SeeBeyond™ eBusiness Integration Suite

e*Way Intelligent Adapter for Siebel EIM User's Guide

Release 4.5.4

Java Version

SEEBEYOND™

Version 20021105053037.

Contents

Preface

This Preface contains information regarding the User's Guide itself.

P.1 Intended Reader

The reader of this guide is presumed to be a developer or system administrator with responsibility for maintaining the SeeBeyond™ e*Gate™ Integrator system, and have a working knowledge of:

- Operation and administration of the appropriate operating systems (see **e*Way Availability** on page 16)
- Windows-style GUI operations
- Siebel EIM concepts and operations
- Integrating Siebel EIM applications with external systems

P.2 Organization

This User's Guide is organized into two parts. The first part, consisting of Chapters 1-5, introduces the e*Way and describes the procedures for installing and setting up the e*Way, and implementing a working system incorporating the e*Way. This part should be of particular interest to a System Administrator or other user charged with the task of getting the system up and running.

The second part, consisting of Chapters 6-8, describes the details of e*Way operation and configuration, including descriptions of the exposed Java methods. This part should be of particular interest to a Developer involved in customizing the e*Way for a specific purpose. Information contained in this part that is necessary for the initial setup of the e*Way is cross-referenced in the first part of the guide, at the appropriate points in the procedures.

P.3 Nomenclature

Note that for purposes of brevity, the e*Way Intelligent Adapter for Siebel EIM is frequently referred to as the Siebel EIM e*Way, or simply the e*Way.

P.4 Online Use

This User's Guide is provided in Adobe Acrobat's Portable Document Format (PDF). As such, it can be printed out on any printer or viewed online. When viewing online, you can take advantage of the extensive hyperlinking imbedded in the document to navigate quickly throughout the Guide.

Hyperlinking is available in:

- The Table of Contents
- The Index
- Within the chapter text, indicated by **blue print**

Existence of a hyperlink *hotspot* is indicated when the hand cursor points to the text. Note that the hotspots in the Index are the *page numbers*, not the topics themselves. Returning to the spot you hyperlinked from is accomplished by right-clicking the mouse and selecting **Go To Previous View** on the resulting menu.

P.5 Writing Conventions

The writing conventions listed in this section are observed throughout this document.

Monospaced (Courier) Font

Computer code and text to be typed at the command line are set in Courier as shown below.

```
Configuration for BOB_Promotion

java -jar ValidationBuilder.jar
```

Variables within a command line, or attributes within a method signature, are set in italics as shown below:

```
stcregutil -rh host-name -un user-name -up password -sf
```

Bold Sans-serif Font

- User Input: Click **Apply** to save, or **OK** to save and close.
- File Names and Paths: In the **Open** field, type **D:\setup\setup.exe**.
- Parameter, Function, and Command Names: The default parameter **localhost** is usually used only for testing.

P.6 Additional Documentation

- Many of the procedures included in this User's Guide are described in greater detail in the *e*Gate Integrator User's Guide*
- For more information on the Java Collaboration Service, see the *e*Gate Integrator Collaboration Services Reference*
- For additional information on the Multi-Mode e*Way, see the *Standard e*Way Intelligent Adapter User's Guide*
- For additional information on the Oracle e*Way, see the *e*Way Intelligent Adapter for Oracle User's Guide*
- For additional information on the SQL Server e*Way, see the *e*Way Intelligent Adapter for SQL Server User's Guide*
- For additional information on the DB2 e*Way, see the *e*Way Intelligent Adapter for DB2 Universal Database User's Guide*
- For information on requirements for the Siebel environment, see the *Siebel System Requirements and Supported Platforms* document for the version of Siebel you are using
- For details regarding Siebel EIM, see the *Siebel Administration Guide*

Chapter 1

Introduction

This chapter provides a brief introduction to the SeeBeyond Java e*Way Intelligent Adapter for Siebel EIM.

1.1 Overview

The Java e*Way Intelligent Adapter for Siebel EIM provides bidirectional communications between e*Gate Integrator and the Siebel Enterprise Integration Manager (EIM). The e*Way provides an execution environment that oversees Siebel's EIM processes and dynamically creates Siebel IFB files (it also provides the option of generating IFB files manually). It uses the definitions in the IFB file to execute the command to run the Siebel EIM job, and can populate or extract data from the Siebel interface tables using elements of the SeeBeyond JDBC e*Way.

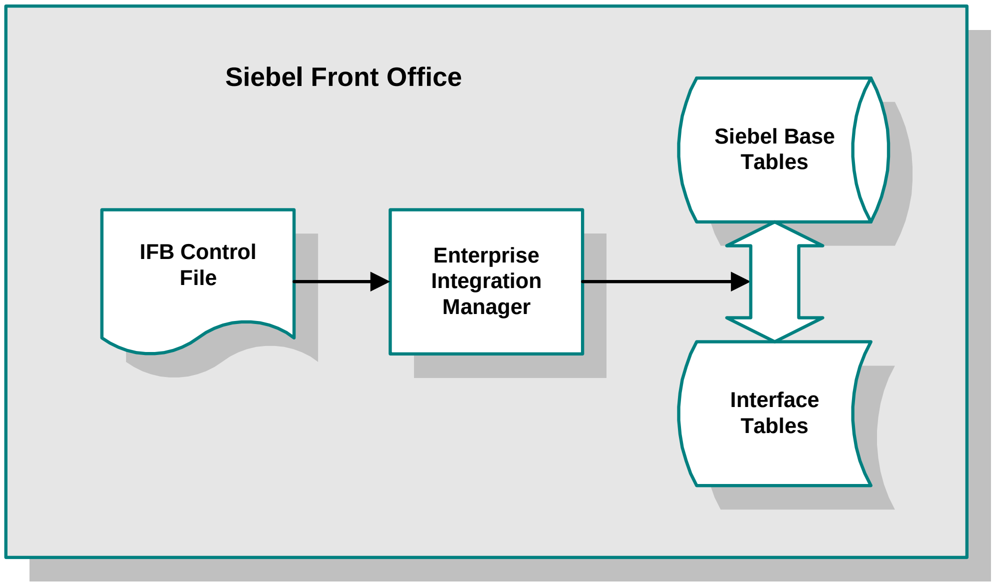
The e*Way also monitors the status of the job—if an error occurs during processing, the error is written into the log file and the e*Way alerts the e*Gate monitor. It incorporates detailed error logs, bad-Event Journaling, and reprocessing capabilities for the failed imported records during operation of the Siebel Enterprise Integration Manager. All Application Logic and Business Rules are enforced using Siebel EIM.

1.2 Communicating with Siebel

1.2.1 Siebel EIM

The Siebel Enterprise Integration Manager is the first step in exporting, and the last step in importing, data. The database consists of two main groups of tables, interface tables and base tables. The Siebel client application communicates directly with the highly normalized base tables. The interface tables are used as a staging area for importing, exporting, deleting and merging logical groups of data. Each interface table represents a subset of the data in a specific base table.

Figure 1 Siebel Enterprise Integration Manager



When run, EIM coordinates the transfer of data between the base and interface tables. In addition, EIM creates and writes codes and row IDs to the base tables that directly correspond to the complex set of business rules used by the Siebel client application to display data. The EIM process must run on the server also running the Transaction Processor.

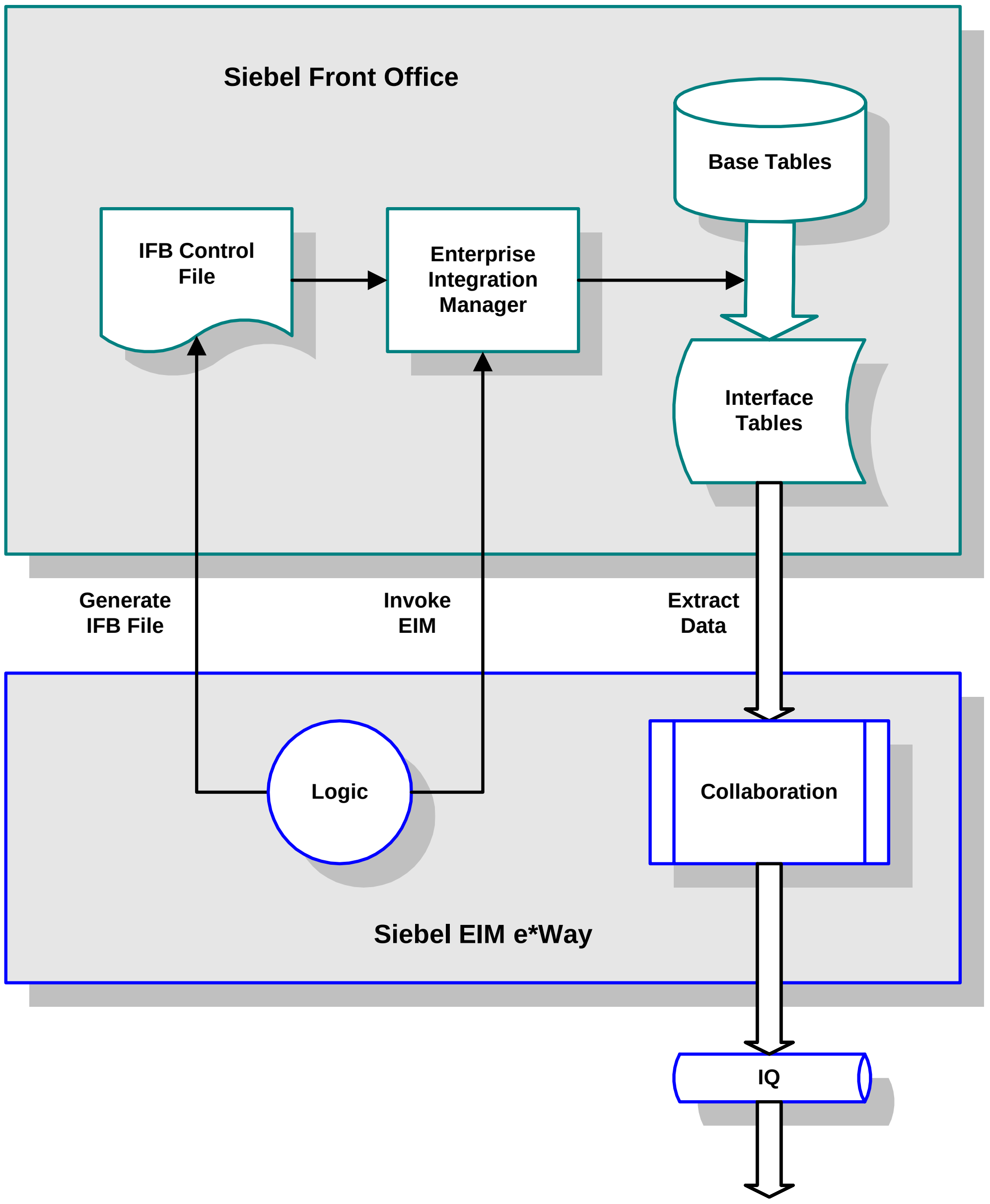
1.2.2 IFB Control File

A control file (***.ifb**) is used to determine what data types are loaded and how. The control file follows a certain format—it tells the interface how to log into the database and what process to run. It also lists the columns that the interface does *not* populate (in Siebel-inbound mode), thus preventing erroneous error messages. The IFB control file can be generated automatically by the e*Way or created manually, as configured by the user.

1.3 e*Way Operation

1.3.1 Siebel to e*Gate

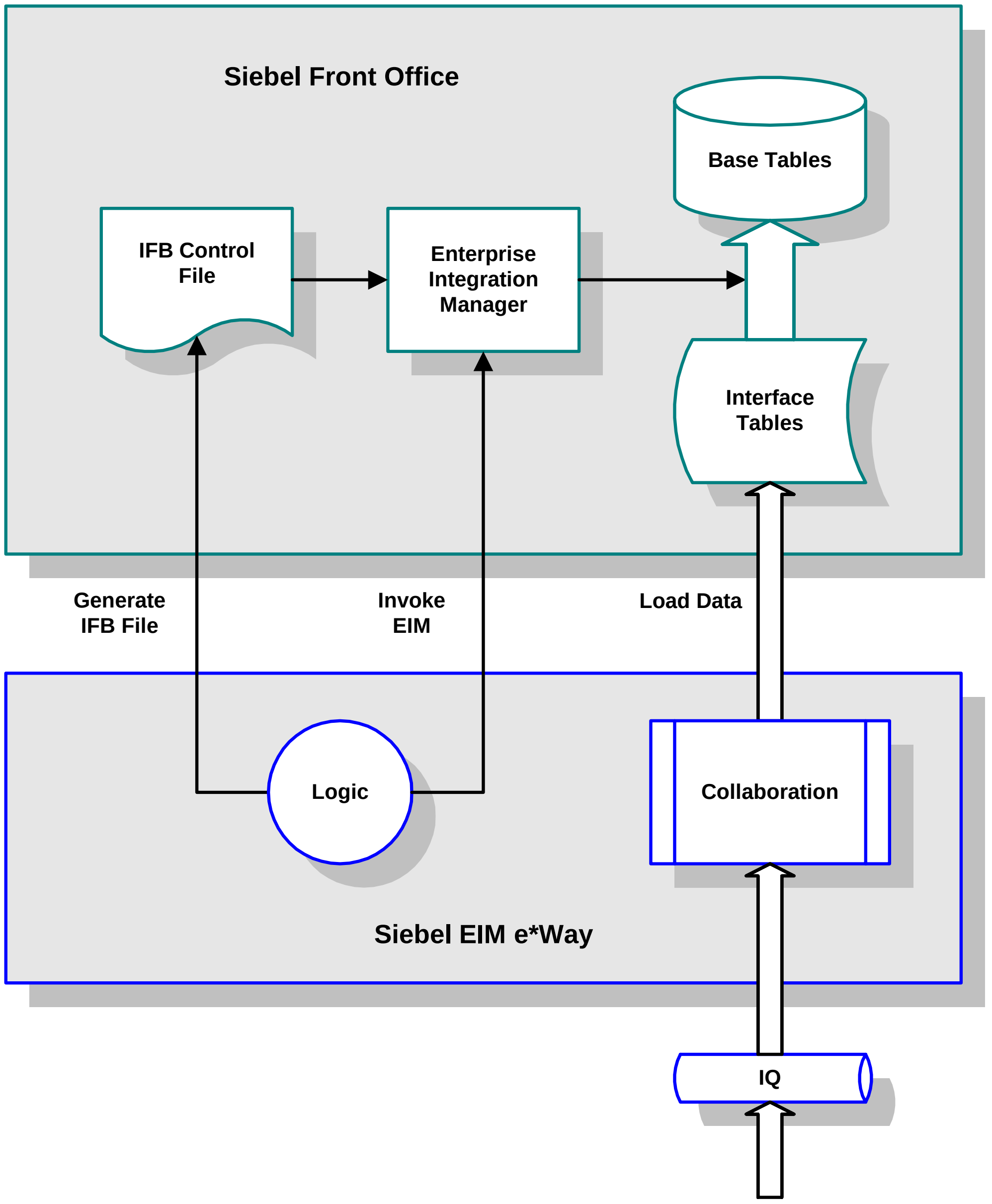
Figure 2 Siebel-to-e*Gate Process Flow



Following a prescribed schedule, the Siebel EIM e*Way sends an IFB file and invokes the Siebel EIM process. Following the definitions in the IFB control file, the EIM copies data from the Siebel Base Tables into the Interface Tables. The e*Way extracts the data from the Interface Tables and maps it into the desired Event Type Definition. The data then is passed to an Intelligent Queue for subsequent processing and/or routing to the target application by other e*Gate components.

1.3.2 e*Gate to Siebel

Figure 3 e*Gate-to-Siebel Process Flow



Following a prescribed schedule, the Siebel EIM e*Way extracts information from an e*Gate Intelligent Queue. The e*Way generates an IFB control file and sends it to Siebel. It then inserts validated rows of data into the interface table. Records that do not successfully load into the interface table are written to an error file for reprocessing. After the interface tables are populated, the e*Way initiates the Siebel EIM to load the data from the Interface Tables to the Siebel Base Tables.

1.4 e*Way Components

The Java e*Way Intelligent Adapter for Siebel EIM incorporates the following primary components:

- SeeBeyond Multi-Mode e*Way (installed with e*Gate):
  - **stceway.exe**
- Default Configuration Definition file:
  - **SiebelEIM.def**
- Java classes, contained in the following files:
  - **stcsiebeleim.jar**
- Supporting methods and Event Type Definitions

For a list of installed files, see **Installing the e*Way** on page 19.

1.5 e*Way Availability

The Java e*Way Intelligent Adapter for Siebel EIM currently supports the following combination of operating systems, database management systems, and Siebel versions.

English

Table 1 English-language Version

Operating System	Siebel		RDBMS		
	2000	7.0	DB2	Oracle	SQL
Windows XP	X	X	X	X	X
Windows 2000 SP1	X	X	X	X	X
Windows 2000 SP2	X	X	X	X	X
Windows NT 4.0 SP6a	X	X	X	X	X
Solaris 2.6	X	X	X	X	-
Solaris 7	X	X	X	X	-
Solaris 8	X	X	X	X	-
AIX 4.3.3	X	X	X	X	-

Japanese

Table 2 Japanese-language Version

Operating System	Siebel		RDBMS		
	2000	7.0	DB2	Oracle	SQL
Windows 2000 SP1 (Japanese)	X	X	-	X	X
Windows 2000 SP2 (Japanese)	X	X	-	X	X
Windows NT 4.0 SP6a (Japanese)	X	X	-	X	X

Note: *The e*Gate Enterprise Manager GUI runs only on the Windows operating system.*

Chapter 2

Installation

This chapter describes the requirements and procedures for installing the e*Way software. Procedures for implementing a working system, incorporating instances of the e*Way, are described in **Chapter 3**.

Note: *Please read the readme.txt file located in the addons\ewsiebeleim directory on the installation CD-ROM for important information regarding this installation.*

2.1 System Requirements

To use the Siebel EIM e*Way, you need the following:

1. An e*Gate Participating Host, version 4.5.1 or later. For Windows XP operating systems, an e*Gate Participating Host, version 4.5.3. or later.
2. A TCP/IP network connection.
3. Sufficient free disk space on both the Participating Host and the Registry Host to accommodate e*Way files (not including sample schemas):
    - Approximately 7.7 MB on Windows systems
    - Approximately 6.5 MB on Solaris systems
    - Approximately 6.7 MB s on AIX systems

   Additional disk space is required to process and queue the data that this e*Way processes; the amount necessary varies, based on the type and size of the data being processed.

2.2 External System Requirements

2.2.1 Siebel

To use the e*Way Intelligent Adapter for Siebel EIM, you need the following Siebel software:

- Siebel 2000 or 7.0
  - Siebel Database Server
  - Siebel Gateway Server
  - Siebel Server
- Siebel Tools

Please see the *Siebel System Requirements and Supported Platforms* document for the version of Siebel you are using (see also **e*Way Availability** on page 16).

2.2.2 RDBMS

To use the e*Way Intelligent Adapter for Siebel EIM, you need one of the following relational database systems installed with Siebel, along with the appropriate client software:

- Oracle 8.1.7
- SQL Server 2000
- DB2 7.2

Please see the *Siebel System Requirements and Supported Platforms* document for the version of Siebel you are using (see also **e*Way Availability** on page 16).

2.3 External Configuration Requirements

Most installations of Siebel applications require some customization of the Data Model to meet the client's specific requirements. We assume that any customization of Siebel required for your implementation has been performed previous to the installation of e*Gate. No special configuration of the Siebel application is required to interface with e*Gate.

2.4 Installing the e*Way

2.4.1 Windows Systems

Installation Procedure

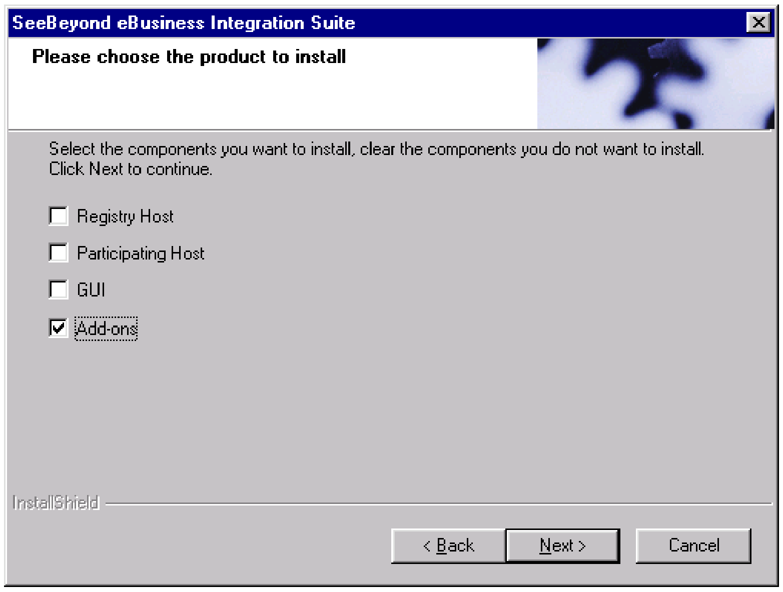
Note: *The installation utility detects and suggests the appropriate installation directory. Use this directory unless advised otherwise by SeeBeyond.*

To Install the e*Way on a Microsoft Windows System

1. Log in as an Administrator on the workstation on which you want to install the e*Way (*you must have Administrator privileges to install this e*Way*).
2. Exit all Windows programs and disable any anti-virus applications before running the setup program.
3. Insert the e*Way installation CD-ROM into the CD-ROM drive.
4. Launch the setup program.

   A. If the CD-ROM drive's Autorun feature is enabled, the setup program should launch automatically. Follow the on-screen instructions until the **Choose Product** dialog box appears (see Figure 4). Check **Add-ons**, then click **Next**.

Figure 4 Choose Product Dialog


SeeBeyond eBusiness Integration Suite

Please choose the product to install

Select the components you want to install, clear the components you do not want to install.
Click Next to continue.

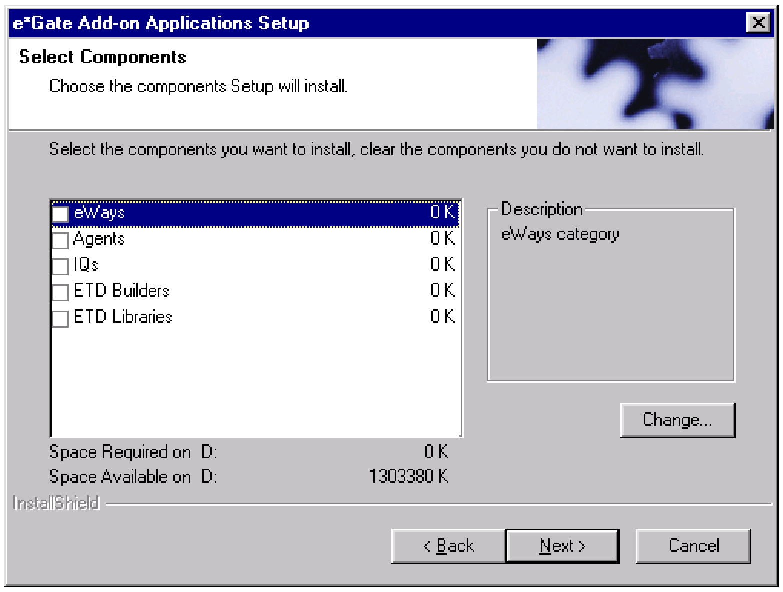
- [ ] Registry Host
- [ ] Participating Host
- [ ] GUI
- [x] Add-ons

   B. If the setup program does not launch automatically, use the Windows Explorer or the Control Panel's **Add/Remove Applications** feature to launch the following file on the CD-ROM drive (bypassing the **Choose Product** dialog):

```
setup\addons\setup.exe
```

5 Follow the on-screen instructions until the **Select Components** dialog box appears (see Figure 5). Highlight—*but do not check*—**eWays** and then click **Change**.

Figure 5 Select Components Dialog



e*Gate Add-on Applications Setup

Select Components

Choose the components Setup will install.

Select the components you want to install, clear the components you do not want to install.

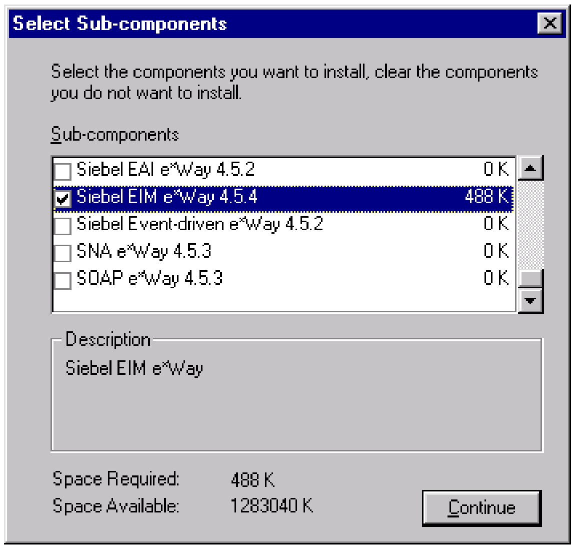
☐ eWays	0 K
☐ Agents	0 K
☐ IQs	0 K
☐ ETD Builders	0 K
☐ ETD Libraries	0 K

Description
eWays category

Space Required on D: 0 K
Space Available on D: 1303380 K

6 When the **Select Sub-components** dialog box appears (see Figure 6), check the **Siebel EIM eWay 4.5.4**.

Figure 6 Select Sub-components Dialog



Select Sub-components

Select the components you want to install, clear the components you do not want to install.

Sub-components

☐ Siebel EAI e*Way 4.5.2	0 K
✓ Siebel EIM e*Way 4.5.4	488 K
☐ Siebel Event-driven e*Way 4.5.2	0 K
☐ SNA e*Way 4.5.3	0 K
☐ SOAP e*Way 4.5.3	0 K

Description
Siebel EIM e*Way

Space Required: 488 K
Space Available: 1283040 K

7 Click **Continue**, and the **Select Components** dialog box reappears, showing your selection. Note that several database e*Ways are also listed.

8 Click **Next** and continue with the installation.

Subdirectories and Files

Note: *Installing the e*Way Intelligent Adapter for Siebel EIM installs both Java and Monk versions, and also elements of several database e*Ways. Only the files used by the Java version of the Siebel EIM e*Way are listed in this section. The files installed for the other e*Ways are listed in their respective User's Guides.*

By default, the InstallShield installer creates the following subdirectories and installs the following files within the **\eGate\client** tree on the Participating Host, and the **\eGate\Server\registry\repository\default** tree on the Registry Host.

Table 3 Participating Host & Registry Host

Subdirectories	Files
\classes\	stcsiebeleim.jar
\configs\siebeleim\	SiebelEIM.def
\etd\	siebeleim.ctl
\etd\siebeleim\	SiebelEIM.xsc

By default, the InstallShield installer also installs the following files within the **\eGate\Server\registry\repository\default** tree on the Registry Host.

Table 4 Registry Host Only

Subdirectories	Files
\	stcewsiebeleim.ctl

Environment Configuration

No changes are required to the Participating Host's operating environment to support this e*Way.

2.4.2 UNIX Systems

Installation Procedure

Note: *You are not required to have root privileges to install this e*Way. Log on under the user name that you wish to own the e*Way files. Be sure that this user has sufficient privilege to create files in the e*Gate directory tree.*

To Install the e*Way on a UNIX System

1 Log onto the workstation containing the CD-ROM drive and, if necessary, mount the drive.

2 Insert the e*Way installation CD-ROM into the CD-ROM drive.

3 At the shell prompt, type

cd /cdrom

4 Start the installation script by typing:

setup.sh

5 A menu of options appears. Select the **Install e*Way** option and follow any additional on-screen instructions.

Note: *The installation utility detects and suggests the appropriate installation directory. Use this directory unless advised otherwise by SeeBeyond. Note also that* ***no spaces*** *should appear in the installation path name.*

Subdirectories and Files

Note: *Installing the e*Way Intelligent Adapter for Siebel EIM installs both Java and Monk versions, and also elements of several database e*Ways. Only the files used by the Java version of the Siebel EIM e*Way are listed in this section. The files installed for the other e*Ways are listed in their respective User's Guides.*

The preceding installation procedure creates the following subdirectories and installs the following files within the **/eGate/client** tree on the Participating Host, and the **/eGate/Server/registry/repository/default** tree on the Registry Host.

Table 5 Participating Host & Registry Host

Subdirectories	Files
/classes/	stcsiebeleim.jar
/configs/siebeleim/	SiebelEIM.def
/etd/	siebeleim.ctl
/etd/siebeleim/	SiebelEIM.xsc

The preceding installation procedure also installs the following files only within the **/eGate/Server/registry/repository/default** tree on the Registry Host.

Table 6 Registry Host Only

Subdirectories	Files
/	stcewsiebeleim.ctl

Environment Configuration

No changes are required to the Participating Host's operating environment to support this e*Way.

2.5 Optional Example Files

The installation CD contains sample schemas located in the **samples\ewsiebeleim** directory. To use these schemas, you must load them onto your system using the following procedure. See **Sample Schema** on page 50 for descriptions of the sample schemas and instructions regarding their use.

