SeeBeyond ICAN Suite

e*Way Intelligent Adapter for Jacada Enterprise/Access User's Guide

Release 5.0.5 for Schema Run-time Environment (SRE)

Java Version

SEEBEYOND®

Contents

Chapter 1

Introduction

The e*Way Intelligent Adapter for Jacada Enterprise/Access provides automatic data interchange with Enterprise Access applications running on external systems for which APIs are not readily available. This document describes how to install and configure the Jacada Enterprise/Access e*Way.

1.1 Overview

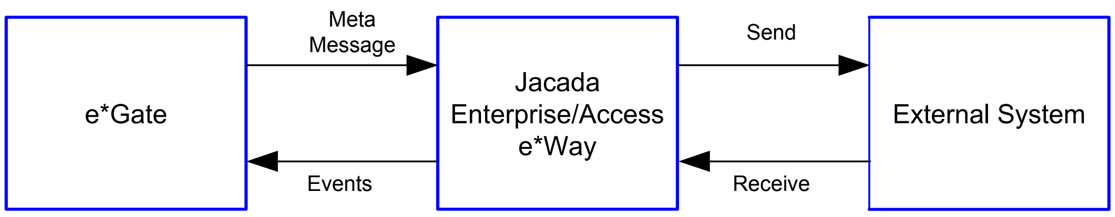
The Jacada Enterprise/Access e*Way provides data translation and manipulation of a binary stream intended to interact with a person, in the form of a monitor screen and keyboard, and matches the data content to the screen order.

Entering information into the application requires transmission of a serial data stream that emulates keyboard entry in response to screen prompts. This transmission requires specific knowledge of the nature of each data element as it relates to the screen position. This process is referred to as *screen scraping*.

The Jacada Integrator application appears to read data from a user's monitor during the "screen scraping" process. In a typical application, (for example, a medical-records database), data is displayed on the user's monitor, while the user interacts with the application using a keyboard. Each data element (for example, a patient name, an ID number, or a service charge code) is displayed on the user's monitor in a known position. The "screen scraper" intercepts the data stream that sends information to the monitor. It then uses the monitor-position information to locate and capture the data being sent to the monitor from the data stream. Although the data is not literally read from or displayed onto the screen, the result is the same.

Data flow between e*Gate, the Jacada Enterprise/Access e*Way, and the external system performs in the following manner.

Figure 1 Data Flow

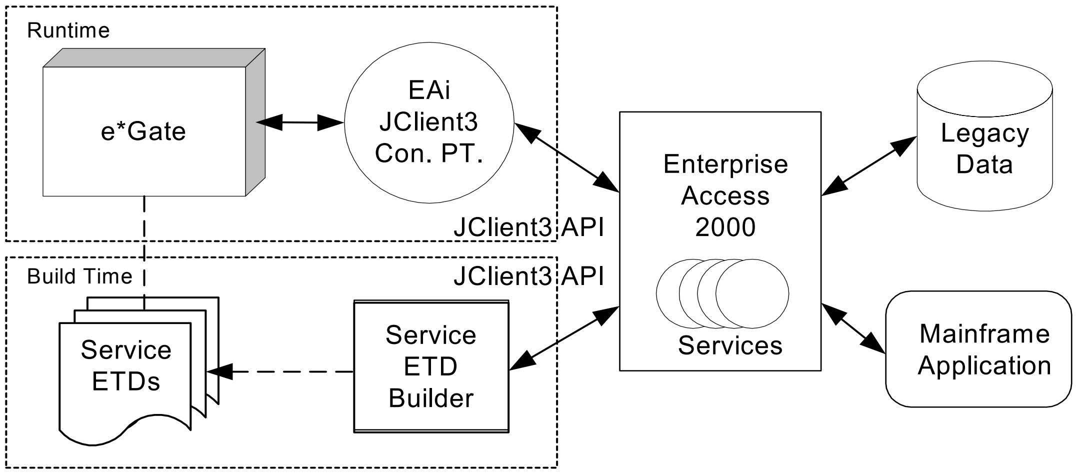


e*Gate initiates the session with the external system after creating a Meta Data Structure (Event) and sending it to the e*Way as a trigger. This Event contains all the information necessary for the e*Way to communicate with the external system. This information can be used to initiate, respond to, or validate the data interchange.

The Jacada Enterprise/Access e*Way provides an **invoke** function that takes in methods and parameters which in turn enable interaction with the E/A service object.

The E/A runtime environment acts as middleware between a client and the legacy system. It facilitates client connections and resource accesses as well as providing an objected-oriented interface for the client to run applications and gather data from legacy systems. The following diagram shows the relationships between the SeeBeyond products, the Jacada products, and the legacy systems.

Figure 2 The Jacada Runtime Environment.

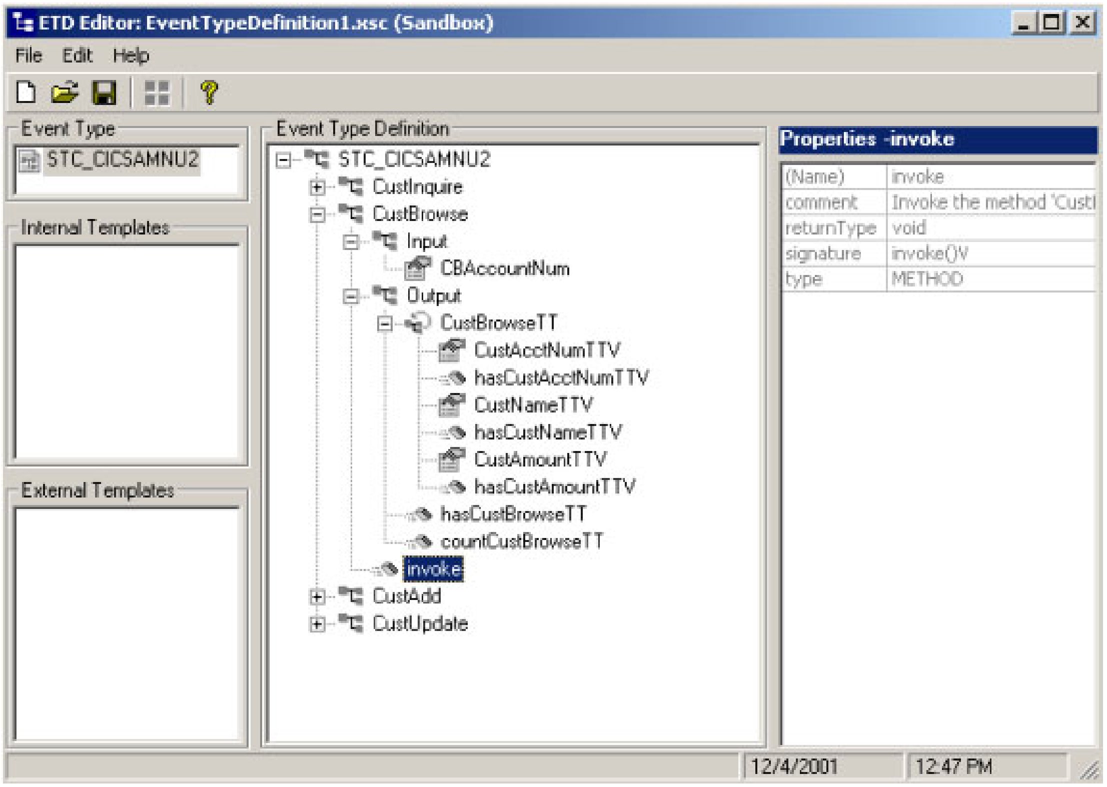


1.1.1. Jacada Services

The business objects, called Services, encapsulate the legacy business processes. Each Service has a number of methods. A method can be called to perform some business process; it may or may not require input arguments and have output results. By interfacing with a Service to perform processes, the user is unaware of the events that occur between the E/A runtime environment and the legacy systems.

The SeeBeyond Jacada Enterprise/Access e*Way (e*Way Connection) uses the JClient3 API to access these Services. Moreover, the SeeBeyond Service ETD Builder allows the user to interrogate the E/A runtime environment for a Service's metadata and construct a SeeBeyond ETD representation of that Service. The builder constructs both an .xsc file and the Java classes. The .xsc file is used by the Java Collaboration Editor for displaying the Service so that the Service can be used with ease during the construction of a Java collaboration. An example of a Service ETD, displayed in SeeBeyond's ETD Editor, is shown in **Figure 3**.

Figure 3 Jacada Service ETD



(Name)	invoke
comment	Invoke the method 'CustI
returnType	void
signature	invoke()V
type	METHOD

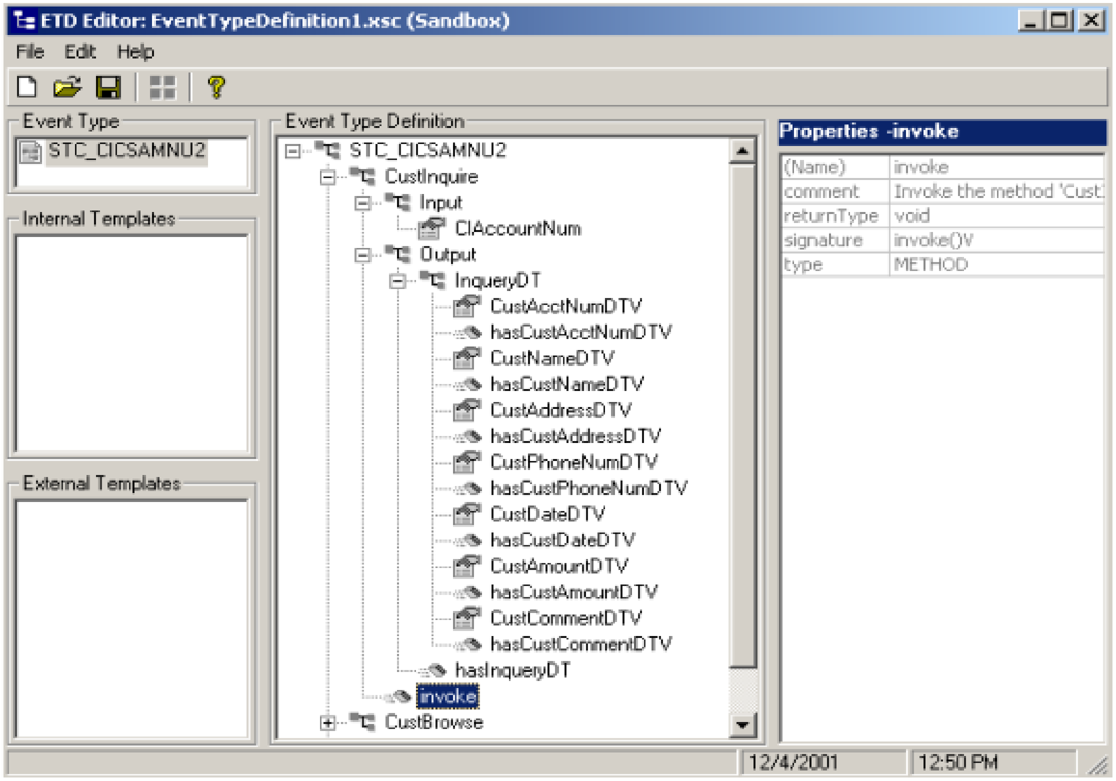
1.1.2. Anatomy of a Service ETD

The Anatomy of a Service ETD can be described as follows. First, a Service is an object with one or more methods. A method may require input arguments and produce results. At runtime, each argument and result has a name value pairing. The name of the argument or result is determined during the construction of the Service with Jacada's MapMaker GUI.

There are several types of values for arguments and results. The simple types include KIND_FLOAT, KIND_INT, and KIND_STRING. These are mapped to Java data types float, int, and String respectively. The complex data types (currently there are two) KIND_STRUCT and KIND_SEQUENCE, are supported by the e*Way. Both of these complex types in turn contain one or more simple types. The e*Way does not support nesting of these complex types. In relational database terms, a KIND_STRUCT can be thought of as a row and a KIND_SEQUENCE is a row set. The builder will construct a Java class to wrap a KIND_STRUCT or a KIND_SEQUENCE and the Java class will provide methods for accessing the simple types contained by KIND_STRUCT or KIND_SEQUENCE.

Second, to understand the structure of the ETD itself in relationship to the Service, look at the sample generated Service ETD displayed in **Figure 4**.

Figure 4 Sample Generated Service ETD



```
STC_CICSAMNU2
  CustInquire
    Input
      CIAccountNum
    Output
      InqueryDT
        CustAcctNumDTV
        hasCustAcctNumDTV
        CustNameDTV
        hasCustNameDTV
        CustAddressDTV
        hasCustAddressDTV
        CustPhoneNumDTV
        hasCustPhoneNumDTV
        CustDateDTV
        hasCustDateDTV
        CustAmountDTV
        hasCustAmountDTV
        CustCommentDTV
        hasCustCommentDTV
      hasInqueryDT
    invoke
  CustBrowse
```

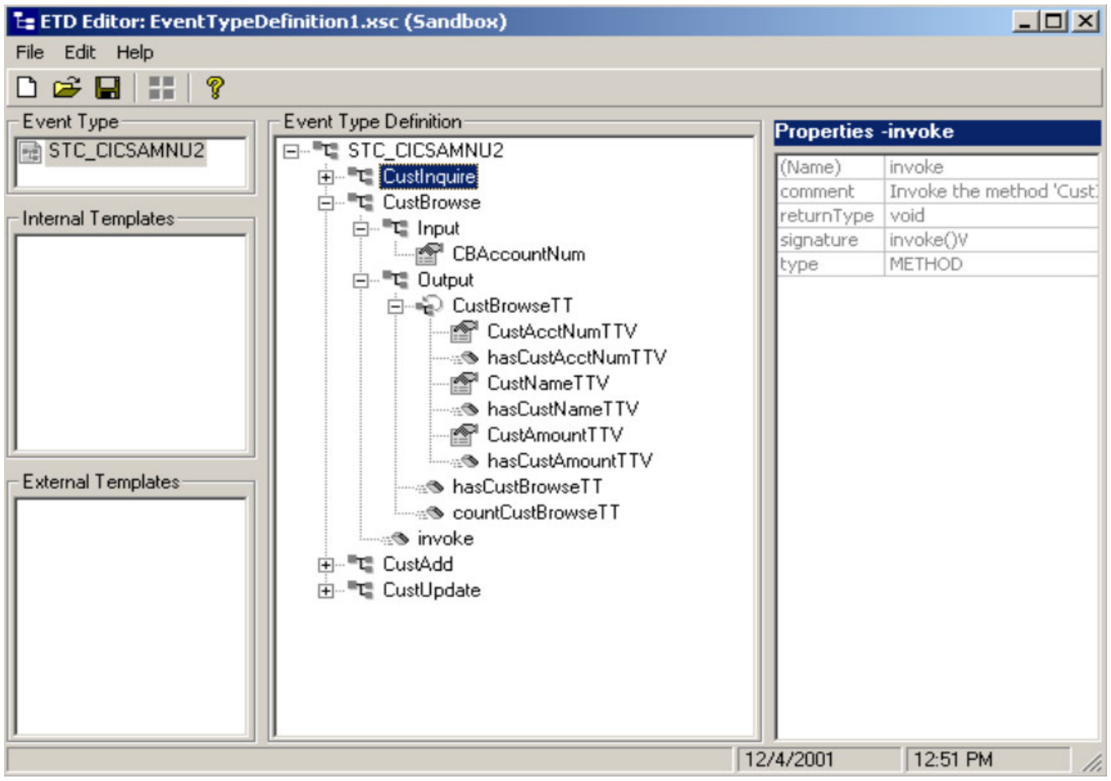
(Name)	invoke
comment	Invoke the method 'Cust
returnType	void
signature	invoke()V
type	METHOD

The root node for the ETD is the Service root node which has the same name as that of the Service. As shown in the example, the Service called STC_CICSAMNU2 is the name of the root node of the ETD. The builder constructs a Java class to represent a Service. The methods of a Service are child nodes of the Service node. In turn, the builder constructs a Java class for each method; an instance of a Service class will contain an instance of each Service method as its attribute. The picture shows that this service has four methods; CustInquire, CustBrowse, CustAdd, and CustUpdate. Each of these methods allows a user to execute a CICS AMNU transaction to manage a customer database.

