SUN SEEBEYOND

eWAY™ HTTPS ADAPTER USER'S GUIDE

Release 5.1.3

microsystems

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Chapter 1

Introducing the HTTPS eWay

Welcome to the *Sun SeeBeyond eWay™ HTTPS Adapter User's Guide*. This document includes information about installing, configuring, and using the Sun Java Composite Application Platform Suite HTTPS eWay™ Adapter, referred to as the HTTPS eWay throughout this guide.

This chapter provides an overview of Hypertext Transfer Protocol (HTTP) and HTTP over Secure Socket Layer (SSL), better known as HTTPS. This chapter also introduces the HTTPS eWay.

What's in This Chapter

1.1 About HTTP and HTTPS

HTTP

HTTP (hypertext transfer protocol) is the set of rules used for transferring files (text, graphic images, sound, and video) over the Web. When a user opens a Web browser, the user is indirectly making use of HTTP. HTTP is an application protocol that runs on top of the TCP/IP suite of protocols.

In addition to the files that it serves, every Web server contains an HTTP daemon—a program that waits for HTTP requests and handles them when they arrive. A Web browser is an HTTP *client*, sending requests to *server* machines. When the user enters a URL or clicks on a hypertext link, the browser builds an HTTP request and sends it to the IP address indicated by the URL. The HTTP daemon in the destination server machine receives the request and sends back the requested file or files associated with the request.

HTTPS

HTTPS (hypertext transfer protocol over secure socket layer—or HTTP over SSL) is a Web protocol that encrypts and decrypts user page requests as well as the pages that are returned by the Web server. HTTP uses port 443 instead of HTTP port 80 in its interactions with the lower layer TCP/IP. SSL uses a 40-bit encryption key algorithm, which is considered an adequate level of encryption for commercial exchange.

When an HTTPS request is sent by a browser—usually by clicking a link that begins with **https://**—the client browser encrypts the request and sends it to the Web server. The acknowledgement sent by the Web server is also sent using encryption, and is decrypted by the client browser.

1.2 About the HTTPS eWay

The HTTPS eWay enables eGate Integrator to communicate with client and server applications over the Internet using HTTP, either with or without SSL.

1.2.1 HTTP Messages

An HTTP message has two parts: a request and a response. The message header is composed of a header line, header fields, a blank line, and an optional body (or data payload). The response is made up of a header line, header fields, a blank line, and an optional body (or data payload). HTTP is a synchronous protocol, that is, a client makes a request to a server and the server returns the response on the same socket.

1.2.2 Web Browser Cookies

A cookie is an HTTP header, which is a key-value pair in the header fields section of an HTTP message.

The **Set-Cookie** and **Cookie** headers are used with cookies. The **Cookie-request** header is sent from the server in request for cookies on the client side. An example of a **Cookie-request** header is:

```
Set-Cookie: sessauth=44c46a10; expires=Wednesday, 27-Sep-2006
03:59:59 GMT
```

In this example, the server requests that the client store the following cookie:

```
sessauth=44c46a10
```

Everything after the first semi-colon contains additional information about the cookie, such as the expiration date. When the eWay sees this header, it extracts the cookie *sessauth=44c46a10* and returns it to the server on subsequent requests. The eWay prepends a cookie header to the HTTP request, for example:

```
Cookie: sessauth=44c46a10
```

Each time the eWay sends a request to the same server during a session, the cookie is sent along with the request.

Cookie Expiration Date Checking

The HTTPS eWay checks time-limited cookies with expiration dates to ensure that they have not expired. If they have expired, the cookie is removed and is not resent to the originating server. As a result, the session state is removed.

The following standard expiration date formats are recognized by the HTTPS eWay:

```
"Sun, 06 Nov 1994 08:49:37 GMT"   ;RFC 822, updated by RFC 1123
"Sunday, 06-Nov-94 08:49:37 GMT";RFC 850, obsoleted by RFC 1036
"Sunday, 06-Nov-1994 08:49:37 GMT";RFC 1036
"Sun Nov  6 08:49:37 1994"    ;ANSI C's asctime()
```

If the expiration date is in another format, the eWay does not recognize the expiration date. Instead, it treats the cookie as if it does not have an expiration date.

1.2.3 GET and POST Methods

The **GET** method can be used in client mode to retrieve a page specified by the URL or to retrieve information from a form-based Web page by submitting URL-encoded key and name value pairs. In the latter case, the page must support the **GET** method.

The following example shows a URL-encoded query string:

http://.../bin/query?p=seebeyond+integrator

The URL specifies the search page and the name-value pair for the search. The question mark (?) indicates the beginning of the name-value pair encoding. In the previous example, the name portion of the query is “p,” and the value to search is “seebeyond integrator.” A query can consist of one or more of these name-value pairs.

Note: *See the official HTTP Specification for complete information.*

The **POST** method is more versatile, in that it supports form-based requests, as well as sending large amounts of data. The **POST** method does not have the size-limitation maximum of 255 or 1024 characters (depending on the Web server), which the **GET** method has. As with **GET**, the Web page must support the **POST** method in order to use **POST**.

Taking the previous URL as an example, if you specify the following URL:

http://. . ./bin/query

Then, you can specify the name-value pair separately. The HTTP client allows for the specification of the URL and n-number of value pairs via its methods.

1.2.4 Sample HTTP Exchange in Client Mode

To retrieve the file at the following URL:

http://www.myhost.com/path/file.html

First open a socket to the host **www.myhost.com**, port 80 (use the default port of 80 because none is specified in the URL). You can then send a request through a socket that looks like the following example:

```
GET /path/file.html HTTP/1.0  (Request Header Line)
User-Agent: HTTP(S)eWay       (Request Header field)
```

The server sends a response back through the same socket. The response could look like the following example:

```
HTTP/1.0 200 OK               (Response Header Line)
Date: Fri, 31 Dec 1999 23:59:59 GMT(Response Header Field)
Content-Type: text/html   (Response Header Field)
Content-Length: 1354          (Response Header Field)
[blank line here]
<html>                        (Response payload)
<body>
<h1>Happy New Millennium!</h1>
(more file contents)
  .
  .
  .
</body>
</html>
```

After sending the response, the server closes the socket.

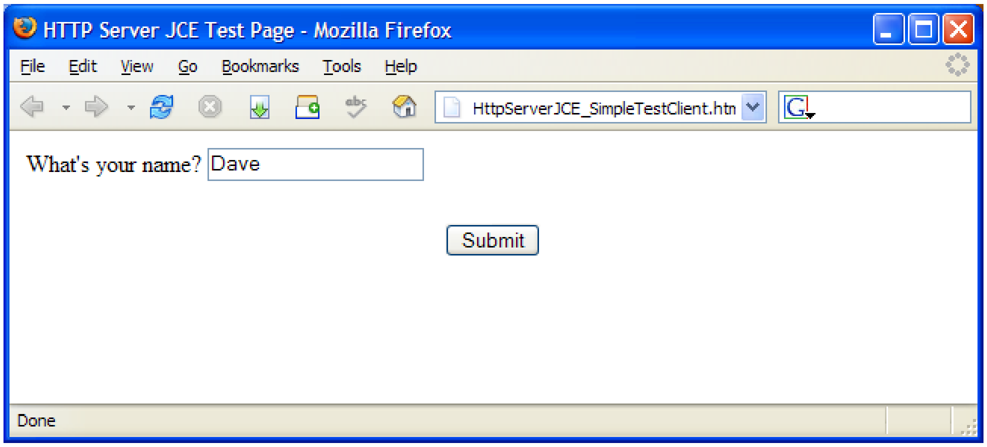
1.2.5 Sample HTTP Exchange in Server Mode

To listen for a request from an HTTP client, the HTTPS eWay in server mode listens on the port configured for your Integration Server (18001 by default). The HTTPS eWay receives the request and processes it according to the logic you create in your Collaboration or Business Process.

In a simple example, the HTTPS eWay receives a request from the following form:

```
<HTML><HEAD><TITLE>HTTP Server JCE Test Page</TITLE></HEAD>
<BODY>
<FORM ACTION="http://localhost:18001/Deployment1_servlet_MyServlet/
MyServlet" METHOD=POST>
<TABLE>
<TR><TD>What's your name? </TD><TD><INPUT NAME=fname></TD></TR>
<TR><TD></TD><TD></TD></TR>
</TABLE>
<BR>
<CENTER><INPUT TYPE=submit VALUE="Submit"></CENTER>
</FORM>
</BODY>
</HTML>
```

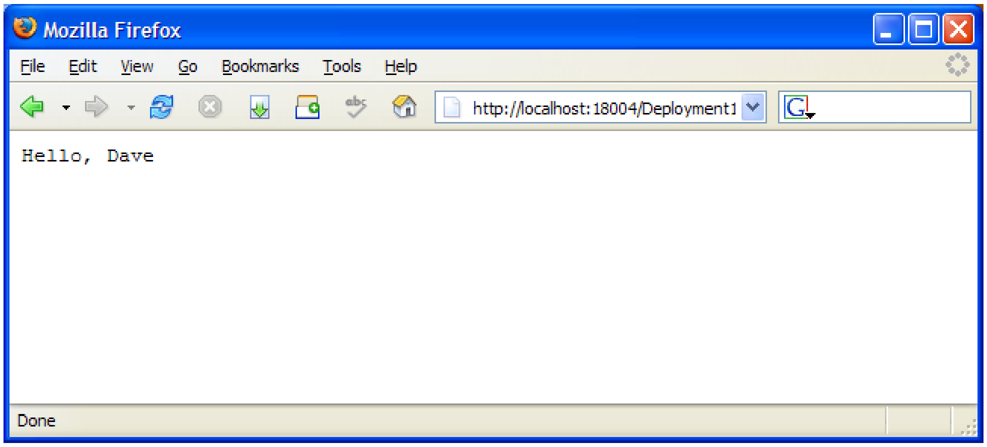
Figure 1 Sample Input Form


HTTP Server JCE Test Page - Mozilla Firefox
File Edit View Go Bookmarks Tools Help
HttpServerJCE_SimpleTestClient.htm
Submit
Done

What's your name? Dave

When the client enters a name in a browser and clicks Submit, the HTTPS eWay server returns a simple response (according to the logic in the Collaboration or Business Process).

Figure 2 Sample Response


Mozilla Firefox
File Edit View Go Bookmarks Tools Help
http://localhost:18004/Deployment1
Done

```
Hello, Dave
```

1.3 What's New in This Release

The Sun SeeBeyond eWay HTTPS Adapter includes the following changes and new features:

New for Version 5.1.3

- This is a maintenance release. No new features.

New for Version 5.1.2

- WebLogic Support: Supports automatic deployment of EAR files to WebLogic Application Server version 9.1.

New for Version 5.1.1

- This is a maintenance release. No new features.

New for Version 5.1.0

- Version Control: An enhanced version control system allows you to effectively manage changes to the eWay components.
- Manual Connection Management: Establishing a connection can now be performed automatically (configured as a property) or manually (using OTD methods from the Java Collaboration).
- Multiple Drag-and-Drop Component Mapping from the Deployment Editor: The Deployment Editor now allows you to select multiple components from the Editor's component pane, and drop them into your Environment component.
- Support for Runtime LDAP Configuration: eWay configuration properties now support LDAP key values.
- Connectivity Map Generator: Generates and links your Project's Connectivity Map components using a Collaboration or Business Process.
- Support for Digest Authentication: eWay functionality now supports HTTP Digest Authentication.
- Support for Cookie Redirect: eWay functionality supports now for Cookie Redirect.
- Logging in the OTD: The User ID and Password are now exposed in the OTD.
- Basic Authentication feature through eDesigner for WebService Server and HTTP Server.

Many of these features are documented further in the *Sun SeeBeyond eGate™ Integrator User's Guide* or the *Sun SeeBeyond eGate™ Integrator System Administration Guide*.

1.4 About This Document

This guide includes the following chapters:

- **Chapter 1 "Introducing the HTTPS eWay"**: Provides an overview description of the product as well as high-level information about this document.
- **Chapter 2 "Installing the HTTPS eWay"**: Describes the system requirements and provides instructions for installing the HTTPS eWay.
- **Chapter 3 "Understanding the HTTPS eWay OTD"**: Provides a description of the Object Type Definitions to be used with the HTTPS eWay.
- **Chapter 4 "Operating SSL"**: Explains the operation of the Secure Sockets Layer (SSL) feature available with the HTTPS eWay, and provides detailed information on how to use the OpenSSL utility.
- **Chapter 5 "Configuring the HTTPS eWay"**: Provides instructions for configuring the eWay.

- **Chapter 6 "Implementing the HTTPS eWay BPEL Sample Projects"**: Describes how to use the HTTPS eWay with eInsight Business Process Manager and reviews a sample Project that uses eInsight.
- **Chapter 7 "Implementing the HTTPS eWay JCD Sample Projects"**: Describes how to implement the HTTPS eWay using a review of the sample Project, which uses Java-based Collaborations.

HTTPS eWay Javadoc

An HTTPS eWay Javadoc is also provided that documents the Java methods available with the HTTPS eWay. The Javadoc is uploaded with the eWay's documentation file (**HTTPeWayDocs.sar**) and downloaded from the **Documentation** tab of the Sun Java Composite Application Platform Suite Installer. To access the full Javadoc, extract the Javadoc to an easily accessible folder, and double-click the **index.html** file.

1.4.1 Scope

This user's guide provides a description of the HTTPS eWay 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 HTTPS eWay Java methods, see the associated Javadoc.

1.4.2 Intended Audience

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

1.4.3 Text Conventions

The following conventions are observed throughout this document.

Table 1 Text Conventions

Text Convention	Used For	Examples
Bold	Names of buttons, files, icons, parameters, variables, methods, menus, and objects	▪ Click **OK**. ▪ On the **File** menu, click **Exit**. ▪ Select the **eGate.sar** file.
`Monospaced`	Command line arguments, code samples; variables are shown in ***bold italic***	`java -jar` ***`filename`***`.jar`
Blue bold	Hypertext links within document	See **Text Conventions** on page 13

Table 1 Text Conventions (Continued)

Text Convention	Used For	Examples
Blue underlined	Hypertext links for Web addresses (URLs) or email addresses	http://www.sun.com

1.4.4 Related Documents

The following Sun documents provide additional information about the Sun Java Composite Application Platform Suite product:

- *Sun SeeBeyond eGate™ Integrator*
- *Sun Java Composite Application Platform Suite Installation Guide*

1.5 Sun Microsystems, Inc. Web Site

The Sun Microsystems web site is your best source for up-to-the-minute product news and technical support information. The site’s URL is:

http://www.sun.com

1.6 Documentation Feedback

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

CAPS_docsfeedback@sun.com

Chapter 2

Installing the HTTPS eWay

What's in This Chapter

2.1 HTTPS eWay System Requirements

The HTTPS eWay Readme contains the latest information on:

- Supported Operating Systems
- System Requirements
- External System Requirements

The HTTPS eWay Readme is uploaded with the eWay's documentation file (**HTTPeWayDocs.sar**) and can be accessed from the **Documentation** tab of the Sun Java Composite Application Platform Suite Installer. Refer to the HTTPS eWay Readme for the latest requirements before installing the HTTPS eWay.

2.2 Installing the HTTPS eWay

The Sun Java Composite Application Platform Suite Installer, a web-based application, is used to select and upload eWays and add-on files during the installation process. The following section describes how to install the components required for this eWay.

Note: *When the Repository is running on a UNIX operating system, the eWays are loaded from the Sun Java Composite Application Platform Suite Installer running on a Windows platform connected to the Repository server using Internet Explorer.*

2.2.1 Installing the HTTPS eWay on an eGate supported system

Follow the directions for installing the Sun Java Composite Application Platform Suite (CAPS).

After you have installed eGate or eInsight, do the following:

1. From the Sun Java Composite Application Platform Suite Installer's Select Sun Java Composite Application Platform Suite Products to Install table(Administration tab), expand the eWay option.
2. Select the products for your Sun Java Composite Application Platform Suite and include the following:
   - **FileeWay** (the File eWay is used by most sample Projects)
   - **HTTPeWay**
3. To upload the Sun SeeBeyond eWay™ HTTPS Adapter User's Guide, Help file, Javadoc, Readme, and sample Projects, select the following:
   - **HTTPeWayDocs**
4. Once you have selected all of your products, click **Next** in the top-right or bottom-right corner of the **Select Sun Java Composite Application Platform Suite Products to Install** box.
5. From the **Selecting Files to Install** box, locate and select your first product's SAR file. Once you have selected the SAR file, click **Next**. Follow this procedure for each of your products. The Installing Files window appears after the last SAR file has been selected.
6. Once your product's installation is finished, continue installing the Sun Java Composite Application Platform Suite as instructed in the *Sun Java Composite Application Platform Suite Installation Guide*.
7. Continue installing the eGate Integrator as instructed in the *Sun Java Composite Application Platform Suite Installation Guide*.

Adding the eWay to an Existing Sun Java Composite Application Platform Suite Installation

It is possible to add the eWay to an existing Sun Java Composite Application Platform Suite installation.

Steps required to add an eWay to an Existing CAPS installation include:

1. Complete steps 1 through 6 on **"Installing the HTTPS eWay on an eGate supported system" on page 15**.
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, then 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. Review the installed modules and click **Finish.**

7 When prompted, restart the IDE (Integrated Development Environment) to complete the installation.

After Installation

Once you install the eWay, 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.

2.2.2 Extracting the Sample Projects and Javadocs

The HTTPS eWay includes sample Projects and Javadocs. The sample Projects are designed to provide you with a basic understanding of how certain database operations are performed using the eWay, while Javadocs provide a list of classes and methods exposed in the eWay.

Steps to extract the Javadoc include:

1 Click the **Documentation** tab of the Sun Java Composite Application Platform Suite Installer, then click the Add-ons tab.

2 Click the HTTPS eWay Adapter link. Documentation for the HTTPS eWay appears in the right pane.

3 Click the icon next to **Javadoc** and extract the ZIP file.

4 Open the index.html file to view the Javadoc.

Steps to extract the Sample Projects include:

1 Click the **Documentation** tab of the Sun Java Composite Application Platform Suite Installer, then click the Add-ons tab.

2 Click the HTTPS eWay Adapter link. Documentation for the HTTPS eWay appears in the right pane.

3 Click the icon next to **Sample Projects** and extract the ZIP file. Note that the **HTTPS_eWay_Sample.zip** file contains two additional ZIP files for each sample Project.

   Refer to **"Importing a Sample Project" on page 58** for instructions on importing the sample Project into your repository via the Enterprise Designer.

2.3 ICAN 5.0 Project Migration Procedures

This section describes how to transfer your current ICAN 5.0.x Projects to the Sun Java Composite Application Platform Suite 5.1.3. To migrate your ICAN 5.0.x Projects to the Sun Java Composite Application Platform Suite 5.1.3, do the following:

Export the Project

1. Before you export your Projects, save your current ICAN 5.0.x Projects to your Repository.
2. From the Project Explorer, right-click your Project and select **Export** from the shortcut menu. Th**e** Export Manager appears.
3. Select the Project that you want to export in the left pane of the Export Manager and move it to the Selected Projects field by clicking the **Add to Select Items** (arrow) button, or click **All** to include all of your Projects.
4. In the same manner, select the Environment that you want to export in the left pane of the Export Manager and move it to the Selected Environments field by clicking the **Add to Select Items** (arrow) button, or click **All** to include all of your Environments.
5. Browse to select a destination for your Project ZIP file and enter a name for your Project in the **ZIP file** field.
6. Click **Export** to create the Project ZIP file in the selected destination.

Install Java CAPS 5.1.3

1. Install the **Java CAPS 5.1.3**, including all eWays, libraries, and other components used by your ICAN 5.0 Projects.
2. Start the Java CAPS 5.1.3 Enterprise Designer.

Import the Project

1. From the Java CAPS 5.1.3 Enterprise Designer's Project Explorer tree, right-click the Repository and select **Import Project** from the shortcut menu. The Import Manager appears.
2. Browse to and select your exported Project file.
3. Click **Import**. A warning message, **"Missing APIs from Target Repository**," may appear at this time. This occurs because various product APIs were installed on the ICAN 5.0 Repository when the Project was created, that are not installed on the Java CAPS 5.1.3 Repository. These APIs may or may not apply to your Projects. You can ignore this message if you have already installed all of the components that correspond to your Projects. Click **Continue** to resume the Project import.
4. Close the Import Manager after the Project is successfully imported.

Deploy the Project

1. A new Deployment Profile must be created for each of your imported Projects. When a Project is exported, the Project's components are automatically *"checked in"* to Version Control to write-protected each component. These protected components appear in the Explorer tree with a red padlock in the bottom-left corner of each icon. Before you can deploy the imported Project, the Project's components must first be *"checked out"* of Version Control from both the Project Explorer and the Environment Explorer. To *"check out"* all of the Project's components, do the following:

A From the Project Explorer, right-click the Project and select **Version Control > Check Out** from the shortcut menu. The Version Control - Check Out dialog box appears.

B Select **Recurse Project** to specify all components, and click **OK**.

C Select the Environment Explorer tab, and from the Environment Explorer, right-click the Project's Environment and select **Version Control > Check Out** from the shortcut menu.

D Select **Recurse Environment** to specify all components, and click **OK**.

2 If your imported Project includes File eWays, these must be reconfigured in your Environment prior to deploying the Project.

To reconfigure your File eWays, do the following:

A From the Environment Explorer tree, right-click the File External System, and select **Properties** from the shortcut menu. The Properties Editor appears.

B Set the inbound and outbound directory values, and click **OK**. The File External System can now accommodate both inbound and outbound eWays.

3 Deploy your Projects.

Note: *Only projects developed on ICAN 5.0.2 and later can be imported and migrated successfully into the Java Composite Application Platform Suite.*

2.4 Installing Enterprise Manager eWay Plug-Ins

The **Sun SeeBeyond Enterprise Manager** is a Web-based interface you use to monitor and manage your Java Composite Application Platform Suite applications. The Enterprise Manager requires an eWay specific “plug-in” for each eWay you install. These plug-ins enable the Enterprise Manager to target specific alert codes for each eWay type, as well as start and stop the inbound eWays.

The *Sun Java Composite Application Platform Suite Installation Guide* describes how to install Enterprise Manager. The *Sun SeeBeyond eGate Integrator System Administration Guide* describes how to monitor servers, Services, logs, and alerts using the Enterprise Manager and the command-line client.

The **eWay Enterprise Manager Plug-ins** are available from the **List of Components to Download** under the Sun Java Composite Application Platform Suite Installer's **DOWNLOADS** tab.

There are two ways to add eWay Enterprise Manager plug-ins:

- From the **Sun SeeBeyond Enterprise Manager**
- From the **Sun Java Composite Application Platform Suite Installer**

To add plug-ins from the Enterprise Manager

1 From the **Enterprise Manager**'s Explorer toolbar, click **configuration**.

2. Click the **Web Applications Manager** tab, go to the **Auto-Install from Repository** sub-tab, and connect to your Repository.
3. Select the application plug-ins you require, and click **Install**. The application plug-ins are installed and deployed.

To add plug-ins from the Sun Java Composite Application Platform Suite Installer

1. From the **Sun Java Composite Application Platform Suite Installer**'s **Download** tab**,** select the Plug-Ins you require and save them to a temporary directory.
2. From the **Enterprise Manager**'s Explorer toolbar, click **configuration**.
3. Click the **Web Applications Manager** tab and go to the **Manage Applications** sub-tab.
4. Browse for and select the WAR file for the application plug-in that you downloaded, and click **Deploy**. The plug-ins is installed and deployed.

2.4.1 Viewing Alert Codes

You can view and delete alerts using the Enterprise Manager. An alert is triggered when a specified condition occurs in a Project component. The purpose of the alert is to warn the administrator or user that a condition has occurred.

To View the eWay Alert Codes

1. Add the eWay Enterprise Manager plug-in for this eWay.
2. From the **Enterprise Manager**'s Explorer toolbar, click **configuration**.
3. Click the **Web Applications Manager** tab and go to the **Manage Alert Codes** sub-tab. Your installed eWay alert codes display under the **Results** section. If your eWay alert codes are not displayed under **Results**, do the following:

   A. From the **Install New Alert Codes** section, browse to and select the eWay alert properties file for the application plug-in that you added. The alert properties files are located in the **alertcodes** folder of your Sun Java Composite Application Platform Suite installation directory.

   B. Click **Deploy**. The available alert codes for your application are displayed under **Results**. A listing of the eWay's available alert codes is displayed in Table 2.

Table 2 HTTPS eWay Alert Codes

Alert Code	Description	User Action
HTTPCLIENTEWAY-CONFIG-FAILED000001=Configuration error encountered for HTTP Client eWay.	Occurs if there your project deployment parameters are invalid.	Connectivity Map and External configuration information is invalid. Verify configured parameters.
HTTPCLIENTEWAY-CONNECT-FAILED000002=Failed to prepare the HTTP Client agent for establishing the connection to the HTTP server.	Occurs when a socket connection does not exist.	Verify that network connectivity is available.

Alert Code	Description	User Action
HTTPCLIENTEWAY-GET-FAILED000004=Failed on HTTP GET request to URL {0}.	Occurs when an HTTPS operation is not successful.	▪ Read the response code in the collaboration and proceed accordingly. ▪ Run the operation from a web browser.
HTTPCLIENTEWAY-POST-FAILED000005=Failed on HTTP POST request to URL {0}.	Occurs when an HTTPS operation is not successful.	▪ Read the response code in the collaboration and proceed accordingly. ▪ Run the operation from a web browser.
HTTPCLIENTEWAY-URL-FAILED000003=Invalid URL specified {0}.	Occurs when an invalid URL is entered.	Verify that the URL is correct.
HTTPSERVEREWAY-REQUEST-FAILED000001=Failed to process the POST or GET request.	Occurs when an HTTPS operation is not successful.	▪ Read the response code in the collaboration and proceed accordingly. ▪ Verify that the HTTP Server is running.

For information on Managing and Monitoring alert codes and logs, as well as how to view the alert generated by the project component during runtime, see the *Sun SeeBeyond eGate™ Integrator System Administration Guide*.

Note: *An alert code is a warning that an error has occurred. It is not a diagnostic. The user actions noted above are just some possible corrective measures you may take. Refer to the log files for more information. For information on Managing and Monitoring alert codes and logs, see the Sun SeeBeyond eGate Integrator System Administration Guide.*

Chapter 3

Understanding the HTTPS eWay OTD

This chapter provides an overview of OTDs and describes the HTTPS eWay's Object Type Definition (OTD) structure.

What's in This Chapter

3.1 Overview of eWay OTDs

An OTD contains a set of rules that define an object. The object encodes data as it travels through eGate. OTDs are used as the basis for creating a Java-based Collaboration Definition for a Project.

Each OTD acts as a template with a unique set of eWay features. The HTTPS eWay OTD template is not customizable and cannot be edited.

The basic parts of an OTD are:

- **Element**: This is the highest level in the OTD tree. The element is the basic container that holds the other parts of the OTD. The element can contain fields and methods.
- **Field**: Fields are used to represent data. A field can contain data in any of the following formats: **string**, **boolean**, **int**, **double**, or **float**.
- **Method**: Method nodes represent actual Java methods.
- **Parameters**: Parameters nodes represent the Java methods' parameters.

Note: *For complete information on the methods contained in the HTTPS eWay OTDs, refer to the Javadoc provided with the eWay documentation in the Enterprise Manager.*

3.2 HTTPS Client OTD

The HTTPS OTD is specific to the HTTPS eWay. It is used as an inbound or outbound OTD in a Collaboration.

OTDs have a tree-like hierarchical data structure composed of fields containing methods and properties.

The top root element of the OTD is the **HTTPClientApplication** interface, and the fields underneath contain Java methods. You can use these Java methods to create Business Rules that specify the HTTP message format and invoke messaging to and/or from an HTTP server.

To access other Java classes and methods, you can use the Collaboration Editor (Java) to utilize the entire contents available for **HTTPClientApplication**.

3.2.1 HTTP OTD Method Descriptions

The HTTP OTD includes the following methods used in HTTP data exchange:

get
The method called in the Collaboration (Java) to send an HTTP **get** request to an HTTP server.

post
The method called in the Collaboration (Java) to send an HTTP **post** request to an HTTP server.

getRequest
The method called in the Collaboration (Java) for other “request” related helper methods, such as to set the URL, to add properties, etc.

getResult
The method called in the Collaboration (Java) for other “respond” related helper methods, such as, to obtain the respond code, respond result, text result, and so on.

For more information on methods available in the HTTP OTDs, see the HTTPS eWay’s **Javadoc**.

3.3 HTTPS Server OTD

The HTTPS Server input OTD has two nodes, Request and Response. The Request node contains the data that the HTTPS Server eWay receives from an HTTP client, while the Response node is used to set the HTTP response data that will be sent back to the HTTP client.