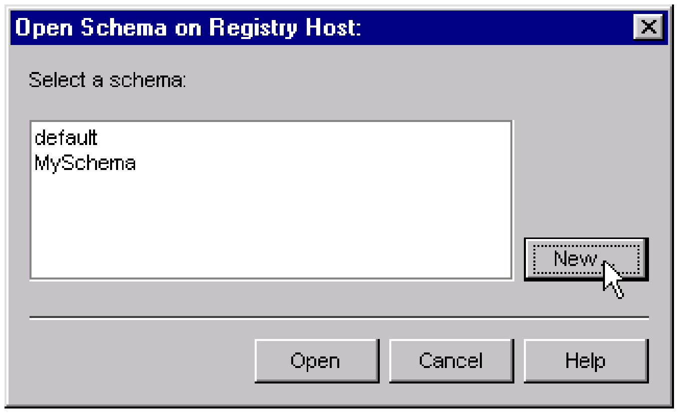
Note: *The Siebel EIM e*Way must be properly installed on your system before you can run the sample schema.*

2.5.1 Installation Procedure

To load a sample schema

1 Invoke the **Open Schema** dialog box and select **New** (see Figure 7).

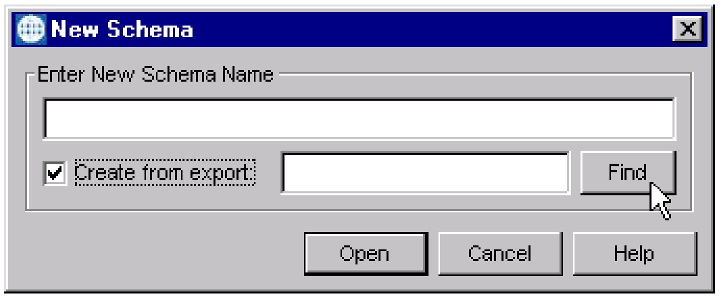
Figure 7 Open Schema Dialog



2 Type the name you want to give to the schema (for example, **EIM_Post.Sample**)

3 Select **Create from export** and navigate to the directory containing the sample schema by clicking the **Find** button (see Figure 8).

Figure 8 New Schema Dialog



4 Select the desired ***.zip** file and click **Open**.

Note: *The schema installs with the host name* **localhost** *and control broker name* **localhost_cb**. *If you want to assign your own names, copy the file* ***.zip** *to a local directory and extract the files. Using a text editor, edit the file* ***.exp**, *replacing all instances of the name* **localhost** *with your desired name. Add the edited* **.exp** *file back into the* **.zip** *file.*

2.5.2 Subdirectories and Files

The preceding procedure creates the following subdirectories and installs the following files within the **\eGate\Server\registry\repository\<SchemaName>** tree on the Registry Host, where **<SchemaName>** is the name you have assigned to the schema in step 2.

Siebel 2000

Table 7 Subdirectories and Files - Java_Siebel6_EIM_Extract

Subdirectories	Files
\runtime\	Java_Siebel_EIM_Extract2.ctl
\runtime\collaboration_rules\	FromSiebelEIM.class FromSiebelEIM.ctl FromSiebelEIM.java FromSiebelEIM.xpr FromSiebelEIM.xts FromSiebelEIMBase.class
\runtime\configs\oracle\	EIM_DB.cfg EIM_DB.sc
\runtime\configs\siebeleim\	EIMExtract.cfg EIMExtract.sc
\runtime\configs\stcewfile\	EIM_Eater.cfg EIM_Eater.sc Feeder_Trigger.cfg Feeder_Trigger.sc
\runtime\etd\	DbEimAccount.jar DbEimAccount.xbs DbEimAccount.xsc GenericBlob.jar GenericBlob.ssc GenericBlob.xsc GenericEvent.jar GenericEvent.ssc GenericEvent.xsc Siebel7DbEimAccount.jar Siebel7DbEimAccount.xbs Siebel7DbEimAccount.xsc

Table 8 Subdirectories and Files - Java_Siebel6_EIM_Post

Subdirectories	Files
\runtime\	Java_Siebel_EIM_Post2.ctl
\runtime\collaboration_rules\	ToSiebelEIM.class ToSiebelEIM.ctl ToSiebelEIM.java ToSiebelEIM.xpr ToSiebelEIM.xts ToSiebelEIMBase.class
\runtime\configs\oracle\	EIM_DB.cfg EIM_DB.sc EIM_DBinsert.cfg EIM_DBinsert.sc
\runtime\configs\siebeleim\	EIM_DBinsert.cfg EIM_DBinsert.sc eim_post.cfg eim_post.sc EIMExtract.cfg EIMExtract.sc
\runtime\configs\stcewfile\	EIM_Eater.cfg EIM_Eater.sc Feeder_Trigger.cfg Feeder_Trigger.sc
\runtime\etd\	AccountData.jar AccountData.xbs AccountData.xsc DbEimAccount.jar DbEimAccount.xbs DbEimAccount.xsc GenericBlob.jar GenericBlob.ssc GenericBlob.xsc GenericEvent.jar GenericEvent.ssc GenericEvent.xsc Siebel7DbEimAccount.jar Siebel7DbEimAccount.xbs Siebel7DbEimAccount.xsc
\sandbox\Administrator\collaboration_rules\	(empty)

Table 8 Subdirectories and Files - Java_Siebel6_EIM_Post

Subdirectories	Files
\sandbox\Administrator\etd\	AccountData.jar AccountData.xbs AccountData.xsc DbEimAccount.jar DbEimAccount.xbs DbEimAccount.xsc GenericBlob.jar GenericBlob.ssc GenericBlob.xsc GenericEvent.jar GenericEvent.ssc GenericEvent.xsc Siebel7DbEimAccount.jar Siebel7DbEimAccount.xbs Siebel7DbEimAccount.xsc
\sandbox\Administrator\etd\template\	AccountData.jar AccountData.ssc AccountData.xsc

Siebel 7

Table 9 Subdirectories and Files - Java_Siebel7_EIM_Extract

Subdirectories	Files
\runtime\	Java_Siebel7_EIM_Extract.ctl
\runtime\collaboration_rules\	FromSiebelEIM.class FromSiebelEIM.ctl FromSiebelEIM.java FromSiebelEIM.xpr FromSiebelEIM.xts FromSiebelEIMBase.class
\runtime\configs\oracle\	EIM_DB.cfg EIM_DB.sc
\runtime\configs\siebeleim\	EIMExtract.cfg EIMExtract.sc
\runtime\configs\stcewfile\	EIM_Eater.cfg EIM_Eater.sc Feeder_Trigger.cfg Feeder_Trigger.sc
\runtime\etd\	DbEimAccount.jar DbEimAccount.xbs DbEimAccount.xsc GenericBlob.jar GenericBlob.ssc GenericBlob.xsc GenericEvent.jar GenericEvent.ssc GenericEvent.xsc Siebel7DbEimAccount.jar Siebel7DbEimAccount.xbs Siebel7DbEimAccount.xsc
\sandbox\Administrator\configs\oracle\	(empty)
\sandbox\Administrator\configs\siebeleim\	(empty)
\sandbox\Administrator\etd\	DbEimAccount.jar DbEimAccount.xbs DbEimAccount.xsc GenericBlob.jar GenericBlob.ssc GenericBlob.xsc GenericEvent.jar GenericEvent.ssc GenericEvent.xsc Siebel7DbEimAccount.jar Siebel7DbEimAccount.xbs Siebel7DbEimAccount.xsc
\userlocks\configs\oracle\	(empty)
\sandbox\configs\siebeleim\	(empty)

Table 9 Subdirectories and Files - Java_Siebel7_EIM_Extract

Subdirectories	Files
\sandbox\etd\	DbEimAccount.jar DbEimAccount.xbs DbEimAccount.xsc GenericBlob.jar GenericBlob.ssc GenericBlob.xsc GenericEvent.jar GenericEvent.ssc GenericEvent.xsc Siebel7DbEimAccount.jar Siebel7DbEimAccount.xbs Siebel7DbEimAccount.xsc

Table 10 Subdirectories and Files - Java_Siebel7_EIM_Post

Subdirectories	Files
\runtime\	Java_Siebel7_EIM_Post.ctl
\runtime\collaboration_rules\	ToSiebelEIM.class ToSiebelEIM.ctl ToSiebelEIM.java ToSiebelEIM.xpr ToSiebelEIM.xts ToSiebelEIMBase.class
\runtime\configs\oracle\	EIM_DB.cfg EIM_DB.sc EIM_DBinsert.cfg EIM_DBinsert.sc
\runtime\configs\siebeleim\	EIM_DBinsert.cfg EIM_DBinsert.sc eim_post.cfg eim_post.sc EIMExtract.cfg EIMExtract.sc
\runtime\configs\stcewfile\	EIM_Eater.cfg EIM_Eater.sc Feeder_Trigger.cfg Feeder_Trigger.sc

Table 10 Subdirectories and Files - Java_Siebel7_EIM_Post

Subdirectories	Files
\runtime\etd\	AccountData.jar AccountData.xbs AccountData.xsc DbEimAccount.jar DbEimAccount.xbs DbEimAccount.xsc GenericBlob.jar GenericBlob.ssc GenericBlob.xsc GenericEvent.jar GenericEvent.ssc GenericEvent.xsc Siebel7DbEimAccount.jar Siebel7DbEimAccount.xbs Siebel7DbEimAccount.xsc
\sandbox\Administrator\collaboration_rules\	(empty)
\sandbox\Administrator\etd\	AccountData.jar AccountData.xbs AccountData.xsc DbEimAccount.jar DbEimAccount.xbs DbEimAccount.xsc GenericBlob.jar GenericBlob.ssc GenericBlob.xsc GenericEvent.jar GenericEvent.ssc GenericEvent.xsc Siebel7DbEimAccount.jar Siebel7DbEimAccount.xbs Siebel7DbEimAccount.xsc
\sandbox\Administrator\etd\template\	AccountData.jar AccountData.ssc AccountData.xsc

Table 10 Subdirectories and Files - Java_Siebel7_EIM_Post

Subdirectories	Files
\userlocks\etd\	AccountData.jar AccountData.xbs AccountData.xsc DbEimAccount.jar DbEimAccount.xbs DbEimAccount.xsc GenericBlob.jar GenericBlob.ssc GenericBlob.xsc GenericEvent.jar GenericEvent.ssc GenericEvent.xsc Siebel7DbEimAccount.jar Siebel7DbEimAccount.xbs Siebel7DbEimAccount.xsc
\userlocks\etd\template\	AccountData.jar AccountData.ssc AccountData.xsc

Chapter 3

System Implementation

In this chapter we summarize the procedures required for implementing a working system incorporating the Java e*Way Intelligent Adapter for Siebel EIM. Please see the *e*Gate Integrator User's Guide* for additional information.

3.1 Overview

This e*Way provides a specialized transport component for incorporation in an operational schema. The schema also contains Collaborations, linking different data or Event types, and Intelligent Queues. Typically, other e*Way types also is used as components of the schema.

One or more sample schemas, included in the software package, are described at the end of this chapter. These can be used to test your system following installation and, if appropriate, as a template that you can modify to produce your own schema.

3.1.1 Pre-Implementation Tasks

Install the SeeBeyond Software

The first task is to install the SeeBeyond software as described in **Chapter 2**.

Import the Sample Schema

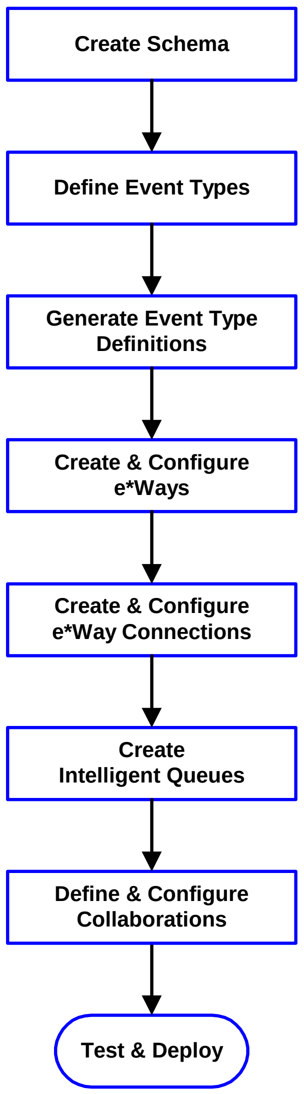
If you want to use the sample schema supplied with the e*Way, the schema files must be imported from the installation CD-ROM (see **Optional Example Files** on page 24).

Note: *It is highly recommended that you make use of the sample schemas to familiarize yourself with e*Way operation, test your system, and use as templates for your working schemas.*

3.1.2 Known Cautions

Note: *When DB2 UDB is employed as a Siebel RDMS, you must match the datatype **exactly**, because of the strict type binding enforced by DB2.*

3.1.3 Implementation Sequence


Create Schema
Define Event Types
Generate Event Type Definitions
Create & Configure e*Ways
Create & Configure e*Way Connections
Create Intelligent Queues
Define & Configure Collaborations
Test & Deploy

1 The first step is to create a new Schema—the subsequent steps apply only to this Schema (see **Creating a Schema** on page 34).

2 The second step is to define the Event Types you are transporting and processing within the Schema (see **Creating Event Types** on page 35).

3 Third, you need to associate the Event Types created in the previous step with Event Type Definitions (ETDs) derived from the applicable Business Rules (see **Generating Event Type Definitions** on page 36).

4 The fourth step is to create and configure the required e*Ways (see **Setting Up the e*Way** on page 54).

5 The fifth step is to configure the e*Way Connections (see **Creating e*Way Connections** on page 61).

6 Now you need to create Intelligent Queues to hold published Events (see **Creating Intelligent Queues** on page 47

7 Next you need to define and configure the Collaborations between Event Types (see **Defining Collaborations** on page 48).

8 Finally, you must test your Schema. Once you have verified that it is working correctly, you may deploy it to your production environment.

3.1.4 Viewing e*Gate Components

Use the Navigator and Editor panes of the e*Gate Enterprise Manager to view the various e*Gate components. Note that you may only view components of a single schema at one time, and that all operations apply only to the current schema. All procedures in this chapter should be performed while displaying the **Components** Navigator pane. See the *e*Gate Integrator User's Guide* for a detailed description of the features and use of the Enterprise Manager.

3.2 Creating a Schema

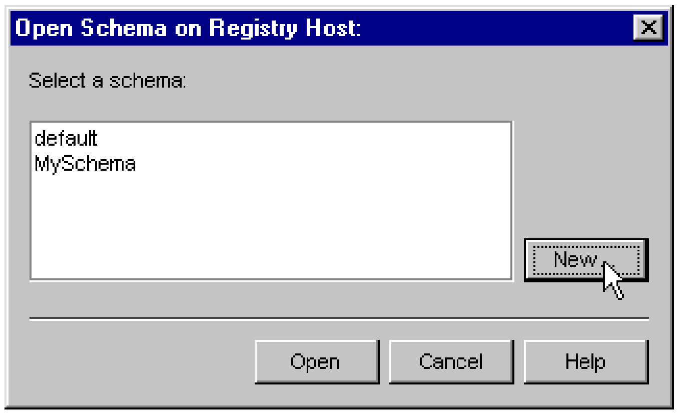
A schema is the structure that defines e*Gate system parameters and the relationships between components within the e*Gate system. Schemas can span multiple hosts.

Because all setup and configuration operations take place within an e*Gate schema, a new schema must be created, or an existing one must be started before using the system. Schemas store all their configuration parameters in the e*Gate Registry.

To select or create a schema

1 Invoke the **Open Schema** dialog box and **Open** an existing schema or click **New** to create a new schema.

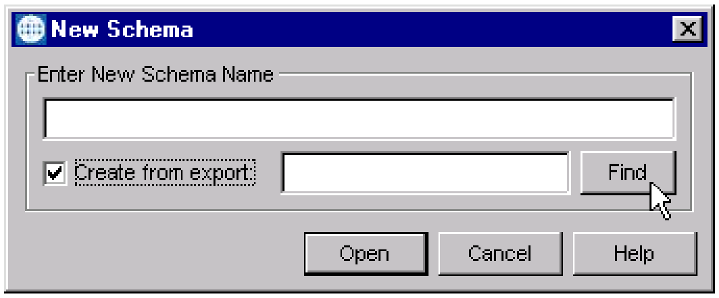
Figure 9 Open Schema Dialog



default
MySchema

2 Clicking **New** invokes the **New Schema** dialog box (Figure 10).

Figure 10 New Schema Dialog



3 Enter a new schema name and click **Open**.

4 The e*Gate Enterprise Manager then opens under your new schema name.

5 From the **Options** menu, click on **Default Editor** and select **Java**.

6 Select the **Components** tab, found at the bottom of the Navigator pane of the e*Gate Enterprise Manager window.

7 You are now ready to begin creating the necessary components for this new schema.

3.3 Creating Event Types

Within e*Gate, messages and/or packages of data are defined as Events. Each Event must be categorized into a specific Event Type within the schema.

To define the Event Types

1. In the e*Gate Enterprise Manager's Navigator pane, select the **Event Types** folder.
2. On the Palette, click the **New Event Type** button .
3. In the **New Event Type Component** box, enter the name for the input Event Type and click **Apply**. Use this method to create all required Event Types, for example:
   - **InboundEvent**
   - **ValidEvent**
   - **InvalidEvent**
4. After you have created the final Event Type, click **OK**.

3.4 Generating Event Type Definitions

3.4.1 Using the DBWizard ETD Builder

The DBWizard ETD Builder generates Java-enabled ETDs by connecting to external data sources and creating corresponding Event Type Definitions. The ETD Builder can create ETDs based on any combination of tables, stored procedures, or prepared SQL statements.

Field nodes are added to the ETD based on the tables in the external data source. Java method and parameter nodes are added to provide the appropriate JDBC functionality. For more information on the Java methods, refer to your JDBC developer's reference.

Note: *For Japanese, Korean and Traditional Chinese operating systems, you must use English table names, and English column names within the tables (DBCS is not supported).*

Please note that the DB Wizard is using ODBC standard data types. Specific data types that are not ODBC standard will not be supported. For example Oracle specific data type of PL/SQL TABLE.

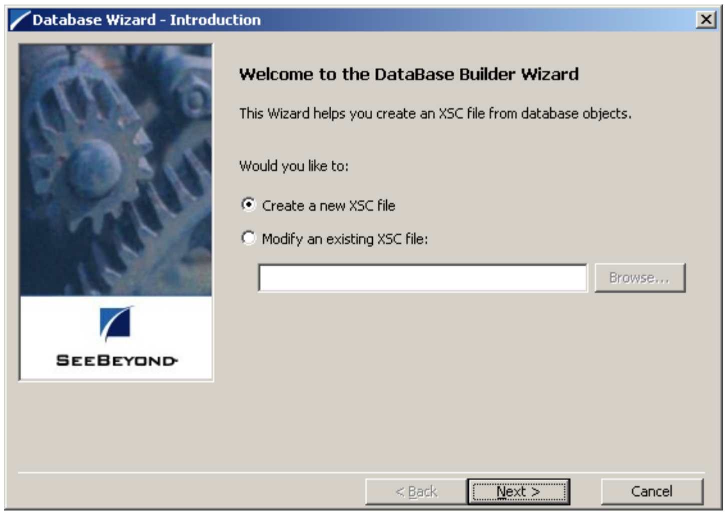
To create a new ETD using the DBWizard

1. From the **Options** menu of the Enterprise Manager, choose **Default Editor**.
2. Verify that **Java** is selected, then click **OK**.
3. Click the **ETD Editor** button to launch the Java ETD Editor.
4. In the Java ETD Editor, click the **New** button to launch the New Event Type Definition window.
5. In the New Event Type Definition window, select the **DBWizard** and click **OK** to continue.

Figure 11 DBWizard Icon

6. Enter the name of the new **.xsc** file you want to create or enter the name of the **.xsc** file you want to edit by browsing to its location.

Figure 12 Database Wizard - Introduction



Welcome to the DataBase Builder Wizard

This Wizard helps you create an XSC file from database objects.

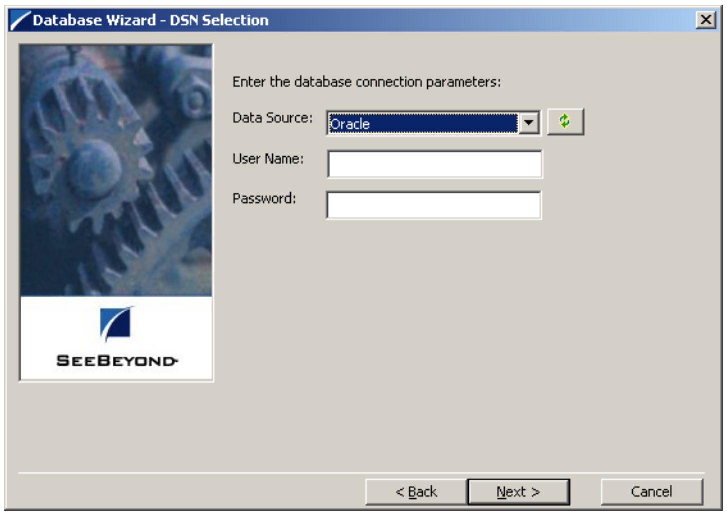
Would you like to:

[✓ Create a new XSC file]

Modify an existing XSC file:

7 Select your **Data Source:** from the drop down list and enter your **User Name:** and **Password:**.

Figure 13 Database Wizard - DSN Selection



Enter the database connection parameters:

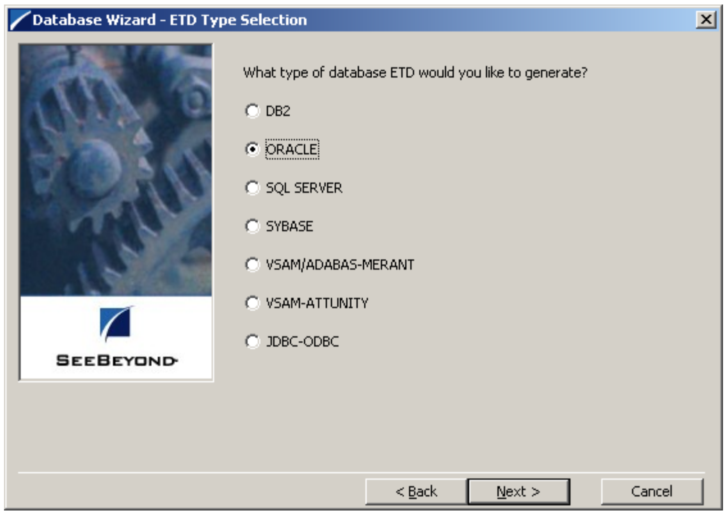
Data Source: Oracle

User Name:

Password:

8 Select what type of database ETD you would like to generate. The data source you selected in the **Database Wizard - DSN Selection** window is the default. *Note: Do not change this unless instructed to do so by SeeBeyond personnel.*

Figure 14 Database Wizard - ETD Type Selection



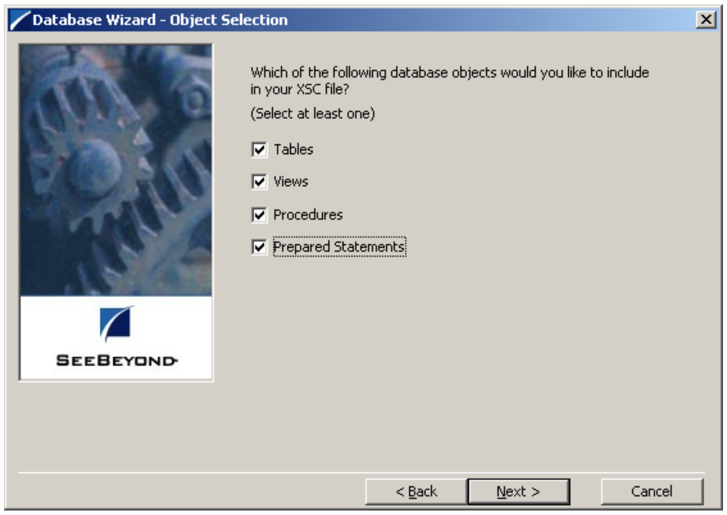
What type of database ETD would you like to generate?

- ( ) DB2
- (●) ORACLE
- ( ) SQL SERVER
- ( ) SYBASE
- ( ) VSAM/ADABAS-MERANT
- ( ) VSAM-ATTUNITY
- ( ) JDBC-ODBC

9 In the **Database Wizard - Object Selection** window, select any combination of **Tables**, **Views**, **Procedures**, or **Prepared Statements** you would like to include in your **.xsc** file.

10 Click **Next** to continue.

Figure 15 Database Wizard - Object Selection

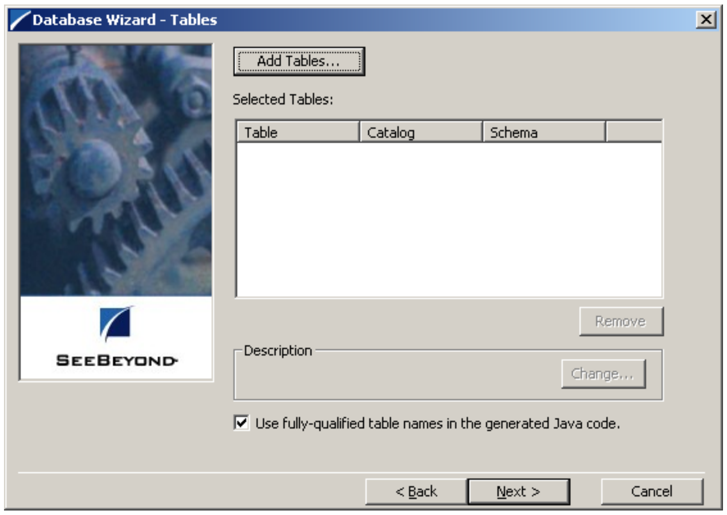


Which of the following database objects would you like to include in your XSC file?
(Select at least one)

- [✓] Tables
- [✓] Views
- [✓] Procedures
- [✓] Prepared Statements

11 In the **Database Wizard - Tables** window, click **Add Tables**.

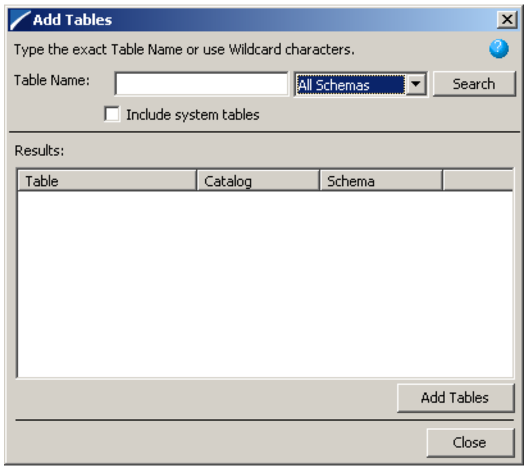
Figure 16 Database Wizard - Tables



☑ Use fully-qualified table names in the generated Java code.

12 In the **Add Tables** window, type the exact name of the database table or use wildcard characters to return table names.

Figure 17 Add Tables

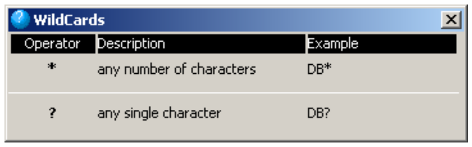


Type the exact Table Name or use Wildcard characters.

13 To see a list of valid wildcard characters, click the round ball with a question mark located in its center.

Note: *When using the Oracle native ODBC driver with the DB Wizard to search for a table, view, or procedure, do not use '_' or '%'. Doing so will result in nothing being returned. Use the e*Way wildcard characters of '?', and '*'. For example, searching for tables "AB_CD", will return nothing. Use "AB?CD" or "AB*CD".*

Figure 18 Wildcards



WildCards

Operator	Description	Example
*	any number of characters	DB*
?	any single character	DB?

14 Select **Include System Tables** if you wish to include them and click **Search**. If your search was successful, you will see the results in the Results window. To select the name of the tables you wish to add to your **.xsc**, double click on the table name or highlight the table names and click **Add Tables**. You may also use adjacent selections or nonadjacent selections to select multiple table names. When you have finished, click **Close**.

15 In the **Database Wizard - Tables** window, review the tables you have selected. If you would like to change any of the tables columns you have selected, click **Change**.

16 In the **Columns Selection** window, you can select or deselect your table columns. You can also change the data type for each table by highlighting the data type and selecting a different data type from the drop down list. Once you have completed your choices, click **OK**.

