

SeeBeyond ICAN Suite

CICS eWay Intelligent Adapter User's Guide

Release 5.0.5



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Introduction

This chapter includes a brief description of IBM's Customer Information Control System™ (CICS™), and an overview of the SeeBeyond CICS eWay Intelligent Adapter.

What's in This Chapter

- [CICS Transaction Server](#) on page 8
- [The eWay Intelligent Adapter for CICS](#) on page 9
- [z/OS CICS Security Considerations](#) on page 12
- [About This Document](#) on page 14
- [SeeBeyond Web Site](#) on page 15

1.1 CICS Transaction Server

IBM's Customer Information Control System (CICS), is IBM's most widely used proprietary, transaction monitor. CICS provides connectivity and online transaction management for mission-critical applications. It supports real-time distributed processing environments and online transaction processing (OLTP). According to IBM, CICS handles more than thirty billion transactions, processing more than one trillion dollars, per day.

CICS is the premier OLTP (On-Line Transaction Processing) product from IBM. It is used to access many file systems and databases including third party products. For IBM product, it interfaces with DB2, VSAM and IMS/DB. For non-IBM products, it interfaces with IDMS, ADABAS, DATACOM, to name a few. Most applications in CICS are written in COBOL, although it supports other languages such as PL/1.

OLTP systems provide accurate, up-to-date information within seconds, from terminals that give direct access to data held as either files or databases. CICS provides a company with numerous transaction processing and resource management functions, allowing the user to concentrate on developing application programs that meet that organization's specific business needs. CICS controls OLTP application programs in a distributed transaction processing (DTP) environment. CICS handles interactions between the terminal user and the application programs. Programs gain access to the CICS facilities with straightforward, high-level commands.

CICS provides:

- Communication functions to terminals and systems required by application programs
- Control of concurrently running programs serving online users
- Facilities for accessing databases and files
- The ability to communicate with other CICS family members using Transmission Control Protocol/Internet Protocol (TCP/IP)
- Interactive facilities to configure specific systems
- Recovery processing and data protection, should a problem occur

1.2 The eWay Intelligent Adapter for CICS

The eWay Intelligent Adapter for CICS is an interface that enables remote bidirectional calls to CICS transactional programs. The CICS eWay includes a build tool, the Cobol Copybook Converter, that creates an Object Type Definition (OTD) from a Cobol Copybook file and generates eGate Object Type Definitions for use within the eGate environment. The Copybook file structures are passed into the CICS environment as the data buffer (Commarea).

A fixed Object Type Definition, the **CICS_eWay.CICSClient OTD**, designed to expose various essential portions of the CICS Java API, provides available methods and properties, as well as access to all message attributes.

The eWay can use either the IBM **CICS Transaction Gateway 5.1** or the **SeeBeyond CICS Listener** as the underlying connection transport for accessing CICS z/OS transactions.

IBM CICS Transaction Gateway (CTG)

CTG provides an API (the External Call Interface or ECI) to call CICS transactions on the mainframe. The ECI allows a non-CICS application program to call a CICS program in a CICS server. SeeBeyond's CICS eWay uses this ECI method to connect to CICS. The CICS eWay connects to CICS with CTG running on a local-host (Figure 1), on a second computer ([Figure 2 on page 10](#)), or on the mainframe ([Figure 3 on page 10](#)).

Figure 1 eGate and CTG running on the same host

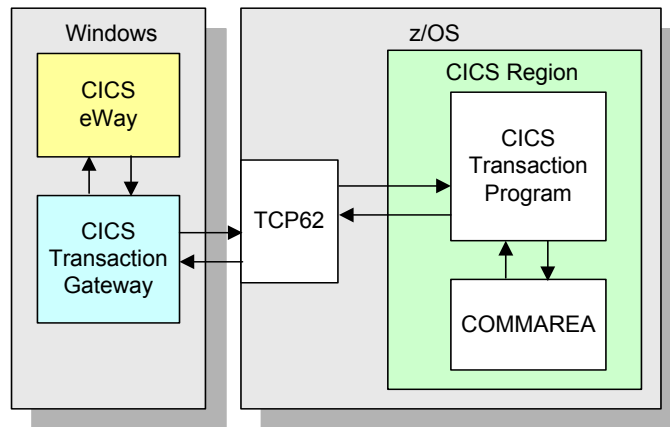


Figure 2 Remote connection with CTG on a UNIX or Windows host

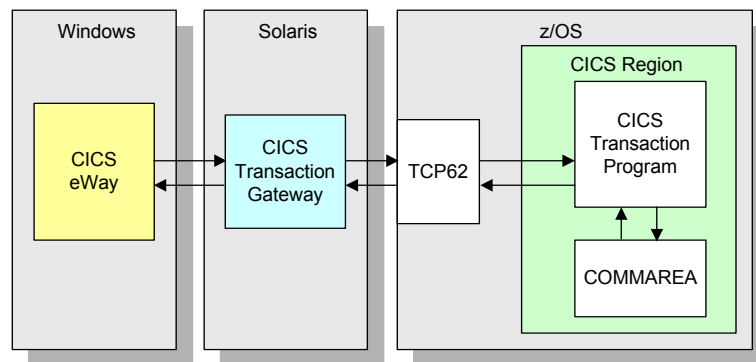
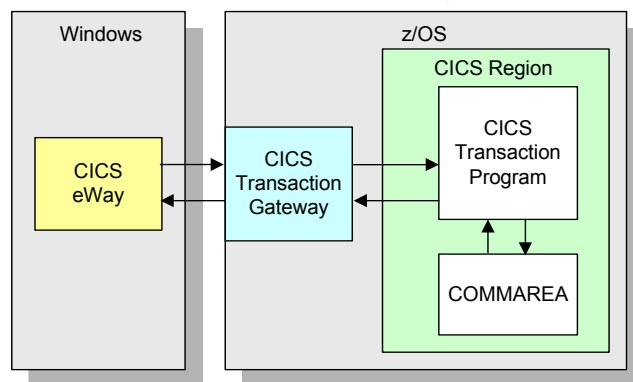


Figure 3 eGate connects with CTG running on the mainframe

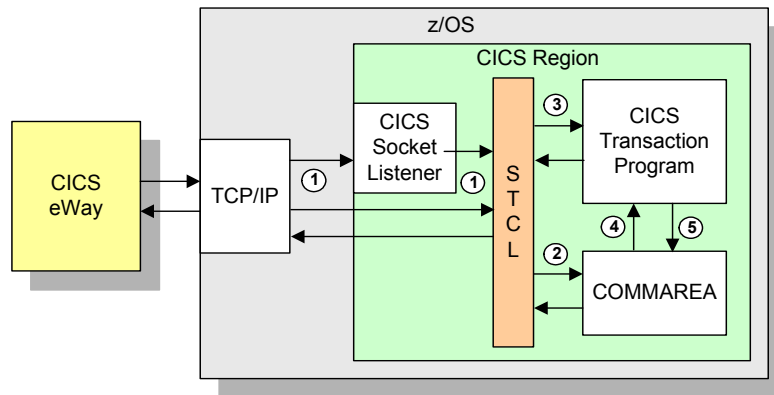


Note: When using the CICS Transaction Gateway transport, data sent to CICS must be padded with spaces, if necessary, to match the full size of the commarea.

SeeBeyond CICS Listener (STCL)

The CICS eWay connects to the IBM CICS Listener running on z/OS via the TCP/IP Sockets. The Listener accepts the incoming request and spawns a new process handling the socket connection off to the newly created process via TCP/IP givesocket()/takesocket() function calls. The spawned process invokes the user written CICS application program through an EXEC CICS LINK.

Figure 4 Using the SeeBeyond CICS Listener for Synchronous Transactions



The CICS eWay (Java version) communicates with SeeBeyond CICS Listener for Synchronous Transactions (See Figure 4) as follows:

- 1 An incoming Connect request is handled by the IBM CICS Socket Listener, which starts the SeeBeyond CICS Listener Transaction STCL and hands off the incoming connection via the IBM TCP/IP Give Socket and Take Socket interface.
- 2 The SeeBeyond CICS Listener allocates a CICS COMMAREA and copies information from the CICS eWay COMMAREA to the actual CICS COMMAREA.
- 3 The SeeBeyond CICS Listener issues an EXEC CICS LINK to requested CICS Transaction Program passing it the newly allocated COMMAREA.
- 4 The requested CICS Transaction obtains data from the COMMAREA, performs typical business rule processing and then returns its results in the COMMAREA and returns control back to the SeeBeyond CICS Listener.
- 5 The SeeBeyond CICS Listener copies information from the CICS COMMAREA back to the CICS eWay COMMAREA.
- 6 The SeeBeyond CICS Listener goes into a listen mode and waits for the next incoming Transaction Program request.

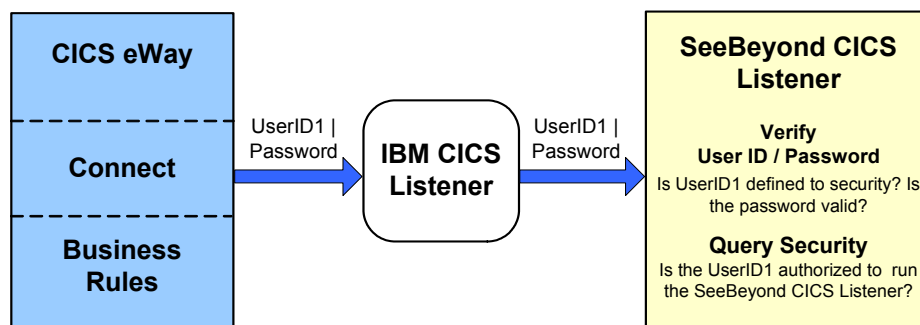
The process continues until the SeeBeyond CICS Listener Timeout is exceeded or a disconnect request is received from the CICS eWay.

1.3 z/OS CICS Security Considerations

Security Considerations for SeeBeyond CICS Listener

The CICS eWay, using the SeeBeyond CICS Listener as the underlying connection transport, utilizes three modes of security with z/OS: Connection Logic, Request Link to Program, and Request Start Transaction. The userID and password are defined in the eWay properties file. The connection manager uses the userID and password in the properties file to start the SeeBeyond CICS Listener on z/OS. During Business Rules processing, requests that flow into the SeeBeyond CICS Listener can use the userID and password from the properties file, or can be overwritten in the Collaborations.

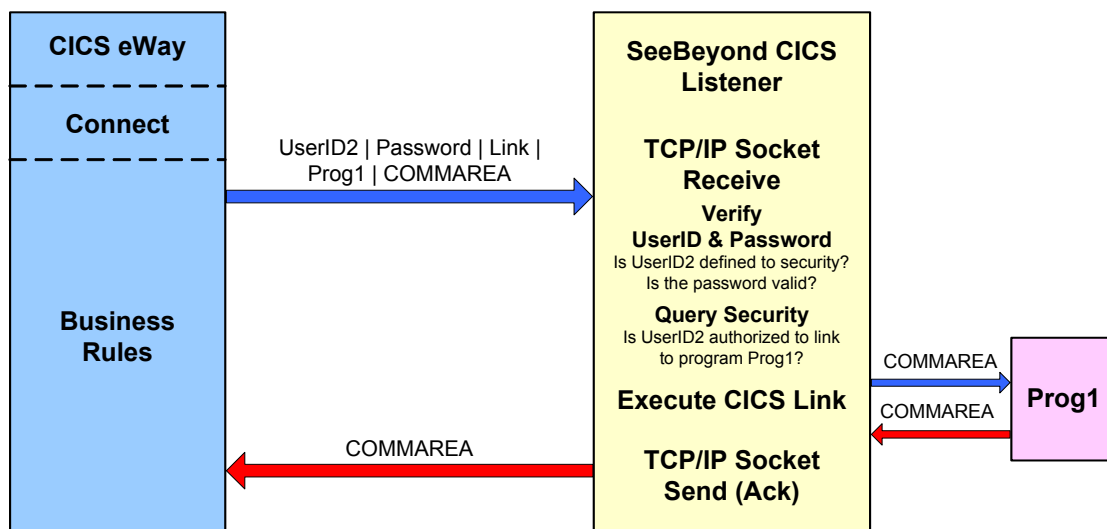
Figure 5 Connection Logic



Connection Logic

For the Connection Logic mode (Figure 5), the userID and password, passed from the CICS eWay through the IBM CICS listener and into the SeeBeyond CICS Listener, must be defined for the z/OS security system (RACF, for example). The userID must be authorized by the z/OS security system to run CICS transaction “xxxx” inside of CICS. The default value for “xxxx” is STCL, and can be changed in the properties of the Connection Manager in the CICS eWay.

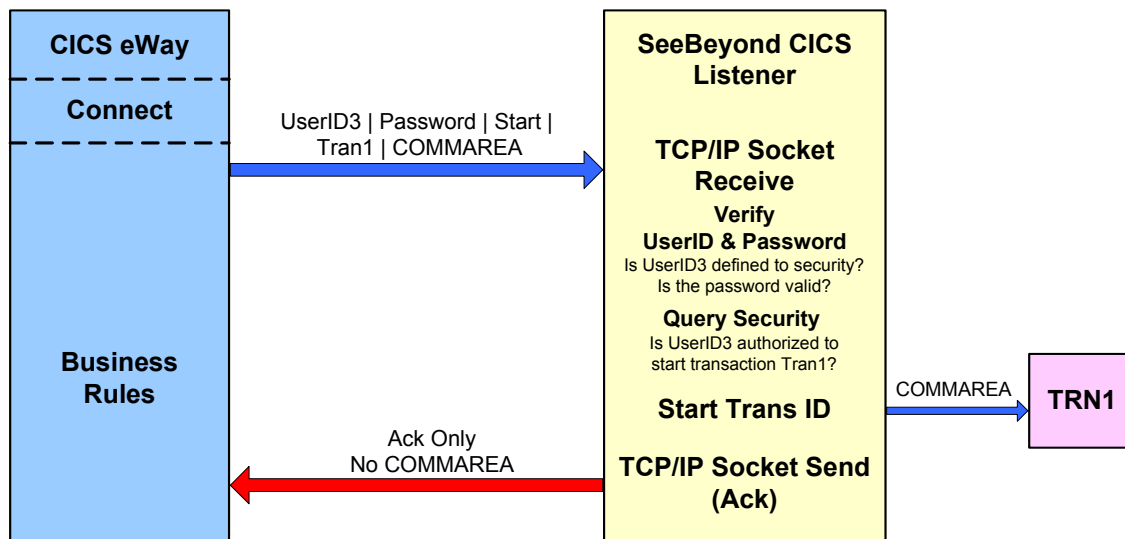
Figure 6 Business Rules Request to Program



Request Link to Program

For the Request Link to Program mode (Figure 6 on page 12), the userID and password passed from the CICS eWay to the SeeBeyond CICS Listener must be defined for the z/OS security system (RACF, for example). The userID must be authorized by the z/OS security system to run CICS program “prog1” inside of CICS. The default value for “prog1” is set in the properties of the CICS eWay, and can be overridden in the Collaboration for each request sent into the SeeBeyond CICS Listener.

Figure 7 Business Rules Request Start Transaction



Request Start Transaction

For the Request Start Transaction mode (Figure 7), the userID and password passed from the CICS eWay to the SeeBeyond CICS Listener must be defined for the z/OS security system (RACF, for example). The userID must be authorized by the z/OS security system to start CICS transaction “TRN1” inside of CICS. The default value for “TRN1” is set in the properties file of the CICS eWay, and can be overridden in the Collaboration for each request sent into the SeeBeyond CICS listener.

Security Considerations for IBM CICS Transaction Gateway

For information on CICS Transaction Gateway 5.1 security validation refer to the following:

- IBM documentation *CICS Transaction Gateway z/OS Administration* or the *CICS Transaction Gateway V5.1 Administration Guide* for your specific operating system, available at:
<http://www-306.ibm.com/software/htp/cics/library/cicstgv5.html>
- *Readme.txt* for CTG 5.1 provided on the CTG 5.1 installation CD_ROM
- APAR OW55570 (for RACF)

1.4 What's New in This Release

Version 5.0.4 is a maintenance release of the CICS eWay. This user's guide includes the following changes:

- Support for z/OS V1.3 and V1.4 (see [Supported Operating System](#) on page 16).

1.5 About This Document

This section provides a brief outline of the CICS eWay User's Guide.

1.5.1. Organization of Information

This book includes the following chapters:

- **Chapter 1 "Introduction"** provides an overview of the CICS eWay Intelligent Adapter, including a brief description of CICS Transaction Gateway, SeeBeyond CICS Listener, and CICS eWay security for z/OS.
- **Chapter 2 "Installing the CICS eWay"** provides the supported operating systems and system requirements for the CICS eWay. It also includes directions for installing the CICS eWay, installing and configuring the SeeBeyond CICS Listener, and accessing the accompanying documentation and sample projects.
- **Chapter 3 "Configuring the CICS eWay"** describes the process of configuring the CICS eWay to run in your environment.
- **Chapter 4 "Using eInsight Business Processes with the CICS eWay"** describes how to use the CICS eWay with the ICAN Suite's eInsight Business Process Manager and the Web Services interface.
- **Chapter 5 "Implementing a CICS eWay Project"** describes the features and functionality of the CICS eWay using the eGate Integrator and the Collaboration Editor (Java).
- **Chapter 6 "Java Methods"** describes the CICS eWay's Java classes and provides directions for accessing the CICS eWay Javadoc.

1.5.2. Scope of the Document

This user's guide provides a description of the CICS eWay Intelligent Adapter. It includes directions for installing the eWay, configuring the eWay properties, and implementing the eWay's sample projects. This document is also intended as a reference guide, listing available properties, functions, and considerations. For a reference of available CICS eWay Java methods, see the associated Javadoc.

1.5.3. Intended Audience

This guide is intended for experienced computer users who have the responsibility of helping to set up and maintain a fully functioning ICAN Suite system. This person must also understand any operating systems on which the ICAN Suite will be installed and must be thoroughly familiar with Windows-style GUI operations.

1.5.4. Document Conventions

The following conventions are observed throughout this document.

Table 1 Document Conventions

| Text | Convention | Example |
|--|--|--|
| Button, file, icon, parameter, variable, method, menu, and object names. | Bold text | <ul style="list-style-type: none"> ▪ Click OK to save and close. ▪ From the File menu, select Exit. ▪ Select the logicalhost.exe file. ▪ Enter the timeout value. ▪ Use the getClassName() method. ▪ Configure the Inbound File eWay. |
| Command line arguments and code samples | Fixed font. Variables are shown in <i>bold italic</i> . | bootstrap -p <i>password</i> |
| Hypertext links | Blue text | http://www.seebeyond.com |

1.6 SeeBeyond Web Site

The SeeBeyond Web site is your best source for up-to-the-minute product news and technical support information. The site's URL is:

<http://www.seebeyond.com>

1.7 SeeBeyond Documentation Feedback

We appreciate your feedback. Please send any comments or suggestions regarding this document to:

docfeedback@seebeyond.com

Installing the CICS eWay

This chapter contains installation information for the CICS eWay.

In addition, this chapter also includes information for installing and configuring the **SeeBeyond CICS Listener** and **IBM CICS Transaction Gateway**. One of these must be installed and configured as the underlying connection transport for accessing z/OS CICS transactions.

What's in This Chapter

- **Supported Operating System** on page 16
- **System Requirements** on page 17
- **Installing the CICS eWay** on page 18
- **SeeBeyond CICS Listener Installation for z/OS** on page 19
- **SeeBeyond CICS Listener Configuration Maintenance for z/OS** on page 24
- **CICS Listener Considerations for Invoking DB2 Applications** on page 40
- **CICS Transaction Gateway 5.1 Installation and Configuration** on page 42

2.1 Supported Operating System

The CICS eWay is available on the following operating systems:

- Windows 2000, Windows XP, and Windows Server 2003
- HP-UX 11.0, 11i (PA-RISC), and 11i V2 (11.23)
- IBM AIX 5.1L and 5.2
- IBM z/OS V1.3 and V1.4
- Sun Solaris 8 and 9

Also Supported

The CICS eWay also supports CICS Transaction Server residing on the following operating systems:

- OS/390 V2R10 or z/OS V1.3 and above (any reference to z/OS in this document includes OS/390 V2R10)

2.2 System Requirements

The system requirements for the CICS eWay are the same as those for eGate Integrator. For information, refer to the *SeeBeyond ICAN Suite Installation Guide*. It is also helpful to review the **Readme.txt** for any additional requirements prior to installation. The **Readme.txt** is located on the installation CD-ROM.

Although the CICS eWay, the Repository, and Logical Hosts run on the platforms listed under Supported Operating Systems, the Enterprise Designer requires the Windows operating system. The Enterprise Manager can run on any platform that supports Internet Explorer 6.0.

2.3 External System Requirements

Software Requirements

- IBM CICS Transaction Server version 1.3, 2.1, or 2.2
- An underlying connection transport using either of the following
 - ♦ **IBM CICS Transaction Gateway 5.1** (see [Requirements for the CICS Server using CICS Transaction Gateway](#) on page 17)
 - ♦ **SeeBeyond CICS Listener** (see [Requirements for the CICS Server Using the SeeBeyond CICS Listener](#) on page 17)

Requirements for the CICS Server using CICS Transaction Gateway

For directions on configuring CICS Transaction Gateway 5.1 to communicate with a CICS server over a TCP/IP using TCP62, see the “Setting Up Client/Server Communications” section of the *CICS Transaction Gateway Administration* manual for your specific platform available at:

<http://www-306.ibm.com/software/htp/cics/library/cicstgv5.html>

Requirements for the CICS Server Using the SeeBeyond CICS Listener

To enable the eWay to communicate correctly with CICS using the SeeBeyond CICS Listener the following are required:

- OS/390 V2R10 or above (see [System Requirements](#) on page 17)
- Resource Access Control Facility (RACF) or an equivalent security product
- IBM CICS Transaction Server version 1.3 or 2.1
- IBM MVS TCP/IP socket runtime libraries, installed and configured for each CICS region in which the SeeBeyond CICS Listener will be run. For more information please refer to IBM's TCP/IP V3R2 for MVS: CICS TCP/IP Socket Interface Guide.
- COBOL for z/OS and Language Environments

SeeBeyond CICS Listener Requirements for Invoking DB2 Applications

There are two different techniques that can be used for invoking DB2 application programs through the SeeBeyond CICS Listener.

- RCT entry for the STCL SeeBeyond CICS Listener Transaction
- PPT entry to redirect DB2 application to another AOR (Application Owning Region)

For detailed information refer to [CICS Listener Considerations for Invoking DB2 Applications](#) on page 40.

2.4 Application Server Support

The CICS eWay in Outbound mode is supported on WebSphere™ and WebLogic™ Application Servers when using Java Collaborations only. See the eGate Integrator User's Guide for additional information regarding the running of this eWay on this Application Server.

2.5 Installing the CICS eWay

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

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

2.5.1. Installing the CICS eWay on an eGate supported system

The ICAN Suite installation process includes the following operations:

- Install the eGate Repository
- Upload products to the Repository
- Download components (including the eGate Enterprise Designer and Logical Host)

Follow the directions for installing the ICAN Suite in the *SeeBeyond ICAN Suite Installation Guide*. After you have installed eGate and any other purchased core products, do the following:

- 1 From the Enterprise Manager's **ADMIN** tab, browse to the **Add-ons** directory and select the **ProductsManifest.xml**, and click **Submit**. The available Add-on product list is now displayed.
- 2 Browse to and select the following files located in the **Add-ons** directory:

- ♦ **FileeWay.sar** (to install the File eWay, used in the sample project)
 - ♦ **CICSeWay.sar** (to install the CICS eWay)
- 3 Click **upload now** to upload the selected products.
 - 4 Click on the Manifest File field's **Browse** option, browse to the Add-ons > **Documentation** directory, select the **ProductsManifest.xml**, and click **Submit**. The available Add-on documentation list is now displayed.
 - 5 Select and upload the following file:
 - ♦ **CICSeWayDocs.sar** (to upload the CICS eWay User's Guide, Javadoc, Readme, and sample projects to the Enterprise Manager).
 - 6 Click **upload now** to upload the selected product.
 - 7 Continue installing the eGate Integrator as instructed in the *SeeBeyond ICAN Suite Installation Guide*.

Adding the eWay to an Existing ICAN Suite Installation

If you are installing the eWay to an existing ICAN installation, do the following:

- 1 Complete steps 1 through 6 above.
- 2 Open the Enterprise Designer and select **Update Center** from the Tools menu. The Update Center Wizard appears.
- 3 For Step 1 of the wizard, simply click **Next**.
- 4 For Step 2 of the wizard, click the **Add All** button to move all installable files to the **Include in Install** field. Click **Next**.
- 5 For Step 3 of the wizard, wait for the modules to download, then click **Next**.
- 6 The wizard's Step 4 window displays the installed modules. Click **Finish**.
- 7 When prompted, restart the IDE to complete the installation.

After Installation

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

The CICS eWay User Guide, Javadoc, Readme, and sample projects, can be accessed from the Enterprise Manager's Documentation tab.

2.6 SeeBeyond CICS Listener Installation for z/OS

The following section provides directions for installing the SeeBeyond CICS Listener to an OS/390 or z/OS operating system from the installation CD-ROM or from a 3480 Tape. Directions are also included for installing CICS CEDA definitions, adding the CICS eWay load modules to the CICS DFHRPL concatenation, and using the

SeeBeyond CICS Listener monitoring screen to verify that all components are properly installed and working correctly.

2.6.1. Downloading the SeeBeyond CICS Listener Zip File

The SeeBeyond CICS Listener ZIP file, CICS_Listener.zip can be downloaded from the ICAN Installation CD-ROMs. To download the CICS_Listener.zip to your computer do the following:

- 1 Locate the Products installation CD-ROM containing the **CICSeWay.sar** file.
- 2 Open the CD-ROM to view and locate the **CICSeWay.sar** file.
- 3 Right-click the **CICSeWay.sar** file, and from the shortcut menu, select the “Open With” option and select a zip program such as WinZip™.
- 4 From the opened CICSeWay.sar file, click on and drag the **CICS_Listener.zip** file to your Desktop. Close the zip program. The CICS_Listener.zip file is now available from your computer’s Desktop file.

2.6.2. Installing the SeeBeyond CICS Listener from CD for z/OS

These following describes how to restore the SeeBeyond CICS Listener files from the CICS_Listener.zip file to your MVS system in a usable state. The files are packaged on MVS for transfer using the TSO transmit (XMIT) command to transmit them into a data set. This is done to turn a PDS into FB 80 files which can be sent by FTP. Files are downloaded to a computer and then compressed with PKZIP.

- 1 Download the **CICS_Listener.zip** file to your PC (see [Downloading the SeeBeyond CICS Listener Zip File](#) on page 20), and unzip the files using a zip program such as WinZip.
- 2 Create two MVS datasets to receive the files, as follows:

```
//DD1      DD DSN=USER.XMIT.CICSLOAD,
//          DISP=(NEW,CATLG,DELETE),
//          RECFM=FB,LRECL=80,BLKSIZE=3120,DSORG=PS,
//          SPACE=(3120,(48,5)),
//          UNIT=diskunit

//DD2      DD DSN=USER.XMIT.JCLLIB,
//          DISP=(NEW,CATLG,DELETE),
//          RECFM=FB,LRECL=80,BLKSIZE=3120,DSORG=PS,
//          SPACE=(3120,(30,5)),
//          UNIT=diskunit
```

- 3 Upload (FTP, IND\$FILE) the unzipped files to MVS using a binary file transfer method (no CRLF or ASCII translation).
- 4 Restore the files to PDS by using the **Receive** command on MVS.
- 5 Issue command: TSO RECEIVE INDATASET(uploaded.dataset)
- 6 When prompted by the message:

```
INMR906A Enter restore parameters or 'DELETE' or 'END' +
enter:
```

```
DA(name.of.your.library) UNIT(unit) VOLUME(volume)
```

Note: *The UNIT() and VOLUME() operands are optional but shown in case your installation requires them.*

We suggest using the following names for your received datasets:

```
STC.XMIT.CICS.CICSLOAD
STC.XMIT.CICS.JCLLIB
```

These names match our documentation. Change them as your facility requires.

2.6.3. Installing the SeeBeyond CICS Listener from 3480 Tape

The SeeBeyond CICS Listener installation for OS/390 or z/OS is provided on an installation tape containing the following datasets (Table 2):

Table 2 Tape Contents

| File | Dataset Name | Contents |
|------|------------------------|--|
| 1 | TAPE.STC.RESTORE.JCL | JCL sample to load this tape to disk (RESTORE JCL). |
| 2 | TAPE.STC.CICS.JCLLIB | Installation jobs and control cards for the CICS eWay. |
| 3 | TAPE.STC.CICS.CICSLOAD | Load library that containing the load modules for the CICS eWay. |

Copying the Tape Contents to Disk

- 1 Create, customize, and submit the following job to copy the RESTORE JCL to disk:

```

1 //JOBNAME JOB (SYSTEM), 'SYSPROG', NOTIFY=&SYSUID, REGION=6M,
2 //          CLASS=A, MSGLEVEL=(1,1), MSGCLASS=X
3 // *
4 // * COPY SAMPLE JCL TO DISK
5 // *
6 //IEBGENER EXEC PGM=IEBGENER
7 //SYSPRINT DD SYSOUT=*
8 //SYSUT1   DD DSN=TAPE.STC.RESTORE.JCL,
9 //          UNIT=tapeunit,
10 //         VOL=SER=STC390,
11 //         LABEL=(1,SL,,,EXPDT=98000),
12 //         DISP=OLD
13 //SYSUT2   DD DSN=customer.dataset,
14 //         SPACE=(TRK,(10,10),RLSE),
15 //         UNIT=diskunit,
16 //         VOL=SER=diskvol,
17 //         DCB=(LRECL=80, BLKSIZE=3120, RECFM=FB),
18 //         DISP=(NEW,CATLG,DELETE)
19 //SYSIN    DD DUMMY

```

- 2 Edit the fore mentioned code for your system as follows:
 - A Replace the Jobcard in the first two lines with one that meets your installation standards.
 - B Replace **tapeunit** in line 9 with the unit name of your tape drive: for example, UNIT=TAPE.
 - C Some Tape Management systems require an **EXPDT** value (see line 11) to indicate a foreign tape.
 - D Specify a **customer.dataset** name (see line 13) that meets your installation standards.
 - E Specify a unitname for the disk (replacing **diskunit** in line 15), to meet your installation standards: for example, UNIT=3390.
 - F Specify the volume serial number of the disk (replacing **diskvol** in line 16), where the dataset is to be created.