Figure 3 Input Server OTD

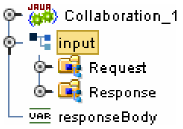


Figure 4 Input Server Request Node

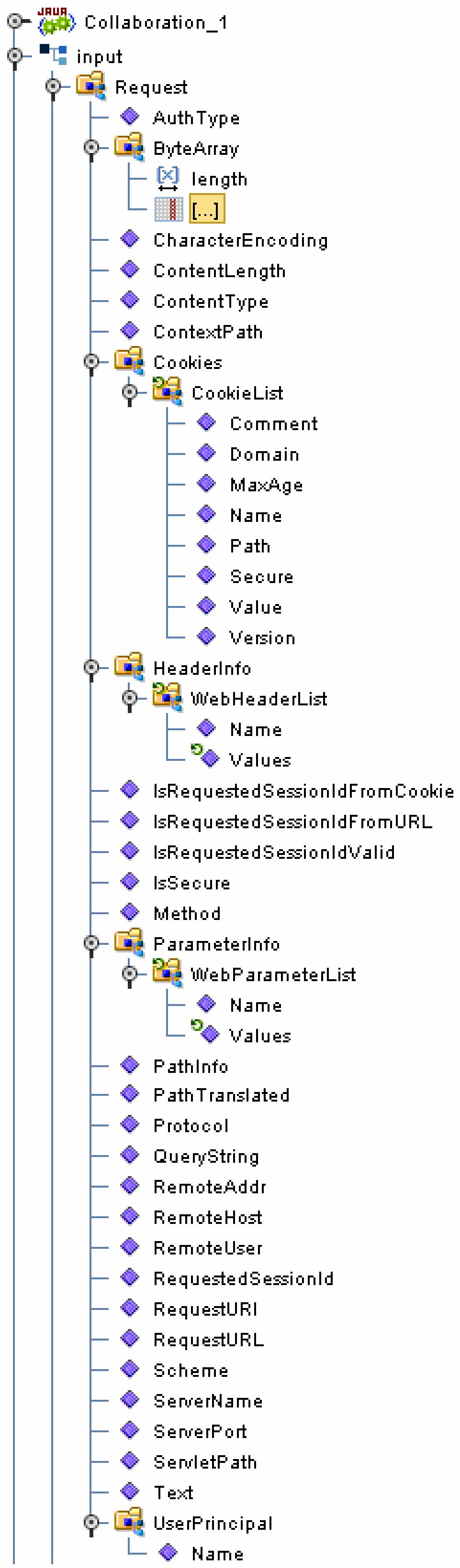
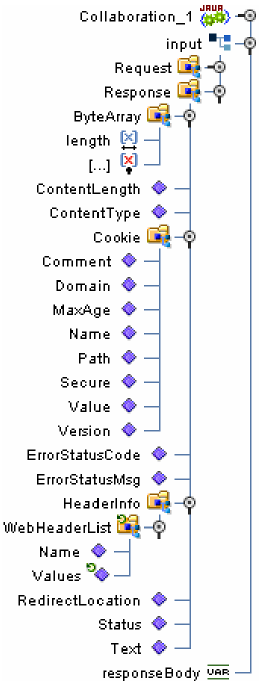


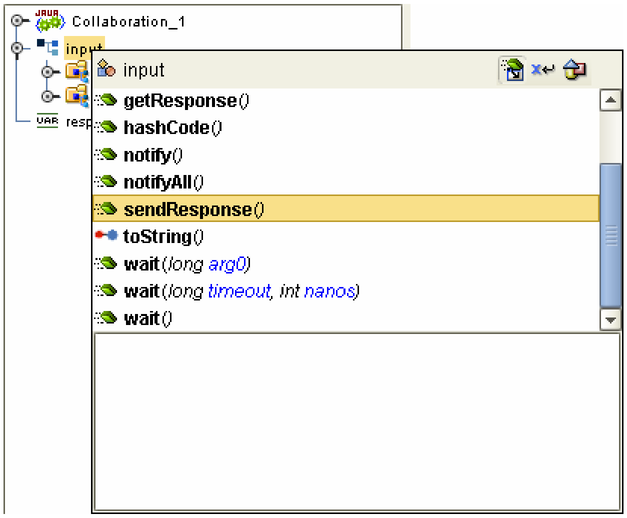
Figure 5 Input Server Response Node



Working with the Server OTD

Use the OTDs Request and Response nodes to build the logic in your HTTPS Collaborations. The HTTP response is not sent back to the HTTP client until **sendResponse()** method is called on the HTTP server input OTD.

Figure 6 sendResponse() Method

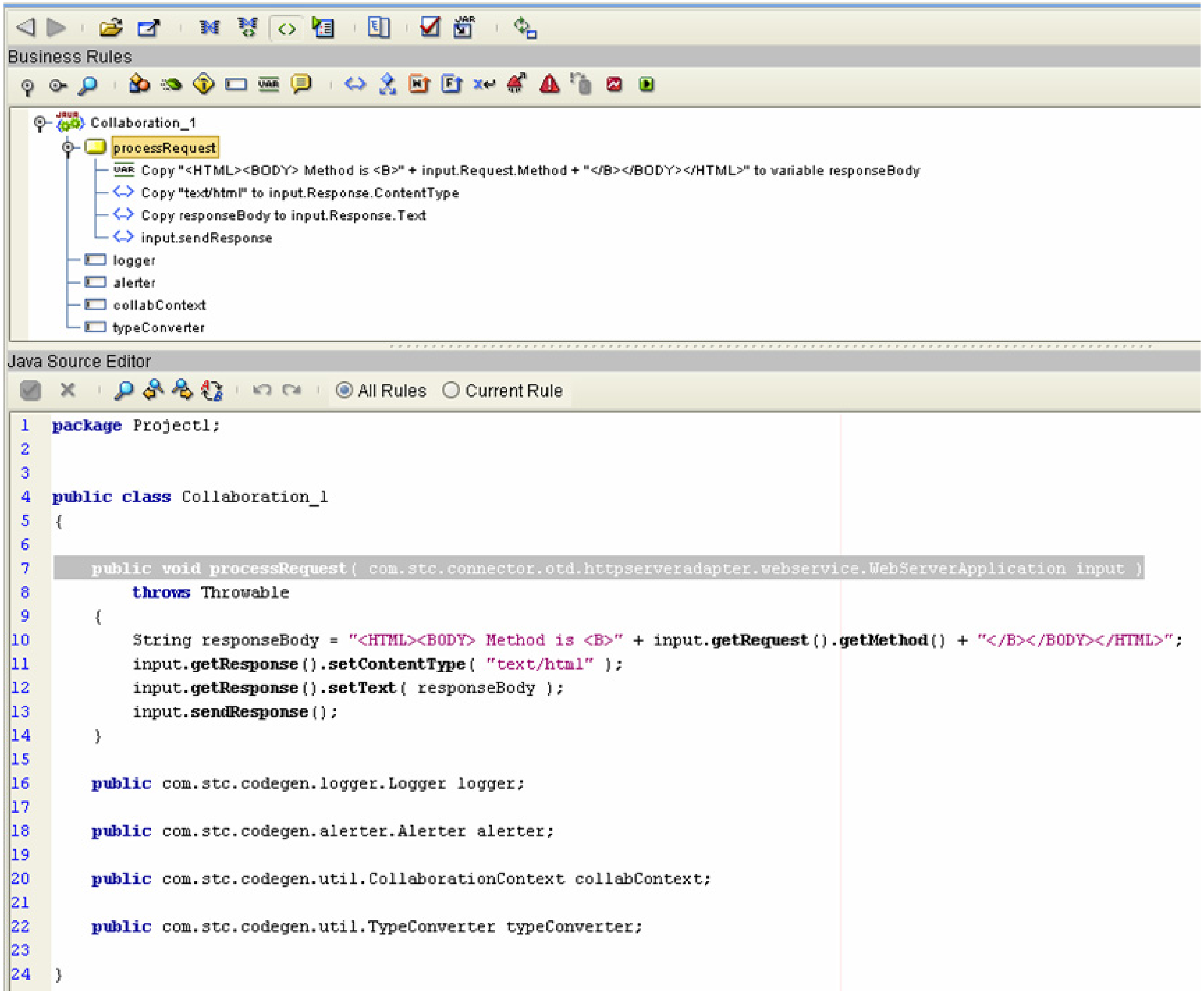


It is critical that you use this method to send the response back to the client. Otherwise, the client will wait indefinitely for the response. HTTP requires that a response be sent to the client whether the response is a valid application response or an application error response.

Collaboration Example

The following example shows a simple Java Collaboration that retrieves the HTTP method from the Request node via the Method property, creates an HTML response indicating the HTTP method retrieved from the request, sets the ContentType property as “text/html” on the Response node, sets the Text property with the HTML response, and then calls the **sendResponse()** method on the HTTP server input OTD to send the constructed response to the HTTP client.

Figure 7 sendResponse() Example



```
Collaboration_1
    processRequest
        Copy "<HTML><BODY> Method is <B>" + input.Request.Method + "</B></BODY></HTML>" to variable responseBody
        Copy "text/html" to input.Response.ContentType
        Copy responseBody to input.Response.Text
        input.sendResponse
    logger
    alerter
    collabContext
    typeConverter
```

```
package Project1;


public class Collaboration_1
{

    public void processRequest( com.stc.connector.otd.httpserveradapter.webservice.WebServerApplication input )
        throws Throwable
    {
        String responseBody = "<HTML><BODY> Method is <B>" + input.getRequest().getMethod() + "</B></BODY></HTML>";
        input.getResponse().setContentType( "text/html" );
        input.getResponse().setText( responseBody );
        input.sendResponse();
    }

    public com.stc.codegen.logger.Logger logger;

    public com.stc.codegen.alerter.Alerter alerter;

    public com.stc.codegen.util.CollaborationContext collabContext;

    public com.stc.codegen.util.TypeConverter typeConverter;

}
```

Chapter 4

Operating SSL

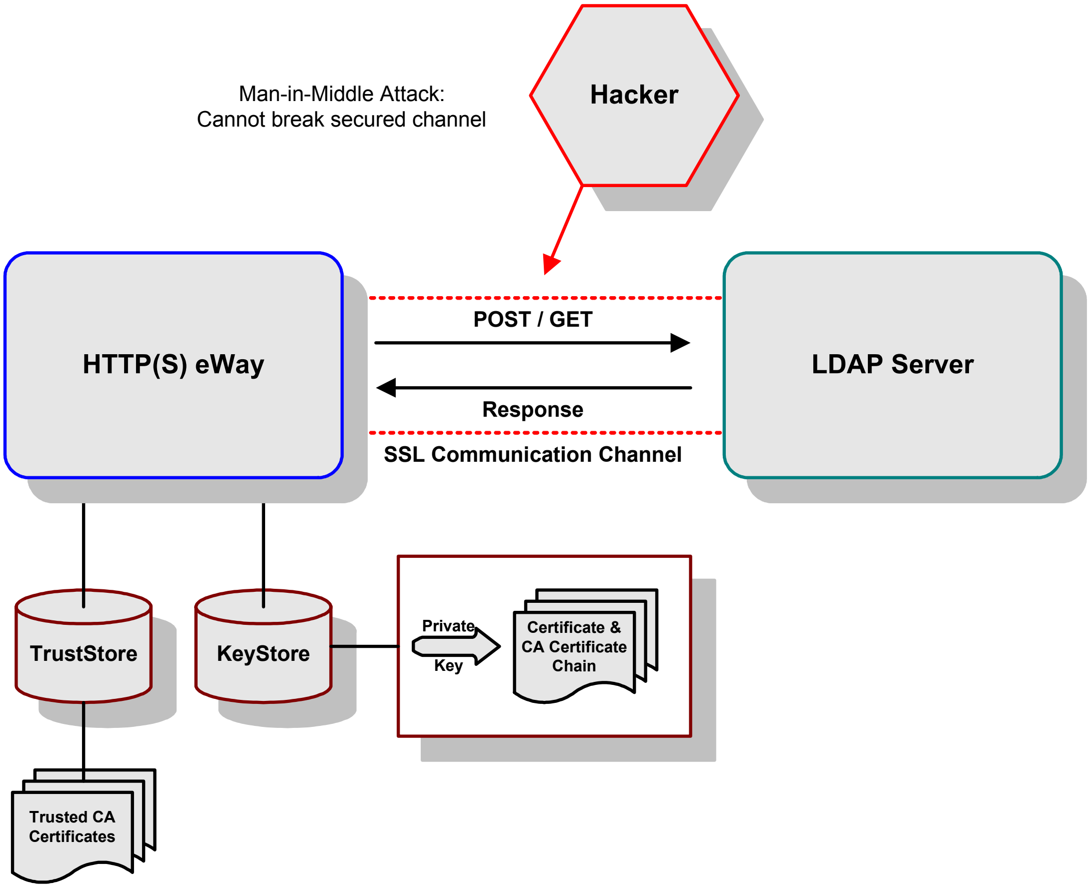
This chapter explains the operation of the Secure Sockets Layer (SSL) feature available with the HTTP(S) eWay.

What's in This Chapter

4.1 Overview

The use of SSL with HTTP, here called HTTPS, enables HTTP data exchanges that are secure from unauthorized interception from "hackers" or other entities. The eWay's SSL feature provides a secure communications channel for the data exchanges (see Figure 8).

Figure 8 General SSL Operation: HTTPS



This SSL feature is supported through the use of JSSE version 1.0.3.

Currently, the JSSE reference implementation is used. JSSE is a provider-based architecture, meaning that there is a set of standard interfaces for cryptographic algorithms, hashing algorithms, secured-socket-layered URL stream handlers, and so on.

Because the user is interacting with JSSE through these interfaces, the different components can be mixed and matched as long as the implementation is programmed under the published interfaces. However, some implementations may not support a particular algorithm.

The JSSE 1.0.3 application programming interface (API) is capable of supporting SSL versions 2.0 and 3.0 and Transport Layer Security (TLS) version 1.0. These security protocols encapsulate a normal bidirectional stream socket and the JSSE 1.0.3 API adds transparent support for authentication, encryption, and integrity protection. The JSSE reference implementation implements SSL version 3.0 and TLS 1.0.

For more information, visit the Sun Java Web site at the following URL:

http://java.sun.com

Note: *See the JSSE documentation provided by Sun Microsystems for further details.*

4.2 KeyStores and TrustStores

As depicted in Figure 8, JSSE makes use of files called *KeyStores* and *TrustStores*. The KeyStore is used by the eWay for client authentication, while the TrustStore is used to authenticate a server in SSL authentication.

- A *KeyStore* consists of a database containing a private key and an associated certificate, or an associated certificate chain. The certificate chain consists of the client certificate and one or more certification authority (CA) certificates.
- A *TrustStore* contains only the certificates trusted by the client (a “trust” store). These certificates are CA root certificates, that is, self-signed certificates. The installation of the Logical Host includes a TrustStore file named **cacerts.jks** in the location:

  `<c:\JavaCAPS>\logicalhost\is\domains\<MyDomain>\config`

  where `<c:\JavaCAPS>` is the directory where the Sun Java Composite Application Platform Suite is installed and `<MyDomain>` is the name of your domain. This file is recommended as the TrustStore for the HTTPS eWay.

Both KeyStores and TrustStores are managed by means of a utility called **keytool**, which is a part of the Java SDK installation.

4.2.1 Generating a KeyStore and TrustStore

This section explains steps on how to create both a KeyStore and a TrustStore (or import a certificate into an existing TrustStore such as the default Logical Host TrustStore in the location:

```
<c:\JavaCAPS>\logicalhost\is\domains\<MyDomain>\config\cacert
s.jks
```

where `<c:\JavaCAPS>` is the directory where the Sun Java Composite Application Platform Suite is installed and `<MyDomain>` is the name of your domain. The primary tool used is **keytool**, but **openssl** is also used as a reference for generating **pkcs12** KeyStores.

For more information on **openssl**, and available downloads, visit the following Web site:

http://www.openssl.org.

4.2.2 KeyStores

This section explains how to use KeyStores.

Creating a KeyStore in JKS Format

This section explains how to create a KeyStore using the JKS format as the database format for both the private key, and the associated certificate or certificate chain. By default, as specified in the java.security file, **keytool** uses JKS as the format of the key and certificate databases (KeyStore and TrustStores). A CA must sign the certificate signing request (CSR). The CA is therefore trusted by the server-side application to which the eWay is connected.

Note: *It is recommended to use the default KeyStore* `<c:\JavaCAPS>\logicalhost\is\domains\<MyDomain>\config\keystore.jks` *where* `<c:\JavaCAPS>` *is the directory where the Sun Java Composite Application Platform Suite is installed and* `<MyDomain>` *is the name of your domain.*

To generate a KeyStore

Use the following command:

```
keytool -keystore clientkeystore -genkey -alias client
```

You are prompted for several pieces of information required to generate a CSR. A sample key generation section follows:

```
Enter keystore password: seebyond
What is your first and last name?
[Unknown]: development.seebeyond.com
What is the name of your organizational unit?
[Unknown]: Development
what is the name of your organization?
[Unknown]: SeeBeyond
What is the name of your City of Locality?
[Unknown]: Monrovia
What is the name of your State or Province?
[Unknown]: California
What is the two-letter country code for this unit?
[Unknown]: US
Is<CN=Foo Bar, OU=Development, O=SeeBeyond, L=Monrovia,
ST=California, C=US> correct?
[no]: yes

Enter key password for <client>
    (RETURN if same as keystore password):
```

If the KeyStore password is specified, then the password must be provided for the eWay. Press RETURN when prompted for the key password (this action makes the key password the same as the KeyStore password).

This operation creates a KeyStore file **clientkeystore** in the current working directory. You must specify a fully-qualified domain for the “first and last name” question. The reason for this use is that some CAs such as Verisign expect this properties to be a fully qualified domain name.

There are CAs that do not require the fully qualified domain, but it is recommended to use the fully-qualified domain name for the sake of portability. All the other information given must be valid. If the information can not be validated, a CA such as Verisign does not sign a generated CSR for this entry.

This KeyStore contains an entry with an alias of **client**. This entry consists of the Generated private key and information needed for generating a CSR as follows:

```
keytool -keystore clientkeystore -certreq alias client -keyalg rsa
    -file client.csr
```

This command generates a certificate signing request which can be provided to a CA for a certificate request. The file **client.csr** contains the CSR in PEM format.

Some CA (one trusted by the Web server to which the eWay is connecting) must sign the CSR. The CA generates a certificate for the corresponding CSR and signs the certificate with its private key. For more information, visit the following web sites:

http://www.thawte.com

or

http://www.verisign.com

If the certificate is chained with the CA's certificate, perform step 1; otherwise, perform step 2 in the following list:

1 The following command assumes the client certificate is in the file **client.cer** and the CA's certificate is in the file **CARoot.cer**:

```
keytool -import -keystore clientstore -file client.cer -alias
    client
```

This command imports the certificate (which can include more than one CA in addition to the Client's certificate).

Also use the following command to import the CA's certificate into the KeyStore for chaining with the client's certificate:

```
keytool -import -keystore clientkeystore -file CARootcer -alias
    theCARoot
```

2 The following command imports the client's certificate signed by the CA whose certificate was imported in the preceding step:

```
keytool -import -keystore clientkeystore -file client.cer -alias
    client
```

The generated file **clientkeystore** contains the client's private key and the associated certificate chain used for client authentication and signing. The KeyStore and/or **clientkeystore**, can then be used as the eWay's KeyStore.

See the **"KeyStores" on page 29** for more information.

Creating a KeyStore in PKCS12 Format

This section explains how to create a PKCS12 KeyStore to work with JSSE. In a real working environment, a customer could already have an existing private key and certificate (signed by a known CA). In this case, JKS format can not be used, because it does not allow the user to import/export the private key through **keytool**. It is necessary to generate a PKCS12 database consisting of the private key and its certificate.

The generated PKCS12 database can then be used as the eWay's KeyStore. The **keytool** utility is currently lacking the ability to write to a PKCS12 database. However, it can read from a PKCS12 database.

Note: *There are additional third-party tools available for generating PKCS12 certificates, if you want to use a different tool.*

For the following example, **openssl** is used to generate the PKCS12 KeyStore:

```
cat mykey.pem.txt mycertificate.pem.txt>mykeycertificate.pem.txt
```

The existing key is in the file **mykey.pem.txt** in PEM format. The certificate is in **mycertificate.pem.txt**, which is also in PEM format. A text file must be created which contains the key followed by the certificate as follows:

```
openssl pkcs12 -export -in mykeycertificate.pem.txt -out
    mykeystore.pkcs12 -name myAlias -noiter -nomaciter
```

This command prompts the user for a password. The password is required. The KeyStore fails to work with JSSE without a password. This password must also be supplied as the password for the eWay's KeyStore password (see **Table 8 on page 50**).

This command also uses the **openssl pkcs12** command to generate a PKCS12 KeyStore with the private key and certificate. The generated KeyStore is **mykeystore.pkcs12** with an entry specified by the **myAlias** alias. This entry contains the private key and the certificate provided by the **-in** argument. The **noiter** and **nomaciter** options must be specified to allow the generated KeyStore to be recognized properly by JSSE.

4.2.3 TrustStores

Creating a TrustStore

For demonstration purposes, suppose you have the following CAs that you trust: **firstCA.cert, secondCA.cert, thirdCA.cert**, located in the directory **C:\cascerts**. You can create a new TrustStore consisting of these three trusted certificates.

To create a new TrustStore

Use the following command:

```
keytool -import -file C:\cascerts\firstCA.cert -alias firstCA
    -keystore myTrustStore
```

You must enter this command two more times, but for the second and third entries, substitute **secondCA** and **thirdCA** for **firstCA**. Each of these command entries has the following purposes:

1. The first entry creates a KeyStore file name **myTrustStore** in the current working directory and imports the **firstCA** certificate into the TrustStore with an alias of **firstCA**. The format of **myTrustStore** is JKS.
2. For the second entry, substitute **secondCA** to import the **secondCA** certificate into the TrustStore, **myTrustStore**.
3. For the third entry, substitute **thirdCA** to import the **thirdCA** certificate into the TrustStore.

Once completed, myTrustStore is available to be used as the TrustStore for the eWay.

Using an Existing TrustStore

This section explains how to use an existing TrustStore such as the default Logical Host TrustStore in the location:

```
<c:\JavaCAPS>\logicalhost\is\domains\<MyDomain>\config\cacert
s.jks
```

where `<c:\JavaCAPS>` is the directory where the Sun Java Composite Application Platform Suite is installed and `<MyDomain>` is the name of your domain. The primary tool used is **keytool**, but **openssl** is also used as a reference for generating **pkcs12** KeyStores.

Notice that in the previous section, steps 2 and 3 were used to import two CAs into the TrustStore created in step 1. For example, suppose you have a trusted certificate file named: **C:\trustedcerts\foo.cert** and want to import it to the **trustedcacertsjks** TrustStore.

If you are importing certificates into an existing TrustStore, use:

```
keytool -import -file C:\cacerts\secondCA.cert -alias secondCA
    -keystore trustedcacertsjks
```

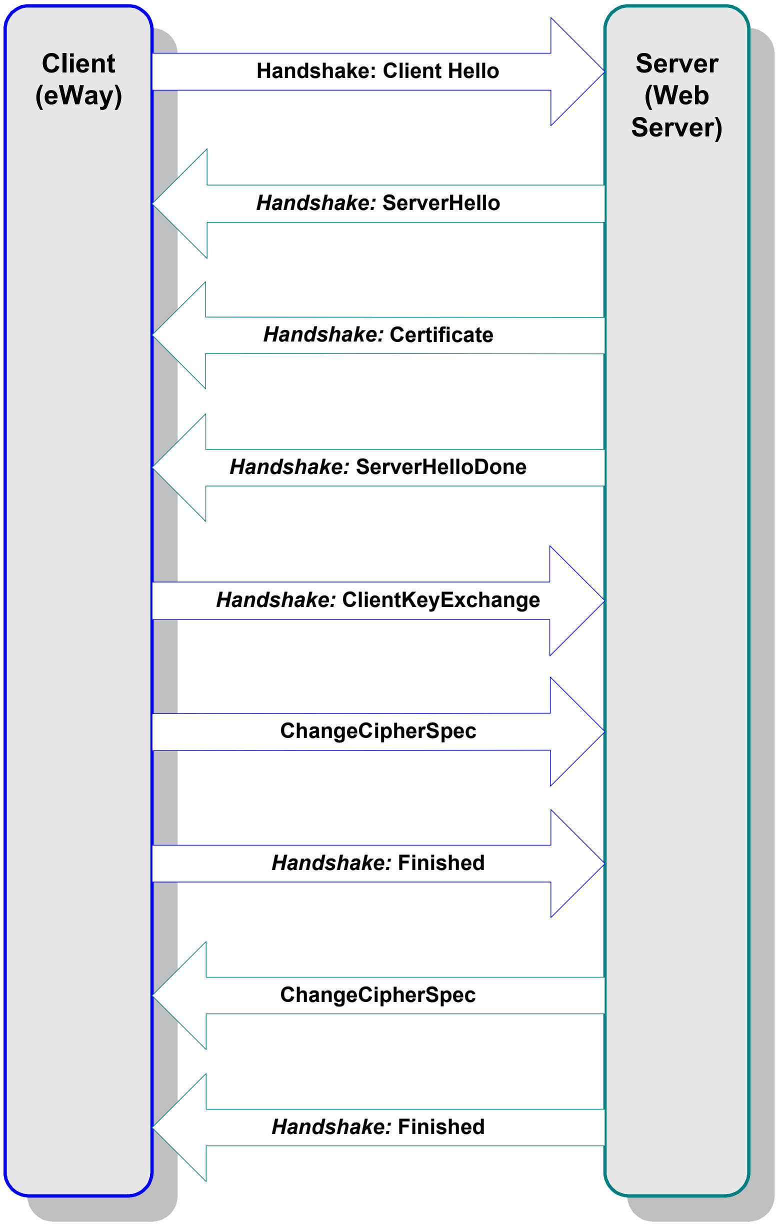
Once you are finished, **trustedcacertsjks** can be used as the TrustStore for the eWay.

4.3 SSL Handshaking

There are two options available for setting up SSL connectivity with a Web server:

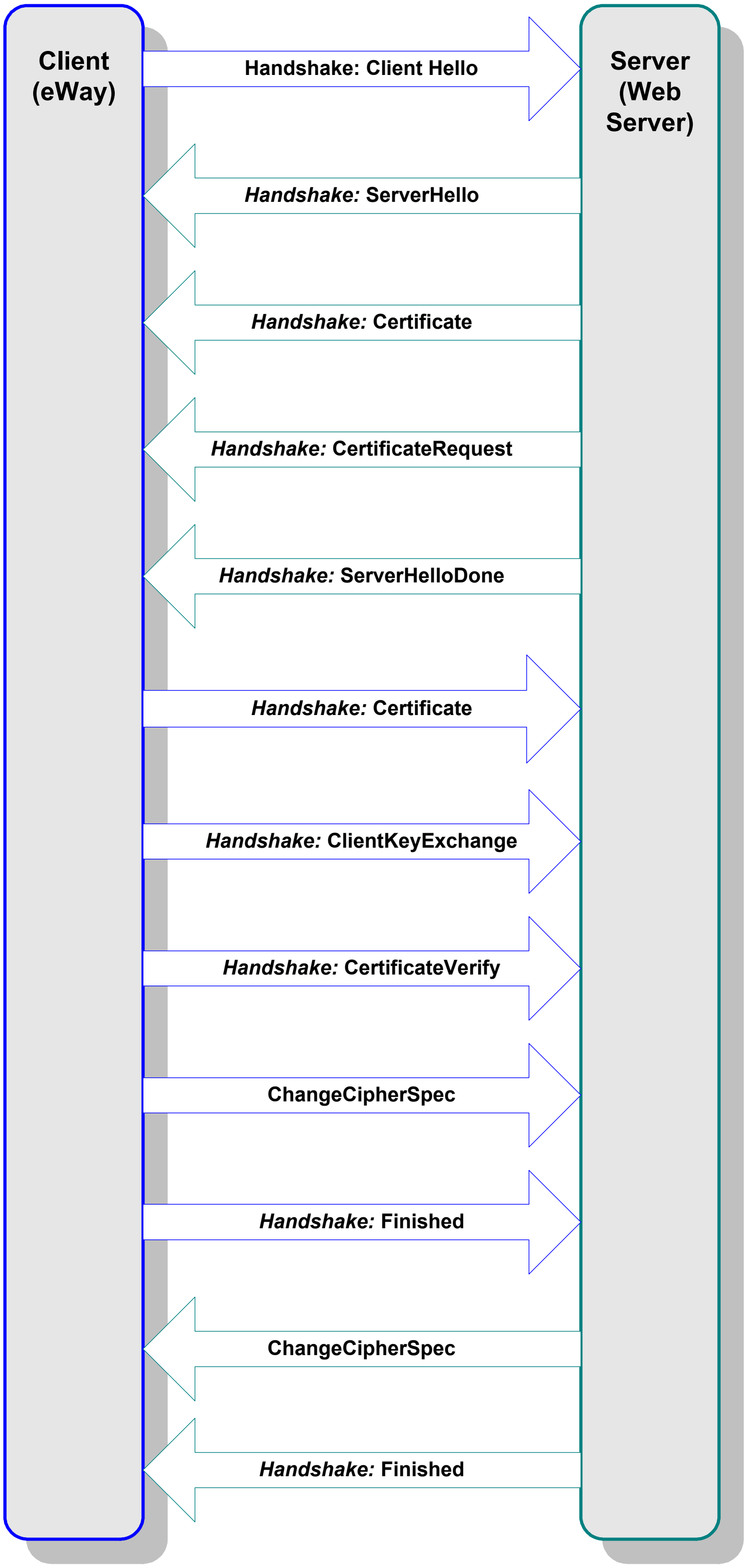
- **Server-side Authentication**: The majority of eCommerce Web sites on the Internet are configured for server-side authentication. The eWay requests a certificate from the Web server and authenticates the Web server by verifying that the certificate can be trusted. Essentially, the eWay performs this operation by looking into its TrustStore for a CA certificate with a public key that can validate the signature on the certificate received from the Web server. This option is illustrated in Figure 9.

Figure 9 Server-side Authentication



- **Dual authentication**: This option requires authentication from both the eWay and Web server. The server side (Web server) of the authentication process is the same as that described previously. In addition, however, the Web server requests a certificate from the eWay. The eWay then sends its certificate to the Web server. The server, in turn, authenticates the eWay by looking into its TrustStore for a matching trusted CA certificate. The communication channel is established by the process of both parties' requesting certificate information. This option is illustrated in Figure 10.

Figure 10 Dual Authentication



4.4 Using the OpenSSL Utility

The **OpenSSL** utility is a free implementation of cryptographic, hashing, and public key algorithms such as 3DES, SHA1, and RSA respectively. This utility has many options including certificate signing, which **keytool** does not provide. You can download **OpenSSL** from the following Web site:

http://www.openssl.org

Follow the build and installation instruction for **OpenSSL**.

To learn more about SSL, and the high level aspects of cryptography, a good source of reference is a book entitled *SSL and TLS: Designing and Building Secure Systems* (by Eric Rescorla, Published by Addison Wesley Professional; ISBN: 0201615983).

4.4.1 Creating a Sample CA Certificate

The sample given in this section demonstrates the use of the **OpenSSL** utility to create a CA. This generated CA is then used to sign a CSR (see **"Signing Certificates With Your Own CA" on page 37**), whether it is generated from **keytool** or **OpenSSL**.

For testing purposes a sample CA can be generated. To avoid spending additional funds to have a commercial CA sign test certificates, a sample is generated and used to sign the test certificate.

Perform the following operations from the command line:

```
openssl  req  -config c:\openssl\bin\openssl.cnf  -new  -x509  -
keyout  ca-key.pem.txt -out  ca-certificate.pem.txt  -days  365

Using properties from c:\openssl\bin\openssl.cnf
Loading 'screen' into random state: done
Generating a 1024 bit RSA private key
.................++++++
.....................++++++
writing new private key to 'ca-key.pem.txt'
Enter PEM pass phrase:
Verifying password: Enter PEM pass phrase:
-----
You are about to be asked to enter information that will be
    incorporated into your certificate request.
What you are about to enter is what is called a Distinguished Name
    or a DN.
There are quite a few fields but you can leave some blank
For some fields there will be a default value,
If you enter '.', the field will be left blank.
-----
Country Name (2 letter code) []:US
State or Province Name (full name) []:California
Locality Name (eg, city) []:Monrovia
Organization Name (eg, company) []:SeeBeyond
Organizational Unit Name (eg, section) []:Development
Common Name (eg, your websites domain name) []
    :development.seebeyond.com
Email Address []:development@seebeyond.com
```

You are prompted for information. You must enter a password and remember this password for signing certificates with the CA's private key. This command creates a private key and the corresponding certificate for the CA. The certificate is valid for 365 days starting from the date and time it was created.