Figure 19 Columns Selection

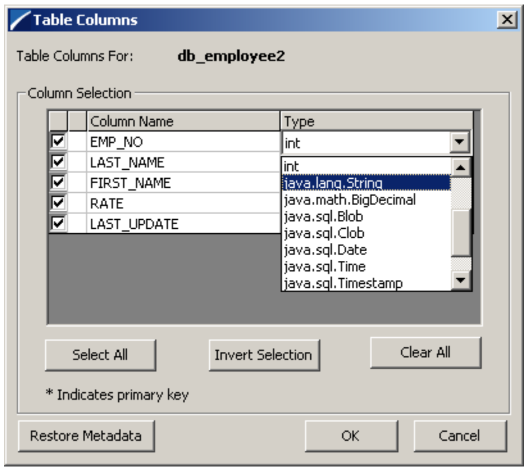


Table Columns

Table Columns For: db_employee2

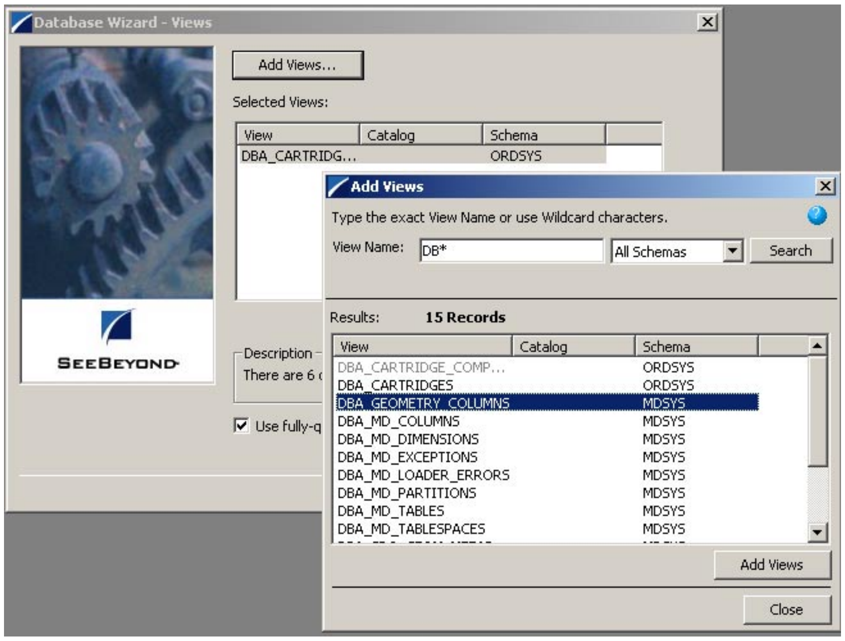
Column Selection

	Column Name	Type
✓	EMP_NO	int
✓	LAST_NAME	
✓	FIRST_NAME	
✓	RATE	
✓	LAST_UPDATE	

17 In the **Database Wizard - Tables** window, review the tables you have selected. If you do not want to use fully-qualified table names in the generated Java code, click to clear the check box and click **Next** to continue.

18 If you selected **Views** on the **Database Wizard - Object Selection** window, you are presented with the **Database Wizard - Views** window. Follow steps 9 - 17 to select and add views to your **.xsc**. Views are read-only.

Figure 20 Database Wizard - Views



View	Catalog	Schema
DBA_CARTRIDG...		ORDSYS

Description
There are 6 c

Type the exact View Name or use Wildcard characters.

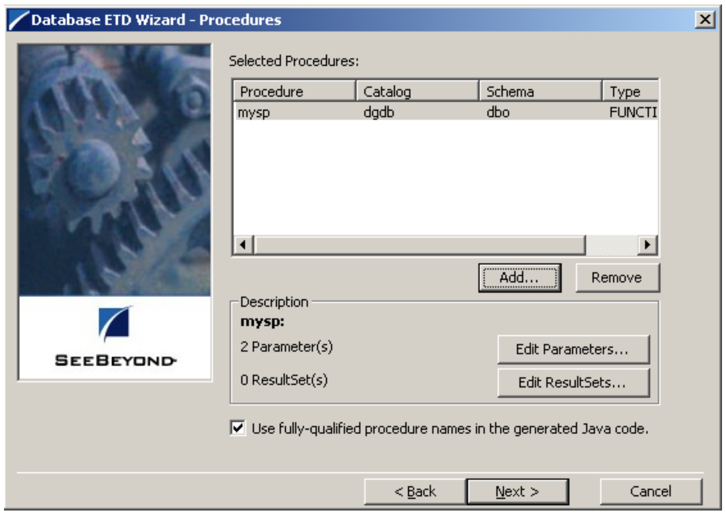
View Name: DB* All Schemas

Results: **15 Records**

View	Catalog	Schema
DBA_CARTRIDGE_COMP...		ORDSYS
DBA_CARTRIDGES		ORDSYS
DBA_GEOMETRY_COLUMNS		MDSYS
DBA_MD_COLUMNS		MDSYS
DBA_MD_DIMENSIONS		MDSYS
DBA_MD_EXCEPTIONS		MDSYS
DBA_MD_LOADER_ERRORS		MDSYS
DBA_MD_PARTITIONS		MDSYS
DBA_MD_TABLES		MDSYS
DBA_MD_TABLESPACES		MDSYS

19 If you selected **Procedures** on the **Database Wizard - Object Selection** window, you are presented with the **Database Wizard - Procedures** window. Follow steps 9 - 15 to select and add **Procedures** to your **.xsc**. If you do not want to use fully-qualified procedure names in the generated Java code, click to clear the check box and click **Next** to continue.

Figure 21 Database Wizard - Procedures



Selected Procedures:

Procedure	Catalog	Schema	Type
mysp	dgdb	dbo	FUNCTI

Description
mysp:
2 Parameter(s)
0 ResultSet(s)

☑ Use fully-qualified procedure names in the generated Java code.

20 If you selected **Prepared Statements** on the **Database Wizard - Object Selection** window, you are presented with the **Database Wizard - Prepared Statement** window. To add **Prepared Statements** to your **.xsc**. complete the following steps:

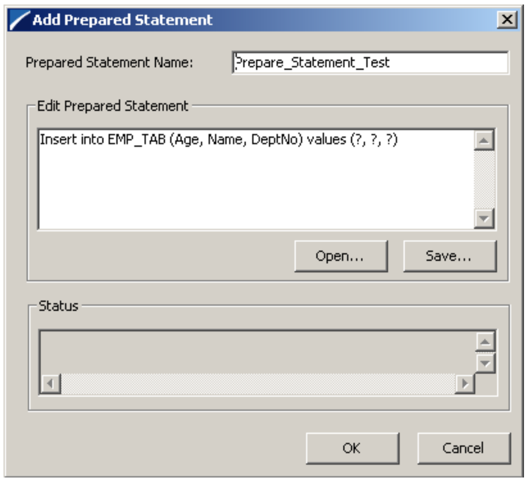
A Click **Add** to add a new prepared statement

B Enter a prepared SQL statement.

C Enter the **Prepared Statement Name** to be used by the statement.

D Use the **Open…** or **Save…** button to open pre-existing statements or save the current one. SeeFigure 22.

Figure 22 Add Prepared Statement



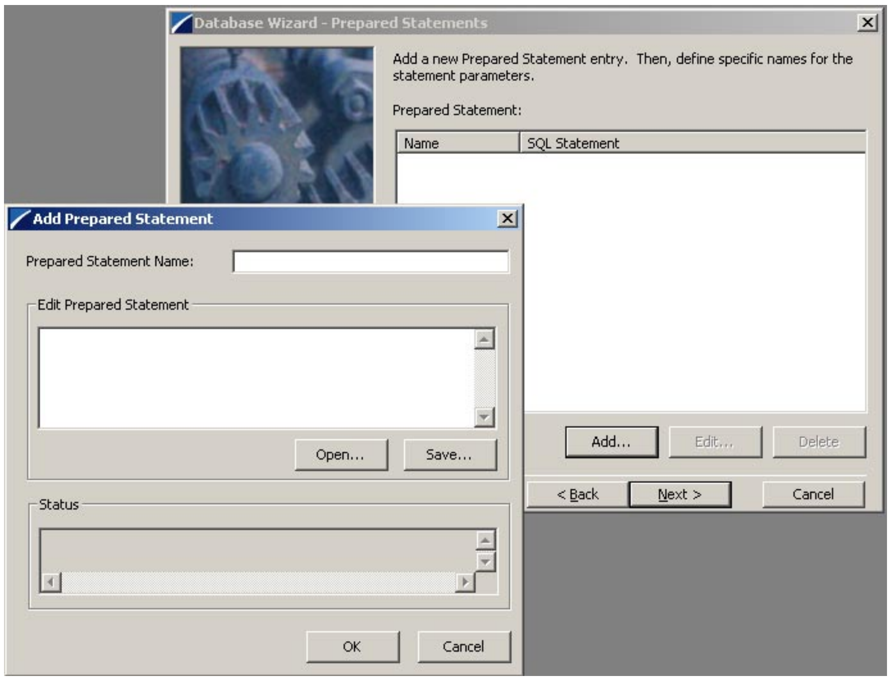
Prepare_Statement_Test

Insert into EMP_TAB (Age, Name, DeptNo) values (?, ?, ?)

E Click **OK** to return to the **Database Wizard - Prepared Statements** window.

21 Repeat steps A–E to add additional prepared statements or click **Next** to continue.

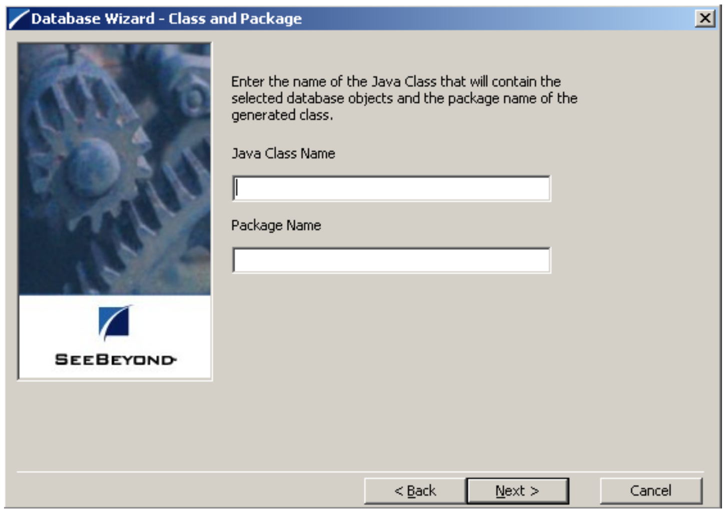
Figure 23 Database Wizard - Prepared Statements



Add a new Prepared Statement entry. Then, define specific names for the statement parameters.

22 Enter the **Java Class Name** that will contain the selected tables and/or procedures and the **Package Name** of the generated classes.

Figure 24 Database Wizard - Class and Package



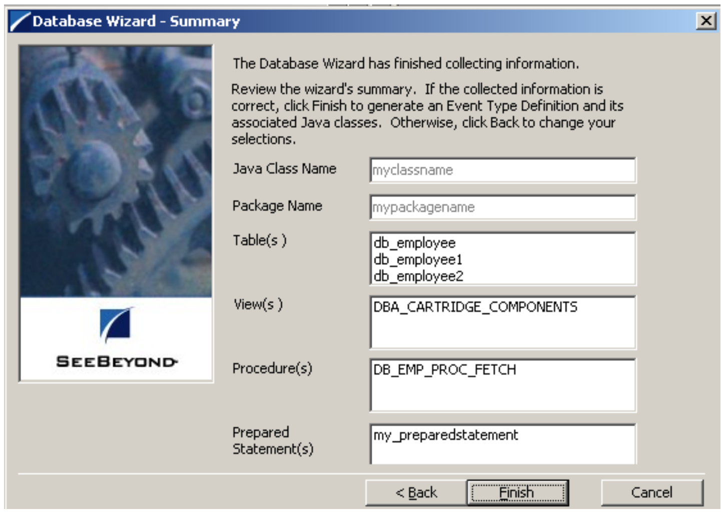
Enter the name of the Java Class that will contain the selected database objects and the package name of the generated class.

Java Class Name

Package Name

23 View the summary of the database wizard information and click **Finish** to begin generating the ETD.

Figure 25 Database Wizard - Summary



The Database Wizard has finished collecting information.

Review the wizard's summary. If the collected information is correct, click Finish to generate an Event Type Definition and its associated Java classes. Otherwise, click Back to change your selections.

Java Class Name	myclassname
Package Name	mypackagename
Table(s)	db_employee db_employee1 db_employee2
View(s)	DBA_CARTRIDGE_COMPONENTS
Procedure(s)	DB_EMP_PROC_FETCH
Prepared Statement(s)	my_preparedstatement

3.4.2 The Generated ETDs

The DataBase Wizard ETD builder can create three editable Event Type Definitions (ETDs) and one non-editable Event Type Definition (ETD). These types of ETDs can also be combined with each other. The four types of ETDs are:

- **Table ETD**

  The table ETD contains fields for each of the columns in the selected table as well as the methods required to exchange data with the external data source. To edit this type of ETD, you will need to open the **.xsc** file in the DataBase Wizard.

- **View ETD**

  The view ETD contains selected columns from selected tables. View ETDs are read-only.

- **Stored Procedure ETD**

  The stored procedure ETD contains fields which correspond to the input and output fields in the procedure. To edit this type of ETD, you will need to open the **.xsc** file in the DataBase Wizard.

- **Prepared Statement ETD**

  The prepared statement ETD contains a result set for the prepared statement. To edit this type of ETD, you will need to open the **.xsc** file in the DataBase Wizard.

3.4.3 Editing an Existing ETD Using the Database Wizard

If you choose to edit an existing **.xsc** file that you have created using the Database Wizard, do the following:

1. From the **Options** menu of the Enterprise Manager, choose **Default Editor…**.
2. Verify that **Java** is selected, then click **OK**.
3. From the **Tools** menu, click **ETD Editor...**
4. From the ETD Tool menu click **File** and click **New**.
5. From the **New Event Type Definition** window, select **DBWizard** and click **OK**.
6. On the Database Wizard - Introduction window, select **Modify an existing XSC file:** and browse to the appropriate **.xbs** file that you would like to edit.

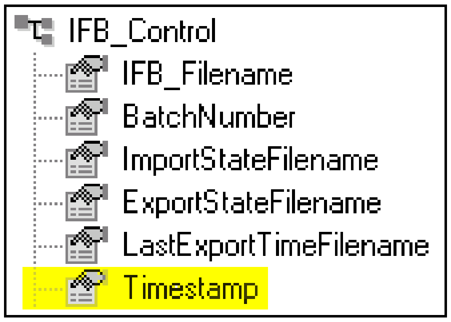
You are now able to edit your **.xsc** file.

Note: *When you add a new element type to your existing* **.xsc** *file, you must reselect any pre-existing elements or you will loose them when the new* **.xsc** *file is created.*

If you attempt to edit an **.xsc** *file whose elements no longer exist in the database, you will see a warning and the element will be dropped from the ETD.*

3.4.4 Using the Timestamp Node

Figure 26 IFB_Control - Timestamp Node



If you want to obtain records from the database within a certain time frame, you can use the **Timestamp** attribute in the collaboration, as follows:

1. Get the last export time, using the method from the ETD.
2. Get the current time from the database. The SQL commands are as follows:
   - **DB2**

     ```
     “select CURRENT TIMESTAMP FROM SYSIBM.SYSDUMMY1”
     ```
   - **Oracle**

     ```
     "alter session set NLS_DATE_FORMAT = 'YYYY-MM-DD HH24:MI:SS'"
         "select sysdate from dual"
     ```
   - **SQL Server**

     ```
     "select {fn NOW()}"
     ```
3. Write a command into the IFB file using the last export time and the current time, such as the following:

   ```
   EXPORT MATCHES = S_ORG_EXT, (LAST_UPD >= '2002-04-25 09:38:36' AND
       LAST_UPD < '2002-06-21 10:38:36')
   ```

An example is given in the **EIM_Extract** sample schema.

Note: *Timestamps are obtained from the Siebel Database Server. If different Siebel components are installed on different systems (within the same overall installation), they must be synchronized for this feature to work properly.*

Example Synchronization Problem

As an example of the problem alluded to in the above note, consider having the Siebel Server on one platform and a Database Server on another platform. The timestamp used by Siebel to populate the database will be later than the one returned by the Database Server. If the Post schema is running *immediately* after the Extract schema, the Extract program will *not* be able to pick up new messages. If the Extract schema will be run again in a later time (for example, if the e*Way is running in poll mode), however, the new messages will be eventually picked up. Synchronizing the timestamps between the Siebel components will avoid this problem.

3.5 Assigning ETDs to Event Types

After you have created the e*Gate system's ETD files, you can assign them to Event Types you have already created.

To assign ETDs to Event Types

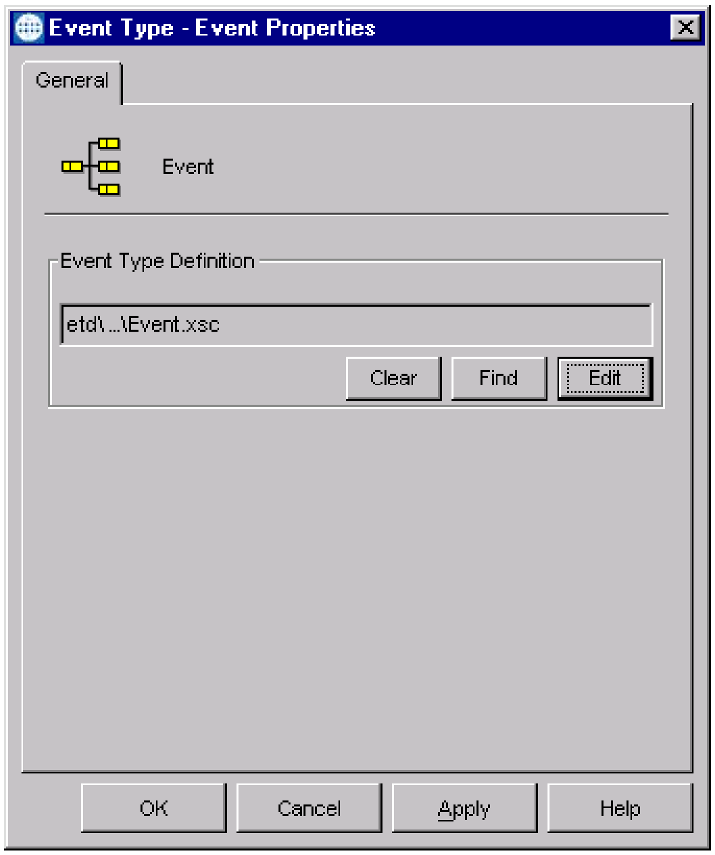
1 In the Enterprise Manager window, select the **Event Types** folder in the Navigator/ Components pane.

2 In the Editor pane, select one of the Event Types you created.

3 Right-click on the Event Type and select **Properties** (or click in the toolbar).

The Event Type Properties dialog box appears. See Figure 27.

Figure 27 Event Type Properties Dialog Box



etd\...\Event.xsc

4 Under Event Type Definition, click **Find**.

The Event Type Definition Selection dialog box appears; it is similar to the Windows Open dialog box.

5 Open the **etd** folder, then select the desired file name (**.xsc**). Note that there may be an intervening sub-folder.

6 Click **Select**. The file populates the Event Type Definition field.

7. To save any work in the properties dialog box, click **Apply** to enter it into the system.
8. When finished assigning ETDs to Event Types, click **OK** to close the properties dialog box and apply all the properties.

Each Event Type is associated with the specified Event Type Definition.

3.6 Creating Intelligent Queues

IQs are components that provide nonvolatile storage for Events within the e*Gate system as they pass from one component to another. IQs are *intelligent* in that they are more than just a "holding tank" for Events. They actively record information about the current state of Events.

Each schema must have an IQ Manager before you can add any IQs to it. You must create at least one IQ per schema for published Events within the e*Gate system. Note that e*Ways that publish Events externally do not need IQs.

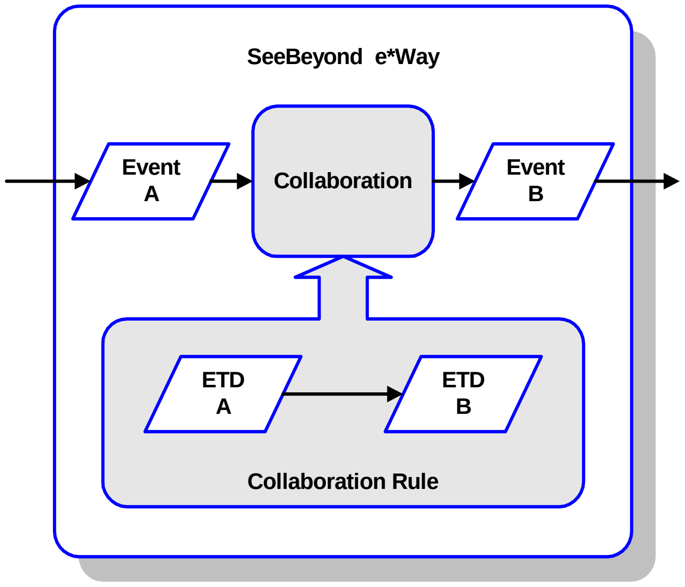
For more information on how to add and configure IQs and IQ Managers, see the *e*Gate Integrator System Administration and Operations Guide.* See the *e*Gate Integrator Intelligent Queue Services Reference Guide* and the *SeeBeyond JMS Intelligent Queue User's Guide* for complete information on working with IQs.

3.7 Defining Collaborations

After you have created the required Event Type Definitions, you must define a Collaboration to transform the incoming Event into the desired outgoing Event.

Collaborations are e*Way components that receive and process Event Types, then forward the output to other e*Gate components. Collaborations consist of the Subscriber, which “listens” for Events of a known type or from a given source, and the Publisher, which distributes the transformed Event to a specified recipient. The same Collaboration cannot be assigned to more than one e*Gate component.

Figure 28 Collaborations



3.7.1 The Java Collaboration Rules Editor

Java Collaborations are defined using the e*Gate Java Collaboration Rules Editor. Note that the Java Collaboration environment supports multiple source and destination ETDs. The file extension for Java Collaboration Rules is **.xpr**. See the *e*Gate Integrator User’s Guide* for descriptions of the Java Collaboration Rules Editor and its use.

3.7.2 Subcollaboration Rules

New methods are provided to allow you to use a Collaboration Rule as a parent or child of another Collaboration Rule. This allows you to insulate connectivity from transformation by separating out transformation-specific Collaboration Rules and maintaining them as individual units. See the *e*Gate Integrator User’s Guide* for detailed information on Subcollaborations.

3.8 Auditing

Error counts and totals are returned to the e*Way through variables. When a non-zero return code is given, these errors are written to the standard e*Way error logs.

3.8.1 Error logging—Inbound to Siebel

Errors are logged in the Siebel interface tables, a custom file is created by the Siebel EIM e*Way, and the standard error logs are supplied by the e*Gate components. The Siebel EIM e*Way monitors the status of EIM by capturing the task state for the initiated interface. The state changes to **Completed**, thus signaling the end of the EIM process.

The Siebel EIM e*Way interrogates the status of the **IF_ROW_STAT** column in the interface table where the batch number equals the records just loaded. The Siebel EIM e*Way extracts all records from the interface tables where the **IF_ROW_STAT** does not equal **Imported**, and sends an alert to the Administrator that manual intervention is required.

3.8.2 Error logging—Outbound from Siebel

Although Siebel lacks an alert notification facility to notify administrators, it does log the success or failure of each row during the export process. If the exported data cannot be extracted from the database, a message is recorded in the e*Way log and a Notification is sent to the e*Gate Monitor.

3.8.3 Journaling

Errors encountered during normal e*Gate processing are addressed by normal functionality. Each Logical Unit of Work (LUW) that encounters errors during translation is placed into a journal for later viewing, correction and reprocessing.

3.9 Sample Schema

Sample implementations are available in the **\samples\ewsiebeleim** directory of the e*Gate CD-ROM.

- **Java_Siebel6_EIM_Extract**

  Siebel 2000-to-e*Gate example.

- **Java_Siebel6_EIM_Post**

  e*Gate-to-Siebel 2000 example.

- **Java_Siebel7_EIM_Extract**

  Siebel 7-to-e*Gate example.

- **Java_Siebel7_EIM_Post**

  e*Gate-to-Siebel 7 example.

These samples can be used to test your system following installation and, if appropriate, as templates that you can modify to produce your own schemas. See **Optional Example Files** on page 24 for installation instructions.

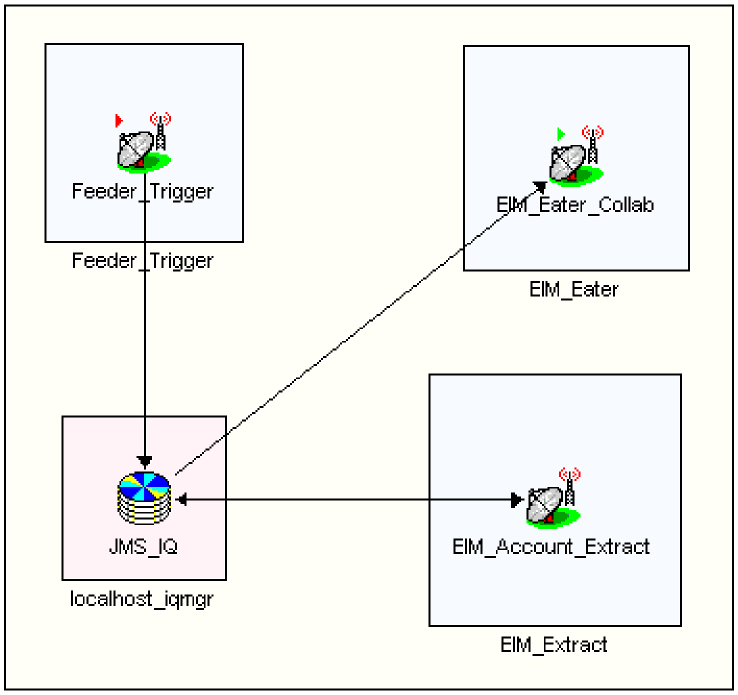
The corresponding schemas for Siebel 2000 and Siebel 7 are identical in architecture, but are different in detail to match the different table structures in the two Siebel versions.

3.9.1 EIM_Extract

For an explanation of the operational details, including annotated code, see **Siebel to e*Gate** on page 75.

Architecture

Figure 29 EIM_Extract Schema



Operation

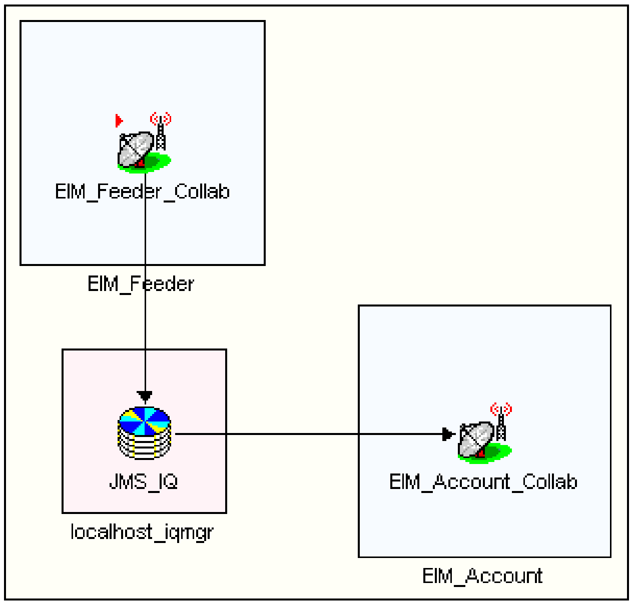
1. Upon receiving a trigger from **Feeder_Trigger**, the Siebel EIM e*Way, **EIM_Extract**, generates an IFB Control File, and sends it to Siebel.
2. The e*Way then invokes the Siebel EIM process.
3. Siebel EIM then copies data from the Siebel Base Tables into the Interface Tables, as prescribed by the IFB Control File.
4. **EIM_Extract** extracts the data from the interface tables and maps it into the correct Event Type Definition, following a pre-defined Collaboration.
5. The data is then passed to **EIM_Eater** and is available as a file.

3.9.2 EIM_Post

For an explanation of the operational details, including annotated code, see **e*Gate to Siebel** on page 80.

Architecture

Figure 30 EIM_Post Schema



Operation

1. The File e*Way **EIM_Feeder** sends data to a JMS Intelligent Queue.
2. The Siebel EIM e*Way, **EIM_Account**, processes the information following a Collaboration previously created using structural information extracted from Siebel, and inserts validated rows into the Siebel Interface Tables.
3. An IFB control file is built and sent to the Siebel system for use by the EIM in populating the Base Tables with data from the Interface Tables.
4. **EIM_Account** initiates the Siebel Enterprise Integration Manager (EIM) to load the data from the Interface Tables into the appropriate Siebel Base Tables.
5. Upon completion of the EIM process, **EIM_Account** interrogates the **IF_ROW_STAT** column in the Siebel Interface Tables to verify the correct transfer of data to the Base Tables. All records transferred successfully are deleted from the Interface Tables.

Chapter 4

e*Way Setup

This chapter describes the procedures required to customize the SeeBeyond Java e*Way Intelligent Adapter for Siebel EIM to operate within your production system.

4.1 Overview

After creating a schema, you must instantiate and configure the e*Way Intelligent Adapter for Siebel EIM to operate within the schema. A wide range of setup options allow the e*Way to conform to your system's operational characteristics and your facility's operating procedures.

