SeeBeyond ICAN Suite

SAP (ALE) eWay Intelligent Adapter User's Guide

Release 5.0.2



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Chapter 1

Introducing the SAP (ALE) eWay

The SAP (ALE) eWay provides ICAN Projects with the ability to exchange data with SAP R/3 software. This chapter provides an overview of the SAP (ALE) eWay.

In This Chapter

- About the SAP (ALE) eWay on page 5
- The SAP (ALE) OTD Data Flows on page 7

1.1 About the SAP (ALE) eWay

The SAP (ALE) IDOC Object Type Definition (OTD), when used with the SAP (BAPI) eWay and Transactional Remote Function Call (tRFC) protocol, enables ICAN Projects to exchange data with SAP R/3 software using SAP's Intermediate Documents (IDocs) via the Application Link Enabling (ALE) interface. IDocs are data containers that allow exchange of business information between an SAP R/3 system and other SAP or non-SAP R/3 systems.

SAP interfaces that are defined in the SAP Business Object Repository (BOR) as business objects that can be accessed using the tRFC protocol.

The SAP (BAPI) eWay uses the SAP Java Connector (JCo) to allow Java applications to access IDocs. Applicable IDoc methods are held in the eWay server's repository, and are invoked by a tRFC call from SAP R/3. When invoked, they are passed as an tRFC function into an ICAN IDOC OTD. OTDs define the business logic for Collaborations and Business Processes.





1.1.1 The SAP ALE Interface

Real-time communications with an SAP R/3 system is accomplished through the use of SAP's ALE layer running on top of SAP's tRFC. Communication via tRFC is similar to non-transactional RFC, except that it adds transactional verification steps prior to committing or rolling back. tRFC is preferred over RFC because of the additional reliability which guarantees uniqueness of transactions. With tRFC, the receiving SAP R/3 system relies on an unique Transactional ID (TID) sent with the message to determine whether SAP R/3 has processed a transaction previously. This TID is assigned by the SAP R/3 system. Every message received from this eWay is checked against an internal TID database to ensure that it has not already been processed.

SAP provides the API libraries for:

- Enabling connection to the SAP R/3 system, given the appropriate host and identification parameters
- Marshaling of arguments to and from the SAP R/3 system
- Executing (client-mode) or defining (server-mode) tRFC Services on the SAP R/3 system

ALE supports the transfer of information between applications by means of messaging, rather than file transfer. Transactions are exchanged using the SAP IDoc format, which is basically a fixed message. The IDoc file is interpreted by correlating with an IDoc Description file or an IDoc message description obtained from the SAP R/3 system.



Figure 2 tRFC Communications

1.1.2 The SAP IDoc Format

IDocs are used as containers for information, and are used to upload data to and download data from other systems. IDocs allow independence between the format and content of the message.

Several hundred IDocs are supplied with each R/3 system, serving as templates for a wide variety of applications. The IDoc hierarchy is represented by the following terminology:

- Message Types are related to specific applications such as Orders.
- **IDoc Types** are different versions of standard Message Types, such as Orders for specific items or services.

A typical SAP IDoc consists of Control, Data, and Status records, as shown in **Figure 3 on page 7**. Status records, however, are not used by the ALE interface.

			•	
Sender	Recvr	Messg. Type	IDoc-Type	Status
	D	ata Record/Segm	ents	
HEADER1		XXXXXXXXXX	XXX	
ITEMS		XXXXXXXXXX	XXXXXXXXXXX	XXXXXX
SUBITEMA		XXXXXX		
SUBITEMB		XXXXXX		
TEXT		XXXXXXXXXX	XX	
ITEMS		XXXXXXXXXX	XXXXXXXXXXX	XXXXXXXX
SUBITEMC		XXXXXXX		
SUBITEMD		XXXXXX		
ACCUM		XXXXXXXXXX	XXXXXX	
		Status Record		
'To be process	sed'		14:33:48	

Figure 3 SAP IDoc Structure

Control Record

Connecting to ExteSAP (ALE) OTD

1.2 The SAP (ALE) OTD Data Flows

The SAP (ALE) IDOC OTD is used in conjunction with the SAP (BAPI) eWay to control the communication protocol layer between the SAP R/3 host and ICAN, and can be configured to process data in either direction.

The ICAN Project, in turn, connects to another application through an eWay designed specifically for that system. This external system may be either another (differently configured) SAP R/3 system or a non-SAP R/3 system.

1.2.1 Inbound Data Flow: SAP R/3 to ICAN

The figure below describes the inbound data flow from SAP R/3 systems to ICAN. During routine operations, an application on the SAP R/3 system generates a transaction designated for an external system. The ALE interface converts the data from the internal data format to the IDoc format, and sends it to the SAP (BAPI) eWay, which acts as an IDoc server.

The ICAN Project receives the IDoc data from the SAP (BAPI) eWay, performs any necessary processing or routing, and sends the information to another eWay connected to the recipient system. Here, it is converted to the correct format for the target application.



Figure 4 Inbound Data Flow: SAP R/3 to ICAN

During routine operation, some application on the SAP R/3 system generates a transaction designated for a target application. The data is converted to IDoc format by the ALE Interface and sent via tRFC to the SAP (BAPI) eWay.

Note: The generic IDOC format (IDOC_INBOUND_ASYNCHRONOUS) and specific IDOC formats may be converted by the ALE interface---to be received via tRFC to the SAP (BAPI) eWay.



Figure 5 Inbound Message Processing Flow: SAP R/3 to ICAN

The diagram above shows the following inbound message processing flow:

- 1 The eWay reads in the required configuration parameters and establishes a network connection with the SAP R/3 system, which becomes the IDoc server.
- 2 When the IDoc is sent from SAP R/3 via tRFC, the SAP (BAPI) eWay uses the RFC OTD, IDOC_INBOUND_ASYNCRONOUS, to receive the data.
- 3 Using the unmarshal method in of the SAP (ALE) IDoc OTD, the contents of the IDOC are now available for external systems.
- 4 The eWay verifies that the Transactional ID (TID) of the received transaction has not previously been committed (processed successfully) by this eWay.
- 5 A file-based DBMS is used to track transactions that have been committed successfully or rolled back, each with a timestamp. To expedite database searches, the database is purged periodically to delete all entries that have exceeded their specified lifetimes.
- 6 If identified successfully, the process moves on to the next step. If not, the eWay composes the appropriate response and logs an exception in the log file.
- 7 If the Collaboration or Business Process fails, an exception is logged in the log file.
- 8 If the message sent to ICAN is unidentifiable or transformable, an exception is logged in the log file.
- 9 The eWay then repeats the procedure beginning with step 2.

1.2.2 Outbound Data Flow: ICAN to SAP R/3

The figure below described the outbound data flow from ICAN to the SAP R/3 system. An application external to the SAP R/3 system generates a transaction designated for an SAP R/3 application. The ICAN Project receives the transaction through an eWay, performs any necessary processing or routing, and sends the information to the SAP

(ALE) IDOC OTD. This OTD converts the data to SAP IDoc format and sends the data to the SAP (BAPI) eWay. The SAP (BAPI) eWay, in turn uses tRFC to connect to the SAP R/3 system's ALE Interface. Here, it is converted to the correct internal data format and stored in the application database.



