BEA WebLogic Integration™

Running the B2B Integration Samples

Release 2.1 Service Pack 1
Document Date: January 2002

Running the B2B Integration Samples

Part Number	Date	Software Version
NA	January 2002	2.1 Service Pack 1

Contents

6. Messaging API Sample

7. ebXML Sample

A. JSP Tag Reference

About This Document

This document describes the business-to-business (B2B) integration samples delivered with WebLogic Integration. It provides configuration information and instructions for running and verifying each sample.

This document includes the following topics:

- Chapter 1, "Getting Started," describes the WebLogic Integration B2B samples, and discusses basic installation and configuration.
- Chapter 2, "Hello Partner Sample," demonstrates communication using the default XOCP messaging protocol.
- Chapter 3, "Channel Master Sample," demonstrates both point-to-point and multicast (broadcast) communications using the XOCP business protocol between WebLogic Integration trading partners.
- Chapter 4, "RosettaNet 2.0 Security Sample," shows how WebLogic Integration can be used to implement RosettaNet 2.0 PIP 3A2 and PIP 0A1 using workflows.
- Chapter 5, "Trading Partner Zeroweight Client Sample," describes how to configure and use the browser and file-sharing client samples.
- Chapter 6, "Messaging API Sample," shows how the WebLogic Integration Messaging API can be used.

What You Need to Know

This document is intended for independent software vendors (ISVs) who are interested in extending BEA WebLogic Integration. We assume you are familiar with the BEA WebLogic Integration platform and Java programming.

e-docs Web Site

BEA product documentation is available on the BEA corporate Web site. From the BEA Home page, click on Product Documentation or go directly to the "e-docs" Product Documentation page at http://e-docs.bea.com.

How to Print the Document

You can print a copy of this document from a Web browser, one file at a time, by using the File—>Print option on your Web browser.

A PDF version of this document is available on the WebLogic Integration documentation Home page on the e-docs Web site (and also on the documentation CD). You can open the PDF in Adobe Acrobat Reader and print the entire document (or a portion of it) in book format. To access the PDFs, open the WebLogic Integration documentation Home page, click the PDF files button and select the document you want to print.

If you do not have the Adobe Acrobat Reader, you can get it for free from the Adobe Web site at http://www.adobe.com/.

Related Information

To learn how to use BEA WebLogic Integration to meet your company's needs, see the following documents:

- WebLogic Integration documentation at the following URL:

  `http://edocs.bea.com`

- Sun Microsystems, Inc. Java site at the following URL:

  `http://java.sun.com/`

Contact Us!

Your feedback on the BEA WebLogic Integration documentation is important to us. Send us e-mail at **docsupport@bea.com** if you have questions or comments. Your comments will be reviewed directly by the BEA professionals who create and update the WebLogic Integration documentation.

In your e-mail message, please indicate which release of the WebLogic Integration documentation you are using.

If you have any questions about this version of BEA WebLogic Integration, or if you have problems installing and running BEA WebLogic Integration, contact BEA Customer Support through BEA WebSupport at **www.bea.com**. You can also contact Customer Support by using the contact information provided on the Customer Support Card, which is included in the product package.

When contacting Customer Support, be prepared to provide the following information:

- Your name, e-mail address, phone number, and fax number
- Your company name and company address
- Your machine type and authorization codes
- The name and version of the product you are using

- A description of the problem and the content of pertinent error messages

Documentation Conventions

The following documentation conventions are used throughout this document.

Convention	Item
boldface text	Indicates terms defined in the glossary.
Ctrl+Tab	Indicates that you must press two or more keys simultaneously.
italics	Indicates emphasis or book titles.

`monospace text`	Indicates code samples, commands and their options, data structures and their members, data types, directories, and file names and their extensions. Monospace text also indicates text that you must enter from the keyboard.
	Examples:
	`#include <iostream.h> void main ( ) the pointer psz`
	`chmod u+w *`
	`\tux\data\ap`
	`.doc`
	`tux.doc`
	`BITMAP`
	`float`

`monospace boldface text`	Identifies significant words in code. *Example*: `void` **`commit`** `( )`
`monospace italic text`	Identifies variables in code. *Example*: `String` *`expr`*

Convention	Item
UPPERCASE TEXT	Indicates device names, environment variables, and logical operators. *Example*s: LPT1 SIGNON OR
`{ }`	Indicates a set of choices in a syntax line. The braces themselves should never be typed.
`[ ]`	Indicates optional items in a syntax line. The brackets themselves should never be typed. *Example*: `buildobjclient [-v] [-o name ] [-f file-list]... [-l file-list]...`
`|`	Separates mutually exclusive choices in a syntax line. The symbol itself should never be typed.
`...`	Indicates one of the following in a command line: ■ That an argument can be repeated several times in a command line ■ That the statement omits additional optional arguments ■ That you can enter additional parameters, values, or other information The ellipsis itself should never be typed. *Example*: `buildobjclient [-v] [-o name ] [-f file-list]... [-l file-list]...`
. . .	Indicates the omission of items from a code example or from a syntax line. The vertical ellipsis itself should never be typed.

1 Getting Started

The business-to-business (B2B) integration samples are provided to help you understand how B2B integration functionality works in WebLogic Integration. In addition, successful installation and setup of the Hello Partner sample provides verification that you have successfully installed WebLogic Integration and configured it properly.

This section includes the following topics:

- Overview of Samples
- Preparing to Run the Samples

Overview of Samples

With the exception of the Hello Partner sample, which verifies the successful use of the XOCP messaging protocol, the samples demonstrate B2B integration solutions to plausible business problems. The following samples are described in this document:

- Hello Partner Sample—Demonstrates the basic handshake necessary for communication. The Hello Partner sample uses XOCP, the default messaging protocol for B2B integration.
- Channel Master Sample—Demonstrates how a large trading partner uses WebLogic Integration to automate its supply chain. The sample shows both point-to-point and multicast (broadcast) communications using the XOCP business protocol between WebLogic Integration trading partners.