The topics discussed in this chapter are:

4.2 Setting Up the e*Way

Note: *The e*Gate Enterprise Manager GUI runs only on the Windows operating system.*

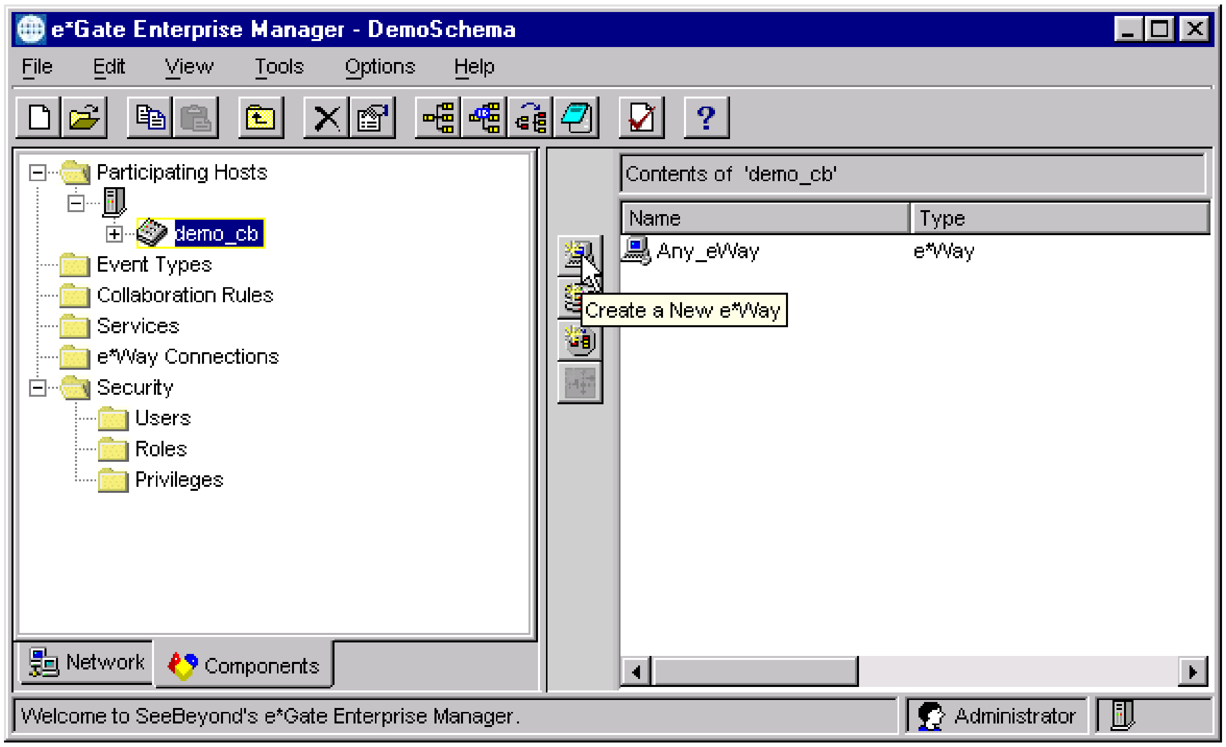
4.2.1 Creating the e*Way

The first step in implementing an e*Way is to define the e*Way component using the e*Gate Enterprise Manager.

To create an e*Way

1. Open the schema in which the e*Way is to operate.
2. Select the e*Gate Enterprise Manager Navigator's **Components** tab.
3. Open the host on which you want to create the e*Way.
4. Select the Control Broker you want to manage the new e*Way.

Figure 31 e*Gate Enterprise Manager Window (Components View)



Contents of 'demo_cb'

Name	Type
Any_eWay	e*Way

Welcome to SeeBeyond's e*Gate Enterprise Manager.

5. On the Palette, click **Create a New e*Way**.
6. Enter the name of the new e*Way, then click **OK**.
7. All further actions are performed in the e*Gate Enterprise Manager Navigator's **Components** tab.

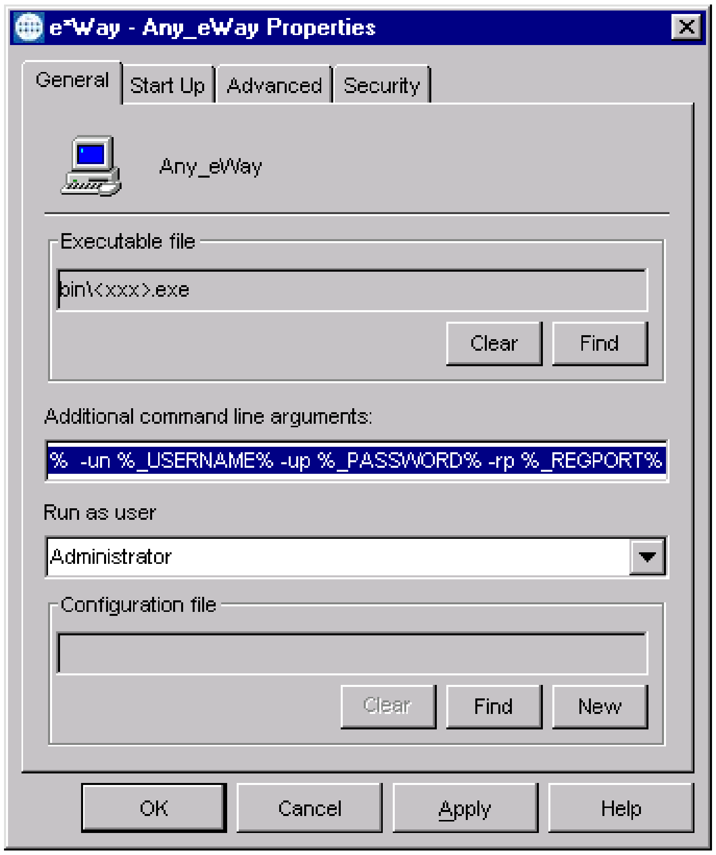
4.2.2 Modifying e*Way Properties

To modify any e*Way properties

1 Right-click on the desired e*Way and select **Properties** to edit the e*Way's properties. The properties dialog opens to the **General** tab (shown in Figure 32).

Note: *The figures are generic—the executable and default configuration files used by this e*Way are listed in* **e*Way Components** *on page 15.*

Figure 32 e*Way Properties (General Tab)



Executable file: bin\<xxx>.exe

Additional command line arguments: % -un %_USERNAME% -up %_PASSWORD% -rp %_REGPORT%

Run as user: Administrator

Configuration file:

2 Make the desired modifications, then click **OK**.

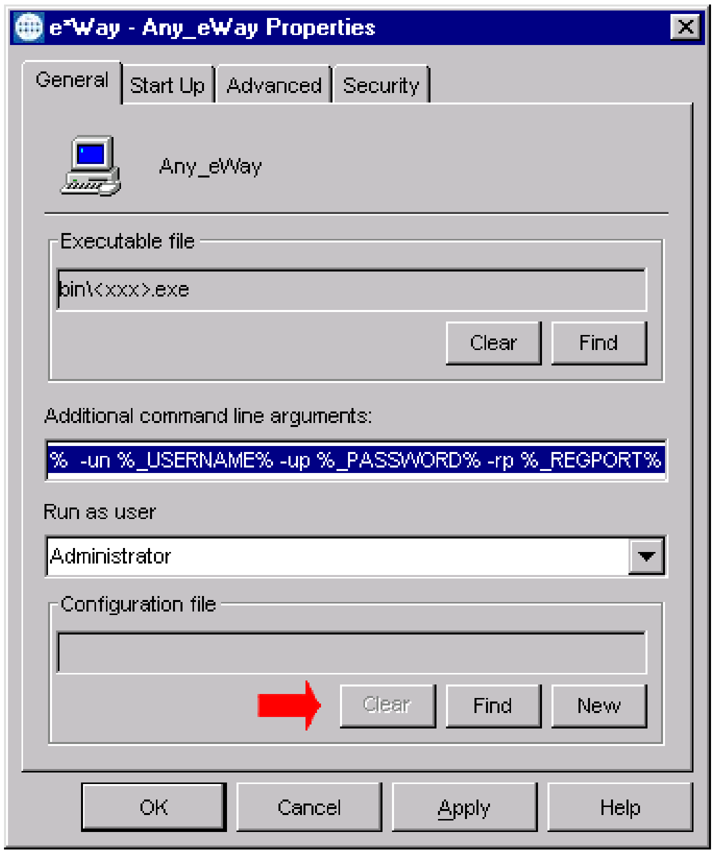
4.2.3 Configuring the e*Way

The e*Way's inherent configuration parameters are stored in an ASCII text file with a **.def** extension. The e*Way Editor provides a simple graphical interface for viewing and changing those parameters to create a working configuration (**.cfg**) file.

To change e*Way configuration parameters

1 In the e*Gate Enterprise Manager's Component editor, select the e*Way you want to configure and display its properties.

Figure 33 e*Way Properties - General Tab



2 Under **Executable File**, click **Find** to locate **stceway.exe**.

3 Under **Configuration File**, click **New** to create a new file or **Find** to select an existing configuration file. If you select an existing file, an **Edit** button appears; click the button to edit the currently selected file.

4 You now are in the e*Way Configuration Editor (see **Using the e*Way Configuration Editor** on page 67). The e*Way's configuration parameters are described in **Chapter 6**.

4.2.4 Changing the User Name

Like all e*Gate executable components, e*Ways run under an e*Gate user name. By default, all e*Ways run under the **Administrator** user name. You can change this if your site's security procedures so require.

To change the user name

1. Display the e*Way's properties dialog.
2. On the **General** tab, use the **Run as user** list to select the e*Gate user under whose name you want this component to run.

See the *e*Gate Integrator System Administration and Operations Guide* for more information on the e*Gate security system.

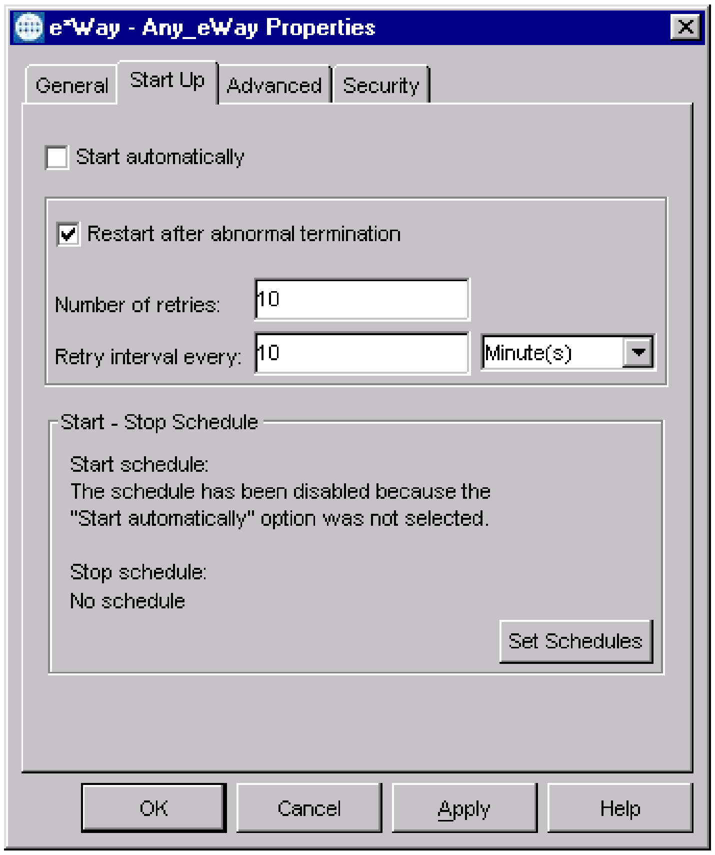
4.2.5 Setting Startup Options or Schedules

SeeBeyond e*Ways can be started or stopped by any of the following methods:

- The Control Broker can start the e*Way automatically whenever the Control Broker starts.
- The Control Broker can start the e*Way automatically whenever it detects that the e*Way terminated execution abnormally.
- The Control Broker can start or stop the e*Way on a schedule that you specify.
- Users can start or stop the e*Way manually using an interactive monitor.

You determine how the Control Broker starts or shuts down an e*Way using options on the e*Way properties **Start Up** tab (see Figure 34). See the *e*Gate Integrator System Administration and Operations Guide* for more information about how interactive monitors can start or shut down components.

Figure 34 e*Way Properties (Start-Up Tab)



☐ Start automatically

☑ Restart after abnormal termination

Number of retries: 10

Retry interval every: 10 Minute(s)

Start - Stop Schedule

Start schedule:
The schedule has been disabled because the "Start automatically" option was not selected.

Stop schedule:
No schedule

To set the e*Way's startup properties

1. Display the e*Way's properties dialog.
2. Select the **Start Up** tab.
3. To have the e*Way start automatically when the Control Broker starts, select the **Start automatically** check box.
4. To have the e*Way start manually, clear the **Start automatically** check box.
5. To have the e*Way restart automatically after an abnormal termination:
   A Select **Restart after abnormal termination.**
   B Set the desired number of retries and retry interval.
6. To prevent the e*Way from restarting automatically after an abnormal termination, clear the **Restart after abnormal termination** check box.
7. Click **OK**.

Note: *Clearing the* **Start automatically** *check box will delete any existing schedules (a warning dialog will be displayed first).*

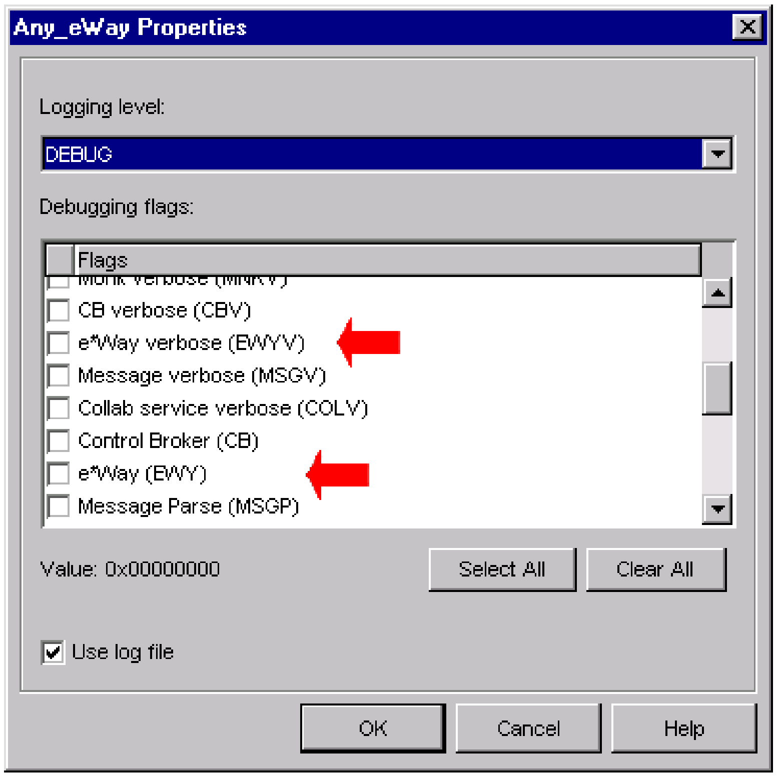
4.2.6 Activating or Modifying Logging Options

Logging options enable you to troubleshoot problems with the e*Way and other e*Gate components.

To set the e*Way debug level and flag

1. Display the e*Way's Properties dialog.
2. Select the **Advanced** tab.
3. Click **Log**. The dialog window appears, as shown in Figure 35.

Figure 35 e*Way Properties (Advanced Tab - Log Option)



Any_eWay Properties

Logging level:

DEBUG

Debugging flags:

Flags
- [ ] Monk verbose (MNKV)
- [ ] CB verbose (CBV)
- [ ] e*Way verbose (EWYV)
- [ ] Message verbose (MSGV)
- [ ] Collab service verbose (COLV)
- [ ] Control Broker (CB)
- [ ] e*Way (EWY)
- [ ] Message Parse (MSGP)

Value: 0x00000000

- [x] Use log file

4. Select **DEBUG** for the **Logging level**.
5. Select either **e*Way (EWY)** or **e*Way Verbose (EWYV)** for the **Debugging flag.** Note that the latter has a significant impact on system performance.
6. Click **OK**.

The other options apply to other e*Gate components and are activated in the same manner. See the *e*Gate Integrator Alert and Log File Reference* for additional information concerning log files, logging options, logging levels, and debug flags.

4.2.7 Activating or Modifying Monitoring Thresholds

Monitoring thresholds enable you to monitor the throughput of the e*Way. When the monitoring thresholds are exceeded, the e*Way sends a Monitoring Event to the Control Broker, which routes it to the e*Gate Monitor and any other configured destinations.

1. Display the e*Way's properties dialog.
2. Select the **Advanced** tab.
3. Click **Thresholds**.
4. Select the desired threshold options and click **OK**.

See the *e*Gate Integrator Alert and Log File Reference* for more information concerning threshold monitoring, routing specific notifications to specific recipients, or for general information about e*Gate's monitoring and notification system.

4.3 Creating e*Way Connections

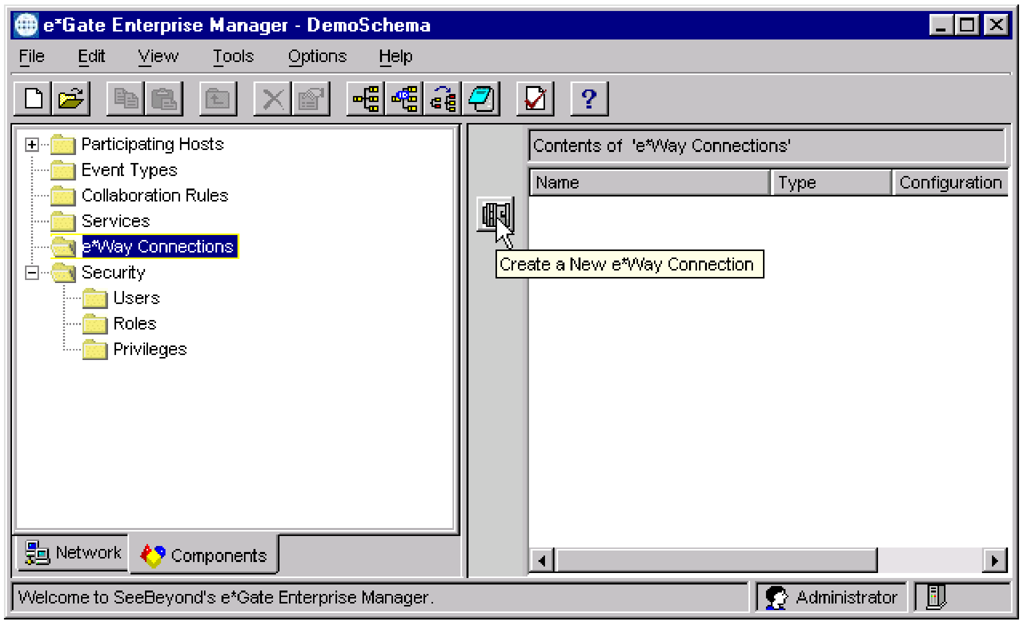
The e*Way Connections are created and configured in the Enterprise Manager. The e*Way Connection's configuration parameters are described in **Siebel EIM e*Way Connections** on page 111.

Note: *The e*Gate Enterprise Manager GUI runs only on the Windows operating system.*

To create and configure the e*Way Connections

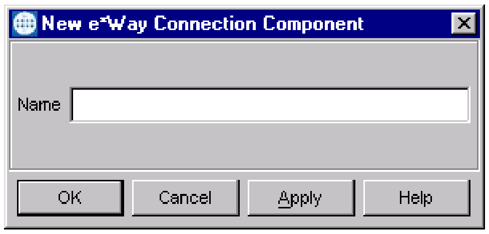
1. In the Enterprise Manager's Component editor, select the **e*Way Connections** folder.

Figure 36 Enterprise Manager - e*Way Connections Folder (1)



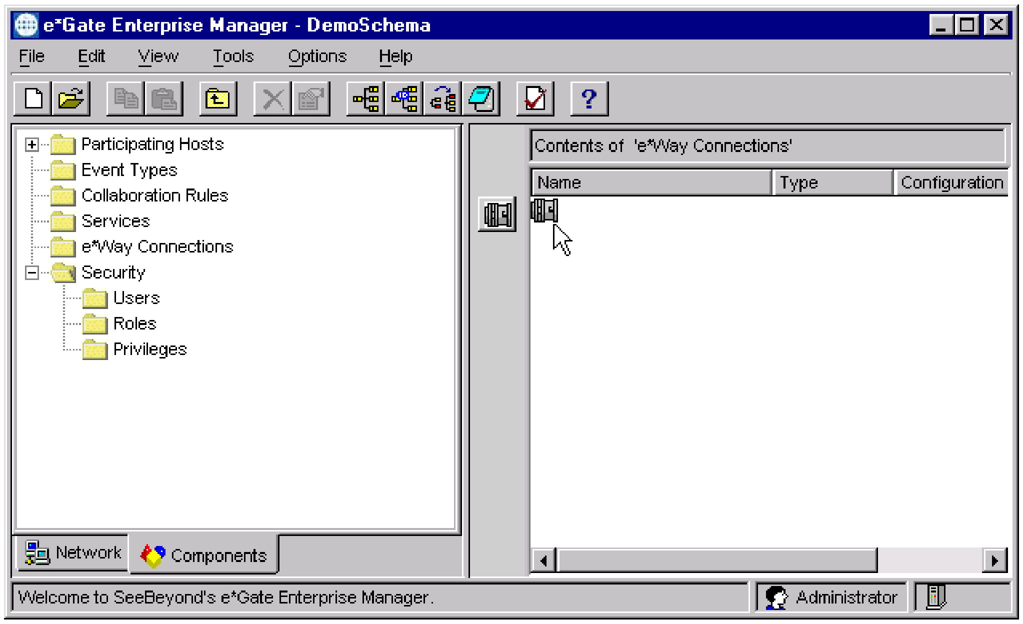
2. On the Palette, click the **Create a New e*Way Connection** button, which opens the New e*Way Connection Component dialog box.

Figure 37 New e*Way Connection Component Dialog Box



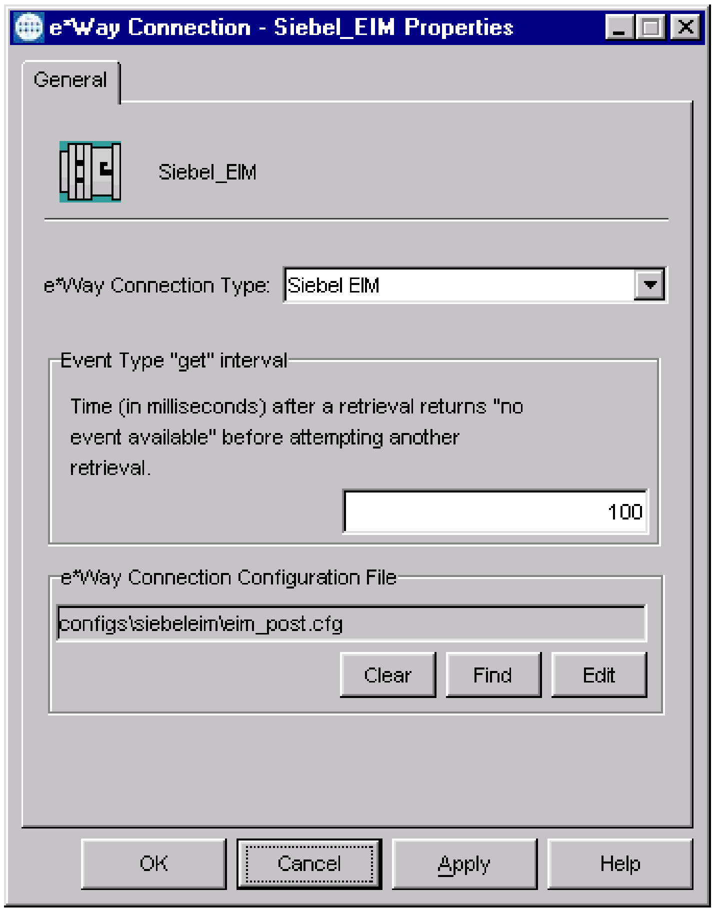
3. Enter a name for the e*Way Connection and click **OK**. The new e*Way Connection appears in the Enterprise Manager Contents pane.

Figure 38 Enterprise Manager - e*Way Connections Folder (2)



4 Right-click the new e*Way Connection icon and select **Properties** to open the e*Way Connection Properties dialog box.

Figure 39 e*Way Connection Properties Dialog Box



Siebel_EIM

e*Way Connection Type: Siebel EIM

Event Type "get" interval

Time (in milliseconds) after a retrieval returns "no event available" before attempting another retrieval.

100

e*Way Connection Configuration File

configs\siebeleim\eim_post.cfg

5 From the e*Way Connection Type drop-down box, select **Siebel EIM** (or one of the Database e*Way connections, as is appropriate).

6 Enter the Event Type *get* interval in the dialog box provided (optional).

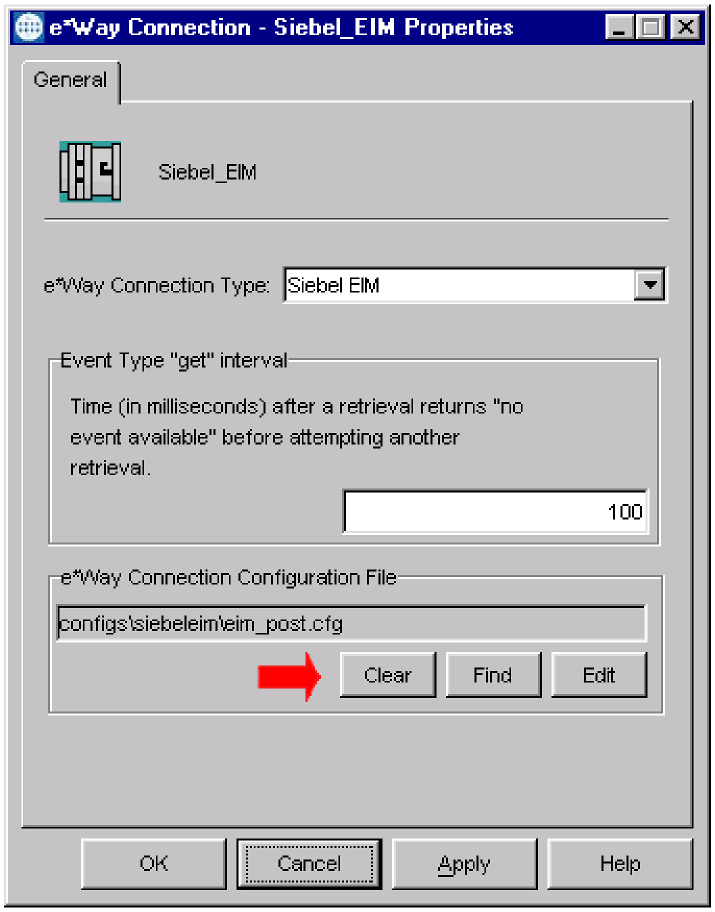
7 Click **New** to start the e*Way Connection Configuration File Editor, where you can create a new e*Way Connection Configuration File.

To modify the e*Way Connections

1 In the e*Gate Enterprise Manager's Component editor, select the e*Way you want to reconfigure and display its properties.

Note: *The executable and default configuration files used by this e*Way are listed in* **e*Way Components** *on page 15. The configuration files for the sample schemas are listed in* **Optional Example Files** *on page 24.*

Figure 40 e*Way Connection Properties Dialog Box



e*Way Connection Type: Siebel EIM

Event Type "get" interval

Time (in milliseconds) after a retrieval returns "no event available" before attempting another retrieval.

100

e*Way Connection Configuration File

configs\siebeleim\eim_post.cfg

2 Under **Configuration File**, click **New** to create a new file or **Find** to select an existing configuration file. If you select an existing file, an **Edit** button appears; click the button to edit the currently selected file.

3 You are now in the e*Way Configuration Editor (see **Using the e*Way Configuration Editor** on page 67). The e*Way Connection's configuration parameters are described in **Siebel EIM e*Way Connections** on page 111.

Note: *You must restart the e*Way after modifying the e*Way connection.*

4.4 Managing e*Way Connections

The Connection Manager allows you to define the functionality of your e*Way connection. You can:

- Select when to initiate an e*Way connection
- Select when to close the e*Way connection and disconnect
- Select the status of your e*Way connection
- Have the Collaboration call the **OnConnectionDown** method when the connection fails

The Connection Manager is specifically designed to take full advantage of the enhanced functionality in e*Gate 4.5.2. In e*Gate 4.5.1 or earlier, this enhanced functionality is visible, but ignored.

The Connection Manager is controlled as described in **Chapter 6**. If you choose to control the e*Way Connections manually, you may find the following chart helpful.