Figure 6 Outbound Data Flow: ICAN to SAP R/3

Before the eWay can install functions on the SAP R/3 system, it must first register its program ID. This program ID is associated with an SAP RFC destination. For information about creating the RFC destination, refer to **"Defining the RFC Destination" on page 36**.

Some application external to SAP R/3 generates data and sends the data to ICAN via an eWay. ICAN then performs any necessary processing or routing, and sends the data to the SAP (ALE) eWay.

Note: The generic IDOC format (IDOC_INBOUND_ASYNCHRONOUS) and specific IDOC formats may be converted by the ALE interface---to be sent via tRFC to the SAP (BAPI) eWay.

Messages are sent to the SAP R/3 host via Transactional RFC (tRFC). With tRFC, the receiving SAP R/3 system relies on an unique Transactional ID (TID) sent with the message to ascertain whether or not a transaction has ever been processed by it before. The SAP (BAPI) eWay assumes that all messages handled are new and assigns a new TID to each message (the counter is persistently stored by the eWay).

Dynamic routing of messages to different SAP R/3 hosts is not supported by the eWay, because the required routing information is not inherently part of the IDoc message format. In client mode, a single instance of the SAP (BAPI) eWay can establish an SAP R/3 connection with only one host (and as one user) at a time. Additional instances are required to connect to a different SAP R/3 host or as a different user.



Figure 7 Outbound Message Processing Flow: ICAN to SAP R/3

The diagram above shows the following outbound message processing flow:

- 1 When the Collaboration or Business Process starts to run, the eWay is initialized with its configuration properties.
- 2 The IDoc message format is retrieved from SAP R/3 or from the specified IDoc description file.
- ³ The data is unmarshaled to the IDoc OTD before being sent to the SAP (BAPI) eWay RFC OTD---IDOC_INBOUND_ASYNCRONOUS.
- 4 The SAP (BAPI) eWay transmits the data to SAP R/3.
- 5 The SAP (BAPI) eWay associates the next TID (from a persistent resetable counter) with the transformed outbound message and sends it via tRFC to the SAP R/3 host.
- 6 If no exceptions are raised by the receiving SAP R/3 host, the next TID is incremented.
- 7 If exceptions are raised, and the error is unrecoverable because re-transmission is not feasible, the offending outbound message is logged in the log file.
- 8 The eWay repeats the procedure beginning with step 2.

Chapter 2

Installing the SAP (ALE) eWay

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

In This Chapter

- "Supported Operating Systems" on page 12
- "SAP R/3 Version Support Per Supported Operating System" on page 12
- "Installation Requirements" on page 13
- "Installing the SAP eWay" on page 14
- "After Installation" on page 15

2.1 Supported Operating Systems

The SAP eWay is available for the following operating systems:

- Windows Server 2003, Windows XP, and Windows 2000
- HP-UX 11.0, 11i (PA-RISC), and 11i v2.0 (11.23)
- 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 *eGate Integrator User's Guide* for additional information regarding the running of this eWay on this Application Server.

2.2 SAP R/3 Version Support Per Supported Operating System

The table below lists which SAP R/3 Enterprise version can be used with which eWaysupported operating system.

Operating System	4.0B	4.5B	4.6B	4.6C	4.6D	4.7
Windows 2000 SP1	X	X	X	X	X	Х
Windows 2000 SP2	X	X	X	X	X	X
Windows 2000 SP3						X
Windows XP SP1a						X
Windows Server 2003						X
Sun Solaris 8 and 9	X	X	X	X	X	Х
IBM AIX 5.1L	X	X	X	X	X	X
IBM AIX 5.2						Х
HP-UX 11.0, 11i (PA-RISC), and 11i v2.0 (11.23)	X	X	X	X	X	X

T.I.I. 4	
lable I	English-Language version

2.3 Installation Requirements

2.3.1. 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*.

2.3.2. 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 IDoc 1.0.1 libraries
- *Note: SAP BAPI / ALE eWays can run on a 64-bit JVM, but only after the correct 64-bit JCO files (version 2.1.3 or later) have been applied. SAP customers who use 64-bit JVM must download the JCO files from the Web site for SAP Service Marketplace.*

Your SAP R/3 system must be configured to communicate with the SAP (ALE) eWay as described in **Configuring SAP R/3** on page 30.

2.3.3. Version Compatibility

Due to a major architectural change to the SAP ALE eWay, the SAP ALE v5.0.2 eWay is not compatible with SAP ALE eWay v5.0.1 and earlier. All collaborations (BPEL and

Java), in addition to all IDOC OTDs, that were built with SAP ALE eWay v5.0.1 and earlier must be deleted and rebuilt with SAP ALE eWay v5.0.2 or newer.

2.4 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*:
 - SAPALEeWay.sar (to install the SAP eWay)
 - FileeWay.sar (to install the File eWay, used in the sample Projects)
 - SAPALEeWayDocs.sar (to install the user guide and the sample Projects)
- 2 In the Enterprise Manager, click the **DOCUMENTATION** tab.
- 3 Click **SAP (ALE) 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 **"Locating, Importing, and Using the Sample Projects" on page 48**.

If you plan to create an IDOC OTD directly from SAP, go to step 5. If you plan to create the IDOC OTD from a decription file, no further installation steps are required. Refer to "Creating IDoc OTDs" on page 17 for more information about creating IDOC OTDs.

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

2.5 After Installation

Ensure you have properly installed the SAP BAPI in order to connect to SAP; refer to the *SAP* (*BAPI*) *eWay Intelligent Adapter User's Guide* for installation instructions. Once you have installed the SAP ALE 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 3

Using the SAP (ALE) OTD Wizard

This chapter describes how to build the business logic for SAP (ALE) 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 IDoc wizard to create the IDoc OTDs. You then create the Business Processes or Collaborations, and the Connectivity Maps.

In This Chapter

- About the SAP IDoc Wizard on page 16
- Creating IDoc OTDs on page 17
- **IDoc OTD Methods** on page 22
- Exporting the IDOC File from SAP R/3 on page 23

3.1 About the SAP IDoc Wizard

The SAP IDoc wizard is used to create IDoc OTDs. These OTDs can then later be used in Collaboration Definitions to create the business logic behind the Collaborations.

You can create IDoc OTDs in one of two ways:

- Let the IDoc wizard connect and retrieve the IDoc message format directly from the SAP R/3 system.
- Provide the location for a saved IDoc description file.





To export an IDoc description file from an SAP R/3 system to be used with an SAP ALE eWay IDOC OTD, see **"Exporting the IDOC File from SAP R/3" on page 23**. Separate instructions are included for versions 4.6 and earlier and 4.7 and later due to the significant SAPGUI changes that distinguish those versions.

3.2 Creating IDoc OTDs

You create IDoc OTDs with the SAP IDoc wizard in the Enterprise Designer. You can choose to have the wizard connect to the SAP R/3 system and retrieve the IDoc message format automatically, or you can have the wizard use an IDoc definition file from a specified location. The IDoc definition file would be saved or downloaded from the SAP R/3 system as described in "Exporting the IDOC File from SAP R/3" on page 23.