- RosettaNet 2.0 Security Sample—Demonstrates how WebLogic Integration can be used to implement RosettaNet 2.0 PIP 3A2 and PIP 0A1 using workflows. This sample uses the WebLogic Integration security features required for RosettaNet 2.0 support: two-way SSL authentication, digital signatures, data encryption, and nonrepudiation.
- Trading Partner Zeroweight Client Sample—Illustrates a request-reply scenario in which two trading partners without a B2B integration installation use the B2B integration mailbox interface. Two types of zeroweight client communication are simulated for this demonstration:
  - Browser-based client—Uses XML and JMS to prepare, deliver, and collect information
  - File-sharing client—Uses a third-party file-sharing server to exchange messages
- Messaging API Sample—Shows how the WebLogic Integration Messaging API can be used. Specifically, it demonstrates the use of two message-delivery mechanisms available with the Messaging API and the logic plug-in feature of WebLogic Integration B2B integration.
- ebXML Sample—Demonstrates how WebLogic Integration can be used to implement an ebXML business transaction between two trading partners, each of which deploys WebLogic Integration. Specifically, it shows the design and use of two workflows, one for each trading partner. The workflows choreograph the exchange of ebXML-based business messages between the trading partners.

Preparing to Run the Samples

Before you can run the B2B samples, you must install WebLogic Integration and configure the samples. If you have not already done so, complete the following steps:

1. Install WebLogic Integration.

   For instructions, see *Installing BEA WebLogic Integration.* When prompted to choose an install set, select WebLogic Integration Full Installation With Samples (the default selection).

The WebLogic Integration installer prompts you to specify the databases to configure for the samples and production domains. The samples database information is used when you configure the samples.

2. Configure and start the server in the samples domain.

   For instructions, see "Configuring and Starting the Samples Domain" in "Getting Started" in *Starting, Stopping, and Customizing BEA WebLogic Integration.*

When you execute the `RunSamples` command as described in "Configuring and Starting the Samples Domain," the following actions are performed:

- The samples database is created.
- The sample repository data is bulk loaded into the database.
- WebLogic Server is started and the workflows are imported. A browser is started and the samples launcher page is displayed.

Note: To display the samples launcher page on a UNIX system, your `PATH` environment variable must include the directory in which the Netscape executable (`netscape`) resides. For additional Web browser configuration requirements, see "Web Browser Configuration Requirements" in "WebLogic Integration Administration and Design Tools" in *Starting, Stopping, and Customizing BEA WebLogic Integration*.

Once you have configured the samples and started the server in the samples domain, any additional steps required to configure a particular sample are provided in the documentation for that sample. Instructions are provided for both Windows and UNIX systems.

Switching the Default Database

You can use any supported database with the samples domain. The WebLogic Database Configuration Wizard can be used to update your samples domain to a new database. If you would like to update the samples domain to use a new database, complete the following steps:

1. Use the WebLogic Integration Database Configuration Wizard to switch to the new database.

For instructions, see the "Using the Database Configuration Wizard" and "Specifying a New Database for a Domain" topics in "Customizing WebLogic Integration" in *Starting, Stopping, and Customizing BEA WebLogic Integration*.

2. Execute the `RunSamples` command to configure the new database, start the samples domain, and display the samples launcher in your Web browser.

   For instructions, see "Configuring and Starting the Samples Domain" in "Getting Started" in *Starting, Stopping, and Customizing BEA WebLogic Integration*.

WebLogic Integration Domains

As described in "Getting Started" in *Starting, Stopping, and Customizing BEA WebLogic Integration*, a domain is a set of interrelated WebLogic Server resources defined in a single configuration file. A special WebLogic Server domain is set up to run all WebLogic Integration samples that require only one server. This domain, which is fully configured after installation, but is not yet populated, resides in the *`WLI_HOME`*`/config/samples` directory. The Samples domain uses the database chosen during installation, or when the WebLogic Integration Database Configuration Wizard was last run as described in "Switching the Default Database."

For additional information about using the preconfigured domains installed with WebLogic Integration, see "Getting Started" in *Starting, Stopping, and Customizing BEA WebLogic Integration*.

Browser Proxy Settings

If your browser is unable to connect to the URL for the samples launcher, it may be using a proxy server that prevents you from connecting to your local WebLogic Server. If this condition exists, the following error message is displayed:

```
The requested URL could not be retrieved
```

To bypass the proxy server, change the browser proxy settings so that the browser does not use the proxy server to access the servlet. The procedure for making this change is browser-dependent:

- For Internet Explorer, choose Tools→Internet Options→Connections→LAN Settings. The Local Area Network (LAN) Settings Dialog box is displayed. Select the following option: Bypass proxy server for local addresses.
- For Netscape, choose Edit→Preferences→Advanced→Proxies→View. In the Exceptions text field, specify your `localhost:`*`listening_port`*. (The value of *`listening_port`* should be the listening port number specified in the `config.xml` file.) The default is 7001.

CHAPTER

2 Hello Partner Sample

The Hello Partner sample demonstrates communication using the default messaging protocol: XOCP. This section discusses the following topics:

- Overview of the Hello Partner Sample
- Before Running the Hello Partner Sample
- Running the Hello Partner Sample
- How the Sample Works

Overview of the Hello Partner Sample

The Hello Partner sample demonstrates business communications between two trading partners using WebLogic Integration.

What the Sample Demonstrates

The Hello Partner sample demonstrates how two trading partners send business messages using the XOCP protocol. For each trading partner, the sample demonstrates the following:

- Public process—A public process that handles communication between the trading partners is shown. The public process workflows in this sample use the XOCP protocol to send messages between trading partners.

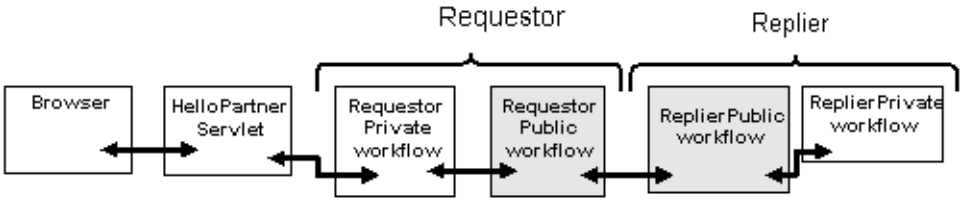
- Private process—A private process for each trading partner that processes message content is shown.

This sample also illustrates the preferred method of handling trading partner message traffic. Public processes are used to manage trading partner message traffic, while private processes are used for message creation, message processing, and links to outside applications.

Hello Partner Sample Scenario Logic

The Hello Partner sample scenario involves two trading partners: one requestor and one replier, as shown in Figure 2-1. The following figure shows the high-level interactions between the different Hello Partner workflows.

Figure 2-1 Interactions Among Hello Partner Workflows



Notes: The public workflows are shaded in gray in the preceding figure.

