SeeBeyond ICAN Suite

SAP (BAPI) eWay Intelligent Adapter User's Guide

Release 5.0

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Chapter 1

About This Guide

This chapter provides an overview of the this user's guide; including its contents and writing conventions.

In This Chapter

- **Contents of This Guide** on page 6
- **Writing Conventions** on page 7
- **Supporting Documents** on page 8
- **SeeBeyond Web Site** on page 8

1.1 Contents of This Guide

This guide contains the following information:

- **Chapter 2, "Introducing the SAP (BAPI) eWay" on page 9** provides an overview of the SAP Application Link Enabling (BAPI) eWay and provides a brief overview of the steps necessary to use the SAP eWay in eGate Projects.
- **Chapter 3, "Installing the SAP (BAPI) eWay" on page 19** describes how to install the SAP eWay, its documentation, and its sample Projects.
- **Chapter 4, "Configuring SAP (BAPI) eWays" on page 21** describes how to build a SAP eWay Project.
- **Chapter 5, "Building SAP (BAPI) Project Business Logic" on page 31** describes how to build the business logic for the SAP eWay by creating Object Type Definitions (OTDs).
- **Chapter 6, "Working with SAP (BAPI) Sample Projects" on page 43** describes how to import and use the sample Projects provided with the SAP eWay.
- **Chapter 7, "Configuring the SAP System for eWay Connections" on page 50** describes how to configure the SAP system to work with the SAP eWay.
- **Chapter 8, "Managing Deployed eWays" on page 55** describes how to monitor and reconfigure deployed eWays.

1.2 Writing Conventions

The following writing conventions are observed throughout this document.

Table 1 Writing Conventions

Text	Convention	Example
Button, file, icon, parameter, variable, method, menu, and object names.	**Bold** text	▪ Click **OK** to save and close. ▪ From the **File** menu, select **Exit**. ▪ Select the **logicalhost.exe** file. ▪ Enter the **timeout** value. ▪ Use the **getClassName()** method. ▪ Configure the **Inbound** File eWay.
Command line arguments and code samples	`Fixed` font. Variables are shown in ***`bold italic`***.	`bootstrap -p` ***`password`***
Hypertext links	**Blue** text	For more information, see **“Writing Conventions” on page 7**.

Additional Conventions

Windows Systems

For the purposes of this guide, references to “Windows” will apply to Microsoft Windows Server 2003, Windows XP, and Windows 2000.

Path Name Separator

This guide uses the backslash (“\“) as the separator within path names. If you are working on a UNIX system, please make the appropriate substitutions.

1.3 Supporting Documents

The following SeeBeyond documents provide additional information about the Integrated Composite Application Network (ICAN) Suite:

- *SeeBeyond ICAN Suite Primer*
- *SeeBeyond ICAN Suite Installation Guide*
- *eGate Integrator User's Guide*
- *eGate Integrator Tutorial*
- *SeeBeyond ICAN Suite Deployment Guide*

1.4 SeeBeyond Web Site

The SeeBeyond Web site is a useful source for product news and technical support information at **www.seebeyond.com**.

Chapter 2

Introducing the SAP (BAPI) eWay

This chapter provides an overview of the SAP (BAPI) eWay and its Intermediate Document (BAPI) format.

In This Chapter

- **About the SAP (BAPI) eWay** on page 9
- **The SAP (BAPI) eWay** on page 10
- **Remote Function Calls** on page 12
- **Client Mode (Outbound from eGate to SAP)** on page 13
- **Server Mode (Inbound from SAP to eGate)** on page 14
- **Supported Operating Systems** on page 17
- **System Requirements** on page 17
- **External System Requirements** on page 17
- **Quick Overview: Implementing SAP (BAPI) eWays in eGate Projects** on page 18

2.1 About the SAP (BAPI) eWay

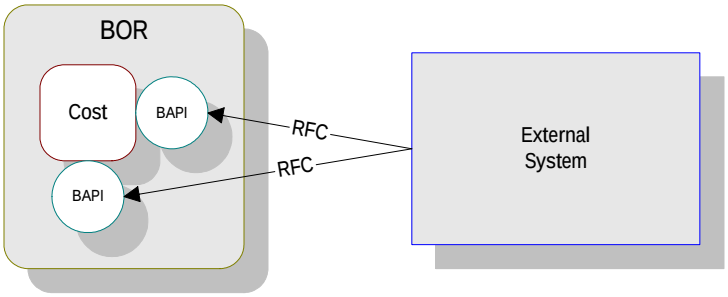
SAP offers several interface options, such as Application Link Enabling (ALE) and Business Application Programming Interface (BAPI).

The SAP (BAPI) eWay is designed specifically to connect eGate to SAP enterprise-management software within a network of diverse hardware and software systems. Using one or more SAP eWays, eGate can act as a bus, linking SAP applications and other software systems, or differently-configured SAP systems. This eWay allows bidirectional data exchange via BAPI and RFC.

2.1.1 BAPI Methods

BAPI is SAP's way of providing precise access to processes the data residing in their system. More specifically, BAPIs are *methods* of SAP Business Objects stored in the Business Object Repository (BOR) and are implemented by function modules programmed in ABAP/4. Also, these functions are Remote Function Call (RFC) enabled, and thus can be called by an external process such as the SAP BAPI eWay.

Figure 1 BAPI Example



2.1.2 BAPI Versus ALE

SAP's ALE mechanism also provides access to processes the data residing in the SAP system, but with one major difference: that access is asynchronous. In other words, data retrieved from the SAP system is not guaranteed to be the most current; there could have been several seconds lapse between when data was captured into an BAPI and when it was sent out via ALE to the external system. Also, if data in an BAPI is sent into SAP, it may not be posted immediately into the database tables. Another difference is data communicated through ALEs tend to be overly comprehensive and lengthy.

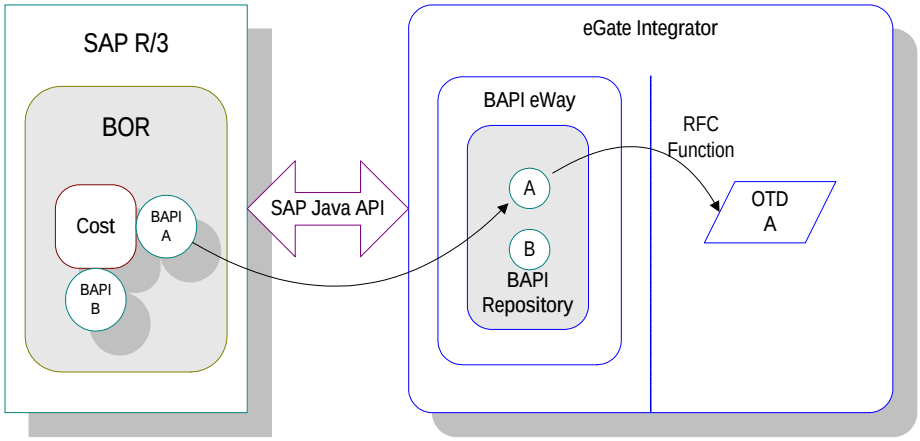
In contrast, BAPIs provide synchronous access to SAP. That is, a request by an external process for data to be retrieved from or posted into the SAP system is executed immediately and control is returned to the caller only when the transaction has completed (or failed). Moreover, the data exchanged is brief as compared with ALEs.

Topic	ALE-BAPI	BAPI
Communication	Asynchronous	Synchronous
Data from SAP	Sending may lag capture into BAPI	Immediate sending
Data to SAP	Posting may lag receipt of data	Immediate posting
Data content	Lengthy and overly comprehensive	Brief and selective

2.2 The SAP (BAPI) eWay

The SAP (BAPI) eWay serves as the external system of Figure 1. It provides an interface with the SAP R/3 system by means of the SAP Java API set contained in the SAP JCo library. Applicable BAPI methods are held in the eWay server's repository, and are invoked by an RFC call from the R/3 system. When invoked, they are passed as an RFC function into an OTD.

Figure 2 BAPI eWay



The functionality of the SAP (BAPI) eWay simplifies the whole process of determining the requisite **IMPORT**, **EXPORT** and **TABLE** parameters—marshaling all the necessary data using the correct type and format, calling the ABAP/4 function module that represents the BAPI, and then extracting and parsing data from the **EXPORT** and/or **TABLE** parameters.

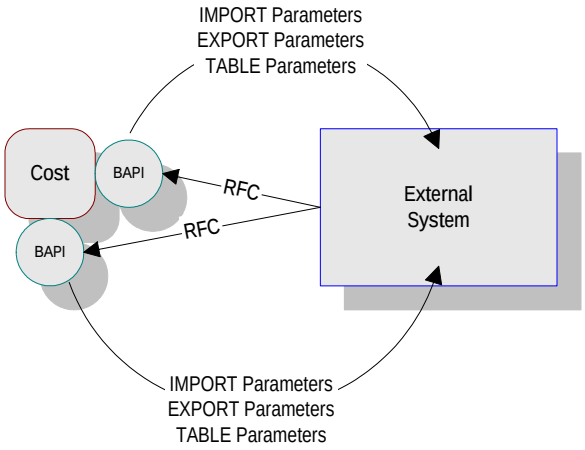
2.2.1 Invoking BAPI Methods

Before it can be invoked, a BAPI (or any RFC-enabled function module on SAP for that matter) requires the following:

- **IMPORT** parameters - data which must be provided to the BAPI
- **EXPORT** parameters - data which is returned by the BAPI
- **TABLE** parameters - data that may be provided to and/or returned by the BAPI

The detailed metadata for these parameters such as descriptions of their value types and mandatory or optional nature, can be found under SAP transaction **SE37**. These metadata, however, can prove tedious to implement without an automated solution such as the SeeBeyond SAP BAPI eWay.

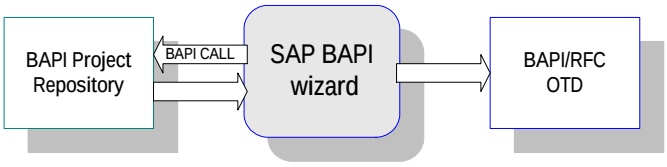
Figure 3 Required Information



2.2.2 Object Type Definitions

Object Type Definitions (OTDs) are templates that embody the business rules related to the associated external system. In the case of the SAP (BAPI) eWay, these OTDs contain methods that communicate with corresponding BAPI methods in SAP R/3. These OTDs are built with the SAP BAPI wizard.

Figure 4 BAPI Builder Operation

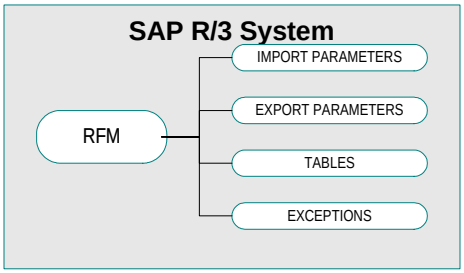


The functionality of the SAP (BAPI) eWay simplifies the whole process of determining the requisite **IMPORT**, **EXPORT** and **TABLE** parameters—marshaling all the necessary data using the correct type and format, calling the ABAP/4 function module that represents the BAPI, and then extracting and parsing data from the **EXPORT** and/or **TABLE** parameters.

2.3 Remote Function Calls

A Remote Function Call (RFC) is SAP's term for a call to a function, or function module, in one system (the server) from another system (the client). An SAP Remote Function Module (RFM) has four main components, as shown in Figure 5.

Figure 5 Remote Function Module



When making a call to a Remote Function Module, two different environments are involved (server and client). As a result, information is passed in a different manner than if the function call was being performed locally.

- **Import/Export Parameters**

  The actual values must be passed between systems, instead of being done by reference.

- **Tables**

  The entire contents of a table must be passed, creating a local copy on the server. After the RFC is completed, then the original table (on the client) is updated.