The properties file **C:\openssl\bin\openssl.cnf** is needed for the **req** command. The default **config.cnf** file is in the **OpenSSL** package under the **apps** sub-directory.

Note: *That to use this file in Windows, you must change the paths to use double back-slashes. See* **"Windows OpenSSL.cnf File Example" on page 38** *for a complete* **Config.cnf** *file example, which is known to work in a Windows environment.*

4.4.2 Signing Certificates With Your Own CA

The example in this section shows how to create a CSR with **keytool** and generate a signed certificate for the CSR with the CA created in the previous section. The steps shown in this section, for generating a **KeyStore** and a CSR, were already explained under **"Creating a KeyStore in JKS Format" on page 29**.

Note: *No details are given here for the* **keytool** *commands. See* **"Creating a KeyStore in JKS Format" on page 29** *for more information.*

To create a CSR with keytool and generate a signed certificate for the CSR

1

```
keytool -keystore clientkeystore -genkey -alias client

Enter keystore password:  seebeyond
What is your first and last name?
[Unknown]:  development.seebeyond.com
What is the name of your organizational unit?
[Unknown]:  Development
What is the name of your organization?
[Unknown]:  SeeBeyond
What is the name of your City or Locality?
[Unknown]:  Monrovia
What is the name of your State or Province?
[Unknown]:  California
What is the two-letter country code for this unit?
[Unknown]:  US
Is <CN=Foo Bar, OU=Development, O=SeeBeyond, L=Monrovia, ST=Californi
a, C=US>   correct?
[no]:  yes

Enter key password for <client>
(RETURN if same as keystore password):
```

2

```
keytool  -keystore clientkeystore  -certreq  -alias client  -
keyalg rsa  -file client.csr
```

3

```
openssl  x509  -req  -CA
    ca-certificate.pem.txt  CAkey ca-key.pem.txt
    -in client.csr -out client.cer  -days 365  -CAcreateserial
```

This is how we create a signed certificate for the associated CSR. The option **-CAcreateserial** is needed if this is the first time the command is issued. It is used to create an initial serial number file used for tracking certificate signing. This certificate will be valid for 365 days.

4

```
keytool -import -keystore clientkeystore -file client.cer
    -alias client

Enter keystore password: seebeyond
keytool error: java.lang.Exception: Failed to establish chain from
    reply
```

You get an exception because there is no certificate chain in the client certificate so we have to import the CA's certificate into the **KeyStore** first. You can then import the client.cer itself to form a certificate chain. You need the following steps:

5

```
keytool  -import  -keystore clientkeystore  -file CA
    ca-certificate.pem.txt  -alias theCARoot

Enter keystore password:  seebeyond
Owner: EmailAddress=development@seebeyond.com, CN=development.seebeyo
nd.com, OU=Development, O=SeeBeyond, L=Monrovia, ST=California, C=US
Issuer: EmailAddress=development@seebeyond.com, CN=development.seebey
ond.com,
OU=Development, O=SeeBeyond, L=Monrovia, ST=California, C=US
Serial number: 0
Valid from: Tue May 08 15:09:07 PDT 2001 until: Wed May 08
    15:09:07 PDT 2002
Certificate fingerprints:
MD5:  60:73:83:A0:7C:33:28:C3:D3:A4:35:A2:1E:34:87:F0
SHA1: C6:D0:C7:93:8E:A4:08:F8:38:BB:D4:11:03:C9:E6:CB:9C:D0:72:D0
Trust this certificate? [no]:  yes
Certificate was added to keystore
```

6

```
keytool -import -keystore clientkeystore -file  client.cer -alias
    client

Enter keystore password: seebeyond
Certificate reply was installed in keystore
```

Now that we have a private key and an associating certificate chain in the **KeyStore clientkeystore**, we can use it as a **KeyStore** for client (eWay) authentication. The only warning is that the CA certificate must be imported into the trusted certificate store of the Web server to which you will be connecting. Moreover, the Web server must be configured for client authentication (**httpd.conf** for Apache, for example).

This appendix contains the contents of the **openssl.cnf file** that can be used on Windows. Be sure to make the appropriate changes to the directories.

4.4.3 Windows OpenSSL.cnf File Example

This section contains the contents of the **openssl.cnf file** that can be used on Windows. Be sure to make the appropriate changes to the directories.

```
#
# SSLeay example properties file.
# This is mostly being used for generation of certificate requests.
#

RANDFILE = .rnd

####################################################################
[ ca ]
default_ca= CA_default# The default ca section

####################################################################
[ CA_default ]

dir      = G:\\openssl\\\bin\\demoCA# Where everything is kept
certs    = $dir\\certs    # Where the issued certs are kept
crl_dir= $dir\\crl    # Where the issued crl are kept
database= $dir\\index.txt# database index file.
new_certs_dir= $dir\\newcerts# default place for new certs.

certificate= $dir\\cacert.pem    # The CA certificate
serial   = $dir\\serial    # The current serial number
crl      = $dir\\crl.pem    # The current CRL
private_key= $dir\\private\\cakey.pem   # The private key
RANDFILE= $dir\\private\\private.rnd # private random number file

x509_extensions= x509v3_extensions# The extentions to add to the cert
default_days= 365    # how long to certify for
default_crl_days= 30# how long before next CRL
default_md= md5      # which md to use.
preserve = no        # keep passed DN ordering

# A few difference way of specifying how similar the request should l
ook
# For type CA, the listed attributes must be the same, and the option
al
# and supplied fields are just that :-)
policy   = policy_match

# For the CA policy
[ policy_match ]
countryName  = match
stateOrProvinceName= match
organizationName= match
organizationalUnitName= optional
commonName   = supplied
emailAddress = optional

# For the 'anything' policy
# At this point in time, you must list all acceptable 'object'
# types.
[ policy_anything ]
countryName= optional
stateOrProvinceName= optional
localityName= optional
organizationName= optional
organizationalUnitName= optional
commonName   = supplied
emailAddress = optional

####################################################################
[ req ]
default_bits= 1024
default_keyfile = privkey.pem
distinguished_name= req_distinguished_name
attributes= req_attributes
```

```
[ req_distinguished_name ]
countryName  = Country Name (2 letter code)
countryName_min= 2
countryName_max= 2

stateOrProvinceName= State or Province Name (full name)

localityName = Locality Name (eg, city)

0.organizationName= Organization Name (eg, company)

organizationalUnitName= Organizational Unit Name (eg, section)

commonName   = Common Name (eg, your website's domain name)
commonName_max= 64

emailAddress = Email Address
emailAddress_max= 40

[ req_attributes ]
challengePassword= A challenge password
challengePassword_min= 4
challengePassword_max= 20

[ x509v3_extensions ]
```

Note: *The following copyright notices apply:*

Chapter 5

Configuring the HTTPS eWay

This chapter describes how to set the properties of the HTTPS eWay.

What's in This Chapter

5.1 Creating and Configuring the HTTPS eWay

All eWays contain a unique set of default configuration parameters. After the eWays are established and a HTTPS External System is created in the Project's Environment, the eWay parameters are modified for your specific system. The HTTPS eWay configuration parameters are modified from two locations:

- From the **Connectivity Map**—which contains parameters specific to the HTTPS eWay, and may vary from other eWays (of the same type) in the Project.
- From the **Environment Explorer** tree—which contains global parameters that commonly apply to all eWays (of the same type) in the Project. Saved parameters are shared by all eWays in the HTTPS External System Properties window.
- **Collaboration or Business Process**: HTTPS eWay properties may also be set from your Collaboration or Business Process, in which case the settings will override the corresponding properties in the eWay's Connectivity Map configuration. Any properties that are not overridden retain their configured default settings.

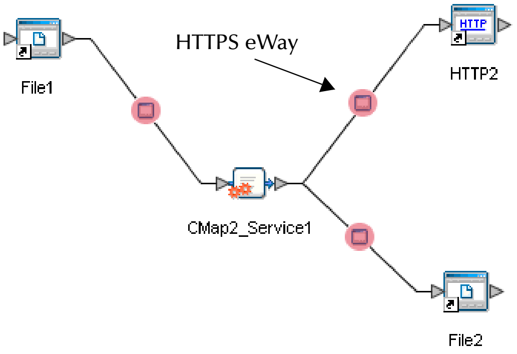
5.2 Configuring the eWay Connectivity Map Properties

When you connect an External Application to a Collaboration, Enterprise Designer automatically assigns the appropriate eWay to the link. Each eWay is supplied with a template containing default configuration properties that are accessible on the Connectivity Map.

To configure the HTTPS eWay properties:

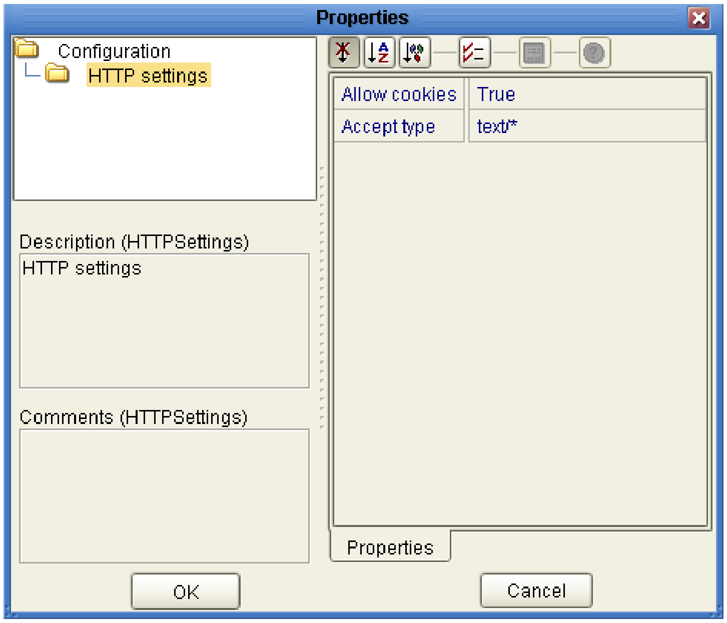
1 On the Enterprise Designer's Connectivity Map, double-click the HTTPS eWay icon.

Figure 11 Connectivity Map with Components - Client



The eWay Properties window appears, displaying the default properties for the eWay.

Figure 12 eWay Properties - Client



Allow cookies	True
Accept type	text/*

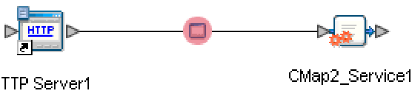
Description (HTTPSettings)
HTTP settings

Comments (HTTPSettings)

To configure the HTTPS Server eWay properties:

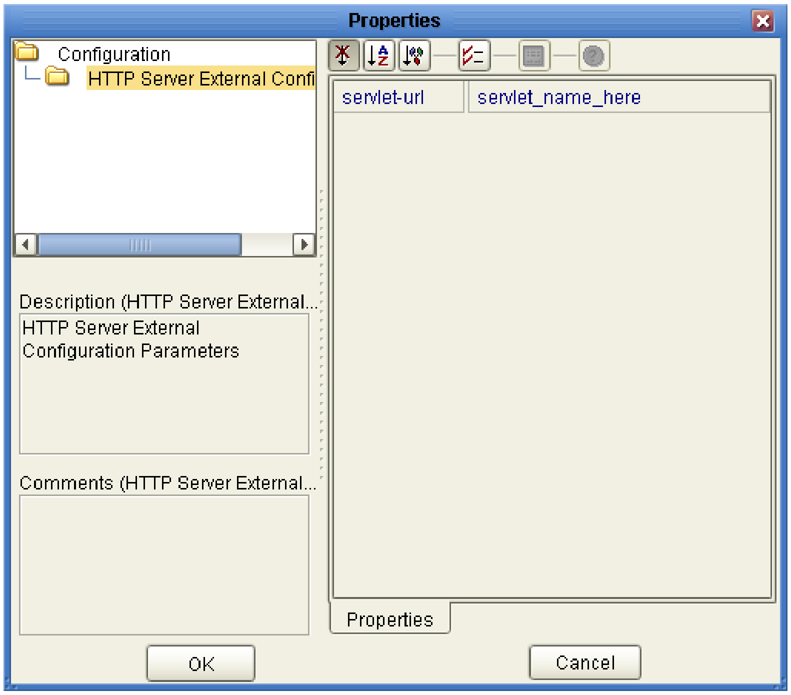
1 On the Enterprise Designer's Connectivity Map, double-click the HTTPS Server eWay icon.

Figure 13 Connectivity Map with Components - Server



The eWay Properties window appears, displaying the default properties for the HTTPS Server eWay.

Figure 14 eWay Properties - Server



Description (HTTP Server External...

HTTP Server External Configuration Parameters

Comments (HTTP Server External...

servlet-url	servlet_name_here

5.3 Configuring the eWay Environment Properties

The eWay Environment Configuration properties contain parameters that define how the eWay connects to and interacts with other eGate components within the Environment. When you create a new HTTPS External System, you may configure the type of External System required.

Available External System properties include:

- HTTP Settings
- Proxy Configuration
- Security
- Connection Pool Settings

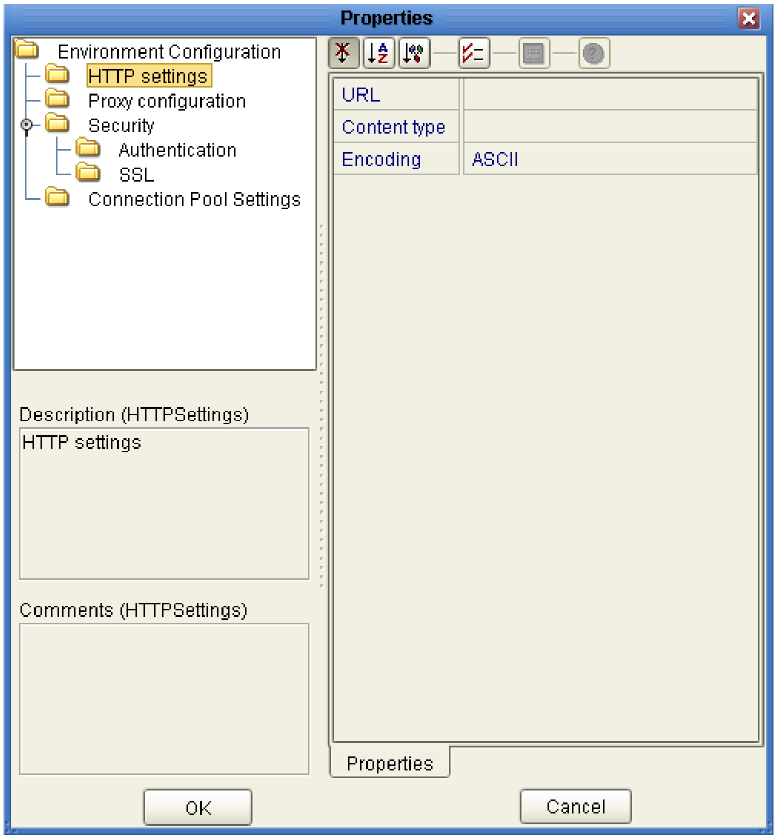
To Configure the Environment Properties:

1. In Enterprise Explorer, click the Environment Explorer tab.
2. Expand the Environment created for the HTTPS Project and locate the HTTPS External System.

Note: *For more information on creating an Environment, see the "Sun SeeBeyond eGate Integrator Tutorial".*

3. Right-click the External System created for the HTTPS Project and select Properties from the list box. The Environment Configuration Properties window appears.

Figure 15 HTTPS eWay Environment Configuration



Description (HTTPSettings)
HTTP settings

Comments (HTTPSettings)

URL	
Content type	
Encoding	ASCII

4. Click on any folder to display the default configuration properties for that section.
5. Click on any property field to make it editable.

After modifying the configuration properties, click **OK** to save the changes.

5.4 eWay Connectivity Map Properties

The eWay Connectivity Map consists of the following properties categories.

HTTPS eWay Configuration Sections Include:

- HTTP Settings

HTTPS Server eWay Configuration Sections Include:

- HTTP Server External Configuration

5.4.1 Configuring the Connectivity Map HTTPS eWay Properties

The HTTPS eWay Properties include parameters used by the external system.

Table 3 HTTP eWay—HTTP Settings

Name	Description	Required Value
Allow Cookies	Specifies whether cookies sent from servers are allowed to be stored and sent on subsequent requests. If cookies are not allowed, sessions are not supported.	**True** or **False**. The default is **True**.
Accept Type	The default **Accept type** header value to include when sending a request to the server.	A string. For example: **text/html, text/plain, text/xml,** and so on. The default is **text/***.

5.4.2 Configuring the Connectivity Map HTTPS Server eWay Properties

The HTTPS Server eWay Properties include parameters used by the external system.

Table 4 HTTP Server eWay—HTTP Server External Configuration

Name	Description	Required Value
servlet-url	Specifies the last path component of the HTTPS server servlet URL. The client uses this URL value to access the server. The property value must be the servlet name (for example, **HttpServerServlet**). An example of a valid servlet URL is **http://localhost:18001/Deployment1_servlet_HttpServerServlet/HttpServerServlet**, where the URL value comprises several components as follows: ▪ **localhost**: The name of the machine on which your current Logical Host is running. ▪ **18001**: The port number (in this case, the Sun SeeBeyond Integration Server port number). ▪ **Deployment1_servlet_HttpServerServlet**: The name of your current Project's Deployment Profile concatenated with **_servlet_HttpServerServlet**. ▪ **HttpServerServlet**: The servlet name (equivalent to the **servlet_url** property). ***Note:*** Set the port number based on the Sun SeeBeyond Integration Server properties. By default, it is 18001, but it can be modified by the user. Set the Sun SeeBeyond Integration Server properties using the **Environment Explorer**. See the *eGate Integrator User's Guide* for details.	A valid URL.

5.5 eWay Environment Properties

eWay External System properties must be configured from within the Environment. Until you have successfully configured all eWays for your Java CAPS project, your project cannot be properly executed or deployed. The following list identifies the HTTPS eWay properties. There are four Environment Configuration categories that the HTTPS eWay implements.

Property Categories Configured in the Logical Host Environment

- **HTTP Settings** on page 47

- **Proxy Configuration** on page 48
- **Security** on page 49
- **Connection Pool Settings** on page 53

5.5.1 HTTP Settings

HTTP Settings includes the configuration parameters listed in Table 5.

Caution: *Calling the* **clear()** *method in the Collaboration Editor (Java) clears all properties in this* **HTTP Settings** *section. Once the properties have been cleared, you must manually rebuild the header and payload sections of the Request message in the Transformation Designer.*

Table 5 Environment Configuration—HTTP Settings

Name	Description	Required Value
URL	Specifies the default URL to be used for establishing an HTTP or HTTPS connection. When a URL is not assigned to the HTTP OTD, the default value is used as the URL for both the GET and POST commands. See **"GET and POST Methods" on page 9**. If "https" protocol is specified, SSL must be enabled. See **Table 8 on page 50**.	A valid URL. You must include the full URL. For example, **http://www.sun.com** or **http://google.yahoo.com/bin/query** If using GET functionality, you can provide the properties, using encoded query string notation. For example (all on one line): **http://www.ee.cornell.edu/cgi-bin/cgiwrap/~wes/** **pq?FirstName=John&LastName=Doe** ***Note:*** For international URLs, be sure the targeting URL supports the encoding used in this property. A list of the character encoding supported by the Java 2 platform is at the Sun Web site: **http://java.sun.com**

Table 5 Environment Configuration—HTTP Settings (Continued)

Name	Description	Required Value
Content Type	The default **Content type** header value to include when sending a request to the server. If no value is specified, a default value of **application/x-www-form-urlencoded** is supplied by the eWay. ***Important:*** A change of the configuration value will only alter the header value, and not the actual Content type. When necessary, you can undertake any conversion or transformation of data manually.	A valid string.
Encoding	The default encoding used when reading or writing textual data.	A valid entry. The default is **ASCII**.

5.5.2 Proxy Configuration

The properties in this section specify the information required for the eWay to access the external systems through a proxy server.

Use the **Proxy Configuration** settings in the client HTTPS Environment properties, when setting the desired URL dynamically within a Collaboration (Java) or Business Process.

Note: *It is a known behavior of the Java Virtual Machine (JVM) to bypass an invalid proxy server through a local connection. As a result, you may still get a response, even if the proxy setting is invalid. This false response only happens with an HTTP connection. An HTTPS connection ensures authenticated handshaking from the proxy.*

Note: *The HTTPS eWay client bypasses the proxy server when accessing local addreses. This contrasts a web browser's behavior where all requests are sent to a proxy even if they are local.*

Proxy Configuration includes the configuration parameters listed in Table 6.

Table 6 Environment Configuration—Proxy Configuration

Name	Description	Required Value
Proxy Host	Specifies the host name of the HTTP proxy. This specifies the HTTPS proxy host to which requests to an HTTP server or reception of data from an HTTP server may be delegated to a proxy. This sets the proxy port for secured HTTP connections.	A valid HTTPS proxy host name.

Table 6 Environment Configuration—Proxy Configuration (Continued)

Name	Description	Required Value
Proxy Port	Specifies the port of the HTTPS proxy. This specifies the HTTPS proxy port to which requests to an HTTP server or reception of data from an HTTP server may be delegated to a proxy. This sets the proxy port for secured HTTP connections.	A valid HTTPS proxy port. The default is **8080**.
Proxy Username	Specifies the user name necessary for authentication to access the proxy server.	A valid user name. ***Note:*** The user name is required by URLs that require HTTP basic authentication to access the site. ***Important:*** Be sure to enter a value for this property before you enter a value for the **Proxy password** properties.
Proxy Password	Specifies the password required for accessing the HTTPS proxy.	The appropriate password. ***Important:*** Be sure to enter a value for the **Proxy username** properties before entering this property.

An additional task to properly configure the Proxy properties is to edit the **PropertyPermission** utility of the **server.policy** file in the Logical Host:

1. Navigate to `<c:\JavaCAPS>\logicalhost\is\lib\install\templates\` where `<c:\JavaCAPS>\` is the location of your Sun Java Composite Application Platform Suite installation.
2. Add the following syntax to the **server.policy** file:

   ```
   permission java.util.PropertyPermission "*", "read,write";
   ```

3. For the permission changes to take place, you need to create a new domain. See **"Creating and Starting the Domain" on page 81** to create a new domain.

5.5.3 Security

The Environment Configuration Security properties are used to perform HTTP authentication and SSL connections. They include the following configuration sections:

- Authentication
- SSL

Authentication

Details for the Authentication settings used for HTTP authentication are detailed in Table 7.

Table 7 Environment Configuration—Security, Authentication

Name	Description	Required Value
HTTP Username	Specifies the user name for authenticating the web site specified by the URL.	A valid user name. ***Important:*** Enter a value for this property before you enter a value for the **HTTP password** properties.
HTTP Password	Specifies the password used for authenticating the web site specified by the URL.	A valid password. ***Important:*** Be sure to enter a value for the **HTTP username** properties before entering this property.

SSL

Details for the SSL settings used for SSL connections are detailed in Table 8.

Table 8 Environment Configuration—Security, SSL

Name	Description	Required Value
Protocol SSL	The SSL protocol to use when establishing an SSL connection with the server. If the protocol is not set by this method, the default protocol type, **TLS** (Sun JSSE), is used. If an SSL connection is not required, leave the default **No SSL** option.	If you are using the default Sun JSSE provider, choose one of the following settings: ♦ **TLSv1** ♦ **TLS** ♦ **SSLv2** ♦ **SSLv3** ♦ **SSL** If you are running the Sun SeeBeyond Integration Server on AIX, choose or enter one of the following settings: ♦ **SSL-TLS** ♦ **TLSv1** ♦ **TLS** ♦ **SSLv3** ♦ **SSLv2** ♦ **SSL** For details on these settings, see the appropriate JSSE documentation.

Table 8 Environment Configuration—Security, SSL (Continued)

Name	Description	Required Value
JSSE Provider Class	Specifies the fully qualified name of the JSSE provider class. For more information, see the Sun Java Web site at: http://java.sun.com/. It is assumed that the provider class is in the runtime classpath.	The name of a valid JSSE provider class. The default is **com.sun.net.ssl.internal.ssl.Provider** If you are running the Sun SeeBeyond Integration Server on AIX, specify **com.ibm.jsse.IBMJSSEProvider**.
X509 Algorithm Name	Specifies the X509 algorithm name to use for the trust and key manager factories.	The name of a valid X509 algorithm. The default is **SunX509**. If you are running the Sun SeeBeyond Integration Server on AIX, specify **IbmX509**.
KeyStore Type	Specifies the default KeyStore type. The keystore type is used for key/certificate management when establishing an SSL connection. If the default KeyStore type is not set by this method, the default KeyStore type, JKS, is used.	
KeyStore	Specifies the default KeyStore file. The keystore is used for key/certificate management when establishing SSL connections.	A valid package location. There is no default value. It is recommended to use `<c:\JavaCAPS>\logicalhost\is\domains\<MyDomain>\config\keystore.jks` where `<c:\JavaCAPS>` is the directory where the Sun Java Composite Application Platform Suite is installed and `<MyDomain>` is the name of your domain.
KeyStore Username	The username for accessing the keystore used for key/certificate management when establishing SSL connections. ***Note:*** If the keystore type is PKCS12 or JKS, the keystore username properties is not used. PKCS12 and JKS keystore types require passwords for access but do not require user names. If you enter a value for this property, it is ignored for PKCS12 and JKS.	

Table 8 Environment Configuration—Security, SSL (Continued)

Name	Description	Required Value
KeyStore Password	Specifies the default KeyStore password. The password is used to access the KeyStore used for key/certificate management when establishing SSL connections; there is no default.	
TrustStore Type	The TrustStore type of the TrustStore used for CA certificate management when establishing SSL connections. If the TrustStore type is not set by this method, the default TrustStore type, **JKS**, is used.	A valid **TrustStore** type.
TrustStore	Specifies the default TrustStore. The TrustStore is used for CA certificate management when establishing SSL connections.	A valid **TrustStore** name. There is no default value. It is recommended to use `<c:\JavaCAPS>\logicalhost\is\domains\<MyDomain>\config\cacerts.jks` where `<c:\JavaCAPS>` is the directory where the Sun Java Composite Application Platform Suite is installed and `<MyDomain>` is the name of your domain.
TrustStore Password	Specifies the default TrustStore password. The password is for accessing the TrustStore used for CA certificate management when establishing SSL connections.	A valid **TrustStore** password. There is no default value.

5.5.4 Additional SSL Section Notes

Following are additional notes related to the properties in the SSL section.

Verify hostname

Description

Determines whether the host name verification is done on the server certificate during the SSL handshake.

You can use this property to enforce strict checking of the server host name in the request URL and the host name in the received server certificate.

Required Values

True or **False**; the default is **False**.

Additional information

Under some circumstances, you can get different Java exceptions, depending on whether you set this property to **True** or **False**. This section explains what causes these exceptions.

For example, suppose the host name in the URL is **localhost**, and the host name in the server certificate is **localhost.stc.com**. Then, the following conditions apply:

- If **Verify hostname** is set to **False**:

  Host name checking between the requested URL and the server certificate is turned *off*.

  You can use an incomplete domain host name, for example, **https://localhost:444**, or a complete domain host name, for example, **https://localhost.stc.com:444**, and get a positive response in each case.

- If **Verify hostname** is set to **True**:

  Host name checking between the requested URL and the server certificate is turned *on*.

Note: *If you use an incomplete domain host name, for example,* **https://localhost:444**, *you can get the exception* **java.io.IOException: HTTPS hostname wrong**.

You must use a complete domain host name, for example, **https://localhost.stc.com:444**.

5.5.5 Connection Pool Settings

Connection Pool Settings include the configuration parameters listed in Table 9.

Table 9 Environment Configuration—Connection Pool Settings

Name	Description	Required Value
Steady Pool Size	Specifies the minimum number of physical connections the pool should keep available at all times. 0 (zero) indicates that there should be no physical connections in the pool and the new connections should be created as needed.	A valid numeric value. The default is **1**.
Maximum Pool Size	Specifies the maximum number of physical connections the pool should keep available at all times. 0 (zero) indicates that there is no maximum.	A valid numeric value. The default is **10**.
Maximum Idle Timeout	Specifies the number of seconds that a physical connection may remain unused before it is closed. 0 (zero) indicates that there is no limit.	A valid numeric value. The default is **300**.

5.6 Setting Acceptor Threads Property for HTTPS Server Mode

Before you run the Java CAPS Logical Host, you must set the **Acceptor Threads** property for the Sun SeeBeyond Integration Server HTTP listener. This property allows you to set up the correct performance of the HTTPS eWay in server mode.

Acceptor threads operate as follows:

- At server start-up time, the Sun SeeBeyond Integration Server HTTP listener creates a number of request-processing threads. Each incoming request requires a thread for the duration of that request.
- If more simultaneous requests are received than can be handled by the currently available request-processing threads, additional threads are created. This number is limited by the configured maximum.
- If still more simultaneous requests are received, they are queued inside the server socket created by the HTTP listener, up to the configured maximum. Any further simultaneous requests receive “connection refused” errors, until resources are available to process the requests. In Java CAPS, such errors appear in the log file for the server mode eWay component.

Note: *For more information, visit the Apache Tomcat server, version 4.1, Web site.*

- To adjust the number of threads that wait for HTTP connections (Acceptor threads) according to the needs of your application, refer to the *Sun SeeBeyond eGate™ Integrator System Administration Guide* for more information.

Chapter 6

Implementing the HTTPS eWay BPEL Sample Projects

This chapter provides an introduction to the HTTPS eWay BPEL components, and information on how these components are created and implemented in a Sun Java Composite Application Platform Suite Project. Sample Projects are designed to provide an overview of the basic functionality of the HTTPS eWay by identifying how information is passed between eGate and supported external systems via HTTPS.