Each Service method node has two child nodes called Input and Output. The Input node contains the child nodes that map to the required input arguments for a Service method. Here we see that the method CustInquire requires a String as an input (the customer account number). The Output node contains the results for the method after invoking the method. CustInquire has an output that is a KIND_STRUCT. As discussed previously, a KIND_STRUCT or KIND_SEQUENCE data type is wrapped by a Java class. Thus, the KIND_STRUCT data type in the ETD is a child node of the Output node.

A KIND_STRUCT or KIND_SEQUENCE contains simple types as illustrated by the following picture. A KIND_SEQUENCE is a little more complex in that it is represented as a collection of row results. As shown in **Figure 5**, a KIND_SEQUENCE has a repeating symbol next to its node to show the user that it may contain 0 or more row results (see Figure 5).

Figure 5 Sample Generated Service ETD



STC_CICSAMNU2

```
STC_CICSAMNU2
    CustInquire
    CustBrowse
        Input
            CBAccountNum
        Output
            CustBrowseTT
                CustAcctNumTTV
                hasCustAcctNumTTV
                CustNameTTV
                hasCustNameTTV
                CustAmountTTV
                hasCustAmountTTV
            hasCustBrowseTT
            countCustBrowseTT
        invoke
    CustAdd
    CustUpdate
```

(Name)	invoke
comment	Invoke the method 'Cust'
returnType	void
signature	invoke()V
type	METHOD

12/4/2001 12:51 PM

In addition, a "count" method is available to the user to determine how many rows are available in the result. For example, the CustBrowse method returns a KIND_SEQUENCE called CustBrowseTT. A Java method called countCustBrowseTT will be generated and exposed in the ETD.

Notice that each output in the ETD has a corresponding "has" method. This method can be used to determine whether result is returned for the particular output. Taking the CustBrowse method as an example, we see that there is a method called "hasCustBrowseTT" in the Output node. The user can use this method to determine whether data is returned for one or more of CustBrowseTT members. In addition, each member of the sequence has a corresponding "has" method to determine whether data is available for that member. For example, "hasCustAmountTTV" can be used to find out whether a value for CustAmountTTV was returned for this customer. If the method invocation does not return a particular result and the user tries to retrieve that result, a CollabDataException will be thrown. No default values will be returned.

Overall, the ETD is constructed in such a way as to preserve the natural hierarchical structure of a Service. The Service ETD is therefor, intuitive and simple to use.

1.1.3. Intended Reader

The reader of this guide is presumed to be a developer or system administrator with responsibility for maintaining the e*Gate system, to have a high level of experience in Windows operations and administration, and to be thoroughly familiar with Jacada Enterprise/Access Integrator applications and Windows-style GUI operations.

1.2 Supported Operating Systems

The Jacada Enterprise/Access e*Way is available on the following operating systems:

- Windows 2000, Windows XP, and Windows Server 2003
- HP-UX 11.0 and 11i (PA-RISC)
- IBM AIX 5.1L and 5.2
- Sun Solaris 8 and 9

Note: *Open and review the* ***Readme.txt*** *for the Jacada E/A e*Way for any additional information or requirements, prior to installation. The Readme.txt is located on the Installation CD_ROM at setup\addons\ewcntea.*

1.3 System Requirements

To use the Jacada Enterprise/Access e*Way, you need the following:

- The Jacada Enterprise/Access e*Way uses the JClient3 classes contained in **jclient3.jar**. This jar file must be copied from the lib directory of the Jacada Integrator server or client and copied to egate\client\ThirdParty\jacada\classes and egate\server\registry\repository\default\ThirdParty\jacada\classes before the builder or the e*Way can be used.
- An e*Gate Participating Host.
- A TCP/IP network connection.
- Additional disk space for e*Way executable, configuration, library, and script files. The disk space is required on both the Participating and the Registry Host. 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, and any external applications performing the processing.

The client components of Jacada Enterprise/Access Integrator have their own requirements; see that system's documentation for more details.

1.3.1. External System Requirements

The Java-enabled Jacada Enterprise/Access e*Way requires the following installed on the participating host:

- Jacada Enterprise/Access Integrator Version 3.5 or 4.0. Version 4.0 requires PTF 7 plus Patch 3 from Jacada.

Note: *Jacada Integrator 4.0 is only supported for features which are compatible with version 3.5. New features for version 4.0 are not currently supported.*

Chapter 2

Installation

This chapter describes the procedures for installing the Jacada Enterprise/Access e*Way.

2.1 Windows Installation

2.1.1. Pre-installation

- Exit all Windows programs before running the setup program, including any antivirus applications.
- You must have Administrator privileges to install this e*Way.

2.1.2. Installation Procedure

To install the Jacada Enterprise/Access e*Way on a Windows system

1. Log in as an Administrator to the workstation on which you are installing the e*Way.
2. Insert the e*Way installation CD-ROM into the CD-ROM drive.
3. If the CD-ROM drive's Autorun feature is enabled, the setup application launches automatically; skip ahead to step 4. Otherwise, use the Windows Explorer or the Control Panel's **Add/Remove Applications** feature to launch the file **setup.exe** on the CD-ROM drive.
4. The InstallShield setup application launches. Follow the installation instructions until you come to the Please choose the product to install dialog box.
5. Select **e*Gate Integrator**, then click **Next**.
6. Follow the on-screen instructions until you come to the second **Please choose the product to install** dialog box.
7. Clear the check boxes for all selections except **Add-ons**, and then click **Next**.

8 Follow the on-screen instructions until you come to the **Select Components** dialog box.

9 Highlight (but do not check) **e*Ways**, and then click the **Change** button. The **SelectSub-components** dialog box appears.

10 Select the **Jacada Enterprise/Access e*Way**. Click the continue button to return to the Select Components dialog box, then click **Next**.

11 Follow the rest of the on-screen instructions to install the Java-enabled Jacada Enterprise/Access e*Way. Be sure to install the e*Way files in the suggested client installation directory. The installation utility detects and suggests the appropriate installation directory. ***Unless you are directed to do so by SeeBeyond support personnel, do not change the suggested installation directory setting.***

Note: *Once you have installed and configured this e*Way, you must incorporate it into a schema by defining and associating the appropriate Collaborations, Collaboration Rules, IQs, and Event Types before this e*Way can perform its intended functions. For more information about any of these procedures, please see the online Help.*

*For more information about configuring e*Ways or how to use the e*Way Editor, see the **e*Gate Integrator User's Guide**.*

2.2 UNIX

2.2.1. Pre-installation

You do not require root privileges to install this e*Way. Log in under the user name that you wish to own the e*Way files. Be sure that this user has sufficient privileges to create files in the e*Gate directory tree.

2.2.2. Installation Procedure

To install the Jacada Enterprise/Access e*Way on a UNIX system

1 Log in on the workstation containing the CD-ROM drive, and insert the CD-ROM into the drive.

2 If necessary, mount 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 will appear. Select the **Install e*Way** option. Then, follow the additional on-screen directions.

Note: *Be sure to install the e*Way files in the suggested* ***client*** *installation directory. The installation utility detects and suggests the appropriate installation directory.* ***Unless you are directed to do so by SeeBeyond support personnel, do not change the suggested "installation directory" setting.***

6 After installation is complete, exit the installation utility and launch the Schema Designer.

Note: *Once you have installed and configured this e*Way, you must incorporate it into a schema by defining and associating the appropriate Collaborations, Collaboration Rules, IQs, and Event Types before this e*Way can perform its intended functions. For more information about any of these procedures, please see the online Help system.*

*For more information about configuring e*Ways or how to use the e*Way Editor, see the* ***e*Gate Integrator User's Guide****.*

2.3 Files/Directories Created by the Installation

The Java-enabled Jacada Enterprise/Access e*Way installation process will install the following files, see the table **"Files Created by the Installation" on page 14**, within the e*Gate directory tree. Files will be installed within the **egate\client** tree on the Participating Host and committed to the **default** schema on the Registry Host.

Table 1 Files Created by the Installation

e*Gate Directory	File(s)
\classes\	stcjcs.jar stcjc3conn.jar stcjc3svcbldr.jar stcutil.jar stcexception.jar
configs\jacadaeaijc3\	jacadaeaijc3.def
etd\	jc3svcwizard.ctl jacadaeaijc3.ctl
bin\java\	jcscomp.jar stcjintegra.jar
ThirdParty\gnu-getopt\classes\	gnu-getopt.jar
ThirdParty\xml\Apache\classes\	xerces.jar

Chapter 3

Multi-Mode e*Way Configuration

This chapter describes how to configure the Multi-Mode e*Way.

3.1 Multi-Mode e*Way

Multi-Mode e*Way properties are set using the Schema Designer.

To create and configure a New Multi-Mode e*Way:

1. Select the Navigator's Components tab.
2. Open the host and control broker on which you want to create the e*Way.
3. On the Palette, click on the **Create a New e*Way** button.
4. The New e*Way Component window opens. Enter the name of the new e*Way, then click **OK**.
5. Right-click the new e*Way and select **Properties** edit its properties.
6. When the e*Way Properties window opens, click on the **Find** button beneath the **Executable File** field, and select an executable file. For the purposes of the sample select **stceway.exe** (**stceway.exe** is located in the "bin\" directory).
7. Under the **Configuration File** field, click on the **New** button. When the Settings page opens, set the configuration parameters for this configuration file.
8. After selecting the desired parameters, save the configuration file. Close the **.cfg** file and select **OK** to close the e*Way Properties Window.

Multi-Mode e*Way Configuration Parameters

The Multi-Mode e*Way configuration parameters are arranged in the following sections:

- **JVM Settings** on page 15
- **.General Settings** on page 19

3.1.1. JVM Settings

The JVM Settings control basic Java Virtual Machine settings.

- **JNI DLL Absolute Pathname** on page 16

- **CLASSPATH Prepend** on page 17
- **CLASSPATH Override** on page 17
- **CLASSPATH Append From Environment Variable** on page 17
- **Initial Heap Size** on page 18
- **Maximum Heap Size** on page 18
- **Maximum Stack Size for Native Threads** on page 18
- **Maximum Stack Size for JVM Threads** on page 18
- **Disable JIT** on page 18
- **Remote Debugging port number** on page 19
- **Suspend option for debugging** on page 19
- **Auxiliary JVM Configuration File** on page 19

3.1.2. 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 2 SDK* 1.3.1_02 is located on the Participating Host.

Required Values

A valid pathname.

Additional Information

The JNI dll name varies on different O/S platforms:

OS	Java 2 JNI DLL Name
Windows	jvm.dll
Solaris	libjvm.so
HP-UX	libjvm.sl
AIX	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 loads successfully, the Dynamic Load Library search path environment variable must be set appropriately to include all the directories under the Java 2 SDK (or JDK) installation directory that contain shared libraries (UNIX) or DLLs.

CLASSPATH Prepend

Description

Specifies the paths to be prepended to the CLASSPATH environment variable for the JVM.

Required Values

An absolute path or an environmental variable. This parameter is optional.

Additional Information

If left unset, no paths are prepended 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 JVM. This parameter is optional. If left unset, an appropriate CLASSPATH environment variable (consisting of required e*Gate components concatenated with the system version of CLASSPATH) is set.

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

Required Values

An absolute path or an environmental variable. This parameter is optional.

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 the path is appended for the CLASSPATH environmental variable to jar and zip files needed by the JVM.

Required Values

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

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 JVM is used.

Required Values

An integer between 0 and 2147483647. This parameter is optional.

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 JVM is used.

Required Values

An integer between 0 and 2147483647. This parameter is optional.

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 is used.

Required Values

An integer between 0 and 2147483647. This parameter is optional.

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 JVM is used.

Required Values

An integer between 0 and 2147483647. This parameter is optional.

Disable JIT

Description

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

Required Values

YES or **NO**.

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

Remote Debugging port number

Description

Specifies the port number by which the e*Gate Java Debugger can connect with the JVM to allow remote debugging.

Required Values

An unused port number in the range 2000 through 65535. If not specified, the e*Gate Java Debugger is not able to connect to this e*Way.

Suspend option for debugging

Description

Allows you to specify that the e*Way should do no processing until an e*Gate Java Debugger has successfully connected to it.

Required Values

YES or **No**. YES suspends e*Way processing until a Debugger connects to it. NO enables e*Way processing immediately upon startup.

Auxiliary JVM Configuration File

Description

Specifies an auxiliary JVM configuration file for additional parameters.

Required Values

The location of the auxiliary JVM configuration file

3.1.3. .General Settings

For more information on the General Settings configuration parameters see the *e*Gate Integrator User's Guide*. The General Settings section contains the following parameters:

- **Rollback Wait Interval** on page 20
- **Standard IQ FIFO** on page 20

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.

Standard IQ FIFO

Description

Specifies whether the highest priority messages from all STC_Standard IQs will be delivered in the first-in-first-out (FIFO) order.

Required Values

Select **YES** or **NO**. YES indicates that the e*Way will retrieve messages from all STC_Standard IQs in the first-in-first-out (FIFO) order. NO indicates that this feature is disabled. NO is the configured default.

Chapter 4

e*Way Connection Configuration

This chapter describes how to configure the e*Way Connection using the JacadaEAi/JClient3 e*Way Connection type.

4.1 Configuring e*Way Connections

e*Way Connections are set using the Schema Designer.

To create and configure e*Way Connections:

1. In the Schema Designer's Component editor, select the **e*Way Connections** folder.
2. On the palette, click the **Create a New e*Way Connection** button.
3. The **New e*Way Connection Component** dialog box opens, enter a name for the new e*Way Connection. Click **OK**.
4. Double-click on the new e*Way Connection. For this example, the connection has been defined as **ec_Jacada**
5. The **e*Way Connection Properties** dialog box opens.
6. From the **e*Way Connection Type** drop-down box, select **JacadaEAi/JClient3**.
7. Enter the **Event Type "get"** interval in the dialog box provided. The configured default is 10000 milliseconds.
8. From the **e*Way Connection Configuration File**, click **New** to create a new Configuration File for this e*Way Connection. (To use an existing file, click **Find**.)
9. The **e*Way Connection Edit Settings** window opens. Make any necessary changes to the Jacada Enterprise/Access e*Way Connection parameters.
10. Go to **File**, **Save** to save settings.
11. Click on **File**, **Promote to Run Time**.

Note: *If changes are made to an existing e*Way Connection file, any e*Ways using the revised e*Way Connection must be restarted.*

The Jacada Enterprise/Access e*Way Connection configuration parameters are organized into the following sections:

- **Connector** on page 22

- **EnvironmentManager** on page 22
- **ServiceConnection** on page 23
- **JC3Debug** on page 24

4.1.1. Connector

This section contains a set of top level parameters:

- type
- class
- Property.Tag

Type

Description

Specifies the connector type.

Required Values

String-set. The value is always defaulted to Jacada EAi JClient3 for Jacada EAi JClient3 connections.

Class

Description

Specifies the class name of the Jacada EAi JClient3 connector object.

Required Values

String-set. A valid package name. The default is com.stc.eways.cics.jacadaeaijc3.runtime.JacadaEAiJC3Connector.

Property.Tag

Description

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

Required Values

String-set. A valid data source package name.

4.1.2. EnvironmentManager

This section contains a set of top level parameters:

- Host
- Port
- ClientName

Host

Description

Specifies the name or IP address of the host on which the EA Environment Manager is running.

Required Values

String-set. A valid host name or IP address. This parameter is mandatory

Port

Description

Specifies the port at which the EA Environment Manager listening for client connections.

Required Values

Integer-set. An integer ranging from 1 to 65535. This parameter is mandatory. The configured default is 30001.

ClientName

Description

Specifies the client name for the Environment Manager.

Required Values

String-set. A valid client name. This parameter is optional.

4.1.3. ServiceConnection

This section contains the following parameters:

- Timeout
- InitialDelay
- Slope
- MaxRetries
- ConnectPerInvoke

Timeout

Description

Specifies the timeout value to be used for a service connection. The timeout value is set in seconds. If timeout is not set, then the default timeout, set by EA, will be used.

Required Values

Integer-set. The determined number of seconds to timeout. This parameter is optional.