To create IDoc 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** dialog box appears.
- 2 Click **SAP IDoc** and click **Next**. The **Select metadata** page appears.

		New Wizard - SAP IDOC
Ste	ps	Select the metadata source for your SAP OTD:
1. 2. 3. 4. 5. 6. 7.	Select Wizard Type Select the metadata source for SAP OTD Select System Parameters Select Login Parameters Select the IDoc Parameters for finding the definition file Select the IDoc Parameters for the SAP Metadata Review Selections	 From SAP directly From Description File
		< Back Next > Einish Cancel Help

Figure 9 IDoc Wizard – Metadata Selection

- 3 To retrieve the IDocs description file directly from the connected SAP R/3 system, select the **From SAP Directly** option and continue with the next step.
- *Note:* Refer to "Installing the SAP eWay" on page 14 for a list of required modules that must be installed in order to conncet to SAP directly.
- *Note:* When connecting to SAP directly, you must also use the SAP (BAPI) eWay. More specifically, all inbound and outbound SAP transactions that use the generic SAP (ALE) IDOC OTD require configuration of the SAP (BAPI) eWay RFC OTD, IDOC_INBOUND_ASYNCHRONOUS.

To use an IDoc description file from a specified location, select the **From Description File** option and skip to step 10.

4 Click Next. The System Parameters page appears.

	Select System Parameters
 Select Wizard Type Select the metadata source for SAP OTD Select System Parameters Select Login Parameters Select the IDoc Parameters for finding the definition file Select the IDoc Parameters for the SAP Metadata Review Selections 	Please specify the SAP R/3 System Parameters below: System ID: Application Server: System Number: SAP Router String (optional): Language: EN

Figure 10 IDoc 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 R/ 3 system using the wizard.

6 Click Next. The Login Parameters page appears.

	New Wizard - SAP IDOC	6
Steps Select Wizard Type Select the metadata source for SAP OTD Select System Parameters Select Login Parameters Select the IDoc Parameters for finding the definition file Select the IDoc Parameters for the SAP Metadata Review Selections	Select Logon Parameters Please Specify the SAP R/3 Login Parameters below: Client Number: User Name: Password:	
	< Back Next > Finish Cancel Help	

Figure 11 IDoc Wizard–Login Parameters

7 Enter the information to log into the SAP R/3 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 IDoc Metadata Parameters page appears.

	New Wizard - SAP IDOC
Steps	Select the IDoc Parameters for the SAP Metadata
 Select Wizard Type Select the metadata source for SAP OTD Select System Parameters Select Login Parameters Select the IDoc Parameters for finding the definition file Select the IDoc Parameters for the SAP Metadata Review Selections 	Enter in the IDoc Type, i.e CREMAS03 IDoc Type: Enter in the IDoc Type Extention (optional) IDoc Type Extension: Select the SAP R/3 IDoc Segment Release Segment Release: 3.1H Select the Data Record format for the IDoc Message Format: Blank Padded

9 Enter the following information about the IDoc and continue with step 12:

For this option	Enter
IDoc type	IDoc type, for example, CREMAS03. You cannot use a wild card.
IDoc type extension	Extension for this IDoc type (optional).
Segment release	SAP R/3 IDoc segment release for this IDoc, for example, 4.6C.
Message format	Blank padded or CR-LF.

10 Click **Next**. The **Definition File Parameters** page appears.

|--|

New Wizard - SAP IDOC 🛛 🗶					
Steps 1. Select Wizard Type 2. Select the metadata source for SAP OTD 3. Select System Parameters 4. Select Login Parameters 5. Select the IDoc Parameters for finding the definition file 6. Select the IDoc Parameters for the SAP Metadata 7. Review Selections	New Wizard - SAP IDOC Select the IDoc Parameters for finding the definition file Select an IDoc Description file to be used to generate an Object Type Definition file IDOC File Name: Browse Select the SAP R/3 IDoc Segment Release				
SEEBEYOND	Select the Data Record format for the IDoc Message Format: Blank Padded 💌 < Back Next > Finish Cancel Helt	<u></u>			

11 Enter the following information about the IDoc definition file:

For this option	Enter
IDoc File Name	The path and filename for the IDoc description file to be used.
Segment release	SAP R/3 IDoc segment release for this IDoc, for example, 4.6C.
Message format	Blank padded or CR-LF.

- 12 Click Next. The Review Selection page appears.
- **13** Review your selections and click **Finish**. The OTD Editor window appears, displaying the OTD.

You can now built the Collaborations or Business Processes as described in **"Building** SAP (ALE) Business Logic with eInsight" on page 54 and **"Building SAP** (ALE) Business Logic with eGate" on page 57.

3.3 **IDoc OTD Methods**

The SAP (ALE) eWay provides the following IDoc methods that are available for you to use in the source code for the Collaborations or Business Activities:

- "getDataString"
- "marshal"
- "reset"
- "unmarshal"

getDataString

Syntax

getDataString()

Description

Returns a string representation of the data.

Parameters

None

Return Value

String

Throws

None

marshal

Syntax

marshal()

Description

Marshals the data of the IDoc OTD to a byte array.

Parameters

None

Return Value

byte[]

Throws

MarshalException

reset

Syntax

reset()

Description

Clears the node of all data.

Parameters

None

Return Value

None

Throws

None

unmarshal

Syntax

unmarshal(byte[] bytes)

Description

Unmarshals the IDoc data to an IDoc OTD.

Parameters

Name	Туре	Description
bytes	byte[]	Data stream to be unmarshaled.

Return Value

None

Throws

UnmarshalException

3.4 Exporting the IDOC File from SAP R/3

The following sections describe how to create and export the IDOC file from SAP R/3 that is required to create the SAP ALE business logic. The procedures provided may vary depending on version and/or platform of SAP R/3. Refer to the current documentation for your version of SAP R/3. The procedures described in this section create the IDOC file an SAP R/3 system version 4.6 and earlier:

Downloading the IDoc Description File (Before 4.7) on page 24

• Saving the IDoc Description File (After 4.6) on page 27

3.4.1 Downloading the IDoc Description File (Before 4.7)

Note: The screenshots in the procedure below show the SAPGUI version 6.2 connecting to segment version 4.6.

To download the IDoc description file from SAP

1 Log into the SAPGUI, and close the system messages. The **SAP Easy Access** window appears.

If the SAP Easy Access window does not display, click Exit.



Figure 14 SAP Easy Access Window

2 Double-click WE63. The Documentation IDoc Record Types window appears.

'⊡ Program Edit Goto System He		
8 I I		
Documentation IDoc Reco	ord Types and IDoc Types (Parser)	
🕀 🚸 📃 🔳		
✓ IDoc record types		
Control record		
✓ Data record		
Status record		
Basic types		
Basic types	to	
 Output from segment fields 		
Extended basic types		
Basic type		
Extension		
 Output from segment fields 		
Version of IDoc record types	3	
SegmentRelease	46B	
Extended grammar		
	4	

Figure 15 Documentation IDoc Record Types Window

- 3 In the **Basic Types** box, type or select the IDoc to be parsed.
- 4 Select any other options needed, and click **Execute**. The **Documentation IDoc Record Types** window shows the parsed definition file.