- 3 Once the job has completed successfully, customize and submit the sample JCL in CUSTOMER.DATASET job to copy the entire contents of the installation tape to disk. Customize displayed in the first 15 lines below

```

1 //JOBNAMEx JOB (SYSTEM), 'SYSPROG', NOTIFY=&SYSUID, REGION=6M,
2 //          MSGLEVEL=(1,1), MSGCLASS=X, CLASS=A
3 // *
4 //TAPECOPY PROC PREFIX=custpref, <== CUSTOMER HIGH LEVEL QUALIFIER
5 //          TAPEUNIT=tapeunit, <== UNIT NAME FOR TAPE DRIVE
6 //          DISKUNIT=3390, <== UNIT NAME FOR DISK DRIVE
7 //          VOLSER=diskvol, <== DISK VOLUME FOR INSTALL DATASETS
8 //          LOADBLK=TRK, <== BLOCKING FACTOR FOR CICS LOAD
9 //          LOADPRI=45, <== PRIMARY ALLOCATION FOR CICS LOAD
10 //         LOADSEC=15, <== SECONDARY ALLOCATION FOR CICS LOAD
11 //         LOADDIR=10, <== DIRECTORY BLOCKS FOR CICS LOAD
12 //         JCLLBLK=TRK, <== BLOCKING FACTOR FOR JCL LIBRARY
13 //         JCLLPRI=1, <== PRIMARY ALLOCATION FOR JCL LIBRARY
14 //         JCLLSEC=1, <== SECONDARY ALLOCATION FOR JCL LIB
15 //         JCLLDIR=10 <== DIRECTORY BLOCKS FOR JCL LIBRARY:

```

- A Replace the Jobcard in the first two lines with one that meets your installation standards.
- B Change the **custpref** value (see line 4) in the TAPECOPY procedure to a high-level-qualifier for your installation datasets.
- C Replace **tapeunit** in line 4 with the unit name of your tape drive: for example, TAPEUNIT=TAPE.
- D Change the **3390** for the DISKUNIT in line 6, to meet your installation standards: for example, DISKUNIT=SYSDA.
- E Specify the volume serial number of the disk (replacing **diskvol** in line 7), where the dataset is to be created.

2.6.4. Creating the STCCLCFG File

Customize the **Jobcard** and **Dataset** names, and submit the **STCCLCFG** job found in **JCLLIB**.

2.6.5. Installing the CICS CEDA Definitions

Customize the file definition in the JCLLIB member CEDALCFG to conform to your file naming conventions, and to match the file name created in the previous step.

Customize and submit job STCLCEDA to create CICS CEDA definitions for the eWay.

Using the CICS RDO interface, install the new definitions in group STCLSN into CICS, and add the group name STCLSN, to your start-up list.

2.6.6. Adding the CICS eWay Load Modules to CICS DFHRPL Concatenation

Add the following data set to the DFHRPL concatenation under CICS:

```
// DD DSN=&PREFIX..STC.CICS.CICSLOAD, DISP=SHR
```

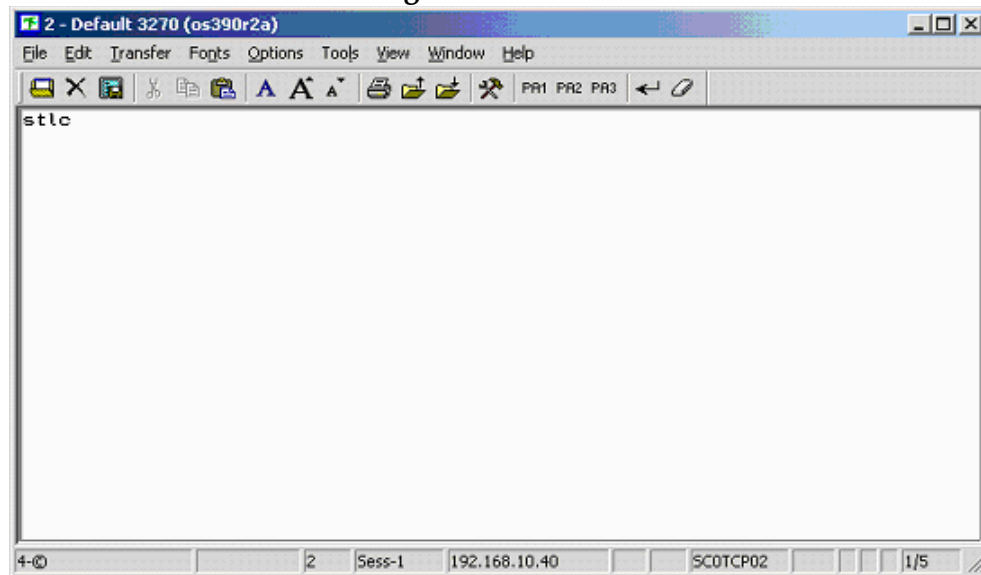
Note: Remember to re-cycle your CICS region to pick up this new library.

2.7 SeeBeyond CICS Listener Configuration Maintenance for z/OS

After the STCCLCFG Configuration File has been created and the CEDA file definition has been installed, use the SeeBeyond CICS Configuration File Maintenance screen to view and update the contents of the STCCLCFG configuration file.

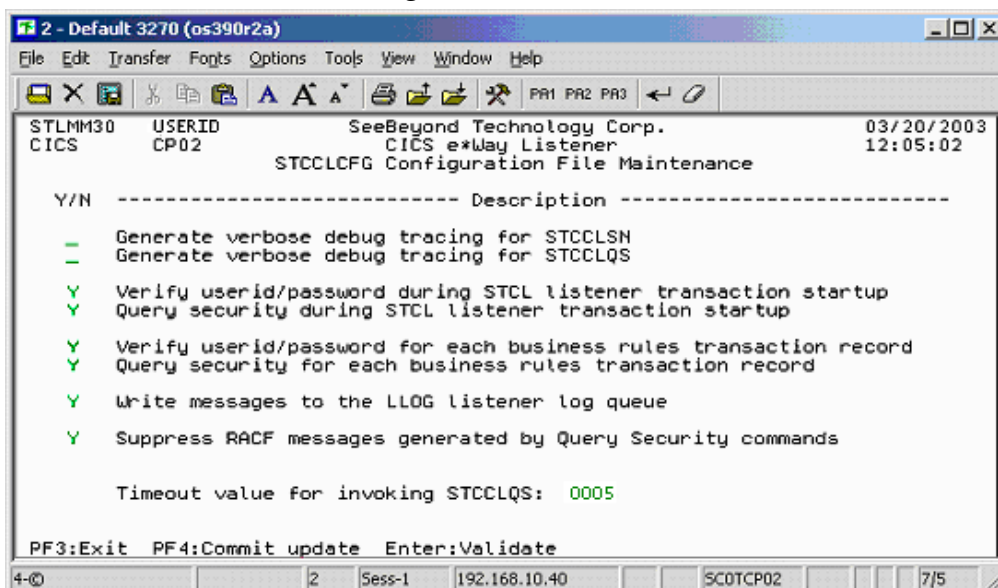
- 1 Logon to the CICS region that the SeeBeyond Listener is running in. Clear the screen, type in **stlc** as shown in Figure 8, and press **Enter**.

Figure 8



- 2 The **Configuration File Maintenance** screen appears as displayed in Figure 9.

Figure 9



3 The fields of the Listener Configuration Maintenance screen are described as follows:

- ♦ **Generate verbose debug tracing for STCCLSN:** This flag controls the logging of debug tracing messages issued by the STCCLSN SeeBeyond CICS Listener Program. These tracing messages are written to the LLOG transient data queue.

If the “Write messages to the LLOG listener log queue” field on this screen is turned off, then debug tracing will NOT be logged.

- ♦ **Y:** yes, log debug tracing messages.
 - ♦ **N or blank:** no, do not log debug tracing messages.
- ♦ **Generate verbose debug tracing for STCCLQS:** This flag controls the logging of debug tracing messages issued by the STCCLQS SeeBeyond CICS Listener Query Security Program. These tracing messages are written to the LLOG transient data queue.

If the “Write messages to the LLOG listener log queue” field on this screen is turned off, then debug tracing will NOT be logged.

- ♦ **Y:** yes, log debug tracing messages.
 - ♦ **N or blank:** no, do not log debug tracing messages.
- ♦ **Verify userid/password during STCL listener transaction startup:** This flag controls userid/password verification at the STCL SeeBeyond Listener Transaction startup. The userid and password are passed from the CICS eWay to the IBM Listener program in the user area of Connection Request Record. The IBM Listener passes this user area to the SeeBeyond CICS Listener when it spawns it as a child listener task.

If this flag is turned on, the SeeBeyond Listener Program startup logic issues a Verify Password command to check whether the userid is defined for the RACF or any equivalent security system, and if the password is valid and current.

- ♦ **Y:** yes, verify userid/password.
 - ♦ **N or blank:** no, do not verify userid/password.
- ♦ **Query Security during STCL listener transaction startup:** This flag controls Query Security processing at the STCL SeeBeyond Listener Transaction startup. The userid and password are passed from the CICS eWay to the IBM Listener program in the user area of Connection Request Record. The IBM Listener passes this user area to the SeeBeyond CICS Listener when it spawns it as a child listener task.

If this flag is turned on, the SeeBeyond Listener Program startup logic invokes the STLQ SeeBeyond Listener Query Security transaction to check if the userid is authorized to run the STCL SeeBeyond Listener transaction.

- ♦ **Y:** yes, perform Query Security processing.
- ♦ **N or blank:** no, do not Query Security processing

- ♦ **Verify userid/password for each business rules transaction record:** This flag controls userid/password verification for each Business Rules transaction sent in from the CICS eWay. The userid and password are passed in from the CICS eWay in the Application Control Record (ACR) that contains the Business Rules transaction data.

If this flag is turned on, the SeeBeyond CICS Listener program Business Rules logic issues a Verify Password command to check whether the userid is defined for the RACF or any equivalent security system, and if the password is valid and current.

- ♦ **Y:** yes, verify userid/password.
- ♦ **N or blank:** no, do not verify userid/password.
- ♦ **Query Security for each business rules transaction record:** This flag controls Query Security processing for each Business Rules transaction sent in from the CICS eWay. The userid and password are passed in from the CICS eWay in the Application Control Record (ACR) that contains the Business Rules transaction data.

If this flag is turned on, the SeeBeyond CICS Listener Program Business Rules logic invokes the STLQ SeeBeyond Listener Query Security transaction to check whether the userid is authorized to run the requested customer application program or transaction that is specified in the ACR.

- ♦ **Y:** yes, perform Query Security processing.
- ♦ **N or blank:** no, do not Query Security processing.
- ♦ **Write messages to the LLOG listener log queue:** This flag controls the logging of messages to the LLOG listener log queue.

If this flag is turned off, NO messages (normal information as well as debug tracing) will be written by either the STCCLSN (SeeBeyond CICS Listener) or STCCLQS (SeeBeyond Listener Query Security) programs.

- ♦ **Y:** yes, write log messages to the LLOG listener log queue.
- ♦ **N or blank:** no, do not write log messages to the LLOG listener log queue.
- ♦ **Suppress RACF messages generated by Query Security commands:** This flag controls RACF informational message logging for Query Security exceptions.

If this flag is turned off, then every Query Security command that results in a negative result for Control, Alter, Update, or Read will cause respective RACF information messages to be written to the system message log. This could create unnecessary, high volume logging on the system message log files.

It is recommended that this flag be turned off for debugging or low volume testing purposes only.

In a production environment, it is recommended that this flag be turned on to

suppress the RACF informational messages generated by Query Security exception conditions.

- ♦ **Y:** yes, suppress RACF messages generated by Query Security processing.
- ♦ **N or blank:** no, do not suppress (in other words, allow) RACF messages to be generated by Query Security processing.
- ♦ **Timeout value for invoking STCCLQS:** This value is used to control the amount of time the STCCLSN SeeBeyond CICS Listener program waits for the STLQ Listener Query Security Transaction to return a response. Valid values are 0000 to 9999. Since the STLQ transaction, under normal CICS processing conditions, executes within one second, it is recommended that the value be set above 1 and below 10. However, if the CICS region that the SeeBeyond CICS Listener is running in experiences occasional performance bottle necks, you may choose to set this value higher to avoid unnecessary STLQ timeout errors during peak load conditions.

This value does not affect the time STLQ takes to respond. It simply sets a timeout threshold above which the STCCLSN stops waiting for a response from STLQ and issues an error message back to the CICS eWay indicating that an STLQ timeout has occurred. For example, if this timeout value is set to 5, and STLQ executes in 1 second, then STCCLSN will “wake up” after 1 second, not the full 5 seconds.

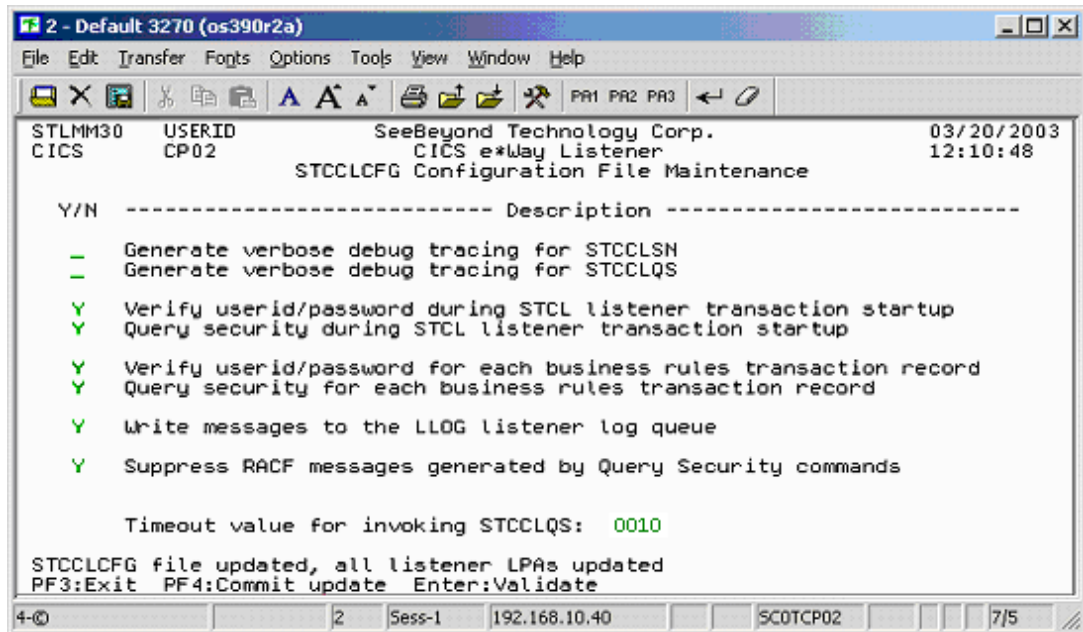
4 The pfkeys for this screen are as follows:

- ♦ **PF3:** exit.
- ♦ **PF4:** commit the updates on the screen to the STCCLCFG file and update all existing Listener Program Areas (LPA's) in CICS storage.
- ♦ **Enter:** validates the onscreen data for errors.

The user may make any necessary changes, then use the **Enter** key to validate any new values that have been entered. IF no error conditions occur for the data on the screen, then the user must press the PF4 key to commit the updates to the STCCLCFG Listener Config VSAM File. The updated screen appears as displayed in [Figure 10 on page 28](#). A message appears at the bottom of the screen that indicating the file and whether any LPA's were updated.

During commit processing, the program will also automatically propagate the new data to all existing SeeBeyond Listener Program Areas (LPA's) in the same CICS region. There is one LPA for each instance of the SeeBeyond CICS Listener in the region. The STCCLSN (SeeBeyond CICS Listener) program uses its copy of the LPA to store monitoring statistics and to retrieve data used to control the execution of the SeeBeyond CICS Listener. Live updates to the LPAs provide the capability for real time control of the configuration flags and timers for all active SeeBeyond CICS Listeners executing at that time.

Figure 10



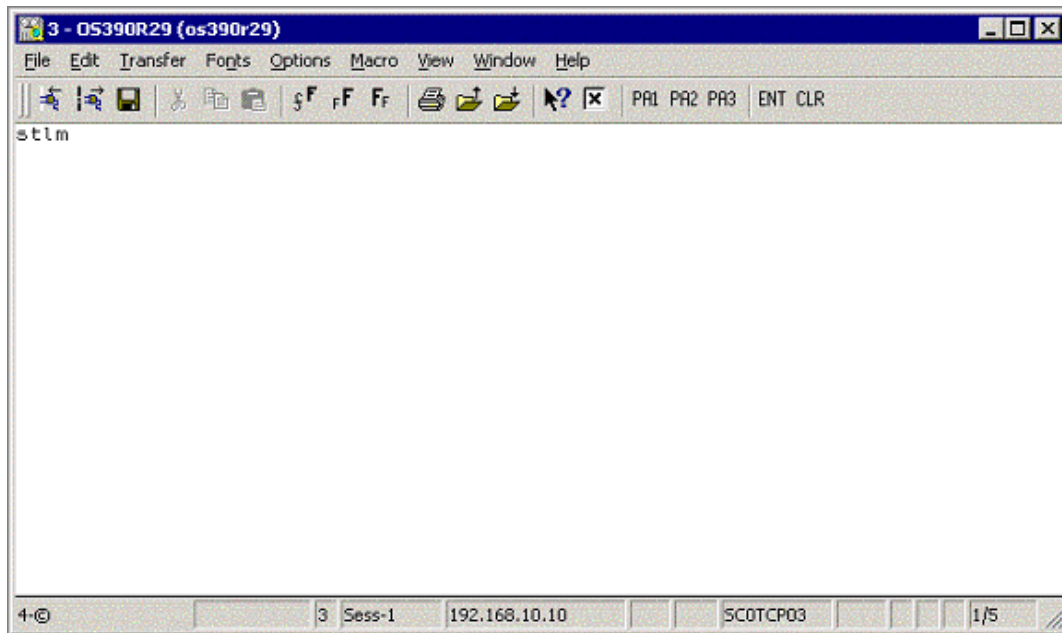
- 5 Continue making any necessary changes, committing them by pressing **PF4**. To exit the screen press **PF3**.

2.7.1. The SeeBeyond CICS Listener Monitor Screen for z/OS

After the components are installed, use the SeeBeyond CICS Listener monitoring screen to verify that all components are properly installed and working correctly.

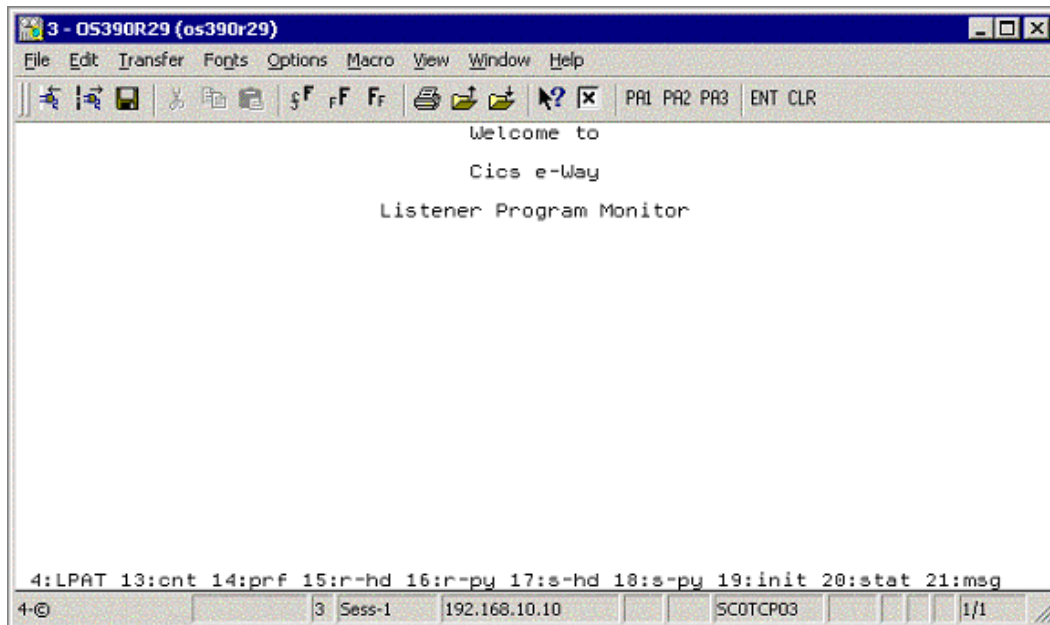
- 1 Logon to the CICS region that the SeeBeyond Listener is running in. Clear the screen, and type in **stlm** as displayed in Figure 11. Press **Enter**.

Figure 11



- 2 The menu screen appears as displayed in Figure 12.

Figure 12

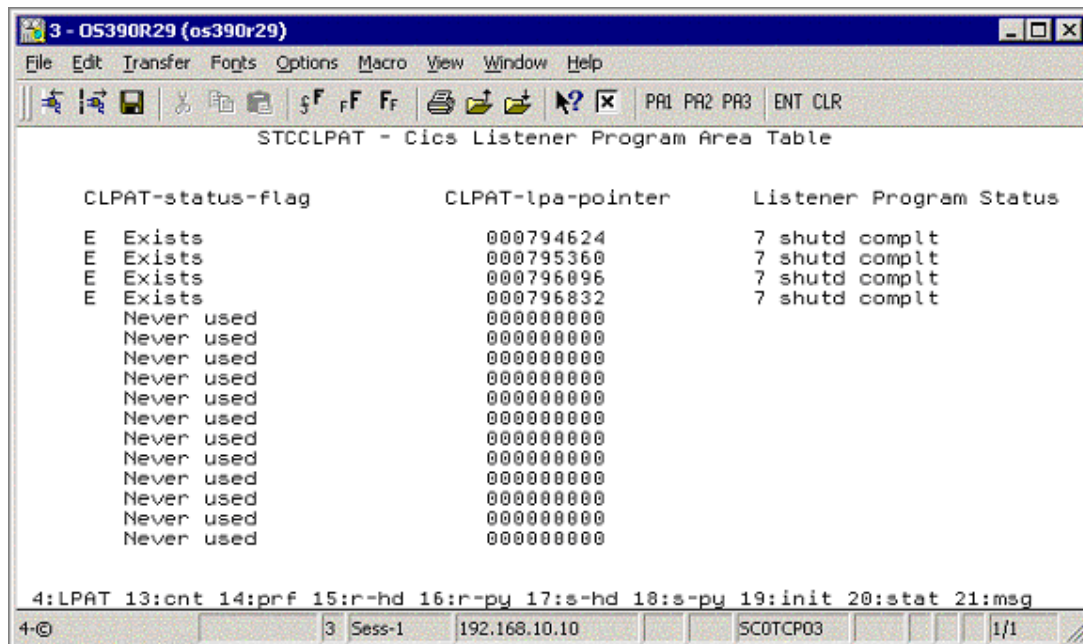


3 The **pfkeys** for this screen, and all of the monitor screens shown in this document, are as follows:

- ♦ **PF4**: displays the LPAT (Listener Program Area Table).
- ♦ **PF13**: displays the LPA counts and polling rates.
- ♦ **PF14**: displays the LPA performance statistics.
- ♦ **PF15**: displays the LPA last request header received from the CICS eWay.
- ♦ **PF16**: displays the LPA last request payload received from the CICS eWay.
- ♦ **PF17**: displays the LPA last response header sent to the CICS eWay.
- ♦ **PF18**: displays the LPA last response payload sent to the CICS eWay.
- ♦ **PF19**: displays the LPA initial record sent from the IBM Listener (EZACIC02).
- ♦ **PF20**: displays the LPA status.
- ♦ **PF21**: displays the LPA last error message sent to the CICS eWay.

Press **PF4**. The **Listener Program Area Table** screen appears as displayed in Figure 13.

Figure 13



4 This screen displays the Listener Program Area Table (LPAT). Each line contains information about a Listener Program Area (LPA). There is one LPA associated with each instance of the SeeBeyond CICS Listener Program that is running or has run in this CICS region. The fields on the screen are:

- ♦ **CLPAT-status-flag**: shows the current status of the LPAT entry as follows:
 - ♦ **E**: Exists.
 - ♦ **N**: Never used.

- ♦ C: Corrupted.
- ♦ **CLPAT-lpa-pointer**: shows the address of the most recent LPA in this entry.
- ♦ **Listener Program Status**: shows the last status of the Listener Program using this LPA.

Press PF13. The **LPA Counts and Polling Rates** screen appears as displayed in Figure 14.

Figure 14

| program link | start trans | avg poll rate | non-max poll | highest poll | receive delay cnt | listener delay cnt |
|--------------|-------------|---------------|--------------|--------------|-------------------|--------------------|
| 373 | 0 | 1.0 | 2 | 2 | 0 | 0 |
| 900 | 0 | 1.0 | 2 | 2 | 0 | 0 |
| 1 | 0 | 1.0 | 1 | 1 | 0 | 0 |
| 1 | 0 | 1.0 | 1 | 1 | 0 | 0 |

4:LPAT 13:cnt 14:prf 15:r-hd 16:r-py 17:s-hd 18:s-py 19:init 20:stat 21:msg

4-C 3 Sess-1 192.168.10.10 SCOTCP03 1/1

- 5 This screen displays counts and polling rates information for each LPA. Each line shows one LPA (one for each instance of the SeeBeyond Listener Program).

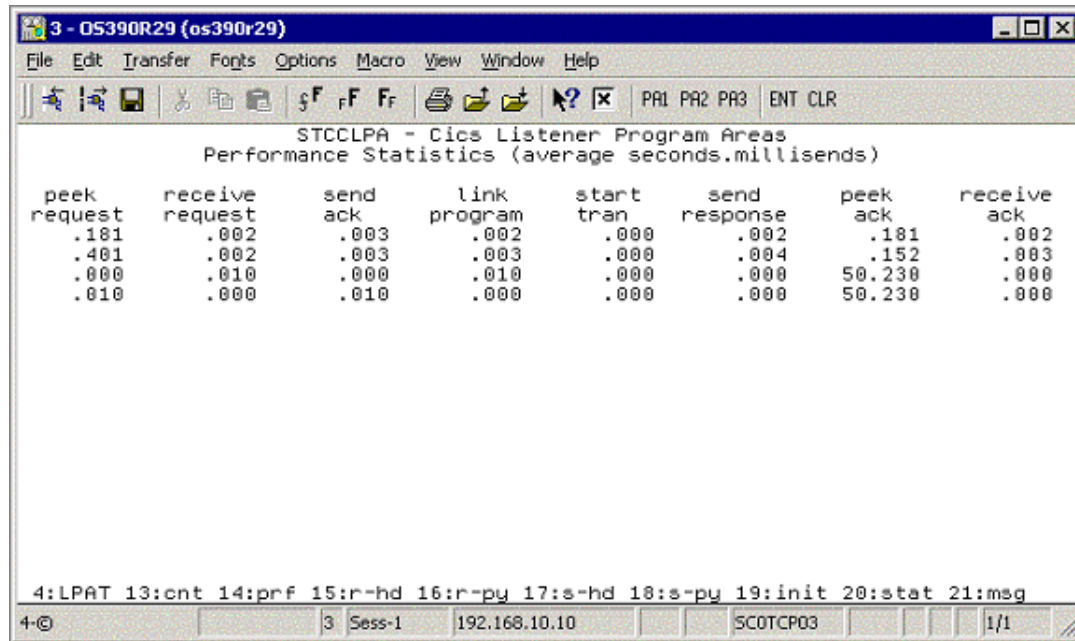
The fields on the screen are as follows:

- ♦ **program link**: the number of program links that have been requested.
- ♦ **start trans**: the number of transaction starts that have been requested.
- ♦ **avg poll rate**: the average number of receives per polling cycle to satisfy a full message receive from the CICS eWay.
- ♦ **non-max cnt**: the 'high water mark' of receives within a polling cycle without reaching the polling rate (polling rate is sent in from the CICS eWay when it initializes connection with the CICS Listener program).
- ♦ **highest poll**: the 'high water mark' of receives within a polling cycle that can include reaching the maximum allowed polling rate.
- ♦ **receive delay cnt**: the number of one second delays that occurred due to the Comm Timeout limit being reached (Comm. Timeout is sent in from the CICS eWay when it initializes connection with the CICS Listener program).

- ◆ **listener delay cnt:** number of one second delays that occur due to the Listener Timeout limit being reached (Listener Timeout is sent in from the CICS eWay when it initializes connection with the CICS Listener program).

Press **PF14**. The **LPA Performance Statistics** screen appears as displayed in Figure 15.

Figure 15



- 6 This screen (Figure 15) displays the performance statistics for each LPA. Each line shows one LPA (one for each instance of the SeeBeyond Listener Program).

All times shown are in sss.mmm format (sss = seconds, mmm=milliseconds). The fields on the screen are as follows:

- ◆ **peek request:** the average time spent peeking for the next incoming application request message.
- ◆ **receive request:** the average time spent receiving the next incoming application request message.
- ◆ **send ack:** the average time spent sending an ack for an incoming application request message.
- ◆ **link program:** the average time spent link to requested application programs.
- ◆ **start tran:** the average time spent starting requested application transactions.
- ◆ **send response:** the average time spent sending the application response (including the updated COMMAREA for program links) back to the eWay.
- ◆ **peek ack:** the average time spent peeking for the incoming ack to the preceding send response.
- ◆ **receive ack:** the average time spent receiving the incoming ack to the preceding send response.

Press PF15. The **Last Application Request Header Received** screen appears as displayed in Figure 16.