It is assumed that you understand the basics of creating a Project using the 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

6.1 eInsight Engine and Components

eGate components can be deployed as Activities in eInsight Business Processes. Using the Enterprise Designer with eInsight, you can add an Activity to a Business Process, then associate that Activity with an eGate component such as an eWay. When eInsight runs the Business Process, it automatically invokes that component using its Web Services interface. eGate components that can interface with eInsight in this way include:

- Object Type Definitions (OTDs)
- eWays
- Collaborations

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

6.2 HTTPS eWay With eInsight

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

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 by the Business Process. Using eInsight's Web Services interface, the Activity in turn invokes the HTTPS eWay.

6.2.1 Server Mode Operation

Instead of **GET** and **POST** operations, the eWay's server mode processes a **Request** operation. In addition these operations, the eInsight **Business Rule Designer** allows you to perform a variety of actions, represented by nodes in the **Output** and **Input** panes.

The actions allowed vary, depending on whether you are using the **Receive** or **Reply** functions. These actions allow you to perform operations in the same way as making calls using Java methods.

Table 10 explains the functions of these nodes.

Table 10 Receive: Business Rule Designer Output Nodes

Node Name	Description
authType	Gets or sets the name of the authentication scheme used to protect the servlet.
byteArray	Gets or sets the contents of the message as a byte array.
characterEncoding	Gets or sets the name of the character encoding used.
contentLength	Gets or sets the length, in bytes, of the message body.
contents	Sets the contents of the reply.
contentType	Gets or sets the MIME type of the body of the message, or null if the type is not known.
contextPath	Gets or sets the portion of the message URI that indicates the context of the message.
errorStatusCode	Gets or sets the error status code.
errorStatusMsg	Gets or sets the error status message.
isRequestedSessionIdFromCookie	Checks or sets whether the requested session ID came in as a cookie.
isRequestedSessionIdFromURL	Checks or sets whether the requested session ID came in as part of the request URL.
isRequestedSessionIdValid	Checks or sets whether the requested session ID is still valid.

Table 10 Receive: Business Rule Designer Output Nodes (Continued)

Node Name	Description
isSecure	Gets or sets a boolean indicating whether this message was made using a secure channel, such as HTTPS.
method	Gets or sets the name of the HTTP method with which this message was made; for example, GET, POST, or PUT.
name (WebHeaderList)	Gets or sets the name of the current Web header list.
name (WebParameterList)	Gets or sets the value of a request parameter as a String, or null if the parameter does not exist.
pathInfo	Gets or sets any extra path information associated with the URL the client sent when it made this message.
pathTranslated	Gets or sets any extra path information after the servlet name but before the query string.
protocol	Gets or sets the name and version of the protocol the message uses in the form protocol/majorVersion.minorVersion, for example, HTTP/1.1.
queryString	Gets or sets the query string that is contained in the message URL after the path.
redirectLocation	Gets or sets the URL to which the client is to be redirected.
remoteAddr	Gets or sets the Internet Protocol (IP) address of the client that sent the message.
remoteHost	Gets or sets the fully qualified name of the client that sent the message.
remoteUser	Gets or sets the log-in of the user making this request, if the user has not been authenticated.
requestedSessionId	Gets or sets the session ID specified by the client.
requestURI	Gets or sets the part of this message's URL from the protocol name up to the query string in the first line of the HTTP message.
requestURL	Gets or sets the reconstructed URL the client used to make the request.
scheme	Gets or sets the name of the scheme used to make this request; for example HTTP, HTTPS, or FTP.
serverName	Gets or sets the host name of the server that received the message.
serverPort	Gets or sets the port number on which this message was received.
servletPath	Gets or sets the part of this request's URL that calls the servlet.
status	Sets the status of the reply.
text	Gets or sets the contents of the message as a string.
values (WebHeaderList)	Gets or sets an array String objects containing all the values contained in the current Web header.
values (WebParameterList)	Gets or sets an array String objects containing all the values the given request parameter has, or null if the parameter does not exist.

6.3 About the HTTPS eWay eInsight Sample Projects

The HTTPS eWay **HTTPS_eWay_Sample.zip** file contains two sample Projects that provide basic instruction on using HTTPS operations in Business Process Execution Language (BPEL).

The **prjHTTPClient_BPEL** sample Project allows you to observe an end-to-end data-exchange scenario involving eGate and the HTTPS eWay. The Project also demonstrates how the HTTPS eWay uses the **GET** and **POST** commands to request and receive data from a specific Web site.

The **prjHTTPServer_BPEL** sample Project demonstrates how the HTTPS eWay can receive information via HTTP from a server.

6.4 Importing a Sample Project

Sample eWay Projects are included as part of the installation 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 Sun Composite Application Platform Suite Installer's Documentation tab. The **HTTPS_eWay_Sample.zip** file contains the various sample Project ZIP files and sample data. Extract the samples 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 and click **Import**. After the sample Project is succesfully imported, you can import additional samples or click **Close** to exit the Import Manager.
5. Before an imported sample Project can be run, you must do the following:
   - Create an Environment (see **"Creating an Environment" on page 78**)
   - Configure the eWays for your specific system (see **"Configuring the eWays" on page 79**)
   - Create a Deployment Profile (see **"Creating and Activating the Deployment Profile" on page 80**)
   - Create and start a domain (see **"Creating and Starting the Domain" on page 81**)
   - Build and deploy the Project (see **"Building and Deploying the Project" on page 82**)

The following pages provide step-by-step instructions for creating the **prjHTTPClient_BPEL** and **prjHTTPServer_BPEL** sample Projects.

6.5 Building and Deploying the prjHTTPClient_BPEL Sample Project

The HTTPS eWay client sample Project **prjHTTPClient_BPEL** demonstrates how the HTTPS eWay processes information from an HTTPS system via an eInsight Business Process. Resulting or confirming information is then written to a text file.

6.5.1 Project Overview

The client HTTPS eWay sample Project with an eInsight Business Process demonstrates how the HTTPS eWay uses the **GET** and **POST** commands to request and receive data from a specific Web site.

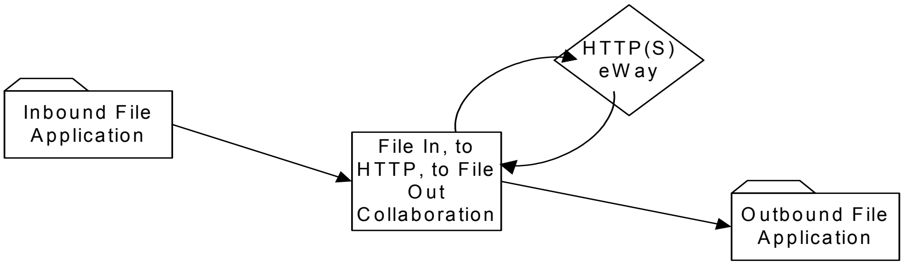
The data result is received from the Web site and is sent to a text file written to an external system via an outbound File eWay, to show the returned data and to confirm that the Project is operating correctly.

The Project has the following outputs:

- **GET Operations**: Returns the retrieved data in an HTML file.
- **POST Operations**: Posts a name/value pair to a form and writes the same information to an HTML file, to confirm the posting.

Figure 16 shows the flow of the sample HTTPS eWay Project.

Figure 16 HTTPS eWay Sample Project


Inbound File Application
File In, to HTTP, to File Out Collaboration
HTTP(S) eWay
Outbound File Application

The location of input and output files are defined by the File eWay properties. By default, the inbound File eWay reads from **c:\temp\input*.txt**. The default is changed for the Project's outbound File eWay, which sends the resulting data to **c:\temp\output%d.html** (**%d** represents the serial index starting with integer 0).

Project Operations

The **prjHTTPClient_BPEL** Project operates as follows:

- **FileIn**: The external file system that provides instructions to the inbound File eWay; this eWay gets a text file containing the instructions and passes them to a Business Process, **HttpBpelService**.
- **HttpBpelService**: Sends instructions to the desired HTTP system via the HTTPS eWay. **HttpBpelService** also receives the information from the HTTPS system, via the HTTPS eWay, then sends it to a File eWay, **FileOut**.
- **HTTP_CLIENT**: The HTTP client external application or system; the HTTPS eWay handles inbound and outbound communication with this system.
- **FileOut**: The external file system that receives the information via HTTP; another File eWay writes the received information to a text file on this system.

Input and Output Data

The HTTPS eWay Project uses the following input/output data files:

- **Get_Sample.xml**
- **Post_Sample.xml**
- **MultipleData_In.dtd**

These files have the following content:

GET Command: Get_Sample.xml

The input data file for the GET command is:

```
<website>
    <method>GET</method>
    <url>http://www.yahoo.com</url>
    <data/>
</website>
```

POST Command: Post_Sample.xml

The input data file for the POST command is:

```
<website>
    <method>POST</method>
    <url>http://<rep host>:<rep port>/examples/servlet/
        RequestParamExample</url>
    <data><name>firstname</name><value>MyFirstName</value></data>
    <data><name>lastname</name><value>MyLastName</value></data>
</website>
```

Sample DTD: MultipleData_In.dtd

The eGate OTD wizard is used to create a DTD-based OTD. The input data file specifies an URL for HTTP commands. The XML DTD code for this sample input data file is:

```
<!ELEMENT website (method, url, data*)>
<!ELEMENT method (#PCDATA)>
<!ELEMENT url (#PCDATA)>
<!ELEMENT data (name?, value?)>
<!ELEMENT name (#PCDATA)>
<!ELEMENT value (#PCDATA)>
```

The **MultipleData_In.dtd** file defines the following elements:

- **Method**: Defines whether the file is for a GET or POST command.
- **URL**: Defines the address of the target HTTP server.
- **Data**: Stores the name/value pair used in the POST command; you can use as many name/value pairs as you need.

Instead of getting and posting relative to an external Internet site, this Business Process sample uses the eGate Integration Server and does these operations internally. If external Internet access is available, you can use that URL in the URL tag.

6.5.2 Creating a Project

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

1. Start the Enterprise Designer.
2. From the Project Explorer tree, right-click the Repository and select **New Project**. A new Project (**Project1**) appears on the Project Explorer tree.
3. Right-click **Project1** and select **Rename** form the shortcut menu. Rename the Project (for this sample, **prjHTTPClient_BPEL**).

6.5.3 Creating the OTD

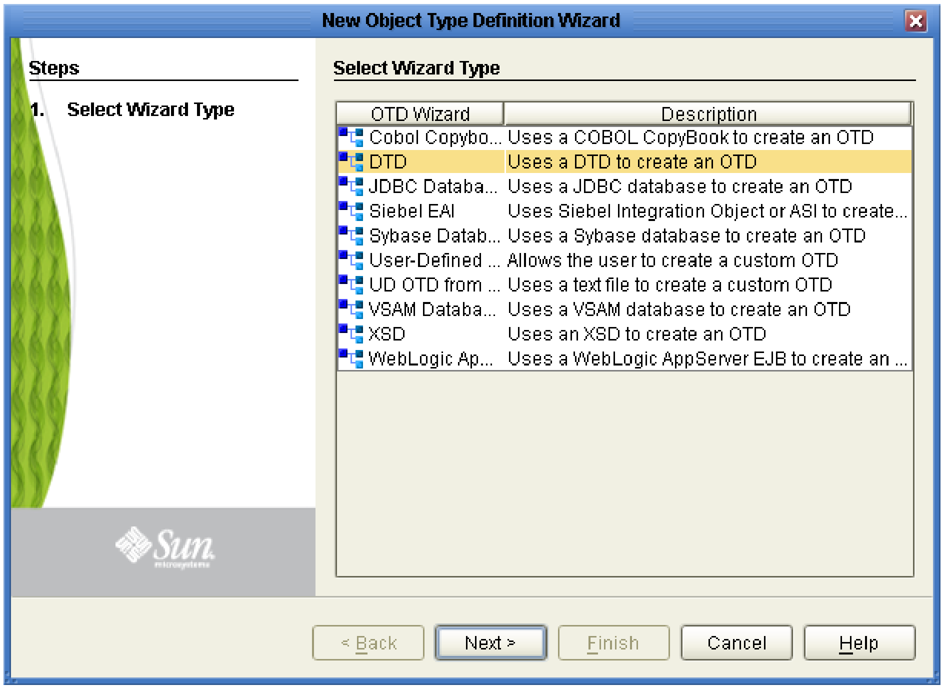
The next step is to create a Data Type Definition (DTD) OTD as an input file for this HTTPS sample Project.

Steps required to create new DTD:

1. In the **Enterprise Explorer**, right-click **prjHTTPClient_BPEL** and select **New > Object Type Definition** from the pop-up menu.

The OTD Wizard Selection window appears. See Figure 17.

Figure 17 OTD Wizard Selection



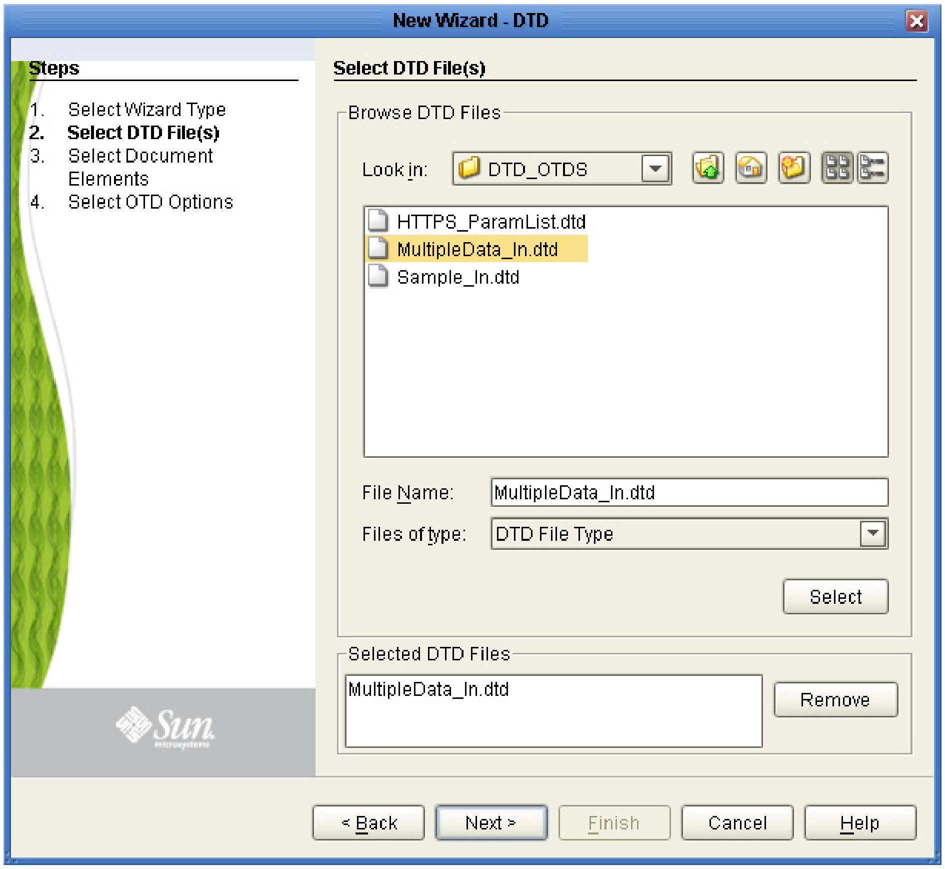
OTD Wizard	Description
Cobol Copybo...	Uses a COBOL CopyBook to create an OTD
DTD	Uses a DTD to create an OTD
JDBC Databa...	Uses a JDBC database to create an OTD
Siebel EAI	Uses Siebel Integration Object or ASI to create...
Sybase Datab...	Uses a Sybase database to create an OTD
User-Defined ...	Allows the user to create a custom OTD
UD OTD from ...	Uses a text file to create a custom OTD
VSAM Databa...	Uses a VSAM database to create an OTD
XSD	Uses an XSD to create an OTD
WebLogic Ap...	Uses a WebLogic AppServer EJB to create an ...

2 From the OTD Wizard Selection window, select **DTD** from the OTD Wizard column. Click **Next**.

3 From the Include DTDs to Selected List window, browse to the **MultipleData_In.dtd** located in the sample folder. Click **Select**.

4 The **MultipleData_In.dtd** file appears in the **Selected DTD Files** pane. See Figure 18.

Figure 18 Include DTDs to Selected List



New Wizard - DTD

Steps

1. Select Wizard Type
2. **Select DTD File(s)**
3. Select Document Elements
4. Select OTD Options

Select DTD File(s)

Browse DTD Files

Look in: DTD_OTDS

HTTPS_ParamList.dtd
MultipleData_In.dtd
Sample_In.dtd

File Name: MultipleData_In.dtd

Files of type: DTD File Type

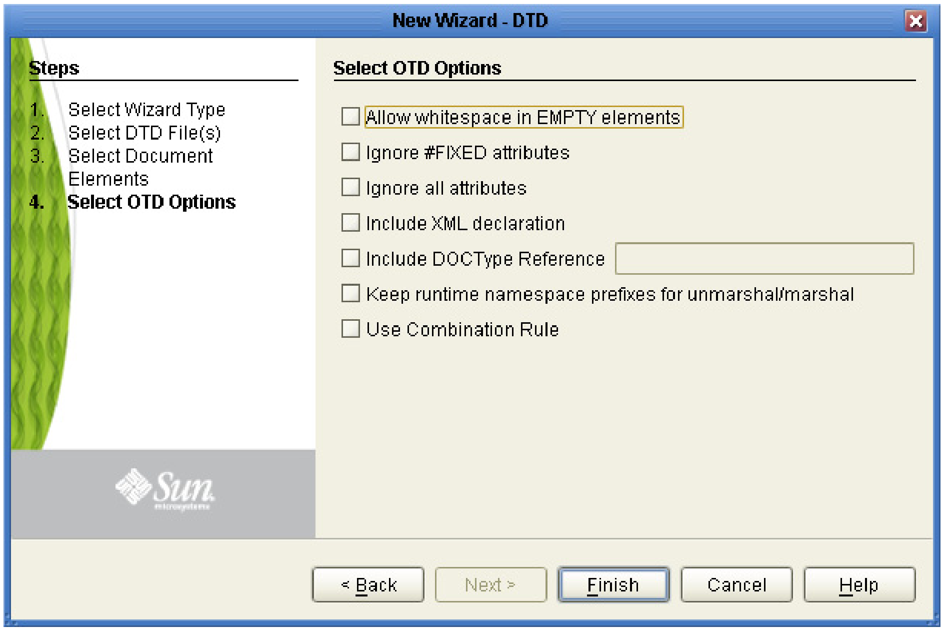
Selected DTD Files

MultipleData_In.dtd

5 Click **Next**.

6 From the **Select Document Elements** section, select **MultipleData_In_website** and click **Next**. The **OTD Options** screen appears.

Figure 19 OTD Options



New Wizard - DTD

Steps

1. Select Wizard Type
2. Select DTD File(s)
3. Select Document Elements
4. **Select OTD Options**

Select OTD Options

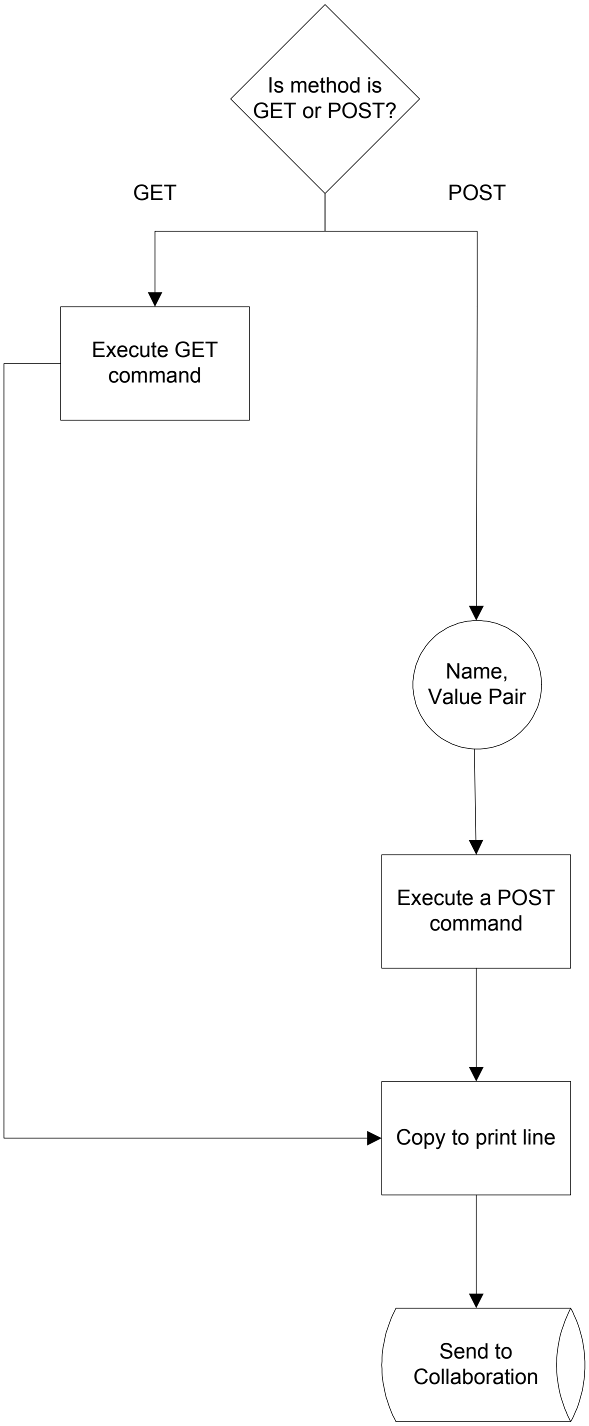
☐ Allow whitespace in EMPTY elements
☐ Ignore #FIXED attributes
☐ Ignore all attributes
☐ Include XML declaration
☐ Include DOCType Reference
☐ Keep runtime namespace prefixes for unmarshal/marshal
☐ Use Combination Rule

7 From the **OTD Options** screen, leave all the OTD options unchecked and click **Finish**. A Message dialog box appears if the OTD is successfully created. The OTD appears in the **Project Explorer** as the OTD icon **MultipleData_In_website**.

6.5.4 Creating a Business Process

The next step is to create the Project's Business Process. The logic of the Business Process is shown in Figure 20.

Figure 20 Logic of the Business Process



This scenario sets up two possible decisions, called Cases in eInsight. If the inbound file requests a GET operation, it is routed to Case 1. If the inbound file requests a POST operation, it is routed to Case 2. Table 11 shows how these cases operate of this Business Process.

Table 11 Business Process Cases

Case	Activity	Result
Case 1: GET operation	Requests that the Business Process get information from the HTTP server.	Appropriate information is retrieved.
Case 2: POST operation	Requests that the Business Process posts information to the HTTP server.	Appropriate information is posted.

To create a Business Process

1. Right-click the name of the sample Project, **prjHTTPClient_BPEL**, in the **Project Explorer** and choose **New > Business Process** from the pop-up menus. Rename the Business Process to **bpHTTPClient**.

   A blank Business Process canvas appears in the right pane, along with the Business Process toolbar.

2. In the **Project Explorer** expand the icons for **SeeBeyond > eWays** for **File** and **HTTP**. Also expand the icon for the **MultipleData_In_website** OTD.

3. Arrange the **Start** and **End** icons at opposite sides of the canvas, then drag the following icons onto the canvas:

   From the **Project Explorer**:

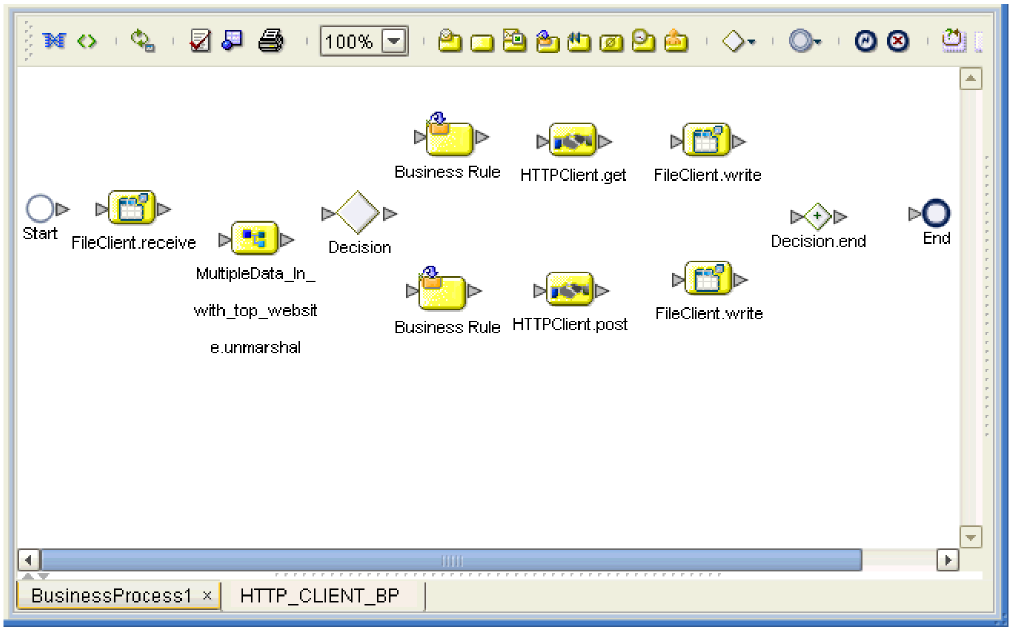
   - **HTTP eWay** (server)
     - One **get** icon
     - One **post** icon
   - **File eWay**
     - One **receive** icon
     - Two **write** icons
   - **MultipleData_In_website.unmarshal** OTD icon

   From the Business Process canvas toolbar:

   - **Decision** (a **Decision End** icon also appears)
   - Two **Business Rule** icons, for your two cases

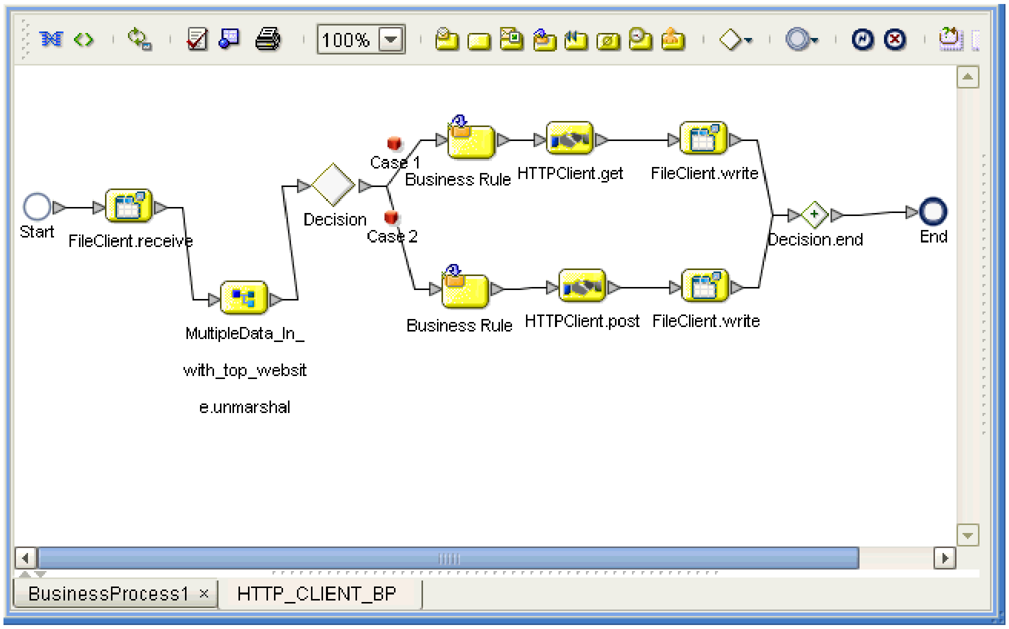
4. Again by dragging, arrange these icons on the canvas as shown in Figure 21.

Figure 21 Business Process Icons: Client



5 By dragging from one icon to another, link the icons on the canvas, as shown in Figure 22.

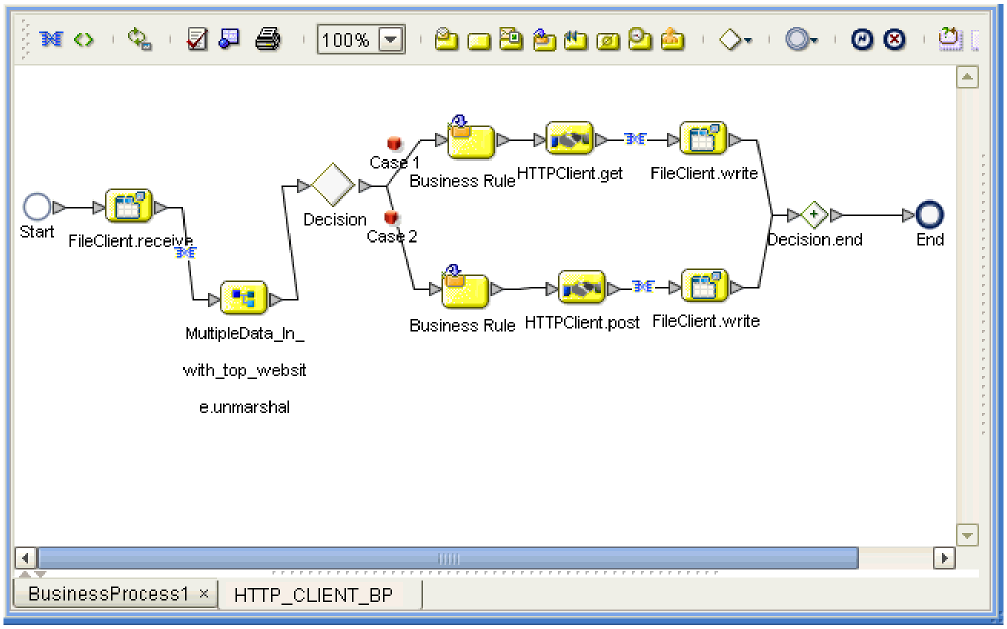
Figure 22 Business Process With Links: Client



Two **Case** icons appear between the **Decision Gate** and each of your **Business Rule** icons.

6 You must add additional Link Business Rules (represented by a small blue, star-shaped icons) to the appropriate links. To do this operation, right-click on the desired link and choose **Add Business Rule** from the pop-up menu. See Figure 23 for the appropriate links where you must add these Link Business Rules.