InitialDelay

Description

Specifies the initial delay between service connection retries. The InitialDelay value is set in seconds. If the initial delay is not set, then the default initial delay, set by EA, will be used.

Required Values

Integer-set. The determined number of seconds for the initial delay. This parameter is optional.

Slope

Description

Specifies the rate for the delay between service connection retries. The Slope value is set in seconds. If the slope is not set, then the default slope, set by EA, will be used.

Required Values

Integer-set. The number of seconds to increase the delay between service connection retries. This parameter is optional..

MaxRetries

Description

Specifies the maximum number of times to retry service connections. If the maximum retries is not set, then the default maximum retries set by EA will be used.

Required Values

Integer-set. A valid number. This parameter is optional.

ConnectPerInvoke

Description

Specifies whether to force a recondition attempt to a service every time a method is invoked. If this parameter is set to FALSE, then once a connection to the service has been established the connection is kept for subsequent method invocations. An attempt to reconnect only happens if the connection to the service is lost (is not alive). If this parameter is set to TRUE, then a new connection to a service is established prior to a method invocation and closed after a method invocation.

Required Values

String-set. TRUE or FALSE. FALSE is the configured default.

4.1.4. JC3Debug

This section contains a set of top level parameters:

- Level

- File

Level

Description

Specifies the level of debugging that the debug feature of the JClient3 will use. If NONE is selected, then a DebugController will not be used. Otherwise, the level of debugging ranges from 0 to 3. 0 being minimum and 3 being maximum. If debugging is turned on, debug messages will be logged to the file specified by the File parameter (below). If debugging is turned on and the log file is not specified by the File parameter, then a default file jacadaeai.log will be created in the logs directory under eGate client.

Required Values

Select one of five options, 0 to 3 and NONE. NONE is the configured default.

File

Description

Specify the full path to the debug file. Sets the file name to use for logging JClient3 debug messages. See the **Level** parameter in this section.

Required Values

A valid output path and file name.

Chapter 5

Implementation

This chapter contains basic information for implementing the Java-enabled Jacada Enterprise/Access e*Way in a production environment. Examples are given for creating and configuring the necessary components for a Jacada Enterprise/Access schema. A sample schema is included on the Installation CD-ROM for the implementation of the e*Way. For more information on creating and configuring e*Way components see the *e*Gate Integrator User's Guide.*

5.1 Sample Implementation Components

The Java-enabled Jacada Enterprise/Access e*Way is an *application specific* e*Way which allows e*Gate to connect with Jacada Integrator applications. When the Jacada Enterprise/Access e*Way is installed along with the e*Gate Integrator, schema's can be created and configured using the e*Gate Schema Designer. A schema is an organization scheme that contains the parameters of all the components that control, route, and transform data as it moves through e*Gate in a predefined system configuration.

The following pages contain a sample implementation which serves to explain how the components for a Jacada Enterprise/Access e*Way schema are created. The Host and Control Broker are automatically created and configured during the e*Gate installation. The default name for each is the name of the host on which you are installing the e*Gate Schema Designer GUI. To complete the sample implementation of the Java-enabled Jacada Enterprise/Access e*Way requires the following:

- **Install the Jacada Enterprise/Access Integrator:** On the e*Gate Server, copy jclient3.jar from the lib directory of the Jacada Integrator Server or Client and copy it to egate\server\ThirdParty\jacada\classes and egate\client\ThirdParty\jacada\classes.
- **Install the Jacada Enterprise/Access e*Way:** The Jacada Enterprise/Access e*Way is installed as an Add-on to the E*Gate integrator system. For directions on installing the Jacada Enterprise/Access e*Way from CD-ROM on your specific operating system, see **Installation** on page 12.
- **Create the e*Ways:** e*Ways connect with external systems to poll or send data. They also transform and route data. Multi-Mode e*Ways are used to run Java Collaborations that utilize e*Way Connections to send and receive Events to and from multiple external systems.

- **Configure the e*Way Connections:** An e*Way Connection is the encoding of access information for a specific external connection. The e*Way Connection configuration file contains the parameters necessary for communicating with Jacada Enterprise/Access Integrator.
- **Create Event Types:** Each packet of data within e*Gate is referred to as an Event. Event Types are data labels that allow e*Gate to process and route specific Events differently. Data is not routed in e*Gate without an Event Type.
- **Create Intelligent Queues:** Non-volatile storage for data traveling through the e*Gate system is provided by creating Intelligent Queues (IQs). The IQ Manager oversees the activities of the individual storage locations. The exact behavior of each IQ is determined by the IQ Service configuration.
- **Create Collaboration Rules:** Collaboration Rules determine how input Event Types are modified to the format of specific output Event Types. A Collaboration Rule defines what type of data is received, how it will be transformed and what type of data will be published.
- **Create Collaborations:** A Collaboration is a message bus in e*Gate that specifies the name and source of the incoming Event Types, the Collaboration Rules that will be applied to the Event, and the name, destination and expiration date of the outgoing Event Types. A Collaboration designates the Subscriber, which “listens” for Events of a known type from a given source, and the Publisher, which distributes the transformed Event to a specified recipient.

5.1.1. Step One–Installing the Jacada Enterprise/Access Integrator

Step one in creating the Jacada Enterprise/Access e*Way is to install and configure the **Jacada Enterprise/Access Integrator**. It is assumed that the reader is experienced in the use of the Jacada Integrator.

5.1.2. Step Two–Installing the Jacada Enterprise/Access e*Way and Creating a Schema

Step two is to install the Jacada Enterprise/Access e*Way on the e*Gate server. For directions on installing the Jacada Enterprise/Access e*Way on your specific operating system, see **Installation** on page 12. Also see **Supported Operating Systems** on page 11.

Note: *Copy jclient3.jar from the lib directory of the Jacada Integrator Server or Client and copy it to egate\server\registry\repository\default\ThirdParty\jacada\classes and egate\client\ThirdParty\jacada\classes.*

Once the Jacada Enterprise/Access e*Way is installed, a new schema must be created. While it is possible to use the default schema for the sample implementation, it is recommended that you create a separate schema for testing purposes. After you install the Jacada Enterprise/Access e*Way, do the following:

1. Start the e*Gate Schema Designer GUI.

2 When the Schema Designer prompts you to log in, select the host that you specified during installation and enter your password.

3 You will then be prompted to select a schema. Click on **New**.

4 Enter a name for the new Schema. In this case, for the sample implementation, enter **JacadaSample**, or any appropriate name. Click Open to create a new schema or to import the sample schema do the following:

Importing the Sample Schema

A sample schema, sample .xml file and Readme file are included on the installation CD-ROMs at ...\samples\ewcntea.

1 After completing steps 1 through 4 above, select **Create from export** and locate the **JacadaSample.zip** on the CD-ROM.

Note: *A new sample schema has been added for Jacada Integrator 4.0 that is similar to the JacadaSample schema. If you are using Jacada Integrator 4.0, import the 40JacadaSample.*

2 Click **Open**. The e*Gate Schema Designer opens to the Jacada sample schema.

3 To complete the Jacada sample schema implementation follow the directions in the Readme.txt file included with the sample. This includes details on how to compile and deploy the banking service (GetLoanTrans-Out.xml included with the sample) and use the Jacada MapPlayer to play the bankplay map.

After importing the sample schema and following the directions included in the Readme.txt file the sample schema is complete. The following steps are included to demonstrate how the components of the sample schema are created.

5.1.3. Step Three–Creating and Configuring the e*Ways

Step three is to create the e*Ways. e*Ways are used components for transporting and transforming data. They always interface with at least one external system, and Multi-Mode e*Ways can use e*Way Connections to interface with many external systems. For the sample implementation three e*Ways are required.

- Inbound_eWay
- Outbound_eWay
- Multi-Mode_eWay

The following sections provide instructions for creating each e*Way.

Inbound e*Way

1 Select the Navigator's **Components** tab.

2 Open the host on which you want to create the e*Ways.

3 Select the **Control Broker** that will manage the new e*Ways.

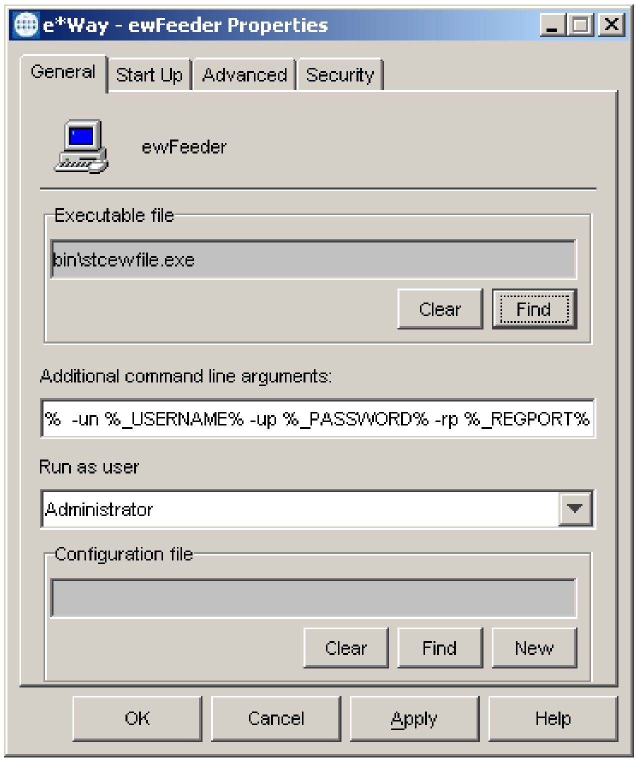
4 On the palette, click the **Create a New e*Way** button.

5 Enter the name of the new e*Way. In this case, **ewFeeder.** Click **OK**.

6 Right-click **ewFeeder**, and select **Properties** to edit its properties.

7 When the e*Way Properties window opens, click on the **Find** button beneath the **Executable File** field and select **stcewfile.exe** as the executable file.

Figure 6 e*Way Properties Dialog Box



Executable file: bin\stcewfile.exe

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

Run as user: Administrator

Configuration file:

8 Under the **Configuration File** field, click on the **New** button. The **Edit Settings** dialog box opens. Set the following for this configuration file.

Table 2 Configuration Parameters for the Inbound e*Way

Parameter	Value
General Settings (unless otherwise stated, leave settings as default)	
AllowIncoming	YES
AllowOutgoing	NO
PerformanceTesting	NO
Outbound Settings	Use default
Poller Inbound Settings	
PollDirectory	C:\INDATA (input file folder)
InputFileExtension	*.xml (input file extension)
PollMilliseconds	1000 (default)
Remove EOL	YES

Table 2 Configuration Parameters for the Inbound e*Way

Parameter	Value
MultipleRecordsPerFile	NO
MaxBytesPerLine	4096 (default)
BytesPerLineIsFixed	NO
File Records Per eGate Event	1 (default)
Performance Testing	Default

9 After selecting the desired parameters, **save** the configuration file (**ewFeeder.cfg**) and **Promote to Run Time**. Close the **.cfg** file.

10 Use the Startup, Advanced, and Security tabs to modify the default settings for each e*Way you configure.

A Use the **Startup** tab to specify whether the e*Way starts automatically, or restarts after abnormal termination or due to scheduling and so forth.

B Use the **Advanced** tab to specify or view the activity and error logging levels as well as the Event threshold information.

C Use **Security** to view or set privilege assignments.

11 Select **OK** to close the **e*Way Properties** window.

Outbound e*Way

1 Select the Navigator's **Components** tab.

2 Open the host on which you want to create the e*Ways.

3 Select the **Control Broker** that will manage the new e*Ways.

4 On the palette, click the **Create a New e*Way** button.

5 Enter the name of the new e*Way, (in this case, **ewEater**), then click **OK**.

6 Select **ewEater**, then right-click and select Properties to edit its properties.

7 When the e*Way Properties window opens, click the **Find** button beneath the **Executable File** field, and select **stcewfile.exe** as the executable file.

8 Under the **Configuration File** field, click the **New** button. When the **Settings** page opens, set the following for this configuration file:

:

Table 3 Configuration Parameters for the Outbound e*Way

Parameter	Value
General Settings (unless otherwise stated, leave settings as default)	
AllowIncoming	NO
AllowOutgoing	YES
PerformanceTesting	NO
Outbound Settings	
OutputDirectory	C:\DATA (use appropriate drive)

Table 3 Configuration Parameters for the Outbound e*Way

Parameter	Value
OutputFileName	banking%d.xml
MultipleRecordsPerFile	YES
MaxRecordsPerFile	10000
AddEOL	YES (add end-of-line character)
Poller Inbound Settings	Default
Performance Testing	Default

9 Save the **.cfg** file (**MQOut.cfg**), and promote to run time.

10 Click **OK** to close **e*Way Properties** window.

Multi-Mode e*Way

1 Select the **Navigator's Components** tab.

2 Open the host on which you want to create the e*Way.

3 Select the **Control Broker** that will manage the new e*Way.

4 On the palette, click the **Create a New e*Way** button.

5 Enter the name of the new e*Way (in this case, **ewJacadaIntegrator**), then click **OK**.

6 Right-click the new e*Way and select **Properties** to edit its properties.

7 When the e*Way Properties window opens, click the **Find** button beneath the **Executable File** field, and select **stceway.exe** as the executable file.

8 To edit the JVM Settings, select **New** under Configuration file.

See **"Multi-Mode e*Way Configuration" on page 15** for details on the parameters associated with the Multi-Mode e*Way.

9 Save the **.cfg** file (**ewJacadaIntegrator.cfg**).

10 In the **e*Way Properties** window, use the **Startup**, **Advanced**, and **Security** tabs to modify the default settings for each.

D Use the **Startup** tab to specify whether the e*Way starts automatically, restarts after abnormal termination or due to scheduling, etc.

E Use the **Advanced** tab to specify or view the activity and error logging levels, as well as the Event threshold information.

F Use **Security** to view or set privilege assignments.

11 Go to **File** and click **Promote to Run Time**.

12 Click **OK** to close **e*Way Properties** window.

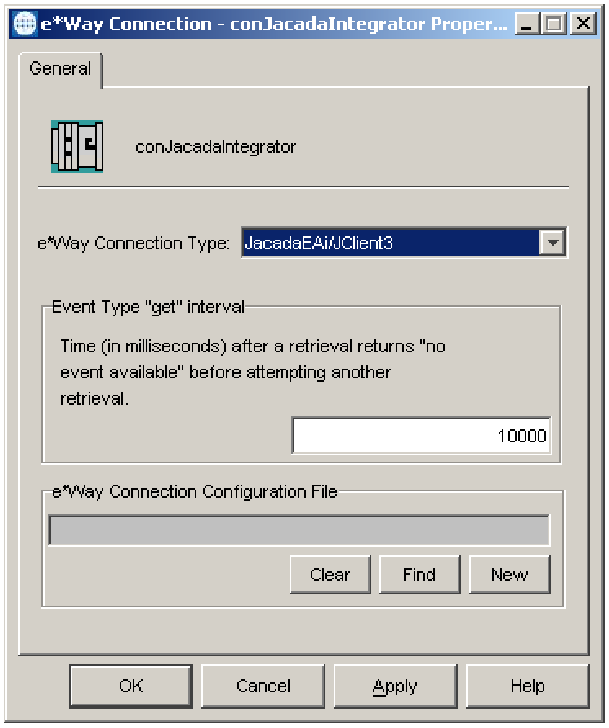
5.1.4. Step Four–Create the e*Way Connection

Step four is to create and configure the e*Way Connection. The e*Way Connection configuration file contains the settings necessary for communicating with Jacada Enterprise/Access Integrator and specifying the Jacada Queue Manager.

To create and configure a New e*Way Connection

1. Select the **e*Way Connection** folder on the e*Gate Navigator.
2. On the palette, click the **Create a New e*Way Connection** button.
3. Enter the name of the **e*Way Connection**, then click **OK.** (For the purpose of this sample, the e*Way Connection is defined as "**conJacadaIntegrator**".)
4. Double-click the new **e*Way Connection** to edit its properties. The **e*Way Connection Properties** dialog box opens.