Figure 16

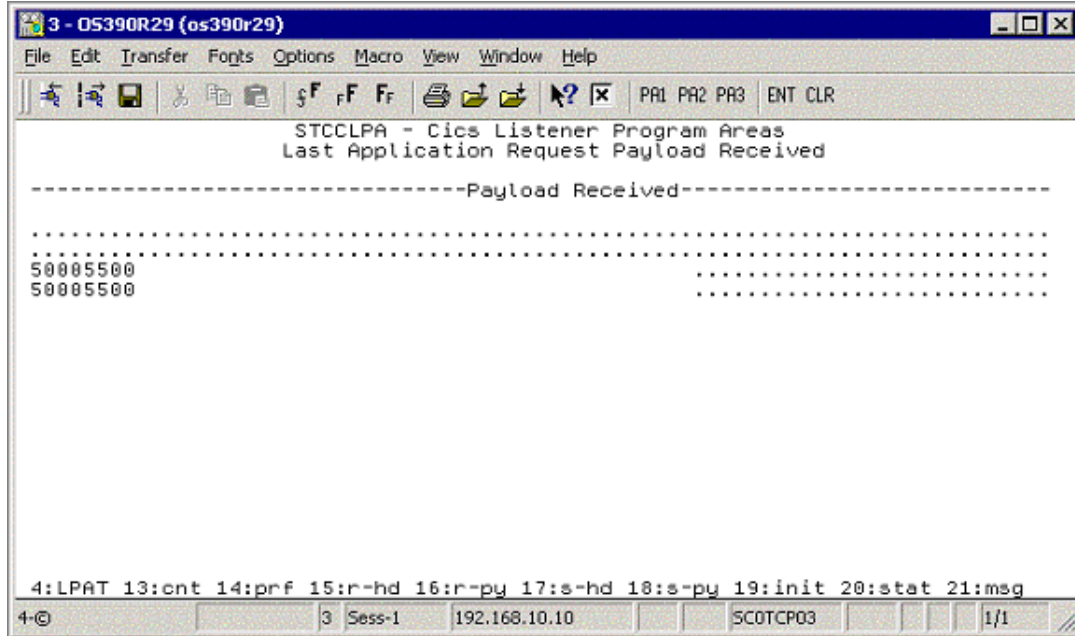
| message length | program or tran | appl timeout | request code | response code | pad char | commarea length | payload length |
|----------------|-----------------|--------------|--------------|---------------|----------|-----------------|----------------|
| 113 | QAN3GLR1 | 0 | 9000 | 0000 | 40 | 0 | 0 |
| 113 | QAN3GLR1 | 0 | 9000 | 0000 | 40 | 0 | 0 |
| 163 | BOB3GLR1 | 0 | 0010 | 0000 | 40 | 50 | 50 |
| 163 | BOB3GLR1 | 0 | 0010 | 0000 | 40 | 50 | 50 |

7 This screen (Figure 16) displays the last application request header received from the CICS eWay for each LPA. Each line shows one LPA (one for each instance of the SeeBeyond Listener Program). The fields on the screen are as follows:

- ◆ **message length:** the entire length of the incoming message including the header and payload.
- ◆ **program or tran:** the requested application program or transaction.
- ◆ **appl timeout:** (reserved for future development).
- ◆ **request code:** which action is being requested.
 - ◆ 0010 = link to application program.
 - ◆ 0020 = start application transaction.
 - ◆ 0111 = ack for a link response.
 - ◆ 0121 = ack for a start response.
 - ◆ 9000 = shutdown the Listener program.
- ◆ **response code:** always set to zero from the CICS eWay.
- ◆ **pad char:** padding character for the COMMAREA if the payload length is less than the COMMAREA length.
- ◆ **commarea length:** the length of the data to pass to the application program (link) or the application transaction (start).
- ◆ **payload length:** the length of the payload portion of the incoming message.

Press **PF16**. The **Last Application Request Payload Received** screen appears as displayed in Figure 17.

Figure 17



- 8 This screen (Figure 17) displays the last application request payload received from the CICS eWay for each LPA. Each line shows one LPA (one for each instance of the SeeBeyond Listener Program). There is one field on the screen:

- ♦ **Payload Received:** the incoming payload from the CICS eWay.

Press **PF17**. The **Last Application Response Header** screen appears as displayed in Figure 18.

Figure 18

| message length | program or tran | appl timeout | request code | response code | pad char | commarea length | payload length |
|----------------|-----------------|--------------|--------------|---------------|----------|-----------------|----------------|
| 113 | QAN3GLR1 | 0 | 9001 | 0000 | 40 | 0 | 0 |
| 113 | QAN3GLR1 | 0 | 9001 | 0000 | 40 | 0 | 0 |
| 113 | BOB3GLR1 | 0 | 9001 | 0000 | 40 | 0 | 0 |
| 113 | BOB3GLR1 | 0 | 9001 | 0000 | 40 | 0 | 0 |

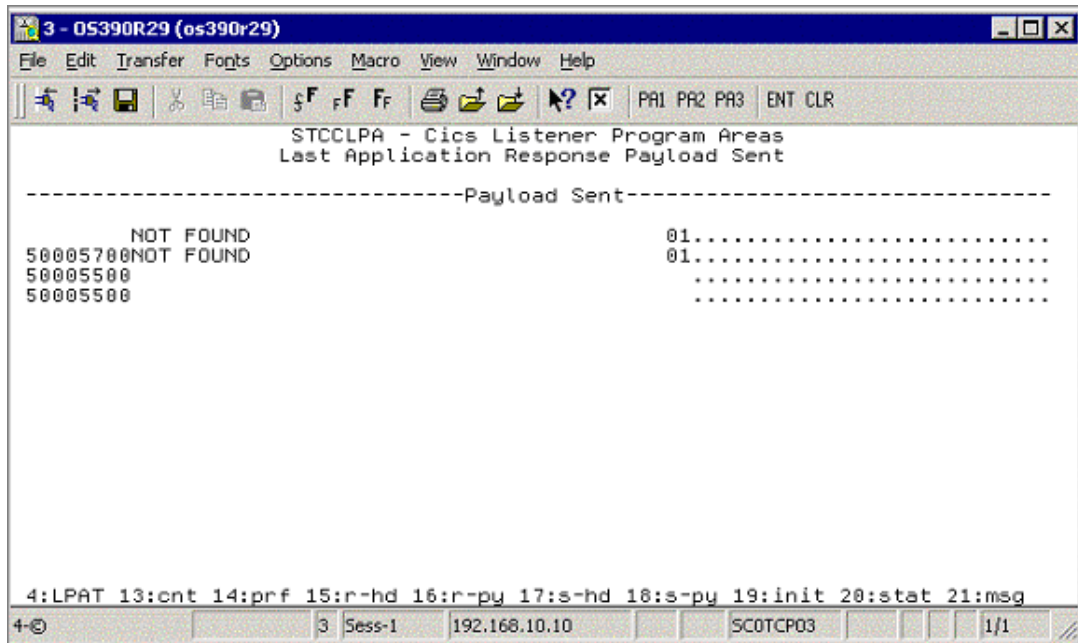
9 The **Last Application Response Header** screen (Figure 18 on page 35) displays the last response header sent to the CICS eWay for each LPA. Each line shows one LPA (one for each instance of the SeeBeyond Listener Program). The fields on the screen are as follows:

- ♦ **message length:** the entire length of the outgoing message including the header and payload.
- ♦ **program or tran:** the application program or transaction that was executed or started.
- ♦ **appl timeout:** (reserved for future development).
- ♦ **request code:** what action is being requested.
 - ♦ 0001 = ack the init request.
 - ♦ 0011 = ack for a link program request.
 - ♦ 0021 = ack for a start trans response.
 - ♦ 0110 = response from a linked application program (including COMMAREA).
 - ♦ 0120 = response from starting an application transaction (no COMMAREA included).
 - ♦ 9001 = ack for a shutdown request.
- ♦ **response code:** response code indicating what occurred while processing the previous incoming request from the eWay.
 - ♦ 0000 = ok.
 - ♦ 0011 = bad startcode during initialization.

- ♦ 0012 = bad password on init record.
- ♦ 0013 = bad comm timeout on init record.
- ♦ 0014 = bad appl timeout on init record.
- ♦ 0015 = bad Listener timeout on init record.
- ♦ 0016 = error reading the init record from transient data queue.
- ♦ 0017 = error retrieving the init record from the start data.
- ♦ 0018 = error while setting blocking mode.
- ♦ 0051 = bad payload length.
- ♦ 0052 = error while linking to a program.
- ♦ 0053 = error while starting a transaction.
- ♦ 0054 = bad request code.
- ♦ 0055 = bad response code.
- ♦ 0056 = partial message received.
- ♦ 0057 = bad program name.
- ♦ 0058 = bad message length.
- ♦ 0059 = bad commarea length.
- ♦ **pad char**: padding char that was sent in from the CICS eWay.
- ♦ **commarea length**: COMMAREA length that was sent in from the CICS eWay.
- ♦ **payload length**: payload length that was sent in from the CICS eWay (the Listener sets this to zero if this is a response to a start transaction request).

Press **PF18**. The **Last Application Response Payload Sent** screen appears as displayed in Figure 19.

Figure 19



- 10 This screen (Figure 19) displays the last application response payload sent to the CICS eWay for each LPA. Each line shows one LPA (one for each instance of the SeeBeyond Listener Program). There is one field on the screen:

- ♦ Payload sent: the outgoing payload being sent to the CICS eWay.

Press PF19. The **Initialization Record Passed from EZACIC02** screen appears as displayed in [Figure 20 on page 38](#).

Figure 20

```

STCCCLPA - Cics Listener Program Areas
Initialization record passed from EZACIC02

sckt ----listener-----
nbr  applid  taskid  userid  password  timeout  listener  poll  --socket---
      family  port
0001 CICSA   00000233          TESTUSR1 TESTPAS1 000005000 000005000 025  0002  1479
0001 CICSA   00000233          TESTUSR4 TESTPAS4 000005000 000005000 025  0002  1800
0001 CICSA   00000233          TESTUSR4 TESTPAS4 000005000 000005000 025  0002  1874
0001 CICSA   00000233          TESTUSR4 TESTPAS4 000005000 000005000 025  0002  1830

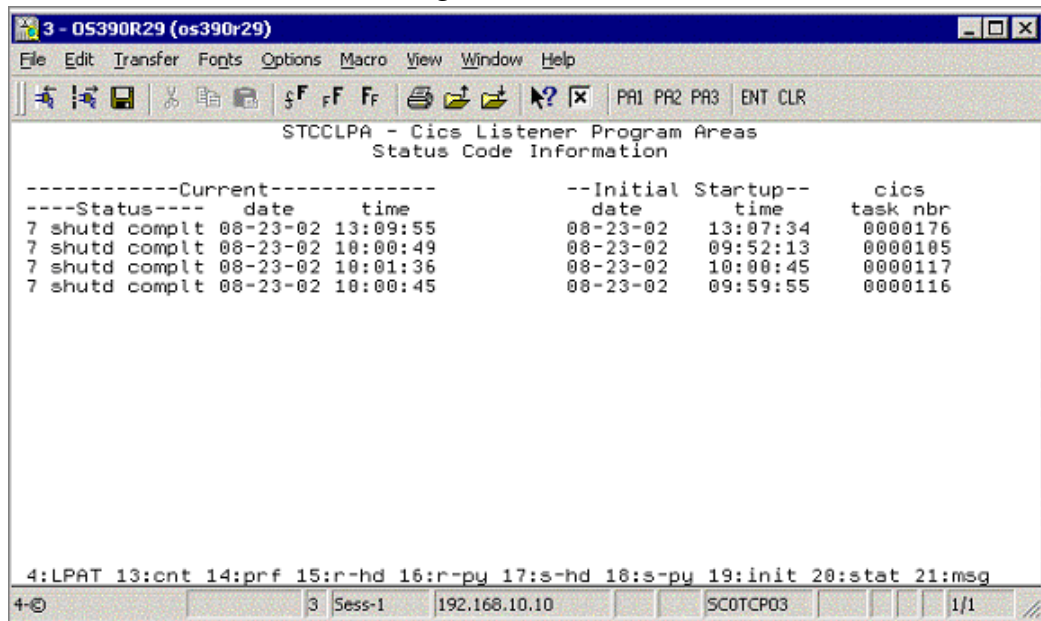
4:LPAT 13:cnt 14:prf 15:r-hd 16:r-py 17:s-hd 18:s-py 19:init 20:stat 21:msg
+Ⓢ 3 Sess-1 192.168.10.10 SC0TCP03 1/1
  
```

11 This screen (Figure 20) displays the init record that was passed to the SeeBeyond Listener program from the IBM Listener program (ezacic02) for each LPA. Each line shows one LPA (one for each instance of the SeeBeyond Listener program). The fields on the screen are as follows:

- ◆ **sckt nbr:** the socket number that is passed to the SeeBeyond Listener.
- ◆ **Listener applid:** the applid of the CICS region that the IBM Listener is executing in that started this instance of the SeeBeyond Listener.
- ◆ **Listener tasked:** the CICS taskid for the IBM Listener program that started this instance of the SeeBeyond Listener.
- ◆ **userid:** userid passed in from the CICS eWay.
- ◆ **password:** user password passed in from the CICS eWay.
- ◆ **comm. Timeout:** this timeout value is the threshold limit for waiting for all the bytes of an incoming message.
- ◆ **Listener timeout:** this timeout value is the threshold limit for waiting for a new incoming message.
- ◆ **poll rate:** how many times the SeeBeyond Listener will perform a receive loop to satisfy a complete message receive, after which it will wait one second before trying again.
- ◆ **socket family:** the TCP/IP family to which this socket belongs.
- ◆ **socket port:** the port this instance of the SeeBeyond Listener is using.

Press PF20. The **Status Code Information** screen appears as displayed in [Figure 21 on page 39](#).

Figure 21

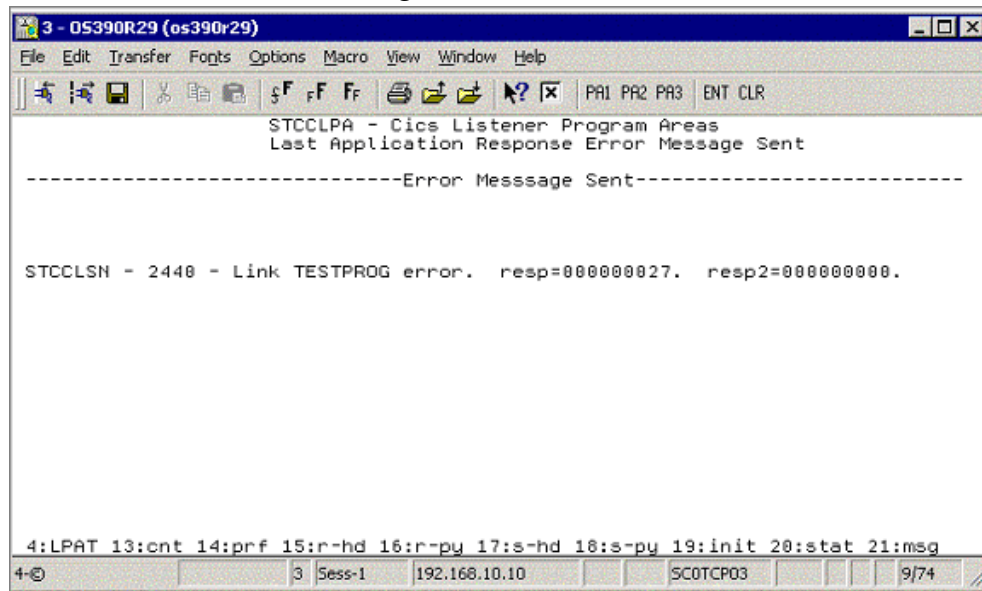


12 This screen (Figure 21) shows the status information for each LPA. Each line shows one LPA (one for each instance of the SeeBeyond Listener program). The fields on the screen are as follows:

- ♦ **Current status:** the current status of an active SeeBeyond Listener program, or the last known status of a previously executing SeeBeyond Listener program.
 - ♦ C = LPA is initialized.
 - ♦ E = about to get ezacic02 data.
 - ♦ G = about to take socket from IBM Listener program.
 - ♦ I = about to set mode to blocking.
 - ♦ K = about to send ack for init request.
 - ♦ M = peeking for length of next incoming request.
 - ♦ O = peeking for entire incoming request.
 - ♦ Q = receiving full incoming request message.
 - ♦ S = sending ack for application request.
 - ♦ U = linking to requested application program.
 - ♦ W = starting a request application transaction.
 - ♦ Y = sending a application response.
 - ♦ 0 = peeking for application response ack.
 - ♦ 2 = receiving an application response ack.
 - ♦ 4 = a shutdown request has been received.
 - ♦ 6 = sending an ack for the shutdown request.

- ♦ 7 = shutdown is complete, this LPA is now available for reuse.
 - ♦ 8 = SeeBeyond Listener program appended.
 - ♦ **Current Status date:** date for this status.
 - ♦ **Current Status time:** time for this status.
 - ♦ **Initial Startup date:** date this instance of the SeeBeyond Listener was started.
 - ♦ **Initial Startup time:** time this instance of the SeeBeyond Listener was started.
 - ♦ **cics task nbr:** the CICS eibtaskn for this instance of the SeeBeyond Listener.
- Press **PF21**. The **Error Message Sent** screen appears as displayed in Figure 22.

Figure 22



- 13 This screen (Figure 22) shows the last error message sent to the CICS eWay for each LPA. Each line shows one LPA (one for each instance of the SeeBeyond Listener program). There is one field on the screen:

Error Message Sent: the last error message sent to the CICS eWay for this instance of the SeeBeyond Listener program.

2.8 CICS Listener Considerations for Invoking DB2 Applications

One of the following two techniques are required when using the CICS eWay to run CICS applications that invoke a DB2 table:

- RCT entry for the STCL SeeBeyond CICS Listener Transaction
- PPT entry to redirect DB2 application to another AOR

RCT entry for the STCL SeeBeyond CICS Listener Transaction

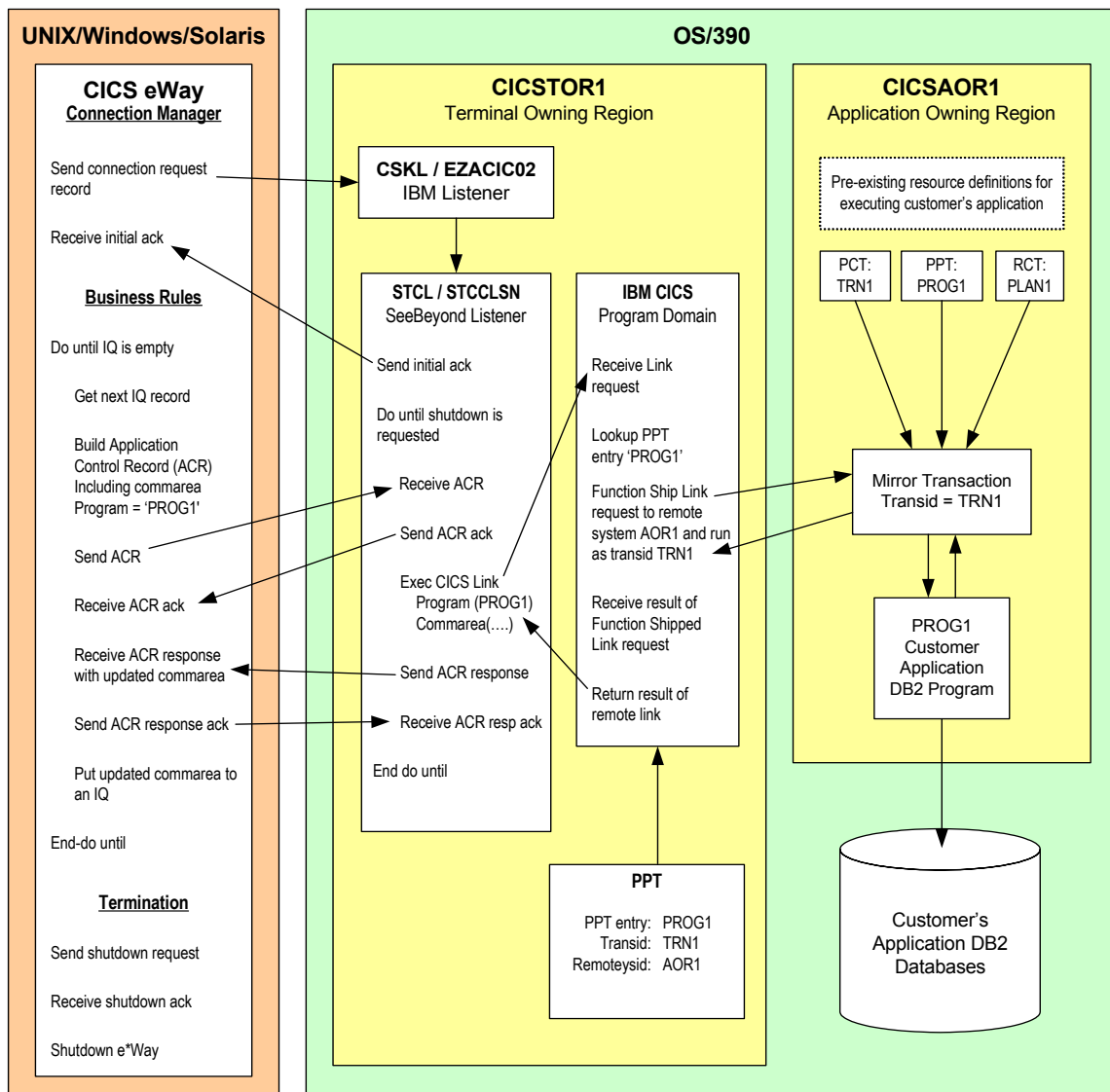
To run DB2 application programs under the STCL SeeBeyond CICS Listener transid, an RCT entry for the STCL transaction must be created using an RCT macro definition similar to the one shown below or by using an equivalent RDO entry.

```
DSNCRCT TYPE=ENTRY, TXID=STCL, THRDM=0, THRDA=0, THRDS=0,
        TWAIT=POOL, PLAN=HD45LE06, AUTH=(SIGNID, *, *)
```

PPT entry to redirect DB2 application to another AOR

To redirect DB2 application programs to another AOR, the PPT entry for the requested DB2 application program in the TOR (where the STCL SeeBeyond CICS Listener transaction is running) must be defined to run the DB2 application program in a different region (usually an AOR) and under a specific PCT in that AOR. Refer to Figure 23 for a detailed flow diagram showing the use of the PPT and PCT.

Figure 23 SeeBeyond CICS Listener invoking DB2 programs



2.9 CICS Transaction Gateway 5.1 Installation and Configuration

For installation and configuration information regarding IBM's CICS Transaction Gateway 5.1, consult the latest CTG 5.1 documentation at IBM's CICS Library Website:

<http://www-3.ibm.com/software/ts/cics/library/cicstgv5.html>

This documentation should also be consulted for information on configuring CTG for use with RACF and the latest APARs.

IBM CICS Transaction Gateway properties are set using the CTG Configuration Tool. The Configuration Tool is located under the CICS Transaction Gateway program menu.

Configuring the CICS eWay

This chapter describes how to create and configure the CICS eWay properties.

What's in This Chapter

- [Creating and Configuring the CICS eWay](#) on page 43
- [Using the Properties Sheet](#) on page 45
- [CICS eWay Connectivity Map Configuration Properties](#) on page 46
- [CICS eWay Environment Explorer Configuration Properties](#) on page 53

3.1 Creating and Configuring the CICS eWay

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

- From the **Connectivity Map**. These parameters most commonly apply to a specific component eWay, and may vary from other eWays (of the same type) in the project.
- From the **Environment Explorer tree**. These parameters are commonly global, applying to all eWays (of the same type) in the project. The saved properties are shared by all eWays in the CICS External System window.
- CICS eWay properties may also be set from the **Collaboration Editor (Java)** or **eInsight Business Rules Designer**, in which case they will override the corresponding properties in the eWay's configuration file. Any properties that are not overridden retain their saved settings. Thieves

3.1.1 Selecting CICS as the External Application

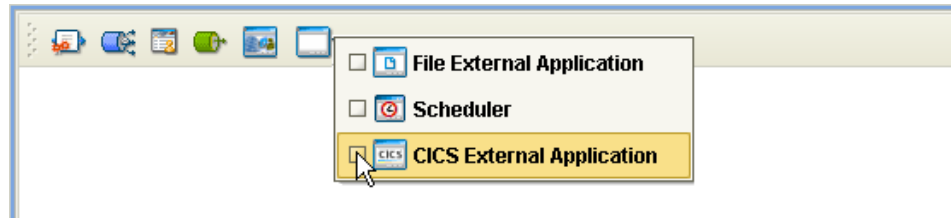
To create a CICS eWay you must first create a CICS External Application in your Connectivity Map. CICS eWays are located between a CICS External Application and a Service. Services are containers for Collaborations, Business Processes, eTL processes, and so forth.

To create the CICS External Application

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

- 2 Select the **CICS External Application** from the menu (see [Figure 24 on page 44](#)). The selected CICS External Application icon appears on the Connectivity Map toolbar.

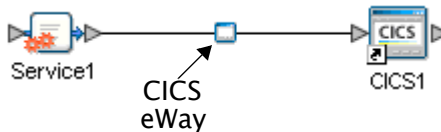
Figure 24 External Applications Selection Menu



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

From the Connectivity Map, you can associate (bind) the External Application with the Service to establish an eWay (see [Figure 25](#)).

Figure 25 eWay Location.



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

3.1.2 Modifying the CICS eWay Properties

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

Modifying the CICS eWay (Connectivity Map) Properties

- 1 From the Connectivity Map, double click the eWay icon, located in the link between the associated External Application and the Service.
- 2 The eWay **Properties Sheet** opens with the CICS eWay Connectivity Map properties. Make any necessary modifications and click **OK** to save the settings.

Modifying the CICS eWay (Environment Explorer) Properties

- 1 From the Environment Explorer tree, right-click the CICS External System. Select **Properties** from the shortcut menu. The **Properties Sheet** opens with the CICS eWay Environment properties.
- 2 Make any necessary modifications to the Environment properties of the CICS eWays, and click **OK** to save the settings.

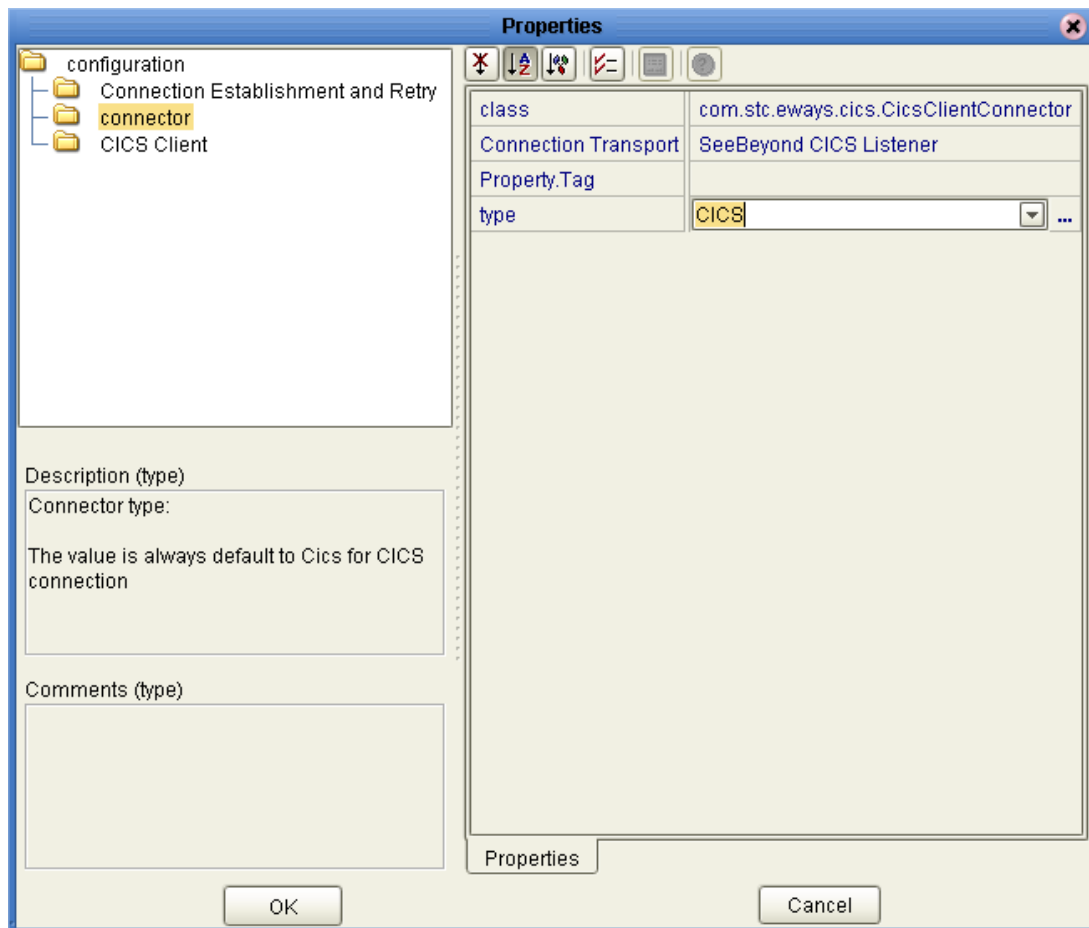
3.1.3. Using the Properties Sheet

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

To modify the default eWay configuration properties

- 1 Open the Properties Sheet to the CICS eWay default properties. An eWay has two different sets of parameters: those specific to that particular eWay (accessed from the Connectivity Map), and those that are common to all eWays of this type (accessed from the Environment Explorer tree).
- 2 From the upper-right pane of the Properties Sheet, select a subdirectory of the configuration directory. The parameters contained in that subdirectory are now displayed in the Properties pane of the Properties Sheet. For example, clicking on the **connector** subdirectory displays the editable parameters in the right pane, as shown in Figure 26.

Figure 26 Properties Sheet -- CICS Properties



- 3 Click on any property field to make it editable. For example, click on the **class** parameter to edit the class value. If a parameter's value is true/false or multiple choice, the field reveals a submenu of property options.

Click on the ellipsis (. . .) in the properties field to open a separate configuration dialog box. This is helpful for large values that cannot be fully displayed in the parameter's property field. Enter the property value in the dialog box and click **OK**. The value is now displayed in the parameter's property field.

- 4 A description of each parameter is displayed in the **Description** pane when that parameter is selected, providing an explanation of any required settings or options.
- 5 The **Comments** pane provides an area for recording notes and information regarding the currently selected parameter. This is saved for future referral.
- 6 After modifying the configuration properties, click **OK** to close the Properties Sheet and save the changes.

3.2 CICS eWay Connectivity Map Configuration Properties

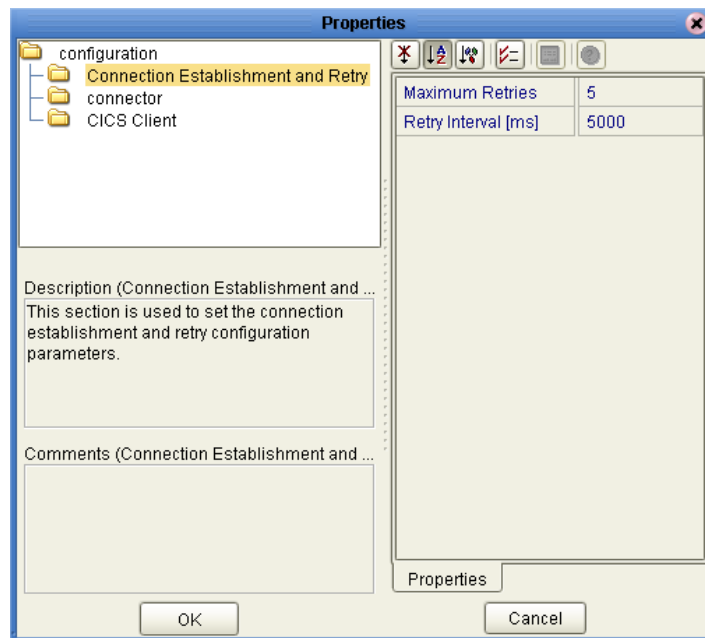
The CICS eWay configuration parameters, accessed from the Connectivity Map, are organized into the following sections:

- **Connection Establishment and Retry** on page 46
- **Connector** on page 48
- **CICS Client** on page 50

3.2.1. Connection Establishment and Retry

The Connection Establishment and Retry section contains the top level parameters displayed in Figure 27.