Figure 16 Documentation IDoc Record Types Window—Parsed Definition File

⊡ List Edit <u>G</u> oto S <u>y</u> stem	<u>H</u> elp	
🖉 👂 🖯 । 😋 🚱 । 🖻	前間:2010年1月1日日(
Documentation IDoc	Record Types and IDoc Ty	/pes (Parser)
Display error log		
BEGIN_RECORD_SECTION BEGIN_CONTROL_RECORD BEGIN_FIELDS NAME TEXT TYPE LENGTH FIELD_POS BYTE_FIRST	TABNAM Name of table structure CHARACTER 000010 00001 000001	
BYTE_LAST NAME TEXT TYPE LENGTH FIELD_POS BYTE_FIRST BYTE_LAST VALUE_TABLE	MANDT Client CHARACTER 000003 0002 000011 000013 T000	
NAME TEXT TYPE LENGTH FIELD_POS BYTE_FIRST BYTE_LAST	DOCNUM IDoc number CHARACTER 000016 0003 000014 000029	
NAME TEXT TYPE	DOCREL SAP Release for IDoc CHARACTER	() ()
	D	D4X (1) (800) 🖻 sapdev INS 🎵

5 On the **System** menu, click **List**, **Save**, and then **Local File**. The **Save List in File** dialog box appears.

Figure 17 Save List in File Dialog box



- 6 If necessary, select Unconverted.
- 7 Click Save. The Save As dialog box appears.
- 8 Navigate to the folder where you want to save the description file and click **Save**. The **Transfer List to a Local File** dialog box displays.

Figure 18 Transfer List to a Local File Dialog Box



- 9 Enter the name and path of the local file to receive the IDoc description file.
- 10 Click Transfer. This downloads the file.

Once you have downloaded the IDoc description file, create the IDoc OTD using the IDoc wizard as described in **"Creating IDoc OTDs" on page 17**. Use the **From Description File** option so that you can select the description file you downloaded.

3.4.2 Saving the IDoc Description File (After 4.6)

Follow the instructions below to download an IDoc description file from an SAP R/3 system version 4.7 and later.

Note: The screenshots in the procedure below show the SAPGUI version 6.2 connecting to segment version 4.7.

To save the IDoc description file from SAP

1 Log into the SAPGUI, and close the system messages window. The **SAP Easy** Access window appears.

If the SAP Easy Access window does not display, click Exit.

Figure 19 SAP Easy Access Window



2 Double-click WE63. The Documentation window appears as shown below.

Figure 20 Documentation Window

년 Documentation <u>E</u> dit	<u>G</u> oto S⊻stem <u>H</u> elp	
🖉 👂 🗄 I 😋 🚱 🌘	N I N I N I N I N I N I N I N I N I N I	
Documentation		
# 🕹 🗗 🖺		
Documentation for IDoc t	type or segment type	
Basic type	CREMAS03	
	Vendor master data distribution	
○ Enhancement		
 Segment type 		
Documentation for IDoc I	record types /	
Control rec.		
🗌 Data rec.		
StatusRec.		
CommantDalagaa	620	
Record types version	3 IDoc record types for SAP Release 4.0	

3 Enter the basic type, enhancement, and segment type information.

- 4 Select the IDoc record types to be included.
- 5 Click **Parser**. The **Documentation** window displays the parsed data.

Figure 21 Documentation Window—Parsed Definition File

Documentation for Basic type CREMAS03 BEGIN_RECORD_SECTION BEEGIN_FIELDS NAME TEXT NAME TABNAM TEXT NAME OB0010 FIELD_POS OB0010 NAME MANDT TEXT CHARACTER LENGTH OB0001 CHARACTER LENGTH OB0001 CHARACTER LENGTH OB0001 CHARACTER_LAST OB001 CHARACTER_LAST OB0011 CHARACTER_LAST OB0013 NAME DOCNUM TEXT IDoc number	 	System <u>H</u> elp	
Documentation for Basic type CREMAS03	🖉 👂 🖯 । 😋 🚱 🕻) (1) (1) (2) (2) (1) (2) (2) (2) (2) (2) (2) (2) (2) (2) (2	
BEGIN_RECORD_SECTION BEGIN_CONTROL_RECORD BEGIN_FIELDS NAME TABNAM TEXT Name of table structure TYPE CHARACTER LENGTH 000010 CHARACTER_FIRST 00001 CHARACTER_LAST 000010 NAME MANDT TEXT Client TYPE CHARACTER LENOTH 000003 FIELD_POS 0002 CHARACTER_FIRST 000011 CHARACTER_LAST 000013 NAME DOCNUM TEXT IDoc number	Documentation for E	Basic type CREMAS03	
BEGIN_RECORD_SECTION BEGIN_CONTROL_RECORD BEGIN_FIELDS NAME TABNAM TEXT Name of table structure TYPE CHARACTER LENSTH 000010 CHARACTER_FIRST 000001 CHARACTER_LAST 000010 NAME MANDT TEXT Client TYPE CHARACTER LENGTH 000003 FIELD_POS 0002 CHARACTER_FIRST 000011 CHARACTER_LAST 000013 NAME DOCNUM TEXT IDOC number			
	BEGIN_RECORD_SECTION BEGIN_CONTROL_RECORD BEGIN_FIELDS NAME TEXT TYPE LENSTH FIELD_POS CHARACTER_FIRST CHARACTER_LAST NAME TEXT TYPE LENSTH FIELD_POS CHARACTER_FIRST CHARACTER_LAST NAME TEXT	TABNAM Name of table structure CHARACTER 000010 00001 000010 MANDT Client CHARACTER 000003 0002 00001 000011 000013 DOCNUM IDoc number	
	• •		

6 On the **System** menu, click **List**, **Save**, and then **Local File**. The **Save List in File** dialog box appears.

Figure 22 Save List in File Dialog box



- 7 If necessary, select Unconverted.
- 8 Click Save. The Save As dialog box appears.
- 9 Navigate to the folder where you want to save the description file and click **Save**.

Once you have saved the IDoc description file, create the IDoc OTD using the IDoc wizard. Use the **From Description File** option so that you can select the description file you saved.

Chapter 4

Configuring SAP R/3

For the SAP (ALE) eWay to interact successfully with the SAP R/3 system, you must configure the SAP R/3 system as described in this chapter.

The SAP screen captures in this chapter correspond to SAPGUI version 6.2, and SAP R/3 version 4.0. They are included to illustrate the general nature of the procedures, and contain only example values. Refer to the documentation supplied with your SAP R/3 system to determine the exact procedures.

In This Chapter

- SAP Hierarchies on page 30
- Naming the Logical System on page 32
- Specifying the Distribution Model on page 34
- Defining the RFC Destination on page 36
- Defining the Communications Port on page 40
- Creating a Partner Profile on page 41
- Configuring a Partner Profile on page 43
- Security Issues on page 46

4.1 SAP Hierarchies

To prepare your SAP R/3 system to recognize the SAP (ALE) eWay, you must first define a Logical System in SAP to represent the eGate system as an ALE client (either sender or receiver). Next, you create a new Distribution Model view, which defines how the Logical System exchanges messages. You must link it to a Client, a Logical System (the one you just created), and an IDoc type. The Distribution Model hierarchy is depicted in Figure 23, as it appears in the SAP GUI (IMG).