Figure 7 e*Way Connection Properties



conJacadaIntegrator

e*Way Connection Type: JacadaEAi/JClient3

Event Type "get" interval

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

10000

e*Way Connection Configuration File

5. In the e*Way Connection Type field, select **JacadaEAi/JClient3** from the drop-down list box.
6. Enter the **Event Type "get" interval** in the dialog box provided. 10000 milliseconds is the configured default. The "get interval is the intervening period at which, when subscribed to, the e*Way connection is polled.
7. Under e*Way Connection Configuration File, click the **New** button.
8. The e*Way Connection editor opens, select the necessary parameters. For more information on the Jacada Enterprise/Access e*Way Connection Type parameters, see **Configuring e*Way Connections** on page 21.
9. Save the **conJacadaIntegrator.cfg** file

10 From the File menu select **Promote to Run Time** to move the file to the e*Way's run time environment.

5.1.5. Step Five–Creating Event Types

Step five is to create the Event Types. An Event Type is a class of Events with a common data structure. The e*Gate system packages data within Events and categorizes them into Event Types. What these Events have in common defines the Event Type and comprises the ETD.

Creating an Event Type from the Custom ETD Wizard

The following procedures show how to create an ETD (Event Type Definition) using the Custom ETD Wizard.

1 Highlight the **Event Types** folder on the **Components** tab of the e*Gate Navigator.

2 On the palette, click the **Create a New Event Type** button.

3 Enter the name of the **Event**, then click **OK.** For the purpose of this sample the Event Type is defined as **BankingInput** .

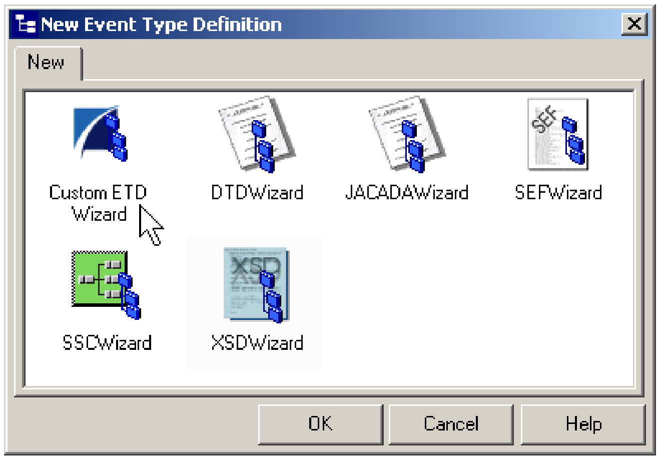
4 Double-click the new **Event Type** to edit its properties. The **Event Type Properties** dialog box opens.

5 Under the Event Type Definition field, click the **New** button. The ETD Editor opens.

6 Select **New** from the File menu. The New Event Type Definition window opens.

7 Select the Custom ETD Wizard from the New Event Type Window.

Figure 8 Event Type Definition Wizards



8 When the **Custom ETD Wizard** opens enter the **Root Node Name** (**BankingInput** for this sample) and the **Package Name** (**test.jacada.banking** for this sample) where all of the Java source files will be generated. Click **Next** and **Finish** to close the Custom e*Way Wizard.

9 Right click **BankingInput** in the Event Type Definition pane, and select **Add Field, as Child Node**. Repeat this to create Field1 and Field2.

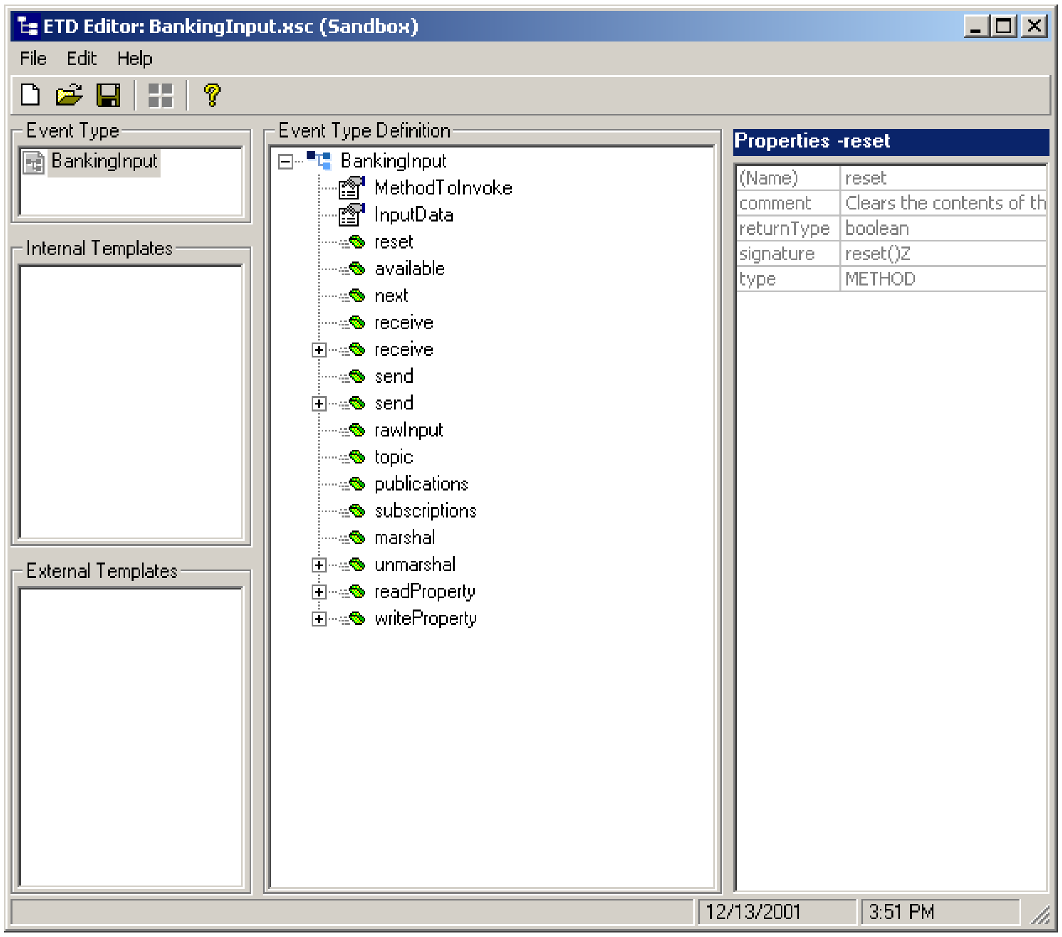
10 Triple-click on **Field1**, and rename it **MethodToInvoke**.

11 Triple-click on **Field2**, and rename it **InputData**.

12 Click on the **Global Delimiters** button on the tool bar. When the Global Delimiters dialog box open enter "/" for the endDelim (end delimiter). Click OK to close the dialog box.

13 From the File menu select **Compile And Save**. Save the file as BankingInput.xsc. If the file fails to compile, errors are displayed in the Compile message box in the Editor. If the file compiles without error the title bar displays the name of the .xsc file and (Sandbox).

Figure 9 Event Type Definition Editor



(Name)	reset
comment	Clears the contents of th
returnType	boolean
signature	reset()Z
type	METHOD

14 To move the file from the "Sandbox" to the runtime environment, select **Promote to Run Time** from the File menu.

15 Close the ETD Editor.

Creating an Event Type Using the Jacada ETD Wizard

The following procedures show how to create an ETD (Event Type Definition) using the JacadaWizard ETD Wizard.

1 Highlight the **Event Types** folder on the **Components** tab of the e*Gate Navigator.

2 On the palette, click the **Create a New Event Type** button.

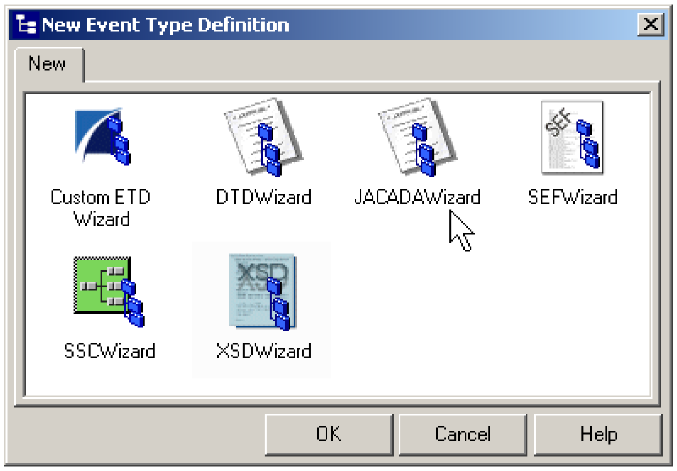
3 Enter the name of the **Event**, then click **OK.** For the purpose of this sample the Event Type is defined as **BankingService**.

4 Double-click the new **Event Type** to edit its properties. The **Event Type Properties** dialog box opens.

5 Under the Event Type Definition field, click the **New** button. The ETD Editor opens.

6 Select **New** from the File menu. The New Event Type Definition window opens.

Figure 10 Event Type Definition Wizards



7 Select the **JACADAWizard** ETD wizard.

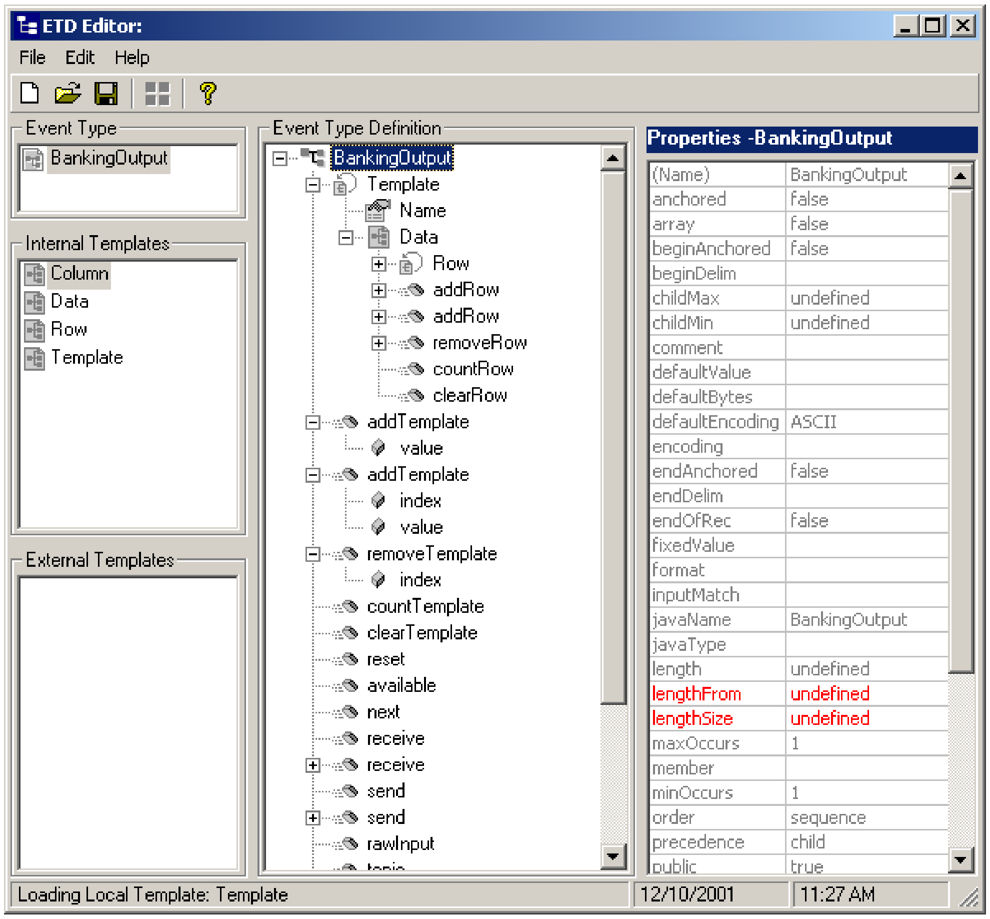
8 When the JACADAWizard opens enter the host name (the name of the machine running the Jacada Server) and port number (the number of the port the server is running on) to connect to Jacada.

9 Select Enable Debug and enter the path for the Debug File to enable the Debug option.

10 Specify the Package Name or service to be used to create the .xsc file. (For this sample, use **test.jacada.banking** as the package name.)

11 Select a Jacada service that will be used to create the .xsc file (for the sample select **banking** as the service) and click **OK**.

Figure 11 Event Type Definition Editor



Event Type
- BankingOutput

Internal Templates
- Column
- Data
- Row
- Template

External Templates

Event Type Definition

```
BankingOutput
  Template
    Name
    Data
      Row
      addRow
      addRow
      removeRow
      countRow
      clearRow
  addTemplate
    value
  addTemplate
    index
    value
  removeTemplate
    index
  countTemplate
  clearTemplate
  reset
  available
  next
  receive
  receive
  send
  send
  rawInput
```

Properties -BankingOutput

(Name)	BankingOutput
anchored	false
array	false
beginAnchored	false
beginDelim	
childMax	undefined
childMin	undefined
comment	
defaultValue	
defaultBytes	
defaultEncoding	ASCII
encoding	
endAnchored	false
endDelim	
endOfRec	false
fixedValue	
format	
inputMatch	
javaName	BankingOutput
javaType	
length	undefined
lengthFrom	undefined
lengthSize	undefined
maxOccurs	1
member	
minOccurs	1
order	sequence
precedence	child
public	true

Loading Local Template: Template | 12/10/2001 | 11:27 AM

12 From the File menu, click **Save**. Save the .xsc file as **BankingService.xsc**.

13 From the File menu, click **Promote to Run Time** to move the file to the run time environment.

14 Close the ETD Editor.

Creating an Event Type from an Existing XSC

The following procedures show how to create an Event Type using an existing .xsc file.

1 Select the **Event Types** folder on the **Components** tab of the e*Gate Navigator.

2 On the palette, click the **Create a New Event Type** button.

3 Enter the name of the **Event Type** in the **New Event Type Component** window, then click **OK**. (For this sample, the Event Type is defined as “**BankingOutput**.”)

4 Double-click the new **Event Type** to edit its properties. The **Event Type Properties** dialog box opens.

5 Click the **Find** button under the **Event Type Definition** field.

6 Browse to and select **BankingOutput.xsc**.

7 Click **OK** to close the Event Type Properties dialog box.

5.1.6. Step Six–Intelligent Queues

Step Six in configuring the Jacada Enterprise/Access e*Way is to create the IQs. IQs manage the exchange of information between components within the e*Gate system, providing non-volatile storage for data as it passes from one component to another. IQs use IQ Services to transport data. IQ Services provide the mechanism for moving Events between IQs, handling the low-level implementation of data exchange (such as system calls to initialize or reorganize a database).

To create and modify an Intelligent Queue for the Jacada Enterprise/Access e*Way

1. Select the Navigator's **Components** tab.
2. Open the host on which you want to create the IQ.
3. Open a **Control Broker**.
4. Select an **IQ Manager**.
5. On the palette, click the **Create a New IQ** button.
6. Enter the name of the new IQ, then click **OK.** (For this case, **iqFeeder**.)
7. Double-click the new **IQ** to edit its properties.
8. On the **General** tab, specify the **Service** and the **Event Type Get Interval**.
   - From the service field, select **STC_Standard.** The Stc_Standard IQ Service provides sufficient functionality for most applications. If specialized services are required, custom IQ Service DLLs may be created.
   - The default **Event Type Get Interval** of 100 Milliseconds is satisfactory for the purposes of this initial implementation.
9. On the **Advanced** tab, make sure that **Simple publish/subscribe** is checked under the **IQ behavior** section.
10. Click OK to close the **IQ Properties** window
11. For this purpose of this implementation, repeat steps 1 through 10 to create an additional IQ (**iqEater**).

5.1.7. Step Seven–Collaboration Rules

Step seven in creating the Jacada Enterprise/Access e*Way is to create the Collaboration Rules that will extract and process selected information from the source Event Type defined earlier, according to its associated Collaboration Service. The **Default Editor** can be set to either **Monk** or **Java**. From the **Schema Designer Task Bar,** select **Options** and click **Default Editor**. Make sure that the default is set to **Java**.