Figure 27 Properties Editor - Connectivity Map, Connection Establishment and Retry



Maximum Retries

Description

Specifies the maximum number of connection retries.

Required Value

A number indicating the number of times the eWay tries to establish a connection. The configured default is 5.

Retry Interval [ms]

Description

Specifies the number of milliseconds to wait between connection retries.

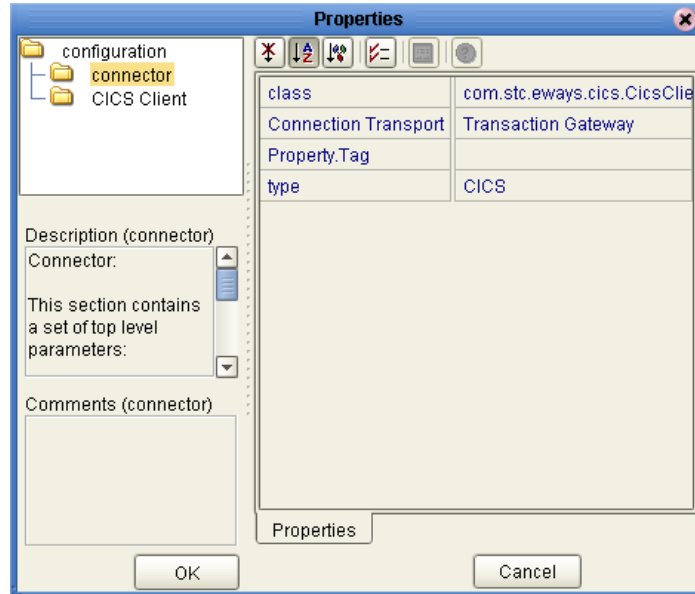
Required Value

A number indicating the time (in milliseconds) that the eWay waits between connection attempts. The configured default is **5000** (or 5 seconds).

3.2.2. Connector

The **Connector** section contains the top level parameters displayed in Figure 27.

Figure 28 Properties Editor - Connectivity Map, Connector Properties



Class

Description

Specifies the class name of the CICS Client connector object.

Required Value

The (class) package name for the CICS Client connector object. The default is `com.stc.eways.cics.CicsClientConnector`.

Connection Transport

Description

Specifies the underlying connection transport used by the CICS eWay to send requests and get responses from a CICS region.

Required Value

Enter the name of the selected underlying connection transport as follows:

- **SeeBeyond CICS Listener**
- **Transaction Gateway** (specifies the IBM CICS Transaction Gateway)

Transaction Gateway is the configured default.

Property.Tag

Description

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

Required Value

The data source package name.

Type

Description

Specifies the connector type.

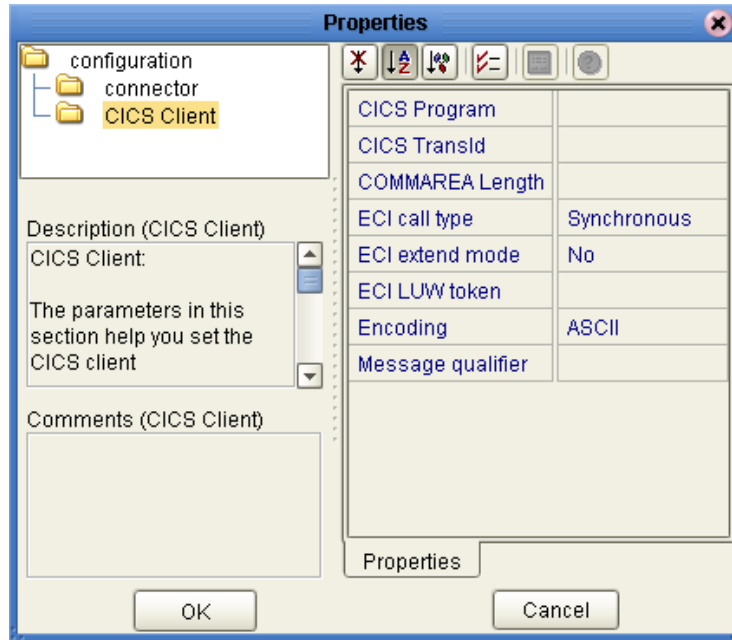
Required Value

CICS. The value always defaults to **CICS** for CICS connections.

3.2.3. CICS Client

The **CICS Client** section contains the top level parameters displayed in Figure 29.

Figure 29 Properties Editor - Connectivity Map, CICS Client Properties



CICS Program

Description

Specifies the CICS program to be run on the server. Maximum length is eight characters.

Required Value

A CICS program name, eight characters or less.

CICS TransId

Description

Specifies the CICS TransId to be run on the server. Maximum length is four characters.

Required Value

A CICS TransId of four characters or less.

COMMAREA Length

Description

Specifies the length (in bytes) of the COMMAREA passed to the ECI.

Required Value

A number indicating the byte length of the COMMAREA.

Note: When using the CICS Transaction Gateway transport, data sent to CICS must be padded with spaces, if necessary, to match the full size of the commarea.

ECI call type

Description

Specifies whether the ECI call type is Synchronous. Synchronous calls wait for the transaction to complete, then return the contents of the COMMAREA. Only Synchronous calls are supported.

Required Value

Synchronous is the configured default.

ECI extend mode

Description

Specifies whether a logical unit of work is terminated at the end of a call.

Required Value

Yes or **No**. **Yes** indicates that the work unit is terminated at the end of a call. **No** is the configured default.

ECI LUW Token

Description

CTG specific. Specifies the logical unit of work to which a call belongs. This must be set to zero at the start of a logical work unit. The ECI updates the value on the first (or only) call of the logical work unit. If the unit of work is to be extended, this value will be used as input to all subsequent calls associated with the same logical work unit.

If the return code is not ECI_NO_ERROR and a call is ending or continuing an existing logical work unit, then this field is used to report the state of the logical work unit. If it is zero, the logical work unit has ended and updates have been backed out. If it is not zero, the value is the same as the input value. The logical work unit is continuing, and updates are still pending.

Required Value

A number indicating the ECI logical unit of work.

Encoding

Description

Specifies the canonical name for the encoding set.

Required Value

The canonical name for any encoding set supported by Sun's Java Runtime Environment 1.1.8 (contained in rt.jar and i18n.jar). Examples are **ASCII** and **Cp500** (EBCDIC). When running the CICS eWay on a **z/OS** platform, set the Encoding value to **ISO-8859-1**.

Message Qualifier

Description

CTG specific. The ECI Message Qualifier identifies each asynchronous call if more than one call is made. This security feature-related ID is only used on the same JavaGateway that created or assigned them.

Required Value

A number indicating the asynchronous call's ECI Message Qualifier.

3.3 CICS eWay Environment Explorer Configuration Properties

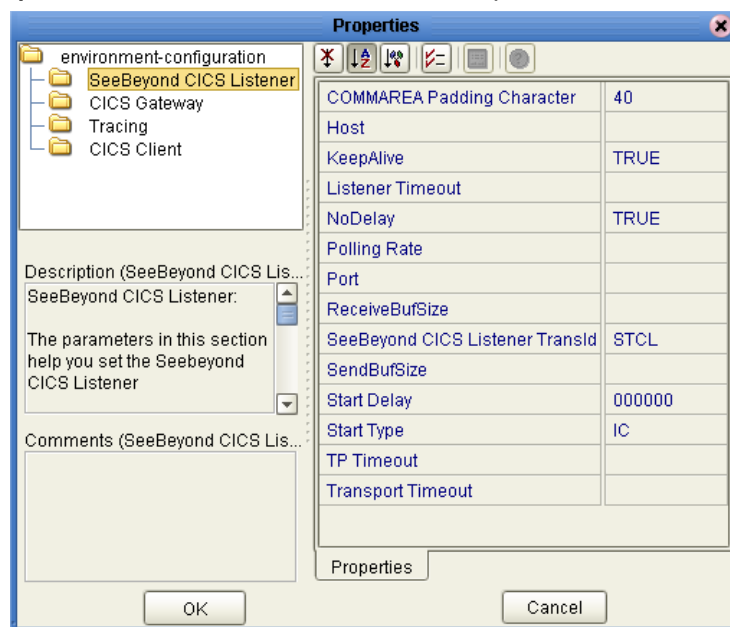
The CICS eWay configuration parameters, accessed from the Environment Explorer tree, are organized into the following sections:

- [SeeBeyond CICS Listener](#) on page 53
- [CICS Gateway](#) on page 57
- [Tracing](#) on page 59
- [CICS Client](#) on page 61

3.3.1. SeeBeyond CICS Listener

The **SeeBeyond CICS Listener** section contains the parameters displayed in Figure 30.

Figure 30 Properties Editor - Environment, SeeBeyond CICS Listener Properties



COMMAREA Padding Character

Description

Specifies the EBCDIC code for the character used by the SBYND listener to pad the COMMAREA at the CICS server when the actual length of the payload in the COMMAREA is shorter than the length given by CommAreaLength. The default value is hexadecimal 40 - EBCDIC space.

Required Value

- A character value coded in Hexadecimal. For example: **40** for Blanks, **00** for Low Values, **FF** for High Values, and so forth. The default value is **40**.

Host

Description

Specifies the name of the mainframe host with which to connect. This is always **CICS**.

Required Value

CICS. The value always defaults to **CICS** for CICS connections. The default is **CICS**.

KeepAlive

Description

Specifies whether to enable socket keep-alive checking. A setting of **TRUE** enables an implementation specific time period when a probe is sent to the peer host. The purpose of this option is to detect if the peer host has crashed.

One of three responses is expected:

- 1 The peer responds with the expected ACK. The application is not notified (since everything is OK). TCP will send another probe following another 2 hours of inactivity.
- 2 The peer responds with an RST, which tells the local TCP that the peer host has crashed and rebooted. The socket is closed.
- 3 There is no response from the peer. The socket is closed.

Required Value

Enter **TRUE** or **FALSE**. **TRUE** is the default.

Listener Timeout

Description

Specifies the estimated amount of time (in milliseconds) for the SeeBeyond CICS Listener to wait for the next incoming transaction program request from the CICS eWay.

Required Value

An integer between 1 and 864000 representing milliseconds (for example, 120000 milliseconds equals 2 minutes). The default value is **5000**.

NoDelay

Description

Specifies whether the system can delay connections or requests. Generally, **NoDelay/True** is necessary for high-volume and/or critical transactions. In cases of low-volume and/or noncritical transactions, you can use **NoDelay/False**. Required Values

Required Value

Enter **TRUE** or **FALSE**. **TRUE** is the default.

Polling Rate

Description

Specifies the polling rate. This is the number of times the SeeBeyond CICS Listener will query the current TCP connection for incoming traffic before issuing an EXEC CICS DELAY for one second.

Required Value

An integer between 1 and 255 representing.

Port

Description

Specifies the TCP/IP port where the SeeBeyond CICS Listener is listening. This is the port to which the CICS eWay will connect.

Required Value

The TCP/IP port to which SeeBeyond CICS Listener is listening.

ReceiveBufSize

Description

Specifies the Receive Buffer Size (in bytes) for the underlying socket, this is a hint.

Required Value

An integer between 1 and 864000 representing bytes (for example, 10240 bytes equals 10 kilobytes).

SeeBeyond CICS Listener TransId

Description

Specifies the TransId of the SeeBeyond CICS Listener on the mainframe host. This is the CICS Transaction that the SeeBeyond CICS Listener is installed under.

Required Value

The valid TransId of the SeeBeyond CICS Listener. The default is **STCL**.

SendBufSize

Description

Specifies the Send Buffer Size for the underlying socket.

Required Value

An integer between 1 and 864000 representing bytes (for example, 10240 bytes equals 10 kilobytes).

Start Delay

Description

Specifies the hours, minutes and seconds (interval of time) to delay starting the transaction program (TP) on the CICS server for the **IC** Start Type. This field is optional but must specify all 6 digits if used.

Required Value

A 6 digit integer. All 6 digits must be given if this is specified (for example, 123456). The default value is **000000**.

Start Type

Description

Specifies the startup type. This can be either **IC** for CICS interval control or **TD** for CICS transient data. This is the CICS Startup type for the program being executed.

Required Value

Select **IC** or **TD**. The default value is **IC**.

TP Timeout

Description

Specifies the amount of time the CICS eWay will wait for the SeeBeyond CICS Listener to return results for a current transaction program request.

Required Value

An integer between 1 and 864000 representing milliseconds (for example, 120000 milliseconds equals 2 minutes).

Transport Timeout

Description

Specifies the timeout used by both the local and host side for receive on the socket.

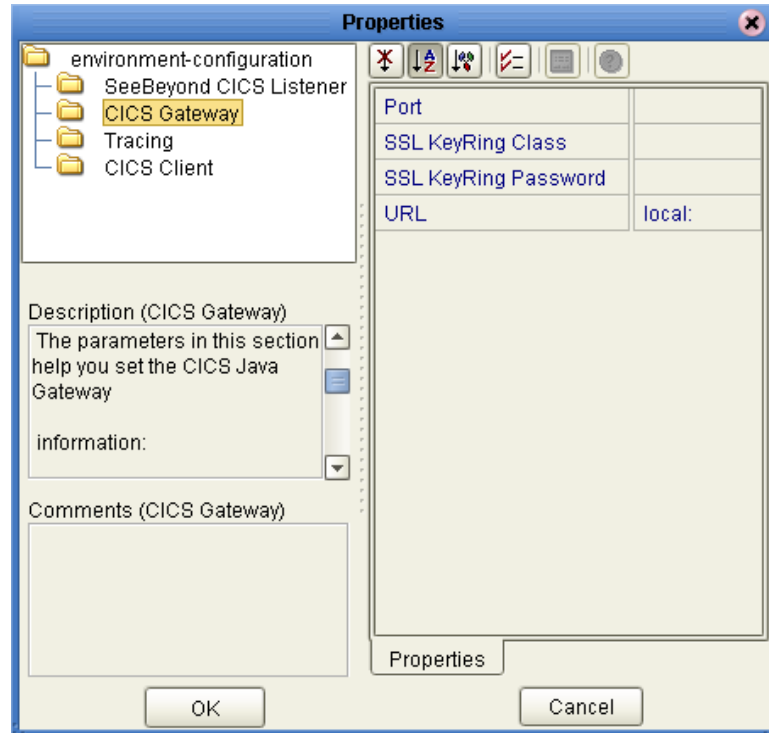
Required Value

An integer between 1 and 864000 representing milliseconds (for example, 120000 milliseconds equals 2 minutes).

3.3.2. CICS Gateway

These parameters are specific to the CICS Transaction Gateway (CTG). This section contains the top level parameters displayed in Figure 31.

Figure 31 Properties Editor - Environment, CICS Gateway Properties



Port

Description

Specifies the TCP/IP port with which to connect, that is, the port where CTG is running.

Required Value

An number indicating the TCP/IP port.

SSL KeyRing Class

Description

Specifies the full classname of the SSL KeyRing class.

Required Value

The full classname of the SSL KeyRing class.

SSL KeyRing Password

Description

Specifies the password for the encrypted KeyRing class.

Required Value

The password for the SSL KeyRing class.

URL

Description

Specifies the remote or local Gateway with which to connect.

Required Value

The remote or local Gateway node name or IP address.

Additional Information

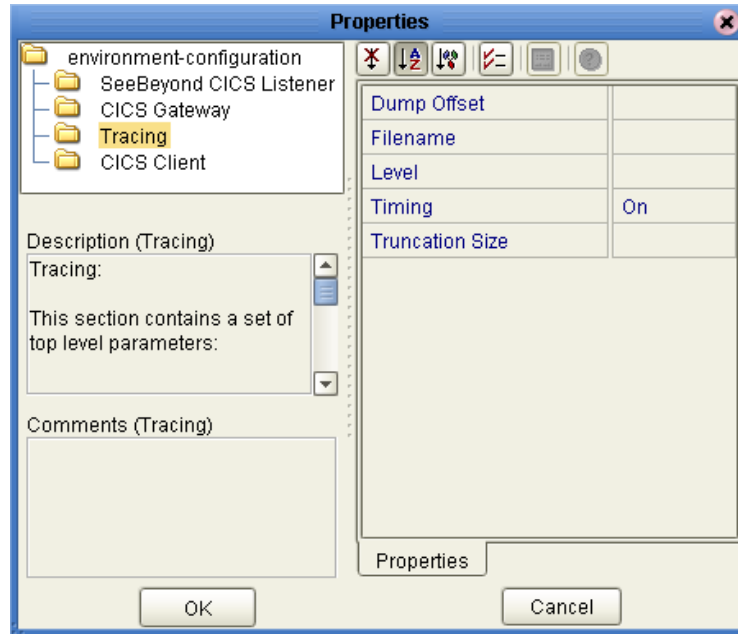
This parameter requires specific JAR files when using **local:** as the value. For directions on installing the required files, see [Adding JAR Files to the LogicalHost](#) on page 62

The default value, **local:**, does not work with CTG running on **z/OS**. For CTG running on a z/OS system, the URL property value must be set to **localhost** or to the server name.

3.3.3. Tracing

This section contains the top level parameters displayed in Figure 32.

Figure 32 Properties Editor - Environment, Tracing Properties



Dump Offset

Description

CTG specific. Specifies the offset from which the display of any data blocks will start.

Required Values

A number indicating the offset. If the offset is greater than the total length of data to be displayed, an offset of 0 is used.

The dump offset can also be set using the system property **gateway.T.setDumpOffset=xxx**, where xxx is a number.

Filename

Description

CTG specific. Specifies a file location for writing the trace output. This is an alternative to the default output on **stderr**. Long filenames must be surrounded by quotation marks; for example: "trace output file.log".

Required Values

The output file name.

The filename can also be set using the system property **gateway.T.setTFile=xxx**, where xxx is a filename.

Level

Description

CTG specific. Specifies the level of trace information available.

Required Values

An integer in the range of 0 to 3, indicating the following:

- **0: None.** No CICS Java client application tracing.
- **1: Standard.** Only the first 128 bytes of any data block (for example the COMMAREA, or network flows) are displayed by default. This trace level is equivalent to the Gateway trace set by the ctgstart -trace option. (This can also be set using the system property **gateway.T.trace=on**)
- **2: Full Debug.** Traces out the whole of any data blocks by default. The trace contains more information about CICS Transaction Gateway than the standard trace level. This trace level is equivalent to the Gateway debug trace set by the ctgstart -x option. (This can also set using the system property **gateway.T=on**)
- **3: Exception Stacks.** Traces most Java exceptions, including exception which are expected during normal operation of the CICS Transaction Gateway. No other tracing is written. This trace level is equivalent to the Gateway stack trace set by the ctgstart -stack option. (This can also set using the system property **gateway.T.stack=on**)

Timing

Description

Specifies whether or not to display time-stamps in the trace.

Required Value

On or **Off**. **On** indicates that the time-stamp is displayed in the trace. The default setting is **On**.

Timing can also set using the system property **gateway.T.timing=on**.

Truncation Size

Description

CTG specific. Specifies the maximum size of any data blocks written in the trace.

Required Value

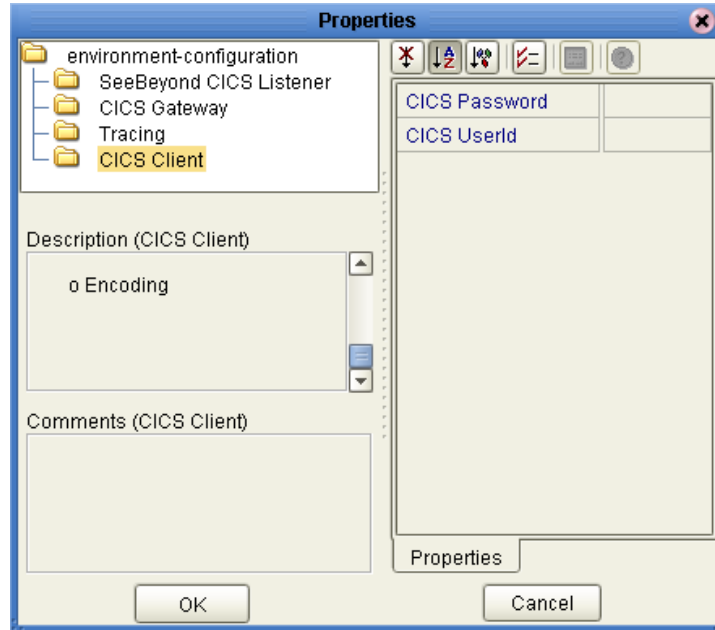
A number indicating the maximum data block size. A value of **0** indicates that no data blocks will be written in the trace. No value (leaving the property blank) indicates that no truncation size is specified.

The truncation size can also be set using the system property **gateway.T.setTruncationSize=xxx**, where xxx is a number.

3.3.4. CICS Client

This section contains the top level parameters displayed in Figure 33.

Figure 33 Properties Editor - Environment, CICS Client Properties



CICS Password

Description

Specifies the password for the CICS user. Maximum length is eight characters.

Required Value

- A password, eight characters or less, for the user ID.

CICS UserId

Description

Specifies the ID of the CICS user. Maximum length is eight characters.

Required Value

A CICS user ID, eight characters or less.

3.4 Adding JAR Files to the LogicalHost

When using local: as a URL value in the Environment properties, both the **ctgclient.jar** and the **ctgserver.jar** files must be installed to the following location prior to running a CICS eWay project.

<ican50>\logicalhost\stcis\lib

where <ican50> is the directory ICAN is installed.

The JAR files can be added from the Enterprise Designer manually, or by using the **Upload Files** option. The Upload Files option automatically ensures that the Logical Host will reload the files if it is rebuilt. Do not remove the location of the JAR file (since the repository remembers its location).

To add the required JAR files using the **Upload Files** option, do the following:

- 1 From the Environment Explorer tree, right click the Logical Host and select **Upload File** from the shortcut menu. The **Upload Third Party Files** dialog box appears.
- 2 From the **Upload Third Party Files** dialog box, click Add, browse to and select the appropriate JAR files, and click **Open**.
- 3 Click **OK** to close the dialog box.
- 4 Right click the Logical Host and select **Apply** from the menu.

Note: If the Logical Host is running, it must be recycled to pickup the new Jar file.

3.5 Alerting and Logging

eGate provides an alerting and logging feature. This allows monitoring of messages, and captures any adverse messages in order of severity based on configured severity level and higher.

For information on enabling or modifying the level of logging for the various logging categories, see the *eGate Integrator System Administration Guide*.

The alerts/status notifications for the CICS eWay are currently limited to Started, Running, Stopping, and Stopped.

Using eInsight Business Processes with the CICS eWay

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

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

What's in This Chapter

- [The eInsight Engine and Components](#) on page 63
- [The CICS eWay With eInsight](#) on page 64
- [The CICS eWay eInsight Sample Project](#) on page 64

4.1 The eInsight Engine and Components

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

- Object Type Definitions (OTDs)
- eWays
- Collaborations

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

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

4.2 The CICS eWay With eInsight

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

The CICS eWay has the following operators available:

- execute

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

Dynamic Configuration

The CICS eWay web service message structure exposes properties such as **server**, **transId**, **password**, **userId**, and so forth, that correspond to eWay configuration parameters. Populating these properties dynamically at runtime from the Business Rules Designer, allows the user to override the corresponding configuration parameters.

4.3 The CICS eWay eInsight Sample Project

This following pages provide directions for creating a simple project that demonstrates how eInsight Business Processes are used with the CICS eWay. The same project can be downloaded from the Installation CD-ROM in a near-complete state.

For more information on creating ICAN projects see the *eInsight Business Process Manager User's Guide* and the *eGate Integrator User's Guide*.

Expanded BPEL Properties

The 5.0.3 version of the CICS eWay displays additional CICS BPEL properties in the message structure, visible from the Business Rules Designer. The packaged sample that is included on the installation CD-ROM is designed to work with eGate, versions 5.0.1 and above, and will not display these additional properties when loaded. To see these additional parameters, create the sample manually, as directed in this chapter.

4.4 Importing a Sample Project

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

- 1 The sample files are uploaded with the eWay's documentation .sar file and downloaded from the Enterprise Manager's Documentation tab. The

CICS_eWay_Sample.zip file contains the various sample project zip files. Extract the samples from the Enterprise Manager to a local file.

- 2 Save all unsaved work before importing a project.
- 3 From the Enterprise Designer’s Project Explorer pane, right-click the Repository and select **Import** from the shortcut menu. The **Import Manager** appears.
- 4 Browse to the directory that contains the sample project zip file. Select the sample file (for this sample, **CICS_BP_Sample.zip**) and click **Import**. After the sample project is successfully imported, click **Close**.
- 5 Before the imported sample project can be run you must do the following:
 - ♦ Create an **Environment** (see **Creating an Environment** on page 73)
 - ♦ Configure the eWay properties for your specific system (see **Configuring the eWay Properties** on page 74)
 - ♦ Create a **Deployment Profile** (see **Creating and Activating the Deployment Profile** on page 76)

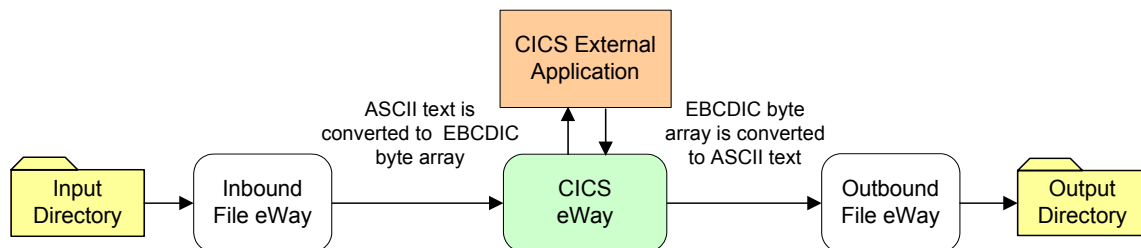
The following pages provide step by step directions for manually creating the CICS_BP_Sample project.

4.5 The CICS_BP_Sample Project Overview

The CICS eWay project, **CICS_BP_Sample**, demonstrates the following:

- The Inbound File eWay subscribes to an external directory and receives input data (ASCII text).
- The ASCII text data is converted to EBCDIC (byte array) using cp037 encoding, and published by the CICS eWay, to the CICS external system.
- Input EBCDIC data from the CICS external system, is received by the CICS eWay and converted back to String ASCII data using cp037 encoding. This data is published to the outbound File eWay.
- The outbound File eWay publishes the data to an external directory.

Figure 34 CICS_BP_Sample Project



4.6 Creating the CICS_BP_Sample Project

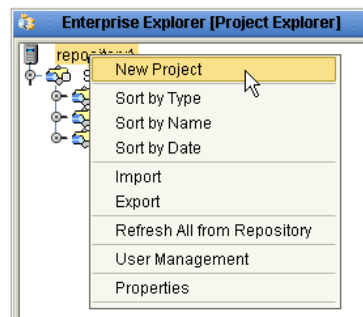
The following pages provide step by step directions for creating the CICS_BP_Sample project.

4.6.1. Creating a Project

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

- 1 Start the Enterprise Designer.
- 2 From the Project Explorer tree, right-click the Repository and select **New Project** (see Figure 35). A new project (**Project1**) appears on the Project Explorer tree.

Figure 35 Enterprise Explorer - New Project



- 3 Click twice on **Project1** and rename the project (for this sample, **CICS_BP_Sample**).