Following this high-level setup, you need to define Communications parameters in SAP to specify the correct routing of IDocs (either inbound to or outbound from SAP). The hierarchy of this Communication system is shown in Figure 24. The individual steps involved in the configuration are:





The RFC Destination defines the entity to which Remote Function Calls (RFCs) can be made; it is the same as the Logical System in the Distribution Model. The Communications Port defines a channel for communication of IDocs. The Partner Profile acts as an identifier for the eGate system, and provides a communications gateway by incorporating elements of the ALE interface.

4.2 Configuring the Distribution Model

4.2.1 Naming the Logical System

Transaction: SALE



🖑 SAR	P R/3 Sys	tem									
<u>O</u> ffice	Logistics	Accounting	<u>H</u> uman re	sources	l <u>n</u> format	ion system	s <u>T</u> ools	System	<u>H</u> elp		5
v	SALE		-		û	× 🖴	ĦĔ	む	6	121 12	3 🗖 🞖
Dyn	amic menu										
							S4>	< (1) (404)	 europ 	oium [INS	05:29PM //

In the SAP R/3 System home window, type SALE into the command field and Enter
 to display the *Distribution (ALE) Structure* window.

Figure 26 Distribution (ALE) Structure Display Window

🖑 Display Structure: Distribution (ALE)	- D ×
<u>Structure Edit Goto Information Utilities Default settings System Help</u>	5
· · · · · · · · · · · · · · · · · · ·	
Expand/collapse 🛃 📴 🎞 What other projects?	
Distribution (ALE)	4
Basic Settings	
Set up logical system	
🗖 🖉 Maintain logical systems	
📔 🔄 🖗 Assign logical system to the client	
[▲] S(V(1)(004) ▼ europium (0)/P	
▼ S4X (1) (404) ▼ europium 0VR	▼ ● 04:59PM

- 2 Expand the tree to display Distribution (ALE) > Basic Settings > Set up logical system > Maintain logical systems.
- 3 Select **P** Maintain logical systems to display the Logical Systems Overview window.
- 4 Select **New entries** to display the **New Entries** window.

Figure 27	New	Entries	Window
inguic 2/	14044	LITTICS	WINGOW

& New Entries: Overview of Created Entries
Table view Edit Goto Selection Utilities System Help
V
🖉 🚰 📳 🔝 😫 Variable list
Log system Description
NEWALEEWY New SAP ALE eWay
运 Position Entru 8 of 8
S4X (1) (404) ▼ europium OVR 05:05PM //

- 5 Enter the logical name for your SAP eWay using capital letters and a brief descriptive name.
- 6 Click 🔙 Save. The Change Request Entry window appears.

Figure 28 Change Request Entry Window (1)

😴 Enter Change Request	×
View maintenance: Data	
V_TBDLS	
Request	1
S4XK900021 Transportable change request	
LP01 Change	
🖌 📔 品 Own requests 🗋 Create request 🗙	

- 7 Select Create request , to display the **Create Request** window.
- 8 Enter a short description (e.g., *eWay Test*) and click **Save**. The **Change Request** entry window appears.
- 9 Select to enter the new data into the system. You are now returned to the Logical Systems Overview window, and the new Logical System appears in the list.
- 10 Click **Save** appears. 10 Click **Save** appears.

4.2.2 Specifying the Distribution Model

Cautionary Notes

Two notes of caution are appropriate at this point:

- 1 Avoid placing eGate in the SAP Primary Model View. Use the SAP Primary Model View only as a template for your custom model view.
- 2 You should use the Z prefix when defining a name. This prefix is reserved for external use, and is not used in any standard SAP names.

Following these rules should prevent any interference with standard SAP functionality or conflicts with standard SAP terminology.

Transaction: SALE

😽 SA	P R/3 Sys	stem									_ 🗆 ×
<u>O</u> ffice	Logistics	Accounting	<u>H</u> uman re	esources (<u>n</u> formal	tion system:	s <u>T</u> ools	System	<u>H</u> elp		
•	SALE		•		û	× 🖴	H E	君1	n 🗘	🗈 🐮	3 🗗 8
Dyn	amic menu										
							S4>	(1) (404) 🗖	europ	ium INS	05:29PM

Figure 29 SAP R/3 System Window

1 In the SAP R/3 System home window, type **SALE** into the command field and click

Enter **v** to display the **Distribution (ALE) Structure** window.

Figure 30 Distribution Structure Window



1 Click **W** Maintain distribution model to displays the Maintain Distribution Model window.

Model Edit Goto System Help ✓ <	🥳 Maintain distribution model	- D ×
✓ ✓ ▲	<u>M</u> odel <u>E</u> dit <u>G</u> oto System <u>H</u> elp	5
Model view Add method Add message type Add filter Distribution model BUBSYSTEMS Primary Model C ZALECERT40 ALE e*Way Recertification for 4.0	· · · · · · · · · · · · · · · · · · ·	
Distribution model Distribution model Distribution for 4.0	Model view Add method Add message type Add filter	
	Distribution model SUBSYSTEMS Primary Model Distribution for 4.0 ALE e*Way Recertification for 4.0	*

Figure 31 Maintain Distribution Model Window

2 Select the Menu path Edit > Model View > Create to display the Create Model View dialog box.

Figure 32 Create Model View Dialog Box

😴 Create model view		X
Model view	ZNEWMODEL	
Short descriptn	Demonstration Model View	
Start date	08/03/2000	
End date	12/31/9999	
V X		

- 3 Enter the logical name you want for the new Distribution Model View, along with a brief descriptive name or message (for your own use).
- 4 Select Enter *▶*, which returns you to the previous window. Your new Model View now appears in the tree, as shown in Figure 33.

Figure 33 Maintain Distribution Model Tree

5 Highlight the new entry and select Add Message Type. This displays the Add Message Type dialog box.



Figure 34 Add Message Type Dialog Box

- 6 Type the desired values for the four parameters into the text boxes, or select them from the drop-down menus. For example, **CREMAS** is the message type used for Creditor Master Data.
- 7 Select Enter , which returns you to the previous window. The values you selected now appear in the Distribution Model tree, as shown in Figure 35.

Figure 35 Maintain Distribution Model Tree



8 Save 💷 your entry, click Back 🗲 and then Cancel X to return to the Distribution Structure window.

4.3 **Configuring Communications**

4.3.1 **Defining the RFC Destination**

Transaction: SM59

An RFC connection must be defined from the sender to the recipient. The first step is to define the RFC Destination.



🖑 SAI	P R/3 Sys	tem										- 🗆 ×
<u>O</u> ffice	Logistics	Accounting	<u>H</u> uman re	sources	l <u>n</u> form	ation syster	ns <u>T</u> ools	System	n <u>H</u> elp			
	SM59		-		– û	× 🗄	, M G	1	ta p	1 🖓	8	
Dyn	amic menu											

In the SAP R/3 System home window, type SM59 into the command field and Enter
 to display the RFC Destination Maintenance window.