Creating Pass Through Collaboration Rules

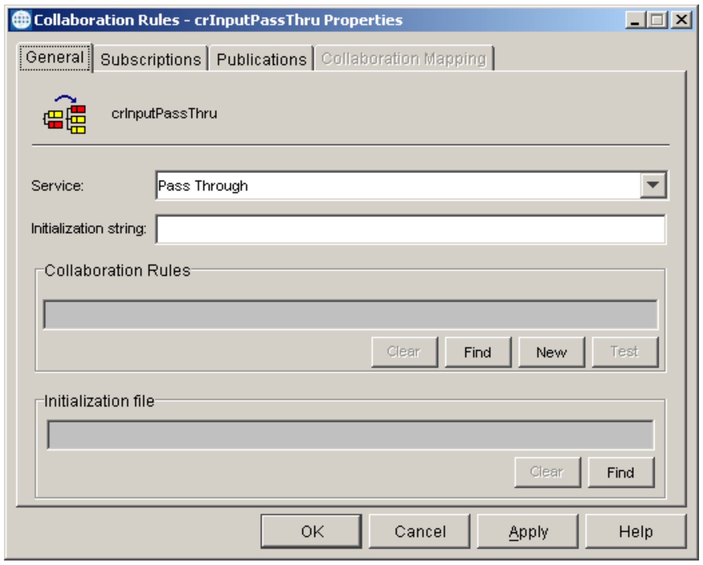
1. Select the Navigator's **Components** tab in the e*Gate Schema Designer.
2. In the **Navigator**, select the **Collaboration Rules** folder.
3. On the palette, click the **Create New Collaboration Rules** button.

4 Enter the name of the new Collaboration Rule Component, then click **OK** (in this case, use **crInputPassThru**).

5 Double-click the new Collaboration Rules Component. The **Collaboration Rules Properties** window opens.

6 Select **Pass Through** from the Service field drop-down box (see Figure 12).

Figure 12 Pass Through Collaboration Properties


Collaboration Rules - crInputPassThru Properties

General | Subscriptions | Publications | Collaboration Mapping

crInputPassThru

Service: Pass Through

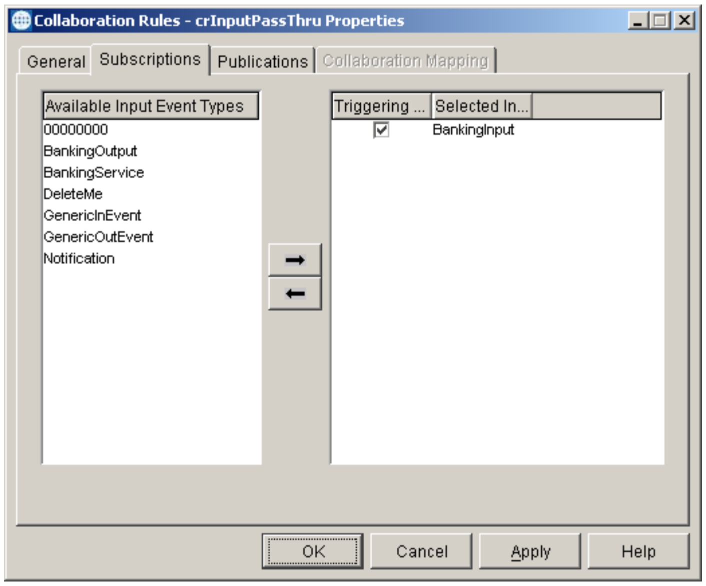
Initialization string:

Collaboration Rules

Initialization file

7 Click on the **Subscriptions** tab. Select **BankingInput** under **Available Input Event Types**, and click the right arrow to move it to **Selected Input Event Types**. The box under **Triggering Event** should be checked.

Figure 13 Pass Through Collaboration Properties, Publications Tab


Collaboration Rules - crInputPassThru Properties

General | Subscriptions | Publications | Collaboration Mapping

Available Input Event Types
00000000
BankingOutput
BankingService
DeleteMe
GenericInEvent
GenericOutEvent
Notification

Triggering ...	Selected In...
✓	BankingInput

8 Go to the **Publications** tab. Select **BankingInput** under **Available Output Event Types**, and click the right arrow to move it to **Selected Output Event Types**. The Radio button under **Default** will be enabled.

9 Click **OK** to close the **Collaboration Rules, Pass Properties** window.

10 For the purpose of this sample repeat steps 1-9 above substituting **crOutputPassThru** as the name in step 4, and **BankingOutput** as the Available Input and Output Event Types in steps 7 and 8.

Creating Java Collaboration Rules

1 Select the Navigator's **Components** tab in the e*Gate Schema Designer.

2 In the **Navigator**, select the **Collaboration Rules** folder.

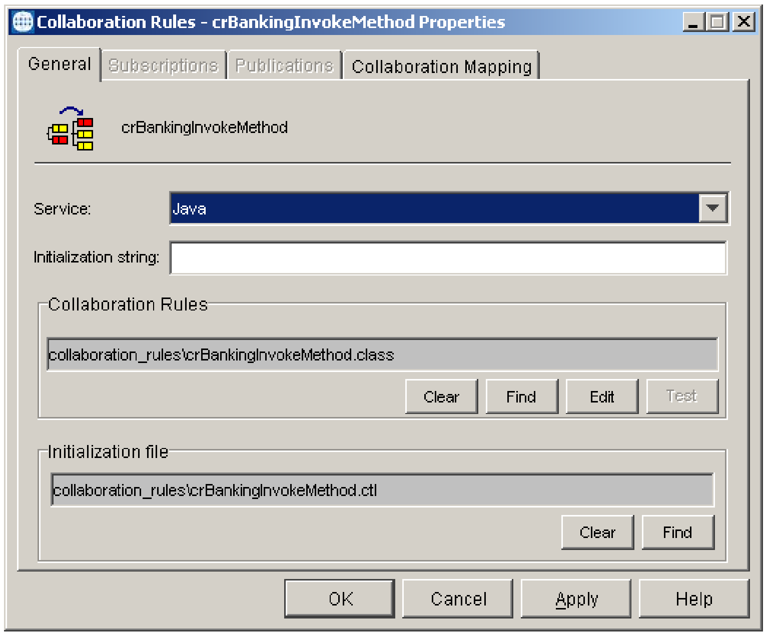
3 On the palette, click the **Create New Collaboration Rules** button.

4 Enter the name of the new Collaboration Rule, then click **OK** (for this case, use **crBankingInvokeMethod**).

5 Double-click the new Collaboration Rules Component to edit its properties. The **Collaboration Rules Properties** window opens.

6 The **Service** field defaults to **Java**. The **Collaboration Mapping** tab is enabled, and the **Subscriptions** and **Publications** tabs are disabled.

Figure 14 Collaboration Rules - Java Properties


Collaboration Rules - crBankingInvokeMethod Properties

crBankingInvokeMethod

Service: Java

Initialization string:

Collaboration Rules: collaboration_rules\crBankingInvokeMethod.class

Initialization file: collaboration_rules\crBankingInvokeMethod.ctl

7 In the **Initialization string** field, enter any required initialization string for the collaboration.

8 Select the **Collaboration Mapping** tab.

9 Using the **Add Instance** button, create instances to coincide with the Event Types.

For this sample, do the following:

10 In the **Instance Name** column, enter **BankingOutput** for the instance name.

11 Click **Find**, navigate to **etd\BankingOutput.xsc**, double-click to select. **BankingOutput.xsc** is added to the **ETD** column of the instance row.

12 In the **Mode** column, select **Out** from the drop–down menu available.

13 The **Trigger** column value is **N/A**.

14 The Manual Publish column is clear.

15 Repeat steps 9–13 using the following values:

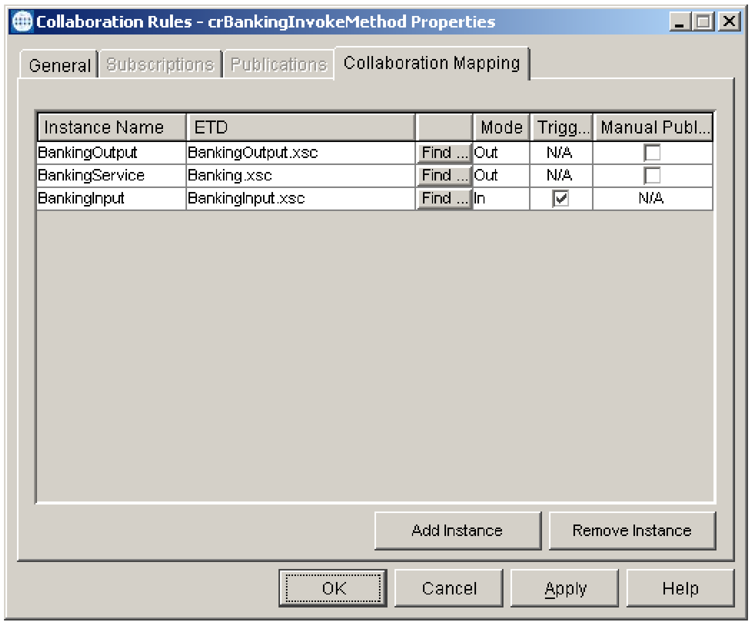
- Instance Name — **BankingService**
- ETD — **Banking.xsc**
- Mode — **Out**
- Manual Publish — unselected

16 Repeat steps 9–13 once more using the following values:

- Instance Name — **BankingInput**
- ETD — **BankingInput.xsc**
- Mode — **In**
- Trigger — selected

Note: *At least one of the ETD instances used by the Collaboration must be checked as the trigger. For specific information on creating and configuring Collaboration Rules, see the* ***e*Gate Integrator User's Guide****.*

Figure 15 Collaboration Rules - Collaboration Mapping Properties



Instance Name	ETD		Mode	Trigg...	Manual Publ...
BankingOutput	BankingOutput.xsc	Find ...	Out	N/A	☐
BankingService	Banking.xsc	Find ...	Out	N/A	☐
BankingInput	BankingInput.xsc	Find ...	In	☑	N/A

17 Select the **General** tab. Under the Collaboration Rule field, select **New**. The **Collaboration Rules Editor** opens.

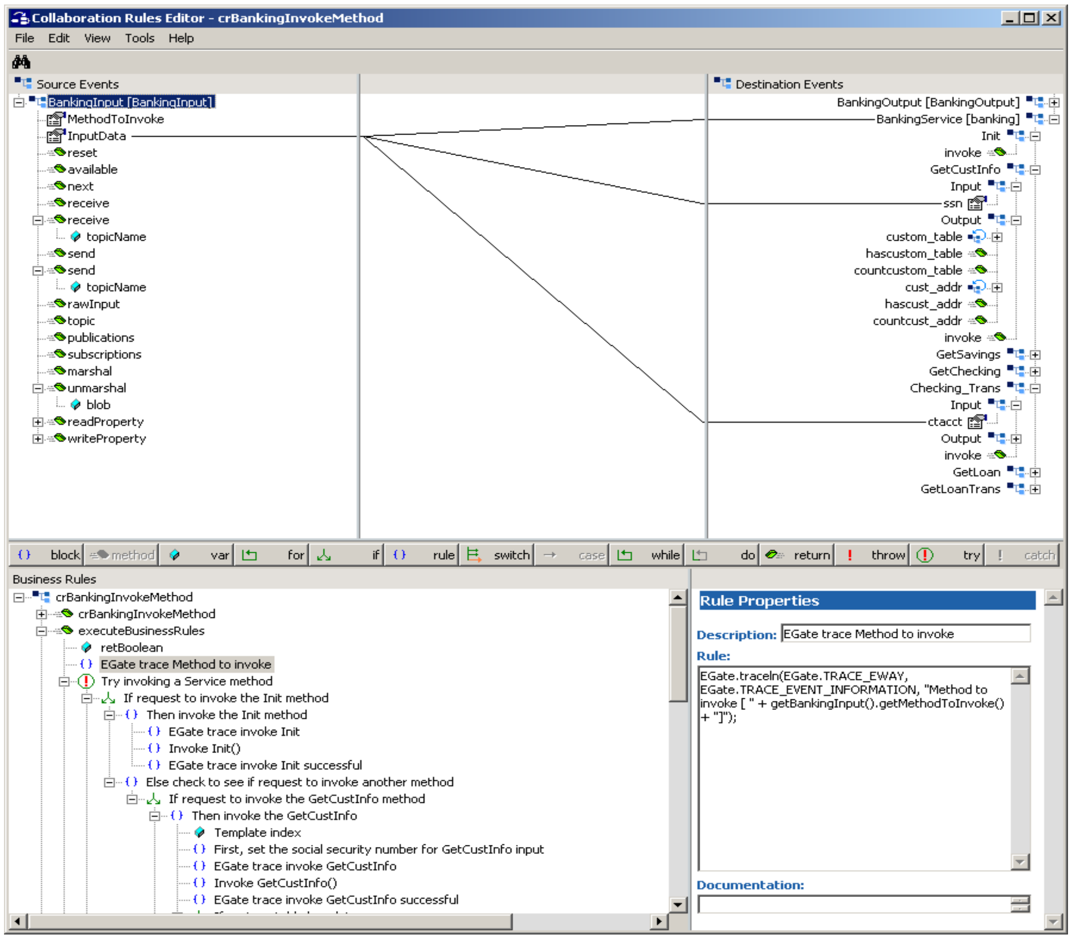
18 Expand to full size for optimum viewing, expanding the Source and Destination Events as well.

5.1.8. The Collaboration Rules Editor

Part two of step seven is to define the business logic using the Collaboration Rules Editor. The Java Collaboration Rules Editor is the GUI used to create and modify Java Collaboration Rules. A Java Collaboration Rule is created by designating one or more source Events and one or more destination Events and then setting up rules governing the relationship between fields in the Event instances.

The **crBankingInvokeMethod.class** that comes as part of the sample schema is an extensive set of collaboration rules. To view the various business rules go to the Business rules window and highlight a rule. Code for the specific rule is displayed in the Rule Properties, Rules window. For detailed information on creating Collaboration Rules using the Java Collaboration Rules Editor see the **e*Gate Integrator User's Guide**.

Figure 16 Collaboration Rules — Collaboration Rules Editor



Description: EGate trace Method to invoke

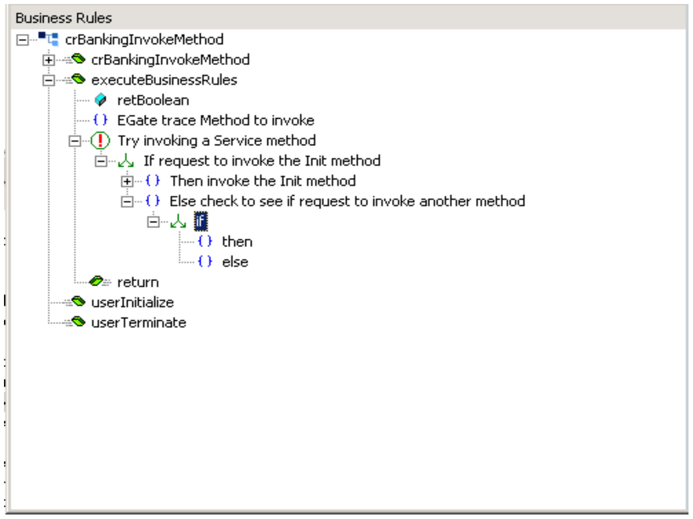
Rule:

```
EGate.traceln(EGate.TRACE_EWAY,
EGate.TRACE_EVENT_INFORMATION, "Method to
invoke [ " + getBankingInput().getMethodToInvoke()
+ "]");
```

For the purpose of demonstrating how the sample's Collaboration Rules were generated, the following partial implementation describes how to create a number of the collaboration rules, starting with line 9 under retboolean in the Business Rules pane.

1 Beginning at the **Else check to see if request to invoke another method**, assuming that this line is selected, click on the **if** button on the toolbar. An if expression is added to the Business Rules pane.