The following sequence summarizes the main events in this scenario:

1. The `RunSamples` script is started, with the following results:
   a. The sample instance of the WebLogic Server is started.
   b. A browser opens and displays the samples launcher page.
   c. On the samples launcher page, the Hello Partner link is clicked: the Hello Partner main HTML page is displayed.

2. Values for the integers are selected from the menu. The Click Here to Begin link is selected. Consequently, the Hello Partner main HTML page sends an HTTP request to the HelloPartnerServlet. The HTTP request contains the selected integer values.

3. The HelloPartnerServlet sends an JMS XML event with the integer values.

4. The preceding JMS XML event triggers the RequestorPrivate workflow to start. The RequestorPrivate workflow composes the MultiplyRequestXML workflow variable and starts the RequestorPublic workflow, passing in the MultiplyRequestXML workflow variable. The RequestorPublic workflow then waits for a response from the replier.

5. The ReplierPublic workflow receives the message and extracts integer values from the MultiplyRequestXML workflow variable. It puts these values into the MultiplyInputsXML workflow variable and posts an internal XML event.

6. The ReplierPrivate workflow is triggered by the preceding internal XML event. The ReplierPrivate workflow multiplies the two integers, places the result in the MultiplyOutputsXML workflow variable, and post an internal XML event with the MultiplyOutputsXML workflow variable.

7. The ReplierPublic workflow, which was waiting for the preceding XML event, creates a MultiplyReplyMessage input message workflow variable and sends it with a business message.

8. The RequestPublic workflow, which was waiting for the preceding business message, extracts values from the MultiplyReplyMessage workflow variable, creates the MultiplyReplyXML workflow variable, and posts it with an internal XML event.

9. The RequestPrivate workflow, which was waiting for the preceding XML event, creates the ResultXMLForJSP workflow variable and posts it with an external XML event.

10. The HelloPartnerServlet receives the XML event, extracts the result of the multiplication of the two integers from the XML, and displays it in the browser.

Before Running the Hello Partner Sample

Before running the Hello Partner sample, complete the following steps:

1. Follow the instructions in "Preparing to Run the Samples" on page 1-2.
2. Make sure the proxy settings on your browser do not prevent you from connecting to the sample WebLogic Server. For more information, see "Web Browser Configuration Requirements" in "WebLogic Integration Administration and Design Tools" in *Starting, Stopping, and Customizing BEA WebLogic Integration*.

Running the Hello Partner Sample

To run the Hello Partner sample:

1. Run the `RunSamples` script by completing the procedure appropriate for your platform:
   - Windows:

     Choose Start→Programs→BEA WebLogic E-Business Platform→WebLogic Integration 2.1→Samples→Run Samples.
   - UNIX:

     a) Make sure your `PATH` environment variable includes the directory in which the Netscape (`netscape`) executable resides.

     b) Go to the WebLogic Integration home directory (the directory in which you installed WebLogic Integration). For example:

     ```
     cd /home/me/bea/wlintegration2.1
     ```

     c) Run the `setenv` script to set the top-level WebLogic Integration environment variables:

     ```
     . setenv.sh
     ```

     d) Run the `RunSamples` script:

```
cd samples/bin
RunSamples
```

Warning: For UNIX systems, the directory in which the `netscape` executable resides must be included in your `PATH` environment variable. If it is not included, the samples launcher page cannot be displayed.

2. If the `RunSamples` script detects that the configuration section of the `RunSamples` script has been run before, the following prompt is displayed:

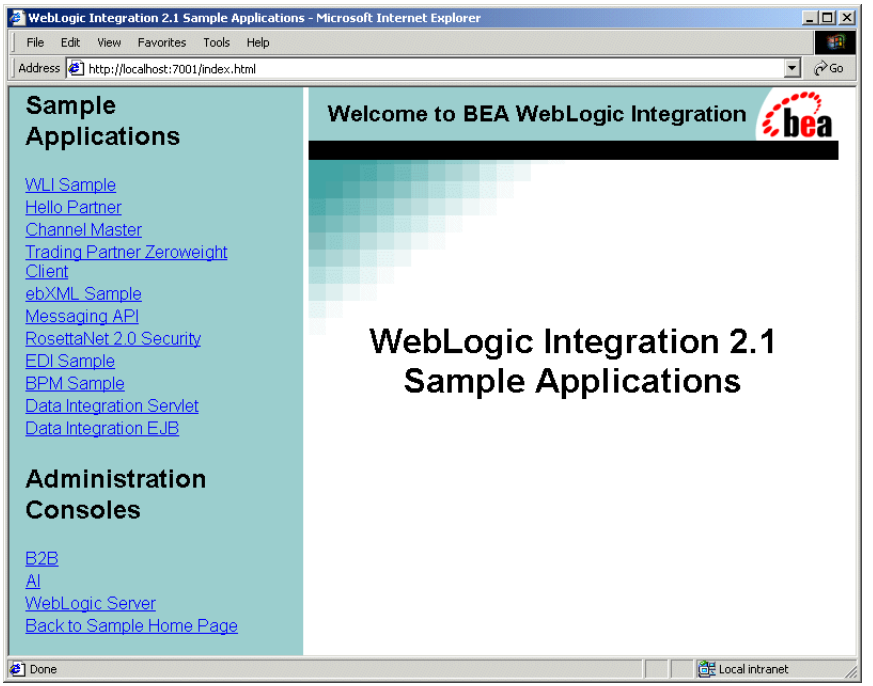
```
The WebLogic Integration repository has already been
created and populated, possibly from a previous run
of this RunSamples script. Do you want to destroy all the
current data in the repository and create and populate the
WebLogic Integration repository, again? Y for Yes, N for No
```

   If you answer `N` to this question, the `RunSamples` script skips the steps for creating and populating the repository and runs only the step for booting the sample instance of the WebLogic Server.

   If you answer `Y` to this question, the `RunSamples` script recreates and repopulates the repository, and then it boots the sample instance of the WebLogic Server. When you answer `Y`, the `RunSamples` script destroys all the data currently in the repository and loads an unaltered version of the sample data into the repository. Answer `Y` only when the current sample data has been altered or removed and you want a fresh or unaltered version of the sample data in the repository.