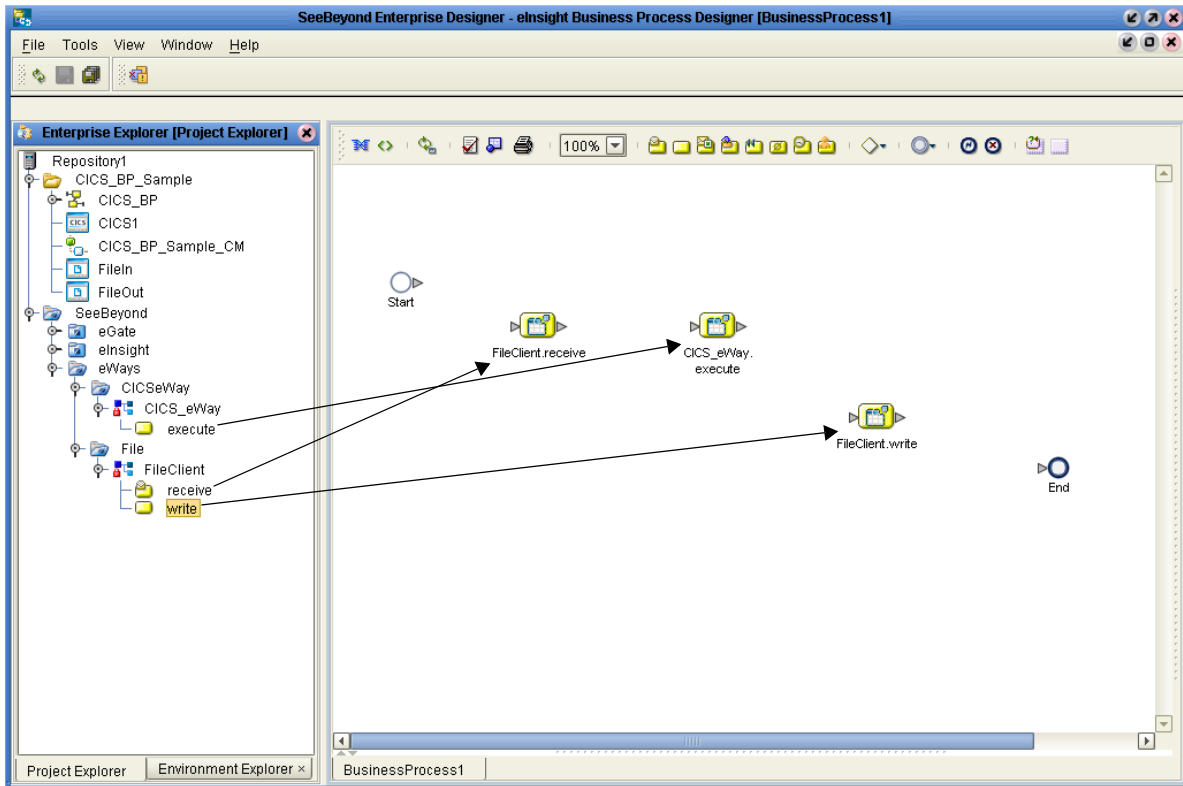
4.6.2 Creating a Business Process

To create the CICS eInsight Business Process, do the following:

Creating the Business Process Flow

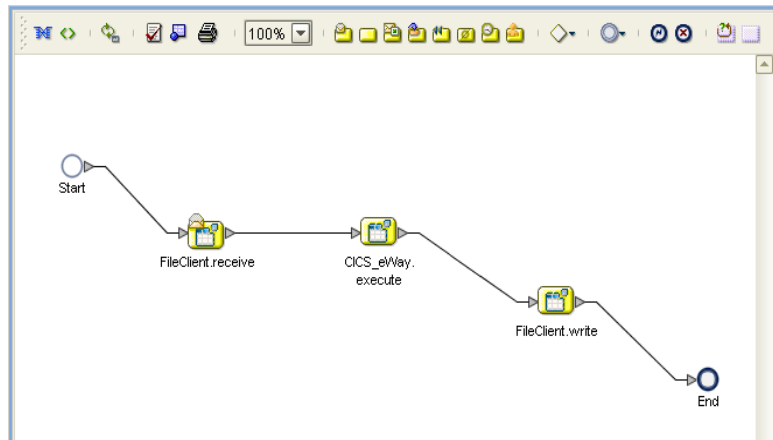
- 1 Right-click an existing project (for this sample **CICS_BP_Sample**) in the Enterprise Designer's Project Explorer, and select **New > Business Process** from the shortcut menu. The eInsight Business Process Designer appears and **BusinessProcess1** is added to the Project Explorer tree. Rename **BusinessProcess1** to **CICS_BP**.
- 2 From the Project Explorer tree, expand the SeeBeyond > eWays > CICSeWay > CICS_eWay, and File > FileClient nodes.
- 3 Populate the eInsight Business Process Designer's modeling canvas with the following activities from the Project Explorer tree, as displayed in [Figure 36 on page 67](#):
 - ♦ **receive**, under SeeBeyond > eWays > File > FileClient
 - ♦ **execute**, under SeeBeyond > eWays > CICSeWay > CICS_eWay
 - ♦ **write**, under SeeBeyond > eWays > File > FileClient

Figure 36 eInsight Business Process Designer - Populate the Canvas



- 4 Link the modeling elements by clicking on the element connector and dragging the cursor to the next element connector, making the following links as displayed in Figure 37.
 - Start -> FileClient.receive
 - FileClient.receive -> CICS_eWay.execute
 - CICS_eWay.execute -> FileClient.write
 - FileClient.write -> End

Figure 37 Business Process Designer - Link the Modeling Elements



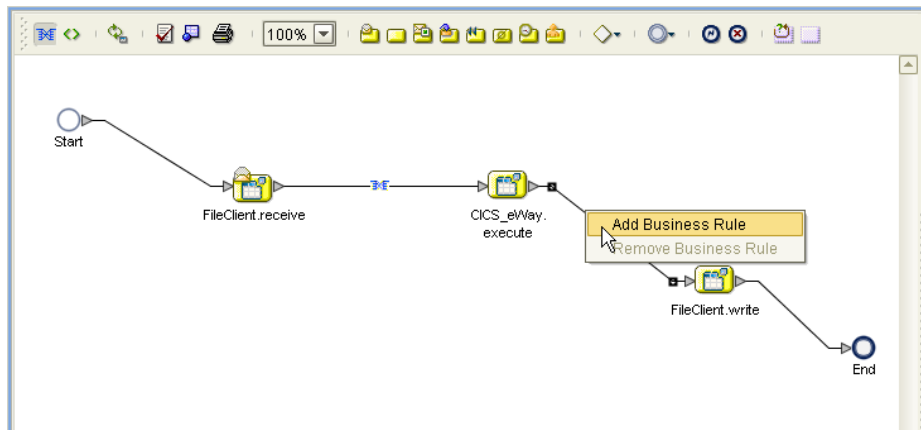
Configuring the Modeling Elements

Business Rules, created between the Business Process Activities, allow you to configure the relationships between the input and output Attributes of the Activities using the Business Process Designer's Business Rule Designer.

Adding Business Rules

- 1 Right-click the link between the **FileClient.receive** and **CICS_eWay.execute** Activities and select **Add Business Rule** from the shortcut menu.
- 2 Repeat step 1 for the **CICS_eWay.execute** to **FileClient.write** link (see Figure 38).

Figure 38 eInsight Business Process Designer - Adding Business Rules



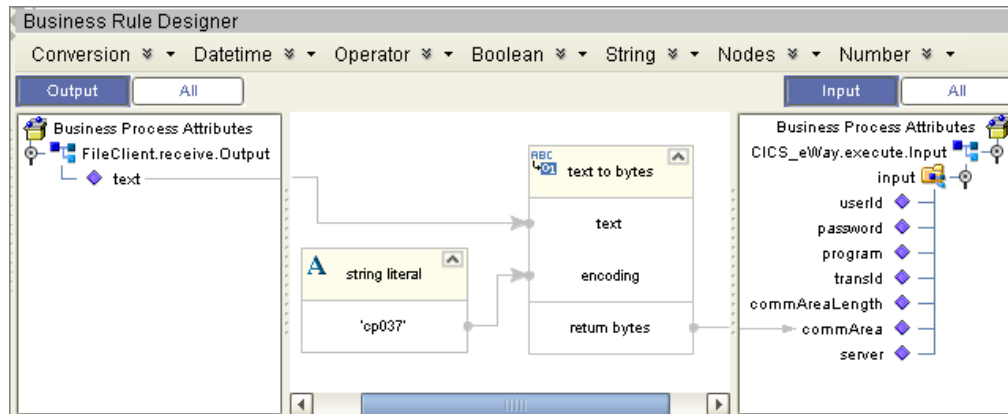
Using the Business Rule Designer

- 1 From the eInsight Business Process Designer toolbar, click the **Display Business Rules Designer** button. The Business Rule Designer appears at the bottom of the eInsight Business Process Designer.
- 2 Click on the Business Rule icon in the link between **FileClient.receive** and **CICS_eWay.execute** to display the Business Rule's Input and Output Attributes in the Business Rule Designer. These Attributes can now be modified.
- 3 To create the **FileClient.receive -> CICS_eWay.execute** Business Rule do the following:
 - A From the Business Rule Designer String menu, select Settings. The Method Palette appears. From the **String** tab, select **bytes to text** and **text to bytes**, and click **Close**. The **bytes to text** and **text to bytes** options are added to the String menu.
 - B From the Business Rule Designer String menu, select **text to bytes**. The **text to bytes** method box appears on the Business Rule Designer canvas.
 - C From the Business Rule Designer String menu, select **String Literal**. The **Input** dialog box appears. Enter **cp037** as the literal value. The string-literal method appears.
 - D Map **text**, under FileClient.receive.Output to the **text** input node of the text to bytes method box. To do this, click on **text** under **FileClient.receive.Output** in Output pane of the Business Rule Designer, and drag the cursor to the **text** input

node of the **text to bytes** method box.

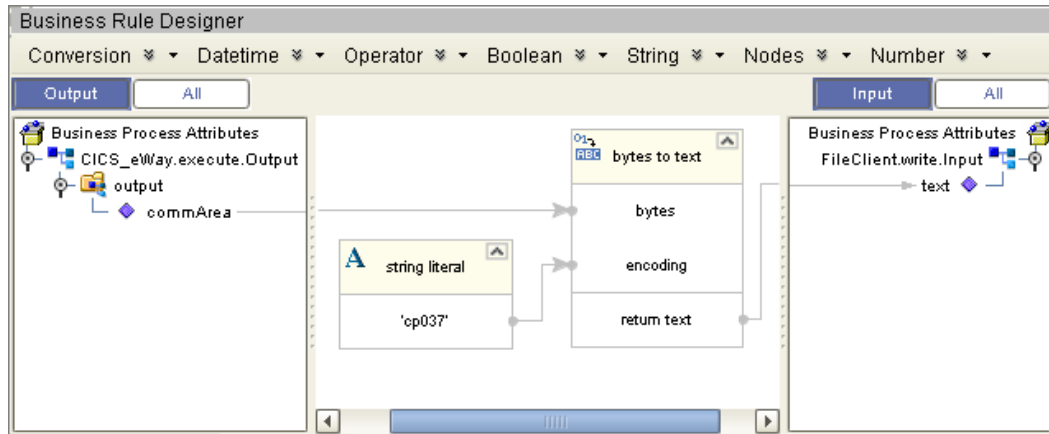
- E Map **return bytes** in the **text to bytes** method box, to **commArea** under **CICS_eWay.execute.Input > Input** in the Input pane of the Business Rule Designer.
- F Map the **cp037** output node of the string literal method box, to the encoding input node of the **text to bytes** method box (see Figure 39).

Figure 39 eInsight Business Rule Designer



- 4 To create the **CICS_eWay.execute -> FileClient.write** Business Rule do the following:
 - A Click on the Business Rule icon in the link between the **CICS_eWay.execute** and **FileClient.write** activities. This Business Rule Designer now displays the Input and Output attributes.
 - B From the Business Rule Designer String menu, select **bytes to text**. The **bytes to text** method box appears.
 - C From the Business Rule Designer String menu, select **String Literal**. The **Input** dialog box appears. Enter **cp037** as the literal value. The string-literal method appears.
 - D Map **commArea**, under **CICS_eWay.execute.Output > output** in the Output pane, to the **bytes** input node of the **bytes to text** method box.
 - E Map the **return text** output node of the **bytes to text** method box, to **text** under **FileClient.write.Input** in the Input pane.
 - F Map the string-literal value, **cp037**, to the **encoding** input node of the **bytes to text** method box (see [Figure 40 on page 70](#)).

Figure 40 eInsight Business Rule Designer



- 5 From the Business Process Designer toolbar, click **Synchronize Graphical Model and Business Process** icon to synchronize the graphical interface to the Business Process code.
- 6 Save your changes to the Repository.

4.6.3 Creating a Connectivity Map

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

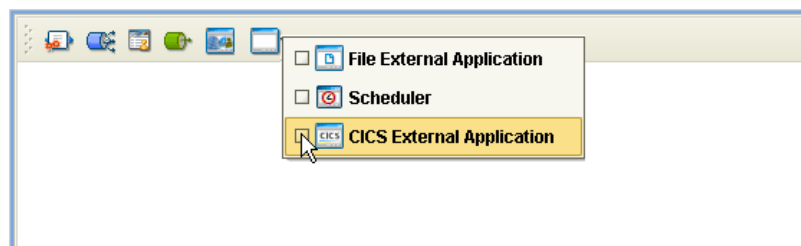
- 1 From the Project Explorer tree, right-click the new **CICS_BP_Sample** project and select **New > Connectivity Map** from the shortcut menu.
- 2 The New Connectivity Map appears and a node for the Connectivity Map is added under the project on the Project Explorer tree labeled **CMap1**. Rename the Connectivity Map **CICS_BP_Sample_CM**.

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

Selecting the External Applications

In the Connectivity Map, the eWays are associated with External Systems. For example, to establish a connection to CICS, you must first select CICS as an External System to use in your Connectivity Map (see Figure 41).

Figure 41 Connectivity Map - External Applications



- 1 Click the **External Application** icon on the Connectivity Map toolbar,

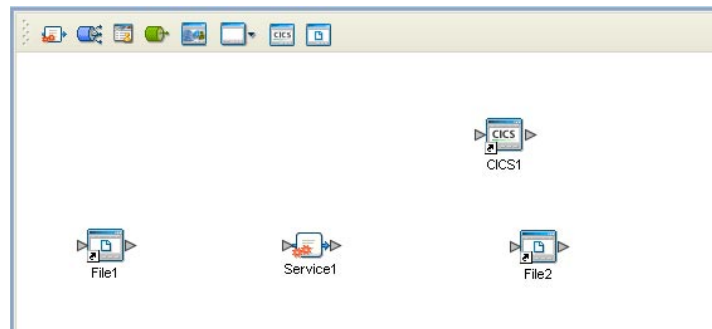
- 2 Select the external systems necessary to create your project (for this sample, **CICS** and **File**). Icons representing the selected external systems are added to the Connectivity Map toolbar.

Populating the Connectivity Map

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

- 1 For this sample, drag the following components onto the Connectivity Map canvas as displayed in Figure 42:
 - ♦ **File External System (2)**
 - ♦ **Service** (A service is a container for Collaborations, Business Processes, eTL processes, and so forth)
 - ♦ **CICS External System**

Figure 42 Connectivity Map with Components



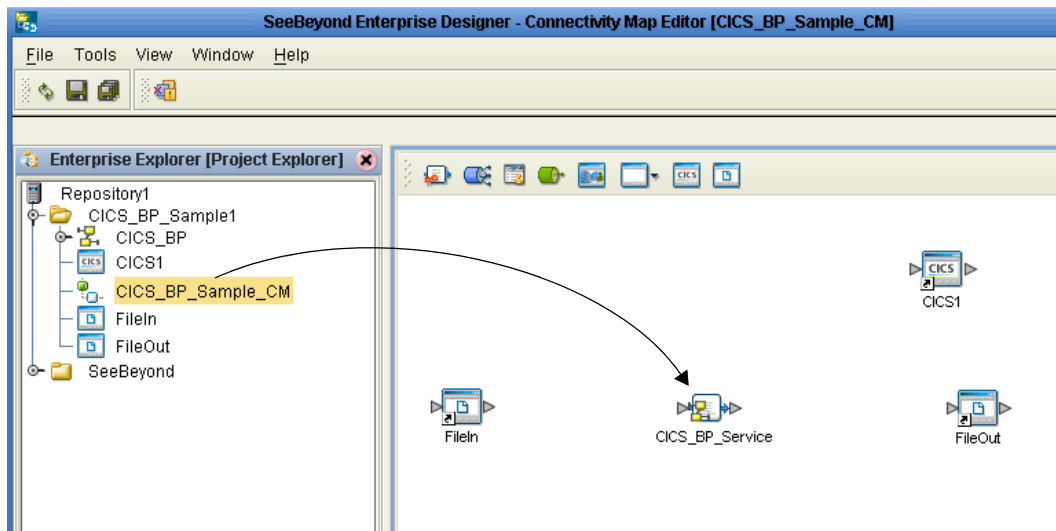
- 2 Rename the **File1** External Application to **FileIn** by right-clicking the object, selecting **Rename** from the shortcut menu, and typing in the new name.
- 3 Rename the **File2** External Application to **FileOut**.
- 4 Rename **Service1** to **CICS_BP_Service**.
- 5 Save your current changes to the Repository.

4.6.4. Binding the eWay Components

After the Business Processes have been completed, the components are associated and Bindings are created in the Connectivity Map.

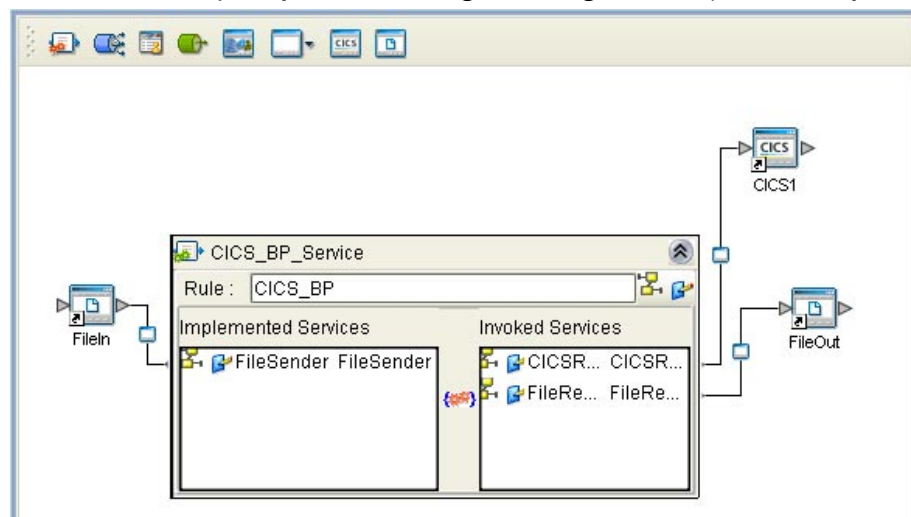
- 1 From the Project Explorer, double-click **CICS_BP_Sample_CM**. The Enterprise Designer canvas now displays the Connectivity Map.
- 2 Drag and drop the **CICS_BP** Business Process from the Project Explorer onto the Service (**CICS_BP_Service**). If the Business Process was successfully associated, the Service's icon changes to a Business Process icon (see Figure 43).

Figure 43 Connectivity Map - Binding the eWay Components



- 3 Double-click **CICS_BP_Service**. The **CICS_BP_Service** Binding dialog box appears using the **CICS_BP** Rule.
- 4 From the **CICS_BP_Service** Binding dialog box, drag **FileSender** (under Implemented Services) to the **FileIn** (File) External Application.
- 5 From the **CICS_BP_Service** Binding dialog box, drag **CICS_Receiver** (under Invoked Services) to the **CICS1** External Application.
- 6 From the **CICS_BP_Service** Binding dialog box, drag **FileReceiver** to the **FileOut** External Application (see Figure 44). Minimize the **CICS_BP_Service** Binding dialog box by clicking the chevrons in the upper-right corner.

Figure 44 Connectivity Map - Associating (Binding) the Project's Components



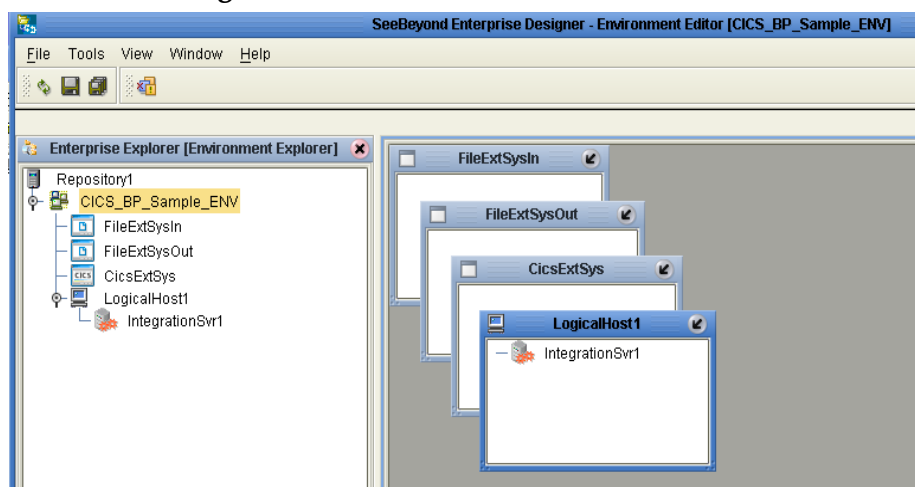
- 7 Minimize the **CICS_BP_Service** Binding dialog box by clicking the chevrons in the upper-right corner.
- 8 Save your current changes to the Repository.

4.6.5. Creating an Environment

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

- 1 From the Enterprise Designer's Enterprise Explorer, click the **Environment Explorer** tab.
- 2 Right-click the Repository and select **New Environment**. A new Environment is added to the Environment Explorer tree.
- 3 Rename the new Environment to **CICS_BP_Sample_ENV**.
- 4 Right-click **CICS_BP_Sample_ENV** and select **New CICS External System**. Name the External System **CicsExtSys**. Click OK. **CicsExtSys** is added to the Environment Editor.
- 5 Right-click **CICS_BP_Sample_ENV** and select **New File External System**. Name the External System **FileExtSysIn** and select **Inbound File eWay** as the **External System Type**. Click OK. **FileExtSysIn** is added to the Environment Editor.
- 6 Right-click **CICS_BP_Sample_ENV** and select **New File External System**. Name this External System **FileExtSysOut** and select Outbound File eWay as the **External System Type**. **FileExtSysOut** is added to the Environment Editor.
- 7 Right-click **CICS_BP_Sample_ENV** and select **New Logical Host**. The **LogicalHost1** box is added to the Environment and **LogicalHost1** is added to the Environment Editor tree.
- 8 From the Environment Explorer tree, right-click **LogicalHost1** and select **New SeeBeyond Integration Server**. A new Integration Server (**IntegrationSvr1**) is added to the Environment Explorer tree under **LogicalHost1**.
- 9 Save changes to the repository. The Environment Explorer and Environment Editor now appear as displayed in Figure 45.

Figure 45 Environment Editor



4.6.6. Configuring the eWay Properties

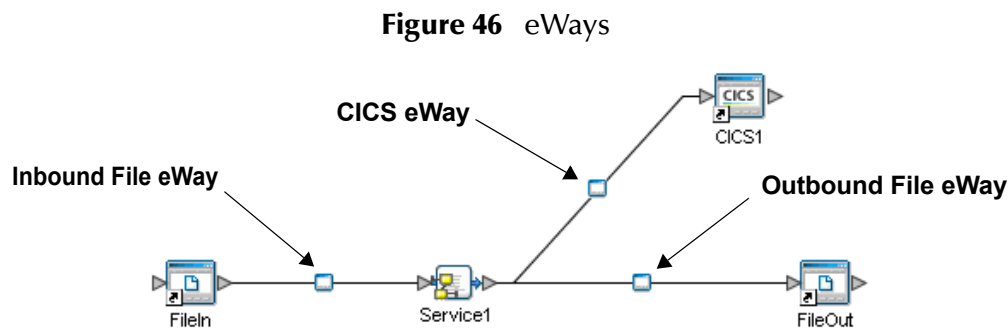
The CICS_BP_Sample project uses three eWays, each represented in the Connectivity Map as a node between an External Application and a Business Process. eWays facilitate communication and movement of data between the external applications and the eGate system.

The File eWay properties are configured from the Connectivity Map. The CICS eWay configuration parameters are set from both the Project Explorer’s Connectivity Map and the Environment Explorer tree.

To configure the eWays do the following:

Configuring the File eWay Properties

- 1 Double-click the inbound **File eWay** (see Figure 46), select **Inbound File eWay** in the Templates dialog box and click **OK**.



- 2 The **Properties Sheet** opens to the inbound File eWay properties. Modify the properties for your system, including the settings for the inbound File eWay in Table 3, and click **OK**.

Table 3 Inbound File eWay Settings

| Inbound eWay Connection Parameters | |
|------------------------------------|------------|
| Directory | C:/temp |
| Input file name | Input*.txt |

- 3 In the same way, modify the outbound File eWay properties for your system, including the settings in Table 4, and click **OK**.

Table 4 Outbound File eWay Settings

| Outbound eWay Connection Parameters | |
|-------------------------------------|-------------|
| Directory | C:/temp |
| Output file name | output%.dat |

Configuring the CICS eWay Properties

The CICS eWay properties must be set in both the Project Explorer’s Connectivity Map and Environment Explorer. For more information on the CICS eWay properties and the Properties Sheet, see [Creating and Configuring the CICS eWay](#) on page 43 or see the *eGate Integrator User’s Guide*.

Modifying the CICS eWay Connectivity Map Properties

- 1 From the **Connectivity Map**, double-click the **CICS eWay**. The **Parameters** dialog box opens to the CICS eWay project configuration properties.
- 2 Modify the CICS eWay Connectivity Map properties for your system, including the settings in Table 5, and click **OK**.

Table 5 CICS eWay Connectivity Map Properties

| CICS eWay (Connectivity Map) Properties | |
|--|---|
| Connector Set as directed, otherwise use the default settings | |
| Class | com.stc.eways.cics.CicsClientConnector |
| Connection Transport | SeeBeyond CICS Listener |
| Type | CICS |
| CICS Client Set as directed, otherwise use the default settings. | |
| COMMAREA Length | 1000 |
| CICS Program | <i>CICS program to be run on server</i> |

Modifying the CICS eWay Environment Explorer Properties

- 1 From the **Environment Explorer** tree, right-click the CICS External System (**CicsExtSys** in this sample), and select **Properties** from the shortcut menu. The Properties Sheet appears.
- 2 Modify the CICS eWay environment properties for your system, including the settings in Table 6, and click **OK**.

Table 6 CICS Environment Explorer eWay Properties

| CICS eWay Environment Properties | |
|--|--|
| SeeBeyond CICS Listener Settings Set as directed, otherwise use the default settings | |
| Host | <i>Host Name</i> |
| Port | <i>TCP/IP Port Number</i> |
| CICS Client Settings Set as directed, otherwise use the default settings. | |
| CICS Password | <i>Password of CICS user</i> |
| CICS UserId | <i>This is the Id of the CICS user</i> |

Note: CICS eWay properties may also be set from the Collaboration Editor (Java) or eInsight Business Rules Designer, in which case they will override the corresponding properties in the eWay's configuration file. Any properties that are not overridden retain their saved settings.

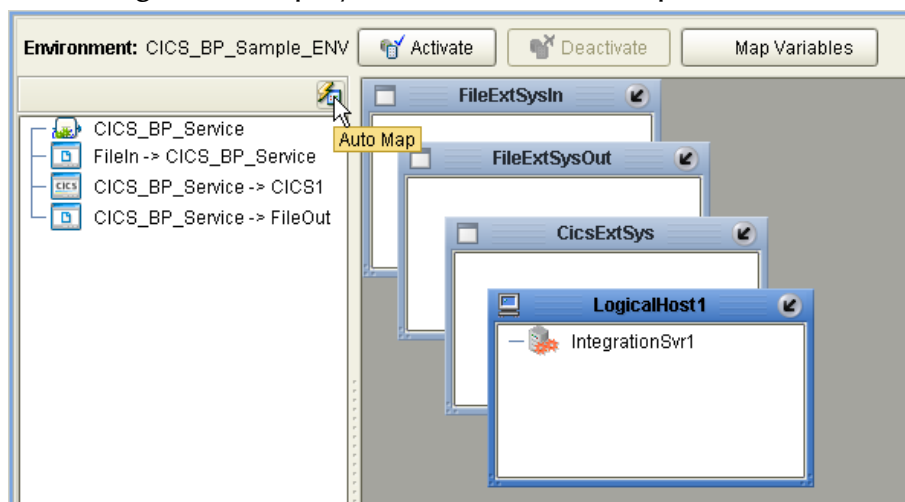
4.6.7 Creating and Activating the Deployment Profile

Deployment Profiles are specific instances of a project in a particular Environment. A Deployment Profile contains information about the assignment of Services and message destinations to integration and message servers (JMS IQ Managers). It also contains version information for all versionable objects in the project. Deployment profiles are created using the Deployment Editor.

To create the CICS_BP_Sample Deployment Profile do the following:

- 1 From the Enterprise Explorer's Project Explorer, right-click the project (CICS_BP_Sample) and select **New > Deployment Profile** from the shortcut menu.
- 2 Enter a name for the Deployment Profile (for this sample CICS_BP_Sample_DP). Make sure that the selected Environment is CICS_BP_Sample_ENV. Click OK. The Deployment Profile Editor appears.
- 3 Click the **Auto Map** icon as displayed in Figure 47. The projects components are automatically mapped to their system window as seen in Figure 48 on page 77. If any of the project components are not mapped automatically after Auto Map is used, those component can be mapped manually by following the appropriate steps below. Once all components are mapped, proceed to step 9.

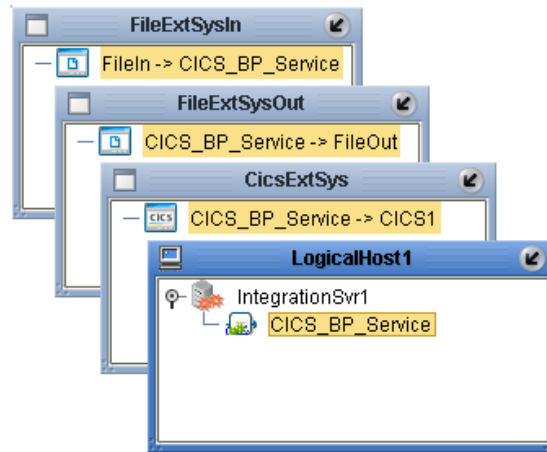
Figure 47 Deployment Profile - Auto Map



- 4 From the left pane of the Deployment Editor, drag the **FileIn -> CICS_BP_Service** (external application) object to the **FileExtSysIn** window.
- 5 Drag the **CICS_BP_Service -> FileOut** (external application) object to the **FileExtSysOut** window.
- 6 Drag the **CICS_BP_Service -> CICS1** (external application) to the **CicsExtSys** window.

- 7 Drag the **CICS_BP_Service** object to **IntegrationSvr1** in the **Logicalhost1** window (see Figure 48).

Figure 48 Deployment Profile



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

4.6.8. Running the Project

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

- 1 From the Enterprise Manager Downloads tab, download **Logical Host - for win32**.
- 2 Extract the file to the **ican50\logicalhost1\logicalhost** directory. You must specify the **logicalhost1** directory for it to be created.
- 3 Navigate to **C:\ican50\logicalhost1\logicalhost\bootstrap\config** directory and open the **logical-host.properties** file using Notepad™.
- 4 Enter the following information in the appropriate fields:
 - ♦ Logical Host root directory: **ican50\logicalhost1\logicalhost**
 - ♦ Repository URL: **http://localhost:port number/repository name**
 - ♦ Repository user name and password: **Your user name and password**
 - ♦ Logical Host Environment name: **CICS_BP_Sample_Env**
 - ♦ Logical Host name: **logicalhost1**

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

- 5 Run the **bootstrap.bat** file in the **eGate50\logicalhost1\logicalhost\bootstrap\bin** directory.
- 6 Copy the sample input data file to the input directory.

Implementing a CICS eWay Project

This chapter provides an introduction to the CICS eWay components and information on how these components are created and implemented in an eGate project. It is assumed that the reader understands the basics of creating a project using the SeeBeyond Enterprise Designer. For more information on creating an eGate project see the *eGate Tutorial* and the *eGate Integrator User's Guide*.

What's in This Chapter

- [CICS eWay Components](#) on page 78
- [CICS eWay Sample Projects](#) on page 79
- [The CICS_JCE_Sample Project Overview](#) on page 80
- [The CICS_COBOL_Sample Project](#) on page 97

5.1 CICS eWay Components

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

CICS eWay Properties File

The Properties file for the CICS eWay contains the parameters that are used to connect with a specific external system. These parameters are set using the **Parameters** dialog box. For more information about the CICS eWay Configuration File and the **Parameters** dialog box see [Creating and Configuring the CICS eWay](#) on page 43.