2.4 Communications with SAP

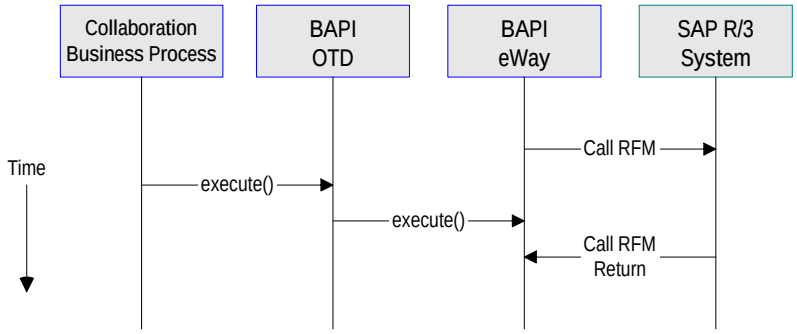
The SAP (BAPI) eWay can communicate with SAP in client (eGate to SAP) and server mode (SAP to eGate). Client mode communication is via non-transactional (regular) RFC and server mode communication can be via Transactional RFC (tRFC) or non transactional (regular) RFC.

2.4.1 Client Mode (Outbound from eGate to SAP)

In this mode, the eWay typically receives data from the eGate system and sends it to the SAP R/3 system by calling a specific BAPI/RFC method. In return, the called BAPI method may provide some ensuing data to be sent back to the eGate system.

Before any BAPI methods on R/3 can be called, the eWay has to log onto the R/3 system using pre-configured parameters.

Most BAPI/RFCs fall into this category. Once they have been successfully invoked, any consequent work done on the SAP system is immediately committed by SAP (autocommit).



Client-Mode Non-Transactional Action Sequence

1. The Collaboration / Business Process populates the appropriate BAPI / RFC **Import** and / or **Table** parameter nodes with data from an inbound OTD.
2. The eWay then calls the BAPI OTD's **execute()** method.
3. SAP returns successfully.

2.5 Server Mode (Inbound from SAP to eGate)

For this release, server mode is only available in eInsight.

Before the eWay can become a server to an SAP system, it must register its program ID. This program ID is associated with an SAP RFC destination, which must have been set up previously on SAP using transaction **SM59**.

After the eWay is started, it registers itself with the SAP system using the pre-configured parameters. It then waits for RFM calls from SAP. When a call is received, the eWay retrieves the data and sends it to eGate. It also sends any required results back to SAP.

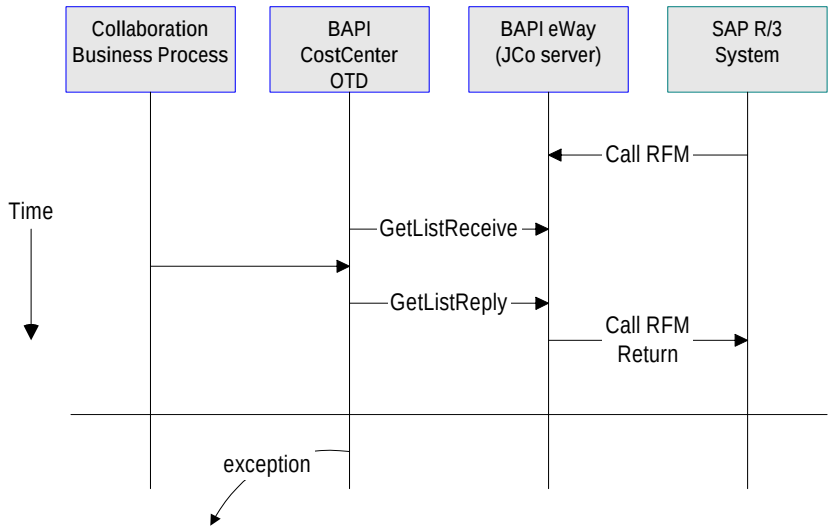
Messages can be retrieved from SAP R / 3 and responses, if any, can be returned to SAP by means of two different mechanisms:

- **Non-Transactional**
- **Transactional RFC (tRFC)**

2.5.1 Non-Transactional Mode

Non-transactional mode provides a simple RFC data transmission from SAP as shown in Figure 6. The sequence diagram uses a sample CostCenter OTD to describe the RFC server sequence.

Figure 6 Internal RFC Server Sequence



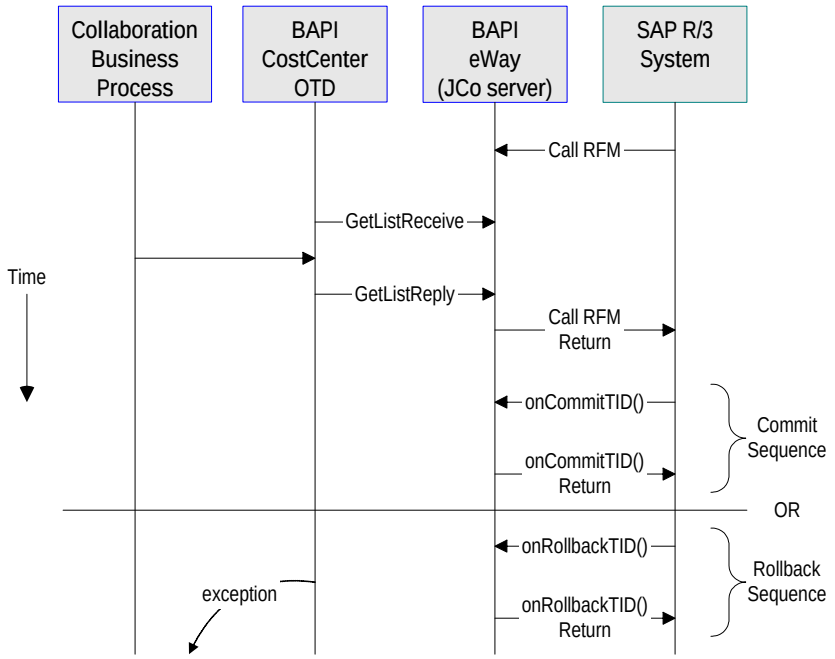
Server-Mode Non-Transaction (Regular) Action Sequence

1. The Business Process is activated when an RFM call is received from SAP.
2. Finding that data from an RFM is available, the Business Process accesses all pertinent data nodes and sends the gathered information to other eGate components.
3. The eWay returns the results of the RFM execution back to SAP.

2.5.2 Transactional RFC (tRFC) Mode

The tRFC mode resembles the Internal mode, with the addition of transactional verification steps prior to committing or rolling back. This is the preferred method, when it can be used. By using unique TIDs associated with a BAPI/RFC call, the SAP system will process the data once, and only once. The sequence of the tRFC process is shown in Figure 7. See **"Communications with SAP" on page 13** for additional information.

Figure 7 Transactional RFC Server Sequence



Server-Mode tRFC Action Sequence

1. The Business Process is activated when an RFM call is received from SAP.
2. Finding that data from an RFM is available, the Business Process accesses all pertinent data nodes and sends the gathered information to other eGate components.
3. The eWay returns the results of the RFM execution back to SAP.
4. If the RFM call returned successfully, without exceptions being thrown, SAP informs the eWay that the data can be committed by calling onCommitTID().
5. The BAPI eWay updates the TID in the file database as being Committed, commits the data, and sends an onCommitTID() return to SAP.
6. If the RFM call did not return successfully, SAP informs the eWay that the data must be rolled back by calling onRollbackTID().
7. The BAPI eWay rolls back the data and throws an exception. It also sends an onRollbackTID() return to SAP, confirming that the data was rolled back and not committed.

2.5.3 SAP R/3 Version Support Per Supported Operating System

The table below shows which version of SAP R/3 are supported per supported operating system.

Table 2 English-Language Version

Operating System	4.0B	4.5B	4.6B	4.6C	4.7
Windows 2000 SP1	X	X	X	X	X
Windows 2000 SP2	X	X	X	X	X
Windows 2000 SP3					X
Windows XP SP1a					X
Windows Server 2003					X
Sun Solaris 8	X	X	X	X	X
Sun Solaris 9	X	X	X	X	X
IBM AIX 5.1	X	X	X	X	X
IBM AIX 5.2					X
HP-UX 11.0	X	X	X	X	X
HP-UX 11i	X	X	X	X	X

2.6 Supported Operating Systems

The SAP eWay is available for the following operating systems:

- Windows Server 2003, Windows XP SP1a, and Windows 2000 SP3
- HP-UX 11.0 and 11i
- IBM AIX 5.1 and 5.2
- Sun Solaris 8 and 9

In addition to the above listed operating systems, this eWay is supported on WebSphere Application Servers in outbound mode for Java Collaborations only. Refer to the e*Gate Integrator User's Guide* for additional information regarding the running of this eWay on this Application Server.

2.7 System Requirements

The system requirements for the SAP eWay are the same as for eGate Integrator. For information, refer to the *SeeBeyond ICAN Suite Installation Guide*.

2.8 External System Requirements

The SAP eWay supports the following software on external systems:

- SAP R/3 Enterprise, version 4.0B, 4.5B, 4.6B, 4.6C, 4.6D, and 4.7
- Supports SAP JCo 2.1.x and 1.0.1 IDoc libraries

Your SAP R/3 system must be configured to communicate with the SAP (BAPI) eWay as described in **Configuring the SAP System for eWay Connections** on page 50.

2.9 Quick Overview: Implementing SAP (BAPI) eWays in eGate Projects

This section provides a quick overview of the overall process of implementing SAP (BAPI) eWays in the process of building and deploying a eGate Projects.

1. Install the SAP eWay, its documentation, and its sample Projects as described in **"Installing the SAP (BAPI) eWay" on page 19**.
2. Create a Project as described in the *eGate Integrator User's Guide*.
3. Create an BAPI OTD as described in **"Building SAP (BAPI) Project Business Logic" on page 31**.
4. For eInsight, build the Business Processes and Connectivity Maps as described in **"Building SAP (BAPI) Business Logic with eInsight" on page 35**.
5. For eGate, build the Collaboration and Connectivity Maps as described in **"Building SAP (BAPI) Business Logic with eGate" on page 40**.
6. Configure the logical properties of the eWay as described in **"Configuring Logical eWay Properties" on page 22**.
7. Create an eGate Environment and add the SAP eWay as described in **"Adding SAP (BAPI) eWays to Environments" on page 26**.
8. Configure the physical properties of the eWay as described in **"Configuring Physical eWay Properties" on page 26**.
9. Configure the other components in the Environment. For an example, refer to **"Creating eGate Environments for the Sample Projects" on page 46**.
10. Apply the .jar files to the Logical Host as described in **"Uploading JAR Files to the Logical Host" on page 46**.
11. Create and activate the Deployment Profile as described in the *eGate Integrator User Guide*. For an example, refer to **"Creating Deployment Profiles for Sample Projects" on page 47**.

Chapter 3

Installing the SAP (BAPI) eWay

This chapter describes how to install the SAP eWay, its documentation, and the SAP (BAPI) sample Projects.

In This Chapter

- **"Installing the SAP eWay" on page 19**
- **"After Installation" on page 20**

3.1 Installing the SAP eWay

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

The installation process includes installing the following components:

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

Follow the instructions for installing the eGate Integrator in the *SeeBeyond ICAN Suite 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 below as described in the *SeeBeyond ICAN Suite Installation Guide*:
   - **SAPBAPIeWay.sar** (to install the SAP eWay)
   - **FileeWay.sar** (to install the File eWay, used in the sample Projects)
   - **SAPBAPIeWayDocs.sar** (to install the user guide and the sample Projects)
2. In the Enterprise Manager, click the **DOCUMENTATION** tab.
3. Click **SAP (BAPI) eWay**.
4. In the right-hand pane, click **Download Sample**, and select a location for the .zip file to be saved.

For information about importing and using the sample, refer to **"Working with SAP (BAPI) Sample Projects" on page 43**.

5 Download the following files from your support account at **www.service.sap.com**:

- s**apjco.jar**
- **sapidocjco.jar**
- **sapidoc.jar**

For Windows:

- **librfc32.dll** (Windows)
- **sapjcorfc.dll** (Windows)

For UNIX:

- **librfccm.***
- **libsapjcorfc.***

For the file extensions, use ***.so** for Solaris, ***.sl** for HP-UX, and ***.0** for AIX.

6 Copy the three JCo .jar files to the following directory:

***ICANSuite*\edesigner\usrdir\lib\ext**

where *ICANSuite* is the folder where you installed eGate Integrator.