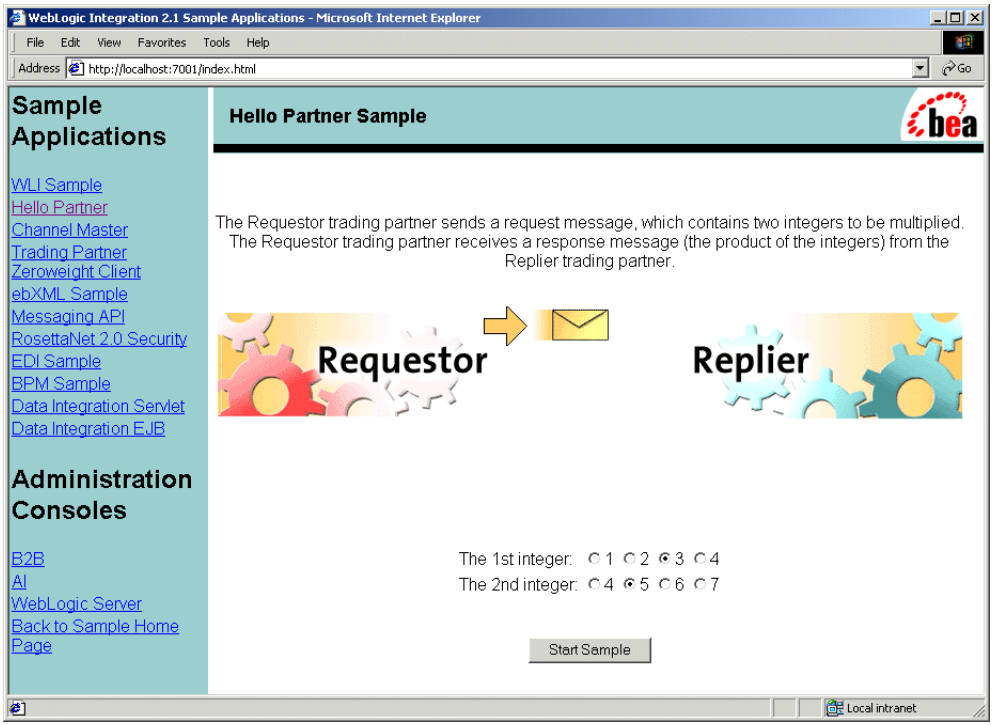
   Now the `RunSamples` script starts an instance of the WebLogic Server as a background process and the samples launcher page is displayed.

Figure 2-2 Samples Launcher Page



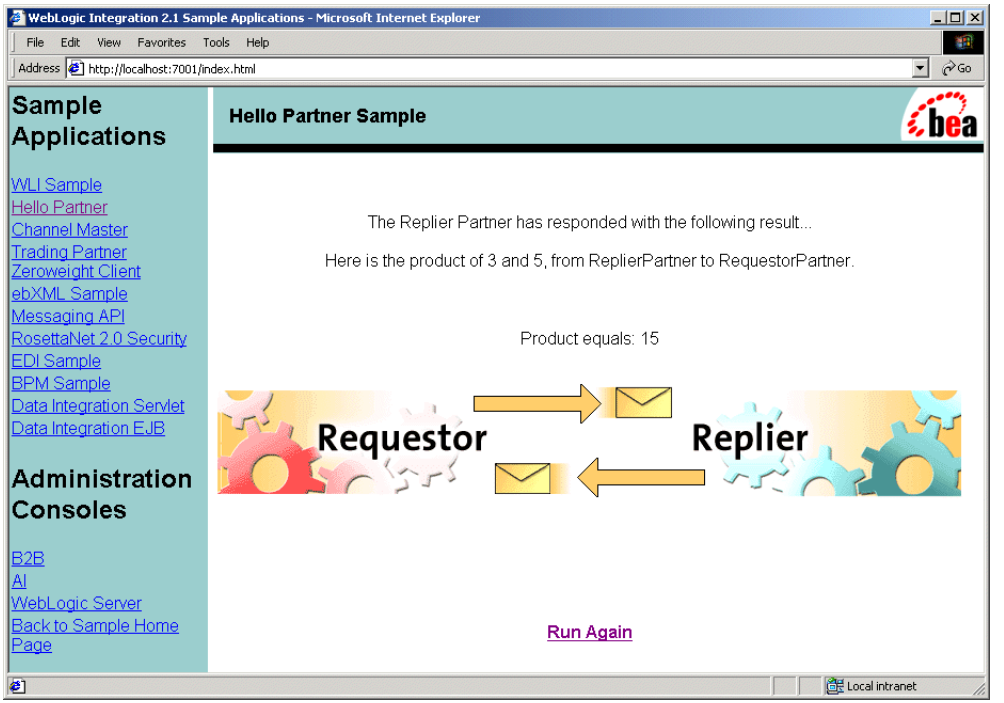
3. Click the link for Hello Partner, listed under Sample Applications in the left pane of the samples launcher page. The Hello Partner sample is displayed in the right pane.

Figure 2-3 Hello Partner Sample Launcher Page



4. Select two numbers using the radio buttons. Click Start Sample.

Figure 2-4 Hello Partner Sample Result Page



5. If you want to run more B2B samples at this time, keep the samples launcher page open and keep the WebLogic Server running.

   If you do not want to run more B2B samples at this time, exit from your browser and shut down the WebLogic Server by completing the procedure appropriate for your platform:

   - Windows:

     Choose Start→Programs→BEA WebLogic E-Business Platform→WebLogic Integration 2.1→Samples→Stop Server.

   - UNIX:

     ```
     cd $WLI_HOME/config/samples/bin
     stopWebLogic
     ```

How the Sample Works

A total of four workflows are used in this sample. Two public workflows manage the requestor's and replier's sides of the XOCP message exchange. One private workflow connects to the servlet and the requestor's public workflow; another creates the replier's reply data.

The following sections provide an overview of this process and describe each type of workflow in detail:

- Documents Exchanged
- Requestor Private Workflow
- Requestor Public Workflow
- Replier Public Workflow
- Replier Private Workflow

Documents Exchanged

The following XML documents are used in the Hello Partner sample:

- Request Message from Requestor Role
- Reply Message from Replier Role
- XML Message Over JMS from Servlet to Trigger Private Workflow
- XML Message Over JMS from Private Workflow to Servlet with Result
- XML Event from Replier Public Workflow to Replier Private Workflow
- XML Event from Replier Private Workflows to Replier Public Workflows

The document type definitions (DTDs) for these documents are located in the `%WLI_HOME%\config\samples` directory for Window systems and the `$WLI_HOME/config/samples` directory for UNIX systems.

Request Message from Requestor Role

The following XML message is sent by the requestor. It includes the two numbers to be multiplied:

```
<multiply-request>
       <integer-one>5</integer-one>
       <integer-two>7</integer-two>
</multiply-request>
```

The message conforms to the `multiply-request.dtd`.