CICS_eWay.CICSClient OTD

The CICS_eWay.CICSClient OTD is provided with the eWay and contains methods and attributes used to create the Business Rules that invoke the CICS program.

Cobol Copybook Wizard

The Cobol Copybook Wizard allows the eGate Integrator to convert Cobol Copybook files into eGate Object Type Definition (OTD) files.

5.2 CICS eWay Sample Projects

Two sample projects are defined in the following sections.

- **CICS_JCE_Sample:** a simple project that demonstrates the CICS eWay receiving data from a file, passing the data to the CICS External System, and writing the output from the CICS System to another file.
- **CICS_COBOL_Sample:** demonstrates a simple CICS project that uses the Cobol Copybook Converter.

5.3 Importing a Sample Project

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

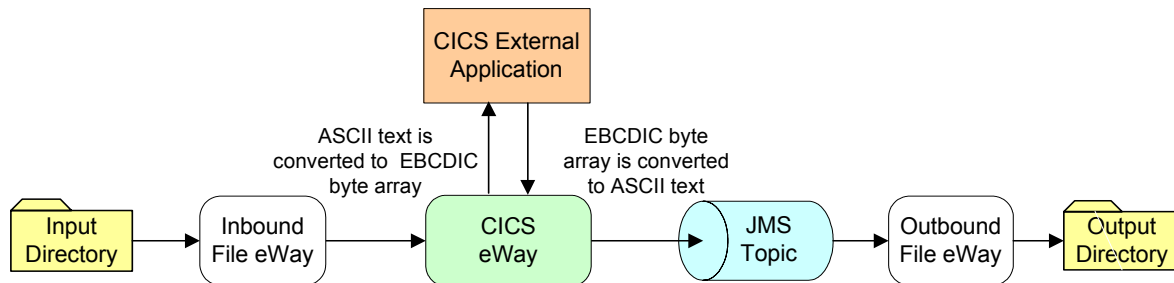
- 1 The sample files are uploaded with the eWay's documentation .sar file and downloaded from the Enterprise Manager's Documentation tab. The **CICS_eWay_Sample.zip** file contains the various sample project zip files. Extract the samples from the Enterprise Manager to a local file.
- 2 Save all unsaved work before importing a project.
- 3 From the Enterprise Designer's Project Explorer pane, right-click the Repository and select **Import** from the shortcut menu. The **Import Manager** appears.
- 4 Browse to the directory that contains the sample project zip file. Select the sample file (for this sample, **CICSjms_JCE_Sample.zip**) and click **Import**. After the sample project is successfully imported, click **Close**.
- 5 Before an imported sample project can be run you must do the following:
 - ♦ Create an **Environment** (see [Creating an Environment](#) on page 90)
 - ♦ Configure the eWays for your specific system (see [Configuring the eWays](#) on page 92)
 - ♦ Create a **Deployment Profile** (see [Creating and Activating the Deployment Profile](#) on page 94)

5.4 The CICS_JCE_Sample Project Overview

The CICS eWay project, **CICS_JCE_Sample**, demonstrates the following:

- Input data (ASCII text) is read from an external directory by the Inbound File eWay.
- The ASCII text data is converted to EBCDIC (byte array) using cp037 encoding, and published by the CICS eWay to the CICS external system.
- The CICS eWay subscribes to the CICS external system, receives EBCDIC input data, and converts it to String ASCII data using cp037 encoding. The data is then published to the JMS Topic.
- The outbound File eWay subscribes to the JMS Topic and publishes the data to an external directory.

Figure 49 CICS_JCE_Sample Project



5.5 Creating the CICS_JCE_Sample Project

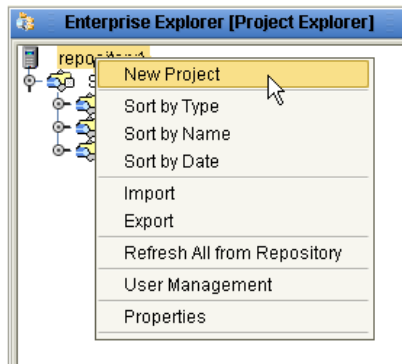
The following pages provide step by step directions for manually creating the sample eWay components.

5.5.1. Creating a Project

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

- 1 Start the Enterprise Designer.
- 2 From the Enterprise Explorer's Project Explorer tab, right-click your Repository on the Project Explorer tree and select **New Project** (see [Figure 50 on page 81](#)). A new project (Project1) appears on the Project Explorer tree.

Figure 50 Enterprise Explorer - New Project



- 3 Click twice on **Project1** and rename the project (for this sample, **CICS_JCE_Sample**).

5.5.2 Creating a Connectivity Map

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

- 1 From the Project Explorer tree, right-click the new **CICS_JCE_Sample** project and select **New > Connectivity Map** from the shortcut menu.
- 2 The New Connectivity Map appears and a node for the Connectivity Map is added under the project on the Project Explorer tree labeled **CMap1**. Rename the Connectivity Map to **CICSjms_JCE_Sample_CM**.

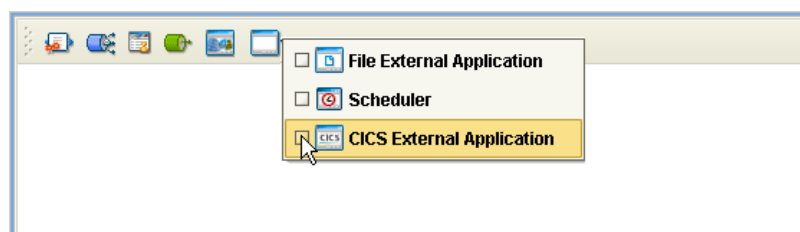
The icons in the toolbar represent the available components used to populate the Connectivity Map canvas.

Selecting the External Applications

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

In a Connectivity Map, the eWays are associated with External Systems. For example, to establish a connection to CICS, you must first select CICS as an External System to use in your Connectivity Map (see Figure 51).

Figure 51 Connectivity Map - External Applications



- 1 Click the **External Application** icon on the Connectivity Map toolbar,

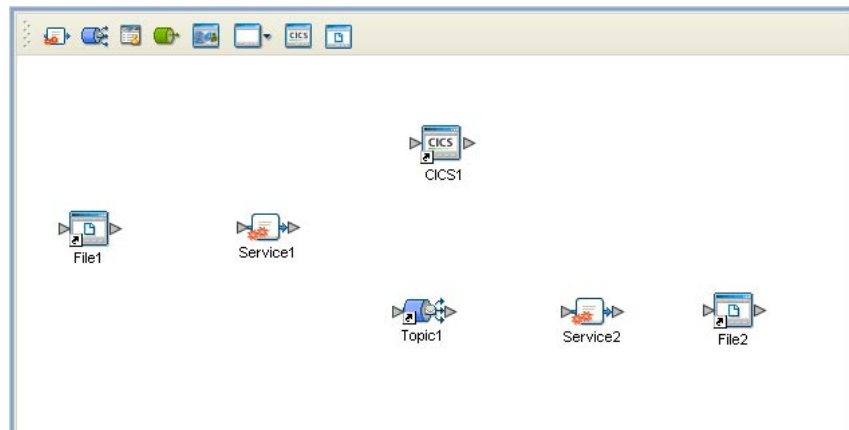
- 2 Select the external systems needed for your project (for this sample, the **CICS** and **File** External Applications). Icons representing the selected external systems are added to the Connectivity Map toolbar.

Populating the Connectivity Map

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

- 1 For this sample, drag the following components onto the Connectivity Map canvas as displayed in Figure 52:
 - ♦ **File External System (2)**
 - ♦ **Service (2)** A service is a container for Collaborations, Business Processes, eTL processes, and so forth.
 - ♦ **Topic**
 - ♦ **CICS External System**

Figure 52 Connectivity Map with Components



- 2 Rename the objects by right-clicking the object, selecting **Rename** from the shortcut menu, and typing in the new name. Change the names as follows:
 - ♦ **File1** to **FileIn**
 - ♦ **Service1** to **CICSjmsCollab**
 - ♦ **Service2** to **JMS2FileCollab**
 - ♦ **File2** to **FileOut**
- 3 From the Enterprise Designer toolbar, click the **Save All** icon to save your current changes to the Repository.

5.5.3. Creating the Collaboration Definitions

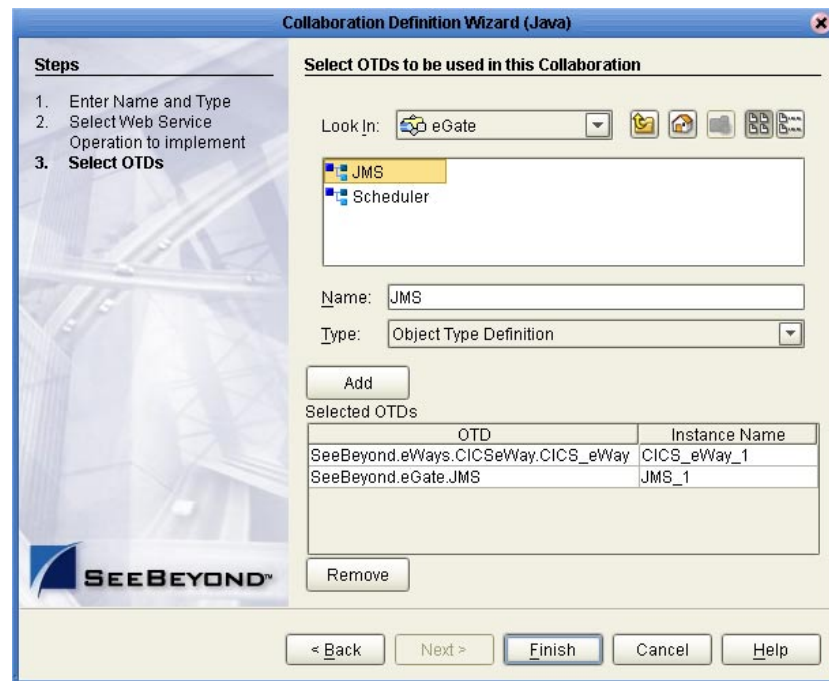
The next step in the sample is to create two Collaborations using the Collaboration Definition Wizard (Java). Once the Collaboration Definitions have been created, the Business Rules of the Collaborations are written using the Collaboration Editor.

Creating the CICSjms_Collab Collaboration

The CICSjms_Collab Collaboration defines transactions from the inbound file application to the CICS eWay and the CICS application, and back to the JMS Topic.

- 1 From the Project Explorer, right-click the sample project and select **New > Collaboration Definition (Java)** from the shortcut menu. The **Collaboration Definition Wizard (Java)** appears.
- 2 Enter a Collaboration Definition name (for this sample CICSjms_Collab) and click **Next**.
- 3 For Step 2 or the wizard, from the Web Services Interfaces selection window, double-click **SeeBeyond > eWays > File > FileClient > receive**. The File Name field now displays **receive**. Click **Next**.
- 4 For Step 3 of the wizard, from the Select OTDs selection window, double-click **SeeBeyond > eWays > CICSeWay > CICS_eWay**. The **CICS_eWay** OTD is added to the Selected OTDs field.
- 5 Click the **Up One Level** button to return to the Repository. Double-click **SeeBeyond > eGate > JMS**. The **Selected OTDs** field now lists the **JMS OTD** (see Figure 53).

Figure 53 Collaboration Definition Wizard (Java) - Select Web Service Interface



- 6 Click **Finish**. The Collaboration Editor with the new CICSjms_Collab Collaboration appears in the right pane of the Enterprise Designer.

Creating the JMS2File_Collab Collaboration (Java)

The JMS2File_Collab Collaboration defines transactions made from the JMS Topic to the Outbound File eWay.

- 1 From the Project Explorer, right-click the sample project and select **New > Collaboration Definition (Java)** from the shortcut menu. The **Collaboration**

Definition Wizard (Java) appears.

- 2 Enter a Collaboration Definition name (**JMS2File_Collab**) and click **Next**.
- 3 For Step 2 of the wizard, from the Web Services Interfaces selection window, double-click **SeeBeyond > eGate > JMS > receive**. The File Name field now displays **receive**. Click **Next**.
- 4 For Step 3, **Select OTDs**, from the Select OTDs selection window, double-click **SeeBeyond > eWays > File > FileClient**. The Selected OTDs field now lists the **FileClient** OTD.
- 5 Click **Finish**. The **JMS2File_Collab** Collaboration appears.

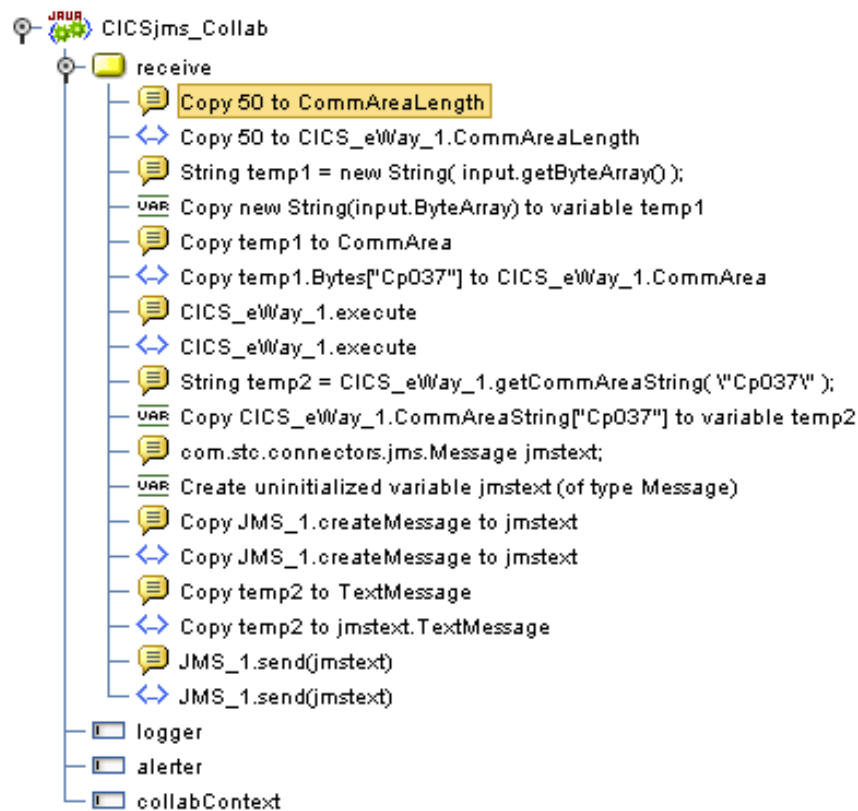
5.5.4. Using the Collaboration Editor (Java)

The next step in the sample is to create the Business Rules of the Collaboration using the Collaboration Editor.

Creating the CICSjms_Collab Business Rules

The CICSjms_Collab Collaboration contains the Business Rule displayed in Figure 54.

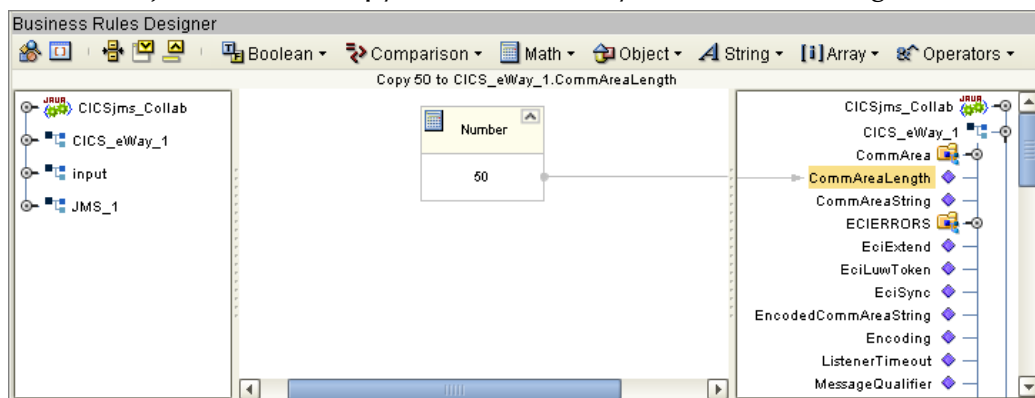
Figure 54 CICSjms_Collab Business Rules



To create the CICSjms_Collab Collaboration Business Rules do the following:

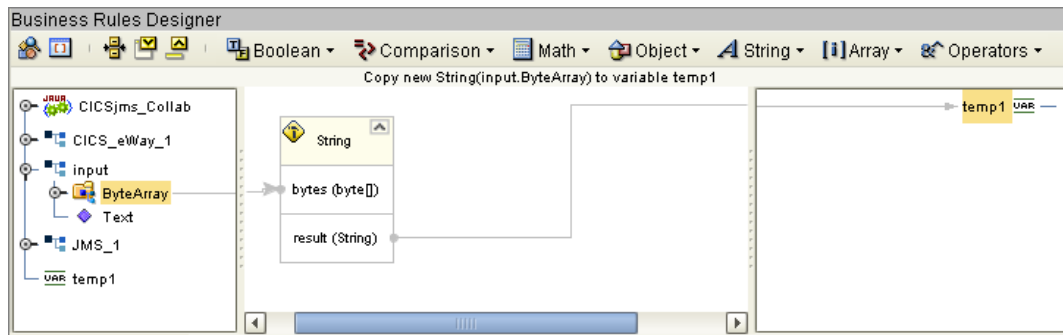
- 1 From the Project Explorer tree, double-click **CICSjms_Collab** to open the Collaboration Editor (Java) to the CICSjms_Collab Collaboration.
- 2 The imported sample includes comments with the Business Rules. To create comments for the Business Rules, click the comment icon on the Business Rules toolbar. The **Enter a Comment** dialog box appears. Enter the comment and click **OK**. The comment is placed on the Business Rules tree under the last selected item. Once the Comment is created, it can be moved by clicking the comment and dragging it up or down the Business Rules tree to a new location.
- 3 To create the **Copy 50 to CICS_eWay_1.CommAreaLength** rule do the following:
 - A From the Business Rules Designer Math menu, select **Literal Number**. The **Number** method box appears. Enter **50** as the value.
 - B Map the **50** output node of the Number method box to **CommAreaLength** under **CICS_eWay_1** in the right pane of the Collaboration Editor. To do this, click on the **50** output node in the Number method box and drag the cursor to **CommAreaLength** under **CICS_eWay_1** in the right pane of the Business Rules Designer (see Figure 55).

Figure 55 CICSjms_Collab - Copy 50 to CICS_eWay_1.CommAreaLength Rule



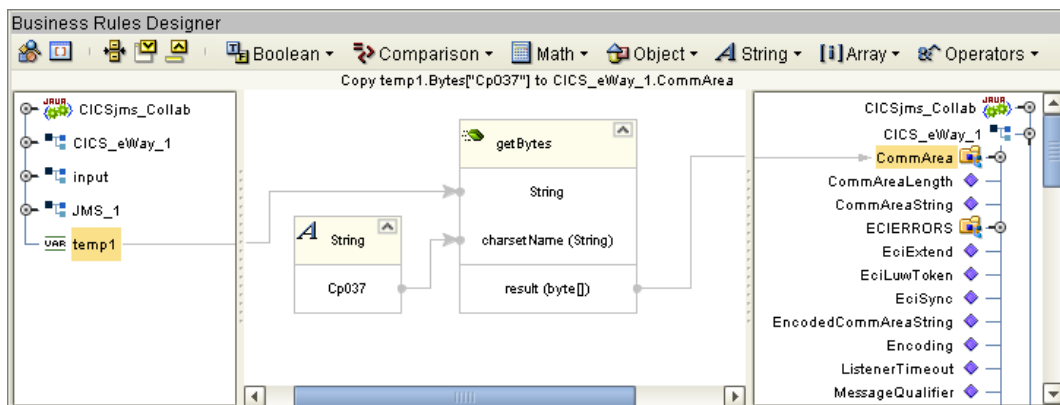
- 4 To create the (variable) **Copy new String(input.ByteArray) to variable temp1** rule do the following:
 - A From the Business Rules toolbar, click the **Local Variable** icon. The **Create Variable** dialog box appears.
 - B From the Create Variable dialog box, enter **temp1** as the Name, and for Type, select **Class** and click the ellipsis (...) button. The **Class Browser** dialog box appears.
 - C From the **Class Browser** dialog box, select **String** under All Classes, and **String(byte[] bytes)** under String. Click **Select**. From the **Create Variable** dialog box, click **OK**.
 - D Map **ByteArray**, under input in the left pane of the Business Rules Designer, to the **bytes (byte[])** input node of the String method box.
 - E Map the **result (String)** output node of the String method box, to **temp1** (variable) in the right pane of the Business Rules Designer (see Figure 56).

Figure 56 Copy new String(input.ByteArray) to variable temp1 Rule



- 5 To create the **Copy temp1.Bytes["Cp037"] to CICS_eWay_1.CommArea** rule do the following:
 - A From the Business Rules toolbar, click the **rule** icon to add a new rule.
 - B From the left pane of the Business Rules Designer, right click **temp1** and select **Select method to call** from the shortcut menu.
 - C From the method selection box, click **getBytes(java.lang.String charsetName)**. The **getBytes** method box appears.
 - D From the Business Rules Designer's String menu, select **Literal String**. The **String** method box appears. Enter **cp037** as the Value.
 - E Map the **cp037** output node of the Stringl method box to the **charsetName (String)** input node of the **getBytes** method box.
 - F Map the **result (byte[])** output node of the **getBytes** method box to **CommArea** under **CICS_eWay_1** in the right pane of the Business Rules Designer. The Collaboration Editor (see Figure 57).

Figure 57 Copy temp1.Bytes["Cp037"] to CICS_eWay_1.CommArea Rule

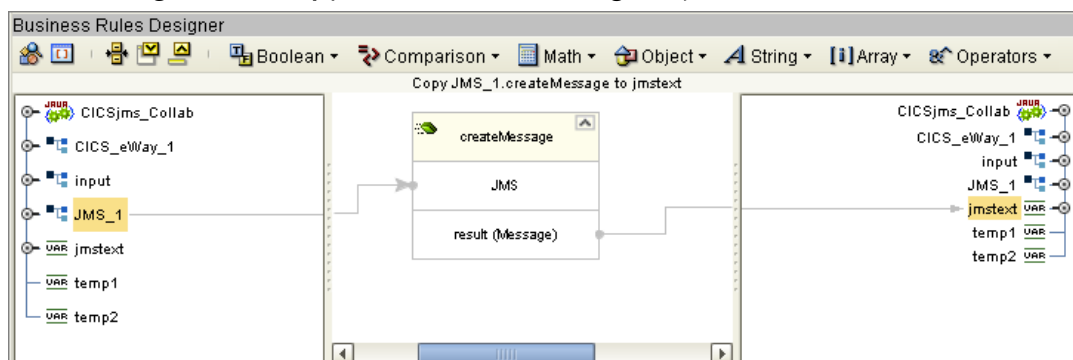


- 6 To create the **CICS_eWay_1.execute** rule do the following:
 - A From the Business Rules toolbar, click the **rule** icon to add a new rule.
 - B From the left pane of the Business Rules Designer, right-click **CICS_eWay_1** and select **Select method to call** from the shortcut menu.

- C From the method selection box, select `execute()`. The `execute` method box appears.
- 7 To create the (variable) **Copy CICS_eWay_1.CommAreaString["Cp037"] to variable temp2** rule do the following:
 - A From the Business Rules toolbar, click the **rule** icon to add a new rule.
 - B From the Collaboration Editor toolbar, click the Advance mode icon. The Java Source Editor appears as the bottom pane of the Collaboration Editor.
 - C From the Java Source Editor, replace *//New rule* with the following code:

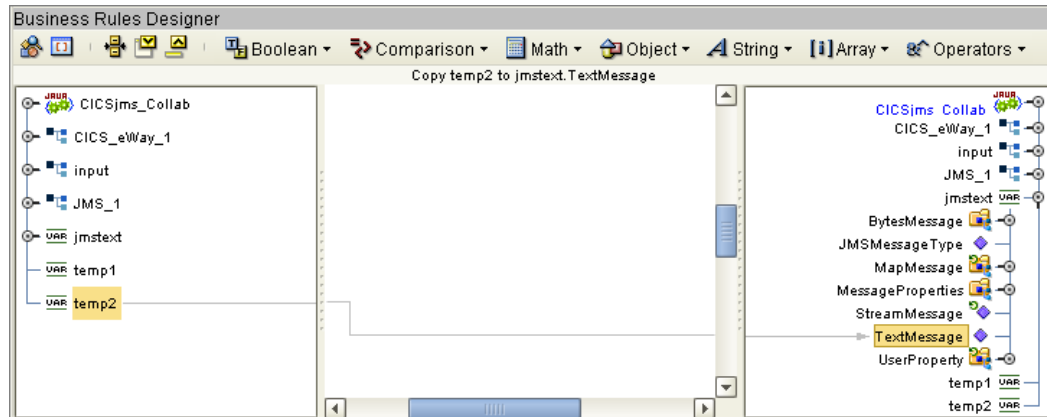

```
String temp2 = CICS_eWay_1.getCommAreaString( "cp037" );
```
 - D From the Java Source Editor toolbar, click the **Commit Changes** icon. A new object named temp2 is added to the left pane of the Business Rules Designer.
- 8 To create the (variable) **Create uninitialized variable jmstext (of type Message);** rule do the following:
 - A From the Business Rules toolbar, click on the **local variable** icon. The **Create Variable** dialog box appears.
 - B From the Create Variable dialog box, enter jmstext as the **Name**, select **class**, and click the *ellipsis* (...) button. The **Class Browser** dialog box appears.
 - C From the Class Browser dialog box, select **Message** under All Classes and click **Select**. From the Create Variable dialog box, click **OK**.
 - D From the Collaboration Editor toolbar, click the **Refresh Collaboration** icon. A new object named **jmstext** is added to the left pane of the Business Rules Designer.
- 9 To create the **Copy JMS_1.createMessage to jmstext** rule do the following:
 - A From the Business Rules toolbar, click the **rule** icon to add a new rule.
 - B From the left pane of the Business Rules Designer, right click **JMS_1** and select **Select method to call** from the shortcut menu.
 - C From the method selection box, select `createMessage()`. The `createMessage` method box appears.
 - D Map the **result (Message)** output node of the `createMessage` method box to **jmstext** in the right pane of the Business Rules Designer (see Figure 58).

Figure 58 Copy JMS_1.createMessage to jmstext Rule



- 10 To create the **Copy temp2 to jmstext.TextMessage** rule do the following:
 - A From the Business Rules toolbar, click the **rule** icon to add a new rule.
 - B Map **temp2** in the left pane of the Business Rules Designer, to **TextMessage** under jmstext in the right pane of the Business Rules Designer.

Figure 59 Business Rules Designer



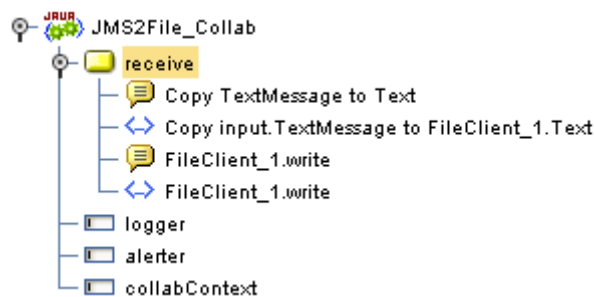
- 11 From the editor's toolbar, click **Validate** to check the Collaboration for errors.
- 12 Save your current changes to the Repository.

Note: See the *eGate Integrator User's Guide* for more information on editing Collaborations.

Creating the JMS2File_Collab Collaboration Business Rules

Be careful to open all nodes specified in the directions to connect to the correct item. The CICSjms_Collab Collaboration contains the Business Rule displayed in Figure 60

Figure 60 JMS2File_Collab Business Rules



To create the **JMS2File_Collab** Collaboration Business Rules do the following:

- 1 From the Project Explorer tree, double-click **JMS2File_Collab** to open the Collaboration Editor to the **JMS2File_Collab** Collaboration.
- 2 To create comments for the Business Rules, from the Business Rules toolbar, click the **comment** icon. The **Enter a Comment** dialog box appears. Enter the comment and click **OK**. The comment is placed on the Business Rules tree under the last

selected item. Once the Comment is created, it can be moved by clicking the comment and dragging it up or down the Business Rules tree to a new location.

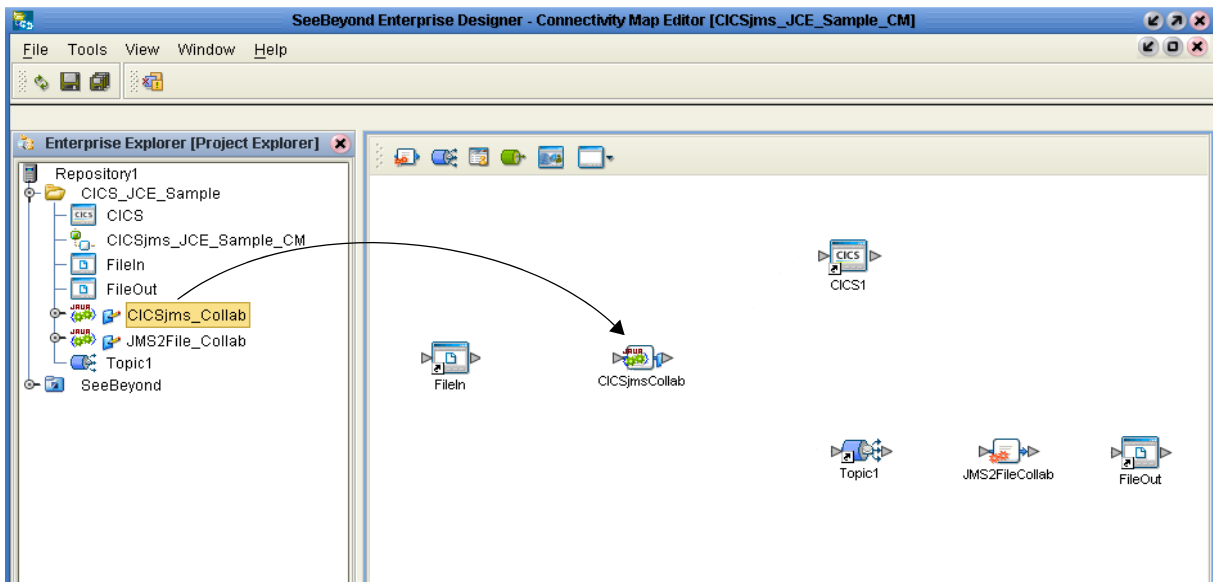
- 3 To create the **Copy input.TextMessage to FileClient_1.Text** rule do the following:
 - A Select the **New rule** in the Business Rules pane.
 - B Map **TextMessage** under **input** in the left pane of the Business Rules Designer to **Text** under **FileClient_1** in the right pane.
- 4 To create the **FileClient_1.write** rule do the following:
 - A From the Business Rules toolbar click the **rule** icon to add a new rule.
 - B From the left pane of the Business Rules Designer, right-click **FileClient_1** and click **Select method to call** from the shortcut menu. The method selection box appears.
 - C Select the **write** method. The **write** method box appears.
- 5 From the editor's toolbar, click **Validate** to check the Collaboration for errors.
- 6 Save your current changes to the Repository.