Figure 23 Business Process With Link Business Rules: Client



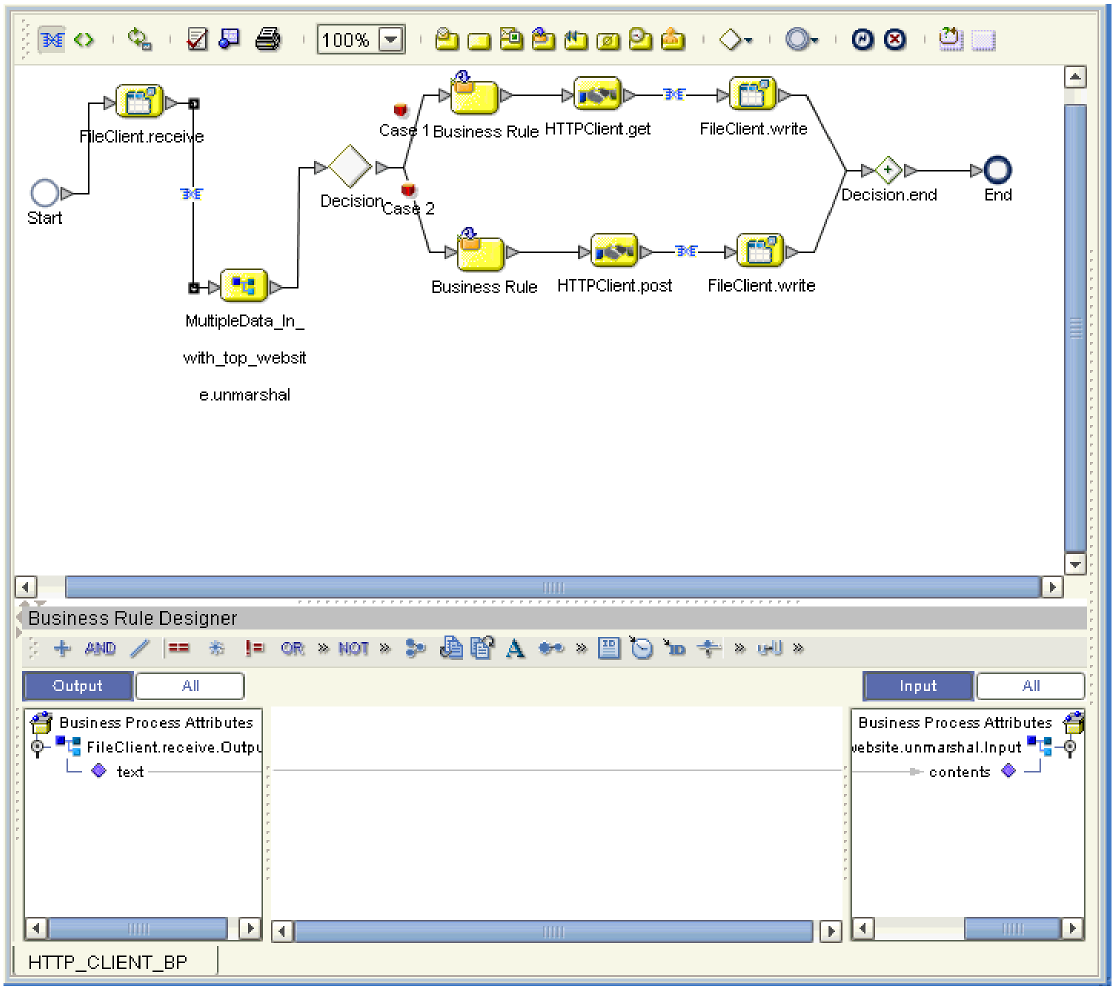
For each Business Rule (Link and **Business Rule** icon), you must create the settings you want in the Business Rule Designer.

7 Select the Link Business Rule on the left, then click the **Map Business Process Attributes** icon in the toolbar.

The Business Rule Designer pane appears at the bottom of the window. Use the Business Rule Designer to create your Business Rules.

8 Set properties For this Link Business Rule by dragging the **text** node from the **Output** pane, and dropping it onto the **contents** node you want to assign it to, in the **Input** pane. In this way, create the first Link Business Rule, as shown in Figure 24.

Figure 24 Business Rule Designer: First Link Business Rule



9 In the same way as you did previously, create additional Link Business Rules, as shown in Figure 25 and Figure 26.

Figure 25 Business Rule Designer: Second Link Business Rule

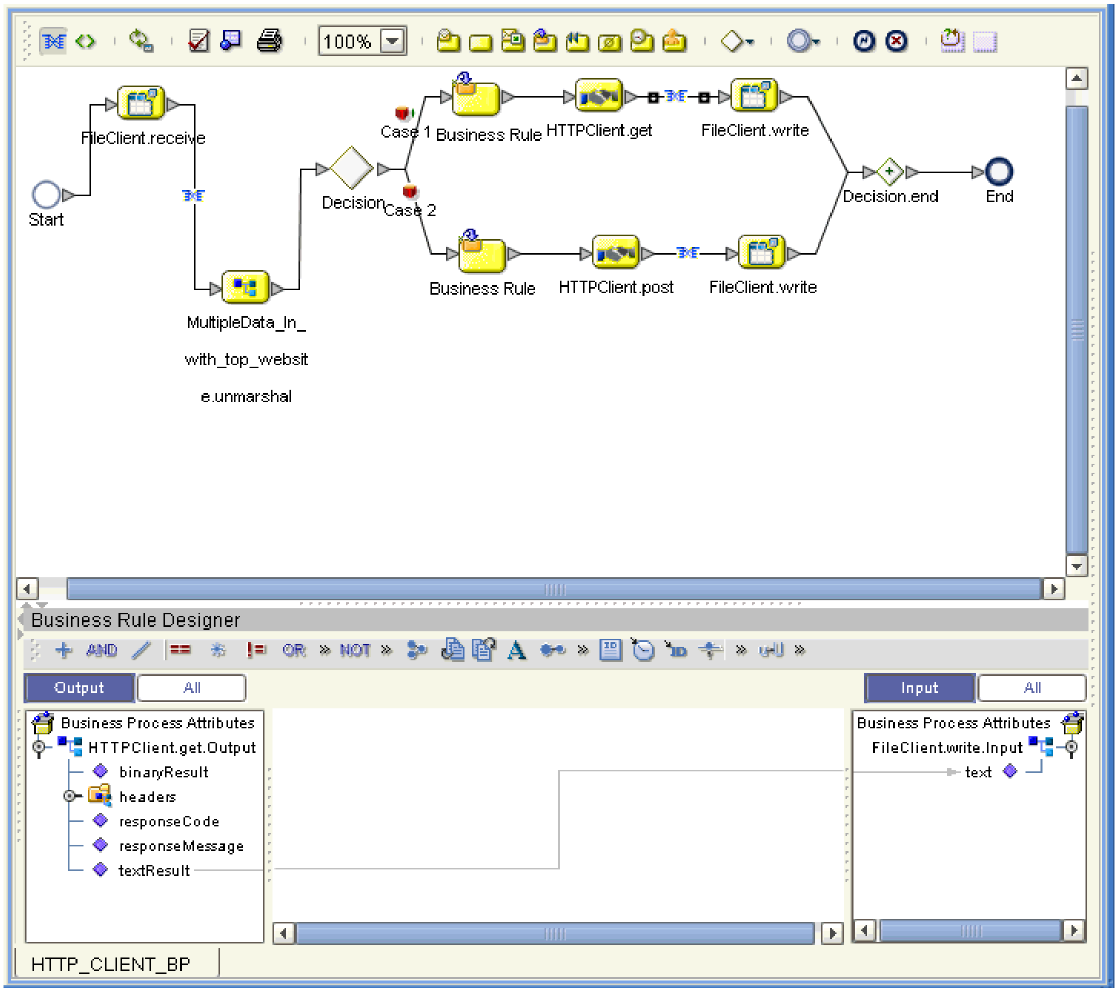
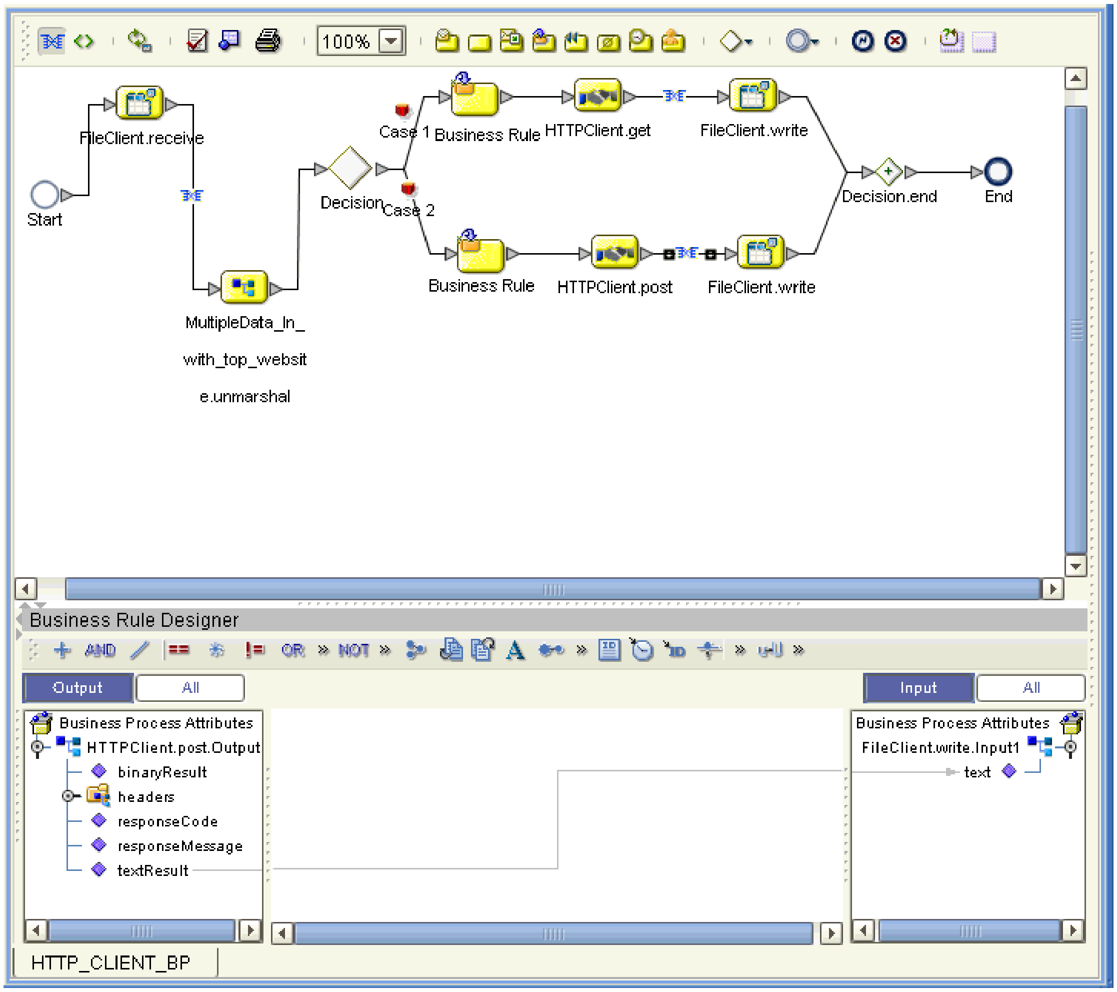


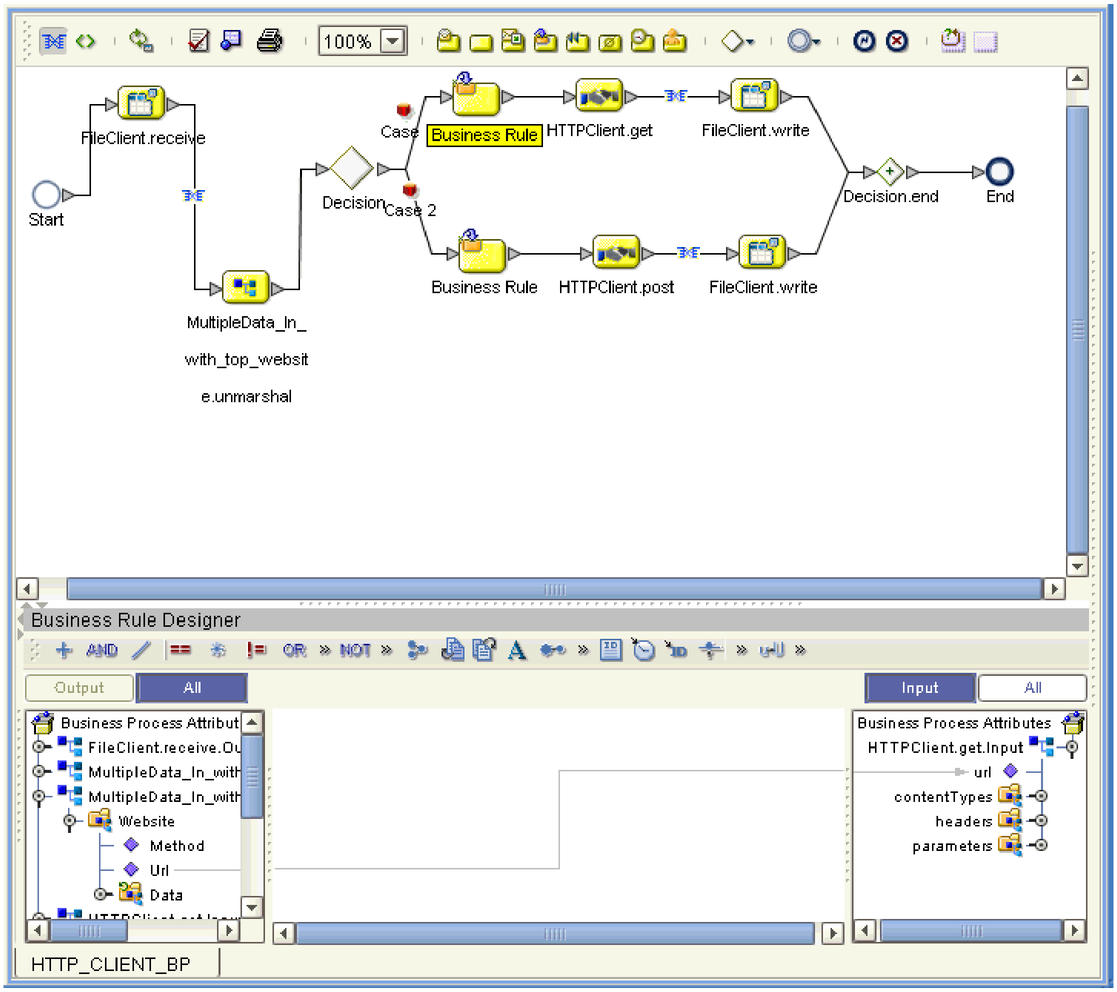
Figure 26 Business Rule Designer: Third Link Business Rule



10 In addition, you must set properties for the **Business Rule** icon components. Select the desired **Business Rule** icon component to open the Business Rule Designer (Figure 27).

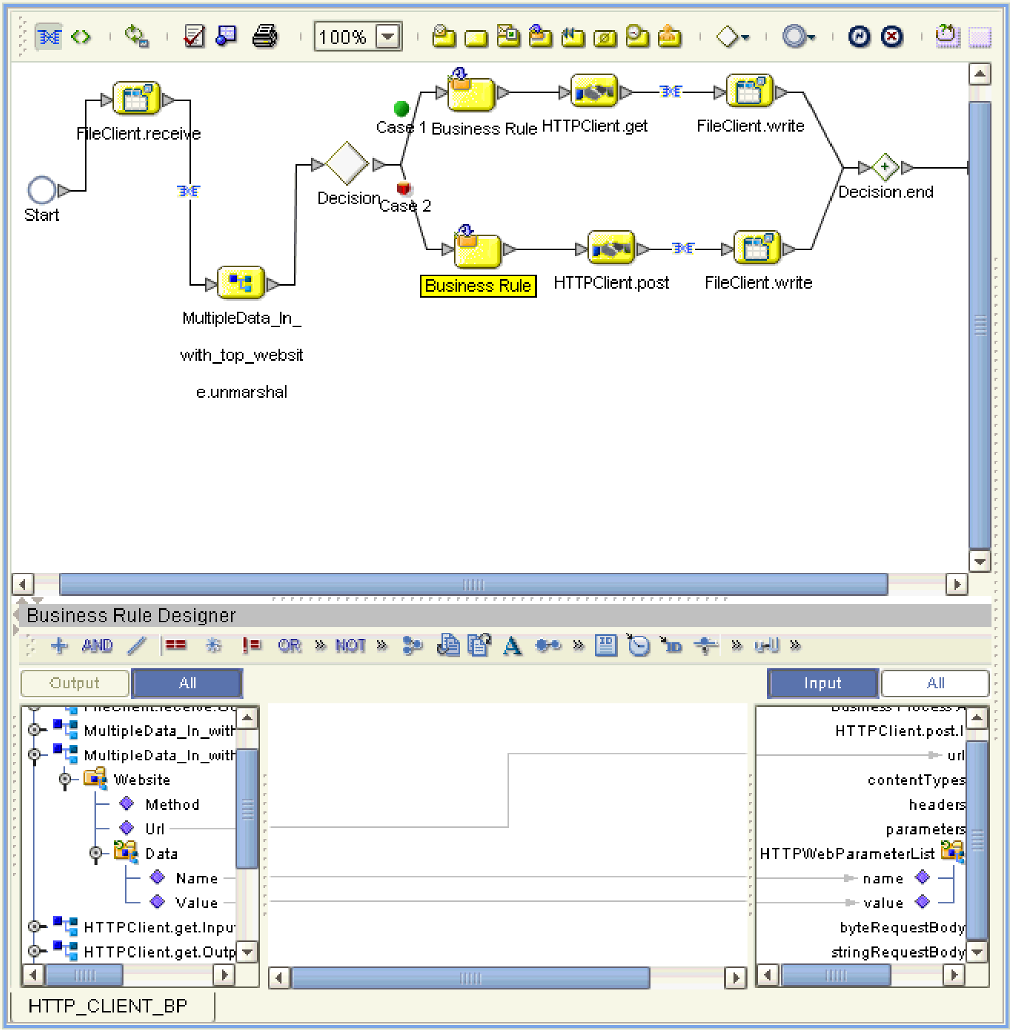
Using the Business Rule Designer in the same way as you did previously, set properties for the **Business Rule** icon component for Case 1 by dragging and dropping the nodes, as shown in Figure 27.

Figure 27 Business Rule Designer: Case 1 Business Rule



11 Set properties For the **Business Rule** icon component for Case 2 by dragging and dropping the nodes, as shown in Figure 28.

Figure 28 Business Rule Designer: Case 2 Business Rule



12 Double-click the **Case 1** (red) icon to set the **Decision Gate** properties for the cases. The **Decision Gate Properties** dialog box opens.

13 For **Case 1**, add a **string literal** by dragging the icon from the toolbar. Call the literal **GET**.

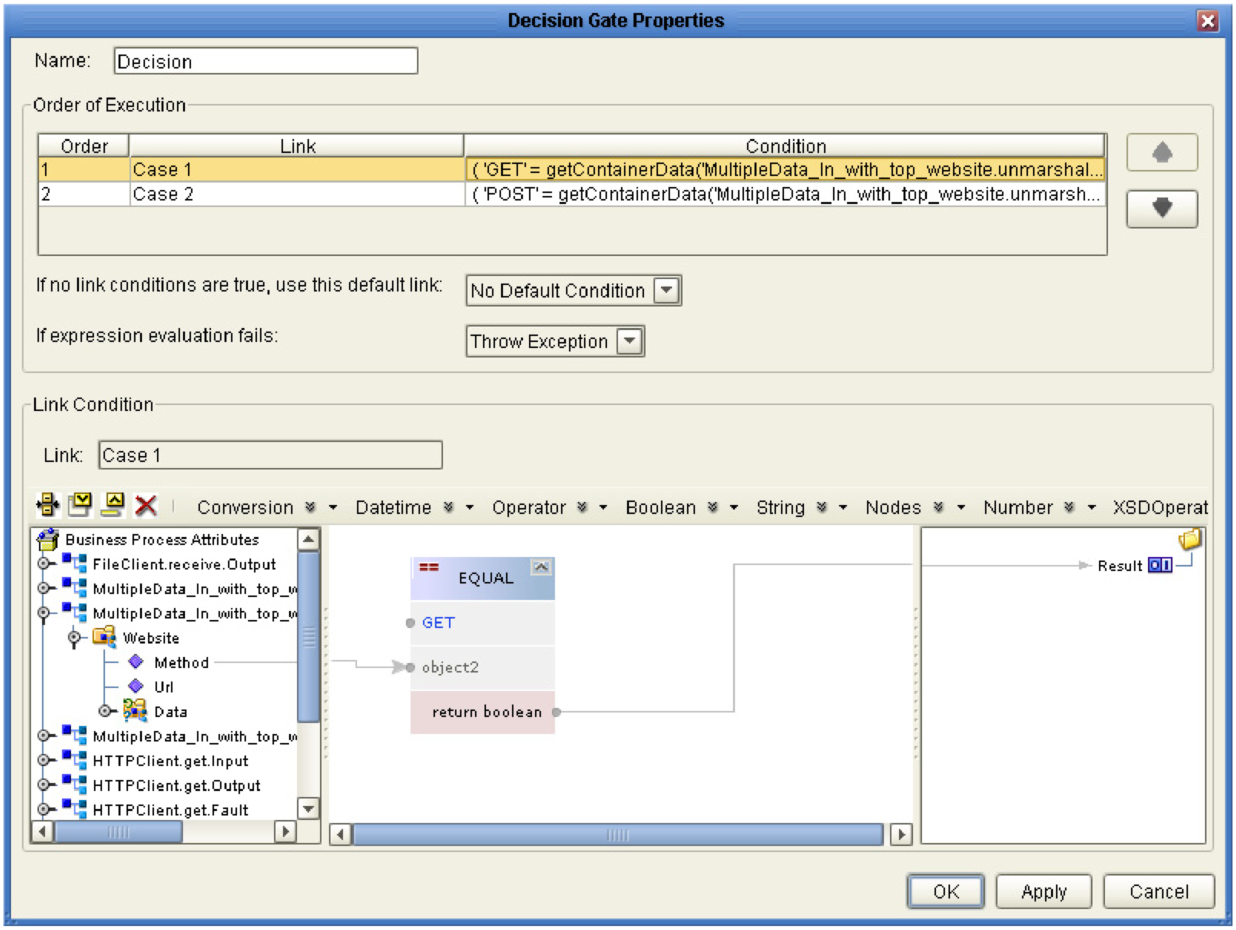
14 By dragging the icon from the toolbar, add an **EQUAL**.

15 Drag Method under **MultipleData_In_with_top_website.unmarshal.Output** to **any1** under **EQUAL** in the left pane.

16 Drag **GET** under **string literal** to **any2**.

17 Drag **return boolean** under **EQUAL** to **Result (boolean)** in the right pane. See Figure 29.

Figure 29 Decision Gate Properties Dialog Box: Case 1



Decision Gate Properties

Name: Decision

Order of Execution

Order	Link	Condition
1	Case 1	('GET' = getContainerData('MultipleData_In_with_top_website.unmarshal...
2	Case 2	('POST' = getContainerData('MultipleData_In_with_top_website.unmarsh...

If no link conditions are true, use this default link: No Default Condition

If expression evaluation fails: Throw Exception

Link Condition

Link: Case 1

18 For **Case 2**, add a **string literal** by dragging the icon from the toolbar. Call the literal **POST**.

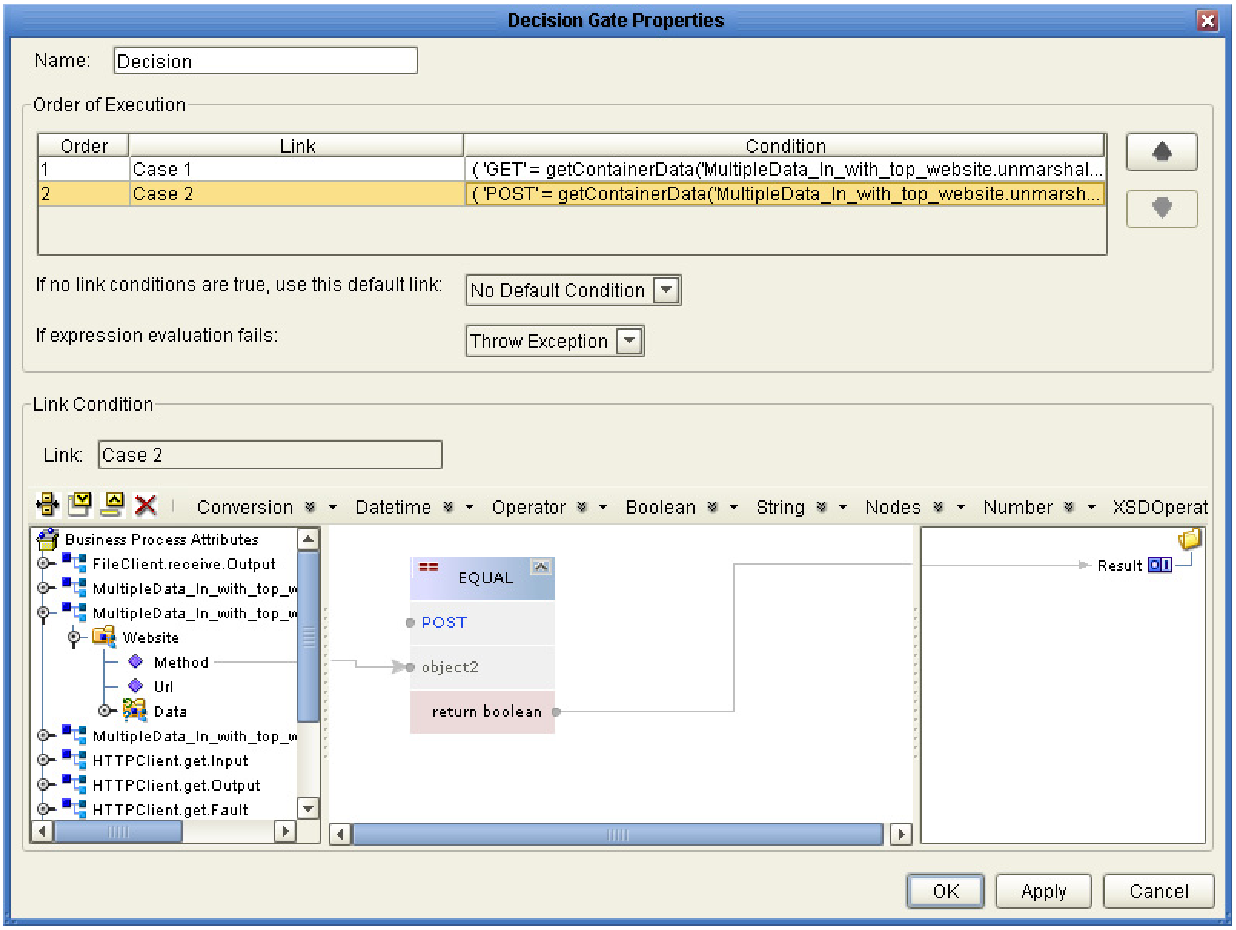
19 By dragging the icon from the toolbar, add an **EQUAL**.

20 Drag Method under **MultipleData_In_with_top_website.unmarshal.Output** to **any1** under **EQUAL** in the left pane.

21 Drag **POST** under **string literal** to **any2**.

22 Drag **return boolean** under **EQUAL** to **Result (boolean)** in the right pane. See Figure 30.

Figure 30 Decision Gate Properties Dialog Box: Case 2



Decision Gate Properties

Name: Decision

Order of Execution

Order	Link	Condition
1	Case 1	('GET' = getContainerData('MultipleData_In_with_top_website.unmarshal...
2	Case 2	('POST' = getContainerData('MultipleData_In_with_top_website.unmarsh...

If no link conditions are true, use this default link: No Default Condition

If expression evaluation fails: Throw Exception

Link Condition

Link: Case 2

23 Click **Save** on the Enterprise Designer toolbar to save your Business Process.

After you have finished creating your Business Process, you can use it to define one or more of the eGate Services on your Connectivity Map.

6.5.5 Creating a Connectivity Map

A Connectivity Map provides a canvas for assembling and configuring a Project's components. The **prjHTTPClient_BPEL** Project only uses one Connectivity Map.

To create a Connectivity Map

1 From the Project Explorer tree, right-click the new **prjHTTPClient_BPEL** 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 **cmHTTPClient**.

Selecting External Applications

When creating a Connectivity Map, you can associate any Service, in this case a Business Process, with an external application. For example, to establish a connection to HTTP, you must first select **HTTP** as the external application to use in your Connectivity Map.

To select external applications

1. Click the **External Application** icon on the Connectivity Map toolbar.
2. Select the external applications necessary for your Project. For this sample, select the **File** and **HTTP** external applications. Icons representing these external applications are then added to the Connectivity Map toolbar.

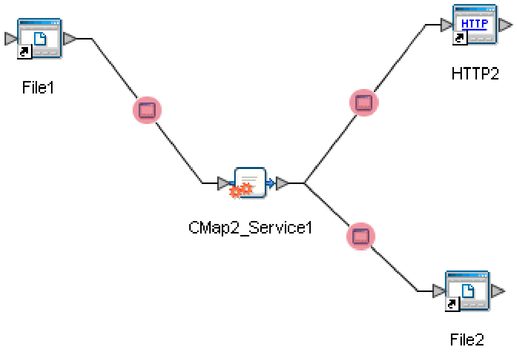
Populating the Connectivity Map

Add the Project components to the **cmHTTPClient** Connectivity Map by dragging the icons from the toolbar to the canvas. For this sample Project, drag and drop the following components onto the Connectivity Map canvas.

- File External System (2)
- Business Service (a service is a container for Java Collaborations, Business Processes, and so forth)
- HTTP Client External System

Figure 31 shows the components in the Connectivity Map.

Figure 31 Connectivity Map With Components: prjHTTPClient_BPEL



Rename the **Service1** component to **HttpBpelService**. Name the other components as shown in Figure 31. Be sure to save the new Connectivity Map before you proceed. You can click **Save** on the Enterprise Designer toolbar for this purpose.

Defining the Business Process

Define your Business Process by combining the Business Process icon with the Service icon in the Connectivity Map. To do so, drag and drop the **bpHTTPClient** icon from the

Project Explorer tree onto the Connectivity Map's **HttpBpelService** Service icon. If the operation is successfully defined, the gears on the **HttpBpelService** icon change from red to yellow.