7 On Windows operating systems, copy the two DLL files to the following folder:

WINNT\system32

8 On UNIX operating systems, add the DLL files to the library path.

9 Restart Enterprise Designer.

3.2 After Installation

Once you have installed the SAP eWay, you must then incorporate it into an eGate Project and Environment in Enterprise Designer. The next chapters description how you add the eWay to an eGate Project and an eGate Environment, how you configure the eWay and how to build the necessary OTDs.

Chapter 4

Configuring SAP (BAPI) eWays

This chapter describes how to implement the SAP (BAPI) eWay in an eGate Project. There are several steps to take for the implementation. Each eWay implementation consists of adding and configuring the eWay as a logical component and as a physical component.

The logical eWay component is defined in the Connectivity Map for the eGate Project in Enterprise Designer. The physical eWay component is defined in the eGate Environment.

This chapter describes each step, and also provides information about reconfiguring eWays once they have been deployed.

In This Chapter

- **Adding SAP (BAPI) eWays to Connectivity Maps** on page 21
- **Configuring Logical eWay Properties** on page 22
- **Adding SAP (BAPI) eWays to Environments** on page 26
- **Configuring Physical eWay Properties** on page 26

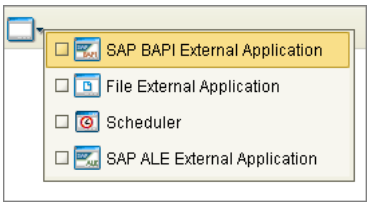
4.1 Adding SAP (BAPI) eWays to Connectivity Maps

To start implementing the SAP eWay in an eGate Project, you add the SAP eWay to the Project's Connectivity Map as described below.

To add SAP (BAPI) eWays to Connectivity Maps

1. In the **Project Explorer** tab of the Enterprise Designer, create or click the Project to which you want to add the SAP (BAPI) eWay.
2. Create or click a Connectivity Map.
3. On the Connectivity Map toolbar, click the **External Applications** icon, and click **SAP BAPI External Application** as shown below.

Figure 8 Selecting the SAP External Application



This adds the SAP (BAPI) icon to the Connectivity Map toolbar.

4 Drag the SAP (BAPI) icon onto the Connectivity Map canvas.

5 To rename the external application, right-click the icon, click **Rename**, and enter a new name.

To continue, refer to **"Building SAP (BAPI) Project Business Logic" on page 31** to complete the Connectivity Map and create the eGate Collaborations and eInsight Business Processes. Once those items are complete, you can configure the logical and physical eWay properties as described in the sections below.

4.2 Configuring Logical eWay Properties

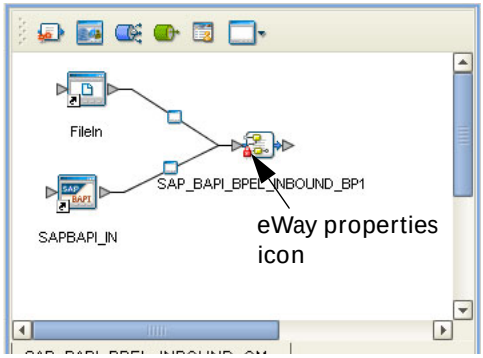
After completing the Connectivity Map and linking its components, you can configure the newly created SAP eWay as described below.

To configure logical eWay properties

1 In the **Project Explorer** tab of the eGate Enterprise Designer, expand the Project which contains the Connectivity Map where you want to configure logical eWay properties.

2 Click the Connectivity Map. The Connectivity Map appears, showing the eWay properties icon.

Figure 9 eWay Properties Icon



3 Double-click the eWay properties icon. The **Templates** dialog box appears.

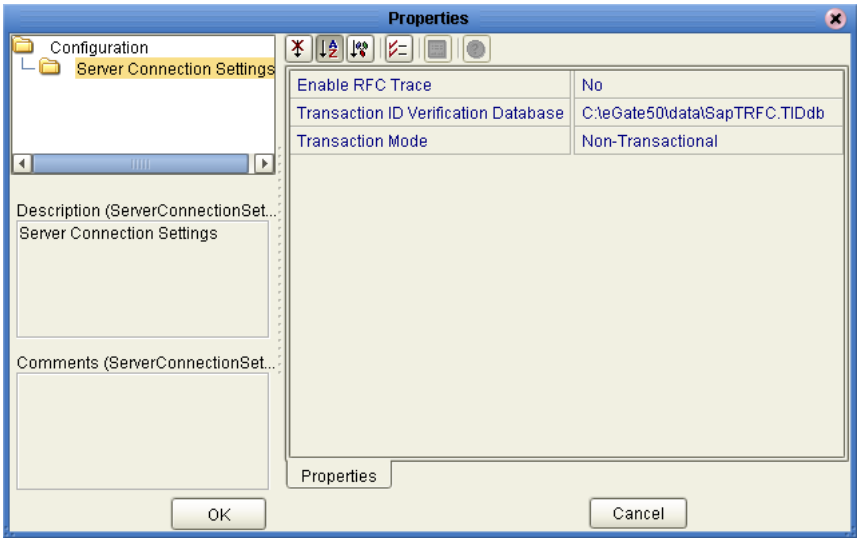
4 To configure the inbound eWay, click **Inbound SAP (BAPI) eWay** and click **OK**.

To configure the outbound eWay, click **Outbound SAP (BAPI) eWay** and click **OK**.

The **Properties** dialog box appears.

The **Properties** dialog box shows the logical eWay properties as shown below. Which properties appear depends on whether this an inbound or outbound eWay.

Figure 10 Logical Inbound eWay Properties



5 Specify the eWay properties. The list below shows the properties and the relevant page for more information:

Property	Available For	Page reference
Enable ABAP Debug Window	Outbound	page 23
Enable RFC Trace	Inbound/Outbound	page 24
Maximum TID Database Rows	Outbound	page 24
Transaction ID Verification Database	Inbound/Outbound	page 25
Transaction Mode	Inbound/Outbound	page 25
Use Load Balancing	Outbound	page 25

The sections below describe the eWay properties in detail. When you have completed configurations for the eWay and all other components in the Connectivity Map, create the Environment for the Project and add the eWay as described in **"Adding SAP (BAPI) eWays to Environments" on page 26**. You can then configure the physical properties of the eWay as described in **"Configuring Physical eWay Properties" on page 26**.

4.2.1 Enabling the ABAP Debugging Window

You enable the ABAP debugging window for outbound eWays with the **Enable ABAP Debug Window** property. To display logical eWay properties in the Connectivity Map, refer to **"Configuring Logical eWay Properties" on page 22**.

Enabling the **Enable ABAP Debug Window** property opens the ABAP/4 debugging window on the Logical Host where this Business Object Server (BOS) resides. The window shows the debug information for the RFC-enabled ABAP/4 application that is called on the R/3 system.

This property only works if the SAPGUI software is installed on the Logical Host for this BOS.

Default

The default mode is **No**; the ABAP Debug window is disabled.

4.2.2 Enabling RFC Trace

You enable RFC tracing for inbound and outbound eWays with the **Enable RFC Trace** property. The trace file contains RFC API calls, and data sent to and received from the SAP R/3 host. To display logical eWay properties in the Connectivity Map, refer to **"Configuring Logical eWay Properties" on page 22**.

Default

The default mode is **No**; the RFC tracing is disabled.

Required Values

Yes or No.

Additional Information

The location of the trace file is as follows.

Operating System	Location
UNIX	In a dev_rfc file located in the directory where the eWay was started.
Windows	Under directory **%WINDIR%\System32** with a filename of rfc<number>.trc, for example, rfc00310_0156.trc

4.2.3 Setting The Maximum Transaction ID Database Rows

You specify the maximum amount of rows for the Transaction ID (TID) database for outbound eWays with the **Maximum TID Database Rows** property. To display logical eWay properties in the Connectivity Map, refer to **"Configuring Logical eWay Properties" on page 22**.

Set this property only if Transactional RFC (tRFC) is used. This property specifies the maximum number of rows in the outbound TID database that are kept before the oldest rows are purged and their corresponding TIDs confirmed on SAP R/3. Confirmation allows SAP R/3 to remove those TIDs from its TID tracking database and reduce resource consumption.

Default

The default is 200 rows.

4.2.4 Specifying The Transaction ID Verification Database Location

You specify the location of the Transaction ID Verification database for inbound and outbound eWays with the **Transaction ID Verification Database** property. To display logical eWay properties in the Connectivity Map, refer to **"Configuring Logical eWay Properties" on page 22**.

Specify the name of the file-based database which persists the TIDs. Provide the path to the database file that records the disposition of all transactions outgoing from this eWay. The database records whether transactions are:

- o C (committed))
- o U (unprocessed or rolled-back)
- o R (reserved or pending)

Default

The default location is as follows:

C:\eGate50\data\SapTRFC.TIDdb

4.2.5 Specifying the Transaction Mode

You specify the transaction mode for outbound eWays with the **Transaction Mode** property. To display logical eWay properties in the Connectivity Map, refer to **"Configuring Logical eWay Properties" on page 22**.

The transaction mode specifies whether Transactional RFC (tRFC) is enforced. With tRFC, transactions have unique TIDs and are processed only once by this eWay.

Default

The default mode is **Non-Transactional**.

4.2.6 Enabling Load Balancing

You enable load balancing for outbound eWays with the **Use Load Balancing** property. To display logical eWay properties in the Connectivity Map, refer to **"Configuring Logical eWay Properties" on page 22**.

This property allows you to take advantage of the workload balancing provided by SAP since the R/3 release 3.0C. Workload balancing is available in a SAP system to automatically route requests to the application server within a group of servers that has the best response time determined at that moment by a SAP message server.

If you disable load balancing, use the **System number** property as described in **"Specifying The System Number" on page 30**.

Default

The default mode is **No**; load balancing is disabled by default.

4.3 Adding SAP (BAPI) eWays to Environments

Before you can configure the physical eWay properties, you must add the eWay to an Environment. The procedure below describes how you add SAP (BAPI) eWays to eGate Environments. For detailed information about creating eGate Environments, refer to the *eGate Integrator User's Guide*.

To add eWays to Environments

1. In the **Environment Explorer** tab of the Enterprise Designer, click the Repository and expand or create the Environment to which you want to add an eWay.
2. Right-clicking the Environment and click **New SAP BAPI External Application**.

This adds an SAP (BAPI) eWay to the Environment. You can now specify the physical properties for the eWay as described in the section below.

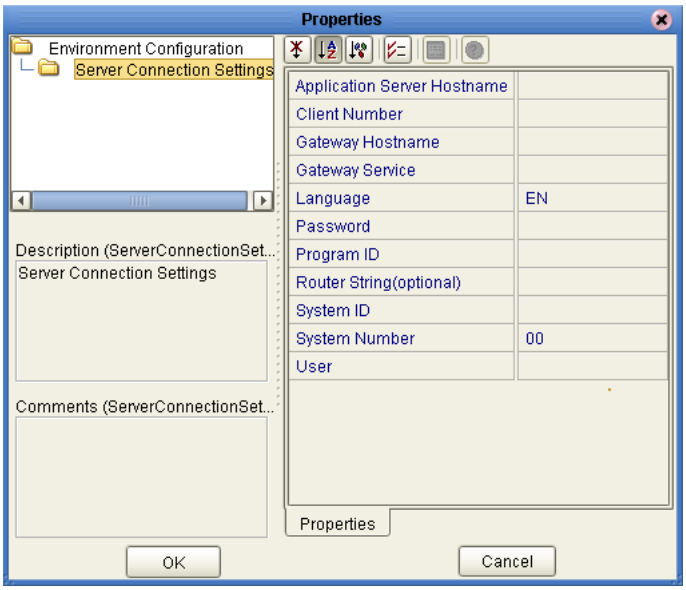
4.4 Configuring Physical eWay Properties

Once you have added the SAP (BAPI) eWay to an eGate Environment, you can configure the eWay as described below. For information about adding eWays to Environment, refer to the section above.

To configure physical eWay properties

3. In the **Environment Explorer** tab of the Enterprise Designer, click the Repository and expand the Environment that contains the Logical Host for which you want to configure an SAP (BAPI) eWay.
4. Expand the Logical Host, right-click the SAP (BAPI) eWay and click **Properties**. The **Properties** dialog box appears.