5.5.5. Binding the eWay Components

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

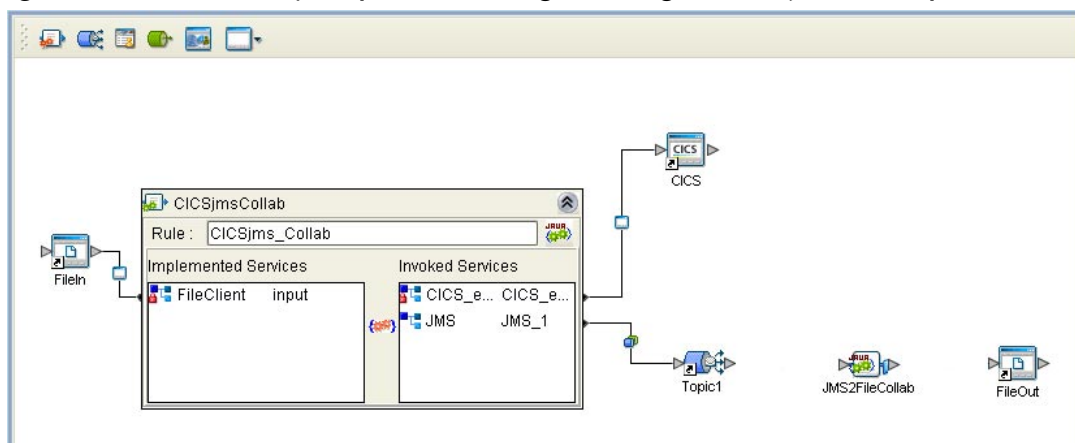
- 1 From the Project Explorer, double-click the Connectivity Map **CICSjms_JCE_Sample_CM**. The Enterprise Designer canvas now displays the **CICSjms_JCE_Sample_CM** Connectivity Map.
- 2 Drag and drop the **CICSjms_Collab** Collaboration from the Project Explorer to the first Service (**CICSjmsCollab**). If the Collaboration was successfully associated, the Service's "gears" icon changes from red to green (see Figure 61).

Figure 61 Connectivity Map - Binding the Components



- 3 Drag and drop **JMS2File_Collab** from the Project Explorer to the second Service (**JMS2FileCollab**).
- 4 From the Connectivity Map canvas, double-click **CICSjmsCollab**. The **CICSjmsCollab** Binding dialog box appears with the **CICSjms_Collab** Rule.
- 5 From the **CICSjmsCollab** Binding dialog box, map **FileClient Input** (under Implemented Services) to the inbound **FileIn** External Application.
- 6 From the **CICSjmsCollab** Binding dialog box, map **CICS_eWay** (under Invoked Services) to the **CICS1** External Application.
- 7 From the **CICSjmsCollab** Binding dialog box, drag **JMS_1** (under Invoked Services) to **Topic1** (see [Figure 62 on page 90](#)).

Figure 62 Connectivity Map - Associating (Binding) the Project's Components



- 8 Minimize the **CICSjmsCollab** Binding dialog box by clicking the chevrons in the upper-right corner.
- 9 From the Connectivity Map, double-click **JMS2FileCollab**. The **JMS2FileCollab** Binding dialog box appears with the **JMS2File_Collab** Rule.
- 10 From the **JMS2FileCollab** Binding dialog box, drag **JMS input** (under Implemented Services) to **Topic1**.
- 11 From the **JMS2FileCollab** Binding dialog box, drag **FileClient_1** (under Invoked Services) to the outbound **FileOut** Application.
- 12 Minimize the Collaboration Binding dialog box, and save your current changes to the Repository

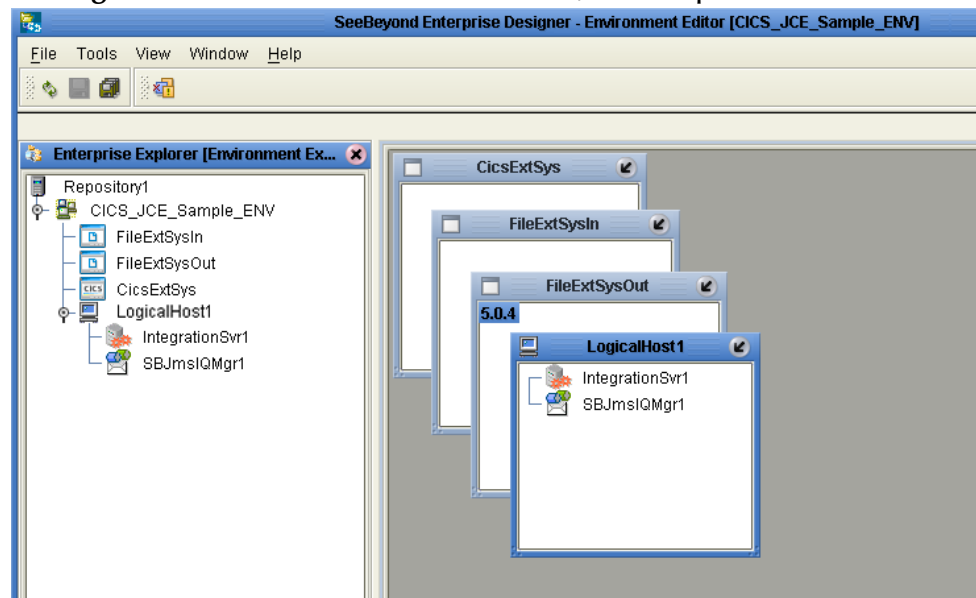
5.5.6. Creating an Environment

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

- 1 From the Enterprise Designer's Enterprise Explorer, click the **Environment Explorer** tab.

- 2 Right-click the Repository and select **New Environment**. A new Environment is added to the Environment Explorer tree.
- 3 Rename the new Environment to **CICS_JCE_Sample_Env**.
- 4 Right-click **CICS_JCE_Sample_Env** and select **New CICS External System**. Name the External System **CicsExtSys**. Click **OK**. **CicsExtSys** is added to the Environment Editor.
- 5 Right-click **CICS_JCE_Sample_Env** and select **New File External System**. Name the External System **FileExtSysIn** and select **Inbound File eWay** as the **External System Type**. Click **OK**. **FileExtSysIn** is added to the Environment Editor.
- 6 Right-click **CICS_JCE_Sample_Env** and select **New File External System**. Name this External System **FileExtSysOut** and select **Outbound File eWay** as the **External System Type**. **FileExtSysOut** is added to the Environment Editor.
- 7 Right-click **CICS_JCE_Sample_Env** and select **New Logical Host**. The **LogicalHost1** box is added to the Environment and **LogicalHost1** is added to the Environment Editor tree.
- 8 Right-click **LogicalHost1** and select **New SeeBeyond Integration Server**. A new Integration Server (**IntegrationSvr1**) is added to the Environment Explorer tree under **LogicalHost1**.
- 9 Right-click **LogicalHost1** and select **New SeeBeyond JMS IQManager**. A new JMS IQ Manager (**SBJmsIQMgr1**) is added to the Environment Explorer tree under **LogicalHost1**. The Environment Explorer and Environment Editor appear as displayed in Figure 63.

Figure 63 Environment Editor - CICS_JCE_Sample_Env

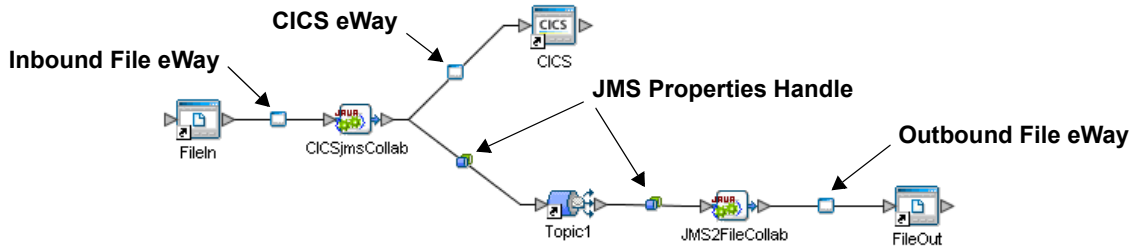


- 10 Save your current changes to the Repository.

5.5.7. Configuring the eWays

The CICS_JCE_Sample project uses three eWays, each represented in the Connectivity Map as a node between an External Application and a Service (see [Figure 64 on page 92](#)). eWays facilitate communication and movement of data between the external applications and the eGate system.

Figure 64 Configuring the eWays and JMS Properties



The File eWay configuration parameters are configured from the Connectivity Map. The CICS eWay configuration parameters are set from both the Project Explorer or Connectivity Map and the Environment Explorer. To configure the eWays do the following:

Configuring the File eWays

- 1 Double-click the **Inbound File eWay**, select **Inbound File eWay** in the Templates dialog box and click **OK**.
- 2 The **Parameters** dialog box opens to the Inbound File eWay configuration. Modify the configuration for your system, including the settings for the **Inbound File eWay** in Table 7, and click **OK**. The configuration settings are saved for the eWay.

Table 7 Inbound File eWay Settings

| Inbound eWay Connection Parameters | |
|------------------------------------|------------|
| Directory | C:/temp |
| Input file name | Input*.txt |

- 3 In the same way, modify the **Outbound File eWay** configuration for your system, including the settings in Table 8, and click **OK**.

Table 8 Outbound File eWay Settings

| Outbound eWay Connection Parameters | |
|-------------------------------------|-------------|
| Directory | C:/temp |
| Output file name | output%.dat |

Configuring the CICS eWay

The CICS eWay configuration parameters must be set in both the Project Explorer and Environment Explorer. For more information on the CICS eWay configuration parameters and the **Parameters** dialog box, see [Creating and Configuring the CICS eWay](#) on page 43 or see the *eGate Integrator User's Guide*.

For the CICS_JCE_Sample project, do the following:

Modifying the CICS eWay (Project Explorer) Configuration Parameters

- 1 From the **Connectivity Map**, double-click the **CICS eWay**. The **Parameters** dialog box opens to the CICS eWay project configuration properties.
- 2 Modify the CICS eWay (Project Explorer) configuration for your system, including the settings in Table 9, and click **OK**.

Table 9 CICS Project Explorer eWay Settings

| CICS eWay Project-Configuration Parameters | |
|--|---|
| Connector Set as directed, otherwise use the default settings | |
| Class | com.stc.eways.cics.CicsClientConnector |
| Connection Transport | SeeBeyond CICS Listener |
| Type | CICS |
| CICS Client Set as directed, otherwise use the default settings. | |
| COMMAREA Length | 1000 |
| CICS Program | <i>CICS program to be run on server</i> |

Modifying the CICS eWay (Environment Explorer) Configuration Parameters

- 1 From the **Environment Explorer** tree, right-click the CICS External System (**CicsExtSys** in this sample), and select **Properties**. The **Parameters** dialog box opens to the CICS eWay environment-configuration properties.
- 2 Modify the CICS eWay environment-configuration for your system, including the settings in Table 10, and click **OK**.

Table 10 CICS Environment Explorer eWay Settings

| CICS eWay Environment-Configuration Parameters | |
|--|--|
| SeeBeyond CICS Listener Settings Set as directed, otherwise use the default settings | |
| Host | <i>Host Name</i> |
| Port | <i>TCP/IP Port Number</i> |
| CICS Client Settings Set as directed, otherwise use the default settings. | |
| CICS Password | <i>Password of CICS user</i> |
| CICS UserId | <i>This is the Id of the CICS user</i> |

Note: *CICS eWay properties may also be set from the Collaboration Editor (Java) or eInsight Business Rules Designer, in which case they will override the corresponding properties in the eWay's configuration file. Any properties that are not overridden retain their saved settings.*

5.5.8. Configuring the JMS Clients

When a Service is linked with a Queue (or Topic), the Enterprise Designer adds a JMS properties handle between the two (see [Figure 64 on page 92](#)). These JMS properties facilitate the transfer and, if necessary, translation of data within the eGate system. JMS configuration properties must be configured in both the Connectivity Map and the Environment Explorer.

For more information on JMS configuration parameters see the *eGate Integrator User's Guide*.

Modifying the JMS Connectivity Map Configuration Parameters

- 1 From the CICSjms_JCE_Sample_CM Connectivity Map, double-click the JMS properties handle located between the **CICSjmsCollab** and **Topic1**.
- 2 The **Properties sheet** appears, containing the default environment-configuration properties. Click **OK** to keep the default settings.
- 3 Double-click the JMS properties handle located between **Topic1** and the **JMS2FileCollab** Collaboration.
- 4 The **Parameters** dialog box appears, containing the default configuration parameters. Click **OK** to keep the default settings.

Modifying the JMS Environment Explorer Configuration Parameters

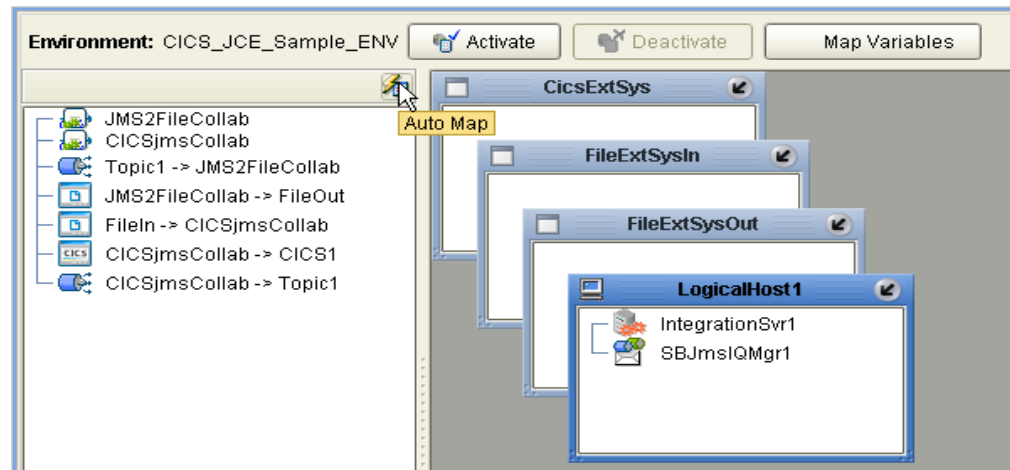
- 1 From the **Environment Explorer** tree, right-click the Message Server found under the Logical Host, and select **Properties**. The **Properties sheet** opens to the JMS Environment-configuration properties.
- 2 Modify the JMS Environment-configuration for your specific system and click **OK**.

5.5.9 Creating and Activating the Deployment Profile

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

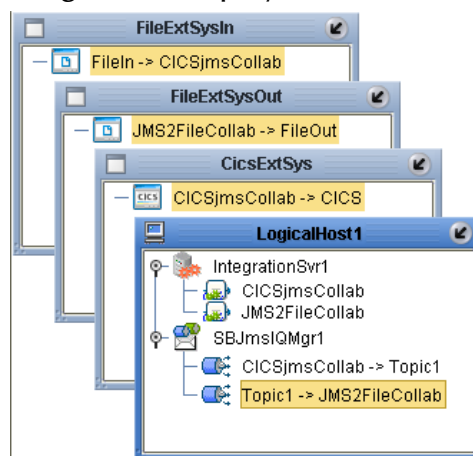
- 1 From the Enterprise Explorer's Project Explorer, right-click the project (**CICS_JCE_Sample**) and select **New > Deployment Profile**.
- 2 Enter a name for the Deployment Profile (for this sample **CICS_JCE_Sample_DP**). Make sure that the selected Environment is **CICS_JCE_Sample_Env**. Click **OK**.
- 3 Click the **Auto Map** icon as displayed in [Figure 65 on page 95](#). The projects components are automatically mapped to their system window as seen in [Figure 66 on page 95](#). If any of the project components are not mapped automatically after Auto Map is used, those component can be mapped manually by following the appropriate steps below. Once all components are mapped, proceed to step 9.

Figure 65 Deployment Profile - Auto Map



- 4 From the left pane of the Deployment Editor, drag **CICSjmsCollab -> Topic1** (External Application) to the **CicsExtSys** window.
- 5 From the left pane of the Deployment Editor, drag the **FileIn -> CICSjmsCollab** (External Application) to the **FileExtSysIn** window.
- 6 From the left pane of the Deployment Editor, drag the **JMS2FileCollab -> FileOut** (External Application) to the **FileExtSysOut** window.
- 7 Drag the following to **IntegrationSvr1** in the **LogicalHost1** window:
 - ◆ **CICSjmsCollab**
 - ◆ **JMS2FileCollab**
- 8 Drag the following two Topic components to **MessageSvr1** in the **LogicalHost1** window as displayed in Figure 66:
 - ◆ **CICSjmsCollab -> Topic1**
 - ◆ **Topic1 -> JMS2FileCollab**

Figure 66 Deployment Profile



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

5.5.10. Running the Project

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

- 1 From the Enterprise Manager Downloads tab, download **Logical Host - for win32**.
- 2 Extract the file to the **ican50\logicalhost2\logicalhost** directory. You must specify the **logicalhost2** directory for it to be created.
- 3 Navigate to **C:\ican50\logicalhost2\logicalhost\bootstrap\config** directory and open the **logical-host.properties** file using Notepad™.
- 4 Enter the following information in the appropriate fields:
 - ♦ Logical Host root directory: **ican50\logicalhost2\logicalhost**
 - ♦ Repository URL: **http://localhost:port number/repository name**
 - ♦ Repository user name and password: *Your user name and password*
 - ♦ Logical Host Environment name: **CICS_JCE_Sample_ENV**
 - ♦ Logical Host name: **logicalhost2**

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

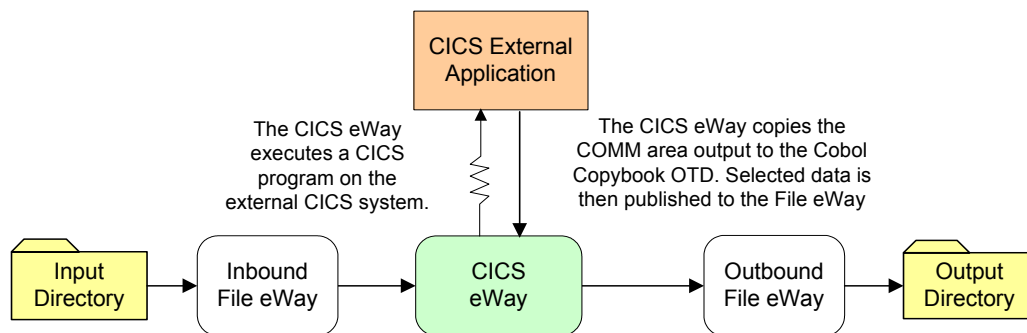
- 5 Run the **bootstrap.bat** file in the **ican50\logicalhost2\logicalhost\bootstrap\bin** directory.
- 6 Copy the sample input data file to the input directory.

5.6 The CICS_COBOL_Sample Project

The CICS eWay project, **CICS_Cobol_Sample**, demonstrates the following:

- The Inbound File eWay subscribes to an external directory, receives the data, and publishes the data to the CICS eWay.
- The CICS eWay, triggered by the data from the File eWay, does the following:
 - ♦ executes a CICS program on the external CICS system (mainframe)
 - ♦ reads the program's output (the contents of its COMM area)
 - ♦ copies the output into a Cobol Copybook OTD that is generated from the same data area description
 - ♦ OTD accessors selectively extract the value of select fields
- This data is published to the outbound File eWay, which publishes the data to an external directory.

Figure 67 CICS_Cobol_Sample Project



The **CICS_Cobol_Sample** is available to import from the Installation CD-ROM package (see [Importing a Sample Project](#) on page 79 for more information). The following pages review how the CICS_Cobol_Sample project is created.

5.6.1. Creating a Project

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

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

5.6.2 Creating a Connectivity Map

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

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

Selecting the External Applications

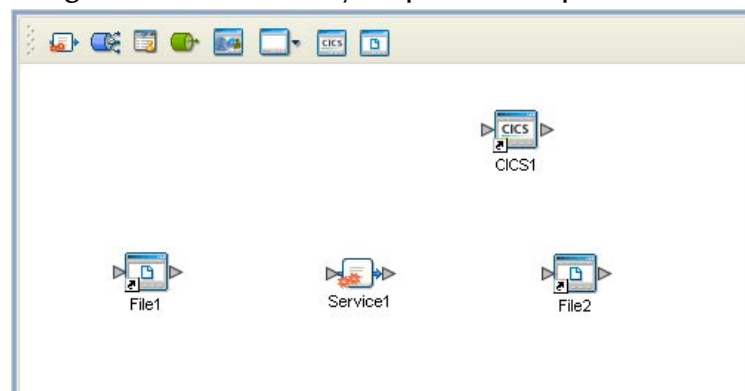
- 1 Click the **External Application** icon on the Connectivity Map toolbar,
- 2 Select the external systems needed for your project (for this sample, **CICS** and **File**). Icons representing the selected external systems are added to the Connectivity Map toolbar.

Populating the Connectivity Map

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

- 1 For the **CICS_COBOL_Sample** project, drag the following components onto the Connectivity Map canvas as displayed in Figure 68:
 - ♦ **File** External System (2)
 - ♦ **Service**
 - ♦ **CICS** External System

Figure 68 Connectivity Map with Components



- 2 Rename the objects by right-clicking the object, selecting **Rename** from the shortcut menu, and typing in the new name. Change the names as follows:
 - ♦ **File1** to **FileIn**
 - ♦ **File2** to **FileOut**

- 3 Save your current changes to the Repository.

5.6.3 Creating an Object Type Definition

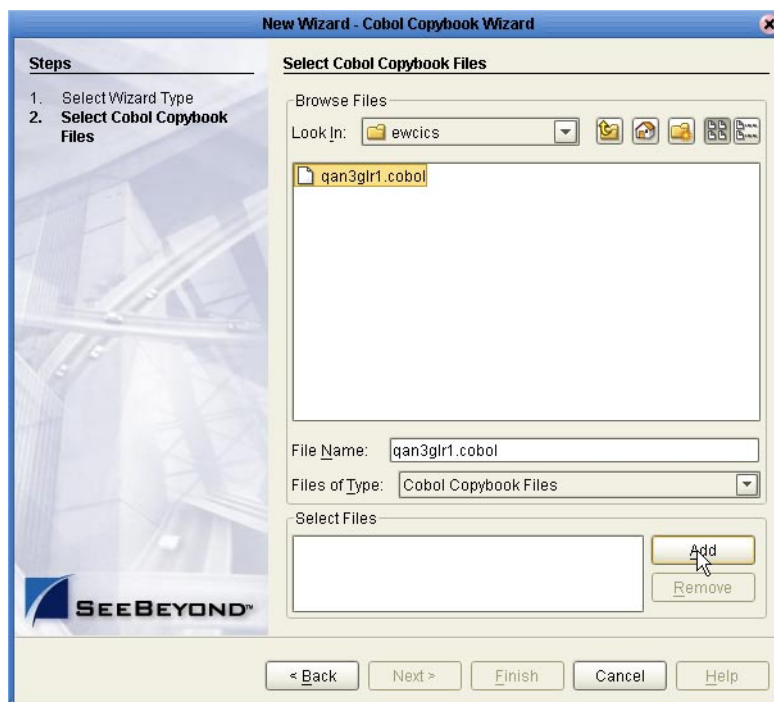
Object Type Definitions (OTDs) contain the data structures and rules that define objects. OTDs are used in the Enterprise Designer to create Collaboration Definitions for building data transformations. OTDs are created using the **Object Type Definition Wizard**.

Using the Cobol Copybook Wizard

The **CICS_COBOL_Sample** project uses an OTD that is created using the **Cobol Copybook Wizard**. A sample Cobol data file, **qan3glr1.cobol** is available from the downloaded CICS eWay Samples folder. To create the Cobol Copybook OTD using the sample Cobol file do the following:

- 1 Copy the sample Cobol file, **qan3glr1.cobol**, from the installation CD-ROM to a temporary file.
- 2 From the Project Explorer, right-click the **CICS_COBOL_Sample** project, and select **New > Object Type Definition** from the shortcut menu. The OTD Wizard Selection dialog box appears. Select the **Cobol Copybook Wizard** and click **Next**.
- 3 From the **Select Cobol Copybook Files** page of the Wizard, navigate to the directory that contains the sample Cobol file. The sample file is now visible in the Available Files field (see Figure 69).

Figure 69 Cobol Copybook Wizard - Select Cobol Files



- 4 Select the sample Cobol file and click the **Add** button. The file is added to the **Selected Files** field. Click **Finish**.
- 5 A **Message** dialog box appears if the OTD is created successfully, and the OTD is added to the Project Explorer tree as **qan3glr1**.

5.6.4. Creating a Collaboration Definition (Java)

The next step is to create the CICS_COBOL_Collab Collaboration using the Collaboration Definition Wizard (Java). Once the Collaboration Definition has been created, the Business Rules of the Collaboration can be written using the Collaboration Editor (Java).

Creating the CICS_COBOL_Colab Collaboration

- 1 From the Project Explorer, right-click the **CICS_COBOL_Sample** project and select **New > Collaboration Definition (Java)** from the shortcut menu. The **Collaboration Definition Wizard (Java)** appears.
- 2 Enter a Collaboration Definition name (for this sample **CICS_COBOL_Collab**) and click **Next**.
- 3 For Step 2 of the Wizard, from the Web Services Interfaces selection window, double-click **SeeBeyond > eWays > File > FileClient > receive**. The File Name field now displays **receive**. Click **Next**.
- 4 For Step 3 of the Wizard, from the Select OTDs selection window, double-click **SeeBeyond > eWays > CICS_eWay > CICS_eWay**. The **CICS_eWay** OTD is added to the Selected OTDs field.
- 5 Click the **Up One Level** button to return to the Repository directory. Double-click **SeeBeyond > eWays > File > FileClient**. The **FileClient** OTD is added to the Selected OTDs field.
- 6 Click the **Up One Level** button to return to the Repository directory. Double-click **CICS_COBOL_Sample > qan3glr1**. The **qan3glr1** OTD is added to the Selected OTDs field.
- 7 Click **Finish**. The Collaboration Editor opens to the new Collaboration in the right pane of the Enterprise Designer.

5.6.5. The CICS_COBOL_Collab Business Rules

The the **CICS_COBOL_Sample** project uses one Collaboration created in the previous section, **CICS_COBOL_Collab**.

CICS_COBOL_Collab Business Rules

The CICS_COBOL_Collab Collaboration contains the Business Rule displayed in **Figure 70 on page 101**. These rules are created using the Collaboration Editor (Java).

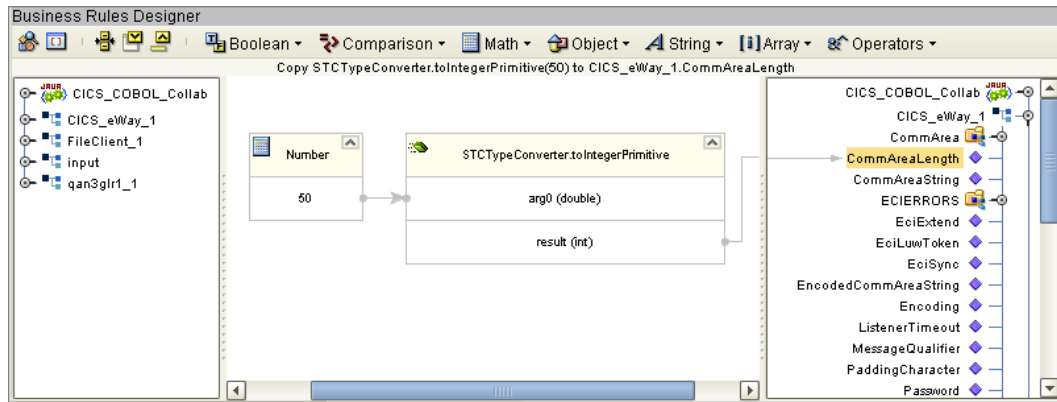
Figure 70 CICS_COBOL_Collab Business Rules



To create the CICS_COBOL_Collab Business Rules do the following:

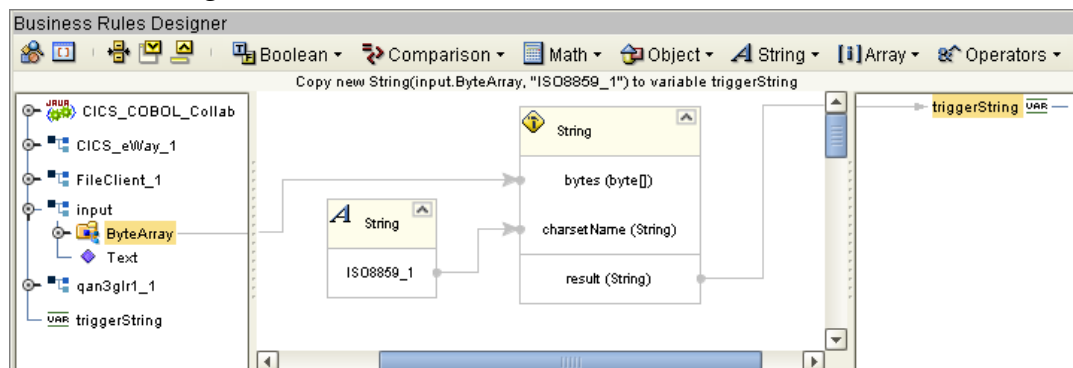
- 1 From the Project Explorer tree, double-click CICS_COBOL_Collab to open the Collaboration Editor to the Collaboration.
- 2 To create the **Copy util.STCTypeConverter.toIntegerPrimitive(50) to CICS_eWay_1.CommAreaLength** rule do the following:
 - A From the Business Rules Designer toolbar, click the **Class Browser** icon. The **Class Browser** dialog box appears.
 - B From the Class Browser dialog box, select **STCTypeConverter** under **All Classes**, select **toIntegerPrimitive(double arg0)** under **STCTypeConverter**, and click **Select**. The STCTypeConverter.toIntegerPrimitive method box appears.
 - C From the Business Rules Designer's Math menu, select **Literal Number**. The Number dialog box appears. Enter **50** as the value.
 - D Map the **50** output node of the Number method box to the **arg0 (double)** input node of the STCTypeConverter.toIntegerPrimitive method box. Do this by clicking on the **50** output node and dragging the cursor to the **arg0 (double)** input node.
 - E Map the result (int) output node of the STCTypeConverter.toIntegerPrimitive method box to **CommAreaLength** under **CICS_eWay_1** in the right pane of the Business Rules Designer (see [Figure 71 on page 102](#)).