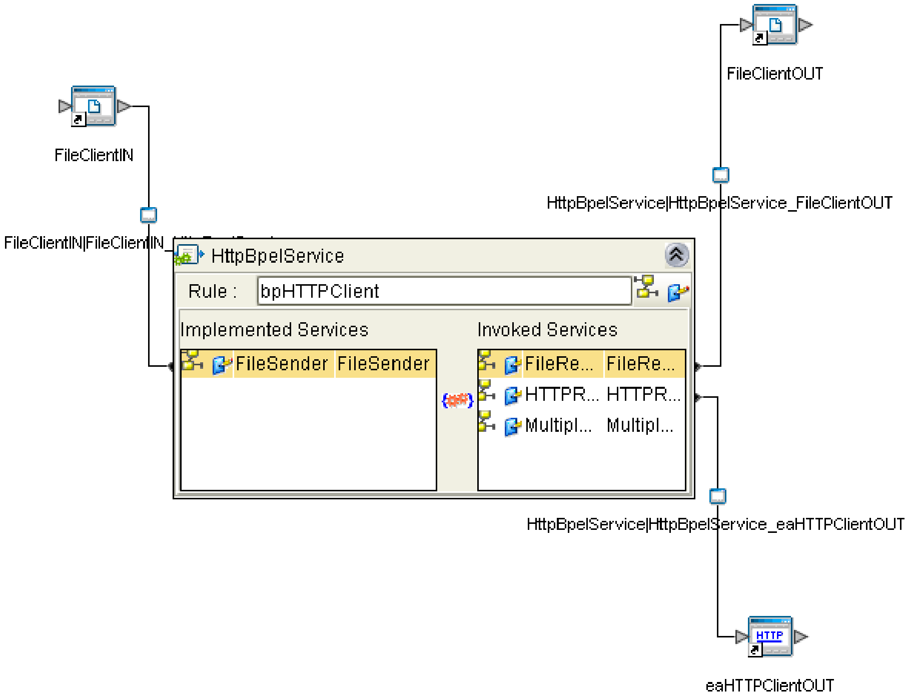
Binding the eWay Components

The final step in creating a Connectivity Map is binding the eWay components together.

Steps required to bind eWay components together:

1. Open the **cmHTTPClient** Connectivity Map and double-click the **HttpBpelService** Business Process. The **HttpBpelService** Binding dialog box appears.
2. From the **HttpBpelService** Binding dialog box, map **FileSender** (under Implemented Services) to the **FileClientIN** (File) External Application. To do this, click on **FileSender** in the **HttpBpelService** Binding dialog box, and drag the cursor to the **FileClientIN** External Application in the Connectivity Map. A link is now visible between **FileClientIN** and **HttpBpelService**.
3. From the **HttpBpelService** Binding dialog box, map **HTTPReceiver** (under Invoked Services) to the **eaHTTPClientOUT** External Application.
4. From the **HttpBpelService** Binding dialog box, map **FileReceiver** to the **FileClientOUT** External Application, as seen in Figure 32.

Figure 32 Connectivity Map - Associating (Binding) the Project's Components


FileClientOUT
FileClientIN
HttpBpelService|HttpBpelService_FileClientOUT
FileClientIN|FileClientIN_
HttpBpelService
HttpBpelService|HttpBpelService_eaHTTPClientOUT
HTTP
eaHTTPClientOUT

Rule : bpHTTPClient

Implemented Services	
FileSender	FileSender

Invoked Services	
FileRe...	FileRe...
HTTPR...	HTTPR...
Multipl...	Multipl...

6.5.6 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 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 **envHTTPClient_BPEL**.

4 Right-click **envHTTPClient_BPEL** and select **New > File External System**. Name the External System **esFile** and click **OK**. **esFile** is added to the Environment Editor.

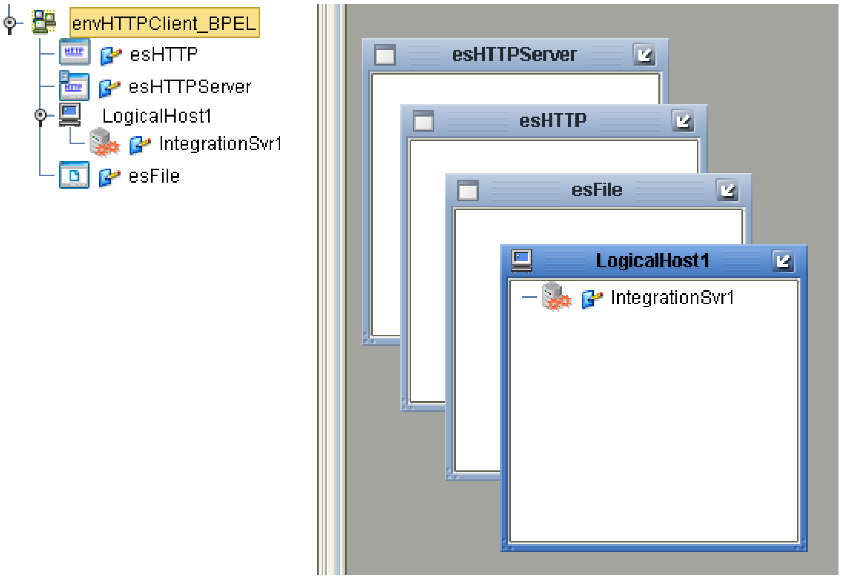
5 Right-click **envHTTPClient_BPEL** and select **New > HTTP External System**. Name the External System **esHTTP** and click **OK**. **esHTTP** is added to the Environment Editor.

6 Right-click **envHTTPClient_BPEL** and select **New > Logical Host**. **LogicalHost1** is added to the Environment Editor.

7 From the Environment Explorer tree, right-click **LogicalHost1** and select **New > Sun SeeBeyond Integration Server**. A new Integration Server (**IntegrationSvr1**) is added to the Environment Explorer tree under LogicalHost1.

8 Save changes to the repository. The Environment Explorer and Environment Editor now appear as displayed in Figure 33.

Figure 33 Environment Editor - envHTTPClient_BPEL



9 Save your current changes to the Repository.

6.5.7 Configuring the eWays

eWays facilitate communication and movement of data between the external applications and the eGate system. Each Connectivity Map in the The **prjHTTPClient_BPEL** sample Project use three eWays that are represented as a nodes between the External Applications and the Business Process, as seen in Figure 31.

You must configure eWay properties in both the Connectivity Map and the Environment Explorer.

1. From the **cmHTTPClient** Connectivity Map, double-click the inbound **FileClientIN** eWay. The **Properties Editor** opens to the inbound File eWay properties.
2. Modify the properties for your system, including the settings for the inbound File eWay in Table 12, and click **OK**.

Table 12 cmHTTPClient - Inbound File eWay Settings

FileClientIN eWay Connection Parameters	
Input file name	Get_Input.xml.~in Post_Input.xml.~in

3. From the **cmHTTPClient** Connectivity Map, modify the outbound **FileClientOUT** eWay properties for your system, including the settings in Table 13.

Table 13 cmHTTPClient - Outbound File eWay Settings

Outbound File eWay Connection Parameters	
Output file name	HttpClient_BPEL_output0.htm HttpClient_BPEL_output1.htm

4. From the **Environment Explorer** tree, right-click the File eWay External System (**esFile** in this sample), and select **Properties** from the shortcut menu. The Properties Editor appears.
5. Modify the File eWay Environment properties for your system, including the settings in Table 14, and click **OK**.

Table 14 File eWay Environment Properties

File eWay Environment Properties	
Inbound File eWay > Parameter Settings Set as directed, otherwise use the default settings	
Directory	*Select a directory, for example C:/DATA/input/*
Outbound File eWay > Parameter Settings Set as directed, otherwise use the default settings	
Directory	*Select a directory, for example C:/DATA/output*

Configuring the HTTPS eWay Properties

1. From the **Environment Explorer** tree, right-click the **esHTTP** External System and select **Properties** from the shortcut menu. The Properties Editor appears.

2 Modify the HTTPS eWay Environment properties for your system, including the following settings:

- HTTP Settings
- Proxy Configuration
- Security
- Connection Pool Settings

For further information on configuring the HTTPS eWay, see **"eWay Environment Properties" on page 46**.

Configuring the Integration Server

You must set your SeeBeyond Integration Server Password property before deploying your Project.

1 From the Environment Explorer, right-click **IntegrationSvr1** under your **Logical Host**, and select **Properties** from the shortcut menu. The Integration Server Properties Editor appears.

2 Click the **Password** property field under **Sun SeeBeyond Integration Server Configuration**. An ellipsis appears in the property field.

3 Click the ellipsis. The **Password Settings** dialog box appears.

4 Enter **STC** as the **Specific Value** and as the **Confirm Password**, and click **OK**.

5 Click **OK** to accept the new property and close the Properties Editor.

For more information on deploying a Project see the *Sun SeeBeyond Java™ Composite Application Platform Suite Deployment Guide*.

6.5.8 Creating and Activating the Deployment Profile

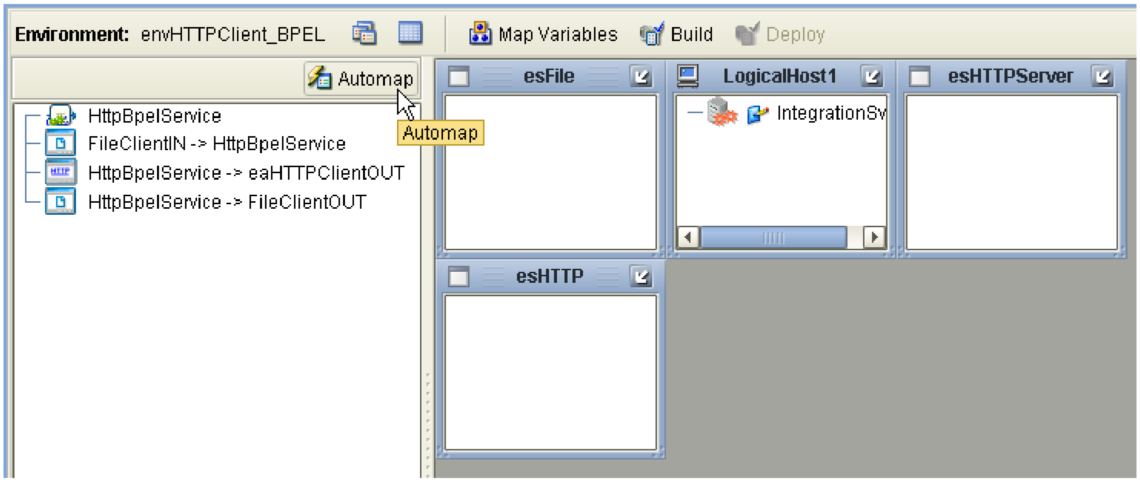
Deployment Profiles are used to assign Collaborations and message destinations to the Integration Server and message server. Deployment profiles are created using the Deployment Editor.

1 From the Project Explorer, right-click the **prjHTTPClient_BPEL** Project and select **New** > **Deployment Profile**.

2 Enter a name for the Deployment Profile (for this sample **dpHTTPClient_BPEL**). Select **envHTTPClient_BPEL** as the Environment and click **OK**.

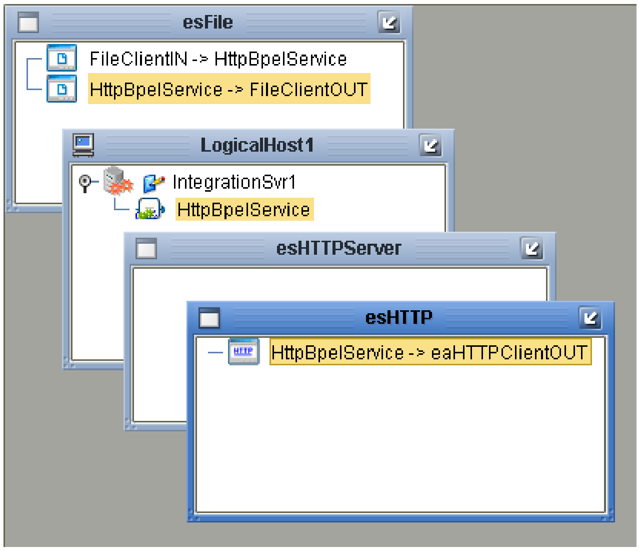
3 From the Deployment Editor toolbar, click the **Automap** icon (see Figure 34).

Figure 34 dpHTTPClient_BPEL Deployment Profile


Environment: envHTTPClient_BPEL
Map Variables
Build
Deploy
Automap
HttpBpelService
FileClientIN -> HttpBpelService
HttpBpelService -> eaHTTPClientOUT
HttpBpelService -> FileClientOUT
Automap
esFile
LogicalHost1
IntegrationSv
esHTTPServer
esHTTP

The Project's components are automatically mapped to their system windows (see Figure 35).

Figure 35 dpHTTPClient_BPEL Deployment Profile Automapping


esFile
FileClientIN -> HttpBpelService
HttpBpelService -> FileClientOUT
LogicalHost1
IntegrationSvr1
HttpBpelService
esHTTPServer
esHTTP
HttpBpelService -> eaHTTPClientOUT

4 Save your current changes to the Repository.

6.5.9 Creating and Starting the Domain

To deploy your Project you must first create a domain. After the domain is created, the Project is built and then deployed.

Create and Start the Domain

1 Navigate to your ***<JavaCAPS51>*\logicalhost** directory (where <*JavaCAPS51*> is the location of your Java Composite Application Platform Suite installation.

2 Double-click the **domainmgr.bat** file. The **Domain Manager** appears.

3 If you have already created a domain, select your domain in the Domain Manager and click the **Start an Existing Domain** button. Once your domain is started, a green check mark indicates that the domain is running.

4 If there are no existing domains, a dialog box indicates that you can create a domain now. Click **Yes**. The **Create Domain** dialog box appears.

5 Make any necessary changes to the **Create Domain** dialog box and click **Create**. The new domain is added to the Domain Manager. Select the domain and click the **Start an Existing Domain** button. Once your domain is started, a green check mark indicates that the domain is running.

6.5.10 Building and Deploying the Project

The Build process compiles and validates the Project's Java files and creates the Project EAR file.

Build the Project

1 From the Deployment Editor toolbar, click the **Build** icon for each of your Deployment Profiles.

2 If there are any validation errors, a **Validation Errors** pane will appear at the bottom of the Deployment Editor and displays information regarding the errors. Make any necessary corrections and click **Build** again.

3 After the Build has succeeded you are ready to deploy your Project.

Deploy the Project

1 From the Deployment Editor toolbar, click the **Deploy** icon. Click **Yes** when the **Deploy** prompt appears. Do this for both of your Deployment Profiles.

2 A message appears when the project is successfully deployed. You can now test your sample.

Note: *Projects can also be deployed from the Enterprise Manager. For more information about using the Enterprise Manager to deploy, monitor, and manage your projects, see the Sun SeeBeyond eGate™ Integrator System Administration Guide.*

6.5.11 Running the Sample

The **prjHTTPClient_BPEL** Project includes the following sample files:

- **Get_Input.xml.~in** (input file)
- **Post_Input.xml.~in** (input file)
- **HttpClient_BPEL_output0.htm** (sample output file example)
- **HttpClient_BPEL_output1.htm** (sample output file example)

To run your deployed sample Project, do the following:

1 From your configured input directory, paste (or rename) the sample input file to trigger the eWay.

2 From your output directory, verify the output data.

6.6 Building and Deploying the prjHTTPServer_BPEL Sample Project

The HTTPS eWay server sample Project **prjHTTPServer_BPEL** demonstrates how the HTTPS eWay receives information via HTTP from a server. Resulting or confirming information is then written to a data file.

6.6.1 Project Overview

Before you can run the Project, you must first copy the following .**html** input form file into any directory:

- **postBPELHTTPS**

The content of **postBPELHTTPS.html** is:

```
<HTML><HEAD><TITLE>HTTPS Test Page</TITLE></HEAD>
<BODY>
<FORM ACTION="http://localhost:18001/
    Deployment1_servlet_HttpServerSample/
    HttpServerSample" METHOD=POST>
<TABLE>
<TR><TD>First Name:</TD><TD><INPUT NAME=fname></TD></TR>
<TR><TD>Last Name:</TD><TD><INPUT NAME=lname></TD></TR>
<TR><TD>EMail:</TD><TD><INPUT NAME=email></TD></TR>
<TR><TD>Sex:</TD><TD><INPUT type="radio" name="sex"
    value="Male">Male</TD></TR>
<TR><TD></TD><TD><INPUT type="radio" name="sex"
    value="Female">Female</TD></TR>
<TR><TD></TD><TD></TD></TR>
</TABLE>
<BR>
<CENTER><INPUT TYPE=submit VALUE="Submit"></CENTER>
```

```
</FORM>
</BODY>
</HTML>
```

You must make a change in the HTML code shown previously. In the code where it shows:

**<FORM ACTION="http://localhost:18001/
Deployment1_servlet_HttpServerSample/
HttpServerSample" METHOD=POST>**

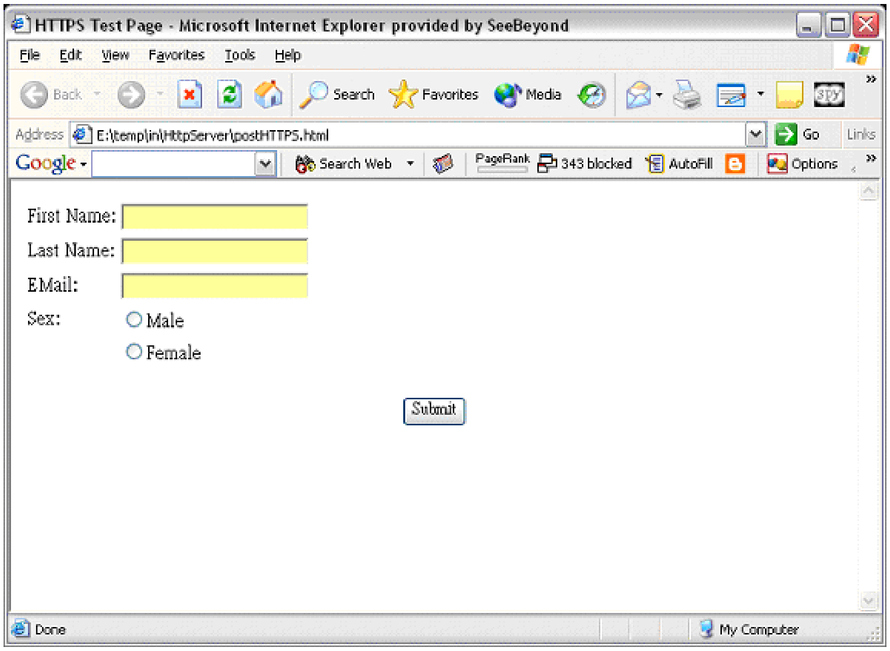
You must make changes based on your own Environment. The logic for the ACTION parameter is:

**http://<IS Server Name>:<IS port>/<Deployment_name>_servlet_
<servlet_url from properties>/<servlet_url from properties>**

Project Forms

Figure 36 shows the original form.

Figure 36 Server Sample Project: Original Form

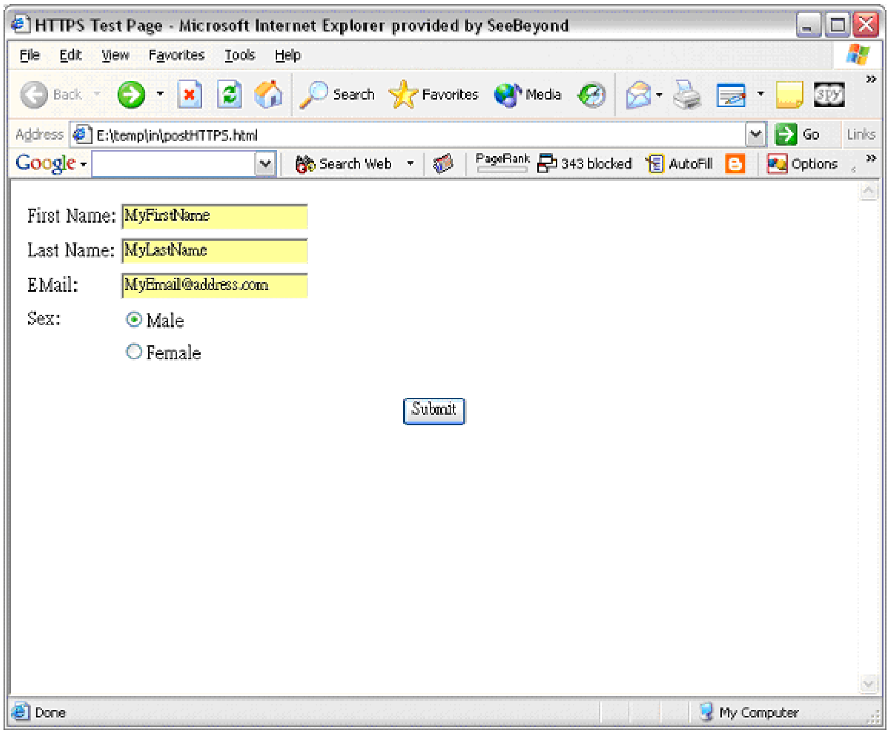


First Name:
Last Name:
EMail:
Sex: ○ Male
○ Female

Submit

Figure 37 shows the input form.

Figure 37 Server Sample Project: Input Form


HTTPS Test Page - Microsoft Internet Explorer provided by SeeBeyond
File Edit View Favorites Tools Help
Back Search Favorites Media
Address E:\temp\in\postHTTPS.html
Go Links
Google Search Web PageRank 343 blocked AutoFill Options
Submit
Done
My Computer

First Name: MyFirstName

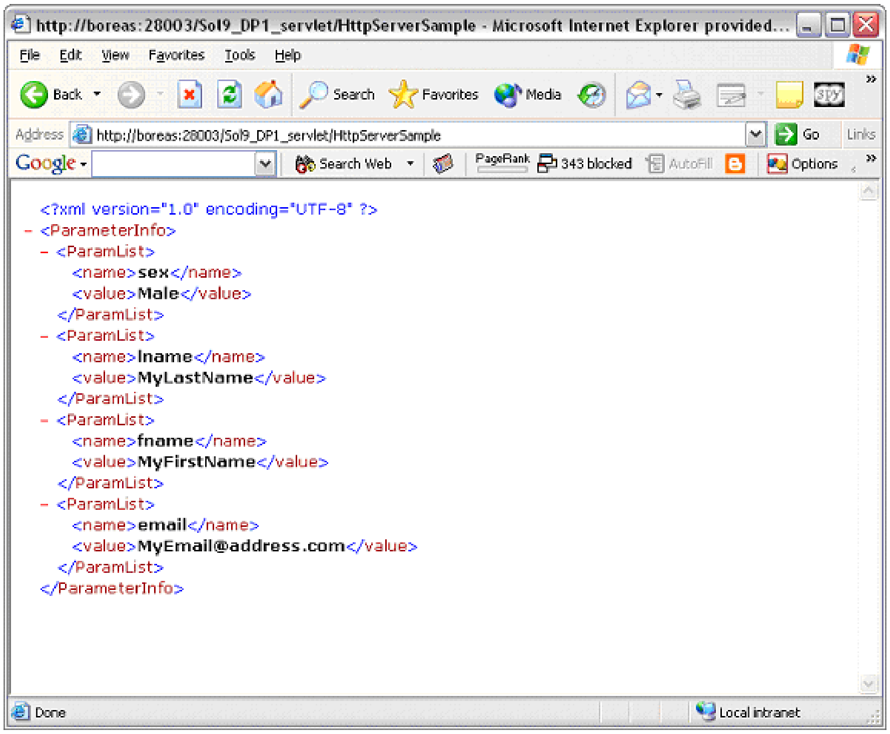
Last Name: MyLastName

EMail: MyEmail@address.com

Sex: ● Male ○ Female

Figure 38 shows the output form.

Figure 38 Server Sample Project: Output Form


http://boreas:28003/Sol9_DP1_servlet/HttpServerSample - Microsoft Internet Explorer provided...
File Edit View Favorites Tools Help
Back Search Favorites Media
Address http://boreas:28003/Sol9_DP1_servlet/HttpServerSample
Go Links
Google Search Web PageRank 343 blocked AutoFill Options
Done
Local intranet

```
  <?xml version="1.0" encoding="UTF-8" ?>
- <ParameterInfo>
  - <ParamList>
      <name>sex</name>
      <value>Male</value>
    </ParamList>
  - <ParamList>
      <name>lname</name>
      <value>MyLastName</value>
    </ParamList>
  - <ParamList>
      <name>fname</name>
      <value>MyFirstName</value>
    </ParamList>
  - <ParamList>
      <name>email</name>
      <value>MyEmail@address.com</value>
    </ParamList>
  </ParameterInfo>
```

The input for the Project is a name/value pair, and it returns the entire list of parameters. A DTD file (**HTTPS_ParamList.dtd**) is used to marshal the list, so you must use the DTD wizard to convert this file to an eGate OTD.

Project Operations

The **prjHTTPServer_BPEL** Project operates as follows:

- **HTTPServer1**: The HTTP server external application or system; the HTTPS eWay handles inbound communication with this system.
- **HTTPS_BP**: Receives instructions from the HTTP server external application via the HTTPS eWay.

6.6.2 Creating a Project

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

1. Start the Enterprise Designer.
2. From the Project Explorer tree, right-click the Repository and select **New Project**. A new Project (**Project1**) appears on the Project Explorer tree.
3. Right-click **Project1** and select **Rename** form the shortcut menu. Rename the Project (for this sample, **prjHTTPServer_BPEL**).

6.6.3 Creating the OTD

The next step is to create a Data Type Definition (DTD) OTD as an input file for this HTTPS sample Project.

Follow the steps outlined in **“Creating the OTD” on page 61** to convert the **HTTPS_ParamList.dtd** file into an eGate OTD. Name the new OTD **HTTPS_ParamList_ParameterInfo**.

6.6.4 Creating a Business Process

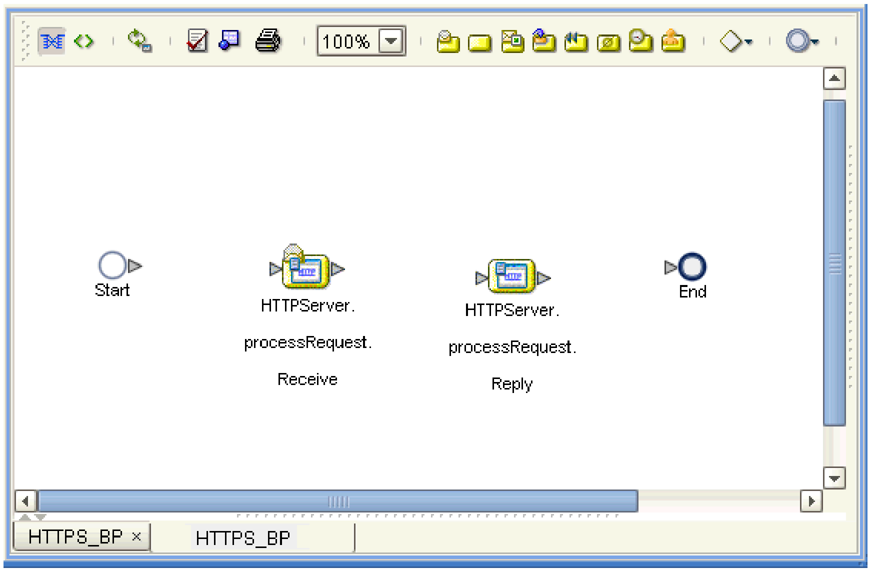
The next step is to create the Project’s Business Process.

To create a Business Process:

1. Right-click the name of the sample Project, **prjHTTPServer_BPEL**, in the **Project Explorer** and choose **New > Business Process** from the pop-up menus. Rename the Business Process You can use the name **bpHTTPServer**.

   A blank Business Process canvas appears in the right pane, along with the Business Process toolbar.
2. In the **Project Explorer**, expand the icons for **SeeBeyond > eWays > HTTPServer**.
3. Arrange the **Start** and **End** icons at opposite sides of the canvas.
4. From the Project Explorer pane, drag the **processRequest** icon under the HTTPServer OTD nodes onto the canvas between the **Start** and **End**. See Figure 39.

Figure 39 Business Process Icons for Receive and Reply

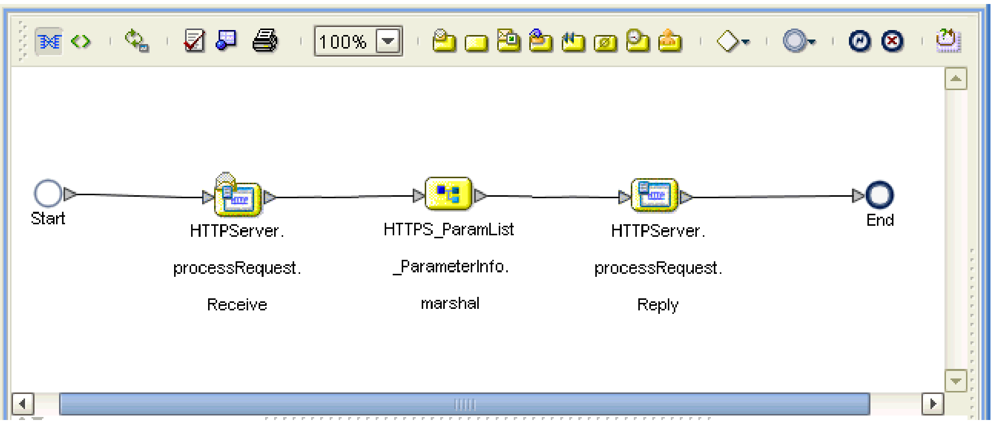


The single icon becomes two, as shown in Figure 39. If the icons appear out of line, drag them until the icons appear.

5 From the Project Explorer pane, drag the **HTTPS_ParamList_ParameterInfo** OTD's **marshal** operation onto the canvas between the two **HTTPServer** icons.

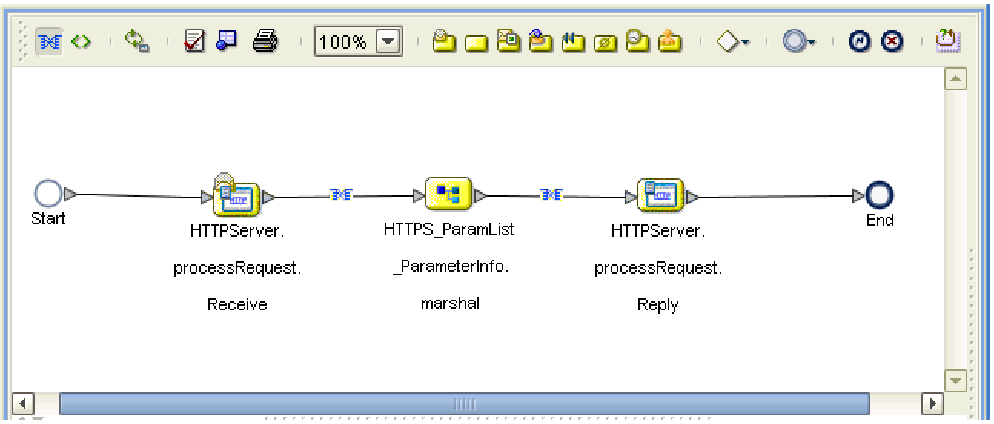
6 By dragging from one icon to another, link the icons on the canvas, as shown in Figure 40.