Figure 17 Collaboration Rules — Business Rules Pane


Business Rules
crBankingInvokeMethod
crBankingInvokeMethod
executeBusinessRules
retBoolean
EGate trace Method to invoke
Try invoking a Service method
If request to invoke the Init method
Then invoke the Init method
Else check to see if request to invoke another method
if
then
else
return
userInitialize
userTerminate

2 Place the curser in the **If Properties, Condition** window and type **"GetCustInfo"equalsIgnoreCase()**.

3 From the Source Events pane drag and drop **MethodToInvoke** into the parenthesis in the If Properties, Condition window. When prompted for ***type of function to insert for this node*** select **get**. The code in the Condition window should appear as follows:

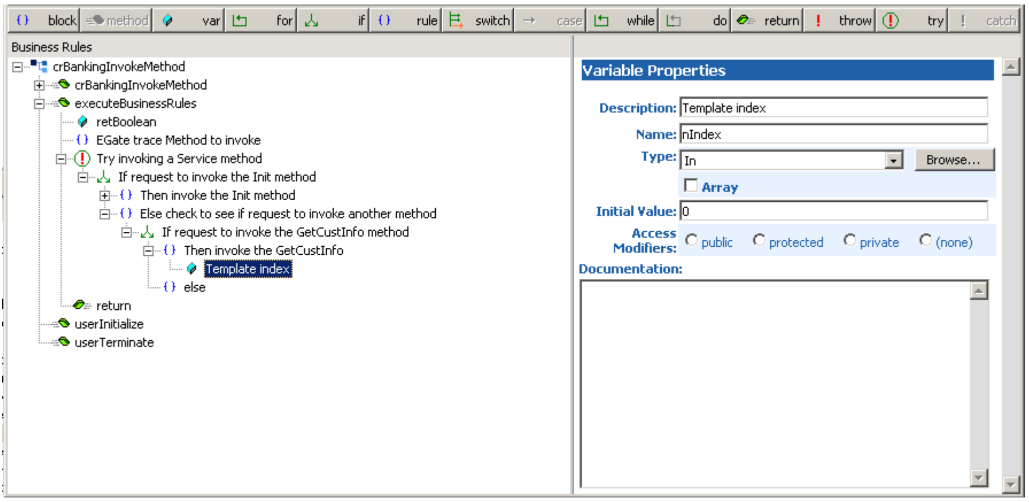
```
"GetChecking".equalsIgnoreCase(getBankingInput().getMethodToInvoke
())
```

4 Type **If request to invoke the GetCustInfo method** in the **If Properties**, **Description** field. The description is added to the rule in the Business Rules pane. (This line checks to see if the customer has data.)

5 Select the **then** expression in the Business Rules pane. Type **Then invoke the GetCustInfo** in the **Then Properties**, **Description** field. The description is added to the rule in the Business Rules pane.

6 Click the **var** button (variable) on the toolbar. a variable is added to the Business Rules pane.

Figure 18 Collaboration Rules Editor - Variable Properties



crBankingInvokeMethod
crBankingInvokeMethod
executeBusinessRules
retBoolean
EGate trace Method to invoke
Try invoking a Service method
If request to invoke the Init method
Then invoke the Init method
Else check to see if request to invoke another method
If request to invoke the GetCustInfo method
Then invoke the GetCustInfo
Template index
else
return
userInitialize
userTerminate

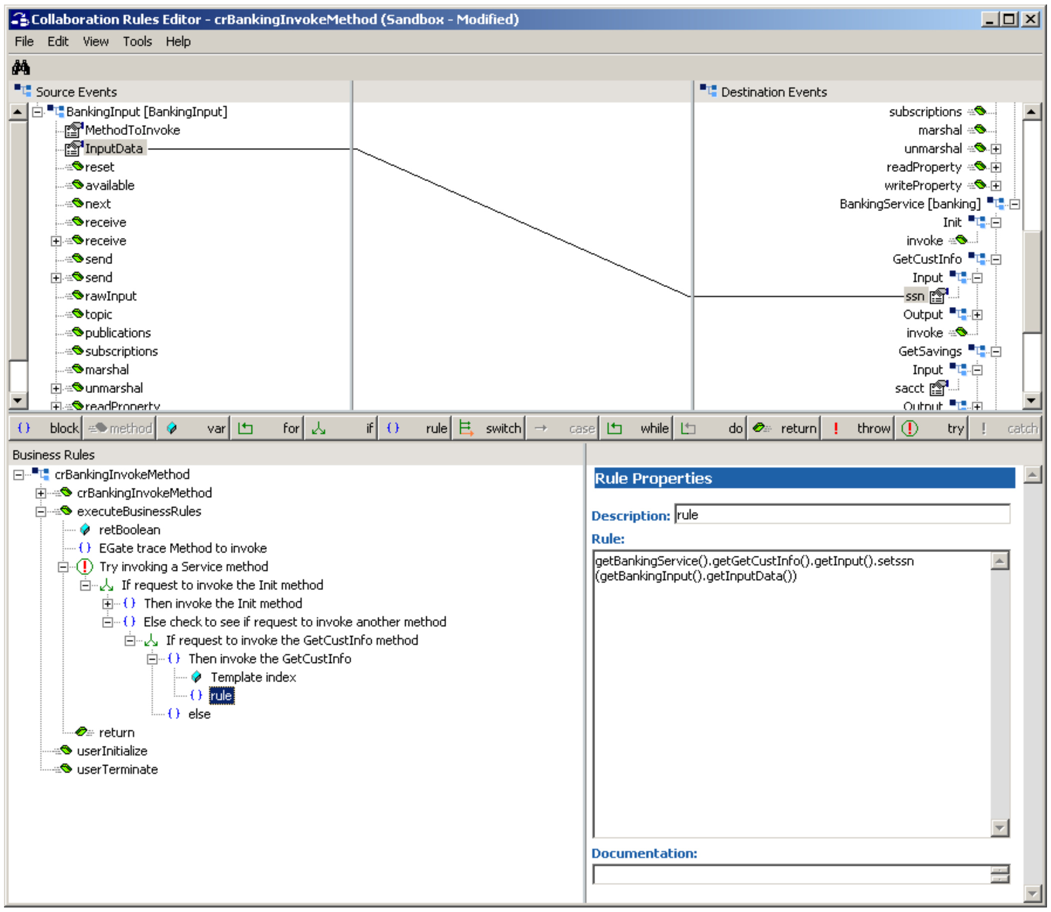
Variable Properties

Description: Template index
Name: nIndex
Type: In
Browse...
Array
Initial Value: 0
Access Modifiers: public protected private (none)
Documentation:

7 Type **Template index** in the **Variable Properties**, **Description** field. Also, type **nIndex** in the **Name** field, select **int** as the **type** and enter **0** as the **Initial Value** (see Figure 18).

8 From the Source Events pane drag and drop **InputData** to **ssn** (under GetCustInfo, Input) in the Destination Events. The new rule is added to the Business Rules pane. A line is displayed between the two events and the associated code is displayed in the Rule Properties, Rule window.

Figure 19 Collaboration Rules Editor



Description: rule

Rule:

```
getBankingService().getGetCustInfo().getInput().setssn
(getBankingInput().getInputData())
```

9 In the Description field type **First, set the social security number for GetCustInfo input**.

10 Click the **rule** button on the toolbar. A **rule** expression appears.

11 Type the following in the **Rule Properties, Rule** window:

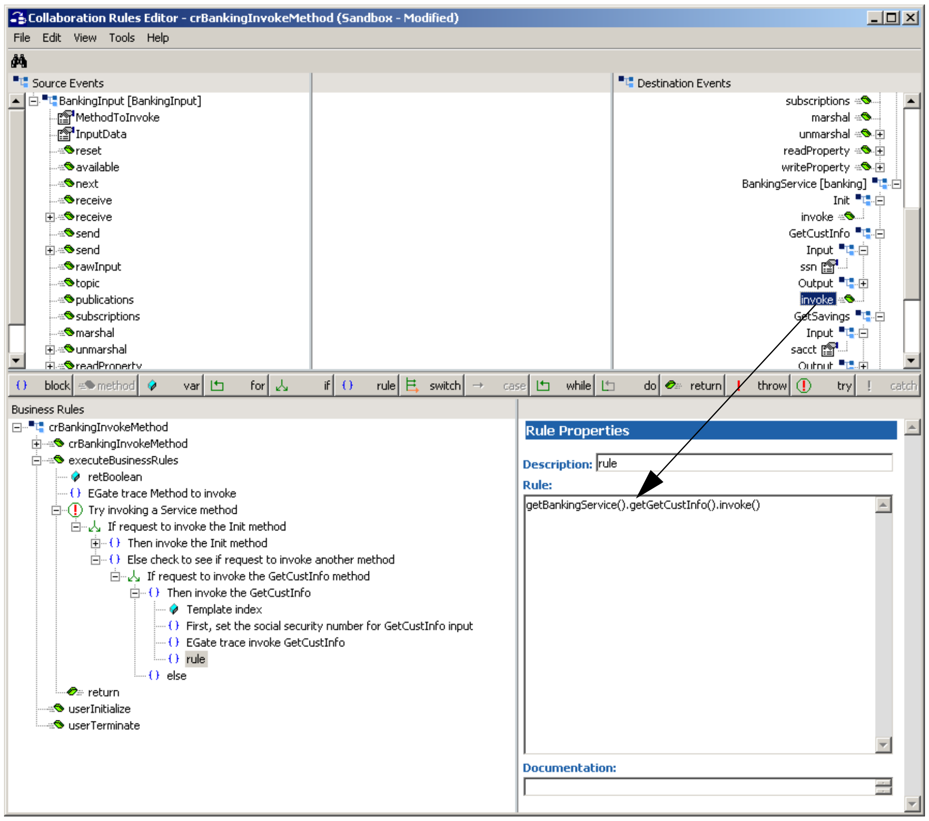
```
EGate.traceln(EGate.TRACE_EWAY, EGate.TRACE_EVENT_INFORMATION,
"Invoking the Init method.");
```

12 In the Description field type **EGate trace invoke GetCustInfo**.

13 Click the **rule** button on the toolbar again.

14 From the Destination Events pane, Drag and drop the **invoke** method (under BankingService, GetCustInfo, Output), into the **Rule Properties, Rule** window (seeFigure 20).

Figure 20 Collaboration Rules Editor


Collaboration Rules Editor - crBankingInvokeMethod (Sandbox - Modified)
File Edit View Tools Help
Source Events
BankingInput [BankingInput]
MethodToInvoke
InputData
reset
available
next
receive
receive
send
send
rawInput
topic
publications
subscriptions
marshal
unmarshal
readProperty
Destination Events
subscriptions
marshal
unmarshal
readProperty
writeProperty
BankingService [banking]
Init
invoke
GetCustInfo
Input
ssn
Output
invoke
GetSavings
Input
sacct
Output
block method var for if rule switch case while do return throw try catch
Business Rules
crBankingInvokeMethod
crBankingInvokeMethod
executeBusinessRules
retBoolean
EGate trace Method to invoke
Try invoking a Service method
If request to invoke the Init method
Then invoke the Init method
Else check to see if request to invoke another method
If request to invoke the GetCustInfo method
Then invoke the GetCustInfo
Template index
First, set the social security number for GetCustInfo input
EGate trace invoke GetCustInfo
rule
else
return
userInitialize
userTerminate
Rule Properties
Description:
Rule:
Documentation:

Description: rule

Rule:

```
getBankingService().getGetCustInfo().invoke()
```

15 In the Description field type **Invoke GetCustInfo()**.

16 Click the **rule** button on the toolbar to add another rule expression.

17 Type the following in the **Rule Properties, Rule** window:

```
EGate.traceln(EGate.TRACE_EWAY, EGate.TRACE_EVENT_INFORMATION,
"Successfully invoked GetCustInfo.");
```

18 In the Description field type **EGate trace invoke GetCustInfo successful**.

19 Click the **if** button again to add another **if** expression.

20 From the Destination Events pane, Drag and drop the **hascustom_table** method (under BankingService, GetCustInfo, Output), into the **If Properties, Condition** window. The associated code appears in the **Condition** window.

21 In the Description field type **If custom_table has data**. (This line checks to see if the custom table contains data. If there is data present it continues to the next step.)

22 Select the **then** expression in the Business Rules pane. Type **Then iterate through each row and populate XML** in the **Then Properties**, **Description** field. The description is added to the rule in the Business Rules pane.

23 Click the **rule** button on the toolbar to add another rule expression.

24 Type the following in the **Rule Properties, Rule** window:

```
EGate.traceln(EGate.TRACE_EWAY, EGate.TRACE_EVENT_INFORMATION,
"custom_table row count : " +
getBankingService().getGetCustInfo().getOutput().countcustom_table
());
```

25 In the Description field type **EGate trace custom_table row count**.

26 Click the **rule** button again to add another rule expression.

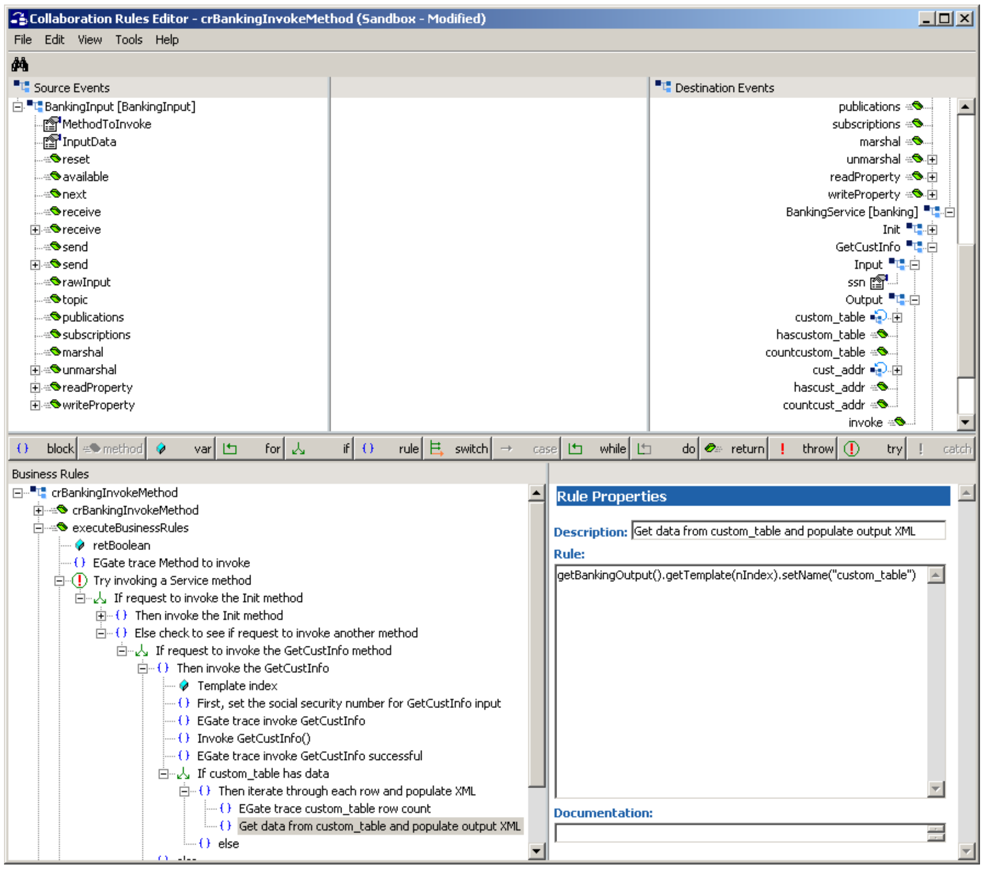
27 Drag and drop **Name** (under BankingOutput, Template) from the Destination pane into the **Rule Properties, Rule** window. When prompted for ***type of function to insert for this node*** select **set**.

28 The **Select Repetition Instance** dialog box appears. Enter **nIndex** in the **Template** field.

29 Place the curser in the last set of parenthesis and type in **"custom_table".** (This line sets the output template name to customer info template.)