Figure 71 Collaboration Editor - Business Rules



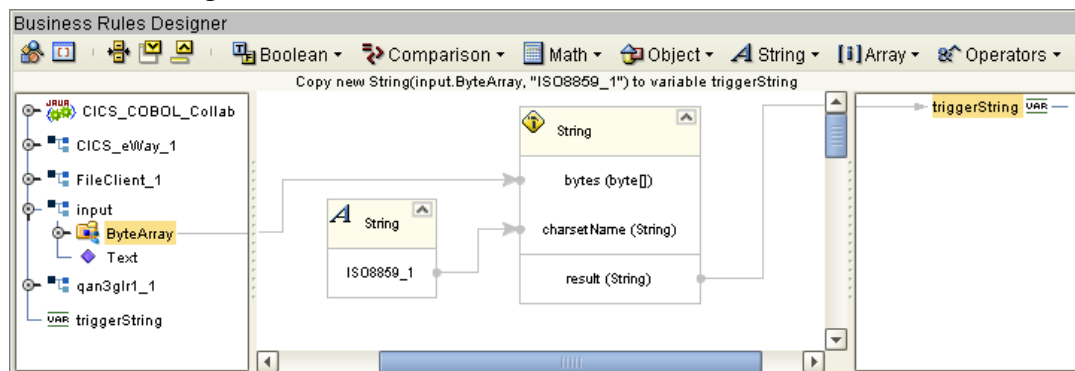
- 3 To create the (variable) **Copy new String(input.ByteArray, "ISO8859_1") to variable triggerString** rule do the following:
 - A From the Business Rules toolbar, click the **Local Variable** icon. The **Create Variable** dialog box appears. Enter **triggerString** as the Variable Name, and for Type, select **Class** and click the ellipsis (...) button. The **Class Browser** dialog box appears.
 - B From the **Class Browser** dialog box, select **String** under All Classes and click **Select**. From the **Create Variable** dialog box, click **OK**.
 - C From the Business Rules Designer's String menu, select **Literal String**. The **String (literal)** dialog box appears. Enter **ISO8859_1** as the value.
 - D From the Business Rules Designer toolbar, click the **Class Browser** icon. The **Class Browser** dialog box appears. Select **String** under All Classes, select **String(byte[] bytes,String charsetName)** under String, and click **Select**. The **String (constructor)** method box appears.
 - E Map **ByteArray** under **input** in the left pane of the Business Rules Designer, to the **bytes (byte[])** input node of the **String (constructor)** method box.
 - F Map the **ISO8859_1** output node of the **String (literal)** method box, to the **charsetName (String)** input node of the **String (constructor)** method box.
 - G Map the **result (String)** output node of the **String (constructor)** method box, to **triggerString** in the right pane of the Business Rules Designer.

Figure 72 Collaboration Editor - Business Rules



- 4 To create the **Copy triggerString.Bytes["Cp037"] to CICS_eWay_1.CommArea** rule do the following:
 - A From the Business Rules toolbar, click the **rule** icon to add a new rule.
 - B From the left pane of the Business Rules Designer, right click **triggerString** and select **Select method to call** from the shortcut menu.
 - C From the method selection box, select **getBytes(String charsetName)**. The **getBytes** method box appears.
 - D From the Business Rules Designer's String menu, select **Literal String**. The **String** (literal) dialog box appears. Enter **cp037** as the Value.
 - E Map the **cp037** output node of the String method box to the **charsetName (String)** input node of the **getBytes** method box.
 - F Map the **result (byte[])** output node of the **getBytes** method box to **CommArea** under **CICS_eWay_1** in the right pane of the Business Rules Designer.
- 5 To create the **CICS_eWay_1.getServerList(1)** Business Rule do the following:
 - A From the Business Rules toolbar, click the **rule** icon to add a new rule.
 - B From the left pane of the Business Rules Designer, right click **CICS_eWay_1** and select **Select method to call** from the shortcut menu.
 - C From the method selection box, select **getServerList(int arg0)**. The **getServerList** method box appears.
 - D From the Business Rules Designer's Math menu, select **Literal Number**. The **Number** (literal) dialog box appears. Enter **1** as the Value.
 - E Map the **1** output node of the Number method box to the **arg0 (int)** input node of the **getServerList** method box (see Figure 73).

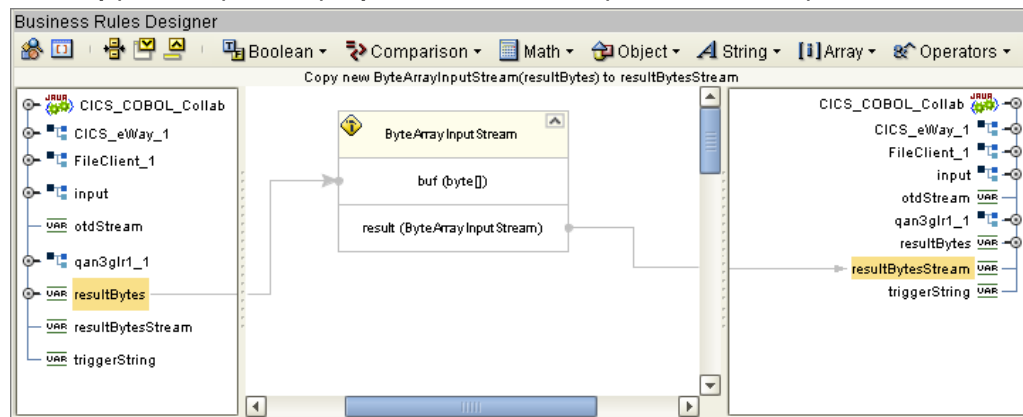
Figure 73 Collaboration Editor - Business Rules



- 6 To create the **CICS_eWay_1.execute** Business Rule do the following:
 - A From the Business Rules toolbar, click the **rule** icon to add a new rule.
 - B From the left pane of the Business Rules Designer, right click **CICS_eWay_1** and select **Select method to call** from the shortcut menu.
 - C From the method selection box, select **execute()**. The **execute** method box appears on the Business Rules Designer canvas.

- 7 To create the variable **Create uninitialized variable resultBytes (of type byte array)** rule do the following:
 - A From the Business Rules toolbar, click the **Local Variable** icon. The **Create Variable** dialog box appears. Enter **resultByte** as the Name. For Type, select **Primitive** and select **byte** as the value. Select the **Is array**, option and click **OK**.
- 8 To create the variable **Create uninitialized variable resultBytesStream (of type ByteArrayInputStream)** rule do the following:
 - A From the Business Rules toolbar, click the **Local Variable** icon. The **Create Variable** dialog box appears. Enter **resultBytesStream** as the Name. For Type, select **Class** and click the elipsis (...) button. The **Class Browser** dialog box appears.
 - B From the **Class Browser** dialog box, select **ByteArrayInputStream** under All Classes and click **Select**.
 - C From the **Create Variable** dialog box, click **OK**.
- 9 To create the variable **Create uninitialized variable otdStream (of type OtdInputStream)** rule do the following:
 - A From the Business Rules toolbar, click the **Local Variable** icon. The **Create Variable** dialog box appears. Enter **otdStream** as the Name. For Type, select **Class** and click the elipsis (...) button. The **Class Browser** dialog box appears.
 - B From the **Class Browser** dialog box, select **OtdInputStream** under All Classes and click **Select**.
 - C From the **Create Variable** dialog box, click **OK**.
- 10 To create the **Copy CICS_eWay_1.CommArea to resultBytes** rule do the following:
 - A From the Business Rules toolbar, click the **rule** icon to add a new rule.
 - B Map **CommArea** under **CICS_eWay_1** in the left pane of the Business Rules Designer, to **resultBytes** in the right pane of the Business Rules Designer.
- 11 To create the **Copy new ByteArrayInputStream(resultBytes) to resultBytesStream** rule do the following:
 - A From the Business Rules toolbar, click the **rule** icon to add a new rule.
 - B From the Business Rules Designer toolbar, click the **Class Browser** icon. The **Class Browser** dialog box appears.
 - C From the **Class Browser** dialog box, select **ByteArrayInputStream** under All Classes, select **ByteArrayInputStream(byte[] buf)** under **ByteArrayInputStream** and click **Select**. . Click **OK**. The **ByteArrayInputStream** method box is appears.
 - D Map **resultBytes** in the left pane of the Business Rules Designer, to the **buf (Byte[])** input node of the **java.io.ByteArrayInputStream** method box.
 - E Map the **result (ByteArrayInputStream)** output node of the **ByteArrayInputStream** method box, to the **resultBytesStream** node in the right pane of the Business Rules Designer (see Figure 74).

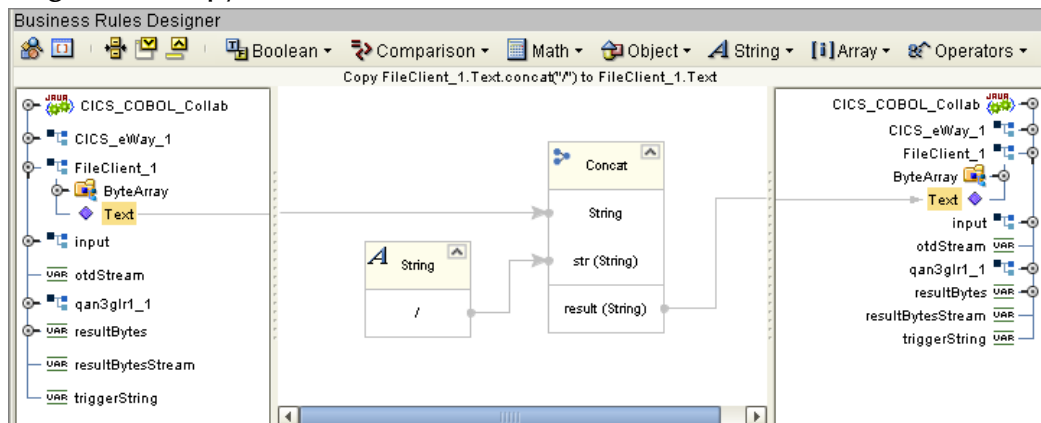
Figure 74 Copy new ByteArrayInputStream(resultBytes) to resultBytesStream rule



- 12 To create the **Copy new SimpleOtdInputStreamImpl(resultBytesStream) to otdStream** rule do the following:
 - A From the Business Rules toolbar, click the **rule** icon to add a new rule.
 - B From the Business Rules Designer toolbar, click the **Class Browser** icon. The **Class Browser** dialog box appears.
 - C From the **Class Browser** dialog box, select **SimpleOtdInputStreamImpl** under All Classes, and click OK. The **SimpleOtdInputStreamImpl** method box is appears on the Business Rules Designer canvas.
 - D Map **resultBytesStream** in the left pane of the Business Rules Designer, to the **arg0 (int)** input node of the **SimpleOtdInputStreamImpl** method box.
 - E Map the **result (ByteArrayInputStream)** output node of the **ByteArrayInputStream** method box, to the **resultBytesStream** node in the right pane of the Business Rules Designer
- 13 To create the **qan3glr1_1.unmarshal(otdStream)** rule do the following:
 - A From the Business Rules toolbar, click the **rule** icon to add a new rule.
 - B From the left pane of the Business Rules Designer, right click **qan3glr1_1** and select **Select method to call** from the shortcut menu.
 - C From the method selection box, select **unmarshal(com.stc.otd.runtime.OtdInputStream in)**. The **unmarshal** method box appears.
 - D Map **otdStream** from the left pane of the Business Rules Designer to the **in (OtdInputStream)** input node of the **unmarshal** method box.
- 14 To create the **Copy qan3glr1_1.DFHCOMMAREA.CA_OUT_NAME to FileClient_1.Text** rule do the following:
 - A From the Business Rules toolbar, click the **rule** icon to add a new rule.
 - B Map **CA-OUT-NAME** under **qan3glr1_1 > DFHCOMMAREA** in the left pane of the Business Rules Designer to **Text** under **FileClient_1** in the right pane of the Business Rules Designer.

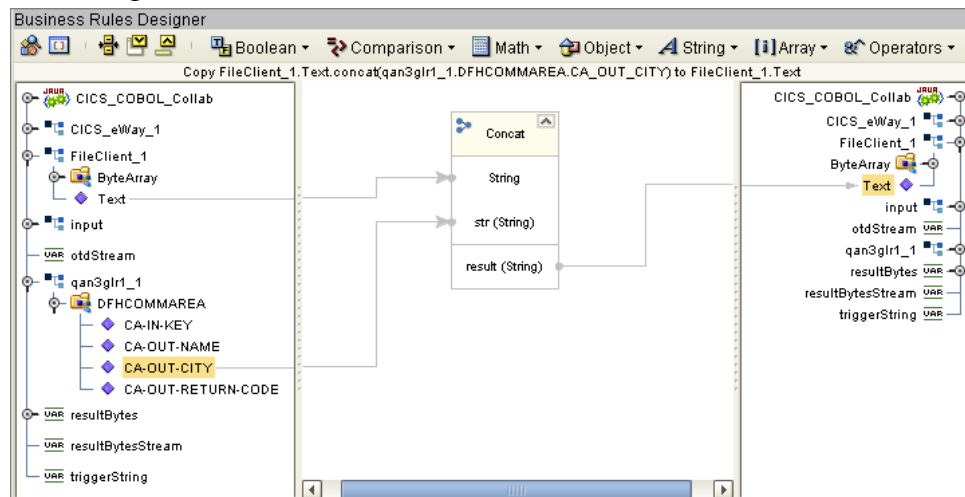
- 15 To create the **Copy FileClient_1.Text.concat("/") to FileClient_1.Text** rule do the following:
 - A From the Business Rules toolbar, click the **rule** icon to add a new rule.
 - B From the Business Rules Designer's String menu, select **Literal String**. The **String** method box appears. Enter / as the Value.
 - C From the Business Rules Designer String menu, select **concat**. The **concat** method box appears.
 - D Map the **Text** under **FileClient_1** in the left pane of the Business Rules Designer, to the **String** input node of the **concat** method box.
 - E Map the / output node of the **Literal** method box to the **str (String)** input node of the **concat** method box.
 - F Map the **result (String)** output node of the **concat** method box to **Text** under **FileClient_1** in the right pane of the Business Rules Designer (see Figure 75).

Figure 75 Copy FileClient_1.Text.concat("/") to FileClient_1.Text rule



- 16 To create the **Copy FileClient_1.Text.concat(qan3glr1_1.DFHCOMMAREA.CA_OUT_CITY) to FileClient_1.Text** rule do the following:
 - A From the Business Rules toolbar, click the **rule** icon to add a new rule.
 - B From the Business Rules Designer String menu, select **concat**. The **concat** method box appears.
 - C Map the **Text** under **FileClient_1** in the left pane of the Business Rules Designer, to the **String** input node of the **concat** method box.
 - D Map **CA-OUT-CITY** under **qan3glr1_1 > DFHCOMMAREA** in the left pane of the Business Rules Designer to the **str (String)** input node of the **concat** method box.
 - E Map the **result (String)** output node of the **concat** method box to **Text** under **FileClient_1** in the right pane of the Business Rules Designer (see [Figure 76 on page 107](#)).

Figure 76 Collaboration Editor - Business Rules



- 17 To create the **Copy FileClient_1.Text.concat("/") to FileClient_1.Text** rule do the following:
 - A From the Business Rules toolbar, click the **rule** icon to add a new rule.
 - B From the Business Rules Designer's String menu, select **concat**. The **concat** dialog box appears.
 - C From the Business Rules Designer's String menu, select **Literal String**. The **String** dialog box appears. Enter / as the Value.
 - D Map the / output node of the String method box to the **str (String)** input node of the **concat** method box
 - E Map the **Text** under **FileClient_1** in the left pane of the Business Rules Designer, to the String input node of the **concat** method box.
 - F Map the **result (String)** output node of the **concat** method box, to **Text** under **FileClient_1** in the right pane of the Business Rules Designer.
- 18 To create the **Copy FileClient_1.Text.concat(qan3glr1_1.DFHCOMMAREA.CA_OUT_RETURN_CODE) to FileClient_1.Text** rule do the following:
 - A From the Business Rules toolbar, click the **rule** icon to add a new rule.
 - B From the Business Rules Designer's String menu, Select **concat**. The **concat** method box appears.
 - C Map the **Text** under **FileClient_1** in the left pane of the Business Rules Designer, to the String input node of the **concat** method box.
 - D Map **CA-OUT-RETURN-CODE** under **qan3glr1_1 > DFHCOMMAREA** in the left pane of the Business Rules Designer to the **str (String)** input node of the **concat** method box.
 - E Map the **result (String)** output node of the **concat** method box to **Text** under **FileClient_1** in the right pane of the Business Rules Designer.
- 19 To create the **FileClient_1.write** Business Rule do the following:
 - A From the Business Rules toolbar, click the **rule** icon to add a new rule.

- B From the left pane of the Business Rules Designer, right click **FileClient_1** and select **Select method to call** from the shortcut menu.
 - C From the method selection box, select **write()**. The **write** method box appears on the Business Rules Designer canvas.
- 20 From the editor's toolbar, click **Validate** to check the Collaboration for errors.
- 21 Save your current changes to the Repository.

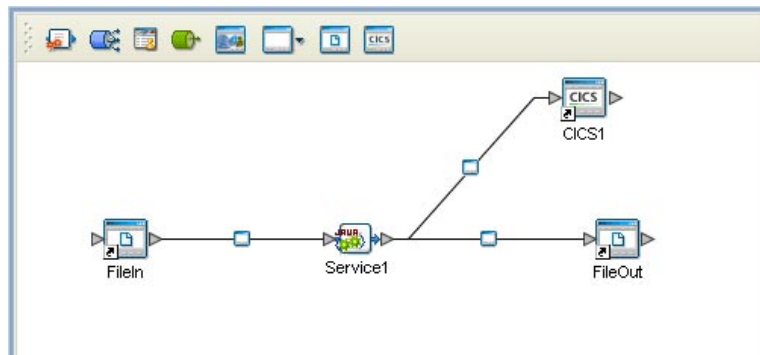
Note: See the *eGate Integrator User's Guide* for information on editing Collaborations.

5.6.6. Creating Collaboration Bindings

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

- 1 From the Project Explorer, double-click the Connectivity Map **CM_CICS_COBOL_Sample**. The Enterprise Designer canvas now displays the **CM_CICS_COBOL_Sample** Connectivity Map.
- 2 Drag and drop the **CICS_COBOL_Collab** Collaboration from the Project Explorer onto **CicsCobolCollab** in the **CICS_COBOL_Sample_CM** Connectivity Map. If the Collaboration was successfully associated, the Collaboration's "gears" icon changes from red to green.
- 3 Double-click **CicsCobolCollab**. The **CicsCobolCollab** Binding dialog box appears.
- 4 From the **CicsCobolCollab** Binding dialog box, drag **FileClient input** (under Source) to the **Inbound** File external application.
- 5 From the **CicsCobolCollab** Binding dialog box, drag the **FileClient FileClient_1** OTD (under Destination) to the **outbound** File external application.
- 6 From the **CicsCobolCollab** Binding dialog box, drag the **CICS_eWay CICS_eWay_1** OTD (under Destination) to the **CICS** external application.
- 7 Minimize the **CicsCobolCollab** Binding dialog box. The Connectivity Map now appears similar to the Connectivity Map displayed in Figure 77.

Figure 77 Connectivity Map - Connecting the Project's Components



- 8 Right-click the Repository in the Project Explorer and select **Save changes to Repository** to save your changes.

5.6.7. Creating an Environment

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

- 1 From the Enterprise Designer's Enterprise Explorer, click the **Environment Explorer** tab.
- 2 Right-click the Repository and select **New Environment**. A new environment is added to the Environment Explorer tree.
- 3 Rename the new environment to **CICS_COBOL_Sample_ENV**.
- 4 Right-click **CICS_COBOL_Sample_ENV** and select **New CICS External System**. Name the External System **CicsExtSys**. Click **OK**. **CicsExtSys** is added to the Environment Editor.
- 5 Right-click **CICS_COBOL_Sample_ENV** and select **New File External System**. Name the External System **FileExtSysIn** and select **Inbound File eWay** as the **External System Type**. Click **OK**. **FileExtSysIn** is added to the Environment Editor.
- 6 Right-click **CICS_COBOL_Sample_ENV** and select **New File External System**. Name this External System **FileExtSysOut** and select **Outbound File eWay** as the **External System Type**. **FileExtSysOut** is added to the Environment Editor.
- 7 Right-click **CICS_COBOL_Sample_ENV** and select **New Logical Host**. The **LogicalHost1** box is added to the Environment and **LogicalHost1** is added to the Environment Editor tree.
- 8 Right-click **LogicalHost1** and select **New SeeBeyond Integration Server**. A new Integration Server (**IntegrationSvr1**) is added to the Environment Explorer tree under **LogicalHost1**.
- 9 Save your current changes to the repository.

5.6.8. Configuring the eWays

The CICS_COBOL_Sample project uses three eWays, each represented in the Connectivity Map as a node between an External Application and a Collaboration.

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

Configuring the File eWays

- 1 Double-click the **Inbound File eWay** and select **Inbound File eWay** in the Templates dialog box and click **OK**.
- 2 The **Properties Sheet** opens to the Inbound File eWay properties. Modify the properties for your system, including the settings for the **Inbound File eWay** in Table 7, and click **OK**.

Table 11 Inbound File eWay properties

| Inbound eWay Connection Parameters | |
|------------------------------------|------------|
| Directory | C:/temp |
| Input file name | Input*.txt |

- 3 In the same way, modify the **Outbound** File eWay properties for your system, including the settings in Table 8, and click **OK**.

Table 12 Outbound File eWay properties

| Outbound eWay Connection Parameters | |
|-------------------------------------|-------------|
| Directory | C:/temp |
| Output file name | output%.dat |

Configuring the CICS eWay

The CICS eWay properties must be set in both the Project Explorer and Environment Explorer. For more information on the CICS eWay properties and the **Properties Sheet**, see [Creating and Configuring the CICS eWay](#) on page 43 or see the *eGate Integrator User's Guide*.

For the CICS_JCE_Sample project, do the following:

Modify the CICS eWay Connectivity Map Properties

- 1 From the **Connectivity Map**, double-click the **CICS eWay**. The **Properties Sheet** opens to the CICS eWay Connectivity Map configuration properties.
- 2 Modify the CICS eWay Connectivity Map properties for your system, including the settings in [Table 13 on page 110](#), and click **OK**.

Table 13 CICS eWay Connectivity Map Properties

| CICS eWay Connectivity Map Properties | |
|--|---|
| Connector Set as directed, otherwise use the default settings | |
| Class | com.stc.eways.cics.CicsClientConnector |
| Connection Transport | SeeBeyond CICS Listener |
| Type | CICS |
| CICS Client Set as directed, otherwise use the default settings. | |
| COMMAREA Length | 1000 |
| CICS Program | <i>CICS program to be run on server</i> |

Modify the CICS eWay Environment Explorer Properties

- 1 From the **Environment Explorer** tree, right-click the CICS External System (**CicsExtSys** in this sample), and select **Properties**. The **Properties Sheet** opens to the CICS eWay Environment configuration .
- 2 Modify the CICS eWay Environment configuration properties for your system, including the settings in **Table 14 on page 111**, and click **OK**.

Table 14 CICS eWay Environment Explorer Properties

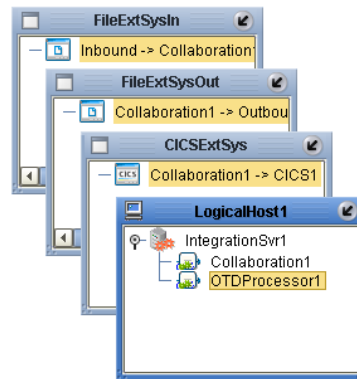
| CICS eWay Environment Explorer Properties | |
|---|--|
| SeeBeyond CICS Listener Set as directed, otherwise use the default settings | |
| Host | <i>Host Name</i> |
| Port | <i>TCP/IP Port Number</i> |
| CICS Client Set as directed, otherwise use the default settings. | |
| CICS Password | <i>Password of CICS user</i> |
| CICS UserId | <i>This is the ID of the CICS user</i> |

5.6.9 Creating and Activating the Deployment Profile

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

- 1 From the Enterprise Explorer’s Project Explorer, right-click the project (**CICS_COBOL_Sample**) and select **New > Deployment Profile**.
- 2 Enter a name for the Deployment Profile (for this sample **CICS_COBOL_Sample_DP**). Select **CICS_COBOL_Sample_ENV** as the Environment and click **OK**.
- 3 From the Deployment Editor toolbar, click the **Auto Map** icon. The projects components are automatically mapped to their system window as seen in **Figure 78 on page 112**. If any of the project components are not mapped automatically after Auto Map is used, those component can be mapped manually by following the appropriate steps below. Once all components are mapped, proceed to step 8.
- 4 From the left pane of the Deployment Editor, drag the **Inbound -> Service1** (External Application) to the **FileExtSysIn** window.
- 5 From the left pane of the Deployment Editor, drag the **Service1 -> Outbound** (External Application) to the **FileExtSysOut** window.
- 6 Drag the **Service1 -> CICS1** (External Application) to the **CicsExtSys** window.
- 7 Drag **Service1** and **OTDProcessor1** to **IntegrationSvr1** in the **Logicalhost1** window (see Figure 78).

Figure 78 Deployment Profile



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

5.6.10. Running the Project

The following directions assume that the Enterprise Designer was downloaded to C:\eGate50. If this is not the case, replace that location in the following directions with the appropriate location.

- 1 From the Enterprise Manager Downloads tab, click on **Logical Host - for win32**.
- 2 Extract the file to the **eGate50\logicalhost3\logicalhost** directory. You must specify the **logicalhost3** directory for it to be created.
- 3 Navigate to **C:\eGate50\logicalhost3\logicalhost\bootstrap\config** directory and open the **logical-host.properties** file using Notepad™.
- 4 Enter the following information in the appropriate fields:
 - ♦ Logical Host rood directory: **eGate50\logicalhost3\logicalhost**
 - ♦ Repository URL: **http://localhost:port number/repository name**
 - ♦ Repository user name and password: *Your user name and password*
 - ♦ Logical Host Environment name: **CICS_COBOL_Sample_ENV**
 - ♦ Logical Host name: **logicalhost3**

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

- 5 Run the **bootstrap.bat** file in the **eGate50\logicalhost3\logicalhost\bootstrap\bin** directory.
- 6 Copy the sample input data file to the input directory.

Java Methods

A number of Java methods have been exposed to make it easier to set information in the eWay's OTD Editor and to get information from it. These methods are contained in the CicsClient Class.

What's in This Chapter

- [The CicsClient Class](#) on page 113
- [Packed Decimal Java Helper Methods](#) on page 113

6.1 The CicsClient Class

The CicsClient class represents an OTD through which a Collaboration can invoke transaction programs on a CICS server. Nodes and methods are exposed so that the Collaboration can conveniently prepare a request for a CICS program, invoke the program, and get result from the program. The OTD also exposes nodes that correspond to eWay configuration parameters, to provide the means to dynamically override the preset eWay settings at runtime.

CICS Javadoc

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

6.2 Packed Decimal Java Helper Methods

The Java helper methods for the toPackedDecimal class. These methods are not exposed in the Collaboration but are available for use. For example, to use the **CopyTo** method to obtain a Hex value in a byte array you would use the following code:

```
MyPacked.toPackedDecimal("327.00") ;
System.out.println( " Decimal value is : " + MyPacked.toString() ) ;
byte[] work_buf = new byte[7];
MyPacked.CopyTo(work_buf, 7);
for ( int Ii = 0 ; Ii < 7 ; Ii++ )
{
    int Ib = (int) new Byte(work_buf[Ii]).intValue();
    if (Ib < 16)
```

```
    {
      System.out.println("  Byte" + Ii + " Hexvalue = 0" + Integer.toHexString(Ib));
    }
    else
    {
      System.out.println("  Byte" + Ii + " Hexvalue = " + Integer.toHexString(Ib));
    }
  }
}
```

This produces the following output:

```
Decimal value is : 327.00
Byte0 Hexvalue = 00
Byte1 Hexvalue = 00
Byte2 Hexvalue = 00
Byte3 Hexvalue = 00
Byte4 Hexvalue = 32
Byte5 Hexvalue = 70
Byte6 Hexvalue = 0c
```

These methods are described in detail on the following pages:

[ContainerExists](#) on page 114

[GiveElem](#) on page 115

[CopyBack](#) on page 114

[SetElem](#) on page 116

[CopyTo](#) on page 115

ContainerExists

Description

Checks to see if contents of a packed decimal are available.

Syntax

```
public com.stc.eways.cics.PackedDecimal boolean ContainerExists()
```

Parameters

None.

Return Values

Boolean

Throws

None.

CopyBack

Description

Builds a packed decimal from the payload in a byte array. The byte array must contain a valid packed decimal number.

Syntax

```
public com.stc.eways.cics.PackedDecimal void CopyBack(byte Origin[],
                                                         int Size)
```

Parameters

| Name | Type | Description |
|----------|------|--|
| Origin[] | byte | Payload containing a valid packed decimal number. |
| Size | int | Size of the payload that contains the packed decimal number. |

Return Values

None.

Throws

None.

CopyTo

Description

Copies a packed decimal number to a byte array.

Syntax

```
public com.stc.eways.cics.PackedDecimal void CopyTo(byte Dest[],
                                                    int Size)
```

Parameters

| Name | Type | Description |
|--------|------|--|
| Dest[] | byte | A byte array that the packed decimal number will be copied to. |
| Size | int | Size of the payload that contains the packed decimal number. |

Return Values

None.

Throws

None.

GiveElem

Description

Returns a specified byte of a packed decimal number.

Syntax

```
public com.stc.eways.cics.PackedDecimal int GiveElem(int Ii)
```

Parameters

| Name | Type | Description |
|------|------|--------------------------------------|
| li | int | Position of the byte to be returned. |

Return Values

int
Returns the value of the position.

Throws

None.

SetElem

Description

Sets the value of a specified byte in a packed decimal number.

Syntax

```
public com.stc.eways.cics.PackedDecimal void SetElem(int Ii,  
                                                    byte Value)
```

Parameters

| Name | Type | Description |
|-------|------|---------------------------------|
| li | int | Position of the byte to be set. |
| Value | byte | Value to set. |

Return Values

None.

Throws

None.

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