay properties do the following:

### Configuring the File eWay Properties

- 1 from the Connectivity Map, double-click the **File** eWay. The Templates dialog box appears. Select **Outbound File eWay** and click **OK**. The Properties Sheet opens to the Outbound File eWay configuration.
- 2 Modify the parameters for your system, including the settings for the Outbound File eWay in Table 3, and click **OK**.

**Table 3** Outbound File eWay Settings

Outbound File eWay Properties	
Directory	C:/eGate50/data/out
Multiple records per file	True
Output file name	mq_out.txt

## Configuring the WebSphere MQ (MQSeries) eWay Properties

The MQSeries eWay parameters must be set in both the Project Explorer and Environment Explorer. For more information on the MQSeries eWay properties and the Properties Sheet, see [Configuring the eWay Properties](#) on page 14, or see the *eGate Integrator User's Guide*.

### Modifying the MQSeries eWay Connectivity Map Properties

- 1 From the Connectivity Map, double-click the **MQSeriesGet** eWay. The Templates dialog box appears. Select **Inbound MQSeries eWay** and click **OK**. The Properties Sheet opens to the Inbound MQSeries eWay properties.
- 2 Modify the **MQSeriesGet** eWay Connectivity Map properties for your system, including the settings in [Table 4 on page 52](#), and click **OK**.

**Table 4** MQSeries eWay Connectivity Map Properties

Inbound MQSeries eWay Connectivity Map Properties	
<b>Settings</b> Set as directed, otherwise use the default settings	
Queue Name	MQ Queue Name
Schedule Interval	Polling Interval in milliseconds

### Modifying the MQSeries eWay Environment Explorer Properties

- 1 From the **Environment Explorer** tree, right-click the MQSeries External System (**MQExtSysIn** in this sample), and select **Properties**. The Properties dialog box opens to the MQSeries eWay Environment properties.
- 2 Modify the MQSeries eWay Environment properties for your system, including the settings in [Table 5 on page 52](#), and click **OK**.

**Table 5** MQSeries eWay Environment Explorer Properties

MQSeries eWay Environment Explorer Properties	
<b>Settings</b> Set as directed, otherwise use the default settings	
MQ Host Name	<i>The name of the host on which the Queue Manager resides</i>
MQ Queue Manager Name	<i>Name of the WebSphere MQ Queue Manager</i>
Password	<i>Queue Manager Password</i>

MQSeries eWay Environment Explorer Properties	
Port Number	Port number on which the Queue Manager is listening
UserID	User ID to access the Queue Manager

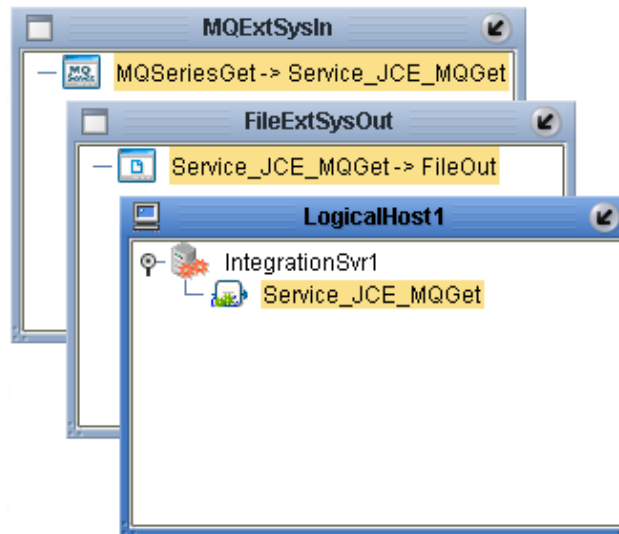
- 3 Save your changes to the Repository when finished.

## 5.5.8 Creating and Activating the Deployment Profile

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

- 1 From the Enterprise Explorer's Project Explorer, right-click the project (MQ\_JCE\_Get Sample) and select **New > Deployment Profile**.
- 2 Enter a name for the Deployment Profile (for this sample MQ\_JCE\_Get Sample\_DP). Make sure that the selected Environment is MQ\_JCE\_Get Sample\_Env. Click **OK**.
- 3 Drag **MQSeriesGet -> Service\_JCE\_MQGet** (External Application) to the **MQExtSysIn** box.
- 4 From the left pane of the Deployment Editor, drag the **Service\_JCE\_MQGet -> FileOut** (External Application) to the **FileExtSysOut** box.
- 5 Drag the **Service\_JCE\_MQGet** service to **IntegrationSvr1** in the Logical Host (**LogicalHost1**) environment box (see [Figure 31 on page 53](#)).