30 In the Description field type **Get data from custom_table and populate output XML**.

Figure 21 Collaboration Rules Editor



Source Events:
- BankingInput [BankingInput]
  - MethodToInvoke
  - InputData
  - reset
  - available
  - next
  - receive
  - receive
  - send
  - send
  - rawInput
  - topic
  - publications
  - subscriptions
  - marshal
  - unmarshal
  - readProperty
  - writeProperty

Destination Events:
- publications
- subscriptions
- marshal
- unmarshal
- readProperty
- writeProperty
- BankingService [banking]
  - Init
  - GetCustInfo
    - Input
      - ssn
    - Output
      - custom_table
      - hascustom_table
      - countcustom_table
      - cust_addr
      - hascust_addr
      - countcust_addr
  - invoke

Business Rules:
- crBankingInvokeMethod
  - crBankingInvokeMethod
  - executeBusinessRules
    - retBoolean
    - EGate trace Method to invoke
    - Try invoking a Service method
      - If request to invoke the Init method
        - Then invoke the Init method
        - Else check to see if request to invoke another method
          - If request to invoke the GetCustInfo method
            - Then invoke the GetCustInfo
              - Template index
              - First, set the social security number for GetCustInfo input
              - EGate trace invoke GetCustInfo
              - Invoke GetCustInfo()
              - EGate trace invoke GetCustInfo successful
              - If custom_table has data
                - Then iterate through each row and populate XML
                  - EGate trace custom_table row count
                  - Get data from custom_table and populate output XML
                - else

Description: Get data from custom_table and populate output XML

Rule:

```
getBankingOutput().getTemplate(nIndex).setName("custom_table")
```

Documentation:

31 Click the **for** button on the toolbar to add a for loop. When prompted as to whether to create the rule as a sibling or child, select **Sibling**.

32 In the **For Properties** pane, **Description** field, type **For each row in custom_table, create row output for XML**. In the **Counter Initialization** field, type **int i=0**.

33 Type **i <** in the Condition field, then drag and drop the countcustom_table method from the Destination Events pane to the **Condition** field. The code in the Condition field appears as follows:

```
i < getBankingService().getGetCustInfo().getOutput()
.countcustom_table()
```

34 In the **Counter Update** field, type **i++**.

35 Click the **if** button on the toolbar to add an if expression.

36 From the Destination Events pane, Drag and drop the **hasacct** method (under BankingService, GetCustInfo, Output, custom_table), into the **If Properties, Condition** window.

37 The **Select Repetition Instance** dialog box appears. Enter **i** in the **custom_table** field and click **OK**.

38 In the Description field type **If have acct in result**. (Checks to see if the account has any data. If it does it is copied to the output.)

39 Select the **then** expression and type **Then get acct** in the Then Properties, Description field.

40 Click the **rule** button again to add another **rule** expression.

41 From the Destination Events pane, drag **Name** (under BankingOutput, Template, Data, Row, Column) to the Rule Properties, Rule window. When prompted for ***type of function to insert for this node*** select **set**.

42 The **Select Repetition Instance** dialog box appears. Enter **nIndex** in the Template field, **i** in the Row field and **0** in the column field. Click **OK**.

43 Place the curser in the last set of parenthesis and type **"acct"**.

44 In the Description field type **Set acct column name for current row**.

45 Click the **rule** button again to add another **rule** expression.

46 From the Destination Events pane, drag **Value** (under BankingOutput, Template, Data, Row, Column) to the Rule Properties, Rule window. When prompted for ***type of function to insert for this node*** select **set**.

47 The **Select Repetition Instance** dialog box appears. Enter **nIndex** in the Template field, **i** in the Row field and **0** in the column field. Click **OK**.

48 Drag and drop **acct** (under BankingOutput, BankingService, GetCustInfo, Output, custom_table) into the curser in the last set of parenthesis in the Rule Properties, Rule window. When prompted for ***type of function to insert for this node*** select **get**.

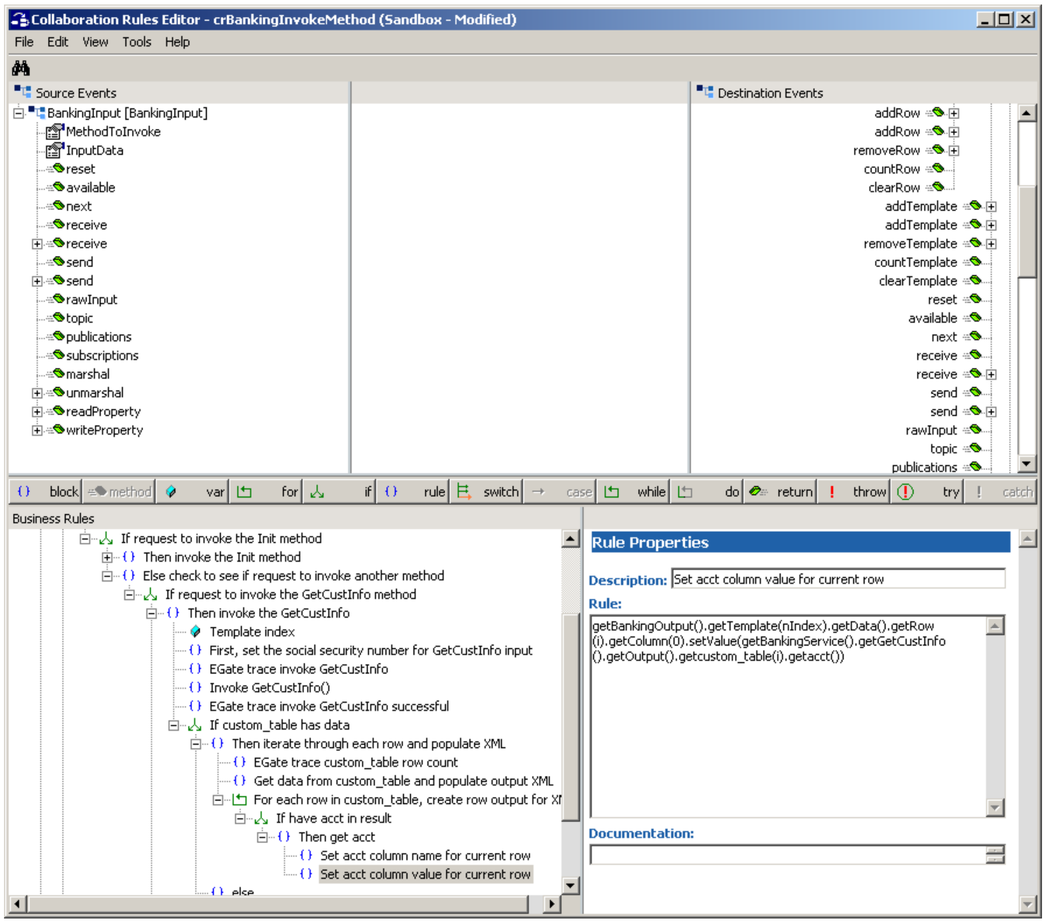
49 The **Select Repetition Instance** dialog box appears. Enter **i** in the **custom_table** field and click **OK**.

50 The code in the Rule window appears as follows:

```
getBankingOutput().getTemplate(nIndex).getData().getRow(i).getColu
mn(0).setValue(getBankingService().getGetCustInfo().getOutput().ge
tcustom_table(i).getacct())
```

51 In the Description field type **Set acct column value for current row**.

Figure 22 Collaboration Rules Editor



Business Rules:

```
If request to invoke the Init method
  Then invoke the Init method
  Else check to see if request to invoke another method
    If request to invoke the GetCustInfo method
      Then invoke the GetCustInfo
        Template index
        First, set the social security number for GetCustInfo input
        EGate trace invoke GetCustInfo
        Invoke GetCustInfo()
        EGate trace invoke GetCustInfo successful
        If custom_table has data
          Then iterate through each row and populate XML
            EGate trace custom_table row count
            Get data from custom_table and populate output XML
            For each row in custom_table, create row output for Xf
              If have acct in result
                Then get acct
                  Set acct column name for current row
                  Set acct column value for current row
          else
```

Description: Set acct column value for current row

Rule:

```
getBankingOutput().getTemplate(nIndex).getData().getRow
(i).getColumn(0).setValue(getBankingService().getGetCustInfo
().getOutput().getcustom_table(i).getacct())
```

52 When all the business logic has been defined, the code can be compiled by selecting **Compile** from the **File** menu. When the **Save** menu opens, provide a name for the **.xpr** file. If the code compiles successfully, the message **Compile Completed** appears. If the outcome is unsuccessful, a Java Compiler error message appears at the bottom of the editor in a watch window.

53 Once the compilation is complete, click **File**, **Promote** to move the file to the run time environment. Close the Collaboration Rules Editor.

54 Click **OK** to close the **Properties** dialog box.

55 *For detailed information on creating Collaboration Rules using the Java Collaboration Rules Editor see the **e*Gate Integrator User's Guide**.*

5.1.9. Step Eight–Collaborations

Step eight in creating the Jacada Enterprise/Access e*Way is to create the Collaborations. Collaborations are the components that receive and process Event Types, then forward the output to other e*Gate components or an external component. Collaborations consist of the Subscriber, which "listens" for Events of a known type, and the Publisher, which distributes the transformed Event to a specified recipient.

Creating the Inbound_eWay Collaboration

1. In the e*Gate Schema Designer, select the Navigator's **Components** tab.
2. Open the host on which you want to create the Collaboration.
3. Select a **Control Broker.**
4. Select the **ewFeeder** e*Way to assign the Collaboration.
5. On the palette, click the **Create a New Collaboration** button.
6. Enter the name of the new Collaboration, then click **OK.** (in this case, "**coFeeder**".)
7. Double-click the new Collaboration to edit its properties.
8. From the **Collaboration Rules** list, select the **Collaboration Rules** file that you created previously. (For the sample, "**crInputPassThru**".)
9. In the **Subscriptions** area, click **Add** to define the input Event Types to which this Collaboration will subscribe.

   A From the **Event Type** list, select the **Event Type** that you previously defined **BankingInput**.

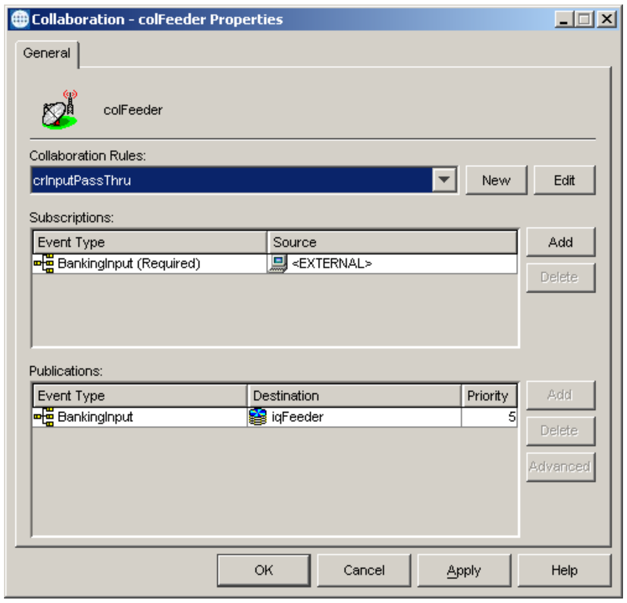
   B Select the **Source** from the **Source** list. In this case, it should be **<External>**.
10. In the **Publications** area, click **Add** to define the output **Event Types** that this Collaboration will publish.

    A From the **Event Types** list, select the **Event Type** that you previously defined **BankingInput**.

    B Select the publication **Destination** from the **Destination** list. In this case, it should be **iqFeeder**.

    C The Priority column will default to **5** (which is fine for this sample).

Figure 23 Collaboration - Inbound e*Way Properties



colFeeder

Collaboration Rules: crInputPassThru

Subscriptions:

Event Type	Source
BankingInput (Required)	<EXTERNAL>

Publications:

Event Type	Destination	Priority
BankingInput	iqFeeder	5

11. Click **OK** to close the **Collaboration Properties** window.

Creating the Outbound_eWay Collaboration

1. In the e*Gate Schema Designer, select the Navigator's **Components** tab.
2. Open the host on which you want to create the Collaboration.
3. Select a **Control Broker.**
4. Select the **ewEater** e*Way to assign the Collaboration.
5. On the palette, click the **Create a New Collaboration** button.
6. Enter the name of the new Collaboration, then click **OK.** (in this case, “**coEater**”.)
7. Double-click the new Collaboration to edit its properties.
8. From the **Collaboration Rules** list, select the **Collaboration Rules** file that you created previously. (For the sample, “**crOutputPassThru**”.)
9. In the **Subscriptions** area, click **Add** to define the input Event Types to which this Collaboration will subscribe.
   - A From the **Event Type** list, select the **Event Type** that you previously defined **BankingOutput**.
   - B Select the **Source** from the **Source** list. In this case, it should be **colInvokeBankingMethod**.
10. In the **Publications** area, click **Add** to define the output **Event Types** that this Collaboration will publish.
    - A From the **Event Types** list, select the **Event Type** that you previously defined **BankingOutput**.
    - B Select the publication **Destination** from the **Destination** list. In this case, it should be **<EXTERNAL>**.
    - C The Priority column will default to **5** (which is fine for this sample).
11. Click **OK** to close the **Collaboration Properties** window.

Creating the Multi Mode e*Way Collaborations

1. To create the **ColInvokeBankingMethod** Collaboration, Select the **ewJacadaIntegrator** e*Way to assign a Collaboration.
2. On the palette, click the **Create a New Collaboration** button.
3. Enter the name of the new Collaboration, then click **OK.** (For the sample, “**colInvokeBankingMethod**”.)
4. Double-click the new Collaboration to edit its properties.
5. From the **Collaboration Rules** field drop down list box, select the **Collaboration Rules** file that you created previously. For the sample use **crBankingInvokeMethod.**
6. In the **Subscriptions** field, click **Add** to define the input Event Types to which this Collaboration will subscribe.
   - A From the **Instance Name** list, select the **Instance Name** that you previously defined **BankingInput**.

B From the **Event Type** list, select the **Event Type** previously defined **BankingInput**.

C Select the **Source** from the **Source** list. In this case, it should be **colFeeder**.

7 In the **Publications** area, click **Add** to define the output **Event Types** that this Collaboration will publish.

A From the **Instance Name** list, select the **Instance Name** previously defined as **BankingService**.

B From the **Event Types** list, select the **Event Type** that you previously defined **BankingService**.

C Select the **Destination** from the **Destination** list. In this case select **conJacadaIntegrator**.

D The Priority column will default to **5**.

8 In the **Publications** area, click **Add** to define the output **Event Types** that this Collaboration will publish.

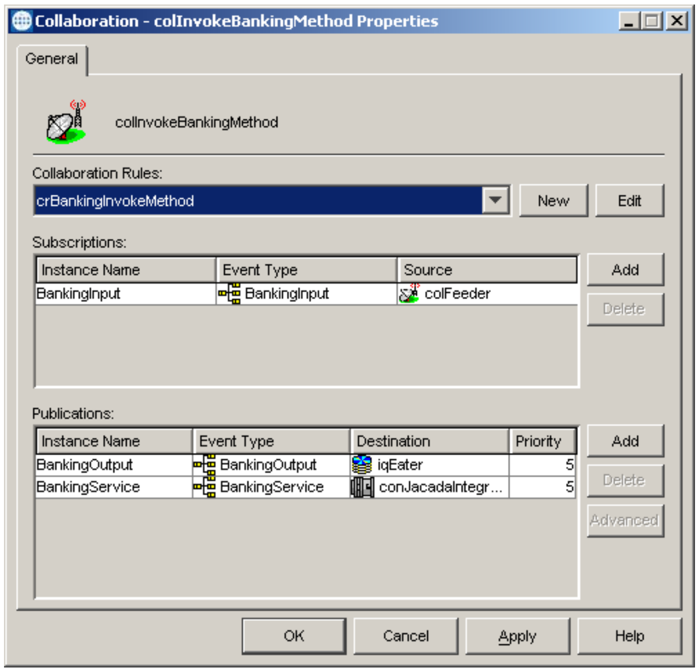
A From the **Instance Name** list, select the **Instance Name** previously defined as **BankingOutput**.

B From the **Event Types** list, select the **Event Type** that you previously defined **BankingOutput**.

C Select the **Destination** from the **Destination** list. In this case select **iqEater**.

D The Priority column will default to **5** (which is fine for this sample).

Figure 24 Collaboration Properties - MQ_cr_out



colInvokeBankingMethod

Collaboration Rules: crBankingInvokeMethod

Subscriptions:

Instance Name	Event Type	Source
BankingInput	BankingInput	colFeeder

Publications:

Instance Name	Event Type	Destination	Priority
BankingOutput	BankingOutput	iqEater	5
BankingService	BankingService	conJacadaIntegr...	5

9 Click **OK** to close the Properties window.

5.2 Execute the Schema

To execute the schema, do the following:

1. Go to the command line prompt, and enter the following:

   ```
   stccb -rh hostname -rs schemaname -un username -up user password
   -ln hostname_cb
   ```

   Substitute ***hostname***, schemaname, ***username*** and ***user password*** as appropriate.