Reply Message from Replier Role

The following XML message, sent by the replier, contains the multiplication product, as well as a generated message:

```
<multiply-reply>
       <integer-product>35</integer-product>
       <note>Dear RequestorPartner: Here is the product of 7 and 5,
 from ReplierPartner to RequestorPartner.</note>
</multiply-reply>
```

The message conforms to the `multiply-reply.dtd`.

XML Message Over JMS from Servlet to Trigger Private Workflow

The following message is sent over JMS by the servlet. Its arrival triggers the requestor's private workflow:

```
<from-multiply-request-jsp-to-workflow light-weight=”false”>
       <integer-one>5</integer-one>
       <integer-two>7</integer-two>
</from-multiply-request-jsp-to-workflow>
```

The message conforms to the `from-multiply-request-jsp-to-workflow.dtd`.

XML Message Over JMS from Private Workflow to Servlet with Result

The following message is sent, over JMS, from the requestor's private workflow to the servlet. It contains the product of the multiplication, as well as a text message:

```
<from-workflow-to-multiply-request-jsp>
       <integer-product>35</integer-product>
```

```
       <note>Dear RequestorPartner: Here is the product of 7 and 5
 from ReplierPartner to RequestorPartner.</note>
</from-workflow-to-multiply-request-jsp>
```

The message conforms to the `from-workflow-to-multiply-request-jsp.dtd`.

XML Event from Replier Public Workflow to Replier Private Workflow

The following XML event contains the request input message with four parameters (the two multiplication inputs, the name of the requestor, and the name of the replier):

```
<multiply-inputs>
       <integer-one>5</integer-one>
       <integer-two>7</integer-two>
       <requestor-name>PartnerRequestor</requestor-name>
       <replier-name>PartnerReplier</replier-name>
</multiply-inputs>
```

The message conforms to the `multiply-inputs.dtd`.

XML Event from Replier Private Workflows to Replier Public Workflows

The following XML event contains the reply output of the private workflow:

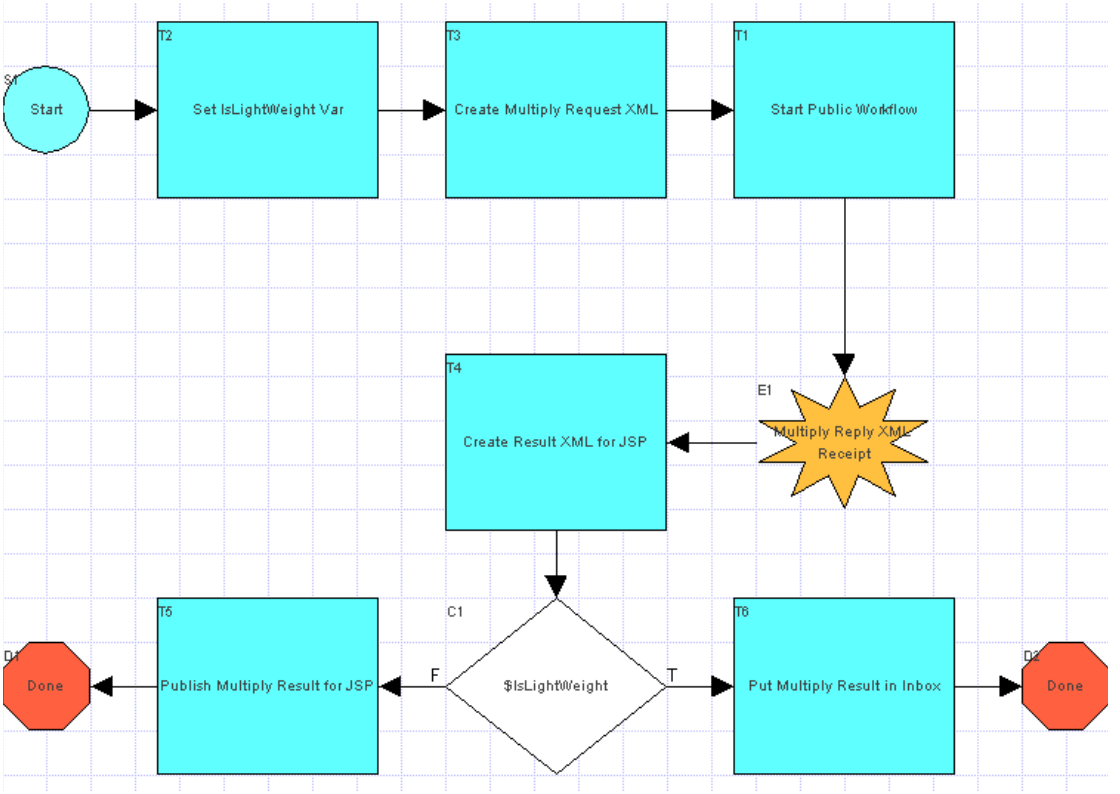
```
<multiply-outputs>
       <integer-product>35</integer-product>
       <note>Dear RequestorPartner: Here is the product of 7 and 5
 from ReplierPartner to RequestorPartner.</note>
</multiply-outputs>
```

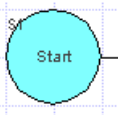
The message conforms to the `multiply-outputs.dtd`.

Requestor Private Workflow

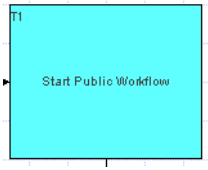
The requestor private workflow receives the initial request from the servlet, creates a message of the appropriate type, and sends it to the public workflow for transmission. When it receives the reply, it processes the reply message, and sends the results to the servlet. This process is illustrated by the workflow shown in the following figure.