Figure 11 Environment eWay Properties



5 Specify the properties. The table below shows where to find detailed configuration information for each eWay property.

For this eWay property	Refer to
Application server hostname	page 27
Client number	page 28
Gateway hostname	page 28
Gateway service	page 28
Language	page 28
Password	page 29
Program ID	page 29
Router string	page 29
System ID	page 30
System Number	page 30
User	page 30

6 Click **OK**.

4.4.1 Specifying The Application Server Name

You can specify the host name of the SAP R/3 application server in the eWay properties in the eGate Environment with the **Application server hostname** property. To display the eWay Environment properties, refer to **"Configuring Physical eWay Properties" on page 26**.

Default

There is no default setting.

4.4.2 Specifying the Client Number

You can specify the SAP client number in the eWay properties in the eGate Environment with the **Client number** property. To display the eWay Environment properties, refer to **"Configuring Physical eWay Properties" on page 26**.

The SAP client number is used to access the R/3 system.

Default

There is no default setting.

Required Values

An alphanumeric string. Do not omit leading zeros.

4.4.3 Specifying The Name of The Gateway

You can specify the gateway hostname of the SAP R/3 application server in the eWay properties in the eGate Environment with the **Gateway hostname** property. To display the eWay Environment properties, refer to **"Configuring Physical eWay Properties" on page 26**.

Default

There is no default setting.

4.4.4 Specifying The Gateway Service

You can specify the gateway service in the eWay properties in the eGate Environment with the **Gateway service** property. To display the eWay Environment properties, refer to **"Configuring Physical eWay Properties" on page 26**.

The gateway service of the SAP R/3 system sends transactions.

Default

There is no default setting.

Required Values

The SAP recommended value is the string *sapgw* concatenated with the SAP system number. For example, if the system number is *01*, the gateway service is *sapgw01*.

4.4.5 Specifying The Language

You can specify the language used for SAP R/3 access in the eWay properties in the eGate Environment with the **Language** property. To display the eWay Environment properties, refer to **"Configuring Physical eWay Properties" on page 26**.

Default

The default is **EN**, English.

4.4.6 Specifying The Password

You can specify the password for the SAP user in the eWay properties in the eGate Environment with the **Password** property To display the eWay Environment properties, refer to **"Configuring Physical eWay Properties" on page 26**.

You must specify the user before specifying the password. For information, see **"Specifying The User Name" on page 30**.

Default

There is no default setting.

4.4.7 Specifying The Program ID

You can specify the program ID for the SAP service in the eWay properties in the eGate Environment with the **Program ID** property. To display the eWay Environment properties, refer to **"Configuring Physical eWay Properties" on page 26**.

Default

There is no default setting.

Required Values

Program ID shown in the SAPGUI transaction SM59. This entry must match the SAPGUI exactly; this entry is case sensitive.

4.4.8 Specifying The Router String

You can specify the router string in the eWay properties in the eGate Environment with the **Router string** property. To display the eWay Environment properties, refer to **"Configuring Physical eWay Properties" on page 26**.

This property is optional; use it only to gain access to an SAP system that is behind a firewall.

Default

There is no default setting.

Required Values

The string is composed of the hostnames or IP addresses of all the SAP routers that are in between this BOS and the SAP gateway host. For example, if there are two routers, *saprouter1*, and *saprouter2*, in order, from the BOS to the application server, as follows:

saprouter1: 204.79.199.5 saprouter2: 207.105.30.146

The router string in this case is as follows:

/H/204.79.199.5/H/207.105.30.146/H/

Do not omit the "/H/" tokens to begin, separate, and end the routers.

4.4.9 Specifying The System ID

You can specify the ID of the SAP R/3 system in the eWay properties in the eGate Environment with the **System ID** property. To display the eWay Environment properties, refer to **"Configuring Physical eWay Properties" on page 26**.

Default

There is no default setting.

4.4.10 Specifying The System Number

You can specify the system number of the SAP R/3 application server in the eWay properties in the eGate Environment with the **System number** property. To display the eWay Environment properties, refer to **"Configuring Physical eWay Properties" on page 26**.

Use this property when you are not using SAP load balancing. For information, refer to **"Enabling Load Balancing" on page 25**.

Default

There is no default setting.

4.4.11 Specifying The User Name

You can specify the SAP user name in the eWay properties in the eGate Environment with the **User** property. To display the eWay Environment properties, refer to **"Configuring Physical eWay Properties" on page 26**.

You must define this property before specifying the password as described in **"Specifying The Password" on page 29**.

Default

There is no default setting.

Chapter 5

Building SAP (BAPI) Project Business Logic

This chapter describes how to build the business logic for SAP (BAPI) Projects. Project business logic is contained in Business Processes for eInsight, and in Collaborations for eGate Integrator used without eInsight.

To build SAP Project business logic, you use the SAP BAPI wizard to create the BAPI and RFC OTDs. You then create the Business Processes or Collaborations, and the Connectivity Maps.

This chapter also includes a final section with an overview of completing SAP Projects after you have built the business logic.

In This Chapter

- **About the SAP BAPI Wizard** on page 31
- **Creating BAPI and RFC OTDs** on page 31
- **BAPI and RFC OTDs** on page 34
- **Building SAP (BAPI) Business Logic with eInsight** on page 35
- **Building SAP (BAPI) Business Logic with eGate** on page 40
- **Completing the Project** on page 42

5.1 About the SAP BAPI Wizard

The SAP BAPI wizard is used to create BAPI OTDs. These OTDs can then later be used in Collaboration Definitions to create the business logic behind the Collaborations. With the BAPI wizard, you create BAPI and RFC OTDs.

5.2 Creating BAPI and RFC OTDs

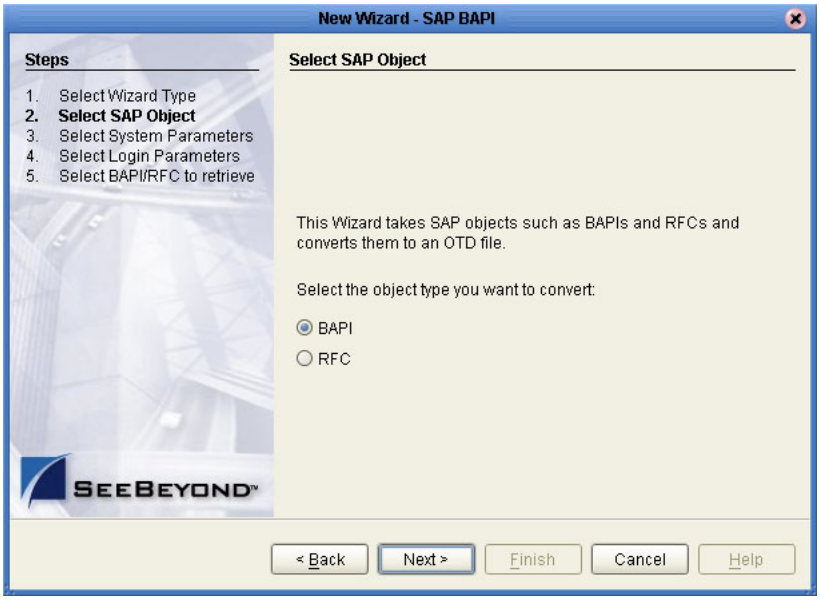
You create BAPI and RFC OTDs with the SAP BAPI wizard in the Enterprise Designer.

To create BAPI OTDs

1. In the Explorer tab of the Enterprise Designer, right click the Project, click **New**, and click **Object Type Definition**. The **New Object Type Definition Wizard** dialog box appears.

2 Click **SAP BAPI** and click **Next**. The **Select SAP Object** page appears.

Figure 12 BAPI Wizard—SAP Object Selection

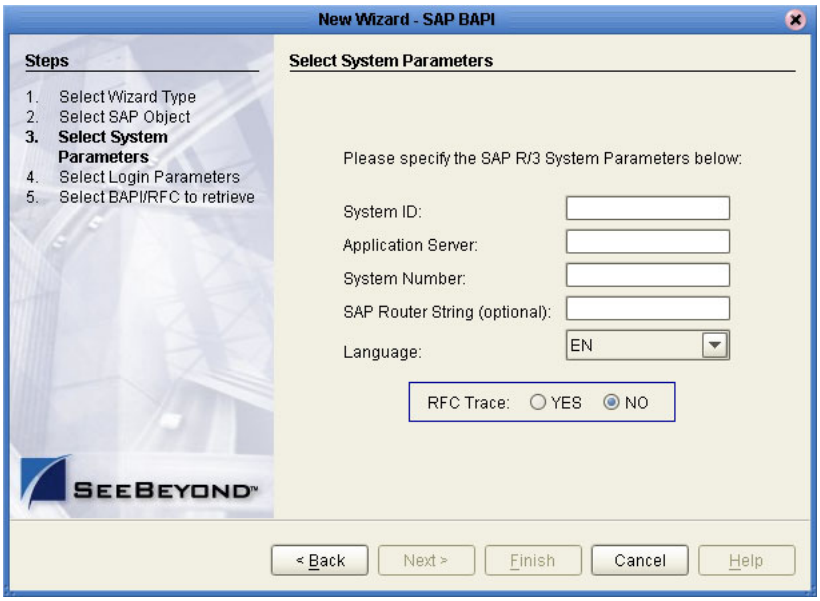


3 To convert a BAPI method to OTDs, select the **BAPI** option.

To convert an RFC method to OTDs, select the **RFC** option.

4 Click **Next**. The **System Parameters** page appears.

Figure 13 BAPI Wizard—System Parameters

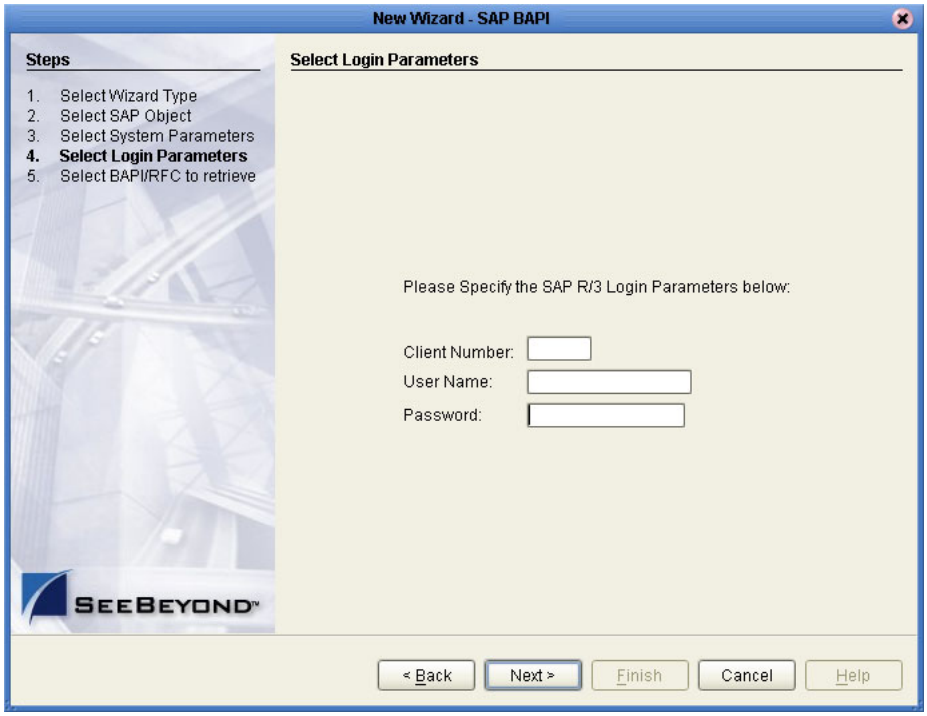


5 Enter the information for the SAP R/3 system for the SAP eWay to connect to:

For this option	Enter
System ID	System ID of the SAP R/3 system.
Application server	Host name of the SAP R/3 system.
System number	System number of the SAP R/3 system.
SAP Routing String	Router string of hostnames/IP addresses of all SAP routers between this BOS and the SAP gateway host (optional).
Language	Language used for SAP R/3 access.
RFC Trace	**NO** to disable RFC tracing (default); **YES** to enable RFC tracing, which creates the **\edesigner\bin\dev_rfc.trc** file when an error occurs when you log into the SAP system using the wizard.