Table 11 e*Way Connection Controls

Method	Automatic	On-Demand	Manual
onConnectionUp	yes	no	no
onConnectionDown	yes	yes—but only if the connection attempt fails	no
Automatic Transaction (XA)	yes	no	no
Manual Transaction (XA)	yes	no	no
connect	no	no	yes
isConnect	no	no	yes
disconnect	no	no	yes
timeout or connect	yes	yes	no
verify connection interval	yes	no	no

Controlling When a Connection is Made

By using Connector Settings, you may have e*Way connections controlled manually (through the Collaboration) or automatically (through the e*Way Connection Configuration). If you choose to control the connection manually, you can have the e*Way Connection made:

- When the Collaboration is loaded
- When the Collaboration is executed
- By using an additional connection method in the ETD
- By overriding any custom values you have assigned in the Collaboration

- By using the **isConnected**() method (if your ETD has multiple connections, the **isConnected**() method is called *per connection*)

Controlling When a Connection is Disconnected

In addition to controlling when a connection is made, you can also control when an e*Way Connection is terminated or disconnected either manually or automatically. You can have the e*Way Connection disconnect:

- At the end of a Collaboration
- At the end of the execution of the Collaborations Business Rules
- During a timeout
- After a method call

Controlling the Connectivity Status

You can control how often the e*Way Connection checks to verify is still live; see:

Connector Settings on page 121 (for Oracle DBMS)

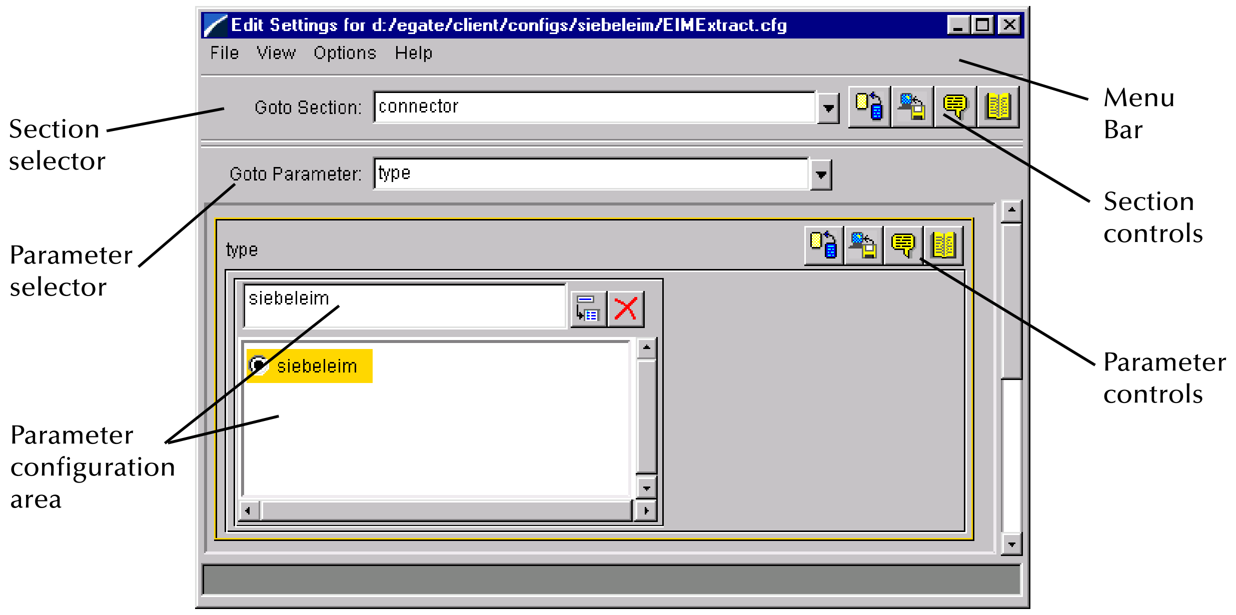
Connector Settings on page 127 (for DB2 UDB)

Connector Settings on page 132 (for SQL Server)

4.5 Using the e*Way Configuration Editor

The e*Way's default configuration parameters are stored in an ASCII text file with a **.def** extension. The e*Way Editor provides a simple graphical interface for viewing and changing those parameters to create a working configuration file pair (**.cfg** and **.sc**). The editor has the same general appearance for either e*Way or e*Way Connection configuration (as shown in Figure 41).

Figure 41 The e*Way Configuration Editor



The e*Way Configuration Editor controls fall into one of six categories:

- The **Menu bar** allows access to basic operations (e.g., saving the configuration file, viewing a summary of all parameter settings, and launching the Help system)
- The **Section selector** at the top of the Editor window enables you to select the category of the parameters you wish to edit
- **Section controls** enable you to restore the default settings, restore the last saved settings, display tips, or enter comments for the currently selected section
- The **Parameter selector** allows you to jump to a specific parameter within the section, rather than scrolling
- **Parameter controls** enable you to restore the default settings, restore the last saved settings, display tips, or enter comments for the currently selected parameter
- **Parameter configuration controls** enable you to set the e*Way's various operating parameters

4.5.1 Section and Parameter Controls

The section and parameter controls are shown in Table 12 below.

Table 12 Parameter and Section Controls

Button	Name	Function
	Restore Default	Restores default values
	Restore Value	Restores saved values
	Tips	Displays tips
	User Notes	Enters user notes

Note: *The **section controls** affect **all** parameters in the selected section, whereas the **parameter controls** affect only the **selected** parameter.*

4.5.2 Parameter Configuration Controls

Parameter configuration controls fall into one of two categories:

- Option buttons
- Selection lists, which have controls as described in Table 13

Table 13 Selection List Controls

Button	Name	Function
	Add to List	Adds the value in the text box to the list of available values.
	Delete Items	Displays a “delete items” dialog box, used to delete items from the list.

4.5.3 File Menu Selections

- **Save**
  - If you are editing a **.def** file, selecting **Save** creates a working configuration file pair (**.cfg** and **.sc**) from the file you are editing.
  - If you are editing an existing **.cfg** file, selecting **Save** overwrites the existing configuration file pair (**.cfg** and **.sc**).
- **Promote to Run Time**
  - Selecting **Promote to Run Time** promotes the configuration file pair (**.cfg** and **.sc**) from the Sandbox to the registry, committing them to the current schema.

For more information, see the *Getting Started* chapter of the *e*Gate Integrator User's Guide*.

4.5.4 Command-line Configuration

In the **Additional Command Line Arguments** box, type any additional command line arguments that the e*Way may require, taking care to insert them *at the end* of the existing command-line string. Be careful not to change any of the default arguments unless you have a specific need to do so.

4.5.5 Getting Help

To launch the e*Way Editor's Help system

From the **Help** menu, select **Help topics.**

To display tips regarding the general operation of the e*Way

From the **File** menu, select **Tips.**

To display tips regarding the selected Configuration Section

In the **Section** Control group, click .

To display tips regarding the selected Configuration Parameter

In the **Parameter** Control group, click .

Note: ***Tips*** *are displayed and managed separately from the online Help system. You cannot search for Tips within the Help system, or view Help system topics by requesting Tips.*

For detailed descriptions and procedures for using the e*Way Configuration Editor, see the *Working with e*Ways* chapter of the *e*Gate Integrator User's Guide.*

4.6 Troubleshooting the e*Way

In the initial stages of developing your e*Gate Integrator system administration system, most problems with e*Ways can be traced to configuration.

4.6.1 Configuration Problems

In the Enterprise Manager

- Does the e*Way have the correct Collaborations assigned?
- Do those Collaborations use the correct Collaboration Services?
- Is the logic correct within any Collaboration Rules script employed by this e*Way's Collaborations?
- Do those Collaborations subscribe to and publish Events appropriately?
- Are all the components that provide information to this e*Way properly configured, and are they sending the appropriate Events correctly?
- Are all the components to which this e*Way sends information properly configured, and are they subscribing to the appropriate Events correctly?

In the e*Way Editor

- Check that all e*Way connection options are set appropriately.
- Check that all settings you changed are set correctly.
- Check all required changes to ensure they have not been overlooked.
- Check the defaults to ensure they are acceptable for your installation.

On the e*Way's Participating Host

- Check that the Participating Host is operating properly, and that it has sufficient disk space to hold the IQ data that this e*Way's Collaborations publish.
- Check that the *path* environmental variable includes the location of the Siebel EIM dynamically-loaded libraries. The name of this variable on the different operating systems is:
  - PATH (Windows)
  - LD_LIBRARY_PATH (Solaris)
  - LIBPATH (AIX)

In the External Application

- Check that the application is configured correctly, is operating properly, and is sending or receiving the correct data appropriately.

4.6.2 System-related Problems

- Check that the connection between the external application and the e*Way is functioning appropriately.
- Once the e*Way is up and running properly, operational problems can be due to:
  - External influences (network or other connectivity problems).
  - Problems in the operating environment (low disk space or system errors)
  - Problems or changes in the data the e*Way is processing.
  - Corrections required to Collaboration Rules scripts that become evident in the course of normal operations.

One of the most important tools in the troubleshooter's arsenal is the e*Way log file. See the *e*Gate Integrator Alert and Log File Reference Guide* for an extensive explanation of log files, debugging options, and using the e*Gate monitoring system to monitor operations and performance.

Chapter 5

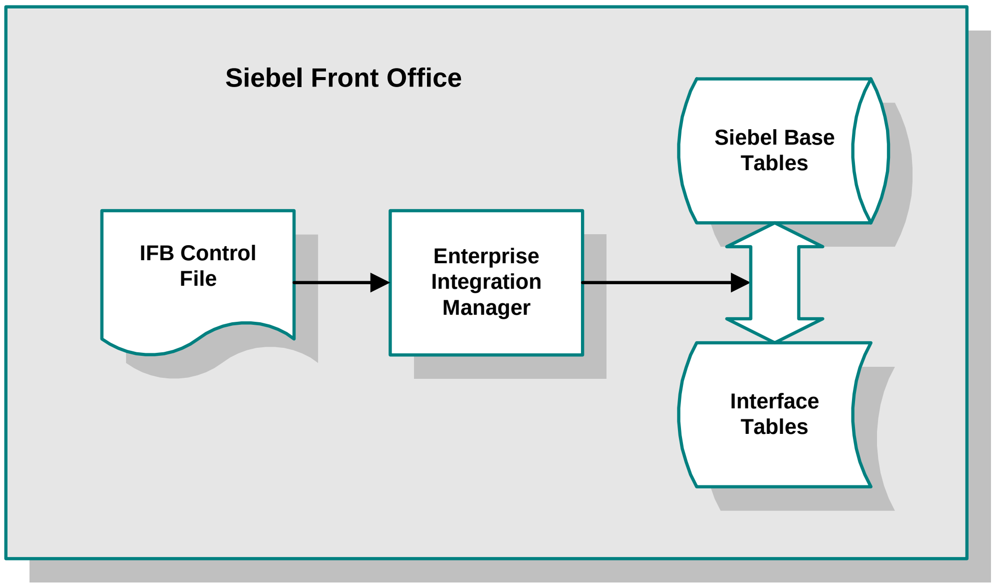
Operational Overview

This chapter provides an overview of the basic functionality of the SeeBeyond Java e*Way Intelligent Adapter for Siebel EIM.

5.1 Siebel EIM

The Siebel Enterprise Integration Manager is the first step in exporting, and the last step in importing, data. The database consists of two main groups of tables, interface tables and base tables. The Siebel client application communicates directly with the highly normalized base tables. The interface tables are used as a staging area for importing, exporting, deleting and merging logical groups of data. Each interface table represents a subset of the data in a specific base table.

Figure 42 Siebel Enterprise Integration Manager



When run, EIM coordinates the transfer of data between the base and interface tables. In addition, EIM creates and writes codes and row IDs to the base tables that directly correspond to the complex set of business rules used by the Siebel client application to display data. The EIM process must run on the server also running the Transaction Processor.

Typically, files to be imported have a predecessor-successor relationship, because Siebel requires files to be loaded in a certain manner. Thus any file depends on the completion of the preceding file. For example, if a project were receiving accounts, contacts and opportunities from an external source, they would receive either of the following:

- Three files from the external source
- One large file containing all of the pertinent information within one record

In scenario one, the three files would be Accounts, Contacts, and Opportunities, and Siebel requires the files be loaded in that order. Once EIM has completed interfacing Accounts, and the Accounts are loaded into the base tables, Contacts are loaded and an association is linked between the two entities. Opportunities follow the same logic.

In scenario two, the file is translated within e*Gate to appear as if three files were loaded into the correct interface tables. Both Scenario one and scenario two have the same predecessor-successor relationship that is inherent in Siebel. To load contacts successfully, the account that the contact belongs to must be loaded first.

See the *Siebel Administration Guide* for more details regarding Siebel EIM.

5.2 IFB Configuration File

A Siebel configuration file (***.ifb**) is used to determine what data types are loaded and how. The control file follows a certain format—it tells the interface how to log into the database and what process to run. It also lists the columns that the interface does *not* populate (in Siebel-inbound mode), thus preventing erroneous error messages. The IFB control file can be generated automatically by the e*Way or created manually, as configured by the user.

Following is an example of the IFB file format:

```
[Siebel Interface Manager]
    PASSWORD = "sadmin"
    PROCESS = Import Accounts
    TABLEOWNER = "siebel"
    USER NAME = "sadmin"

[Import Accounts]
    TYPE = SHELL
    INCLUDE = "Import Accounts without Addresses w/o Position"

[Import Accounts without Addresses w/o Position]
    TYPE = IMPORT
    BATCH = 1201
    ONLY BASE TABLES = S_PARTY, S_ORG_EXT, S_ADDR_ORG
    TABLE = EIM_ACCOUNT
    USING SYNONYMS = FALSE
    DEFAULT COLUMN = ACTIVE_FLG, "Y"
    DEFAULT COLUMN = DISA_CLEANSE_FLG, "N"
    DEFAULT COLUMN = EVT_LOC_FLG, "N"
    DEFAULT COLUMN = FCST_ORG_FLG, "N"
    DEFAULT COLUMN = INT_ORG_FLG, "Y"
    DEFAULT COLUMN = PROSPECT_FLG, "N"
    DEFAULT COLUMN = PRTNR_FLG, "N"
    DEFAULT COLUMN = PRTNR_PUBLISH_FLG, "N"
    DEFAULT COLUMN = RPLCD_WTH_CMPT_FLG, "N"
    DEFAULT COLUMN = ROOT_PARTY_FLG, "N"
    DEFAULT COLUMN = ADDR_ACTIVE_FLG, "Y"
    DEFAULT COLUMN = ADDR_BL_ADDR_FLG, "Y"
    DEFAULT COLUMN = ADDR_DISACLEANSEFL, "N"
    DEFAULT COLUMN = ADDR_MAIN_ADDR_FLG, "Y"
    DEFAULT COLUMN = ADDR_NAME_LOCK_FLG, "N"
    DEFAULT COLUMN = ADDR_SHIP_ADDR_FLG, "Y"
    INSERT ROWS = TRUE
    UPDATE ROWS = TRUE
```

The **IFB Filename** indicated in the configuration file for the e*Way is used to process the data.

5.3 Siebel EIM e*Way Operation

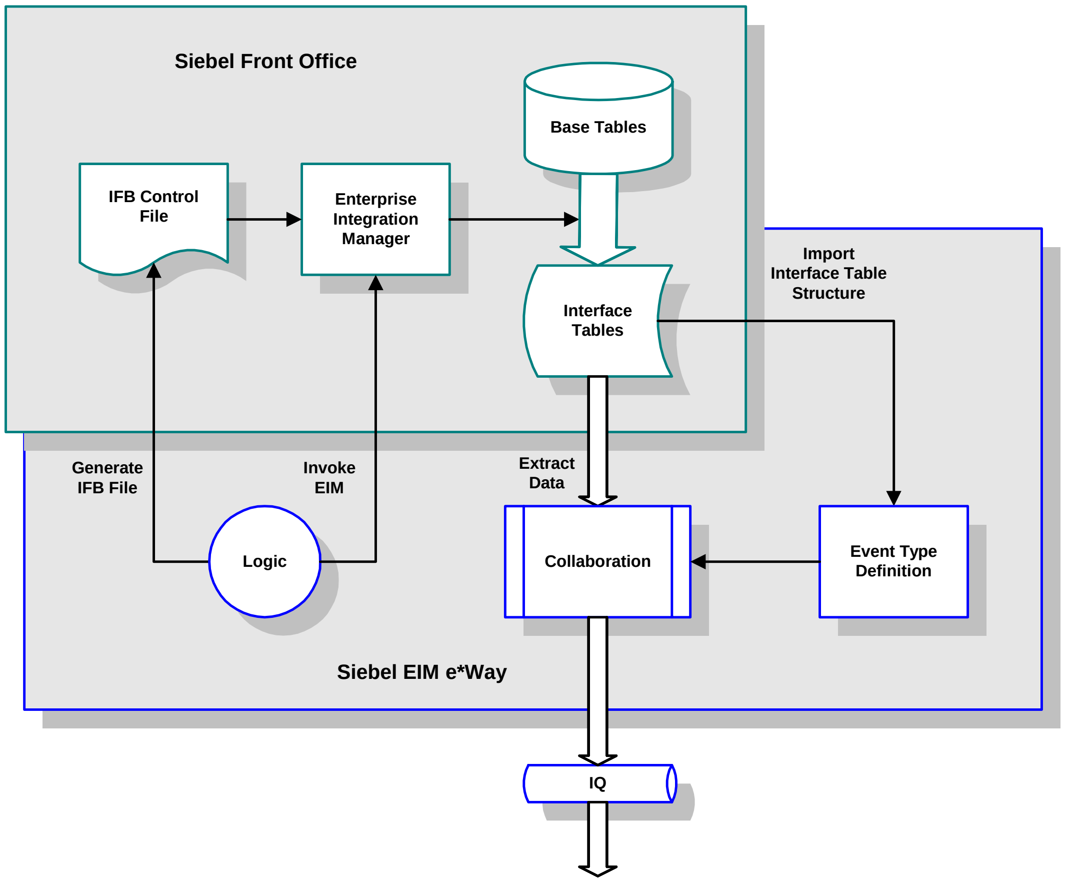
The e*Way uses Java methods to exchange data with the external system, package data as e*Gate *Events*, send those Events to Collaborations, and manage the connection between the e*Way and the external system. These topics are covered in detail in the *e*Gate Integrator User's Guide*.

The Siebel-to-e*Gate operation is dealt with first, since it is less complex than the e*Gate-to-Siebel case.

5.3.1 Siebel to e*Gate

Overview

Figure 43 Siebel-to-e*Gate Process Flow



1 Following a prescribed schedule, the Siebel EIM e*Way either generates or retrieves an IFB Control File, and sends it to Siebel.

2 The e*Way then invokes the Siebel EIM process.

3 Siebel EIM then copies data from the Siebel Base Tables into the Interface Tables, as prescribed by the IFB Control File.

4 The Siebel EIM e*Way extracts the data from the interface tables and maps it into the correct Event Type Definition, following a pre-defined Collaboration.

5 The data is then passed to other e*Gate components for further processing (if required) and routing to the target application.

Export Procedure

Following are the logical steps for exporting data into Siebel, using the provided Java methods:

Note: *If the IFB file already exists, there is no need to generate it.*

1 Generate the IFB if it does not already exist (using **generateIfb()**).

2 Start the Siebel task (using **startTask()**).

3 Perform other operations if necessary.

Note: *If no other operations need to be performed, steps 2 and 4 can be combined by using* **startTaskAndWaitUntilDone()**.

4 Wait until the Siebel task is done (using **waitUntilDone(taskNum)**).

5 Verify the export task is successful.

6 Retrieve records from the interface table.

7 Clean up the exported records in the interface table if the operation is successful.

Note: *You must perform the steps to* **set** *and* **get** *the last export time (using* **getLastExportTime()** *and* **setLastExportTime(export_time)***) if you do not want to retrieve previously-exported records.*

Example

The sample schema **EIM_Extract** on page 51 provides an example of exporting data from the Siebel EIM_ACCOUNT interface table. This sample schema follows the procedure shown below:

1 Retrieve the **timestamp** of the last export.

2 Generate the IFB file.

3 Start the Siebel server task and wait until it is done.

If the export operation is successful,

4 Save the export time for the next export operation.

5 Retrieve the records from the interface table EIM_ACCOUNT.

6 Clean up the exported records in the interface table for this batch operation

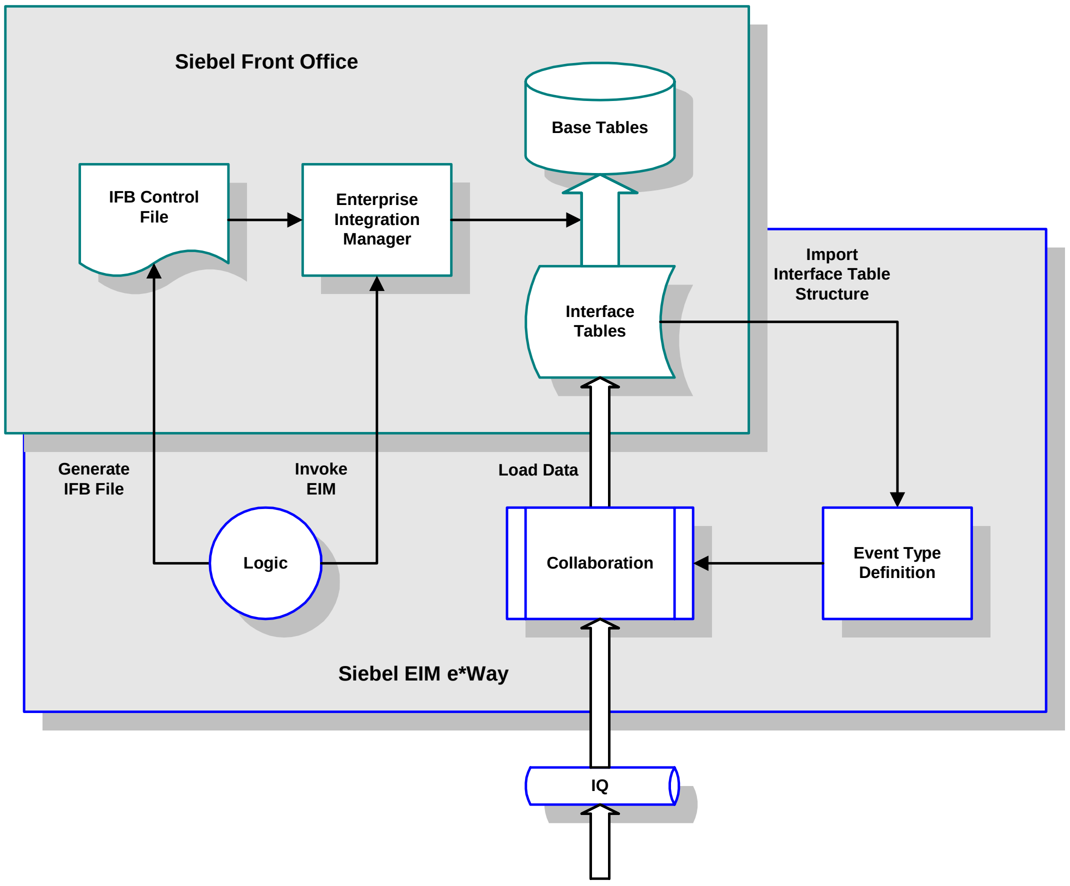
Export Code

```
public boolean executeBusinessRules() throws java.lang.Exception
      {
         boolean retBoolean = true;
         int ind;
         String payload = null;
         String lastts;
         String currentStr;
         java.sql.Timestamp currentts = new java.sql.Timestamp(0);
         String filename = null;
         String retVal = null;

   EGate.traceln(EGate.TRACE_COLLABSERVICE,EGate.TRACE_EVENT_INFORMA
   TION,">>>>> Input trigger data: " + getIn2().getPayload() );

   EGate.traceln(EGate.TRACE_COLLABSERVICE,EGate.TRACE_EVENT_INFORMA
   TION,">>>>> Write values into IFB file...");

         // Generate IFB file

   getInOut().getIFB_Control().getIFB_Content().getHeaderName().setV
   alue("Siebel Interface Manager");

   getInOut().getIFB_Control().getIFB_Content().getHeader().getPROCE
   SS().setValue("Export Accounts");

   getInOut().getIFB_Control().getIFB_Content().getIFB_Iteration(0).
   getProcessName().setValue("Export Accounts");

   getInOut().getIFB_Control().getIFB_Content().getIFB_Iteration(0).
   getIFBProcess().getTYPE().setValue("EXPORT");

   getInOut().getIFB_Control().getIFB_Content().getIFB_Iteration(0).
   getIFBProcess().getBATCH().setValue(getInOut().getIFB_Control().g
   etBatchNumber());

   getInOut().getIFB_Control().getIFB_Content().getIFB_Iteration(0).
   getIFBProcess().getTABLE(0).setValue("EIM_ACCOUNT");

   getInOut().getIFB_Control().getIFB_Content().getIFB_Iteration(0).
   getExportProcess().getCLEAR_INTERFACE_TABLE().setValue("TRUE");

   getInOut().getIFB_Control().getIFB_Content().getIFB_Iteration(0).
   getExportProcess().getEXPORT_ALL_ROWS().setValue("FALSE");

         // Retrieve the current database timestamp
         // For Oracle, we need to specify the timestamp format that
   we want to retrieve
         // The query to retrieve the timestamp is also database
   specific.
         // Please see documentation for the correct query to use.
         com.stc.eways.jdbcx.SqlStatementAgent alterAgent =
   getIn1().getSqlAgent("alterAgent");
         alterAgent.execute("alter session set NLS_DATE_FORMAT =
   'YYYY-MM-DD HH24:MI:SS'");
         com.stc.eways.jdbcx.SqlStatementAgent selectAgent =
   getIn1().getSqlAgent("selectAgent");
         com.stc.eways.jdbcx.ResultSetAgent rs =
   selectAgent.executeQuery("select sysdate from dual");
         while (rs.next())
         {
            currentts = rs.getTimestamp(1);
         }
         // Retrieve the last export time to exclude previously
   exported records in this export operation
         lastts = getInOut().getIFB_Control().getLastExportTime();
         ind = currentts.toString().indexOf(".");
         currentStr = currentts.toString().substring(0, ind);

   getInOut().getIFB_Control().getIFB_Content().getIFB_Iteration(0).
   getExportProcess().getEXPORT_MATCHES().setValue("S_ORG_EXT,
   (LAST_UPD >= '" + lastts + "' AND LAST_UPD < '" + currentStr +
   "')");

   EGate.traceln(EGate.TRACE_COLLABSERVICE,EGate.TRACE_EVENT_INFORMA
   TION,">>>>> Current Time: " + currentStr);

         // Generate the IFB file
         filename = getInOut().getIFB_Control().generateIfb();

   EGate.traceln(EGate.TRACE_COLLABSERVICE,EGate.TRACE_EVENT_INFORMA
   TION,">>>>> Creating IFB file: " + filename);
         retVal =
   getInOut().getEIM_Control().startTaskAndWaitUntilDone();

   EGate.traceln(EGate.TRACE_COLLABSERVICE,EGate.TRACE_EVENT_INFORMA
   TION,">>>>> Ran EIM returned: " + retVal);
         if (retVal.equals("EIM_SUCCESS"))
         {
            // Save the export time
           getInOut().getIFB_Control().setLastExportTime(currentStr);

   EGate.traceln(EGate.TRACE_COLLABSERVICE,EGate.TRACE_EVENT_INFORMA
   TION,">>>>> Set current time to file: " + currentStr);
         }
         else
         {
         }


   EGate.traceln(EGate.TRACE_COLLABSERVICE,EGate.TRACE_EVENT_INFORMA
   TION,">>>>> Ran EIM returned status: "
   +getInOut().getEIM_Control().getServerTasks().getRow().getTK_STAT
   US()  + "   state: " +
   getInOut().getEIM_Control().getServerTasks().getRow().getTK_DISP_
   RUNSTATE());

   EGate.traceln(EGate.TRACE_COLLABSERVICE,EGate.TRACE_EVENT_INFORMA
   TION,">>>>> Creating result set....");

         // Retrieve records from EIM_ACCOUNT interface table and
   publish it to the queue
         getIn1().getEIM_ACCOUNT().select("addr_addr_name is not
   null");
         while (getIn1().getEIM_ACCOUNT().next())
         {

   EGate.traceln(EGate.TRACE_COLLABSERVICE,EGate.TRACE_EVENT_INFORMA
   TION,">>>>> Has data...." + getIn1().getEIM_ACCOUNT().getNAME());
            payload = getIn1().getEIM_ACCOUNT().getNAME() + "|" +
   getIn1().getEIM_ACCOUNT().getLOC();
            getOut1().setPayload(payload);
            getOut1().send();
         }

         // Clean up the exported records
         com.stc.eways.jdbcx.SqlStatementAgent deleteAgent = 
   getIn1().getSqlAgent("deleteAgent");
         deleteAgent.executeUpdate("delete from eim_account where 
   IF_ROW_STAT = 'EXPORTED' and IF_ROW_BATCH_NUM = '" + 
   getInOut().getIFB_Control().getBatchNumber() +"'");

   EGate.traceln(EGate.TRACE_COLLABSERVICE,EGate.TRACE_EVENT_INFORMA
   TION,">>>>> Delete from eim_account ...");
         return retBoolean;
      }
```

5.3.2 e*Gate to Siebel

Overview

Figure 44 e*Gate-to-Siebel Process Flow



1 The Siebel EIM e*Way extracts data from an Intelligent Queue for processing.

2 The e*Way processes the information following a Collaboration previously created using structural information extracted from Siebel, and inserts validated rows into the Siebel Interface Tables.