🧬 Display and maintain RFC destinations	- D ×
<u>B</u> FC <u>E</u> dit <u>G</u> oto System <u>H</u> elp	5
· · · · · · · · · · · · · · · · · · ·	
Create Change Delete Find	
RFC destinations RFC destinations R/3 connections Internal connections Logical destinations TCP/IP connections Connections via ABAP/4 driver	4
S4X (1) (404) oceanus INS	05:13PM

2 Select the TCP/IP connections option and then Create to display the RFC Destination entry window.

RFC Destination	
<u>D</u> estination <u>S</u> ystem information <u>T</u> est System <u>H</u> elp	
✓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓	
Test connection	
RFC destination NEWALEEWY	
Technical settings	
Connection type T New entry Trace	
NEW SAF ALE Eway	
r Logon	
Password ******* is still blank Unencrypted password (2.0)	
Attributes	
Created by	
Last changed by	
	05:47PM
[J4X [1] [404] * [loceanus [04N]	55.471 M

Figure 38 RFC Destination Entry Window

- 3 Type in the name of the **RFC Destination** (use the **Logical System** name), an accompanying **Description**, and enter <**T**> for the Connection Type (TCP/IP).
- 4 Save , which returns a confirmation message and displays the **RFC Destination** window corresponding to your entry.

RFC Destination NEWALEEWY	
	- 5
🖌 💽 🔚 🗢 🕸 🗙 🕒 🖬 🛱 🛱 🗗 🗗 🖉 🚰 🖉	
Test connection	
RFC destination NEWALEEWY	
Technical settings Connection type T TCP/IP connection	
Activation type Start Registration Trace	
Start on Application server Explicit host Front-end workstation Application server Program MYHOST. PROGRAM	
Security Options	1
SNC O Activ Inactv.	
C Description	1
New SAP ALE eWay	
Attributes	1
Created by PS1 08/04/2000 Last changed by PS1 08/04/2000	
Destination NEW/ALEEV Meaved	

Figure 39 RFC Destination Window

- 5 Click **Registration** for the **Activation type** and type in a **Program ID** of the form <hostname>.<program name>, and a Description.
- 6 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.

Connection test STCDGW								
Connection type:	TCP/IP connection							
Logon:	255 msec							
10 KB:	490 msec 491 msec							
20 KB: 30 KB:	504 msec 505 msec							

Figure 40 Connection Test Results

7 Save 🔙 and select 🗲 repeatedly to return to the SAP R/3 System window.

4.3.2 Defining the Communications Port

Transaction: WE21

The Communications Port defines the type of connection with the Partner (see **Creating a Partner Profile** on page 41). In this step you specify the outbound file name, directory path, and any associated function modules.





1 In the SAP R/3 System home window, type WE21 into the command field and click

W to display the *WF-EDI Port Definition* window.



Ρç	rts	
	🖻 Transactional RFC	
	A000000015 ALE Inbound Client A000000016 Outbound Idocs A0000000017 ALE Recertification 4.0, sending 3.X IDOCs A000000018 ALE Recertification 4.0, sending 4.X IDOCs	
	──œ File ───CPI-C ───Internet	

2 Expand the tree under Transactional RFC to display the currently-defined Ports.

3 Select the desired **Port** from the list, or select **Change** to display the *Port Definition for Asynchronous RFC Overview* window.

🧬 Change View "F	^p ort Definit	ion for Asynchronous RFC": Overvie	
<u>T</u> able view <u>E</u> dit <u>G</u>	oto <u>S</u> electi	on <u>U</u> tilities System <u>H</u> elp	~
		💽 🗔 🗢 🏦 🗙 🕒 🕅	🕅 🏝 🏗 🕰 🛣 🚝 🎜 🤗
🛛 💅 New entries	1 🗠 🛙	🛛 🔲 📙 Variable list	
Port	Version	Logical destination	Port description
A00000025	2	ZALE3XEWY	ALE Recertification 4.0, sending 3.
A00000026	3	ZALE4XEWY	ALE Recertification 4.0, sending 4.
A00000027	3	ZPRDMATOUT	SAP Product Material Change pointer
A00000028	3	QA SAPACCT	QA test for accounts
			•
		Position	Entry 7 of 19
			S4X (1) (404) 🕶 oceanus OVR 05:32PM //

Figure 43 Port Details Window

- 4 Type in a Version (specifies IDoc record type), Logical destination, and Description, matching the entries made previously.
- 5 Select Enter, which displays the *Change Request Query* dialog window. [Note that you must have CTS (Correction and Transport System) turned on for this screen to be displayed.]
- 6 Select Create Request, which displays the Create Request dialog window.
- 7 Enter a Short description and Save 🔲
- 8 Select repeatedly to return to the SAP R/3 System window.

4.3.3 Creating a Partner Profile

Transaction: WE20

Here you create the Partner for the Logical System you created earlier. Note that the LS Partner Type is used for all ALE distribution scenarios.



😸 SAF	PR/3 Sys	tem		- D ×
<u>O</u> ffice	Logistics	Accounting	Human resources Information systems Tools System Help	
v	WE20		💽 🖬 ← 🏦 × 🗅 🏙 🏟 智 🎝 🎝 🌮 🎦 🛛 🦓	
Dyna	amic menu			
			S4X (1) (404) ▼ oceanus OVR	03:27PM

In the SAP R/3 System home window, type WE20 into the command field and Enter
 to display the *Partner Profile: Initial Screen* window.

Figure 45 Partner Profile: Initial Screen Window

Partner Edit Goto Utilities System Help Image: Second control Image: Second c	
Image: Second control Image: Second con	
Partner	
Partner	
Partn.number NEWALEEWY Partn.type LS	

2 Type the name of the logical system created previously into the Partner number

field, select **LS** for the Partner type, and select **D**. This creates the Partner, and displays the *Create Partner Profile <Partner Number>* window.

Create Partner Prof	le: NEWALEEWY/LS	
Partner Edit <u>G</u> oto Sy:	stem <u>H</u> elp	•
	· · · · ·	× 🗅 M 🕅 🔁 🗛 🚓 🎦 💭 🤶
Message Control Out	pound parameters Inbound para	ameters
Partn.number	NEWALEEWY	New SAP ALE eWay
Partn.type	LS	Logical system
Classification		
Partner class	ALE	Archv.
Partn.status	A	
Telephony		
	Tel. connection	
Receiver of notifications		
Тур	US	User
Lang.	EN	English
ID	DEV	
		S4X (1) (404) ▼ oceanus OVR 03:35PM //

Figure 46 Create Partner Profile Window

3 Select ALE for the Partner class and A (Active) for the Partner status, then Save . You now have created the Partner, and need to continue to the next section to configure the Partner Profile.

4.3.4 Configuring a Partner Profile

Transaction: WE20

In this section, you configure the Inbound or Outbound Parameters in the Partner Profile.