6 Click **Next**. The **Login Parameters** page appears.

Figure 14 BAPI Wizard—Login Parameters

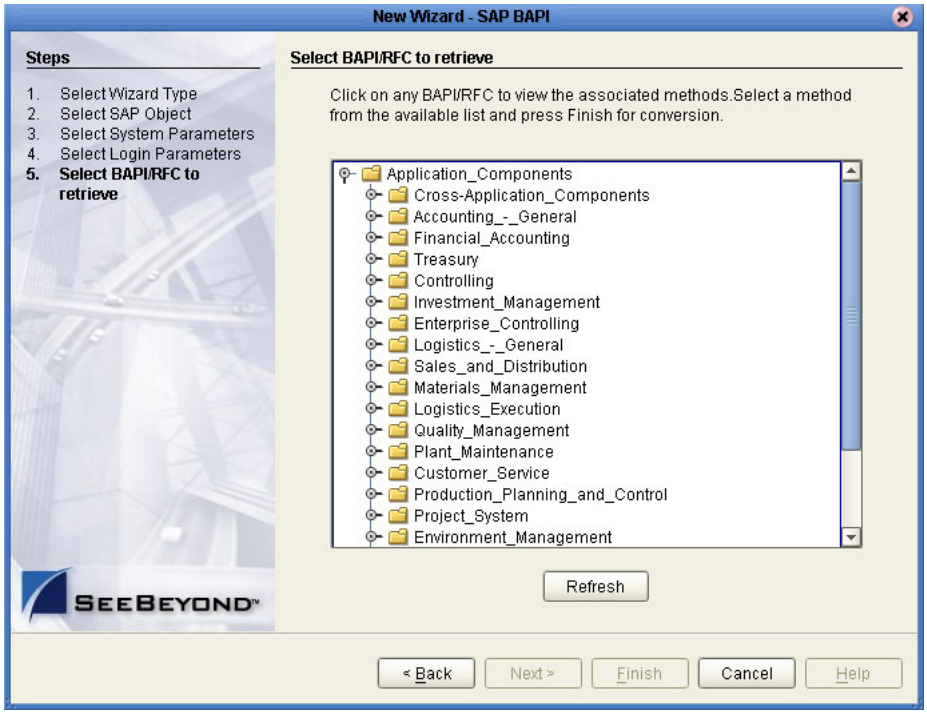


7 Enter the information to log into the SAP system:

For this option	Enter
Client Number	Client number of the SAP R/3 system.
User name	User name.
Password	Login password.

8 Click **Next**. The **Select BAPI/FRC** page appears, showing the BAPI tree.

Figure 15 BAPI Wizard—Select BAPI/RFC



In the BAPI tree, you can drill down to particular SAP application component and select a BAPI or RFC.

9 Expand the SAP application component folder, click a BAPI or RFC, and click **Finish**. The **OTD Editor** window appears, displaying the OTD.

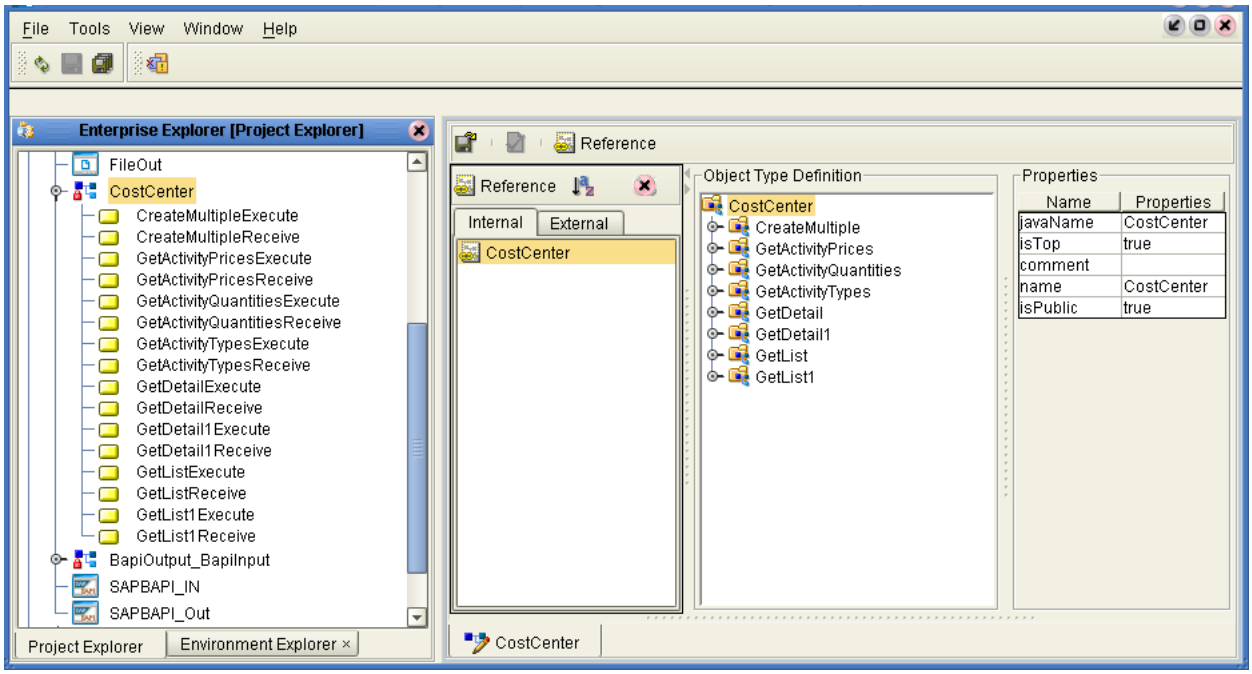
For information about the BAPI and RFC OTDs, refer to the section below.

You can now built the Collaborations or Business Processes as described in **"Building SAP (ALE) Business Logic with eInsight" on page 44** and **"Building SAP (ALE) Business Logic with eGate" on page 49**. The section below describes the BAPI methods (operations) that are available for you to use in the source code for the Collaborations or Business Activities.

5.3 BAPI and RFC OTDs

When an OTD is built for an SAP business object such as Application Components→Controlling→CostCenter. This creates an OTD which has methods corresponding to all the BAPIs in the SAP business object.

Figure 16 CostCenter OTD



The figure above shows the CostCenter OTD. The OTD has nodes for each of the BAPIs in the CostCenter business object. The OTD also has WSDL operations such as GetListExcute and GetListReceive. These WSDL operations are used when the OTD is used in a Business Process. The execute methods are used for client mode operations. The receive methods are used for server mode operations.

5.4 Building SAP (BAPI) Business Logic with eInsight

This section describes how to build the SAP business logic with eInsight in the following sections:

- **Adding Business Processes** on page 36
- **Building Inbound SAP Business Processes** on page 36
- **Building Outbound SAP Business Processes** on page 37
- **Adding Connectivity Maps** on page 38
- **Building Inbound SAP Connectivity Maps** on page 38
- **Building Outbound SAP Connectivity Maps** on page 39

To see an example of SAP Business Processes and Connectivity Maps, import the SAP_BAPI_BPEL sample Project as described in **"Working with SAP (BAPI) Sample Projects" on page 43**.

5.4.1 Adding Business Processes

To add Business Processes

- In the **Project Explorer** tab of the Enterprise Designer, right-click the Project for which you intend to create a Business Process, click **New**, and then **Business Process**.

5.4.2 Building Inbound SAP Business Processes

To build inbound SAP Business Processes

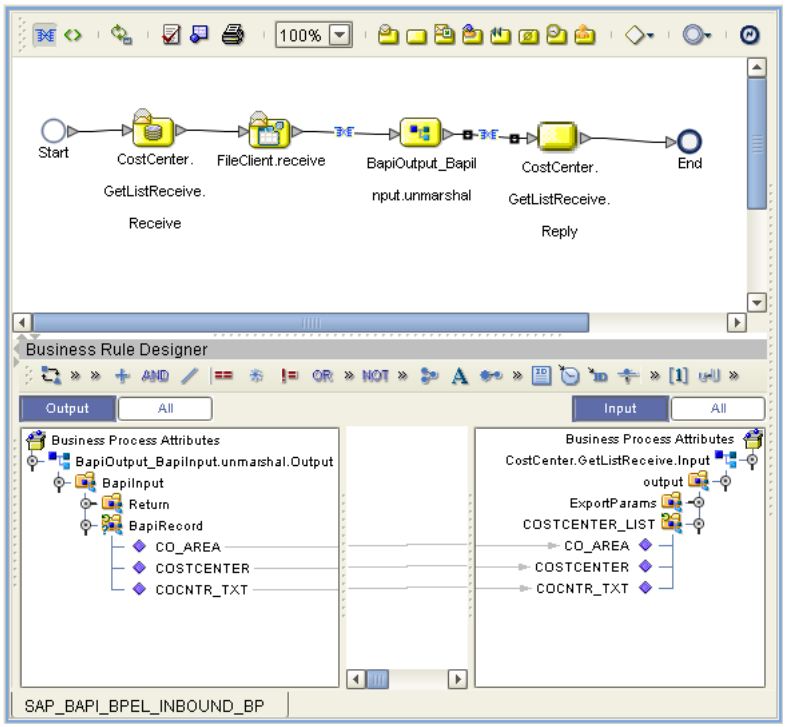
1. In the **Project Explorer** tab of the Enterprise Designer, expand the BAPI OTD. This displays the BAPI OTD methods.
2. Expand the **SeeBeyond**, **eWays**, **File**, and **FileClient** folders in the **Project Explorer** tab.
3. Drag the appropriate methods to the Business Process Designer canvas. For example, for the CostCenter business object, do the following:
   - Drag the *GetListReceive* method to the Business Process Designer canvas. This creates two Activities on the canvas: **GetListReceive.Receive** and **GetListReceive.Reply**. The *receive* Activity is used to receive the RFM call from SAP. The *reply* Activity is used to return the results of the RFM call back to SAP.
4. Configure all other Activities by highlighting the Activity and clicking **Show Properties** .
5. Link all components as described in *eInsight Business Process Manager User's Guide*.
6. To create data mappings, right-click the link between the Activities and click **Add Business Rule**.
7. In the **Business Rule Editor** window, create the code and the data mappings. For details, refer to the *eInsight Business Process Manager User's Guide*.

The figure below shows an example of an inbound SAP Business Process including the data mapping in the **Business Rule Editor** window. This example shows the following process

1. The eWay receive an RFM call from SAP
2. The eWay reads sample data from a file
3. The eWay unmarshals it to the reply Activity to send it back to SAP as results of the RFM call.

To explore the business logic design for an actual Project, import the SAP_BAPI_BPEL sample Project as described in **"Importing the Sample Projects" on page 44**.

Figure 17 Inbound Business Process and Data Mapping



5.4.3 Building Outbound SAP Business Processes

To build outbound SAP Business Processes

1. In the **Project Explorer** tab of the Enterprise Designer, expand the BAPI OTD. This displays the BAPI OTD methods.
2. Expand the **SeeBeyond**, **eWays**, **File**, and **FileClient** folders in the **Project Explorer** tab.
3. Drag the **FileClient.Receive** method to the Business Process Designer canvas.
4. Drag the appropriate methods to the Business Process Designer canvas. For example, for the CostCenter business object, do the following:
   - Drag the *GetListExecute* method to the Business Process Designer canvas. This Activity executes the necessary BAPI methods on SAP, and retrieves the results back to the Activity synchronously.
5. Drag the *marshal* method from the custom DTD to store the results returned by the BAPI.
6. Drag the **Fileclient.Write** method to the Business Process Designer canvas.
7. Configure all other Activities by highlighting the Activity and clicking **Show Properties** .
8. Link all components as described in *eInsight Business Process Manager User's Guide*.