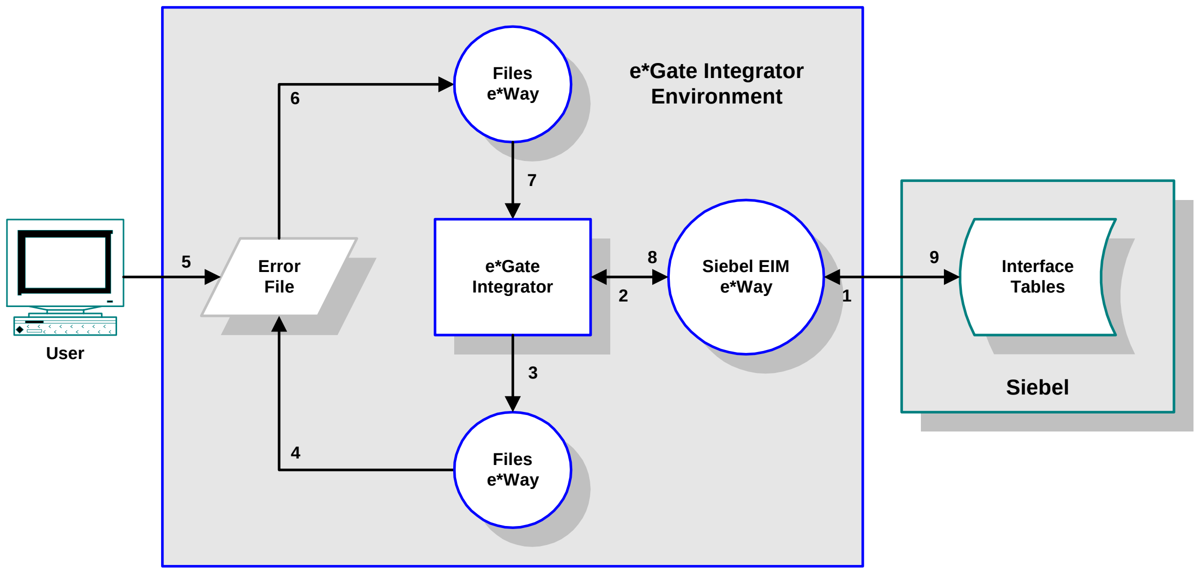
Note: *e*Gate allows the population of ROW_ID, IF_ROW_BATCH_NUM, and IF_ROW_STAT, according to the chosen naming standards during the insert statement.*

3 An IFB control file is built (or retrieved) and created to the Siebel system for use by the EIM in populating the Base Tables with data from the Interface Tables.

4 The e*Way initiates the Siebel Enterprise Integration Manager (EIM) to load the data from the Interface Tables into the appropriate Siebel Base Tables.

5 Upon completion of the EIM process, e*Gate interrogates the **IF_ROW_STAT** column in the Siebel Interface Tables to verify the correct transfer of data to the Base Tables. All records transferred successfully are deleted from the Interface Tables.

Figure 45 e*Gate-to-Siebel Error Processing



6 If any errors have occurred, the rejected records are pulled back into e*Gate by the EIM e*Way, placed in a error log file, and deleted from the Interface Tables.

7 User intervention is required to analyze and correct the data, and submit the records for reprocessing.

Import Procedure

Following are the logical steps for importing data into Siebel, using the provided Java methods:

1 Generate the IFB, if it does not already exist (using **generateIfb()**).

2 Populate the interface table.

3 Start the Siebel task (using **startTask()**).

4 Perform other operations if necessary.

Note: *If no other operations need to be performed, steps 3 and 5 can be combined by using* **startTaskAndWaitUntilDone()**.

5 Wait until the Siebel task is done (using **waitUntilDone(taskNum)**).

6 Verify the import task is successful.

7 Clean up the imported records in the interface table if the operation is successful.

8 Check and perform necessary operations if there is any record fail to import.

9 You also can perform additional steps to **set** and **get** the state of the last import operation (using **getImportState()** and **setImportState(MSG_ACKED)**).

Note: *If the IFB file already exists, there is no need to generate it.*

Example

The sample schema **EIM_Post** on page 52 provides an example of importing data into the Siebel EIM_ACCOUNT interface table. This sample schema follows the procedure shown below:

Note: *Performance can be improved if batch mode operation is used.*

1 Verify the state of the last import operation.

2 Log the import state if it is not acknowledged and continue the operation.

3 Populate the interface table EIM_ACCOUNT.

4 Update the import state file to **inserted**.

5 Generate the IFB file.

6 Start the Siebel server task and wait until it is done.

7 Set the import state to **processed**.

If the import operation is successful,

8 Clean up the imported records in the interface table for this batch operation.

9 Check if any records failed to import.

10 Update the import state file to **acknowledged**.

Import Code

```
public boolean executeBusinessRules() throws java.lang.Exception
      {
         boolean retBoolean = true;
         String MSG_ACKED = "0";
         String MSG_INSERTED = "1";
         String MSG_PROCESSED = "2";
         String filename = null;
         String taskState = "START";
         String taskNum = null;
         String importState = null;

         // Verify the state of the last import operation
        // Log the import state if it is not acknowledged and continue 
   the operation
         importState = getInOut().getIFB_Control().getImportState();
         if (importState.equals(MSG_ACKED))
         {
   
   EGate.traceln(EGate.TRACE_COLLABSERVICE,EGate.TRACE_EVENT_INFORMA
   TION,">>>>> Import state: " + importState + ". Message 
   acknowledged in the last import.");
         }
         else
         {
```

```
EGate.traceln(EGate.TRACE_COLLABSERVICE,EGate.TRACE_EVENT_INFORMA
TION,">>>>> Import state is not MSG_ACKED, it's : " + importState
+ ". The program will continue to import the records in the
interface table after resetting the import state.");
         getInOut().getIFB_Control().setImportState(MSG_ACKED);
      }

      // Populate the interface table EIM_ACCOUNT
      // Note that this example insert the record one at a time.
      // Users can significantly increase the performance by
inserting the records in batch mode.
      for( int ii=0;ii < getIn1().countDataContract();ii++)
      {

EGate.traceln(EGate.TRACE_COLLABSERVICE,EGate.TRACE_EVENT_INFORMA
TION,">>>>> Creating updatable result set...");
         getOut1().setScrollTypeToScrollSensitive();
         getOut1().setConcurrencyToUpdatable();
         getOut1().getEIM_ACCOUNT().select("");
         getOut1().getEIM_ACCOUNT().moveToInsertRow();

getOut1().getEIM_ACCOUNT().setROW_ID(Long.toString(System.current
TimeMillis()));

getOut1().getEIM_ACCOUNT().setIF_ROW_BATCH_NUM(getInOut().getIFB_
Control().getBatchNumber());
         getOut1().getEIM_ACCOUNT().setIF_ROW_STAT("FOR IMPORT");
         getOut1().getEIM_ACCOUNT().setPARTY_TYPE_CD("SEEBEYOND
CORP PARTY");
       getOut1().getEIM_ACCOUNT().setADDR_ADDR_NAME("Address name
" + Integer.toString(ii+1));

getOut1().getEIM_ACCOUNT().setPARTY_UID(getIn1().getDataContract(
ii).getCustomerNumber());

getOut1().getEIM_ACCOUNT().setNAME(getIn1().getDataContract(ii).g
etAccountName());

getOut1().getEIM_ACCOUNT().setLOC(getIn1().getDataContract(ii).ge
tSiteLocation());

getOut1().getEIM_ACCOUNT().setADDR_FAX_PH_NUM(getIn1().getDataCon
tract(ii).getMainFax());

getOut1().getEIM_ACCOUNT().setADDR_PH_NUM(getIn1().getDataContrac
t(ii).getMainPhone());

getOut1().getEIM_ACCOUNT().setADDR_ADDR(getIn1().getDataContract(
ii).getStreet());

getOut1().getEIM_ACCOUNT().setADDR_CITY(getIn1().getDataContract(
ii).getCity());

getOut1().getEIM_ACCOUNT().setADDR_STATE(getIn1().getDataContract
(ii).getState());

getOut1().getEIM_ACCOUNT().setADDR_ZIPCODE(getIn1().getDataContra
ct(ii).getPostalCode());

getOut1().getEIM_ACCOUNT().setADDR_COUNTRY(getIn1().getDataContra
ct(ii).getCountry());
```

```
EGate.traceln(EGate.TRACE_COLLABSERVICE,EGate.TRACE_EVENT_INFORMA
TION,">>>>> Inserting row...");
         getOut1().getEIM_ACCOUNT().insertRow();
      }

     // users will need to commit the record otherwise Siebel will
not see it
      getOut1().commit();

      // update the import state file to "inserted"
      getInOut().getIFB_Control().setImportState(MSG_INSERTED);
      importState = MSG_INSERTED;

EGate.traceln(EGate.TRACE_COLLABSERVICE,EGate.TRACE_EVENT_INFORMA
TION,">>>>> Interface table records committed.  Import state set
to MSG_INSERTED.");

     // Prepare to generate the IFB file; this is an optional step
if the IFB file already exists
      if (importState.equals(MSG_INSERTED))
      {

EGate.traceln(EGate.TRACE_COLLABSERVICE,EGate.TRACE_EVENT_INFORMA
TION,">>>>> Records committed, will set values for IFB file ...");

getInOut().getIFB_Control().getIFB_Content().getHeaderName().setV
alue("Siebel Interface Manager");

getInOut().getIFB_Control().getIFB_Content().getIFB_Iteration(0).
getProcessName().setValue("Import Accounts");

getInOut().getIFB_Control().getIFB_Content().getHeader().getPROCE
SS().setValue("Import Accounts");

getInOut().getIFB_Control().getIFB_Content().getIFB_Iteration(0).
getIFBProcess().getTYPE().setValue("SHELL");

getInOut().getIFB_Control().getIFB_Content().getIFB_Iteration(0).
getIFBProcess().getINCLUDE(0).setValue("Import Accounts without
Addresses w/o Position");

getInOut().getIFB_Control().getIFB_Content().getIFB_Iteration(1).
getProcessName().setValue("Import Accounts without Addresses w/o
Position");

getInOut().getIFB_Control().getIFB_Content().getIFB_Iteration(1).
getIFBProcess().getTYPE().setValue("IMPORT");

getInOut().getIFB_Control().getIFB_Content().getIFB_Iteration(1).
getIFBProcess().getBATCH().setValue(getInOut().getIFB_Control().g
etBatchNumber());

getInOut().getIFB_Control().getIFB_Content().getIFB_Iteration(1).
getIFBProcess().getONLY_BASE_TABLES().setValue("S_PARTY,
S_ORG_EXT, S_ADDR_ORG");

getInOut().getIFB_Control().getIFB_Content().getIFB_Iteration(1).
getIFBProcess().getTABLE(0).setValue("EIM_ACCOUNT");

getInOut().getIFB_Control().getIFB_Content().getIFB_Iteration(1).
getIFBProcess().getUSING_SYNONYMS().setValue("FALSE");
```

```
getInOut().getIFB_Control().getIFB_Content().getIFB_Iteration(1).
getImportProcess().getINSERT_ROWS().setValue("TRUE");

getInOut().getIFB_Control().getIFB_Content().getIFB_Iteration(1).
getImportProcess().getUPDATE_ROWS().setValue("TRUE");

getInOut().getIFB_Control().getIFB_Content().getIFB_Iteration(1).
getImportProcess().getDEFAULT_COLUMN(0).setValue("ACTIVE_FLG,
\"Y\"");

getInOut().getIFB_Control().getIFB_Content().getIFB_Iteration(1).
getImportProcess().getDEFAULT_COLUMN(1).setValue("DISA_CLEANSE_FL
G, \"N\"");

getInOut().getIFB_Control().getIFB_Content().getIFB_Iteration(1).
getImportProcess().getDEFAULT_COLUMN(2).setValue("EVT_LOC_FLG,
\"N\"");

getInOut().getIFB_Control().getIFB_Content().getIFB_Iteration(1).
getImportProcess().getDEFAULT_COLUMN(3).setValue("FCST_ORG_FLG,
\"N\"");

getInOut().getIFB_Control().getIFB_Content().getIFB_Iteration(1).
getImportProcess().getDEFAULT_COLUMN(4).setValue("INT_ORG_FLG,
\"Y\"" );

getInOut().getIFB_Control().getIFB_Content().getIFB_Iteration(1).
getImportProcess().getDEFAULT_COLUMN(5).setValue("PROSPECT_FLG,
\"N\"");

getInOut().getIFB_Control().getIFB_Content().getIFB_Iteration(1).
getImportProcess().getDEFAULT_COLUMN(6).setValue("PRTNR_FLG,
\"N\"");

getInOut().getIFB_Control().getIFB_Content().getIFB_Iteration(1).
getImportProcess().getDEFAULT_COLUMN(7).setValue("PRTNR_PUBLISH_F
LG, \"N\"");

getInOut().getIFB_Control().getIFB_Content().getIFB_Iteration(1).
getImportProcess().getDEFAULT_COLUMN(8).setValue("RPLCD_WTH_CMPT_
FLG, \"N\"");

getInOut().getIFB_Control().getIFB_Content().getIFB_Iteration(1).
getImportProcess().getDEFAULT_COLUMN(9).setValue("ROOT_PARTY_FLG,
\"N\"");

getInOut().getIFB_Control().getIFB_Content().getIFB_Iteration(1).
getImportProcess().getDEFAULT_COLUMN(10).setValue("ADDR_ACTIVE_FL
G, \"Y\"");

getInOut().getIFB_Control().getIFB_Content().getIFB_Iteration(1).
getImportProcess().getDEFAULT_COLUMN(11).setValue("ADDR_BL_ADDR_F
LG, \"Y\"");

getInOut().getIFB_Control().getIFB_Content().getIFB_Iteration(1).
getImportProcess().getDEFAULT_COLUMN(12).setValue("ADDR_DISACLEAN
SEFL, \"N\"");

getInOut().getIFB_Control().getIFB_Content().getIFB_Iteration(1).
getImportProcess().getDEFAULT_COLUMN(13).setValue("ADDR_MAIN_ADDR
_FLG, \"Y\"");

getInOut().getIFB_Control().getIFB_Content().getIFB_Iteration(1).
```

```
getImportProcess().getDEFAULT_COLUMN(14).setValue("ADDR_NAME_LOCK
_FLG, \"N\"");

getInOut().getIFB_Control().getIFB_Content().getIFB_Iteration(1).
getImportProcess().getDEFAULT_COLUMN(15).setValue("ADDR_SHIP_ADDR
_FLG, \"Y\"");
         filename = getInOut().getIFB_Control().generateIfb();

EGate.traceln(EGate.TRACE_COLLABSERVICE,EGate.TRACE_EVENT_INFORMA
TION,">>>>> Creating IFB file: " + filename);

         // Start the Siebel server task and wait until it is done
         taskNum=getInOut().getEIM_Control().startTask();

taskState=getInOut().getEIM_Control().waitUntilDone(taskNum);

EGate.traceln(EGate.TRACE_COLLABSERVICE,EGate.TRACE_EVENT_INFORMA
TION,">>>>> Ran EIM returned task num: " + taskNum + " and
returned: " + taskState);

EGate.traceln(EGate.TRACE_COLLABSERVICE,EGate.TRACE_EVENT_INFORMA
TION,">>>>> Ran EIM returned status: "
+getInOut().getEIM_Control().getServerTasks().getRow().getTK_STAT
US()  + "   state: " +
getInOut().getEIM_Control().getServerTasks().getRow().getTK_DISP_
RUNSTATE());

         // Set the import state to "processed"
        getInOut().getIFB_Control().setImportState(MSG_PROCESSED);
         importState = MSG_PROCESSED;

EGate.traceln(EGate.TRACE_COLLABSERVICE,EGate.TRACE_EVENT_INFORMA
TION,">>>>> Ran EIM.  Import state set to MSG_PROCESSED.");
      }
      else
      {

EGate.traceln(EGate.TRACE_COLLABSERVICE,EGate.TRACE_EVENT_INFORMA
TION,">>>>> Skipped running of EIM.  Import state is not
MSG_INSERTED, it's : " + importState);
      }

      // If the import operation is successful, clean up the
imported records in the interface table for this batch operation
      // Check if there is any record fail to import.
      if (importState.equals(MSG_PROCESSED) &&
taskState.equals("EIM_SUCCESS"))
      {
         com.stc.eways.jdbcx.SqlStatementAgent deleteAgent =
getOut1().getSqlAgent("deleteAgent");
         deleteAgent.executeUpdate("delete from eim_account where
IF_ROW_STAT = 'IMPORTED' and IF_ROW_BATCH_NUM = '" +
getInOut().getIFB_Control().getBatchNumber() + "'");
         getOut1().commit();

EGate.traceln(EGate.TRACE_COLLABSERVICE,EGate.TRACE_EVENT_INFORMA
TION,">>>>> Delete from eim_account ...");
         com.stc.eways.jdbcx.SqlStatementAgent notImportAgent =
getOut1().getSqlAgent("notImportAgent");
         com.stc.eways.jdbcx.ResultSetAgent rs =
notImportAgent.executeQuery("select count(1) from eim_account
where IF_ROW_STAT != 'IMPORTED' and IF_ROW_BATCH_NUM = '" +
getInOut().getIFB_Control().getBatchNumber() + "'");
         while (rs.next())
         {

EGate.traceln(EGate.TRACE_COLLABSERVICE,EGate.TRACE_EVENT_INFORMA
TION,">>>>> Number of NOT IMPORTED records: " + rs.getString(1));
         }
         getInOut().getIFB_Control().setImportState(MSG_ACKED);

EGate.traceln(EGate.TRACE_COLLABSERVICE,EGate.TRACE_EVENT_INFORMA
TION,">>>>> Cleaned up interface table.  Import state set to
MSG_ACKED.");
      }
      else
      {

EGate.traceln(EGate.TRACE_COLLABSERVICE,EGate.TRACE_EVENT_INFORMA
TION,">>>>> Did not clean up interface table.  Import state: " +
importState);
      }
      return retBoolean;
   }
```

5.4 Event Type Definitions

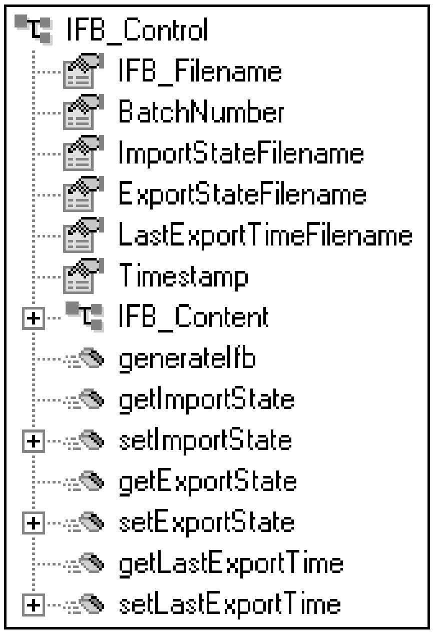
5.4.1 SiebelEIM

The Siebel EIM e*Way ETD, **SiebelEIM.xsc**, provides the main user interface for the e*Way. It contains two main nodes: **IFB_Control** and **EIM_Control**.

IFB_Control

If you want to have the e*Way generate the Siebel IFB file automatically, the attribute nodes in **IFB_Control** (shown in Figure 46) take their values from the e*Way's configuration parameters (see **Siebel Control** on page 115). Otherwise, you must populate them manually.

Figure 46 IFB_Control


IFB_Control
IFB_Filename
BatchNumber
ImportStateFilename
ExportStateFilename
LastExportTimeFilename
Timestamp
IFB_Content
generateIfb
getImportState
setImportState
getExportState
setExportState
getLastExportTime
setLastExportTime

Note: *If you redefine any of the properties in this ETD, the values you place in the ETD will take precedence over the values obtained from the configuration file.*

Of particular interest is the **Timestamp** node, which is used if you want to obtain records from the database within a certain time frame. The procedure for using this node is described in **Using the Timestamp Node** on page 45.

Note: *Timestamps are obtained from the Siebel Database Server. If different Siebel components are installed on different systems (within the same overall installation), they must be synchronized for this feature to work properly.*

The **IFB_Control** node also contains a secondary node, **IFB_Content**, and seven method nodes:

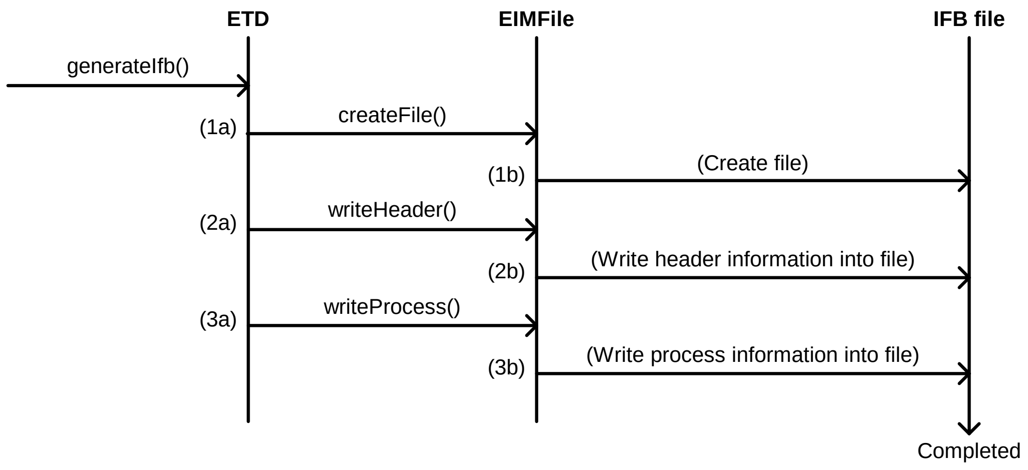
generateIfb	setExportState
getImportState	getLastExportTime
setImportState	setLastExportTime
getExportState	

These methods are described below and in **IFB_Control Class** on page 140. The **IFB_Content** node is described in the following section.

generateIfb()

This is the method to call if you want to have the e*Way generate the IFB file automatically. In this case, the e*Way takes the content of the input data and creates the Siebel IFB file at the location specified in the configuration file.

Note: *e*Gate must have a network path to the generated IFB file, such as a NFS mounted directory, UNC or local directory, or the e*Way must run on the same host as the Siebel server. No FTP capability is provided.*

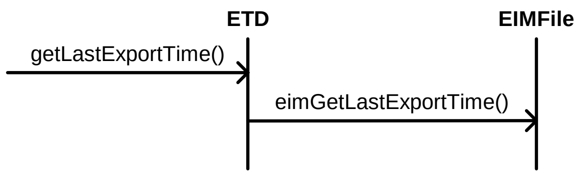


As shown in the preceding diagram, calling **generateIfb()** initiates the following sequence of events:

1. Calls **createFile()**, which creates the file (if the file already exists, it will be overwritten).
2. Calls **writeHeader()**, which writes the Header section into the IFB file.
3. Calls **writeProcess()**, which writes the Process section into the IFB file, completing the file.

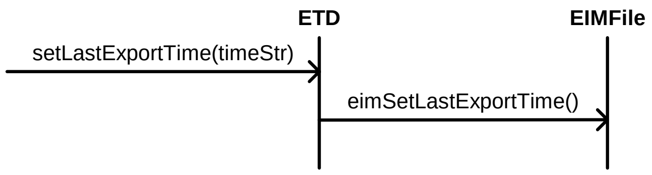
getLastExportTime()

This method calls **eimGetLastExportTime()** to get the time that data was last exported from the file that is specified in the e*Way configuration file, or the ETD.



setLastExportTime(timeStr)

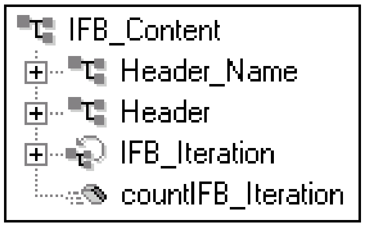
This method calls **eimSetLastExportTime()** to set the time that data was last exported into the file that is specified in the e*Way configuration file, or the ETD.



IFB_Content

The **IFB_Content** node is used to hold information that creates the IFB file and its parameters. It contains three tertiary nodes, **Header_Name**, **Header**, and the repeating node **IFB_Iteration**. It also contains one method, **countIFB_Iteration**.

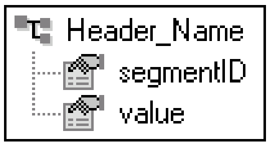
Figure 47 IFB_Content



Header_Name

The **Header_Name** node (see Figure 48) contains two attributes nodes, which specify the header name of the IFB File.

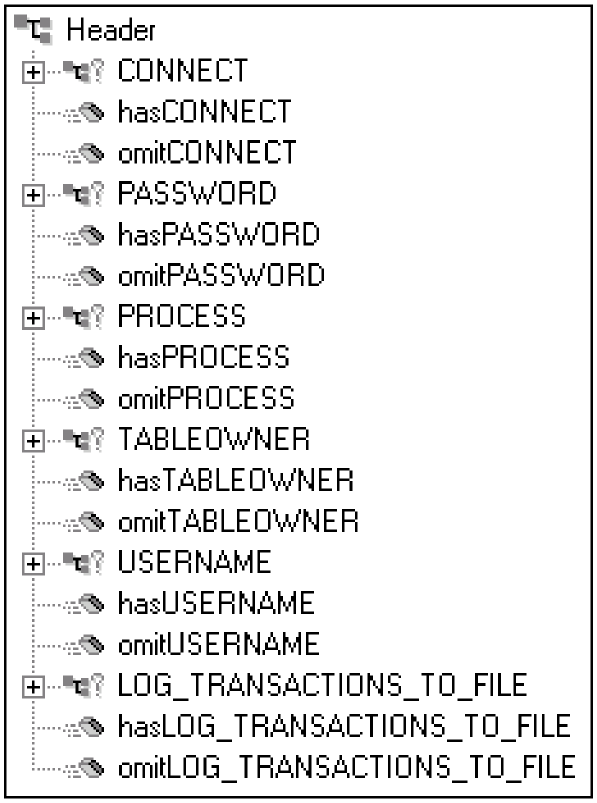
Figure 48 Header_Name



Header

The **Header** node (see Figure 49) contains attribute nodes for user and table information appearing in the IFB File header (compare with the example file shown in **IFB Configuration File** on page 74).

Figure 49 Header

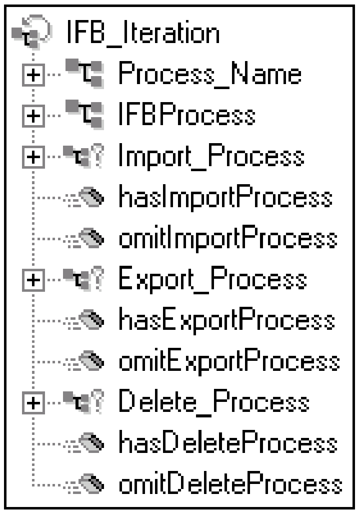


```
Header
  + CONNECT
    hasCONNECT
    omitCONNECT
  + PASSWORD
    hasPASSWORD
    omitPASSWORD
  + PROCESS
    hasPROCESS
    omitPROCESS
  + TABLEOWNER
    hasTABLEOWNER
    omitTABLEOWNER
  + USERNAME
    hasUSERNAME
    omitUSERNAME
  + LOG_TRANSACTIONS_TO_FILE
    hasLOG_TRANSACTIONS_TO_FILE
    omitLOG_TRANSACTIONS_TO_FILE
```

IFB_Iteration

The **IFB_Iteration** node (see Figure 50) contains attribute nodes for controlling the IFB process.

Figure 50 IFB_Iteration



```
IFB_Iteration
  + Process_Name
  + IFBProcess
  + Import_Process
    hasImportProcess
    omitImportProcess
  + Export_Process
    hasExportProcess
    omitExportProcess
  + Delete_Process
    hasDeleteProcess
    omitDeleteProcess
```

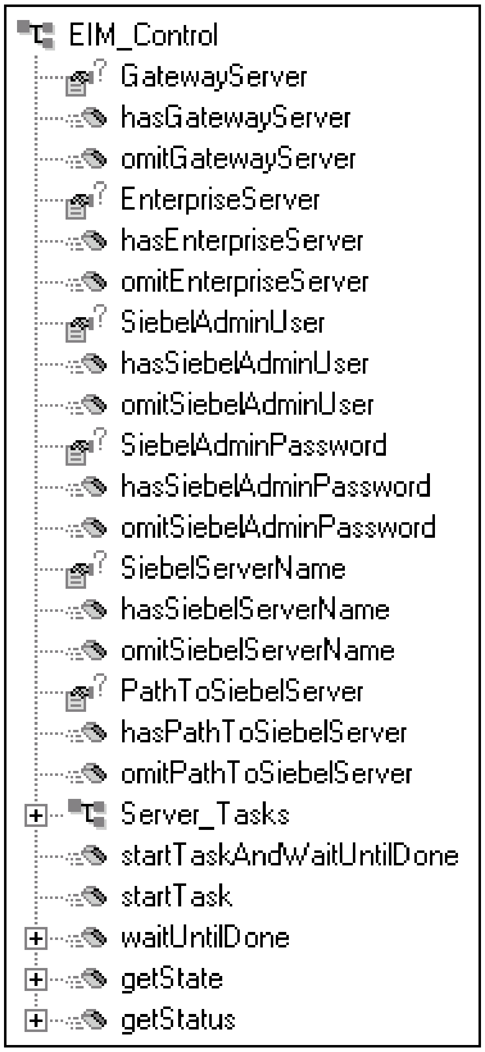
EIM_Control

EIM_Control, shown in Figure 51, contains attribute nodes for the Siebel server information. These are taken from the e*Way configuration file when automatically generating the IFB file (see **Siebel Server** on page 112). It also contains a tertiary node **Server_Tasks** containing the output of the server tasks, and the method nodes:

startTaskAndWaitUntilDone	getState
startTask	getStatus
waitUntilDone	

These methods are described below and in **EIM_Control Class** on page 136.