**Figure 31** Deployment Profile



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

## 5.5.9. Running the Project

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

- 1 From the Enterprise Manager Downloads tab, download **Logical Host - for win32**.
- 2 Extract the file to the **ican50\LogicalHost3** directory. You must specify the **LogicalHost3** directory for it to be created.
- 3 Navigate to **C:\ican50\LogicalHost3\bootstrap\config** directory and open the **logical-host.properties** file using Notepad™.
- 4 Enter the following information in the appropriate fields:
  - ♦ Logical Host root directory: **ican50\LogicalHost3**
  - ♦ Repository URL: **http://localhost:port number/repository name**
  - ♦ Repository user name and password: *Your user name and password*
  - ♦ Logical Host Environment name: **MQ\_JCE\_Get\_Sample\_Env**
  - ♦ Logical Host name: **LogicalHost3**

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

- 5 Run the **bootstrap.bat** file in the **ican50\LogicalHost3\bootstrap\bin** directory.
- 6 Copy the sample input data file to the input directory.

For more information on running a project that utilizes eInsight from the SeeBeyond Enterprise Designer see the *eInsight Business Process Manager User's Guide* and the *eGate Integrator User's Guide*.

---

## 5.6 Alerting and Logging

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

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

## 5.7 The MQ\_JCE\_Put\_Sample Project

The **MQ\_JCE\_Put\_Sample** project demonstrates the following:

- 1 The inbound File eWay subscribes to an external directory. The received message is the name of an MQ Queue.
- 2 The message is concatenated with the string "This is a message for queue" and the message from the file.
- 3 The queueName is set to the message from the file.
- 4 The message is published by the outbound MQSeries eWay to an external directory.

The **MQ\_BP\_Put\_Sample** is found in the Samples file as **WebSphereMQSeries\_JCE\_Put\_Sample.zip**. To Import the project, see [Importing a Sample Project](#) on page 44.

The following pages provide step by step directions for manually creating the **MQ\_JCE\_Put\_Sample** project components.

### 5.7.1 Create a Project

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

- 1 Start the Enterprise Designer.
- 2 From the Enterprise Explorer's Project Explorer tab, select your Repository on the Project Explorer tree, right-click the Repository and select **New Project**. A new project appears on the Project Explorer tree.
- 3 Click twice on **Project1** and rename the project (for this sample, **MQ\_JCE\_Put\_Sample**).

### 5.7.2 Create a Connectivity Map

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

- 1 In Enterprise Explorer's Project Explorer, right-click the new project (**MQ\_JCE\_Put\_Sample**) and select **New > Connectivity Map** from the shortcut menu.
- 2 The New Connectivity Map appears and a node for the Connectivity Map is added under the project on the Project Explorer tree labeled **CMap1**. Rename the Connectivity Map **CMap\_JCE\_MQPut**.

### Select the External Applications

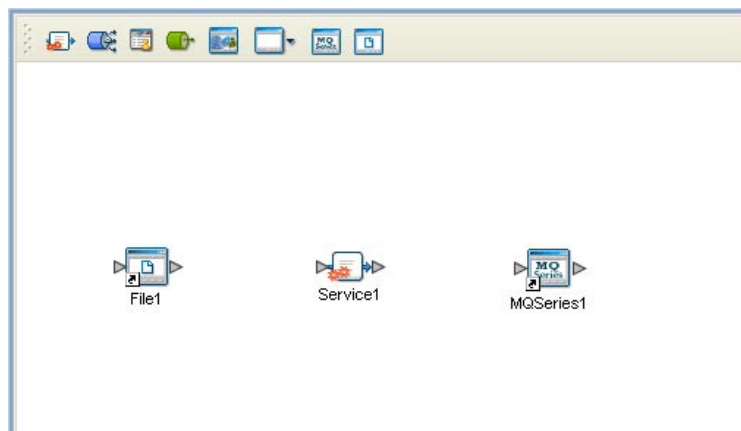
- 1 Click the **External Application** icon on the Connectivity Map toolbar,
- 2 Select the applications needed for your project (for this sample, **MQSeries External Application** and **File External Application**). Icons representing the selected applications are added to the Connectivity Map toolbar.