Figure 40 Business Process Icons With Links: Server



7 You must add two Link Business Rules (represented by a small blue, star-shaped icons) to the appropriate links, as shown in Figure 41. To do this operation, right-click on the desired link and choose **Add Business Rule** from the pop-up menu. See Figure 41 for the appropriate links where you must add the Business Rules.

Figure 41 Business Process Icons With Server Business Rules



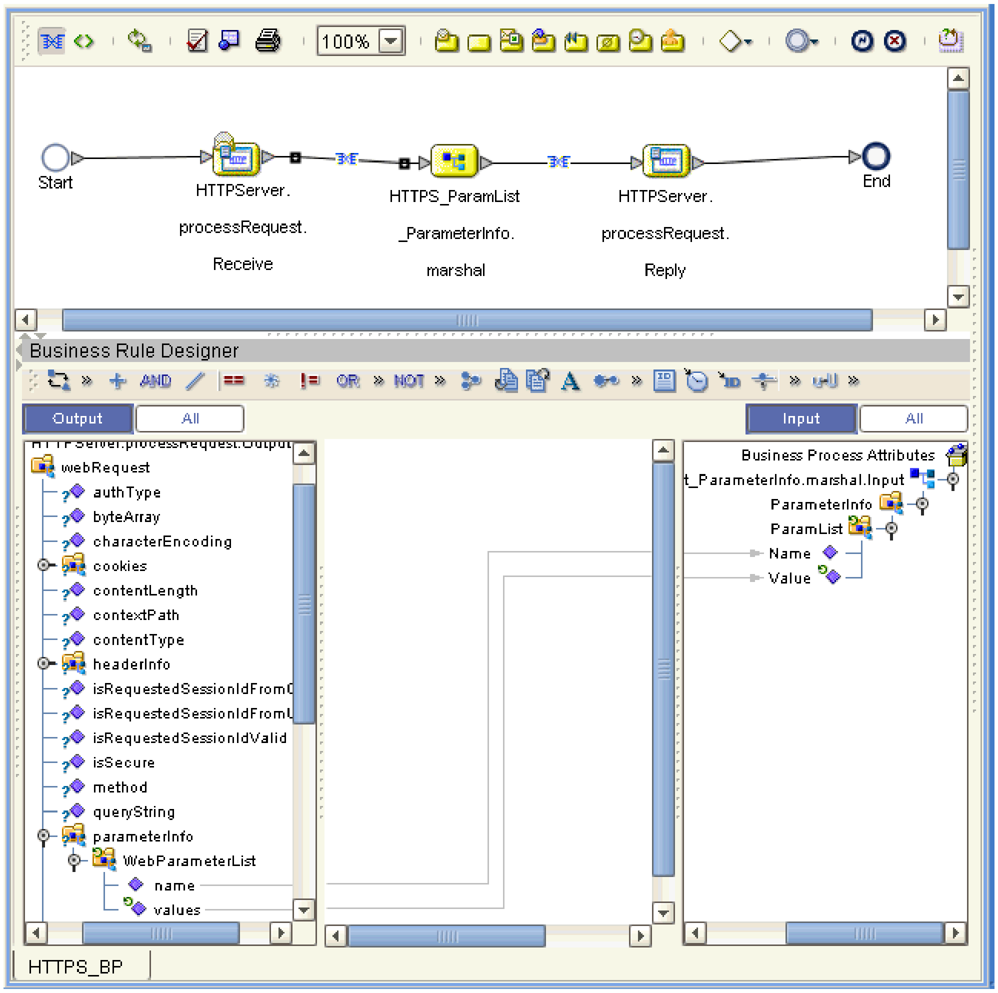
For the Business Rules, you must create the settings you want in the Business Rule Designer.

8 Select the first (left) Business Rule, for the receive operation, then click the **Map Business Process Attributes** icon in the toolbar.

The Business Rule Designer pane appears at the bottom of the window. Use the Business Rule Designer to create your Business Rules.

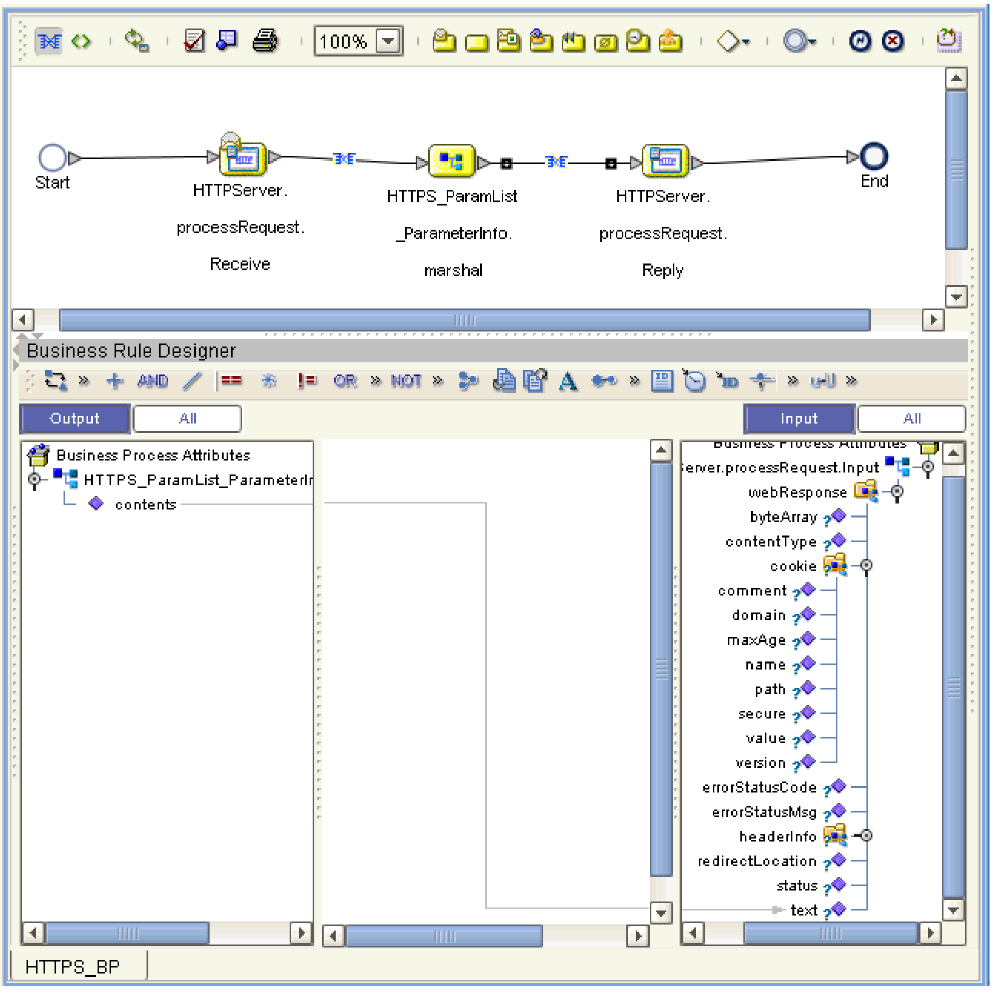
9 From the **Output** pane, drag the **name/value** pair nodes (under **WebParameterList**) to the **name/value** pair nodes (under **ParamList**) n the **Input** pane. See Figure 42.

Figure 42 Business Rule Designer: Server Receive Business Rule



10 From the **Output** pane, drag the **contents** node to the **text** node (under **headerInfo**) n the **Input** pane. See Figure 43.

Figure 43 Business Rule Designer: Server Receive Business Rule



11 Click **Save** to save your Business Process.

After you have finished creating your Business Process, you can use it to define one or more of the eGate Services on your Connectivity Map.

6.6.5 Creating a Connectivity Map

A Connectivity Map provides a canvas for assembling and configuring a Project's components. The **prjHTTPServer_BPEL** Project only uses one Connectivity Map.

Follow the steps outlined in **"Creating a Connectivity Map" on page 75** to create a Connectivity Map. Name the Connectivity Map **cmHTTPServer**.

Selecting External Applications

Follow the steps outlined in **"Selecting External Applications" on page 76** to select the external applications for the **prjHTTPServer_BPEL** Project's Connectivity Map.

Populating the Connectivity Map

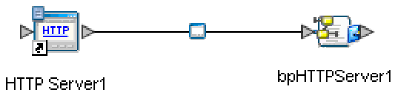
Add the Project components to the Connectivity Map by dragging the icons from the toolbar to the canvas. This operation creates the components for you.

For this sample Project, drag and drop the following components onto the Connectivity Map canvas.

- One Service
- HTTPS eWay/server external application

Figure 44 shows the components in the Connectivity Map.

Figure 44 Connectivity Map With Components: prjHTTPServer_BPEL



1. Rename the **Service1** component to **bpHTTPServer1**.
2. Rename the HTTPS external application **HTTPServer1**.

   Be sure to save the new Connectivity Map before you proceed. You can click **Save** for this purpose.

Defining the Business Process

Define your Business Process by combining the Business Process icon with the Service icon in the Connectivity Map. To do so, drag and drop the **bpHTTPServer** icon from the **Project Explorer** tree onto the Connectivity Map's **bpHTTPServer1** Service icon. If the operation is successfully defined, the gears on the **bpHTTPServer1** icon change from red to yellow.

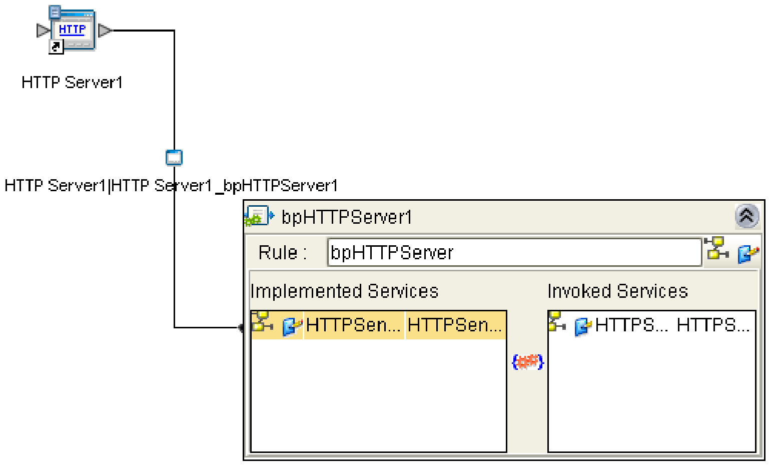
Binding the eWay Components

The final step in creating a Connectivity Map is binding the eWay components together.

Steps required to bind eWay components together:

1. Open the **cmHTTPServer** Connectivity Map and double-click the **HttpServer1** Business Process. The **HttpServer1** Binding dialog box appears.
2. From the **HttpServer1** Binding dialog box, map **HTTPSender** (under Implemented Services) to the **HTTPServer1** External Application. To do this, click on **HTTPSender** in the **HttpServer1** Binding dialog box, and drag the cursor to the **HTTPServer1** External Application in the Connectivity Map. A link is now visible between **HTTPServer1** and **HttpServer1**, as seen in Figure 45.

Figure 45 Connectivity Map - Associating (Binding) the Project's Components



6.6.6 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 Editor.

Follow the steps outlined in **"Creating an Environment" on page 78** to create an Environment for the **prjHTTPServer_BPEL** Project. For this Project, add the **HTTP Server** external system to the Project's Environment, and rename it **esHTTPServer**.

6.6.7 Configuring the eWays

eWays facilitate communication and movement of data between the external applications and the eGate system. Each Connectivity Map in the The **prjHTTPServer_BPEL** sample Project use two eWays that are represented as a nodes between the External Applications and the Business Process, as seen in Figure 44.

You must configure eWay properties in both the Connectivity Map and the Environment Explorer.

1. From the **cmHTTPServer** Connectivity Map, double-click the **HTTPServer1** eWay. The **Properties Editor** opens to the HTTP Server External Configuration properties.
2. Modify the HTTP Server External Configuration properties by entering **HttpServerSample** in the **servlet-url** property field, and click **OK**.

For further information on configuring the HTTPS Server eWay Connectivity Map and Environment properties, see **"eWay Connectivity Map Properties" on page 44** and **"eWay Environment Properties" on page 46**.

6.6.8 Creating and Activating the Deployment Profile

Deployment Profiles are used to assign Collaborations and message destinations to the Integration Server and message server. Deployment profiles are created using the Deployment Editor.

Follow the steps outlined in **"Creating and Activating the Deployment Profile" on page 80** to create and deploy a deployment profile for the **prjHTTPServer_BPEL** Project.

6.6.9 Creating and Starting the Domain

To deploy your Project you must first create a domain. After the domain is created, the Project is built and then deployed.

Follow the steps outlined in **"Creating and Starting the Domain" on page 81** to create and deploy a domain for the **prjHTTPServer_BPEL** Project.

6.6.10 Building and Deploying the Project

The Build process compiles and validates the Project's Java files and creates the Project EAR file. Follow the steps outlined in **"Building and Deploying the Project" on page 82** to build and deploy the **prjHTTPServer_BPEL** Project.

6.6.11 Running the Sample

The **prjHTTPServer_BPEL** Project includes the following sample files:

- **postBPELHTTPS.html** (input file)
- **postHTTPS.html** (sample output file example)

To run your deployed sample Project, do the following:

1. From your configured input directory, paste (or rename) the sample input file to trigger the eWay.
2. From your output directory, verify the output data.

Running the Sample in SSL Mode

To enable and run an HTTPS Server project in SSL mode, the Logical Host's server policy file must be changed as follows:

1. Scroll to the Logical Host directory:

   ```
   <JavaCAPS51>\logicalhost\is\lib\install\templates\
   ```

   where <*JavaCAPS51*> is the location of your Sun Java Composite Application Platform Suite installation

2. Enter the following statements in the **server.policy** file:

   ```
   //JavaCAPS HTTPS eWay
   permission java.security.SecurityPermission
   "insertProvider.SunJSSE";
   ```

```
permission java.util.PropertyPermission “*” “read, write”
```

3. Configure the HTTPS eWay Connectivity Map and Environment Explorer properties for your particular Project.

Note: *You may need to create a new domain server after changing the Logical Host’s server policy file or modify the security policy for the existing domain per step two above.*

Chapter 7

Implementing the HTTPS eWay JCD Sample Projects

This chapter provides an introduction to the HTTPS eWay JCD components, and information on how these components are created and implemented in a Sun Java Composite Application Platform Suite Project. Sample Projects are designed to provide an overview of the basic functionality of the HTTPS eWay by identifying how information is passed between eGate and supported external systems via HTTPS.

It is assumed that you understand the basics of creating a Project using the 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

7.1 About the HTTPS eWay JCD Sample Projects

The HTTPS eWay **HTTPS_eWay_Sample.zip** file contains two sample Projects that provide basic instruction on using HTTPS operations with Java Collaboration Definition (JCD).

The **prjHTTPClient_JCD** sample Project allows you to observe an end-to-end data-exchange scenario involving eGate and the HTTPS eWay. The Project also demonstrates how the HTTPS eWay uses the **GET** and **POST** commands to request and receive data from a specific Web site.

The **prjHTTPServer_JCD** sample Project demonstrates how the HTTPS eWay can receive information via HTTP from a server.

7.2 Importing a Sample Project

Sample eWay Projects are included as part of the installation 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 Sun Composite Application Platform Suite Installer's Documentation tab. The **HTTPS_eWay_Sample.zip** file contains the various sample Project ZIP files and sample data. Extract the samples 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 and click **Import**. After the sample Project is succesfully imported, you can import additional samples or click **Close** to exit the Import Manager.
5. Before an imported sample Project can be run, you must do the following:
   - Create an Environment (see **"Creating an Environment" on page 103**)
   - Configure the eWays for your specific system (see **"Configuring the eWays" on page 103**)
   - Create a Deployment Profile (see **"Creating and Activating the Deployment Profile" on page 104**)
   - Create and start a domain (see **"Creating and Starting the Domain" on page 104**)
   - Build and deploy the Project (see **"Building and Deploying the Project" on page 104**)

The following pages provide instructions for creating the **prjHTTPClient_JCD** and **prjHTTPServer_JCD** sample Projects.

7.3 Building and Deploying the prjHTTPClient_JCD Sample Project

The HTTPS eWay client sample Project **prjHTTPClient_JCD** demonstrates how the HTTPS eWay processes information from an HTTPS system via a JCD. Resulting or confirming information is then written to a text file.

- **Creating an Environment** on page 103
- **Configuring the eWays** on page 103
- **Creating and Activating the Deployment Profile** on page 104
- **Creating and Starting the Domain** on page 104
- **Building and Deploying the Project** on page 104
- **Running the Sample** on page 104

7.3.1 Project Overview

The HTTPS eWay Java Collaboration-based sample Project demonstrates how the HTTPS eWay uses the GET and POST commands to request and receive data from a specific web site. The data result is received from the Web site and is sent to the following locations:

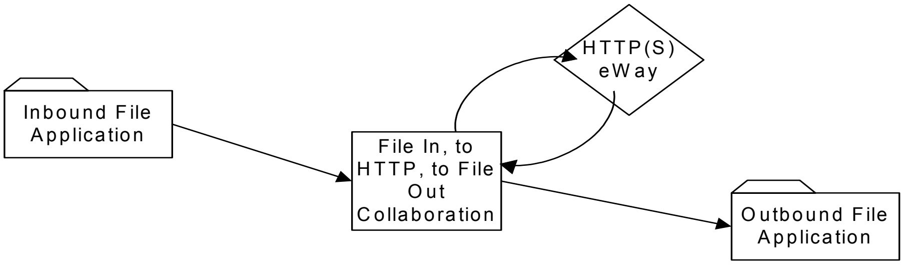
- A log file to confirm that the HTTPS eWay correctly requests and receives the result from the desired Web site
- An text file written to an external system via an outbound File eWay, to show the returned data and to confirm that the Project is operating correctly.

The Project has the following outputs:

- **GET Operations**: Returns the retrieved data in an **.html** file.
- **POST Operations**: Posts a name/value pair to a form and writes the same information to an **.html** file, to confirm the posting.

Figure 46 shows the flow of the sample HTTPS eWay Project.

Figure 46 HTTPS eWay Sample Project (Java Collaboration Based)


HTTP(S) eWay
Inbound File Application
File In, to HTTP, to File Out Collaboration
Outbound File Application

The location of input and output files are defined by the File eWay properties. By default, the inbound File eWay reads from **c:\temp\input*.txt**. The default is changed for the Project's outbound File eWay, which sends the resulting data to **c:\temp\output%d.html** (**%d** represents the serial index starting with integer 0).

The HTTPS eWay sample Project demonstrates how the HTTPS eWay processes information from an HTTPS system. Resulting or confirming information is then written to a text file. This scenario is illustrated in Figure 46.

Project Operations

The **prjHTTPClient_JCD** Project operates as follows:

- **FileClientIn**: The external file system that provides instructions to the inbound File eWay; this eWay gets a text file containing the instructions and passes them to a Business Process, **jcdHttpClient1**.
- **jcdHttpClient1**: Sends instructions to the desired HTTP system via the HTTPS eWay. **jcdHttpClient1** also receives the information from the HTTPS system, via the HTTPS eWay, then sends it to a File eWay, **FileClientOut**.
- **eaHTTPClient**: The HTTP client external application or system; the HTTPS eWay handles inbound and outbound communication with this system.
- **FileClientOut**: The external file system that receives the information via HTTP; another File eWay writes the received information to a text file on this system.

Input and Output Data

The HTTPS eWay Project uses the following data files:

- **Get_Sample.xml**
- **Post_Sample.xml**
- **Sample_In.dtd**

These files have the following content:

GET Command: Get_Sample.xml

The input data file for the GET command is:

```
<website>
    <method>GET</method>
    <url>http://www.yahoo.com</url>
    <data/>
</website>
```

POST Command: Post_Sample.xml

The input data file for the POST command is:

```
<website>
    <method>POST</method>
    <url>http://localhost:12000/examples/servlet/
        RequestParamExample</url>
    <data>firstname^MyFirstName|lastname^MyLastName</data>
</website>
```

Sample_In DTD: Sample_In.dtd

The eGate OTD wizard is used to create a DTD-based OTD. The input data file specifies an URL for HTTP commands. The XML DTD code for this sample input data file is:

```
<!ELEMENT website (method, url, data)>
<!ELEMENT method (#PCDATA)>
<!ELEMENT url (#PCDATA)>
<!ELEMENT data (#PCDATA)>
```

The **Sample_In.dtd** file defines the following elements:

- **Method**: Defines whether the file is for a GET or POST command.
- **URL**: Defines the address of the target HTTP server.
- **Data**: Stores the data string(s) used in the POST command. You can use a single input string in this case.

If your input comes with a name-and-value pair (for example, user name and password fields), you can use '|' as a delimiter between pairs of data and use '^' as a sub-delimiter. For example, if the user name field is **myname**, and the password field is **mypass**, then the data element is:

```
username^myuser|password^mypass
```

You can use any number of pairs in this case. When the HTTPS eWay sends out the POST request, the URL becomes:

```
url?username=myuser&password=mypass
```

Where **url** is the URL element in the input file.

7.3.2 Creating a Project

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

1. Start the Enterprise Designer.
2. From the Project Explorer tree, right-click the Repository and select **New Project**. A new Project (**Project1**) appears on the Project Explorer tree.
3. Right-click **Project1** and select **Rename** form the shortcut menu. Rename the Project (for this sample, **prjHTTPClient_JCD**).

7.3.3 Creating the OTD

The next step is to create a Data Type Definition (DTD) OTD as an input file for this HTTPS sample Project.

Follow the steps outlined in **"Creating the OTD" on page 61** to convert the **Sample_In.dtd** file into an eGate OTD. Name the new OTD **Sample_In_with_top_website**.

7.3.4 Creating the Collaboration Definition (Java)

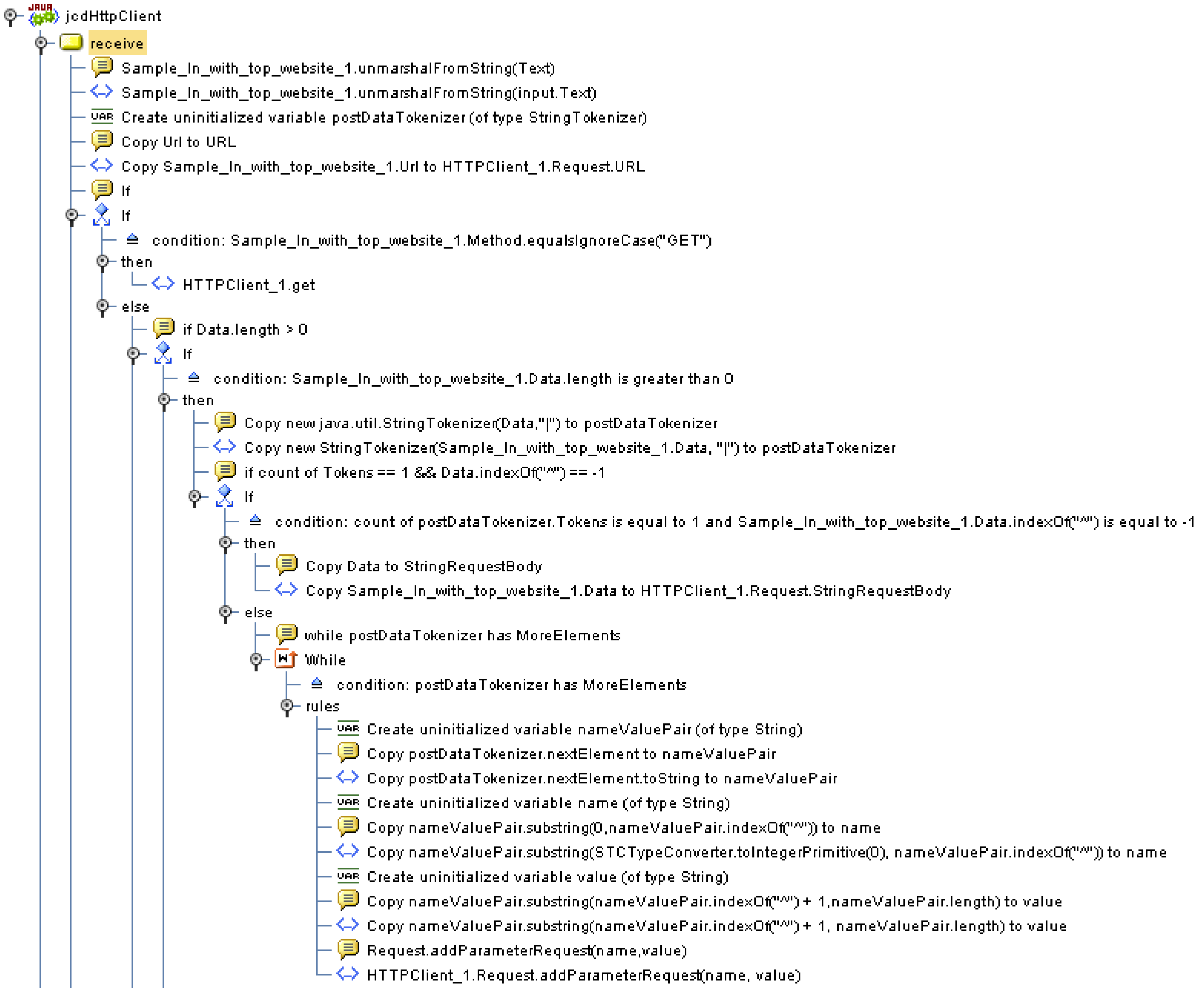
The eGate Enterprise Designer contains a Collaboration Definition wizard (Java) that allows you to create Java-based Collaborations. You must use the wizard to create a Collaboration Definition before implementing the Collaboration.

The Collaboration Editor user interface allows you to create the Business Rules that implement your business logic for a Java-based Collaboration. You can create the desired Business Rules for your Project by dragging and dropping values from a source

OTD onto the nodes of a destination HTTPS OTD and other OTDs. HTTPS OTD nodes represent HTTPS functions, which are in turn able to call HTTPS eWay methods.

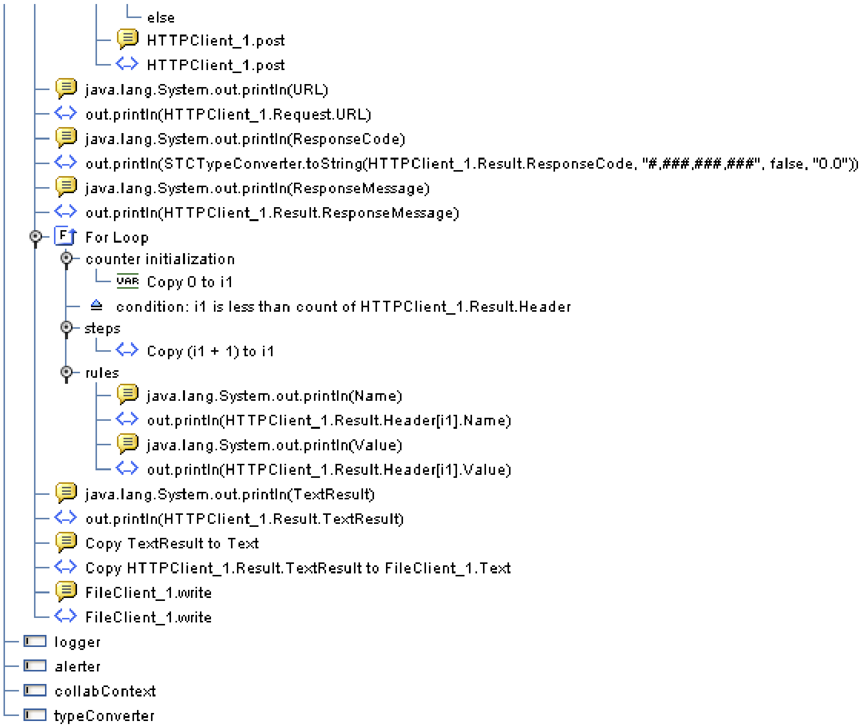
The Business Rules for the **jcdHTTPClient** Java Collaboration Definition are displayed in Figure 47 and Figure 48.

Figure 47 jcdHTTPClient Collaboration Definition - Part 1



```
jcdHttpClient
  receive
    Sample_In_with_top_website_1.unmarshalFromString(Text)
    Sample_In_with_top_website_1.unmarshalFromString(input.Text)
    Create uninitialized variable postDataTokenizer (of type StringTokenizer)
    Copy Url to URL
    Copy Sample_In_with_top_website_1.Url to HTTPClient_1.Request.URL
    If
    If
      condition: Sample_In_with_top_website_1.Method.equalsIgnoreCase("GET")
      then
        HTTPClient_1.get
      else
        if Data.length > 0
        If
          condition: Sample_In_with_top_website_1.Data.length is greater than 0
          then
            Copy new java.util.StringTokenizer(Data,"|") to postDataTokenizer
            Copy new StringTokenizer(Sample_In_with_top_website_1.Data, "|") to postDataTokenizer
            if count of Tokens == 1 && Data.indexOf("^") == -1
            If
              condition: count of postDataTokenizer.Tokens is equal to 1 and Sample_In_with_top_website_1.Data.indexOf("^") is equal to -1
              then
                Copy Data to StringRequestBody
                Copy Sample_In_with_top_website_1.Data to HTTPClient_1.Request.StringRequestBody
              else
                while postDataTokenizer has MoreElements
                While
                  condition: postDataTokenizer has MoreElements
                  rules
                    Create uninitialized variable nameValuePair (of type String)
                    Copy postDataTokenizer.nextElement to nameValuePair
                    Copy postDataTokenizer.nextElement.toString to nameValuePair
                    Create uninitialized variable name (of type String)
                    Copy nameValuePair.substring(0,nameValuePair.indexOf("^")) to name
                    Copy nameValuePair.substring(STCTypeConverter.toIntegerPrimitive(0), nameValuePair.indexOf("^")) to name
                    Create uninitialized variable value (of type String)
                    Copy nameValuePair.substring(nameValuePair.indexOf("^") + 1,nameValuePair.length) to value
                    Copy nameValuePair.substring(nameValuePair.indexOf("^") + 1, nameValuePair.length) to value
                    Request.addParameterRequest(name,value)
                    HTTPClient_1.Request.addParameterRequest(name, value)
```

Figure 48 jcdHTTPClient Collaboration Definition - Part 2



```
│   │       │   └ else
│   │       ├ HTTPClient_1.post
│   │       └ HTTPClient_1.post
│   ├ java.lang.System.out.println(URL)
│   ├ out.println(HTTPClient_1.Request.URL)
│   ├ java.lang.System.out.println(ResponseCode)
│   ├ out.println(STCTypeConverter.toString(HTTPClient_1.Result.ResponseCode, "#,###,###,###", false, "0.0"))
│   ├ java.lang.System.out.println(ResponseMessage)
│   ├ out.println(HTTPClient_1.Result.ResponseMessage)
│   ├ For Loop
│   │   ├ counter initialization
│   │   │   └ Copy 0 to i1
│   │   ├ condition: i1 is less than count of HTTPClient_1.Result.Header
│   │   ├ steps
│   │   │   └ Copy (i1 + 1) to i1
│   │   └ rules
│   │       ├ java.lang.System.out.println(Name)
│   │       ├ out.println(HTTPClient_1.Result.Header[i1].Name)
│   │       ├ java.lang.System.out.println(Value)
│   │       └ out.println(HTTPClient_1.Result.Header[i1].Value)
│   ├ java.lang.System.out.println(TextResult)
│   ├ out.println(HTTPClient_1.Result.TextResult)
│   ├ Copy TextResult to Text
│   ├ Copy HTTPClient_1.Result.TextResult to FileClient_1.Text
│   ├ FileClient_1.write
│   └ FileClient_1.write
├ logger
├ alerter
├ collabContext
└ typeConverter
```

7.3.5 Creating a Connectivity Map

A Connectivity Map provides a canvas for assembling and configuring a Project's components. The **prjHTTPClient_JCD** Project only uses one Connectivity Map.