😴 Partner Profiles: Initial Screen	- D ×
<u>Partner</u> Edit <u>G</u> oto <u>U</u> tilities System <u>H</u> elp	5
·····································	
📗 🛅 🖋 🖓 🛅 📅 🚰 🌴 Message Control 🛛 Outbound parameters 🛛 Inbound parameters	
Partner	
Partn.number NEWALEEWY Partn.type LS	

Figure 47 Partner Profile: Initial Screen

- 4 In the *Partner Profile: Initial Screen* window, select the desired Partner Number, for example **NEWALEEWY**.
- 5 Selecting **Inbound parameters**, for example, displays the *EDI Partner Profile*: *Inbound Parameters Overview* window for **NEWALEEWY**.

😴 Change View "EDI I	Partner Profiles: Inbound Param	eters": Overview	-O×
<u>Table view</u> <u>E</u> dit <u>G</u> oto	<u>Selection</u> <u>U</u> tilities System <u>H</u> elp		
	🖸 🖬 🚽 🖬	: 🗅 🕅 🕅 🏝 🎦 🗗 🗗 😫 🞦 🎜 🦓	
📗 💅 🔍 New entries	🖻 î 🗠 🗉 🗖 📮 V	ariable list	
Partn.number	Typ Fnct. Message type	Code Function Test	
	Message Control	Outbound parameters	
	🚰 Position	Entry 0 of 0	
No entries are available		🙄 🖓 [54X [1] [4U4] ▼ ocean	us IOVR IU4:55PM

Figure 48 EDI Partner Profile: Inbound Parameters Overview Window (1)

6 Select New entries, which displays the *New Entries: Details of Created Entries* window for NEWALEEWY.

S New Entries: Details of C	Created Entries	
🕅 💅 🗊 ┥ 🕨 📇 Variat	able list	
Partn.number	NEWALEEWY Message type CREMAS	
Partn.type		
Partn.funct.	Message code	
	Msg.function Test	
Inbound options		
Process code	CRE1	
Syntax check		
Processing		
O Background, no override	e with express flag	
O Background, override po	ossible with express flag	
Immediate processing		
- Telephonu		
relephony	Tel connection	
Receiver of notifications		
Tun	lis	
Lang.	EN	
ID	PS1	
	· · · · · · · · · · · · · · · · · · ·	
	S4X(1)(404)▼ oceanus OVR 04:0	17PM //

Figure 49 New Entries: Details of Created Entries Window

7 Select CREMAS as a Message type and CRE1 as a Process code from the drop-down

menus, then **Save** . The entries now appear in the list in the *EDI Partner Profile*: *Inbound Parameters Overview* window.

Table view Edit Goto Selection Utilities System Help	
	- 🧑
▶ □ □ □ ← û × □ 前 简 都 节 ₽ 第 □ 2	
Partn.number Typ Fnct. Message type Code Function Test	
NEWALEEWY LS CREMAS	
Message Control Outbound parameters	
Entry 1 of 1	
S4X (1) (404) ▼ loceanus /0VB /05:0	5PM //

Figure 50 EDI Partner Profile: Inbound Parameters Overview Window (2)

- 8 Follow the same procedure for **Outbound parameters**, if appropriate.
- 9 After making your entries, save 🗟 and exit 🗲 to the main *SAP R/3 System* window.

4.4 Security Issues

SAP uses *authorization objects* to allow access to various levels of operation. A minimum set of authorization objects required for the ALE 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 IDoc Type

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

Receiving IDocs via RFC

Locating, Importing, and Using the Sample Projects

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

There is a sample Project for use with the eGate, and another for use with eGate in combination with eInsight.

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

In This Chapter

- About the Sample Projects on page 48
- Locating the Sample Projects on page 49
- Importing the Sample Projects on page 50
- Running Sample Projects on page 51
- Building SAP (ALE) Business Logic with eInsight on page 54
- Building SAP (ALE) Business Logic with eGate on page 57

5.1 About the Sample Projects

The SAP (ALE) eWay includes the following sample Projects that you can import. This enables you to see how ICAN Projects can work with SAP R/3 applications.

- SAP_ALE_JCE_62 for use with eGate
- SAP_ALE_BPEL_62 for use with eInsight/eGate

Requirements

The SAP (ALE) eWay sample projects require the installation of the SAP (BAPI) eWay.

SAP Version Support

The SAP_ALE_JCE_62 Project supports SAP version 4.7. The SAP_ALE_BPEL_62 eInsight Project supports SAP versions 4.6 and earlier.

Sample Project Contents

Each Project contains the following:

- Input data
- IDoc description file
- IDoc OTDs
- Connectivity Maps
- Collaborations Definitions (SAP_ALE_JCE_62)
- Inbound and outbound Collaborations (SAP_ALE_JCE_62)
- Business Processes (SAP_ALE_BPEL_62)

The sample Projects provide a Project that allows you to browse its configurations to learn how inbound and outbound SAP Projects are designed. The Projects do not include ICAN Environments and Deployment Profiles necessary to deploy the sample Projects. To learn how to complete the Projects for deployment, refer to **"Running Sample Projects" on page 51**.

Sample Project Zip Files

The SAP (ALE) eWay sample Projects are provided as a zip file, **SAP_ALE_eWay_Sample.zip**, which contains the following files:

- **SAP_ALE_JCE.zip** for the SAP_ALE_JCE_62 Project (eGate)
- **SAP_ALE_BPEL.zip** for the SAP_ALE_BPEL_62 Project (eGate/eInsight)
- inputCREMAS03_46B.~in (inbound Collaboration input file)
- CREMAS03_46B.descrfile.txt (IDoc description file)
- SAPALEBPELoutput1.dat (eInsight output file)
- SAPALEJCEoutput1.dat (eGate output file)
- *Note:* The sample Projects found in the SAP_ALE_eWay_Sample.zip file require a 5.0.4 or higher version of the logical host.

5.2 Locating the Sample Projects

The eWay sample Projects are included in the **SAPALEeWayDocs.sar**. This file is uploaded separately from the SAP eWay sar file during installation. For information, refer to "**Installing the SAP eWay**" on page 14.

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

5.3 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 49**.

To import the sample Projects

- 1 Unzip the **SAP_ALE_eWay_Sample.zip** file. This creates the following zip files:
 - **SAP_ALE_BPEL.zip** (for the eGate/eInsight Project)
 - **SAP_ALE_JCE.zip** (for the eGate 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 the desired sample file. The **Import Manager** dialog box appears similar to the following:

Figure 51 Import Manager Dialog Box

	Import	Manager	
pecify the ZIP file and the root	to import to:		
rom ZIP file: R:\TechDoc\Sourc	e\eGate_5.0.5\SAP_ALE_	eWaylSamples\SAP_ALE_BPE.zip	<u>B</u> rowse.
Root project:		Root environment:	
TechDoc_Projects		kharperRepository	~
Importing selected projects		Importing 0 environments	
Project	Exclude		
SAP_ALE_BPEL_62	N/A		
		_ <u>I</u> mpo	rt <u>C</u> lose

- 5 Click Import. A dialog box confirms that the Project import was successful.
- 6 Click **OK** and click **Close**.