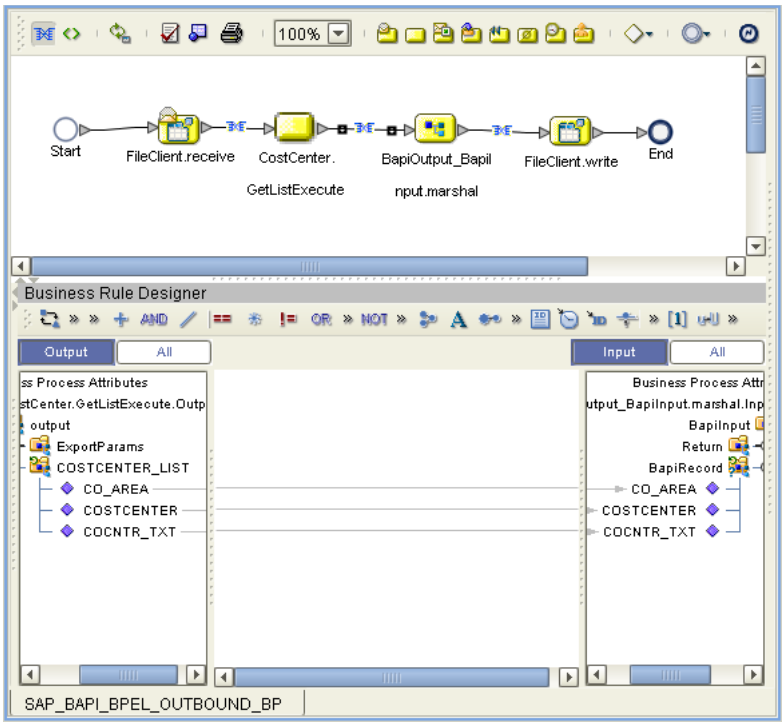
9 To create data mappings, right-click the link between the Activities and click **Add Business Rule**.

10 In the **Business Rule Editor** window, create the code and the data mappings. For details, refer to the *eInsight Business Process Manager User's Guide*.

The figure below shows an example of an outbound SAP Business Process including the data mapping in the **Business Rule Editor** window.

To explore the business logic design for an actual Project, import the SAP_BAPI_BPEL sample Project as described in **"Importing the Sample Projects" on page 44**.

Figure 18 Outbound Business Process and Data Mapping



5.4.4 Adding Connectivity Maps

To add Connectivity Maps

- In the **Project Explorer** tab of the Enterprise Designer, right-click the Project for which you intend to create a Connectivity Map, click **New**, and then **Connectivity Map**.

5.4.5 Building Inbound SAP Connectivity Maps

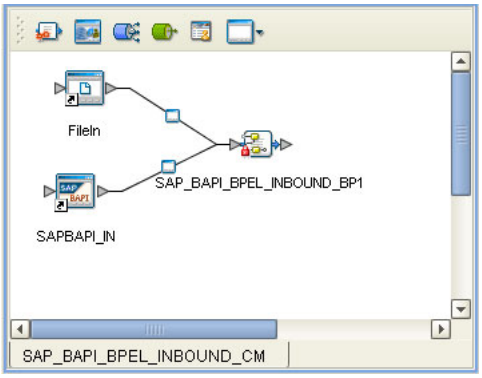
The procedure below describes how to build inbound SAP Connectivity Maps. To see an example, import the SAP_BAPI_BPEL sample Project as described in **"Working with SAP (BAPI) Sample Projects" on page 43**.

To build inbound SAP Connectivity Maps

1. Add the SAP (BAPI) eWays and other necessary components to the Connectivity Map. For detailed information about using the Connectivity Map, refer to the *eGate Integrator User's Guide*.
2. Drag the inbound Business Process from the **Project Explorer** tab to the Connectivity Map.
3. Link and configure all components. For details, refer to the *eGate Integrator User's Guide*.

The figure below shows an example of an inbound SAP Connectivity Map. To explore the Connectivity Map for an actual Project, import the SAP_BAPI_BPEL sample Project as described in **"Importing the Sample Projects" on page 44**.

Figure 19 Inbound SAP Connectivity Map



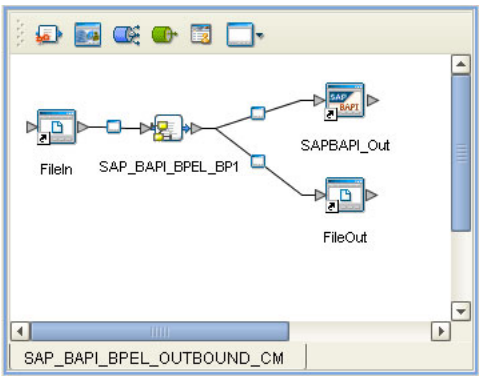
5.4.6 Building Outbound SAP Connectivity Maps

To build outbound SAP Connectivity Maps

1. Add an SAP (BAPI) eWay and other necessary components to the Connectivity Map. For detailed information about using the Connectivity Map, refer to the *eGate Integrator User's Guide*.
2. Drag the outbound Business Process from the **Project Explorer** tab to the Connectivity Map.
3. Link and configure all components. For details, refer to the *eGate Integrator User's Guide*.

The figure below shows an example of an outbound SAP Connectivity Map. To explore the Connectivity Map for an actual Project, import the SAP_BAPI_BPEL sample Project as described in **"Importing the Sample Projects" on page 44**.

Figure 20 Outbound SAP Connectivity Map



5.5 Building SAP (BAPI) Business Logic with eGate

This section describes how to build the outbound SAP Collaborations in the following sections:

- **Building Outbound Collaborations** on page 40
- **Adding Connectivity Maps** on page 41
- **Building Outbound SAP Connectivity Maps** on page 41

This version does not support inbound Projects in eGate. However, it is possible to build inbound Projects with eInsight.

To see an example of SAP Collaborations and Connectivity Maps, import the SAP_BAPI_JCE sample Project as described in **"Working with SAP (BAPI) Sample Projects" on page 43**.

5.5.1 Building Outbound Collaborations

After you have built the BAPI OTDs as described in **"Creating BAPI and RFC OTDs" on page 31**, you are ready to build Collaborations.

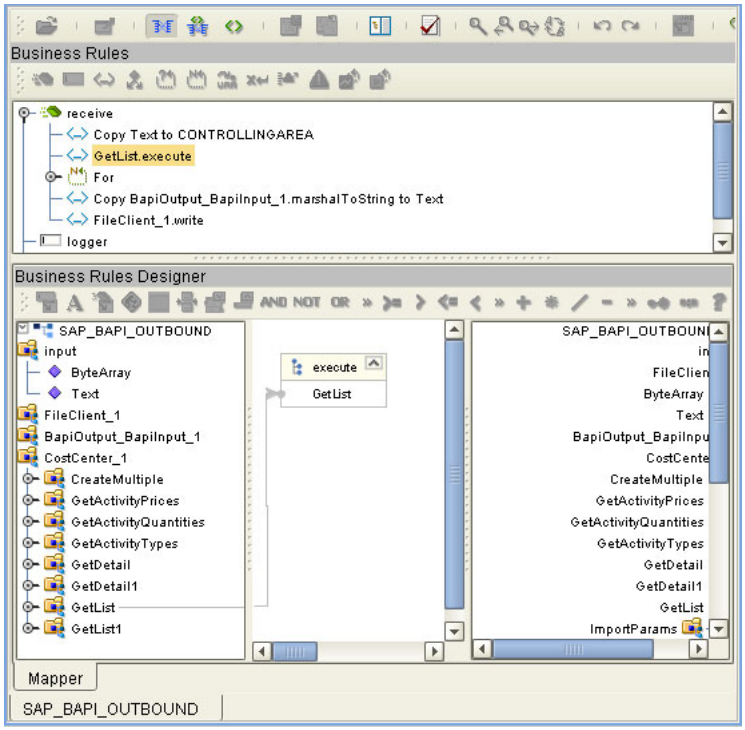
To build Collaborations

1. In the **Project Explorer** tab of the Enterprise Designer, right-click the Project, click **New**, and then **Collaboration Definition (Java)**.
2. Complete the **Collaboration Definition** wizard. For details about this wizard, refer to the *eGate Integrator User's Guide*.
3. Map the relevant import parameters for the desired BAPI and select the *execute* method to execute the BAPI on the SAP system.
4. In the **Collaboration Editor** window, create the source code and the data mappings for the Collaboration. For details, refer to the *eGate Integrator User's Guide*.

The figure below shows an example of data mapping for an outbound SAP (BAPI) Collaboration. To explore the business logic design for an actual Project, import the

SAP_BAPI_JCE sample Project as described in **"Importing the Sample Projects" on page 44**.

Figure 21 Outbound Collaboration



5.5.2 Adding Connectivity Maps

To add Connectivity Maps

- In the **Project Explorer** tab of the Enterprise Designer, right-click the Project for which you intend to create a Connectivity Map, click **New**, and then **Connectivity Map**.

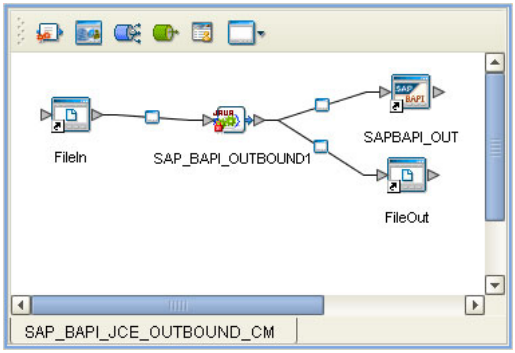
5.5.3 Building Outbound SAP Connectivity Maps

To build outbound SAP Connectivity Maps

1. Add the SAP (BAPI) eWay to the Connectivity Map as described in **"Adding SAP (BAPI) eWays to Connectivity Maps" on page 21**.
2. Add other components such as other eWays and Collaborations to the Connectivity Map.
3. Drag the outbound Collaboration from the **Project Explorer** tab into the Collaboration icon in the Connectivity Map.
4. Link and configure all components. For details, refer to the *eGate Integrator User's Guide*.

The figure below shows an example of an outbound SAP Connectivity Map. To explore the Connectivity Map for an actual Project, import the SAP_BAPI_JCE sample Project as described in **"Importing the Sample Projects" on page 44**.

Figure 22 Outbound SAP Connectivity Map



5.6 Completing the Project

The procedure below provides a quick overview of the remaining steps to complete SAP Projects:

To complete the Project

1. Configure the logical properties of the eWay as described in **"Configuring Logical eWay Properties" on page 22**.
2. Create an eGate Environment and add the SAP eWay as described in **"Adding SAP (BAPI) eWays to Environments" on page 26**.
3. Configure the physical properties of the eWay as described in **"Configuring Physical eWay Properties" on page 26**.
4. Configure the other components in the Environment. For an example, refer to **"Creating eGate Environments for the Sample Projects" on page 46**.
5. Apply the .jar files to the Logical Host as described in **"Uploading JAR Files to the Logical Host" on page 46**.
6. Create and activate the Deployment Profile as described in the *eGate Integrator User Guide*. For an example, refer to **"Creating Deployment Profiles for Sample Projects" on page 47**.

Chapter 6

Working with SAP (BAPI) Sample Projects

The SAP eWay comes with two sample Projects. You can import these Projects into Enterprise Designer and use them to quickly learn how to set up SAP (BAPI) eWays in eGate Projects, Environments, and Deployment Profiles.

There are two sample projects, one for use with the eGate, and one for use with eGate in combination with eInsight.

This chapter describes how you import and use both sample Projects.

In This Chapter

- **About the Sample Projects** on page 43
- **Locating the Sample Projects** on page 44
- **Importing the Sample Projects** on page 44
- **Creating eGate Environments for the Sample Projects** on page 46
- **Creating Deployment Profiles for Sample Projects** on page 47
- **Deploying the Sample Projects** on page 48

6.1 About the Sample Projects

The SAP (BAPI) eWay includes sample Projects that you can import to see how a eGate Projects with the SAP (BAPI) eWay can be built.

The following projects are included:

- SAP_BAPI_JCE for use with eGate
- SAP_BAPI_BPEL for use with eInsight / eGate

SAP Version Support

The sample Projects supports SAP version 4.6x and 4.7.

Sample Project Contents

Each Project contains the following:

- Input data
- Connectivity Maps
- Outbound Collaboration (SAP_BAPI_JCE)

- Inbound and outbound Business Processes (SAP_BAPI_BPEL)

The sample Projects provide a Project that allows you to browse its configurations to learn how SAP Projects are designed. The Projects do not include eGate Environments and Deployment Profiles necessary to deploy the sample Projects. To learn how to complete the Projects for deployment, refer to **"Preparing Sample Projects for Deployment" on page 45**.