Figure 2-5 Requestor Private Workflow





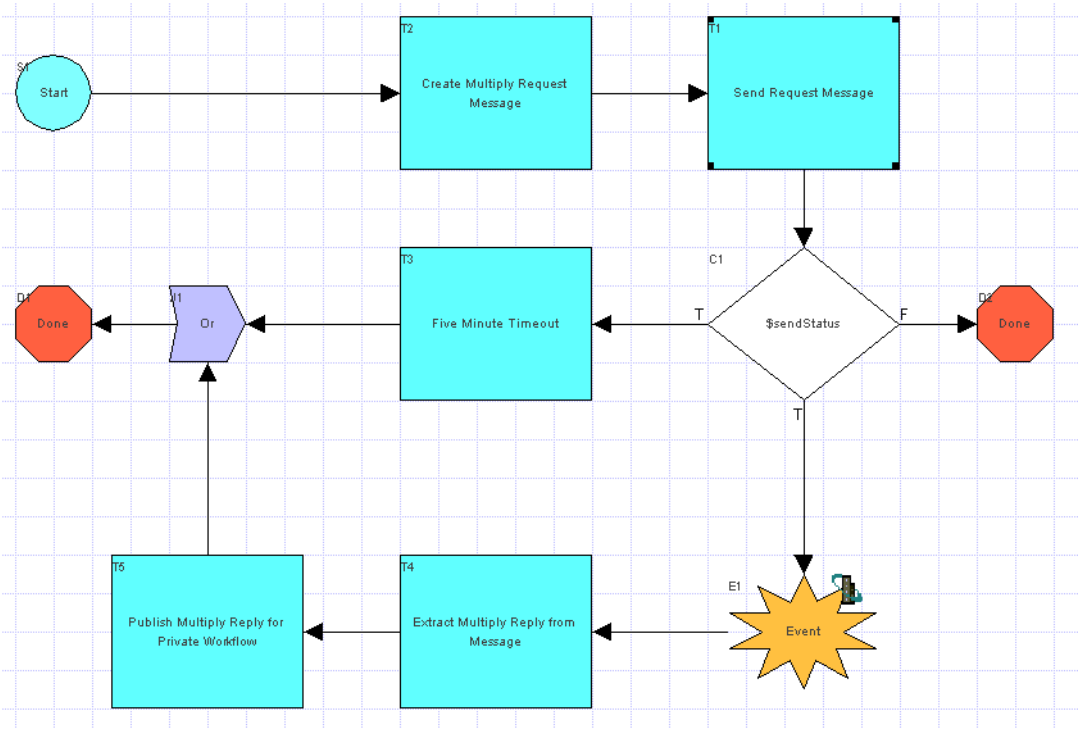
An XML event received from the servlet triggers the workflow. The XML event is of the form `<from-multiply-request-jsp-to-workflow>`, as discussed in "XML Message Over JMS from Servlet to Trigger Private Workflow." The Start node extracts the conversion string from XML, creates a `<multiply-request>` document, and stores it in a workflow variable.

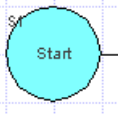
	The Action node starts the public workflow and passes it a workflow variable containing the `<multiply-request>` document.
	The Event node waits for a `<multiply-reply>` document. When the `<multiply-reply>` document is received, the conversion string is extracted from it. A `<from-workflow-to-multiply-request-jsp>` document is created and sent to the servlet.
	A Done node ends the workflow.

Requestor Public Workflow

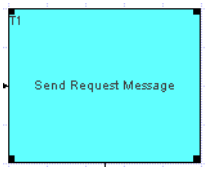
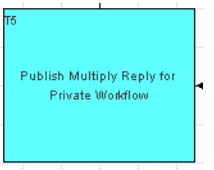
The Requestor public workflow is initiated by the private workflow. The Requestor public workflow receives a workflow variable from the private workflow. It then creates a message with the request XML, sends the message to the Replier, waits for a response, extracts the response XML from the response message, and then passes the response to the private workflow for processing. The workflow shown in the following figure illustrates this process.

Figure 2-6 Requestor Public Workflow





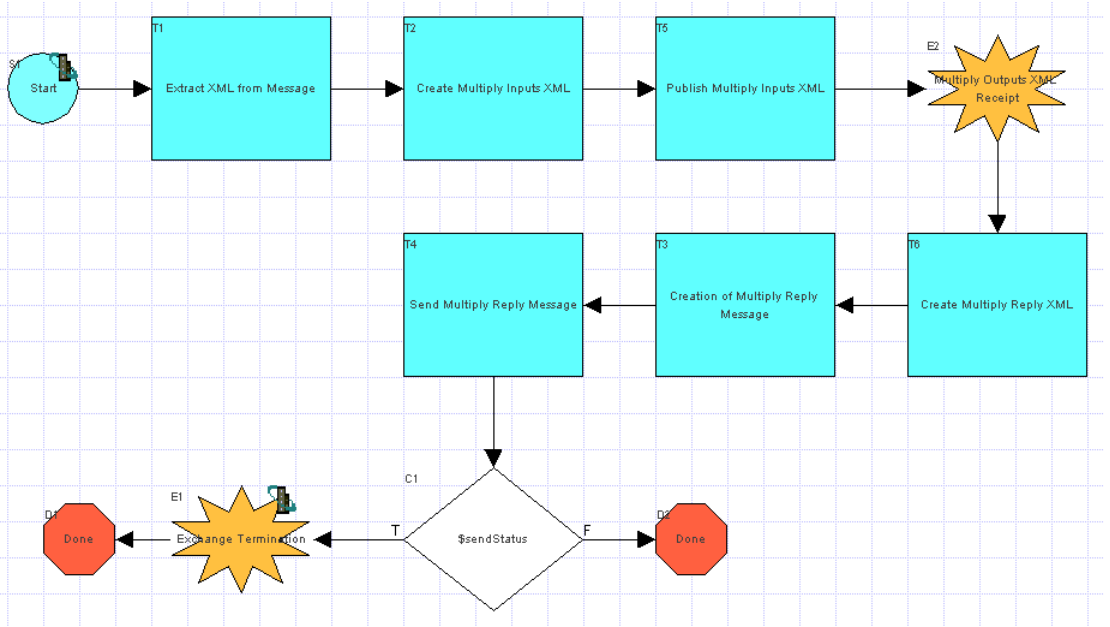
This workflow is initiated from the private workflow. The private workflow passes in the `<multiply-request>` document to this workflow. The Start node extracts the message string and stores it in a workflow variable.

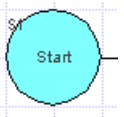
	An Action node sends the `<multiply-request>` document, inside an XOCP message, to the replier role, specifying PartnerReplier as the name of the trading partner.
	An Event node waits for an XOCP reply message from the replier. When the reply arrives, it extracts the `<multiply-reply>` document from the message and stores it in a workflow variable.
	An Action node publishes the `<multiply-reply>` document as an XML Event.
	A Done node ends the workflow.

Replier Public Workflow

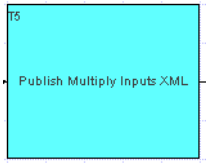
The replier public workflow is initiated upon receipt of the requestor's message. It receives the message, extracts the request XML from the message, publishes an XML event containing the request XML to trigger the replier private workflow, receives an XML event back from the replier private workflow, and sends a message containing the response XML back to the requestor as a reply. This process is illustrated by the workflow shown in the following figure.