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

5.4 **Running Sample Projects**

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 the Environment Profile see "Creating the Environment Profile" on page 51.
- 2 Configure the eWay Environment Properties see "Creating the Environment Profile" on page 51.
- 3 Configure the SAP R/3 application see "Configuring SAP R/3" on page 30.
- 4 Apply the .jar files to the Logical Host see **"Uploading JAR Files to the Logical Host" on page 52**.
- 5 Deploy the Project see "Deploying the Project" on page 53.
- 6 Run the Sample Project see "Running the Sample Project" on page 53

5.4.1 Creating the Environment Profile

The procedure below describes how you create an eGate Environment for the SAP (ALE) 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. The list below shows which systems to add for which Collaboration:
 - Inbound Collaboration: one inbound File eWay and one outbound File eWay
 - Outbound Collaboration: one inbound File eWay and one outbound File eWay
- 3 Right-click the Environment and click New Logical Host.
- 4 Right-click the Logical Host and click New SeeBeyond Integration Server.

Figure 52 shows the completed Environment.

SeeBeyond Enterprise Designer 5.0.4 - Deployment Editor [Deployment1]	K 9 X
<u>File Tools View Window H</u> elp	
8 💊 🔜 🕼 🕼	
Environment: Environment1 😭 Activate Map Variables	
File1-> SAP_ALE_BP1	
SAP_ALE_BP1 -> File2	
file_out 🖉	
LogicalHost1 C	
- 🎆 IntegrationSvr1	
Deployment1	

Figure 52 eGate Environment for Sample Projects

After creating the Environment components, you must upload several .jar files to the Logical Host - see **"Uploading JAR Files to the Logical Host" on page 52**.

5.4.2 Uploading JAR Files to the Logical Host

Once you have added a Logical Host to the Environment, 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

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.

This uploads the .jar files to the Logical Host.

After the eWay configuration, you are ready to deploy the project - see **"Deploying the Project" on page 53**.

5.4.3 **Deploying the Project**

Once you have created the Environment and added its components, and you have uploaded the .jar files to the Logical Host, 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 a name for the inbound Deployment Profile, and select the Environment you created for the sample.
- 3 Double-click the inbound Deployment Profile. Drag the Project components to the Environment component as shown in Figure 53.



Figure 53 Deployment Profile

5.4.4 Running the Sample Project

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 R/3 system as described in **"Configuring SAP R/3" on page 30**.

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 R/3 system with a previously used identifier, the existing deployment must be deactivated first.

5.5 Building SAP (ALE) Business Logic with elnsight

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

- Adding Business Processes on page 54
- Building the SAP Business Processes on page 54
- Adding Connectivity Maps on page 56
- Building the SAP Connectivity Map on page 56

To see an example of SAP Business Processes and Connectivity Maps, import the SAP_ALE_BPEL_62 sample Project as described in **"Locating, Importing, and Using the Sample Projects" on page 48**.

5.5.1 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**.

5.5.2 Building the SAP Business Processes

To build inbound SAP Business Processes

- 1 In the **Project Explorer** tab of the Enterprise Designer, expand the IDoc OTD. This displays the IDoc OTD methods.
- 2 Drag the *unmarshal* and *marshal* IDoc OTD methods to the Business Process Designer canvas.
- 3 Expand the **SeeBeyond**, **eWays**, **File**, and **FileClient** folders in the **Project Explorer** tab.
- 4 Drag the *write* and *receive* methods to the Business Process Designer canvas.
- 5 Click the *marshal* Business Activity and click **Show Properties**. The **Properties** dialog box appears as shown in Figure 54.

Name	IDOC_CREMAS03_4X_620.marshal
Partner	SAPALEmarshal
Port Type	ns1:IDOC_CREMAS03_4X_620PortType
Operation	marshal
Input	IDOC_CREMAS03_4X_620.unmarshal.Output
Output	IDOC_CREMAS03_4X_620.marshal.Output
Use Correlations	no
Alert Properties	Click button to configure
Logger Properties	Click button to configure
Alert Properties Logger Properties	Click button to configure Click button to configure

Figure 54 Inbound Marshal Properties

- 6 Click the Input box and click unmarshal.output.
- 7 Configure all other Activities by highlighting the Activity and clicking Show Properties. Refer to "IDoc OTD Methods" on page 22 for Business Operations syntax.
- 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 inbound 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_ALE_BPEL_62 sample Project as described in "Importing the Sample Projects" on page 50.



Figure 55 Inbound Business Process and Data Mapping

5.5.3 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**.

5.5.4 Building the SAP Connectivity Map

The procedure below describes how to build inbound SAP Connectivity Maps. To see an example, import the SAP_ALE_BPEL_62 sample Project as described in **"Locating, Importing, and Using the Sample Projects" on page 48**.

To build inbound SAP Connectivity Maps

- 1 Add the 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_ALE_BPEL_62 sample Project as described in "Importing the Sample Projects" on page 50.



Figure 56 The SAP Connectivity Map

5.6 Building SAP (ALE) Business Logic with eGate

This section describes how to build the SAP Collaborations:

- Building Collaborations on page 57
- Adding Connectivity Maps on page 58
- Building Inbound SAP Connectivity Maps on page 58
- Building Outbound SAP Connectivity Maps on page 59

To see an example of SAP Collaborations and Connectivity Maps, import the SAP_ALE_JCE_62 sample Project as described in **"Locating, Importing, and Using the Sample Projects" on page 48**.

5.6.1 Building Collaborations

After you have built the IDoc OTDs as described in **"Creating IDoc OTDs" on page 17**, you are ready to build Collaboration Definitions.

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 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*. For information about IDoc methods, refer to "**IDoc OTD Methods**" on page 22.

The figure below shows an example of data mapping for an inbound SAP (ALE) Collaboration. To explore the business logic design for an actual Project, import the SAP_ALE_JCE_62 sample Project as described in **"Importing the Sample Projects" on page 50**.

Figure 57 Inbound Collaboration

SeeBeyond Enterprise Designer 5.0.4 - Collaboration Editor (Java) [SAP_ALE_Collab]	K S S
<u>F</u> ile Tools View Window <u>H</u> elp	
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Business Rules	
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Business Rules Designer	
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SAP_ALE_Collab SAP_AL	.E_Collab 🖾 📑
belagrav	input 🔩
↓ Text IDOC_CREMAS03_4X_620 IDOC_CREMAS03	4X 620 1 🚅
FileClient_1 inputEvent (byte[])	
IDOC_DREMAS03_4X_620_1	
Design	
SAP_ALE_Collab	

5.6.2 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**.

5.6.3 Building Inbound SAP Connectivity Maps

To build inbound SAP Connectivity Maps

- 1 Add other components such as other eWays and Collaborations to the Connectivity Map.
- 2 Drag the inbound Collaboration from the **Project Explorer** tab into the Collaboration icon in 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_ALE_JCE_62 sample Project as described in "Importing the Sample Projects" on page 50.

Figure 58 Connectivity Map



5.6.4 Building Outbound SAP Connectivity Maps

To build outbound SAP Connectivity Maps

- 1 Add other components such as other eWays and Collaborations to the Connectivity Map.
- 2 Drag the outbound Collaboration from the **Project Explorer** tab into the Collaboration icon in 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_ALE_JCE_62 sample Project as described in "Importing the Sample Projects" on page 50.



Figure 59 Outbound SAP Connectivity Map

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