Sample Project Zip Files

The SAP (BAPI) eWay sample Projects are provided as a zip file, **SAP_BAPI_eWay_Sample.zip**, which contains two zip files and an input file:

- **SAP_BAPI_JCE.zip** for the SAP_BAPI_JCE Project (eGate only)
- **SAP_BAPI_BPEL.zip** for the SAP_BAPI_BPEL Project (eGate / eInsight)
- **SAP_BAPI_Inbound.~in** (inbound Collaboration input file)

6.2 Locating the Sample Projects

The eWay sample Projects are included in the **SAPBAPIeWayDocs.sar**. This file is uploaded separately from the SAP eWay sar file during installation. For information, refer to **"Installing the SAP eWay" on page 19**.

Once you have uploaded the **SAPBAPIeWayDocs.sar** to the Repository and you have downloaded the sample Projects (**SAP_BAPI_eWay_Sample.zip**) using the **DOCUMENTATION** tab in the Enterprise Manager, the sample resides in the folder specified during the download.

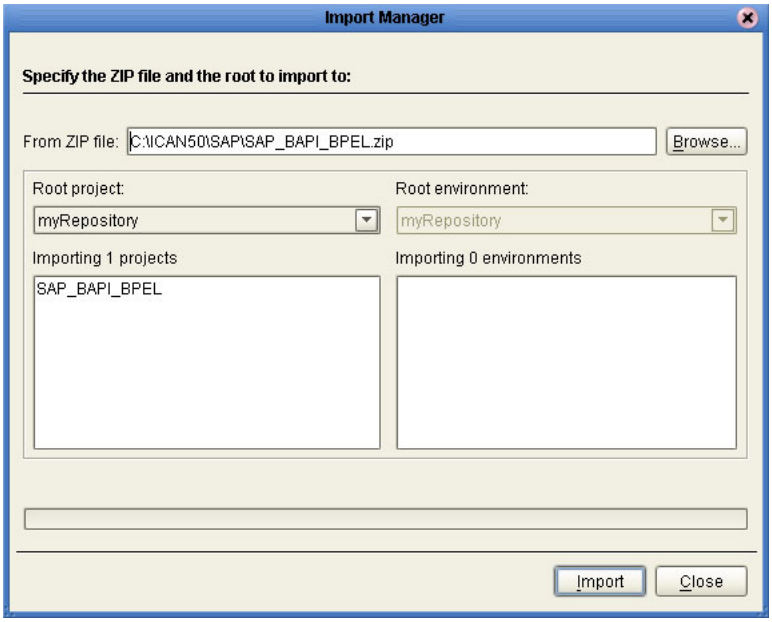
6.3 Importing the Sample Projects

You can import the SAP sample Projects as described below. To find out where the Projects reside, refer to **"Locating the Sample Projects" on page 44**.

To import the sample Projects

1. Unzip the **SAP_BAPI_eWay_Sample.zip** file. This creates two zip files:
   - **SAP_BAPI_JCE.zip** (for the eGate only Project)
   - **SAP_BAPI_BPEL.zip** (for the eGate / eInsight Project)
2. In the **Project Explorer** tab of the Enterprise Designer, right-click the Repository and click **Import**. The **Import Manager** dialog box appears.
3. Click **Browse** and navigate to the folder where you unzipped the sample zip file.
4. Click **SAP_BAPI_JCE.zip** or **SAP_BAPI_BPEL.zip**. The **Import Manager** dialog box appears similar to the following:

Figure 23 Import Manager Dialog Box



5 Click **Import**.

6 When the Project is imported, right-click the Repository and click **Refresh All from Repository**.

7 You can now explore the Connectivity Maps, the OTDs, and the business logic for the Collaborations or Business Processes.

6.3.1 Preparing Sample Projects for Deployment

The sample Projects do not include the eGate Environments, Deployment Profiles, and the physical configurations for the eWays needed to deploy the Projects. To deploy the Projects, do the following after import:

1 Create an eGate Environment and add the SAP eWay as described in the next section.

2 Configure the physical properties of the eWay as described in **"Configuring Physical eWay Properties" on page 26**.

3 Configure the other components in the Environment. For an example, refer to **"Creating eGate Environments for the Sample Projects" on page 46**.

4 Apply the .jar files to the Logical Host as described in **"Uploading JAR Files to the Logical Host" on page 46**.

5 Create and activate the Deployment Profile as described in **"Creating Deployment Profiles for Sample Projects" on page 47**.

6.4 Creating eGate Environments for the Sample Projects

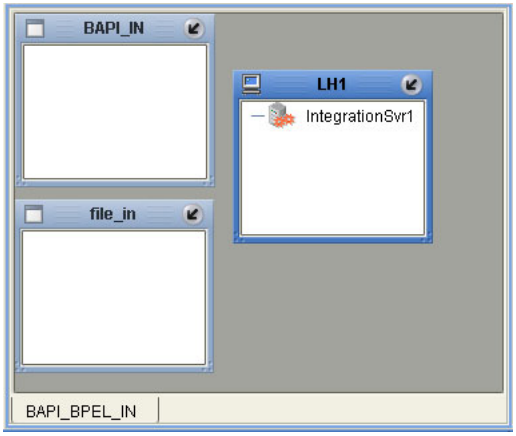
The procedure below describes how you create an eGate Environment for the SAP (BAPI) sample Projects. For detailed information about creating Environments, refer to the *eGate Integrator User's Guide*.

To create eGate Environments for the sample Projects

1. In the Environment Explorer tab of the Enterprise Designer, right-click the Repository and click **New Environment**.
2. Right-click the Environment and click **New File External System** to add a File eWay and **New SAP BAPI External System** to add an SAP eWay. Which external systems to add and how many depends in the design of the Project.
3. Right-click the Environment and click **New Logical Host**.
4. Right-click the Logical Host and click **New SeeBeyond Integration Server.**

The figure below shows the completed Environment.

Figure 24 eGate Environment for Inbound Sample Project (eInsight)



After creating the Environment components, you must upload several .jar files to the Logical Host as described in the next section.

6.5 Uploading JAR Files to the Logical Host

Once you added a Logical Host to the Environment as described in the section above, you must upload the .jar files listed below to the Logical Host. You must upload these files before you run the sample Projects.

- **sapjco.jar**
- **sapidocjco.jar**
- **sapidoc.jar**

You installed these .jar files during the installation in the following directory:

***ICANSuite*\edesigner\usrdir\lib\ext**

where *ICANSuite* is the folder where you installed eGate Integrator.

To upload .jar files to the Logical Host

1. In the Environment Explorer tab in the Enterprise Designer, right-click the Logical Host, and click **Upload File**. The **Upload Third-Party Files** dialog box appears.
2. Click **Add** and navigate to folder where the .jar files reside.
3. Double-click the files and click **OK**.
4. Click **OK**. This uploads the .jar files to the Logical Host.

Once the files are uploaded to the Logical Host you configure the physical properties of the eWay as described in **"Configuring Physical eWay Properties" on page 26**.

After the eWay configuration, you are ready to create the Deployment Profile as described in the section below.

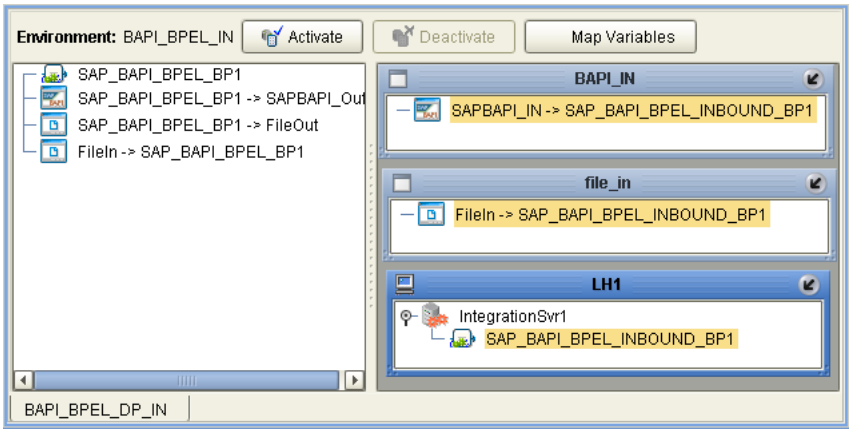
6.6 Creating Deployment Profiles for Sample Projects

Once you have created the Environment and added its components, and you have uploaded the .jar files to the Logical Host as described in the section above, you can create the Deployment Profiles for the sample. The procedure below describes how to create Deployment Profiles for the inbound and outbound Collaborations.

To create Deployment Profiles for sample Projects

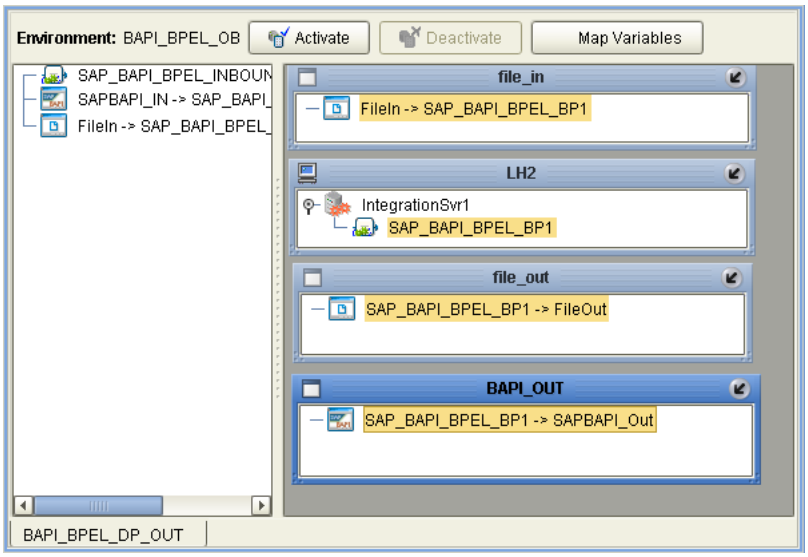
1. In the Project Explorer tab of the Enterprise Designer, right-click the Project and click **New Deployment Profile**.
2. Enter the name for the Deployment Profile, and select the Environment you created for the sample.
3. Double-click the Deployment Profile. Drag the Project components to the Environment component as shown in the figure below. The figure below shows the deployment profile for the inbound eInsight sample Project.

Figure 25 Inbound Deployment Profile (eInsight)



The figure below shows the deployment profile for the outbound eInsight sample Project.

Figure 26 Outbound Deployment Profile (eInsight)



6.7 Deploying the Sample Projects

For instruction on how to deploy the sample Projects see the *eGate Integrator User's Guide*. Before you deploy the Projects, make sure you configure the SAP system as described in **"Configuring the SAP System for eWay Connections" on page 50**.

Notes on Reactivating Inbound Projects

SAP prohibits multiple JCo servers from being registered with the same identifier. When the inbound Project is first deployed, a JCo server is created and registered with SAP with the identifier, which is specified in the environment configuration properties

for the SAP eWay. If you reconfigure an existing Project or create a new inbound SAP Project for an SAP system with a previously used identifier, the existing deployment must be deactivated first.

Chapter 7

Configuring the SAP System for eWay Connections

For the SAP eWay to interact successfully with the SAP system, you must configure the SAP system as described in this chapter. This configuration is non-intrusive; it does not interfere with other SAP R/3 operations.

The SAP screen captures in this chapter correspond to SAPGUI version 6.2, and SAP version 4.7. They are included to illustrate the general nature of the procedures, and contain only example values. They are not meant to replace the SAP documentation supplied with your system. Refer to the documentation supplied with your SAP system to determine the exact procedures.

In This Chapter

- **Defining the RFC Destination** on page 50
- **Security Issues** on page 54

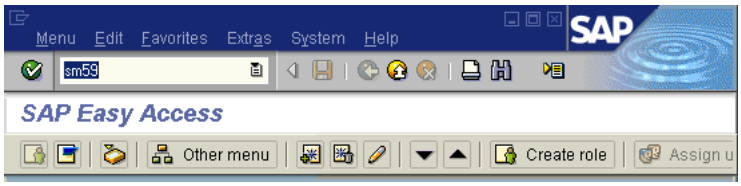
7.1 Defining the RFC Destination

The section below describes how to define the RFC Destination for SAP.