Figure 2-7 Replier Public Workflow

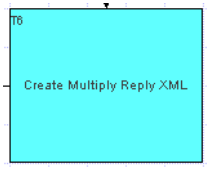




The workflow is started upon receipt of a `<multiply-request>` document. The Start node extracts the content from the message and stores it in a workflow variable. The format of the workflow variable is `<multiply-input>`, using the values from inside the `<multiply-request>` document, and the sender and replier names from within the message.



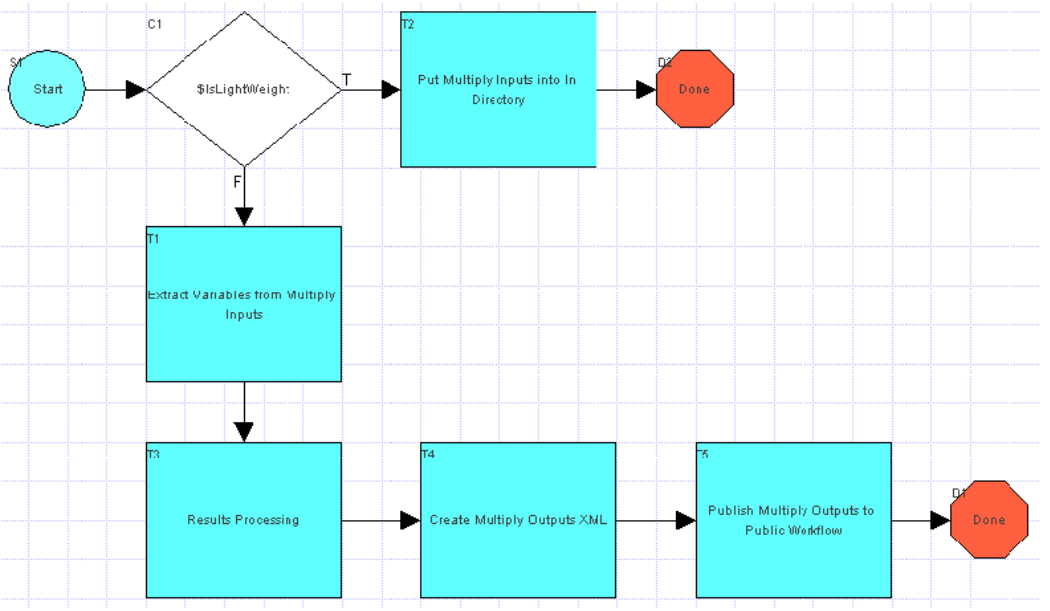
An Action node publishes the `<multiply-inputs>` document as an XML Event, initiating the private workflow.

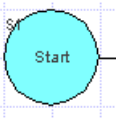
	An Event node waits for a response, which it receives as an XML Event containing a `<multiply-outputs>` document.
	An Action node creates a `<multiply-reply>` document based on the `<multiply-outputs>` document. It stores the result in an XML workflow variable.
	An Action node sends the message containing the `<multiply-reply>` document to the requestor, using XOCP.
	A Done node ends the workflow.

Replier Private Workflow

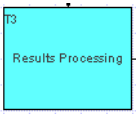
The replier private workflow is initiated upon receipt of the XML Event containing the request XML from the replier public workflow. It receives the request, processes the data, generates a reply in an XML document, and sends the reply XML back to the replier public workflow using an XML Event.

Figure 2-8 Replier Private Workflow

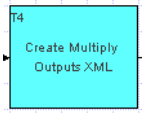
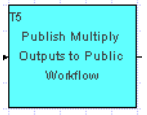




The workflow is started when an XML Event containing a document of type `<multiply-inputs>` is received. The Start node stores the document in a workflow variable.



The Action node creates an integer workflow variable containing the product obtained by multiplying the input integers from the `<multiply-inputs>` document.

	The Action node creates a document of type `<multiply-outputs>` as a workflow XML variable. The values from the integer and note workflow variables in steps 2 and 3 are stored in this document.
	The Action node publishes the `<multiply-outputs>` document as an XML Event.
	A Done node ends the workflow.

3 Channel Master Sample

The Channel Master sample shows how a large trading partner uses WebLogic Integration to automate its supply chain. The sample demonstrates both point-to-point and multicast (broadcast) communications using the XOCP business protocol between WebLogic Integration trading partners.

This section includes the following topics:

- Channel Master Sample Overview
- Before Running the Channel Master Sample
- Running the Channel Master Sample
- Workflows Behind the Channel Master Sample

Channel Master Sample Overview

The following sequence summarizes the communication between the trading partners for this sample:

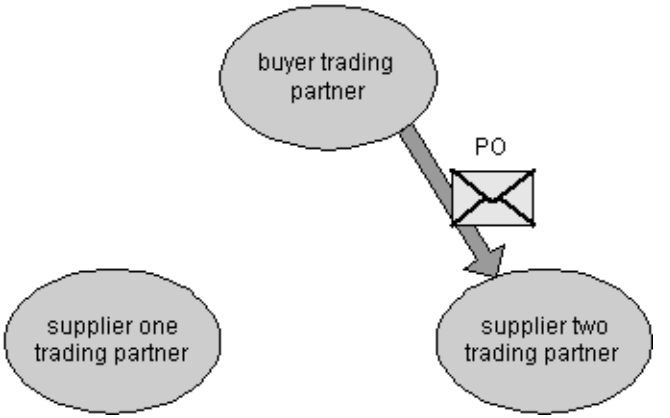
1. One trading partner, the channel master buyer, broadcasts a query for pricing and availability (QPA) of a particular item. In this sample, two supplier trading partners are listening for queries, so two supplier trading partners receive the query. (A broadcast communication can be received by many trading partners. In this sample

only two suppliers are listening, so only two receive the query.) This action demonstrates broadcast or multicast communication. In the following figure, the envelopes labeled QPA represent XML messages.