2. Exit from the command line prompt, and start the Schema Manager GUI.
3. When prompted, specify the ***hostname*** which contains the Control Broker you started in Step 1 above.
4. Select the schema.
5. After you verify that the Control Broker is connected (the message in the Control tab of the console will indicate command *succeeded* and status as *up*), highlight the IQ Manager, ***hostname***_igmgr, then right-click and select **Start**.
6. Highlight each of the e*Ways, right-click the mouse, and select **Start**.

Chapter 6

Java Methods

The Jacada Enterprise/Access e*Way's Java Methods fall into the following categories.

The JDK Classes

SeeBeyond's Jacada Enterprise/Access e*Way uses JDK (SDK) 1.3.1_02 which is installed as part of the e*Gate Enterprise Integrator installation.

The Jacada Classes

SeeBeyond's Jacada Enterprise/Access e*Way uses the JClient3 classes provided as part of the E/A installation. The jar file containing these classes is jclient3.jar. This jar file must be copied to eGate\client\ThirdParty\jacadaeaijc3\classes before the builder or the e*Way can be used.

The SeeBeyond Classes

Builder Class

The builder is used to construct the Service ETD. Only one class implements the builder. This class is called JacadaEAiJC3Builder.class and is in the jar file named stcjc3svcbldr.jar. This jar file gets installed when the e*Way is installed (add-on).

The Service Wizard (GUI) is also installed as part of the e*Way. The Wizard guides a user in a step-by-step process of generating an ETD for a Service. The Wizard provides GUI interfaces for querying the following information : Environment Manager host and port, package name, debugging options, and the Service name. The Wizard will then provide that information to the builder to construct the Service ETD.

Runtime Class

What we referred to as the runtime is the implementation of the e*Way Connection for Jacada EAi. JacadaEAiJC3Connector.class implements the EbobConnector interface to provide connectivity with the Environment Manager on an E/A system. The Environment Manager is a process on an E/A system whose tasks include facilitating client connections. The connector class is in the jar file named stcjc3conn.jar. This jar file also gets installed when the e*Way is installed (add-on).

Miscellaneous Classes

This e*Way also makes use of open source third party tools. These are GNU GetOpt and Apache Xerces. The classes for these tools are also installed as part of the e*Way installation (add-on).

These Java methods have been added to make it easier to set information in the e*Way ETD Editor and to get information from it. These methods are contained in classes:

- **The JacadaEAiJC3Builder Class** on page 54
- **The JacadaEAiJC3Connector Class** on page 61

6.1 The JacadaEAiJC3Builder Class

This class extends the JCSCompiler to provide a Jacada EAi Service builder. This class uses the Jacada EAi JClient3 APIs to query the metadata for a particular service. Using the metadata of a service, this class will produce the corresponding XSC file and the Java classes for that service.

```
java.lang.Object
    com.stc.compilers.Compiler
        com.stc.jcs.JCSCompiler
            com.stc.eways.jacadaeaijc3.builder.JacadaEAiJC3Builder
```

public class **JacadaEAiJC3Builder**

Extends com.stc.jcs.JCSCompiler.

Methods of the JacadaEAiJC3Builder Class

These methods are described in detail on the following pages:

JacadaEAiJC3Builder

Description

Constructor. Constructs a JacadaEAiJC3Builder

Syntax

```
public JacadaEAiJC3Builder()
```

Parameters

None.

Return Values

None.

Throws

None.

setPrintDebug

Description

Sets the print debug flag.

Syntax

```
public void setPrintDebug(boolean printDebug)
```

Parameters

Name	Type	Description
`printDebug`	boolean	Boolean flag to indicate print debug to System.err.

Return Values

None.

Throws

None.

getPrintDebug

Description

Gets the print debug flag.

Syntax

```
public void getPrintDebug()
```

Parameters

None

Return Values

boolean.
The current value of the print debug flag.

Throws

None.

compile

Description

Creates the necessary files to process a Jacada EAi Service data.

Creates the necessary files to process a Jacada EAi Service data. Must be connected to an Environment Manager first before invoking this method.

Syntax

```
public void compile(java.lang.String inEnvmgrHost,
                    int inEnvmgrPort,
                    java.lang.String inServiceName,
                    java.lang.String xscfname,
                    java.lang.String pkg,
                    boolean debug,
                    java.lang.String debugFile,
                    int secTimeout,
                    int secSlope,
                    int secInitDelay,
                    int maxRetries)

public void compile(java.lang.String inEnvmgrHost,
                    int inEnvmgrPort,
                    java.lang.String inServiceName,
                    java.lang.String xscfname,
                    java.lang.String pkg,
                    boolean debug,
                    java.lang.String debugFile)

public void compile(java.lang.String inServiceName,
                    java.lang.String xscfname,
                    java.lang.String pkg)
```

Parameters

Name	Type	Description
inEnvmgrHost	java.lang.String	The host name or IP address on which the Environment Manager is running.
inEnvmgrPort	integer	The port at which the Environment Manager is listening for connections.
inServiceName	java.lang.String	The name of the service for which the ETD is to be constructed.
xscfname	java.lang.String	Full path name of the e*Gate .xsc file to generate.
pkg	java.lang.String	The Package name for the ETD to be constructed.
debug	boolean	The flag to turn on print debugging.
debugFile	java.lang.String	The file used to write JClient3 debug messages. If null is provided and debug is set to true, then a default egate\client\logs\jacadabuilder.log file will be used. If debug is set to false, then this parameter will not be used.

Name	Type	Description
secTimeout	integer	Timeout value to be used for a service connection (in seconds).
secSlope	integer	The rate at which to increase delay between service connection retries (in seconds).
secInitDelay	integer	The the initial delay between service connection retries (in seconds).
maxRetries	integer	The maximum number of times to retry service connections.

Name	Type	Description
inEnvmgrHost	java.lang.String	The host name or IP address on which the Environment Manager is running.
inEnvmgrPort	integer	The port at which the Environment Manager is listening for connections.
inServiceName	java.lang.String	The name of the service for which the ETD is to be constructed.
xscfname	java.lang.String	Full path name of the e*Gate .xsc file to generate.
pkg	java.lang.String	The Package name for the ETD to be constructed.
debug	boolean	The flag to turn on print debugging.
debugFile	java.lang.String	The file used to write JClient3 debug messages. If null is provided and debug is set to true, then a default egate\client\logs\jacadabuilder.log file will be used. If debug is set to false, then this parameter will not be used.

Name	Type	Description
inServiceName	java.lang.String	The name of the service for which the ETD is to be constructed.
xscfname	java.lang.String	Full path name of the e*Gate .xsc file to generate.
pkg	java.lang.String	The Package name for the ETD to be constructed.

Return Values

None.

Throws

com.stc.jcs.JCSException
Thrown upon error.

setJC3Debug

Description

Turn on debugging on the JClient3 API. To turn JClient 3 debugging, this method must be called prior to connect.

Syntax

```
public void setJC3Debug(java.lang.String debugFile)
```

Parameters

Name	Type	Description
`debugFile`	java.lang.String	The file used to write JClient3 debug messages. If this is set to null, then a default file "jacadabuilder.log" will be created in egate\client\logs in an e*Gate environment or in the current working directory if no e*Gate environment.

Return Values

None.

Throws

com.stc.jcs.JCSException
Thrown upon error.

connect

Description

Connect to the EAi Environment Manager.

Syntax

```
public boolean connect(java.lang.String inEnvmgrHost, int
inEnvmgrPort)
```

Parameters

Name	Type	Description
inEnvmgrHost	java.lang.String	The host name or IP address on which the Environment Manager is running.
inEnvmgrPort	integer	The port at which the Environment Manager is listening for connections.

Return Values

boolean
True if connect is successful. False otherwise.

Throws

None.

close

Description

Close the connection to the EAi Environment Manager.

Syntax

```
public boolean close()
```

Parameters

None

Return Values

boolean
True if close is successful. False otherwise.

Throws

None.

getListOfServices

Description

Get a list of supported Services for a connection to an Environment Manager. (See connect(java.lang.String, int))

Syntax

```
public java.lang.String[] getListOfServices()
```

Parameters

None.

Return Values

java.lang.String[]
An array of Service names supported on the connected Environment Manager. Null if no services are supported.

Throws

`com.stc.jcs.JCSException`
Thrown upon error.

getListOfMethods

Description

Get a list of supported Methods for a Service. (See connect(java.lang.String, int), getListOfServices( ), and setService(java.lang.String, serviceName))

Syntax

```
public java.lang.String[] getListOfMethods()
```

```
public java.lang.String[] getListOfMethods(java.lang.String service)
```

Parameters

Name	Type	Description
`service`	`java.lang.String`	The PackedDecimal object to be converted.

Return Values

java.lang.String[]
An array of method names supported on a given Service. Null will be returned if no methods are supported on a given Service.

Throws

com.stc.jcs.JCSException
Thrown upon error.

setService

Description

Set the Name of the Service to use. (See getListOfMethods(java.lang.String))

Syntax

```
public void setService(java.lang.String serviceName)
```

Parameters

Name	Type	Description
`serviceName`	`java.lang.String`	The name of the Service.

Return Values

None.

Throws

None

main

Description

Resets the data content of an ETD.

Syntax

```
public static void main(java.lang.String[] args)
```

Parameters

Name	Type	Description
`args`	`java.lang.String[]`	

Return Values

static void

Throws

None.

6.2 The JacadaEAiJC3Connector Class

This class implements the EBobConnector interface in order to provide a connector object for the Jacada EAi ETDs. This class provides the properties set for the e*Way Connection, and facilitates the connections to the Environment Manager as well as the services managed by the Environment Manager.

```
java.lang.Object
    com.stc.eways.jacadaeaijc3.runtime.JacadaEAiJC3Connector
```

public class **JacadaEAiJC3Connector**

The JacadaEAiJC3Connector Class extends java.lang.Object and implements com.stc.jcsre.EBobConnector

Methods of the **JacadaEAiJC3Connector** Class

These methods are described in detail on the following pages:

JacadaEAiJC3Connector

Description

Constructor. Constructs a JacadaEAiJC3Connector.

Syntax

```
public JacadaEAiJC3Connector(java.util.Properties props)

public JacadaEAiJC3Connector(java.lang.String host, java.lang.String
port, java.lang.String clientID, java.lang.String debugLevel,
java.lang.String debugFile)
```

Parameters

Name	Type	Description
props	java.util.Properties	A Properties object.

Name	Type	Description
host	java.lang.String	Environment Manager host. Mandatory.
port	java.lang.String	Environment Manager port. Mandatory.
clientID	java.lang.String	Client ID to use for Environment Manager monitor. Optional.
debugLevel	java.lang.String	The E/A debug level to use for debugging the JClient3 api. Optional. Valid values are "NONE","0","1","2","3".
debugFile	java.lang.String	Environment Manager host. Optional.

Return Values

None.

Throws

None.

open

Description

Opens the connector for accessing the external system. Specified by **open** in interface com.stc.jcsre.EBobConnector. (**Also see** `com.stc.jcsre.EbobConnector`)

Syntax

```
public void open(boolean intoEgate)
```

Parameters

Name	Type	Description
host	java.lang.String	Environment Manager host. Mandatory.
port	java.lang.String	Environment Manager port. Mandatory.
clientID	java.lang.String	Client ID to use for Environment Manager monitor. Optional.
debugLevel	java.lang.String	The E/A debug level to use for debugging the JClient3 api. Optional. Valid values are "NONE","0","1","2","3".
debugFile	java.lang.String	Environment Manager host. Optional.

Return Values

None.

Throws

com.stc.jcsre.EBobConnectionException
Thrown when connection problems occur.

close

Description

Closes the connector for accessing the external system and releases resources. Specified by **close** in interface com.stc.jcsre.EBobConnector. (Also see `com.stc.jcsre.EbobConnector)`

Syntax

```
public void close()
```

Parameters

None.

Return Values

None.

Throws

com.stc.jcsre.EBobConnectionException
Thrown when connection problems occur.

isOpen

Description

Verifies that the connector to the external system is still available. Specified by **isOpen** in interface com.stc.jcsre.EBobConnector. (**Also see** `com.stc.jcsre.EbobConnector`)

Syntax

```
public boolean isOpen()
```

Parameters

None.

Return Values

boolean.
`True` if the connector is still open and available; `False` otherwise.

Throws

com.stc.jcsre.EBobConnectionException
Thrown when connection problems occur.

getProperties

Description

Retrieves the connection properties (stored by the constructor) used by the connector to access the external. Specified by **getProperties** in interface com.stc.jcsre.EBobConnector. (Also see com.stc.jcsre.EbobConnector)

Syntax

```
public java.util.Properties getProperties()
```

Parameters

None.

Return Values

java.util.Properties
Connection properties of the external system.

Throws

None.

getServiceConnection

Description

Get a connection to a service.

Syntax

```
public com.cnt.ea.jclient3.ServiceConnection
getServiceConnection(java.lang.String serviceName)
```

Parameters

Name	Type	Description
serviceName	java.lang.String	The name of the Service to which a connection is to be opened.

Return Values

com.cnt.ea.jclient3.ServiceConnection
A ServiceConnection object for a connection with the service that was specified.

Throws

`com.stc.jcsre.EBobConnectionException`
Thrown upon failure to open a connection to the service.

getEnvironmentManagerConnection

Description

Returns the Environment Manager connection object. If not connected to the Environment Manager, then null is returned.

Syntax

```
public com.cnt.ea.jclient3.EnvironmentManagerConnection
getEnvironmentManagerConnection()
```

Parameters

None.

Return Values

com.cnt.ea.jclient3.EnvironmentManagerConnection
Connection properties of the external system.

Throws

None.

Chapter 7

Frequently Asked Questions

The FAQ chapter lists common questions and answers in regard to running the Jacada Integrator and the Jacada Enterprise/Access e*Way in a production environment.

7.1 Jacada e*Way Questions

1 **Will the e*Way work if one or more screens of the application have changed on the backend host?**

No. The e*Way will not work without properly changing the Jacada Service to which the e*Way is connecting. Use the Jacada Enterprise/Access 2000 MapMaker tool to record a new trail for the modified screens and update the Service map with the appropriate changes. See the Jacada Enterprise/Access 2000 Tutorial (ea_tut.pdf) for details.

2 **If there were changes made to the Jacada Service, will it require changes to the e*Way?**

The answer depends on what changes the changes were made. There are three scenarios:

A If there were changes to the existing service method(s), such as changes to the number of input arguments, then the e*Way will not work. The service ETD must be rebuilt using the Jacada Service Wizard. The Java Collaboration Rule will also require changes to use the modified service method(s).

B If there were no changes to the existing service method(s), then the e*Way will not be affected by the changes. The e*Way will run without problems.

C If new method(s) were added to the service, then the e*Way will not be affected by the addition of the new methods. However, to use the new methods, the service ETD must be rebuilt using the Jacada Service Wizard. Likewise, to use the new service methods, change the Java Collaboration Rule.

3 **Why can't the Jacada Service Wizard and the e*Way find the jclient3.jar file?**

We do not ship the e*Way with the jclient3.jar file. This JAR file contains the Java client APIs for accessing Jacada Services. To get the jclient3.jar, install either the client or a full install of Jacada Enterprise/Access. The file is located in <EARoot>\lib, where <EARoot> is the full path to the directory where Enterprise/Access is installed. Copy the jclient3.jar file to <eGateRoot>\client\ThirdParty\jacada\classes and

<eGateRoot>\server\registry\repository\default\ThirdParty\jacada\classes, where <eGateRoot> is the full path to the directory where e*Gate is installed. If those directories do not exist, then create them first and then copy the jclient3.jar file to those locations. The Jacada Service Wizard and the e*Way should now run correctly.

4 **Are multiple output templates supported?**

Yes. The Jacada Service Wizard generates an ETD Element for each template. A data template is generated as a record and a table template is generated as a collection of records.

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