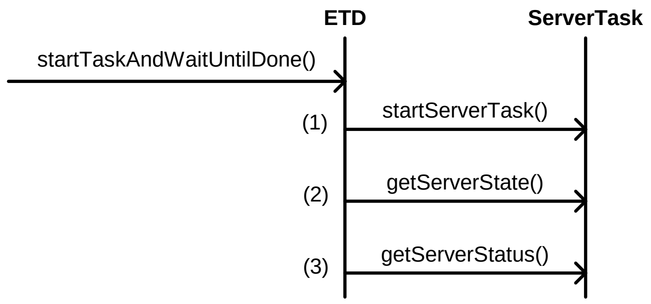
Figure 51 EIM_Control



```
EIM_Control
  GatewayServer
  hasGatewayServer
  omitGatewayServer
  EnterpriseServer
  hasEnterpriseServer
  omitEnterpriseServer
  SiebelAdminUser
  hasSiebelAdminUser
  omitSiebelAdminUser
  SiebelAdminPassword
  hasSiebelAdminPassword
  omitSiebelAdminPassword
  SiebelServerName
  hasSiebelServerName
  omitSiebelServerName
  PathToSiebelServer
  hasPathToSiebelServer
  omitPathToSiebelServer
+ Server_Tasks
  startTaskAndWaitUntilDone
  startTask
+ waitUntilDone
+ getState
+ getStatus
```

startTaskAndWaitUntilDone()

This method obtains the task number of the job associated with the IFB file, and monitors the job by checking its state. If the job exits with an error, it also checks the error status.



As shown above, calling **startTaskAndWaitUntilDone()** initiates the following sequence of events:

1 Calls **startServerTask()**, which issues the command:

```
start task for component EIM server *servername* with config=*ifb_file*
```

and obtains the task number.

2 Calls **getServerState()**, which issues the command:

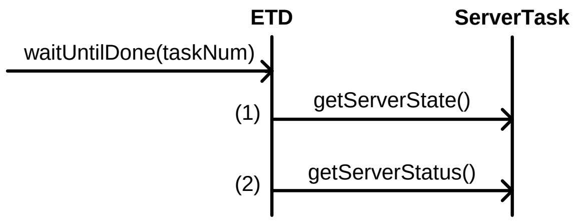
```
list task *tasknum* for *servername*
```

and obtains the state of the job. It then waits 10 seconds and repeats until the job is completed or fails.

3 If the job fails, it calls **getServerStatus()** and obtains the status of the job.

waitUntilDone(taskNum)

This method monitors the job by checking its state. If the job exited with error, it will also check the error status.



As shown above, calling **waitUntilDone(taskNum)** initiates the following sequence of events:

1 Calls **getServerState()**, which issues the command:

```
list task *tasknum* for *servername*
```

and obtains the state of the job. It then waits 10 seconds and repeats until the job is completed or fails.

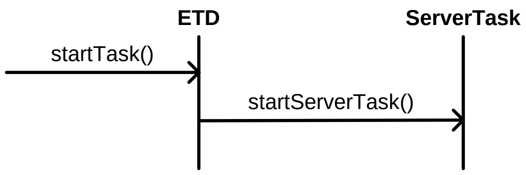
2 If the job fails, calls **getServerStatus()** and obtains the status of the job.

startTask()

This method calls **startServerTask()**, which issues the command

```
start task for component EIM server *servername* with config=*ifb_file*
```

and obtains task number associated with the IFB file.

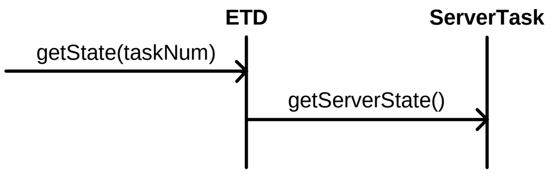


getState(taskNum)

This method calls **getServerState()**, which issues the command:

```
list task *tasknum* for *servername*
```

and obtains the state of the job.

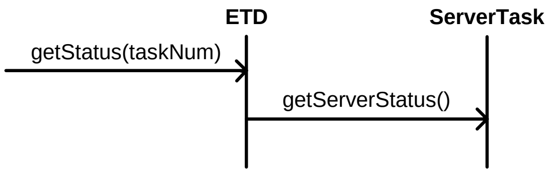


getStatus(taskNum)

This method calls **getServerStatus()**, which issues the command:

```
list task *tasknum* for *servername*
```

and obtains the status of the job.

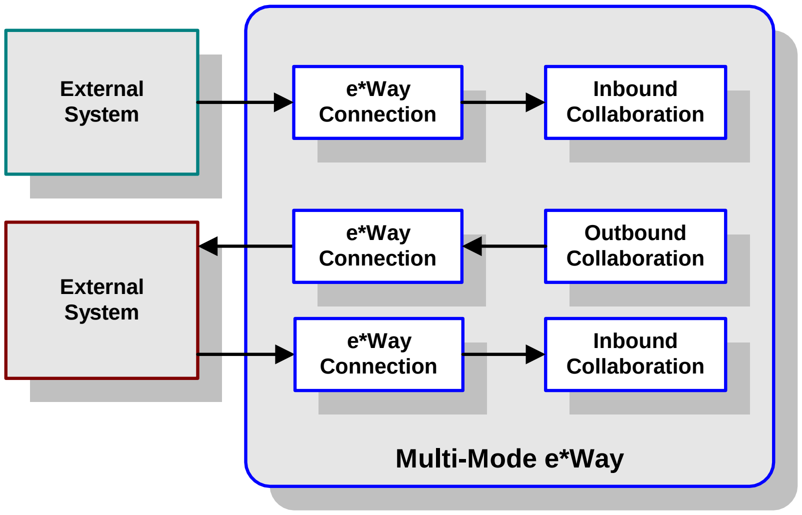


5.5 Basic e*Gate/e*Way Operation

5.5.1 Multi-Mode e*Way

The Siebel EIM e*Way is based on the SeeBeyond Multi-Mode e*Way, which is a multi-threaded component forming an Intelligent Adapter for e*Gate Integrator to exchange information with multiple external systems. The e*Way connects to one or more external systems by means of *e*Way Connections*, each of which must be configured for the specific external system to which it connects (see Figure 52).

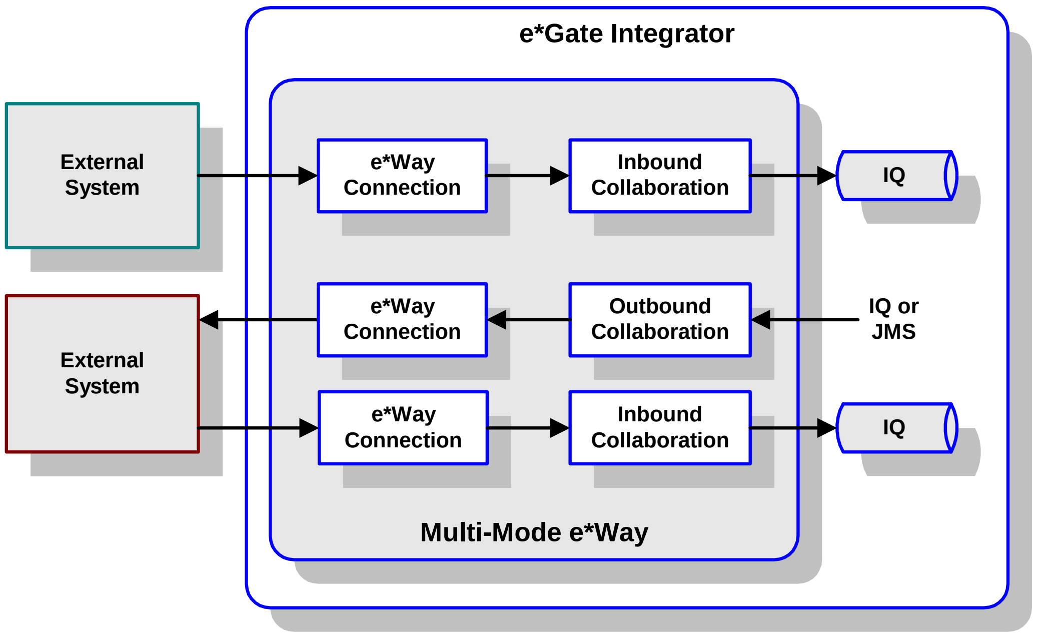
Figure 52 Multi-Mode e*Way



Each e*Way performs one or more *Collaborations* (see **Collaborations** on page 99). Bidirectional data flow requires at least two Collaborations, one *Inbound* and one *Outbound*, as shown in Figure 52. Each Collaboration processes a stream of messages, or *Events*, containing data or other information.

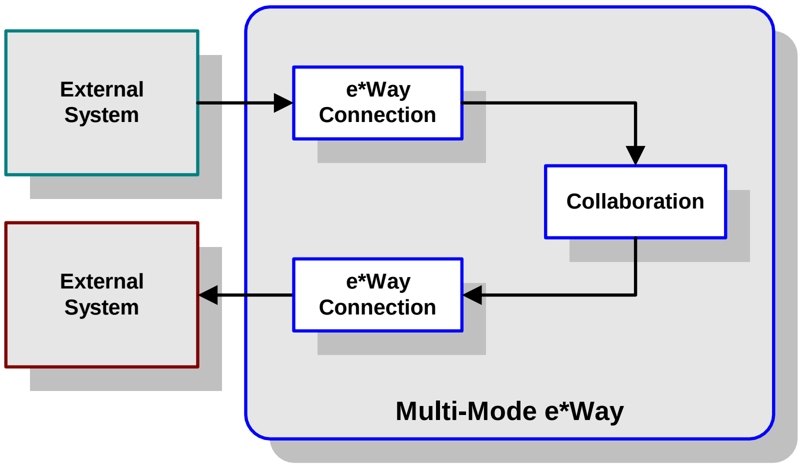
Each Collaboration that publishes its processed Events internally (within e*Gate Integrator) requires one or more *Intelligent Queues* (IQs) to receive the Events (see Figure 53). Any Collaboration that publishes its processed Events only to an external system *does not* require an IQ to receive Events.

Figure 53 e*Way within e*Gate Integrator



Although usually implemented as above, this e*Way also can be implemented as a stand-alone bridge between two or more external systems (see Figure 54).

Figure 54 Stand-alone e*Way



5.5.2 Event Type Definitions

ETDs can be categorized in two types:

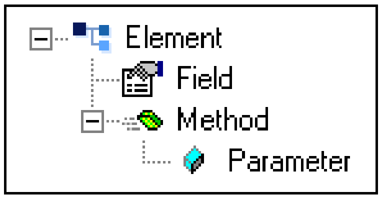
- *Data* ETDs, which represent the structure of Events (messages)
- *API-based* ETDs, or *Complex* ETDs, primarily contain APIs for communicating with external systems

Transforming data from one format to another is a major part of the processing performed by the e*Way, and data ETDs represent the data structure required by specific external systems. Generally, these ETDs are referred to as being *marshalable* because they can be *marshaled* into a flat, non hierarchical structure. See the *e*Gate Integrator User's Guide* for an extensive explanation of ETDs.

ETD Components

There are four possible components (nodes) in the Java Event Type Definition as shown in Figure 55.

Figure 55 The Java-enabled ETD

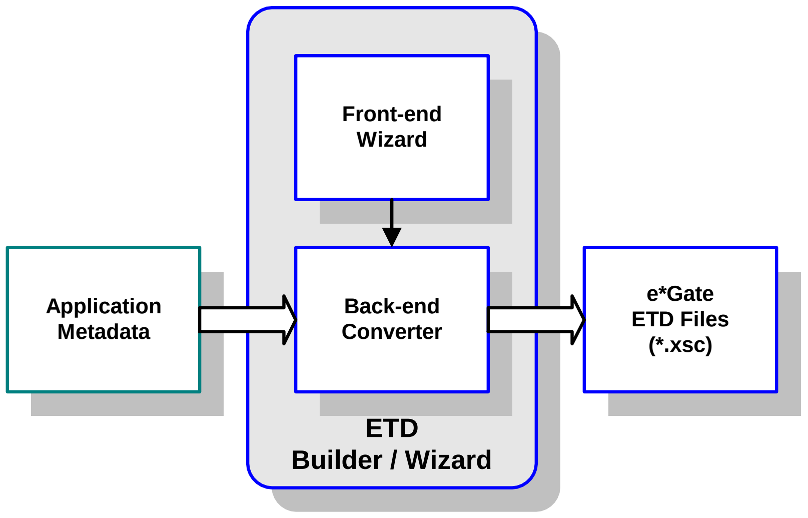


- *Elements* are the basic containers that holds the other parts of the ETD, and can contain fields and methods
- *Fields* are used to represent data, which can be in any of the following formats:
    - string
    - boolean
    - integer
    - double
    - float
- *Method* nodes represent actual Java methods
- *Parameter* nodes represent the Java method's parameters

ETD Builders

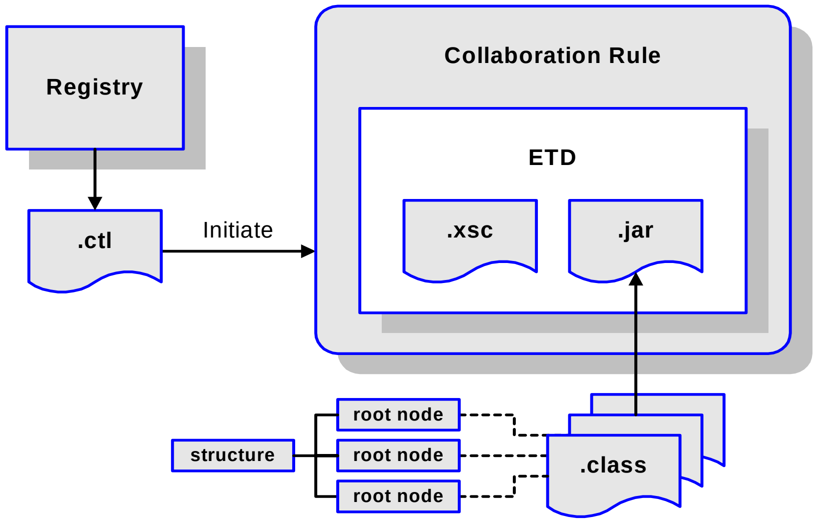
Building an ETD obviously requires knowledge of the internal data structure of the specific application. This information is obtained by extracting metadata from the Siebel database, which is automated by using the *DB Wizard (see* Figure 56).

Figure 56 Typical ETD Wizard



Once compiled, an ETD has two components, an **.xsc** file and a **.jar** file, both having the same file name. The **.jar** file contains **.class** files whose names correspond to the root node names in the ETD. Ultimately, the ETD is used within a Collaboration Rule to define the structure of the corresponding Event. At run time, the Collaboration Rule is initiated according to information contained in a **.ctl** file contained in the e*Gate Registry (see Figure 57).

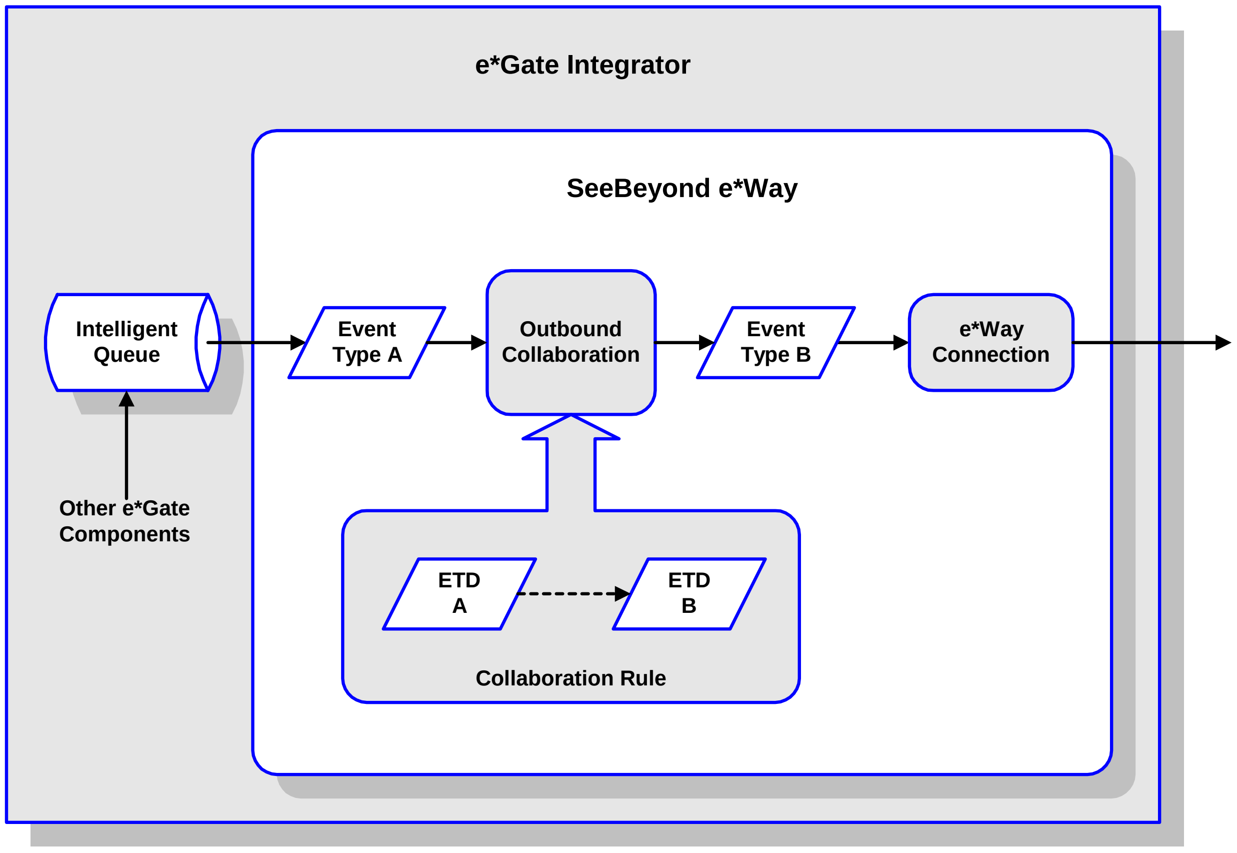
Figure 57 Event Type Definitions



5.5.3 Collaborations

Collaborations execute the business logic that enable the e*Way to perform its intended task. Each Collaboration executes a specified *Collaboration Rule*, which contains the actual instructions to execute the business logic and specifies the applicable *Event Type Definitions* (ETDs). Events Types represent *instances* of their corresponding ETDs. A look inside a typical outbound Collaboration is shown in Figure 58.

Figure 58 Outbound Collaboration

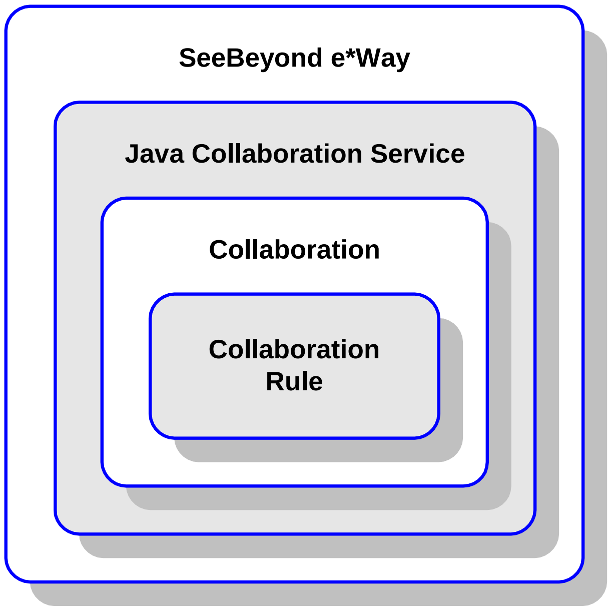


5.5.4 Java Collaboration Service

The Java Collaboration Service (JCS) provides an environment that allows you to use a Java class to implement the business logic that transforms Events as they move through e*Gate. When data passes through e*Gate using a Java Collaboration, a Java Virtual Machine (JVM) is instantiated and uses the associated Java Collaboration Rules class to accomplish the data transformation.

The relationships between the various Java e*Way components can be depicted as a nested structure, as shown in Figure 59.

Figure 59 Java Component Relationships



The Java Collaboration Service makes it possible to develop Collaboration Rules that execute e*Gate business logic using Java code. Using the Java Collaboration Editor, you create Java classes that utilize the **executeBusinessRules**, **userInitialize**, and **userTerminate** methods.

To use the Java Collaboration Service, you create a Collaboration Rule and select Java as the service. Using Event Type instances of previously defined Event Type Definitions (ETDs), you then use the Java Collaboration Rules Editor to add the rules and logic between the Event Type instances. Compiling the Collaboration Rule creates a Java Collaboration Rules class and all required supporting files. This Java class implements the data transformation logic.

For more information on the Java Collaboration Service, see the *e*Gate Integrator Collaboration Services Reference Guide*.

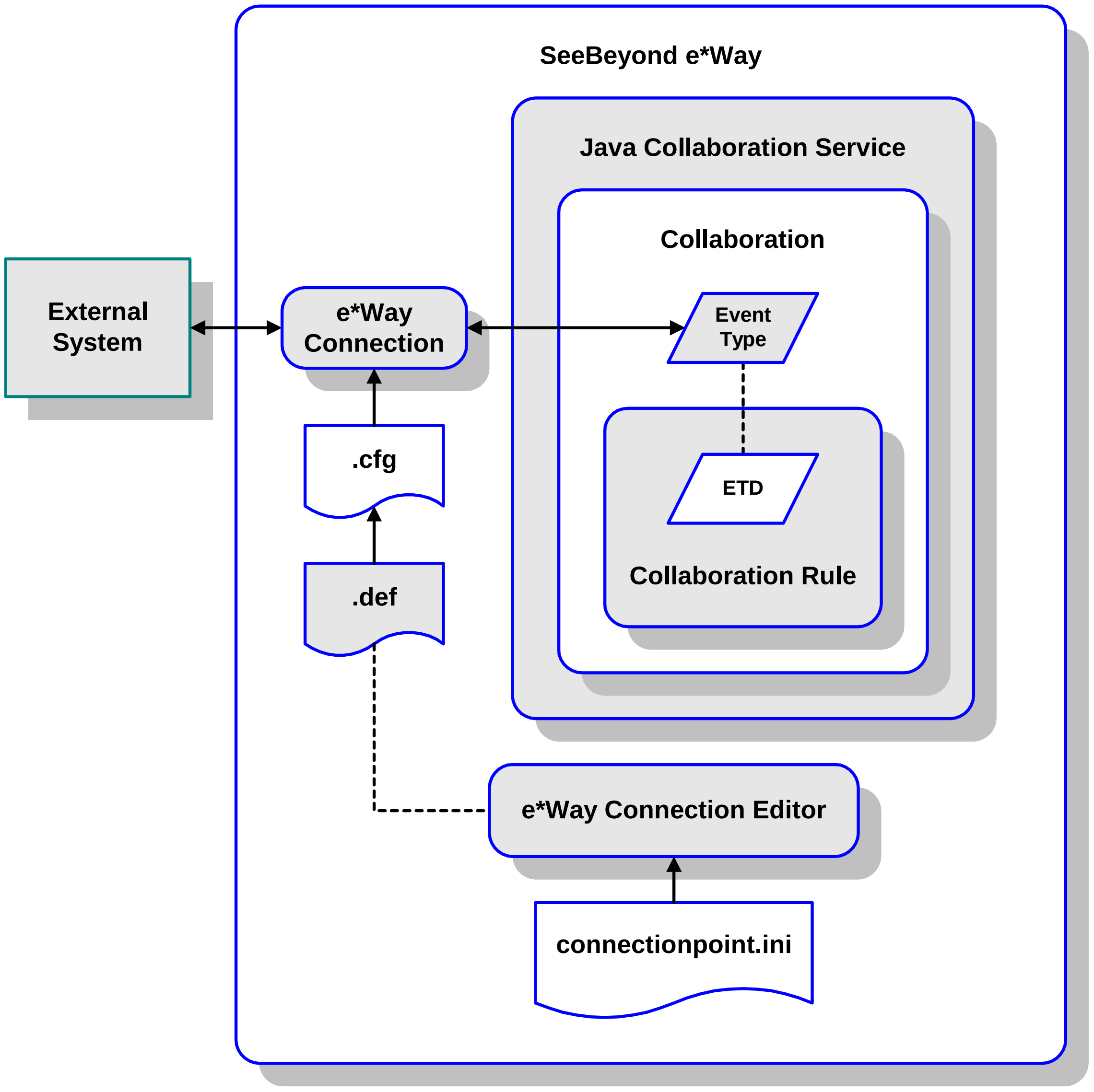
5.5.5 e*Way Connections

The e*Way Connections provide portals to external systems, allowing a single e*Way to adopt several configuration profiles simultaneously. Individual e*Way Connections can be configured using the e*Way Connection Editor to establish a particular kind of interaction with the external system.

Establishing Connections

An e*Way Connection to an external application is set up as depicted in Figure 60. The **.def** file supplied with the e*Way is configured for the specific application using the e*Way Connection Editor, and instantiated as a **.cfg** file for each e*Way Connection.

Figure 60 e*Way Connection Establishment



The e*Way Connection Editor enables you to modify all parameters of an e*Way that control the way the e*Way communicates with an external application. Because each e*Way functions in a specific way to provide an interface to a specific external application or communications protocol, each e*Way Connection has a unique set of configuration parameters.

For more information on the Java ETD Editor and the Java Collaboration Editor, see the *e*Gate Integrator User's Guide*.

Chapter 6

Configuration Parameters

This chapter describes the configuration parameters for the Java Siebel EIM e*Way.

6.1 Overview

6.1.1 Multi-Mode e*Way

The e*Way's inherent configuration parameters are set using the e*Way Configuration Editor; see **Configuring the e*Way** on page 56 for procedural information. The default configuration is provided in **stceway.def**. The Siebel EIM e*Way's Multi-Mode configuration parameters are organized into the following sections:

JVM Settings on page 105

General Settings on page 110

For additional information on the Multi-Mode e*Way, see the *Standard e*Way Intelligent Adapter User's Guide*

6.1.2 e*Way Connections

An e*Way Connection's configuration parameters also are set using the e*Way Configuration Editor; see **Creating e*Way Connections** on page 61 for procedural information. There are e*Way Connections for both Siebel EIM and the appropriate RDBMS.

Siebel EIM

The default configuration is provided in **SiebelEIM.def**. The Siebel EIM e*Way Connection's configuration parameters are organized into the following sections:

Connector on page 111

Siebel Server on page 112

Siebel Control on page 115

Siebel System Import on page 116

Siebel System Export on page 117

JDBC Oracle

The default configuration is provided in **oracle.def**. The Oracle e*Way Connection's configuration parameters are organized into the following sections:

DataSource Settings on page 118

Connector Settings on page 121

For additional information on the Oracle e*Way, see the *e*Way Intelligent Adapter for Oracle User's Guide*

DB2 Universal Database

The default configuration is provided in **db2.def**. The DB2 e*Way Connection's configuration parameters are organized into the following sections:

DataSource Settings on page 123

Connector Settings on page 127

For additional information on the DB2 e*Way, see the *e*Way Intelligent Adapter for DB2 Universal Database User's Guide*

Microsoft SQL Server

The default configuration is provided in **sqlserver.def**. The SQL Server e*Way Connection's configuration parameters are organized into the following sections:

DataSource Settings on page 129

Connector Settings on page 132

For additional information on the SQL Server e*Way, see the *e*Way Intelligent Adapter for SQL Server User's Guide*

6.2 Multi-Mode e*Way

6.2.1 JVM Settings

The JVM Settings control basic Java Virtual Machine settings.

JNI DLL Absolute Pathname

Description

Specifies the absolute pathname to where the JNI DLL installed by the *Java SDK* is located on the Participating Host.

Required Values

A valid pathname.

Note: *This parameter is **required**, and must **not** be left blank.*

Additional Information

The JNI DLL name varies for different operating systems:

Operating System	Java 2 JNI DLL Name
NT 4.0/ Windows 2000	jvm.dll
Solaris 2.6, 2.7, 2.8	libjvm.so
Linux 6	libjvm.so
HP-UX	libjvm.sl
AIX 4.3	libjvm.a

The value assigned can contain a reference to an environment variable, by enclosing the variable name within a pair of % symbols. For example:

```
%MY_JNIDLL%
```

Such variables can be used when multiple Participating Hosts are used on different platforms.

*To ensure that the **JNI .dll** file loads successfully, the Dynamic Load Library search path environment variable must be set appropriately to include all the directories under the Java SDK (or JDK) installation directory that contain shared libraries (UNIX) or **.dll** files (Windows).*

CLASSPATH Prepend

Description

Specifies the paths to be prefixed to the CLASSPATH environment variable for the Java VM.

Required Values

An absolute path or an environmental variable.

Note: *This parameter is optional and may be left blank.*

Additional Information

If left blank, no paths will be prefixed to the CLASSPATH environment variable.

Existing environment variables may be referenced in this parameter by enclosing the variable name in a pair of % signs. For example:

```
%MY_PRECLASSPATH%
```

CLASSPATH Override

Description

Specifies the complete CLASSPATH variable to be used by the Java VM. This parameter is optional. If left blank, an appropriate CLASSPATH environment variable (consisting of required e*Gate components concatenated with the system version of CLASSPATH) will be set.

Note: *All necessary JAR and ZIP files needed by both e*Gate and the Java VM must be included. It is advised that the* **CLASSPATH Prepend** *parameter should be used.*

Required Values

An absolute path or an environment variable.