## Populate the Connectivity Map

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

- 1 For the MQ\_JCE\_Put\_Sample project, drag the following components onto the Connectivity Map canvas as displayed in Figure 32:
  - ♦ **Service**
  - ♦ **MQSeries External System**
  - ♦ **File External System**

**Figure 32** CMap\_JCE\_MQPut Connectivity Map with Components



- 2 Rename the **File1** External Application to **FileIn** by right-clicking the object, selecting **Rename** from the shortcut menu, and typing in the new name.
- 3 Rename the **Service1** External Application to **Service\_JCE\_MQPut**.
- 4 Rename **MQSeries1** to **MQSeriesPut**.
- 5 Save your current changes to the Repository

### 5.7.3. Creating the Collaboration Definition

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

#### Creating the jcd\_MQPut Collaboration

The jcd\_MQPut Collaboration defines transactions from the Inbound File External Application to the WebSphere MQ External Application.

- 1 From the Project Explorer, right-click the **MQ\_JCE\_Put\_Sample** project and select **New > Collaboration Definition (Java)** from the shortcut menu. The **Collaboration Definition Wizard (Java)** appears.
- 2 Enter a Collaboration name (for this sample **jcd\_MQPut**) and click **Next**.



- 3 For Step 2 of the wizard, from the Web Services Interfaces selection window, double-click **SeeBeyond > eWays > File > FileClient > receive**. The File Name field now displays **receive**. Click **Next**.
- 4 For Step 3 of the wizard, double-click **SeeBeyond > eWays > MQSeriesWay > MQSeries** . The **MQSeries OTD** is added to the Selected OTDs field .
- 5 Click **Finish**. The Collaboration Editor with the new **jcd\_MQPut** Collaboration appears in the right pane of the Enterprise Designer.

### 5.7.4. Creating the Business Rules

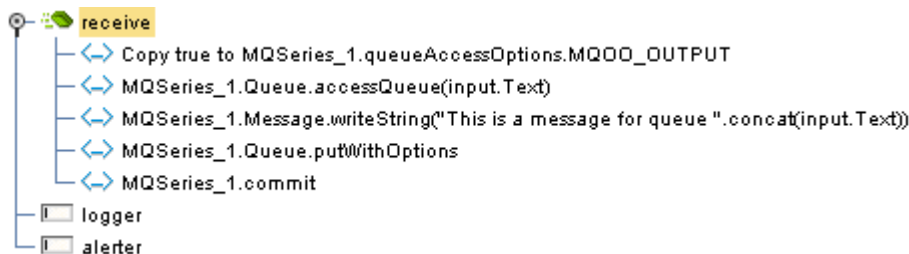
The Business Rules for the **jcd\_MQPut** Collaboration are created using the Collaboration Editor (Java). To open the Collaboration Editor to the **jcd\_MQPut** Collaboration, from the Project Explorer tree, double-click the **jcd\_MQPut** Collaboration. The Collaboration Editor opens, to the selected Collaboration.

#### The **jcd\_MQPut** Collaboration Business Rule

The the **WebSphereMQSeries\_JCE\_Put\_Sample** project uses one Collaboration created in the previous section, **jcd\_MQPut**.

The **jcd\_MQPut** Collaboration contains the Business Rules displayed in Figure 33

**Figure 33** **jcd\_MQPut** Collaboration Business Rules



For more information on how to create Business Rules using the Collaboration Editor see the *eGate Integrator User's Guide*.

### 5.7.5. Binding the Project Components

The eWay components are associated and the bindings are created in the Connectivity Map.

- 1 From the Project Explorer, double-click **CMap\_JCE\_MQPut** to open the Connectivity Map.
- 2 Drag and drop the **jcd\_MQPut** Collaboration from the Project Explorer tree to **Service\_JCE\_MQPut** in the **CMap\_JCE\_MQPut** Connectivity Map.
- 3 Double-click **Service\_JCE\_MQPut**. The **Service\_JCE\_MQPut** binding dialog box opens.
- 4 From the **Service\_JCE\_MQPut** binding box, map **FileClient input** (under Implemented Services) to the **FileIn** application.

- 5 From the **Service\_JCE\_MQPut** binding box, map the **MQSeries\_1 MQSeries** (under Invoked Services) to the **MQSeriesPut** External Application.
- 6 Minimize the **Service\_JCE\_MQPut** binding box, and save the current changes to your Repository.