Follow the steps outlined in **"Creating a Connectivity Map" on page 75** to create a Connectivity Map. Name the Connectivity Map **cmHTTPClient**.

Selecting External Applications

Follow the steps outlined in **"Selecting External Applications" on page 76** to select the external applications for the **prjHTTPClient_JCD** Project's Connectivity Map.

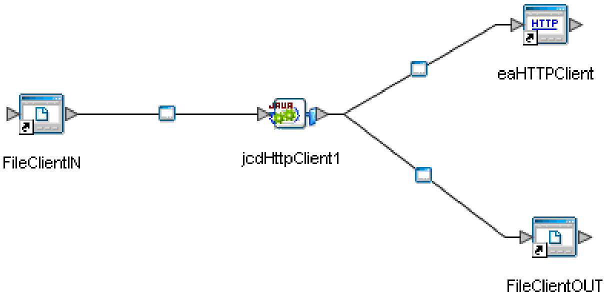
Populating the Connectivity Map

Add the Project components to the **prjHTTPClient_JCD** Connectivity Map by dragging the icons from the toolbar to the canvas. For this sample Project, drag and drop the following components onto the Connectivity Map canvas.

- File External System (2)
- Business Service (a service is a container for Java Collaborations, Business Processes, and so forth)
- HTTP Client External System

Figure 49 shows the components in the Connectivity Map.

Figure 49 Connectivity Map With Components: prjHTTPClient_JCD



Rename the **Service1** component to **jcdHTTPClient1**. Name the other components as shown in Figure 49. Be sure to save the new Connectivity Map before you proceed. You can click **Save** on the Enterprise Designer toolbar for this purpose.

Defining the Business Process

Define your Business Process by combining the Business Process icon with the Service icon in the Connectivity Map. To do so, drag and drop the **jcdHTTPClient** icon from the **Project Explorer** tree onto the Connectivity Map's **jcdHTTPClient1** Service icon. If the operation is successfully defined, the gears on the **jcdHTTPClient1** icon change from red to green.

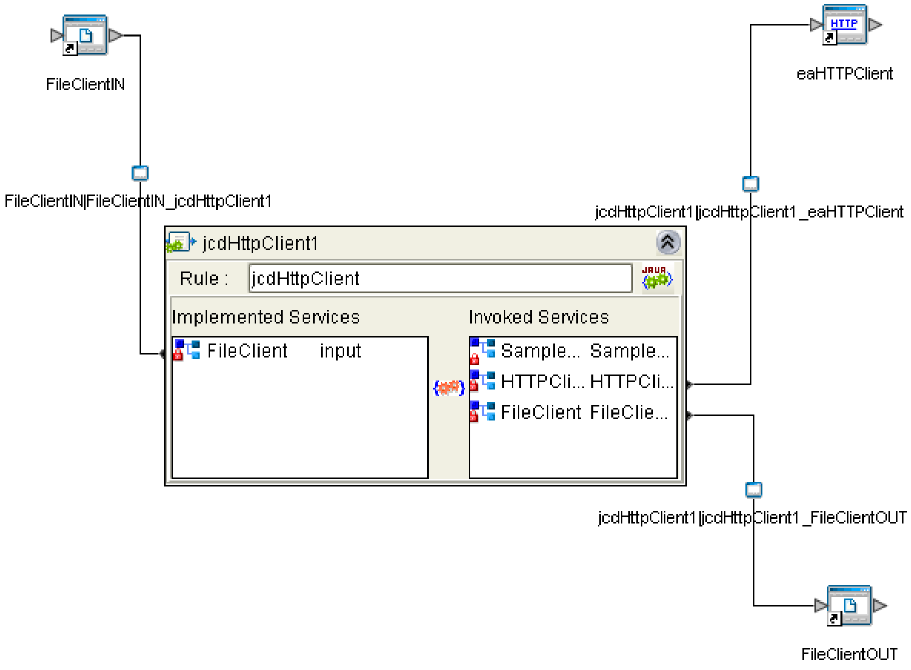
Binding the eWay Components

The final step in creating a Connectivity Map is binding the eWay components together.

Steps required to bind eWay components together:

1. Open the **cmHTTPClient** Connectivity Map and double-click the **jcdHttpClient1** Business Process. The **jcdHttpClient1** Binding dialog box appears.
2. From the **jcdHttpServer1** Binding dialog box, map **HTTPClient** (under Implemented Services) to the **HTTPClient1** External Application. To do this, click on **HTTPClient** in the **HttpClient1** Binding dialog box, and drag the cursor to the **HTTPClient1** External Application in the Connectivity Map. A link is now visible between **HTTPClient1** and **jcdHttpClient1**, as seen in Figure 50.

Figure 50 Connectivity Map - Associating (Binding) the Project's Components



7.3.6 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 Editor.

Follow the steps outlined in **"Creating an Environment" on page 78** to create an Environment for the **prjHTTPClient_JCD** Project.

7.3.7 Configuring the eWays

eWays facilitate communication and movement of data between the external applications and the eGate system. Each Connectivity Map in the **prjHTTPClient_JCD** sample Project use two eWays that are represented as a nodes between the External Applications and the Business Process.

You must configure eWay properties in both the Connectivity Map and the Environment Explorer.

Follow the steps outlined in **"eWay Connectivity Map Properties" on page 44** and **"eWay Environment Properties" on page 46** to configure the eWay properties for the **prjHTTPClient_JCD** Project.

7.3.8 Creating and Activating the Deployment Profile

Deployment Profiles are used to assign Collaborations and message destinations to the Integration Server and message server. Deployment profiles are created using the Deployment Editor.

Follow the steps outlined in **"Creating and Activating the Deployment Profile" on page 80** to create and deploy a deployment profile for the **prjHTTPClient_JCD** Project.

7.3.9 Creating and Starting the Domain

To deploy your Project you must first create a domain. After the domain is created, the Project is built and then deployed.

Follow the steps outlined in **"Creating and Starting the Domain" on page 81** to create and deploy a domain for the **prjHTTPClient_JCD** Project.

7.3.10 Building and Deploying the Project

The Build process compiles and validates the Project's Java files and creates the Project EAR file. Follow the steps outlined in **"Building and Deploying the Project" on page 82** to build and deploy the **prjHTTPClient_JCD** Project.

7.3.11 Running the Sample

The **prjHTTPClient_JCD** Project includes the following sample files:

- **Get_Input.xml.~in** (input file)
- **Post_Input.xml.~in** (input file)
- **HttpClient_JCD_output0.htm** (sample output file example)
- **HttpClient_JCD_output1.htm** (sample output file example)

To run your deployed sample Project, do the following:

1. From your configured input directory, paste (or rename) the sample input file to trigger the eWay.
2. From your output directory, verify the output data.

7.4 Building and Deploying the prjHTTPServer_JCD Sample Project

The HTTPS eWay server sample Project **prjHTTPServer_JCD** demonstrates how the HTTPS eWay receives information via HTTP from a server. Resulting or confirming information is then written to a data file.

- **Project Overview** on page 105

- **Creating a Project** on page 107
- **Creating the OTD** on page 108
- **Creating the Collaboration Definition (Java)** on page 108
- **Creating a Connectivity Map** on page 108
- **Creating an Environment** on page 110
- **Configuring the eWays** on page 110
- **Creating and Activating the Deployment Profile** on page 111
- **Creating and Starting the Domain** on page 111
- **Building and Deploying the Project** on page 111
- **Running the Sample** on page 111

7.4.1 Project Overview

Before you can run the Project, you must first copy the following .**html** input form file into any directory:

- **postJCEHTTPS**

The content of **postJCEHTTPS.html** is:

```
<HTML><HEAD><TITLE>HTTPS Test Page</TITLE></HEAD>
<BODY>
<FORM ACTION="http://localhost:18001/
    Deployment1_servlet_HttpServerSample/
    HttpServerSample" METHOD=POST>
<TABLE>
<TR><TD>First Name:</TD><TD><INPUT NAME=fname></TD></TR>
<TR><TD>Last Name:</TD><TD><INPUT NAME=lname></TD></TR>
<TR><TD>EMail:</TD><TD><INPUT NAME=email></TD></TR>
<TR><TD>Sex:</TD><TD><INPUT type="radio" name="sex"
    value="Male">Male</TD></TR>
<TR><TD></TD><TD><INPUT type="radio" name="sex"
    value="Female">Female</TD></TR>
<TR><TD></TD><TD></TD></TR>
</TABLE>
<BR>
<CENTER><INPUT TYPE=submit VALUE="Submit"></CENTER>
</FORM>
</BODY>
</HTML>
```

You must make a change in the HTML code shown previously. In the code where it shows:

**<FORM ACTION="http://localhost:18001/
Deployment1_servlet_HttpServerSample/
HttpServerSample" METHOD=POST>**

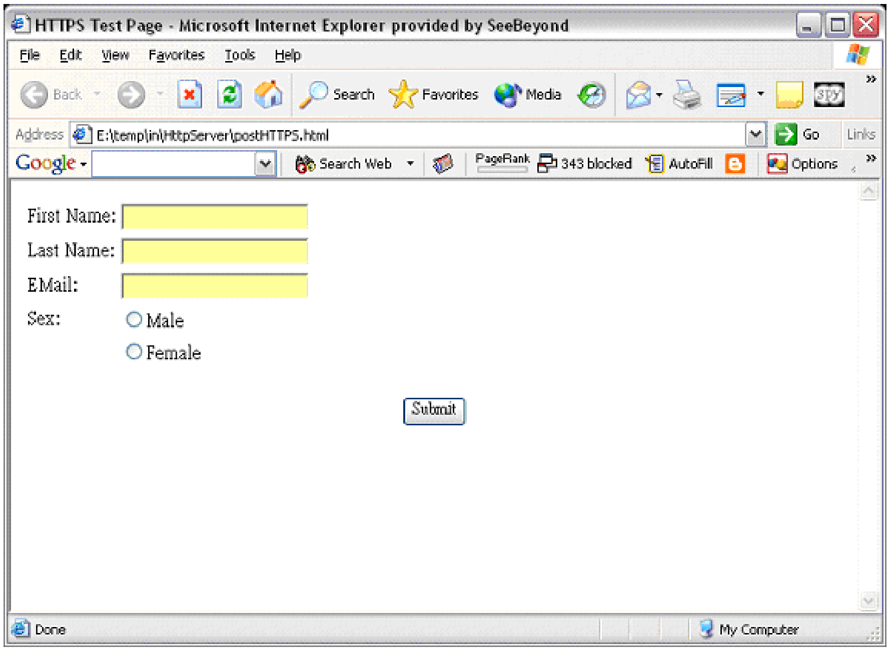
You must make changes based on your own Environment. The logic for the ACTION parameter is:

**http://<IS Server Name>:<IS port>/<Deployment_name>_servlet_
<servlet_url from properties>/<servlet_url from properties>**

Project Forms

Figure 51 shows the original form.

Figure 51 Server Sample Project: Original Form


HTTPS Test Page - Microsoft Internet Explorer provided by SeeBeyond
File Edit View Favorites Tools Help
Back Search Favorites Media
Address E:\temp\in\HttpServer\postHTTPS.html Go Links
Google Search Web PageRank 343 blocked AutoFill Options
Done
My Computer

First Name:

Last Name:

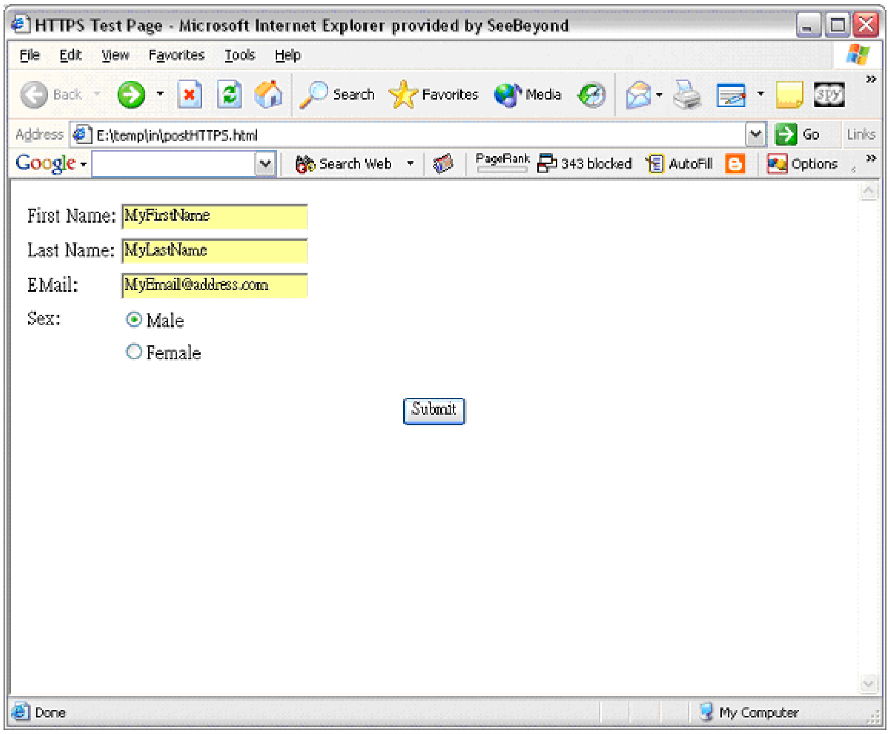
EMail:

Sex: ○ Male ○ Female

Submit

Figure 52 shows the input form.

Figure 52 Server Sample Project: Input Form


HTTPS Test Page - Microsoft Internet Explorer provided by SeeBeyond
File Edit View Favorites Tools Help
Back Search Favorites Media
Address E:\temp\in\postHTTPS.html Go Links
Google Search Web PageRank 343 blocked AutoFill Options
Done
My Computer

First Name: MyFirstName

Last Name: MyLastName

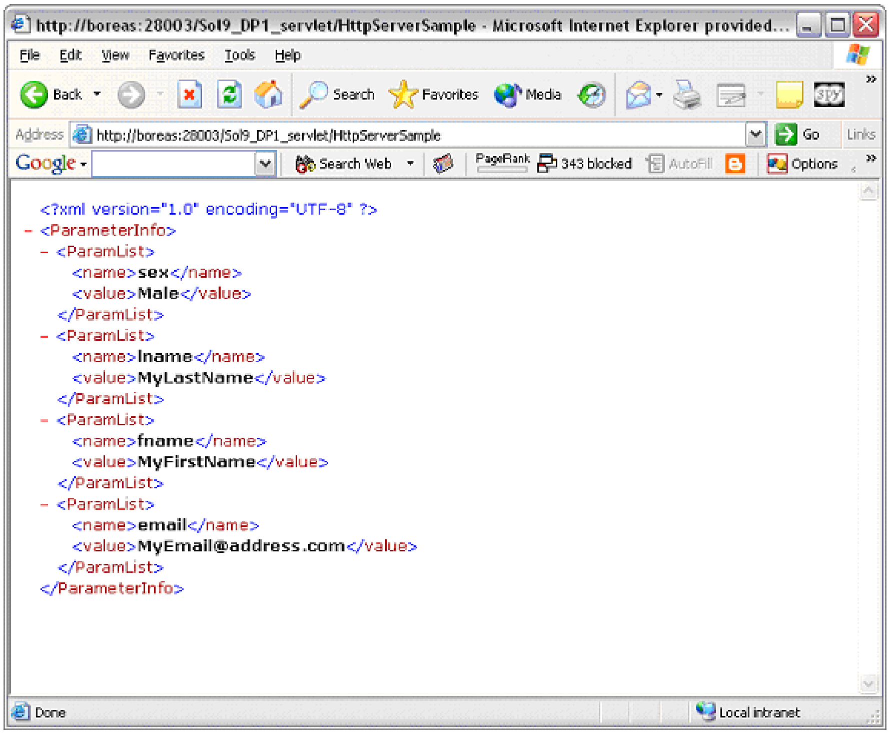
EMail: MyEmail@address.com

Sex: ● Male ○ Female

Submit

Figure 53 shows the output form.

Figure 53 Server Sample Project: Output Form


http://boreas:28003/Sol9_DP1_servlet/HttpServerSample - Microsoft Internet Explorer provided...
File Edit View Favorites Tools Help
Back Search Favorites Media
Address http://boreas:28003/Sol9_DP1_servlet/HttpServerSample
Go Links
Google Search Web PageRank 343 blocked AutoFill Options
Done
Local intranet

```
  <?xml version="1.0" encoding="UTF-8" ?>
- <ParameterInfo>
  - <ParamList>
      <name>sex</name>
      <value>Male</value>
    </ParamList>
  - <ParamList>
      <name>lname</name>
      <value>MyLastName</value>
    </ParamList>
  - <ParamList>
      <name>fname</name>
      <value>MyFirstName</value>
    </ParamList>
  - <ParamList>
      <name>email</name>
      <value>MyEmail@address.com</value>
    </ParamList>
  </ParameterInfo>
```

The input for the Project is a name/value pair, and it returns the entire list of parameters. A DTD file (**HTTPS_ParamList.dtd**) is used to marshal the list, so you must use the DTD wizard to convert this file to an eGate OTD.

Project Operations

The **prjHTTPServer_JCD** Project operates as follows:

- **HTTPServer1**: The HTTP server external application or system; the HTTPS eWay handles inbound communication with this system.
- **jcdHttpServer1**: Receives instructions from the HTTP server external application via the HTTPS eWay.

7.4.2 Creating a Project

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

1. Start the Enterprise Designer.
2. From the Project Explorer tree, right-click the Repository and select **New Project**. A new Project (**Project1**) appears on the Project Explorer tree.
3. Right-click **Project1** and select **Rename** form the shortcut menu. Rename the Project (for this sample, **prjHTTPServer_JCD**).

7.4.3 Creating the OTD

The next step is to create a Data Type Definition (DTD) OTD as an input file for this HTTPS sample Project.

Follow the steps outlined in **"Creating the OTD" on page 61** to convert the **HTTPS_ParamList.dtd** file into an eGate OTD. Name the new OTD **HTTPS_ParamList_ParameterInfo**.

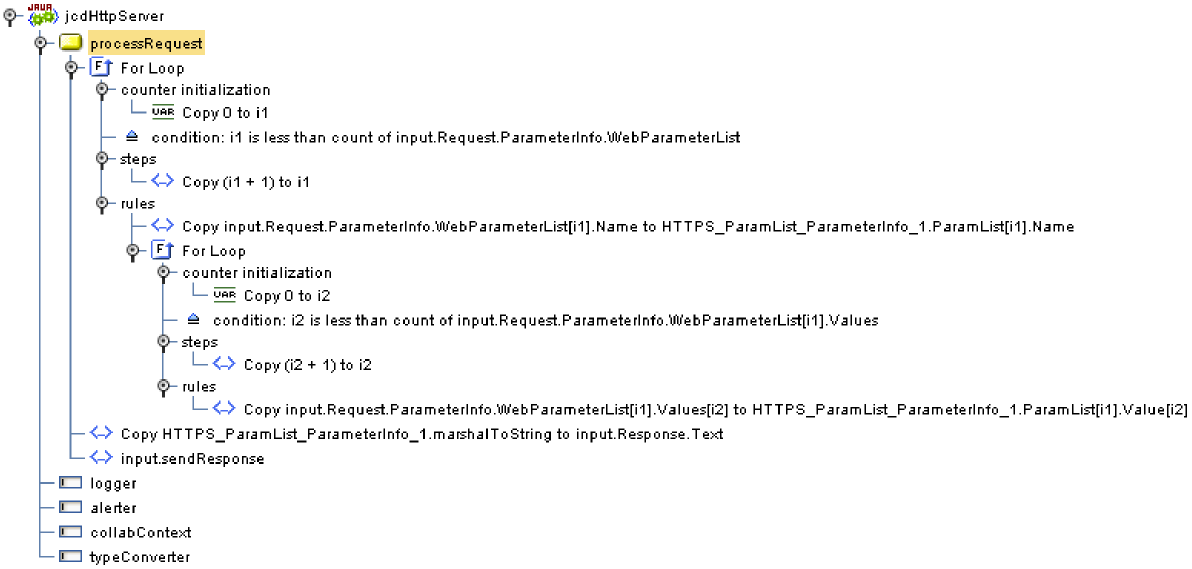
7.4.4 Creating the Collaboration Definition (Java)

The eGate Enterprise Designer contains a Collaboration Definition wizard (Java) that allows you to create Java-based Collaborations. You must use the wizard to create a Collaboration Definition before implementing the Collaboration.

The Collaboration Editor user interface allows you to create the Business Rules that implement your business logic for a Java-based Collaboration. You can create the desired Business Rules for your Project by dragging and dropping values from a source OTD onto the nodes of a destination HTTPS OTD and other OTDs. HTTPS OTD nodes represent HTTPS functions, which are in turn able to call HTTPS eWay methods.

The Business Rules for the **jcdHTTPServer** Java Collaboration Definition are displayed in Figure 54.

Figure 54 jcdHTTPServer Collaboration Definition



```
jcdHttpServer
  processRequest
    For Loop
      counter initialization
        Copy 0 to i1
      condition: i1 is less than count of input.Request.ParameterInfo.WebParameterList
      steps
        Copy (i1 + 1) to i1
      rules
        Copy input.Request.ParameterInfo.WebParameterList[i1].Name to HTTPS_ParamList_ParameterInfo_1.ParamList[i1].Name
        For Loop
          counter initialization
            Copy 0 to i2
          condition: i2 is less than count of input.Request.ParameterInfo.WebParameterList[i1].Values
          steps
            Copy (i2 + 1) to i2
          rules
            Copy input.Request.ParameterInfo.WebParameterList[i1].Values[i2] to HTTPS_ParamList_ParameterInfo_1.ParamList[i1].Value[i2]
    Copy HTTPS_ParamList_ParameterInfo_1.marshalToString to input.Response.Text
    input.sendResponse
  logger
  alerter
  collabContext
  typeConverter
```

7.4.5 Creating a Connectivity Map

A Connectivity Map provides a canvas for assembling and configuring a Project's components. The **prjHTTPServer_JCD** Project only uses one Connectivity Map.

Follow the steps outlined in **"Creating a Connectivity Map" on page 75** to create a Connectivity Map. Name the Connectivity Map **cmHTTPServer**.

Selecting External Applications

Follow the steps outlined in **"Selecting External Applications" on page 76** to select the external applications for the **prjHTTPServer_JCD** Project's Connectivity Map.

Populating the Connectivity Map

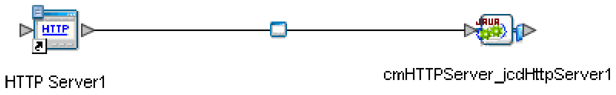
Add the Project components to the Connectivity Map by dragging the icons from the toolbar to the canvas. This operation creates the components for you.

For this sample Project, drag and drop the following components onto the Connectivity Map canvas.

- One Service
- HTTPS eWay/server external application

Figure 55 shows the components in the Connectivity Map.

Figure 55 Connectivity Map With Components: prjHTTPServerJCD



1. Rename the **Service1** component to **jcdHttpServer1**.
2. Rename the HTTPS external application **HTTPServer1**.

   Be sure to save the new Connectivity Map before you proceed. You can click **Save** for this purpose.

Defining the Business Process

Define your Business Process by combining the Business Process icon with the Service icon in the Connectivity Map. To do so, drag and drop the **jcdHttpServer** icon from the **Project Explorer** tree onto the Connectivity Map's **jcdHttpServer1** Service icon. If the operation is successfully defined, the gears on the **jcdHttpServer1** icon change from red to yellow.

Binding the eWay Components

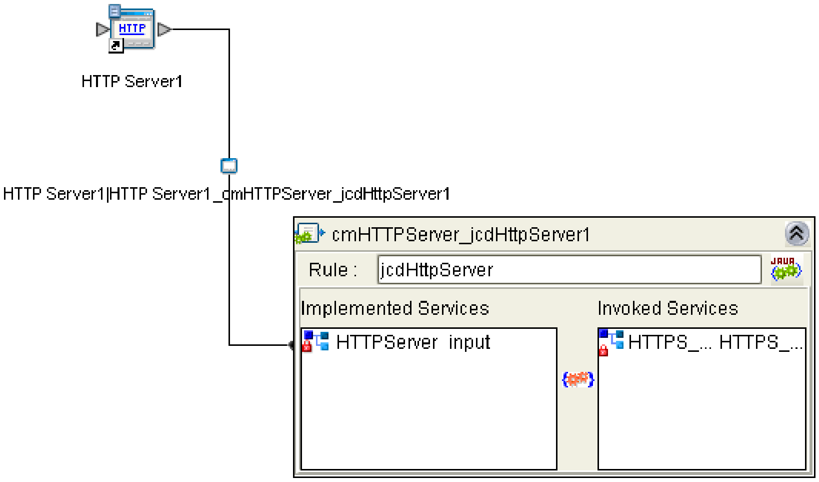
The final step in creating a Connectivity Map is binding the eWay components together.

Steps required to bind eWay components together:

1. Open the **cmHTTPServer** Connectivity Map and double-click the **HttpServer1** Business Process. The **HttpServer1** Binding dialog box appears.
2. From the **HttpServer1** Binding dialog box, map **HTTPSender** (under Implemented Services) to the **HTTPServer1** External Application. To do this, click on **HTTPSender** in the **HttpServer1** Binding dialog box, and drag the cursor to the

HTTPServer1 External Application in the Connectivity Map. A link is now visible between **HTTPServer1** and **HttpServer1**, as seen in Figure 56.

Figure 56 Connectivity Map - Associating (Binding) the Project's Components



7.4.6 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 Editor.

Follow the steps outlined in **"Creating an Environment" on page 78** to create an Environment for the **prjHTTPServer_JCD** Project. For this Project, add the **HTTP Server** external system to the Project's Environment, and rename it **esHTTPServer**.

7.4.7 Configuring the eWays

eWays facilitate communication and movement of data between the external applications and the eGate system. Each Connectivity Map in the The **prjHTTPServer_JCD** sample Project use two eWays that are represented as a nodes between the External Applications and the Business Process, as seen in Figure 55.

You must configure eWay properties in both the Connectivity Map and the Environment Explorer.

1. From the **cmHTTPServer** Connectivity Map, double-click the **HTTPServer1** eWay. The **Properties Editor** opens to the HTTP Server External Configuration properties.
2. Modify the HTTP Server External Configuration properties by entering **HttpServerSample** in the **servlet-url** property field, and click **OK**.

For further information on configuring the HTTPS Server eWay Connectivity Map and Environment properties, see **"eWay Connectivity Map Properties" on page 44** and **"eWay Environment Properties" on page 46**.

7.4.8 Creating and Activating the Deployment Profile

Deployment Profiles are used to assign Collaborations and message destinations to the Integration Server and message server. Deployment profiles are created using the Deployment Editor.

Follow the steps outlined in **"Creating and Activating the Deployment Profile" on page 80** to create and deploy a deployment profile for the **prjHTTPServer_JCD** Project. If you have enabled the HTTPS eWay's SSL feature, you must ensure that your Logical Host's Java Software Development Kit (SDK) versions match. For further information, see **Table 8 on page 50**.

7.4.9 Creating and Starting the Domain

To deploy your Project you must first create a domain. After the domain is created, the Project is built and then deployed.

Follow the steps outlined in **"Creating and Starting the Domain" on page 81** to create and deploy a domain for the **prjHTTPServer_JCD** Project.

7.4.10 Building and Deploying the Project

The Build process compiles and validates the Project's Java files and creates the Project EAR file. Follow the steps outlined in **"Building and Deploying the Project" on page 82** to build and deploy the **prjHTTPServer_JCD** Project.

7.4.11 Running the Sample

The **prjHTTPServer_JCD** Project includes the following sample files:

- **postJCEHTTPS.html** (input file)
- **postHTTPS.html** (sample output file example)

To run your deployed sample Project, do the following:

1. From your configured input directory, paste (or rename) the sample input file to trigger the eWay.
2. From your output directory, verify the output data.

Running the Sample in SSL Mode

To enable and run an HTTPS Server project in SSL mode, the Logical Host's server policy file must be changed as follows:

1. Scroll to the Logical Host directory:

   ```
   <JavaCAPS51>\logicalhost\is\lib\install\templates\
   ```

   where *<JavaCAPS51>* is the location of your Sun Java Composite Application Platform Suite installation
2. Enter the following statements in the **server.policy** file:

```
//JavaCAPS HTTPS eWay
permission java.security.SecurityPermission
"insertProvider.SunJSSE";
permission java.util.PropertyPermission "*" "read, write"
```

3 Configure the HTTPS eWay Connectivity Map and Environment Explorer properties for your particular Project.

Note: *You may need to create a new domain server after changing the Logical Host's server policy file or modify the security policy for the existing domain per step two above.*

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