Note: *This parameter is optional and may be left blank.*

Additional Information

Existing environment variables may be referenced in this parameter by enclosing the variable name in a pair of % signs. For example:

```
%MY_CLASSPATH%
```

CLASSPATH Append From Environment Variable

Description

Specifies whether to attach the environment variable to the end of CLASSPATH.

Required Values

YES or **NO**. The default value is **NO**.

Initial Heap Size

Description

Specifies the value for the initial heap size in bytes. If set to 0 (zero), the preferred value for the initial heap size of the Java VM will be used.

Required Values

An integer between **0** and **2147483647**.

Note: *This parameter is optional and may be left blank.*

Maximum Heap Size

Description

Specifies the value of the maximum heap size in bytes. If set to 0 (zero), the preferred value for the maximum heap size of the Java VM will be used.

Required Values

An integer between **0** and **2147483647**.

Note: *This parameter is optional and may be left blank.*

Maximum Stack Size for Native Threads

Description

Specifies the value of the maximum stack size in bytes for native threads. If set to 0 (zero), the default value will be used.

Required Values

An integer between **0** and **2147483647**.

Note: *This parameter is optional and may be left blank.*

Maximum Stack Size for JVM Threads

Description

Specifies the value of the maximum stack size in bytes for JVM threads. If set to 0 (zero), the preferred value for the maximum heap size of the Java VM will be used.

Required Values

An integer between **0** and **2147483647**.

Note: *This parameter is optional and may be left blank.*

Class Garbage Collection

Description

Specifies whether the Class Garbage Collection will be done automatically by the Java VM. The selection affects performance issues.

Required Values

YES or **NO**.

Garbage Collection Activity Reporting

Description

Specifies whether garbage collection activity will be reported for debugging purposes.

Required Values

YES or **NO**.

Asynchronous Garbage Collection

Description

Specifies whether asynchronous garbage collection activity will be reported for debugging purposes.

Required Values

YES or **NO**.

Report JVM Info and all Class Loads

Description

Specifies whether the JVM information and all class loads will be reported for debugging purposes.

Required Values

YES or **NO**.

Disable JIT

Description

Specifies whether the Just-In-Time (JIT) compiler will be disabled.

Required Values

YES or **NO**.

Note: *This parameter is not supported for Java Release 1.*

Remote debugging port number

Description

Specifies whether to allow remote debugging of the JVM.

Required Values

YES or **NO**.

Suspend option for debugging

Description

Specifies whether to suspend option for debugging on JVM startup.

Required Values

YES or **NO**.

6.2.2 General Settings

Rollback Wait Interval

Description

Specifies the time interval to wait before rolling back the transaction.

Required Values

A number within the range of **0** to **99999999**, representing the time interval in milliseconds.

6.3 Siebel EIM e*Way Connections

6.3.1 Connector

The Connector settings define the high level characteristics of the e*Way Connection.

type

Description

Specifies the type of e*Way Connection. The default value always should be used.

Required Values

The default is **siebeleim**.

class

Description

Specifies the class name of the **siebeleim** connector object.

Required Values

The default is **com.stc.eways.siebeleim.SiebelEIMConnector**.

6.3.2 Siebel Server

The parameters in this section initialize the Siebel Server variables.

Siebel Version

Description

Specifies the Siebel version used to connect with e*Gate

Required Values

One of the following options:

- Siebel7
- Siebel6

The default is **Siebel7**.

Database Client Connectivity

Description

Specifies the connection type version used to connect to the database.

Required Values

One of the following options:

- DB2
- ORACLE
- SQL Server

The default is **Oracle**.

Database Host Name

Description

Specifies the host machine where the Siebel database resides. If using SQL Server, this is the data source name corresponding to the Siebel database.

Required Values

A string—there is no default value.

Database Table Owner

Description

Specifies the Siebel database logon name that owns the tables being operated on.

Required Values

A string—there is no default value.

Database User Name

Description

Specifies the Siebel database logon ID.

Required Values

A string—there is no default value.

Database Password

Description

Specifies the Siebel database password.

Required Values

An encrypted string—there is no default value.

Gateway Server

Description

Specifies the address or name of the Gateway Server platform.

Required Values

A string—there is no default value.

Enterprise Server Name

Description

Specifies the Enterprise Server name.

Required Values

A string—there is no default value.

Administrator User Name

Description

Specifies the Administrator user name.

Required Values

A string—there is no default value.

Administrator Password

Description

Specifies the Administrator password.

Required Values

An encrypted string—there is no default value.

Siebel Server Name

Description

Specifies the name of the Siebel Server you are using.

Required Values

A string—there is no default value.

Path to Siebel Server

Description

Specifies the *fully-qualified* path to the Siebel Server root directory.

Required Values

A pathname—the default value is \\**SiebelBox****Siebel**.

6.3.3 Siebel Control

The functions and parameters in this section are used in processing Siebel data.

Batch Number

Description

Specifies the batch number to be used in the IFB file for processing the data.

Required Values

A number—the default is **1200**.

IFB Filename

Description

Specifies the name of the IFB file.

Required Values

A filename—the default is \\**SiebelBox****Siebel****admin****myeim.ifb**. Replace the placeholder values with the actual names.

6.3.4 Siebel System Import

The parameters in this section initialize the Siebel Server variables for Import only.

Siebel State File

Description

Determines the state of the inbound message at the end of the last run.

Required Values

A pathname—the default is **data\SiebelEIM\import_state.txt**.

Additional Information

Upon startup the Siebel e*Way checks this file. If no file is found, the state is initialized to **MSG_ACKED**. The Siebel State File accepts a relative path (e.g., **data\siebel.doc**) relative to **eGate\client**.

There are three possible states:

State 0 - MSG_ACKED

This is the initial state used for new incoming messages. It also represents the final state in which the data has been inserted into the interface table, processed by the Enterprise Interface Manager and the next message is processed into the queue.

State 1 - MSG_INSERTED

In this state the message has been inserted into the interface table but no acknowledgment has been sent to e*Gate

State 2 - MSG_PROCESSED

In this state the message has been inserted into the interface table and processed by the Enterprise Interface Manager, but no acknowledgment has been sent to e*Gate.

Note: *The integrity of this file is crucial to maintaining the correct state of the import; therefore, editing of this file is not recommended.*

6.3.5 Siebel System Export

The parameters in this section initialize the Siebel Server parameters for Export only.

Last Time of Export File

Description

Specifies the file that holds the time of when the last export was done.

Required Values

A pathname; the default is **data\SiebelEIM\last_exported_time.txt**.

Additional Information

The integrity of this file is crucial to maintaining the correct time of when the last export was done in the Siebel e*Way; therefore, editing of this file is not recommended.

Siebel State File

Description

Determines the state of the outbound Event at the end of the last run.

Required Values

A pathname; the default is **data\SiebelEIM\export_state.txt**.

Note: *The State is not currently implemented for Export.*

6.4 JDBC Oracle e*Way Connections

6.4.1 DataSource Settings

The DataSource settings define the parameters used to interact with the external database.

class

Description

Specifies the Java class in the JDBC driver that is used to implement the **ConnectionPoolDataSource** interface.

Required Values

A valid class name; the default is **oracle.jdbc.pool.OracleConnectionPoolDataSource**.

Additional Information

Use the **oracle.jdbc.xa.client.OracleXADataSource** class for XA-compliant implementations.

To use XA in Oracle 8i and Oracle9i, your Database Administrator needs to GRANT SELECT ON DBA_PENDING_TRANSACTIONS TO PUBLIC.

Note: *XA functionality is not supported on Oracle 8.0.5 databases. For more information on implementing the Oracle e*Way in an XA compliant environment, see the e*Gate Integrator User's Guide.*

DriverType

Description

Specifies the JDBC driver type for Oracle (all other JDBC drivers are ignored).

Oracle implicitly issue a commit statement even if auto commit is set to false and no explicit commit or rollback is executed. Please see Chapter 3 of the *JDBC Developer's Guide and Reference* for Oracle 8.1.7.

Any DDL operation, such as CREATE or ALTER, always includes an implicit COMMIT. If auto-commit mode is disabled, this implicit COMMIT will not only commit the DDL statement, but also any pending DML operations that had not yet been explicitly committed or rolled back.

Required Values

Either **thin** or **oci8**; the default is **thin**.

ServerName

Description

Specifies the host name of the external database server.

Required Values

Any valid string.

PortNumber

Description

Specifies the I/O port number on which the server is listening for connection requests.

Required Values

A valid port number; the default is **1521**.

DatabaseName

Description

Specifies the name of the database instance.

Required Values

Any valid string.

user name

Description

Specifies the user name the e*Way will use to connect to the database.

Required Values

Any valid string.

password

Description

Specifies the password used to access the database.

Required Values

Any valid string.

timeout

Description

Specifies the login timeout in seconds.

Required Values

Any valid string; the default is **300** seconds.

6.4.2 Connector Settings

The Connector settings define the high level characteristics of the e*Way Connection. See **Managing e*Way Connections** on page 65 for additional information.

type

Description

Specifies the type of e*Way Connection.

Required Values

The default is **DB**.

class

Description

Specifies the class name of the JDBC connector object.

Required Values

The default is **com.stc.eways.jdbcx.DbConnector**.

transaction mode

This parameter specifies how a transaction should be handled.

- **Automatic** — e*Gate will take care of transaction control and users should not issue a commit or rollback. If you are using XA, you must set your **connection establishment mode** and your **transaction mode** both to **Automatic**.
- **Manual** — You will manually take care of transaction control by issuing a commit or rollback.

Required Values

The required values are **Automatic** or **Manual**. The default is set to **Automatic**.

connection establishment mode

This parameter specifies how a connection with the database server is established and closed.

- **Automatic** indicates that the connection is automatically established when the collaboration is started and keeps the connection alive as needed. If you are using XA, you must set your **connection establishment mode** and your **transaction mode** both to **Automatic**.
- **OnDemand** indicates that the connection will be established on demand as business rules requiring a connection to the external system are performed. The connection will be closed after the methods are completed.

- **Manual** indicates that the user will explicitly call the connection connect and disconnect methods in their collaboration as business rules.

Required Values

Automatic, **OnDemand** or **Manual**; the default is **Automatic**.

Note: *If you are using **Manual connection establishment mode**, you must also use **Manual transaction mode**.*

connection inactivity timeout

This value is used to specify the timeout for the Automatic connection establishment mode.

- If this is set to 0, the connection will not be brought down due to inactivity. The connection is always kept alive; if it goes down, re-establishing the connection will automatically be attempted.
- If a non-zero value is specified, the connection manager will try to monitor for inactivity so that the connection is brought down if the timeout specified is reached.

Required Values

Any valid string.

connection verification interval

This value is used to specify the minimum period of time between checks for connection status to the database server. If the connection to the server is detected to be down during verification, your collaboration's **onDown** method is called. If the connection comes up from a previous connection error, your collaboration's **onUp** method is called.

Required Values

Any valid string.

6.5 DB2 UDB e*Way Connections

6.5.1 DataSource Settings

The DataSource settings define the parameters used to interact with the external database.

class

Description

Specifies the Java class in the JDBC driver that is used to implement the ConnectionPoolDataSource interface.

Required Values

A valid class name; the default is **com.SeeBeyond.jdbcx.db2.DB2DataSource**.

Connection Method

Specifies which method is used to connect to the database server:

- **Pooled Data Source**

  A ConnectionPoolDataSource object for creating PooledConnection objects. A PooledConnection object represents a physical connection and is cached in memory for reuse, which saves the overhead of establishing a new connection. This is implemented by the driver.

- **XA Data Source**

  An XADataSource object for creating XAConnection objects, which are connections that can be used for distributed transaction.

You should make sure that the class specified in the **class** parameter supports the connection method that is used here.

Required Values

The default is **Pooled Data Source**.

CollectionID

Description

The collection or group of packages to which a package is bound.

Required Values

Any valid string.

DatabaseName

Description

Specifies the name or alias of the database instance. The alias must match the database alias in the DB2 client's database directory. If you are using IBM's DB2 JDBC driver, you will need to enter the database alias name that is configured on the DB2 client.

Required Values

Any valid string.

LocationName

Description

The name of the DB2 location that you want to access.

Required Values

Any valid string.

PackageName

Description

Specifies the name, 7 character limit, of the package that the drive uses to process static and dynamic SQL.

Required Values

Any valid string.

user name

Description

Specifies the case-insensitive user name the e*Way uses to connect to the database.

Required Values

Any valid string.

password

Description

Specifies the password used to access the database.

Required Values

Any valid string.

PortNumber

Description

The TCP port number.

Note: *PortNumber is used for DataSource connections only.*

Required Values

Any valid string.

ServerName

Description

The IP address used for DataSource connections only. If you are using IBM's DB2 JDBC driver enter the name of your local machine.

- If you are using the IBM DB2 Connect JDBC driver and no Hostname is specified, then the IBM DB2 Connect JDBC Type 2 driver will be invoked.
- If you are using the IBM DB2 Connect JDBC driver and a Hostname is specified, then the IBM DB2 Connect JDBC Type 3 driver will be invoked.

Note: *XA is only supported with the IBM DB2 Connect JDBC Type 2 driver.*

Required Values

Any valid string.

timeout

Description

Specifies the login timeout in seconds.

Required Values

Any valid string; the default is **300** seconds.

data source attribute value pair separator

Description

This entry specifies the character separator used to separate the attribute-value pair used in **data source attributes** on page 126. For example, the attribute-value pair **ServerName!myHost** has <**!**> as a separator.

One should select a separator that will *not* be part of the attribute-name or the attribute-value.

Required Values

The default value is <**!**>.

data source attributes

A list of separated attribute-value pairs. This information is used to identify the database and set the connection properties. The attribute name should be exactly the same as the one that is specified in the driver documentation and the value should be a valid one. The whole list will be used to specify the connection properties. To disable an attribute, simply un check it.

For example: **PortNumber! 8888**

The separator used in this parameter should match the one specified in **data source attribute value pair separator** on page 125. By default, the separator used is <**!**>.

Required Values

Any separated attribute-value pair.

6.5.2 Connector Settings

The Connector settings define the high-level characteristics of the e*Way Connection.

type

Description

Specifies the type of e*Way Connection.

Required Values

The default is **DB**.

class

Description

Specifies the JAVA class name of the JDBC connector object.

Required Values

The default is **com.stc.eways.jdbcx.DbConnector**.

transaction mode

This parameter specifies how a transaction should be handled.

- **Automatic** — e*Gate will take care of transaction control and users should not issue a commit or rollback. If you are using XA, you must set your **connection establishment mode** and your **transaction mode** both to **Automatic**.
- **Manual** — You will manually take care of transaction control by issuing a commit or rollback.

Required Values

Automatic or **Manual**; the default is **Automatic**.

connection establishment mode

This parameter specifies how a connection with the database server is established and closed.

- **Automatic** indicates that the connection is automatically established when the collaboration is started and keeps the connection alive as needed. If you are using XA, you must set your **connection establishment mode** and your **transaction mode** both to **Automatic.**
- **OnDemand** indicates that the connection will be established on demand as business rules requiring a connection to the external system are performed. The connection will be closed after the methods are completed.

- **Manual** indicates that the user will explicitly call the connection connect and disconnect methods in their collaboration as business rules.

Required Values

Automatic, **OnDemand** or **Manual**; the default is **Automatic**.

Note: *If you are using **Manual connection establishment mode**, you must also use **Manual transaction mode**.*

connection inactivity timeout

This value is used to specify the timeout for the Automatic connection establishment mode.

- If this is set to 0, the connection will not be brought down due to inactivity. The connection is always kept alive; if it goes down, re-establishing the connection will automatically be attempted.
- If a non-zero value is specified, the connection manager will try to monitor for inactivity so that the connection is brought down if the timeout specified is reached.

Required Values

Any valid string.

connection verification interval

This value is used to specify the minimum period of time between checks for connection status to the database server. If the connection to the server is detected to be down during verification, your collaboration's **onDown** method is called. If the connection comes up from a previous connection error, your collaboration's **onUp** method is called.

Required Values

Any valid string.

6.6 SQL Server e*Way Connections

6.6.1 DataSource Settings

The DataSource settings define the parameters used to interact with the external database.

class

Description

Specifies the Java class in the JDBC driver that is used to implement the ConnectionPoolDataSource interface.

Required Values

A valid class name; the default is **com.SeeBeyond.jdbcx.sqlserver.SQLServerDataSource**.

Connection Method

Specifies which method is used to connect to the database server:

- **Pooled Data Source**

  A ConnectionPoolDataSource object for creating PooledConnection objects. A PooledConnection object represents a physical connection and is cached in memory for reuse, which saves the overhead of establishing a new connection. This is implemented by the driver.

- **XA Data Source**

  An XADataSource object for creating XAConnection objects, which are connections that can be used for distributed transaction.

You should make sure that the class specified in the **class** parameter supports the connection method that is used here.

Required Values

The default is **Pooled Data Source**.

ServerName

Description

Specifies the host name of the external database server.

Required Values

Any valid string.

PortNumber

Description

Specifies the port number on which the server is listening for connection requests. You must specify a valid port number. This e*Way does not support dynamic port assignments.

Required Values

A valid port number; the default value is **1433**.

DatabaseName

Description

Specifies the name of the database instance.

Required Values

Any valid string.

user name

Description

Specifies the user name the e*Way will use to connect to the database.

Required Values

Any valid string.

password

Description

Specifies the password used to access the database.

Required Values

Any valid string.

SelectMethod

Description

Specifies whether database cursors are used for Select statements. Using the Direct mode is the most efficient for executing Select statements however, you may be limited to a single active statement while executing inside a transaction. Setting SelectMethod to cursor allows multiple active statements within a transaction.

Required Values

Cursor or **Direct**

timeout

Description

This is the login timeout in seconds.

Required Values

Any valid string. The default is **300** seconds.

6.6.2 Connector Settings

The Connector settings define the high-level characteristics of the e*Way Connection.

type

Description

Specifies the type of e*Way Connection. The current available type for JDBC connections is **DB**.

Required Values

The default is **DB**.

class

Description

Specifies the class name of the JDBC connector object.

Required Values

The default is **com.stc.eways.jdbcx.DbConnector**.

transaction mode

This parameter specifies how a transaction should be handled.

- **Automatic** — e*Gate will take care of transaction control and users should not issue a commit or rollback. If you are using XA, you must set your **connection establishment mode** and your **transaction mode** both to **Automatic**.
- **Manual** — You will manually take care of transaction control by issuing a commit or rollback.

Required Values

Automatic or **Manual**; the default is **Automatic**.

connection establishment mode

This parameter specifies how a connection with the database server is established and closed.

- **Automatic** indicates that the connection is automatically established when the collaboration is started and keeps the connection alive as needed. If you are using XA, you must set your **connection establishment mode** and your **transaction mode** both to **Automatic**.
- **OnDemand** indicates that the connection will be established on demand as business rules requiring a connection to the external system are performed. The connection will be closed after the methods are completed.

- **Manual** indicates that the user will explicitly call the connection connect and disconnect methods in their collaboration as business rules.

Required Values

Automatic, **OnDemand** or **Manual**; the default is **Automatic**.

Note: If you are using ***Manual connection establishment mode****, you must also use* ***Manual transaction mode****.*

connection inactivity timeout

This value is used to specify the timeout for the Automatic connection establishment mode.

- If this is set to 0, the connection will not be brought down due to inactivity. The connection is always kept alive; if it goes down, re-establishing the connection will automatically be attempted.
- If a non-zero value is specified, the connection manager will try to monitor for inactivity so that the connection is brought down if the timeout specified is reached.

Required Values

Any valid string.

connection verification interval

This value is used to specify the minimum period of time between checks for connection status to the database server.

- If the connection to the server is detected to be down during verification, your collaboration's **onDown** method is called.
- If the connection comes up from a previous connection error, your collaboration's **onUp** method is called.

Required Values

Any valid string.

Chapter 7

Java Classes and Methods

The Java e*Way Intelligent Adapter for Siebel EIM contains Java methods that are used to extend the functionality of the basic e*Way core.

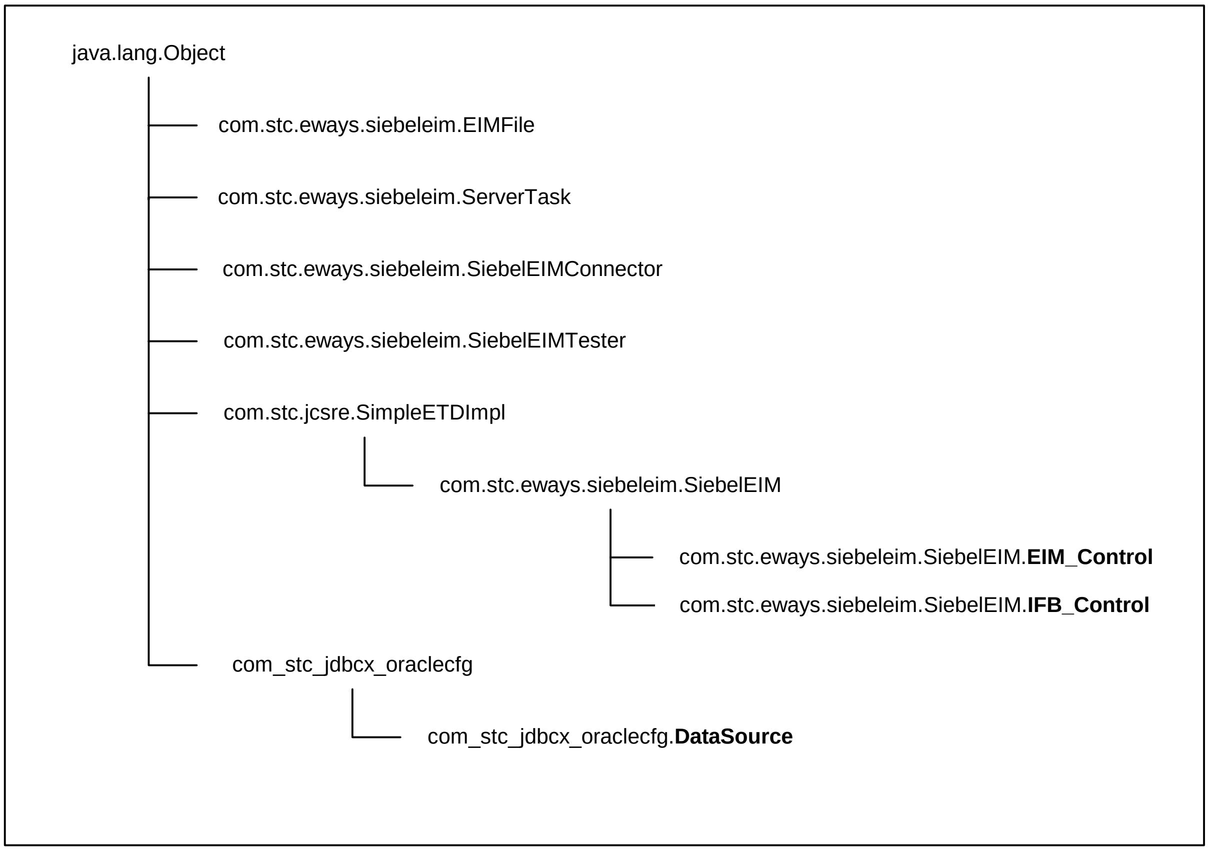
7.1 Overview

This chapter contains descriptions of methods that are exposed in the user interface. Additional methods contained in the e*Way should only be accessed or modified by qualified SeeBeyond personnel. Unless otherwise noted, all classes and methods described in this chapter are **public**.

7.2 Object Classes

The Java Siebel EIM e*Way object methods are contained in the following classes:

Figure 61 Class Hierarchy


java.lang.Object
com.stc.eways.siebeleim.EIMFile
com.stc.eways.siebeleim.ServerTask
com.stc.eways.siebeleim.SiebelEIMConnector
com.stc.eways.siebeleim.SiebelEIMTester
com.stc.jcsre.SimpleETDImpl
com.stc.eways.siebeleim.SiebelEIM
com.stc.eways.siebeleim.SiebelEIM.EIM_Control
com.stc.eways.siebeleim.SiebelEIM.IFB_Control
com_stc_jdbcx_oraclecfg
com_stc_jdbcx_oraclecfg.DataSource

Methods exposed in the ETD Editor are contained in the **EIM_Control** and **IFB_Control** classes.

7.3 EIM_Control Class

Description

Extends java.lang.Object

Signature

```
com_stc_eways_siebeleim.SiebelEIM.EIM_Control
```

Methods

7.3.1 Methods

getState

Description

This method gets and returns the Siebel EIM run state associated with the task number.

Signature

checkState(*taskNum*)

Parameters

Name	Type	Description
taskNum	java.lang.String	The task number of the Siebel EIM job.

Return Type

java.lang.String

Overrides

None.

Throws

- com.stc.common.collabService.CollabConnException
- com.stc.common.collabService.CollabDataException
- com.stc.common.collabService.CollabResendException

getStatus

Description

This method gets and returns the Siebel EIM status associated with the task number.

Signature

```
checkStatus(taskNum)
```

Parameters

Name	Type	Description
taskNum	java.lang.String	The task number of the Siebel EIM job.

Return Type

java.lang.String

Overrides

None.

Throws

- com.stc.common.collabService.CollabConnException
- com.stc.common.collabService.CollabDataException
- com.stc.common.collabService.CollabResendException

startTask

Description

This method starts the Siebel EIM task and returns the task number of the job.

Signature

```
startTask()
```

Parameters

None.

Return Type

java.lang.String

Overrides

None.

Throws

- com.stc.common.collabService.CollabConnException
- com.stc.common.collabService.CollabDataException
- com.stc.common.collabService.CollabResendException

startTaskAndWaitUntilDone

Description

This method starts the Siebel EIM task and runs the EIM job. It also gets the run state of the task repeatedly every ten seconds until it is finished running. If the task exits with error, it also gets the status of the task.

Signature

```
startTaskAndWaitUntilDone()
```

Parameters

None.

Returns

java.lang.String

- FAILURE
- EIM_SUCCESS
- SHUTDOWN
- EXIT_WITH_ERROR
- UNKNOWN_FAILURE

Overrides

None.

Throws

- com.stc.common.collabService.CollabConnException
- com.stc.common.collabService.CollabDataException
- com.stc.common.collabService.CollabResendException

waitUntilDone

Description

This method repeatedly (every ten seconds) gets the run state of the task until it finishes running. If the task exits with error, it also gets the status of the task.

Signature

waitUntilDone(*taskNum*)

Parameters

Name	Type	Description
taskNum	java.lang.String	The task number of the Siebel EIM job.

Returns

java.lang.String

- FAILURE
- EIM_SUCCESS
- SHUTDOWN
- EXIT_WITH_ERROR
- UNKNOWN_FAILURE

Overrides

None.

Throws

- com.stc.common.collabService.CollabConnException
- com.stc.common.collabService.CollabDataException
- com.stc.common.collabService.CollabResendException

7.4 IFB_Control Class

Description

Extends java.lang.Object

Signature

```
com_stc_eways_siebeleim.SiebelEIM.IFB_Control
```

Methods

7.4.1 Methods

generateIfb

Description

This method creates Siebel EIM configuration file at the specified location, returning the absolute path of the EIM configuration file.

Signature

```
generateIfb()
```

Parameters

None.

Return Type

java.lang.String

Overrides

None.

Throws

- com.stc.common.collabService.CollabConnException
- com.stc.common.collabService.CollabDataException
- com.stc.common.collabService.CollabResendException

getImportState

Description

This method gets and returns the state from the import state file.

Signature

```
getImportState()
```

Parameters

None.

Return Type

java.lang.String

Overrides

None.

Throws

- com.stc.common.collabService.CollabConnException
- com.stc.common.collabService.CollabDataException
- com.stc.common.collabService.CollabResendException

setImportState

Description

This method writes the import state into file.

Signature

setImportState(*stateStr*)

Parameters

Name	Type	Description
stateStr	java.lang.String	The import state.

Return Type

void

Overrides

None.

Throws

- com.stc.common.collabService.CollabConnException
- com.stc.common.collabService.CollabDataException
- com.stc.common.collabService.CollabResendException

getExportState

Description

This method gets and returns the state from the export state file.

Signature

```
getExportState()
```

Parameters

None.

Return Type

java.lang.String

Overrides

None.

Throws

- com.stc.common.collabService.CollabConnException
- com.stc.common.collabService.CollabDataException
- com.stc.common.collabService.CollabResendException

setExportState

Description

This method writes the import state into file.

Signature

setExportState(*stateStr*)

Parameters

Name	Type	Description
stateStr	java.lang.String	The export state.

Return Type

void

Overrides

None.

Throws

- com.stc.common.collabService.CollabConnException
- com.stc.common.collabService.CollabDataException
- com.stc.common.collabService.CollabResendException

getLastExportTime

Description

Gets the last export time from file.

Signature

```
getLastExportTime()
```

Parameters

None.

Return Type

java.lang.String

Overrides

None.

Throws

- com.stc.common.collabService.CollabConnException
- com.stc.common.collabService.CollabDataException
- com.stc.common.collabService.CollabResendException

setLastExportTime

Description

Writes the last export time into file.

Signature

`setLastExportTime(`*`timeStr`*`)`

Parameters

Name	Type	Description
timeStr	java.lang.String	The last export time.

Return Type

void

Overrides

None.

Throws

- com.stc.common.collabService.CollabConnException
- com.stc.common.collabService.CollabDataException
- com.stc.common.collabService.CollabResendException

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