## 5.7.6. Creating an Environment

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

- 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 **MQ\_JCE\_Put\_Sample\_Env**.
- 4 Right-click **MQ\_JCE\_Put\_Sample\_Env** and select **New MQSeries External System**. Name the External System **MQExtSysOut** and select **Outbound MQSeries eWay** as the External System Type. The **MQExtSysOut** window is added to the Environment Editor.
- 5 Right-click **MQ\_JCE\_Put\_Sample\_Env** and select **New File External System**. Name this External System **FileExtSysIn** and select **Inbound File eWay** as the External System Type. The **FileExtSysIn** window is added to the Environment Editor.
- 6 Right-click **MQ\_JCE\_Put\_Sample\_Env** and select **New Logical Host**. The **LogicalHost1** box is added to the Environment and **LogicalHost1** is added to the Environment Editor tree.
- 7 From the Environment Explorer tree, right-click **LogicalHost1** and select **New SeeBeyond Integration Server**. A new Integration Server (**IntegrationSvr1**) is added to the Environment Explorer tree under **LogicalHost1**.
- 8 Save your current changes to the Repository.

## 5.7.7. Configuring the eWay Properties

The MQ\_JCE\_Put\_Sample project uses two eWays, each represented in the Connectivity Map as a node between an External Application and a Service.

The File eWay properties are only configured from the Connectivity Map. The MQSeries eWay, is configured from the Project Explorer's Connectivity Map, and the Environment Explorer. To configure the eWays do the following:

### Configuring the File eWay Properties

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

- 2 The Properties Sheet opens to the Inbound File eWay properties. Modify the properties for your system.

## Configuring the MQSeries eWay Properties

The WebSphere MQ (MQSeries) eWay properties must be set in both the Project Explorer and Environment Explorer. For more information on the MQSeries eWay properties and the Properties Sheet, see [Creating and Configuring the MQSeries eWay](#) on page 14 or see the *eGate Integrator User's Guide*.

### Modifying the MQSeries eWay Connectivity Map Properties

- 1 From the Connectivity Map, double-click the **MQSeries** eWay. The Properties Sheet opens to the MQSeries eWay Connectivity Map properties.
- 2 Modify the **MQSeries** eWay properties for your system and click **OK**.

### Modifying the MQSeries eWay Environment Explorer Properties

- 1 From the **Environment Explorer** tree, right-click the Inbound MQSeries External System (**MQSeriesExtSysOut** in this sample), and select **Properties**. The Properties Sheet opens to the MQSeries eWay environment properties.
- 2 Modify the **MQSeries** eWay environment properties for your system and click **OK**.

## 5.7.8 Creating and Activating the Deployment Profile

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

- 1 From the Enterprise Explorer's Project Explorer, right-click the **MQ\_JCE\_Put\_Sample** project and select **New > Deployment Profile**.
- 2 Enter a name for the Deployment Profile (for this sample **MQ\_JCE\_Put\_Sample\_DP**). Make sure that the selected Environment is **MQ\_JCE\_Put\_Sample\_Env**. Click **OK**.
- 3 From the left pane of the Deployment Editor, drag **FileIn -> Service\_JCE\_MQPut** (External Application) to the **FileExtSysIn** window.
- 4 From the left pane of the Deployment Editor, drag the **Service\_JCE\_MQPut -> MQSeriesPut** (External Application) to the **MQExtSysOut** window.
- 5 From the left pane of the Deployment Editor, drag **Service\_JCE\_MQPut** (Business Process) to **IntegrationSvr1** in the **LogicalHost1** window.
- 6 Click **Activate**. When activation succeeds, save the changes to the Repository.

## 5.7.9. Running the Project

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

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

- 2 Extract the file to the **ican50\LogicalHost4** directory. You must specify the **LogicalHost4** directory for it to be created.
- 3 Navigate to **C:\ican50\LogicalHost4\bootstrap\config** directory and open the **logical-host.properties** file using Notepad™.
- 4 Enter the following information in the appropriate fields:
  - ♦ Logical Host root directory: **ican50\LogicalHost4**
  - ♦ Repository URL: **http://localhost;port number/repository name**
  - ♦ Repository user name and password: *Your user name and password*
  - ♦ Logical Host Environment name: **MQ\_JCE\_Put\_Sample\_Env**
  - ♦ Logical Host name: **LogicalHost4**

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

- 5 Run the **bootstrap.bat** file in the **ican50\LogicalHost4\bootstrap\bin** directory.
- 6 Copy the sample input data file to the input directory.