To define the RFC destination for SAP

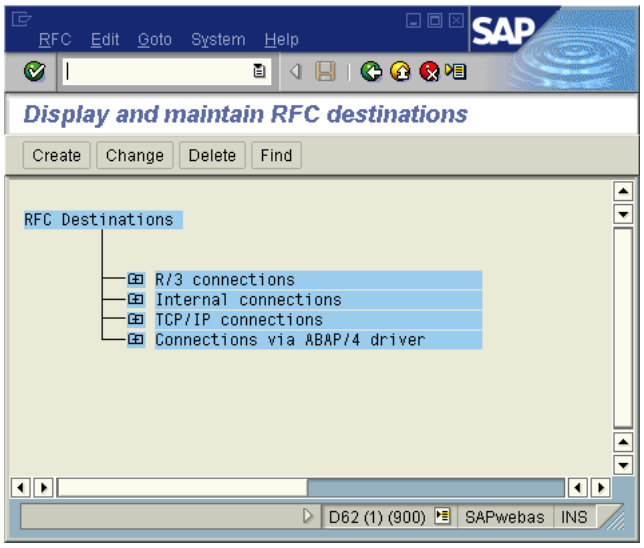
1. In the **SAP** window, click ▷ to display the navigation box if necessary.
2. Type **SM59** as shown below and press ENTER.

Figure 27 Navigating to the SM59 Transaction



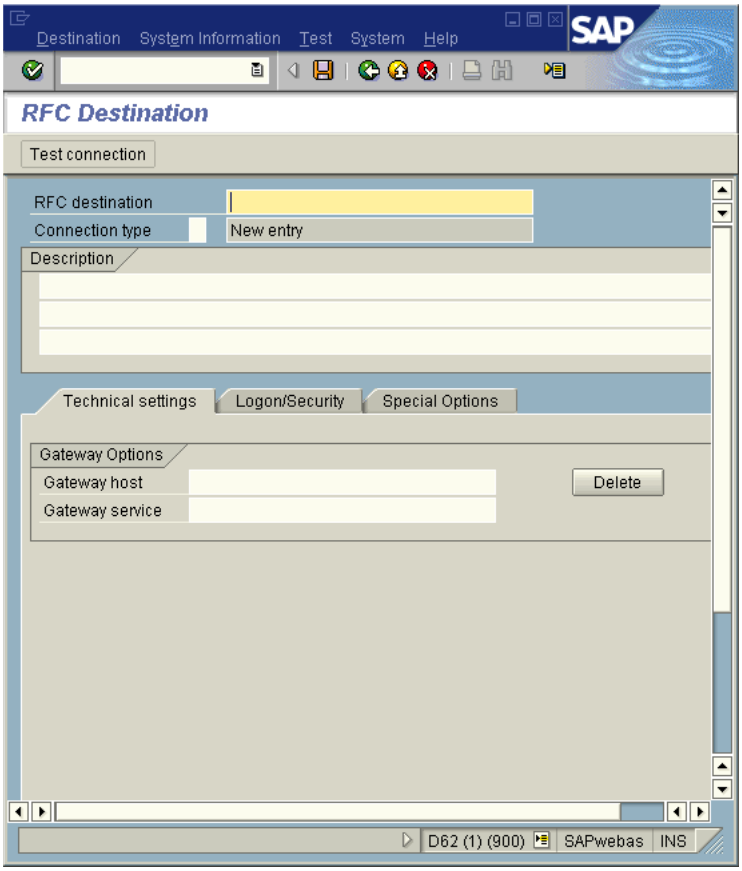
This displays the **RFC Destination Maintenance** window.

Figure 28 RFC Destination Maintenance Window



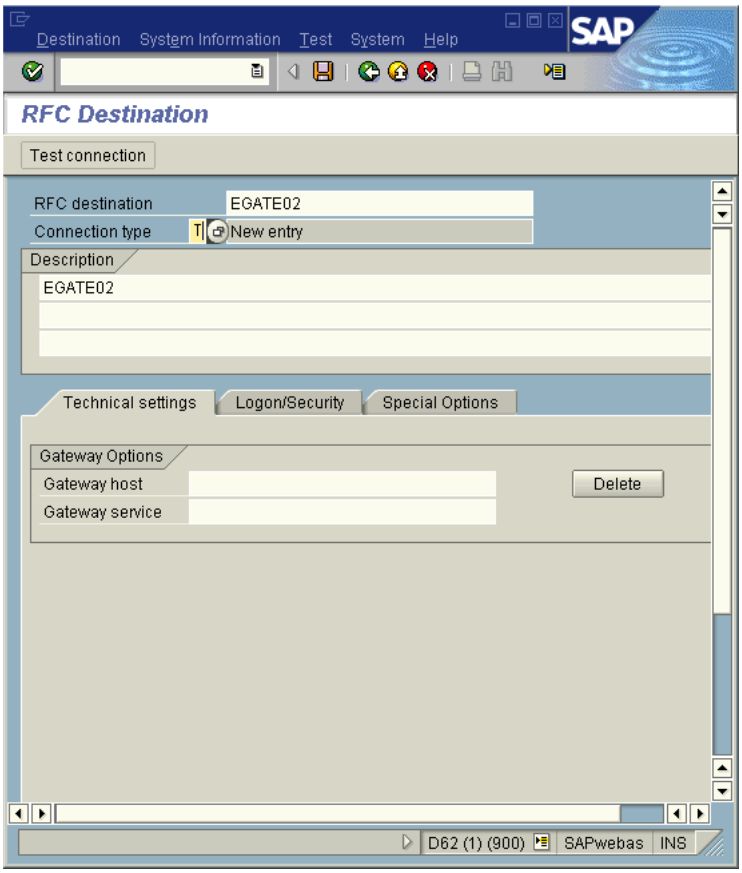
3 Click TCP/IP connections and Create to display the **RFC Destination** entry window.

Figure 29 RFC Destination Entry Window



4 Type in the name of the RFC Destination (use a Logical System name), an accompanying Description, and enter <T> for the Connection Type (TCP/IP).

Figure 30 RFC Destination



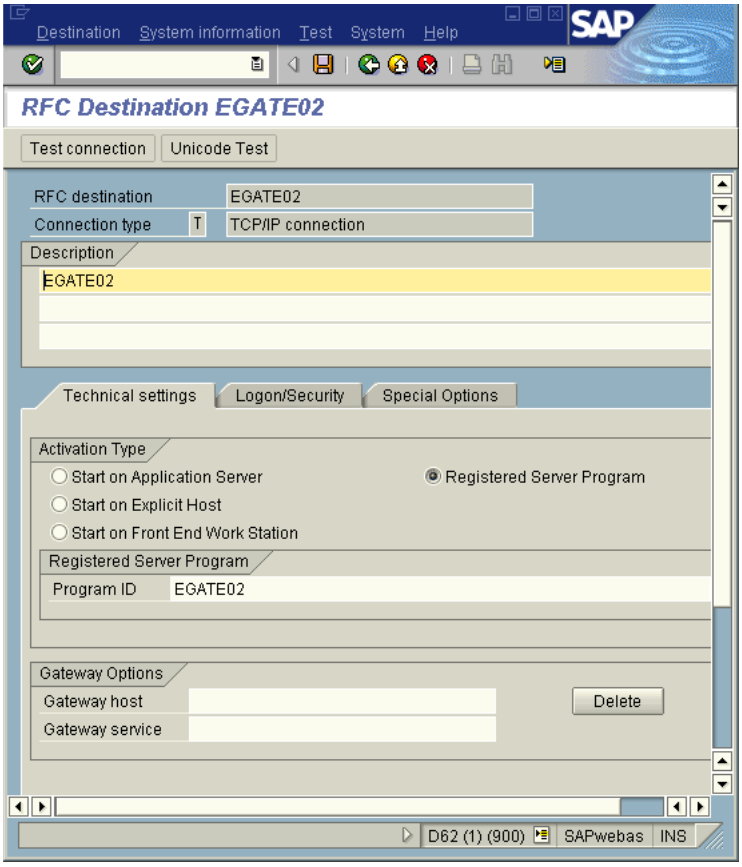
5 Click Save , which displays the **RFC Destination** window corresponding to your entry.

6 Select the **Registered as Server Program** option.

7 Enter the Program ID and click **Save**.

This program ID must be exactly the same as that specified in the eWay **Program ID** property. This value is case sensitive. For information, refer to **"Specifying The Program ID" on page 29**.

Figure 31 RFC Destination Window



8 Click **Test Connection**, which tests the connection for logon speed and message transfer speed. When the eWay is running, the results are displayed in a table; otherwise, return code 3 is displayed.

Figure 32 Connection Test Results

Connection test STCDGW	
Connection type:	TCP/IP connection
Logon:	255 msec
0 KB:	496 msec
10 KB:	491 msec
20 KB:	504 msec
30 KB:	505 msec

7.2 Security Issues

SAP uses *authorization objects* to allow access to various levels of operation. A minimum set of authorization objects required for the BAPI eWay to operate is described below. Please use this only as a reference for setting up your own profiles.

These settings are located under Cross-Application Authorization Objects. Please refer to your SAP R/3 documentation for additional information.

Function Group Access

Under Auth. check for RFC access, select:

- ARFC
- EDIN
- ERFC
- RFC1
- SCCR
- SYST
- ZDG1

Permission for Processing BAPI Type

Under BAPI/EDI > Distributing master data and BAPI/EDI, select:

- Receiving BAPIs via RFC

Chapter 8

Managing Deployed eWays

This chapter describes how to manage deployed SAP eWays. Once you have implemented an SAP eWay into an eGate Project and Environment, and have deployed the Project by activating the Deployment Profile, you can monitor the eWay using the Enterprise Manager. This chapter includes information about monitoring eWays as well as reconfiguring deployed eWays.

In This Chapter

- **Reconfiguring Deployed eWays** on page 55
- **Monitoring SAP (BAPI) Collaborations** on page 56
- **Log Files and Alerts** on page 56

8.1 Reconfiguring Deployed eWays

This section describes how you reconfigure the logical and physical properties of eWays in Projects that have already been deployed. The logical properties are configured in the Connectivity Map

8.1.1 Reconfiguring Logical eWay Properties

To reconfigure a currently deployed eWay, you change the configuration and then reactivate the Deployment Profile. If you also made changes to the logical properties of the eWay in the Connectivity Map, apply the changes to the Logical Host as described in the next section.

The procedure below describes how you reconfigure the logical eWay properties.

To configure logical eWay properties

1. Configure the logical properties in the Connectivity Map as described in **"Configuring Logical eWay Properties" on page 22**.
2. In the **Project Explorer** tab, double-click the Deployment Profile for the Project.
3. Click **Reactivate**.

8.1.2 Reconfiguring Physical eWay Properties

To reconfigure a currently deployed eWay, you change the configuration and then apply the changes to the Logical Host as described below. If you also made changes to the logical properties of the eWay in the Connectivity Map, you must also reactivate the Deployment Profile as described in the *eGate Integrator User's Guide*.

The procedure below describes how you reconfigure the physical eWay properties.

To reconfigure physical eWay properties

1. Configure the physical properties in the Environment as described in **"Configuring Physical eWay Properties" on page 26**.
2. In the **Environment Explorer** tab, right-click the Logical Host that contains this eWay.
3. Click **Apply**.

8.2 Monitoring SAP (BAPI) Collaborations

You monitor eGate SAP (BAPI) Collaborations with the Enterprise Manager. For more information using the Enterprise Manager, refer to the *eGate Integrator System Administration Guide* and the *eGate Integrator User's Guide*.

8.3 Log Files and Alerts

SAP (BAPI) alerts are logged in the Logical Host log file. For information about this log file, and how to change the logging level in Enterprise Manager, refer to the *eGate Integrator System Administrator Guide*.

Note: *If an alert is logged that the JCo library is not found, refer to* **"Uploading JAR Files to the Logical Host" on page 46**.

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