# Java Classes and Methods for the WebSphere MQ eWay

---

## 6.1 MQSeries eWay Classes and Methods

The MQSeries eWay contains Java methods that are used to extend the functionality of the eWay. These methods are contained in the following classes:

- MQSeriesETD Class
- GMO Class
- PMO Class
- Message Class

### WebSphere MQ Javadoc

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

## Mapping WebSphere MQ Header Fields

---

### A.1 Mapping Between JMS Standard Header Items and WebSphere MQ Header Fields

JMS Standard header items and their equivalent WebSphere MQ header fields can be set using the Collaboration Editor (Java). For information on mapping between JMS header items and WebSphere MQ header fields see IBM MQSeries online documentation at:

<http://www-4.ibm.com/software/ts/mqseries/library/manual01/csqzaw07/csqzaw07tfrm.htm>

Table 20, at the above Web site provides JMS header fields used to set or get MQSeries header fields (only some of which are available using this procedure). The Collaboration Editor (Java) sets the header properties by calling **readProperty()** or **writeProperty()**.

For detailed information on creating Business Rules using the Collaboration Editor (Java) see the *eGate Integrator User's Guide*.

# Index

## Symbols

- 17

## A

alerting 34

## B

building a project 43

Business Rules

    Collaboration Editor (Java) 48, 57

## C

Channel 20

class 18

Collaboration Definitions

    creating 47, 56

    wizard 47, 56

Collaboration Editor (Java) 48, 57

com.ibm.mq.jar 9, 12

configuration parameters

    Channel 20

    class 18

    Connector 18

    General Settings 17

    Host Name 21

    MQSeries 20

    Password 21

    Port Number 21

    Property.Tag 19

    Queue Manager Name 21

    Transaction Type 17

    type 19

    UserID 21

configuring the WebSphere MQ eWay 14

Connectivity Map 45

    populating 46

Connector 18

## D

Deployment Profile 53

activation 53

creating 53

## E

eInsight

    engine and components 22

    using with the WebSphere MQ eWay 22

Environment 50

    creating 50

eWay

    configuration parameters

        Channel 20

        class 18

        Connector 18

        General Settings 17

        Host Name 21

        MQSeries 20

        Password 21

        Port Number 21

        Property.Tag 19

        Queue Manager Name 21

        Transaction Type 17

        type 19

        UserID 21

    configuring the eWays 51

eWay components 43

External Applications

    selecting 46

external system requirements 8

    MQSeries V5.2 8

    WebSphere MQ V5.3 8

## F

FileeWay.sar 12

## G

General Settings 17

GMO Class 61

## H

Header fields

    mapping 62

Host Name 21

HP NonStop

    requirements 9

## I

implementation 43

## Index

importing a project 44  
installation 11  
    after installing 12

## J

JMS Standard Header  
    mapping with WebSphereMQ Header fields 62

## L

logging 34

## M

MA88 patch 9  
MA88 SupportPac 9  
Message Class 61  
Methods 61  
MQSeriesETD OTD 43  
MQSerieseWay.sar 12  
MQSeriesOTD Class 61

## N

Non-Transactional transaction type 17

## O

operating systems  
    supported 8  
Overview 7  
overview  
    MQSeries 7

## P

parameters  
    Channel 20  
    class 18  
    Connector 18  
    General Settings 17  
    Host Name 21  
    MQSeries 20  
    Password 21  
    Port Number 21  
    Property.Tag 19  
    Queue Manager Name 21  
    Transaction Type 17  
    type 19  
    UserID 21  
Password 21  
PMO Class 61

Port Number (JMS) 21  
project  
    creating 45  
    importing 44  
Property.Tag 19

## Q

Queue Manager Name 21  
Queue Manager Name (JMS) 21

## S

sample eWay project  
    importing a project 44  
supported operating systems 8  
system requirements 8  
    external system requirements 8  
    patches 9

## T

Topic publish/subscribe connection type  
    requirements for MQSeries V5.2 9  
Transaction Type 17  
transaction type  
    Non-Transactional 17  
    XA-compliant. 17  
type 19

## W

WebLogic 10  
WebSphere 10  
WebSphere MQ eWay Classes  
    GMO 61  
    Message 61  
    MQSeriesETD 61  
    PMO 61  
WebSphere MQ Header fields  
    mapping 62  
WebSphere MQ Javadoc  
    Javadoc 61  
WebSphere MQ Queue 44  
    creating 44  
    server and manager limits and settings 45

## X

XA-compliant transaction type 17