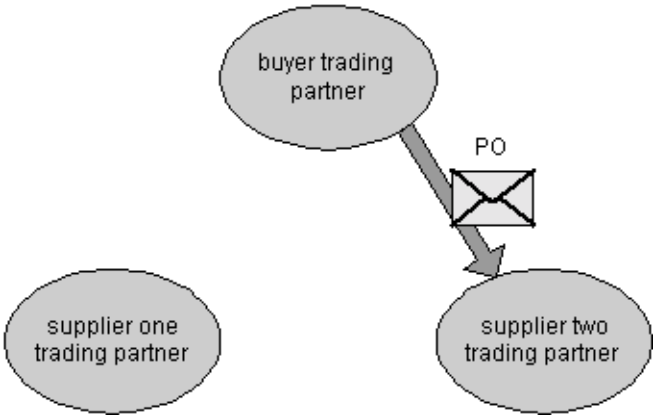
In this case, an XML message containing a query for pricing and availability (QPA) is passed from one trading partner to another. This illustration is a simple representation of trading partners. For a more detailed representation, see "Multicast or Broadcast Messages" on page 3-23.

2. The two suppliers send the buyer reply quotes, each of which contains the price and availability of the requested item. In this step, the two suppliers have point-to-point communications with the buyer.

3. The buyer selects a supplier and sends a purchase order (PO) to that supplier. This action provides another example of point-to-point communication.



4. The supplier replies with a purchase order acknowledgment message.



Before Running the Channel Master Sample

Before running the Channel Master sample, complete the following steps:

1. Follow the instructions in "Preparing to Run the Samples" on page 1-2.
2. Make sure the proxy settings on your browser do not prevent you from connecting to the sample WebLogic Server. For more information, see "Web Browser Configuration Requirements" in "WebLogic Integration Administration and Design Tools" in *Starting, Stopping, and Customizing BEA WebLogic Integration*.

Running the Channel Master Sample

To run the Channel Master sample, complete the following steps:

Note: If the instance of the WebLogic Server started by the `RunSamples` script is running, skip to step 3.

1. Run the `RunSamples` script by completing the procedure appropriate for your platform:
   - Windows:

     Choose Start→Programs→BEA WebLogic E-Business Platform→WebLogic Integration 2.1→Samples→Run Samples.
   - UNIX:

     a) Make sure your `PATH` environment variable includes the directory in which the Netscape executable (`netscape`) resides.

     b) Go to the WebLogic Integration home directory (the directory in which you installed WebLogic Integration). For example:

     ```
     cd /home/me/bea/wlintegration2.1
     ```

     c) Run the `setenv` script to set the top-level WebLogic Integration environment variables:

     ```
     . setenv.sh
     ```

     d) Run the `RunSamples` script:

     ```
     cd samples/bin
     RunSamples
     ```

Note: For UNIX systems, the directory in which the `netscape` executable resides must be included in your `PATH` environment variable. If it is not included, the samples launcher page cannot be displayed.

2. If the `RunSamples` script detects that the configuration section of the `RunSamples` script has been run before, the following prompt is displayed:

```
The WebLogic Integration repository has already been created
and populated, possibly from a previous run of this
RunSamples script. Do you want to destroy all the current
data in the repository and create and populate the
WebLogic Integration repository, again?
Y for Yes, N for No
```

   If you answer `N` to this question, the `RunSamples` script skips the steps for creating and populating the repository and runs only the step for booting the sample instance of the WebLogic Server.

   If you answer `Y` to this question, the `RunSamples` script recreates and repopulates the repository, and then it boots the sample instance of the WebLogic Server. When you answer `Y` the `RunSamples` script destroys all the data currently in the repository and loads an unaltered version of the sample data into the repository. Answer `Y` only when the current sample data has been altered or removed and you want a fresh or unaltered version of the sample data in the repository.

   Now the `RunSamples` script starts an instance of the WebLogic Server (as a background process) and the samples launcher page is displayed.

   Unlike most of the WebLogic Integration B2B samples, the Channel Master sample is not started from the samples launcher page. It does, however, require the sample instance of the WebLogic Server to be running. Until you complete this procedure, make sure that this instance of WebLogic Server and the browser with the sample launcher page continue to run.

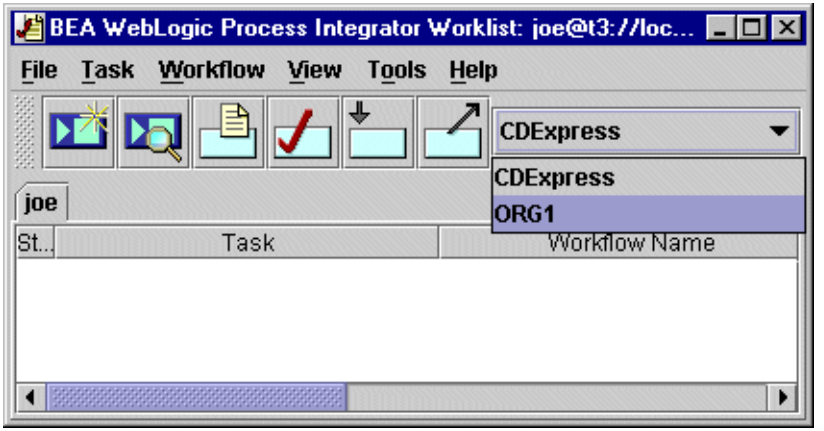
3. Log in to the WebLogic Integration Worklist using the following information:

   - Login: `joe`
   - Password: `password`
   - URL: `t3//localhost:7001`

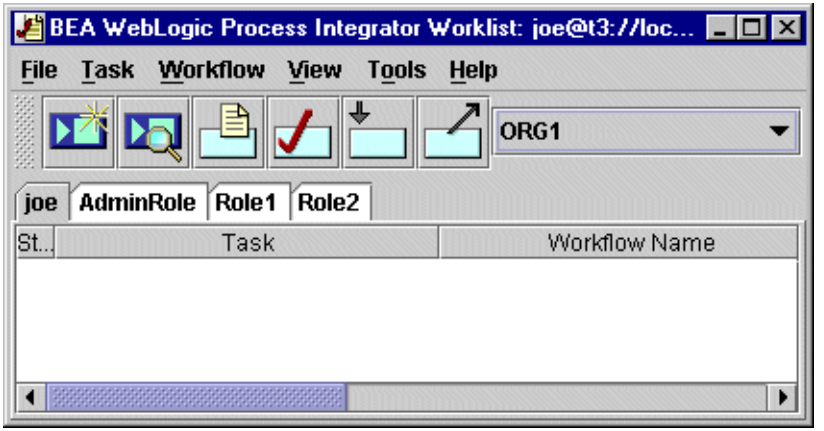
   The main WebLogic Integration Worklist window is displayed.

4. Run the sample using the WebLogic Integration Worklist.

a. Expand the drop-down list in the upper-right corner of the Worklist window. Select ORG .

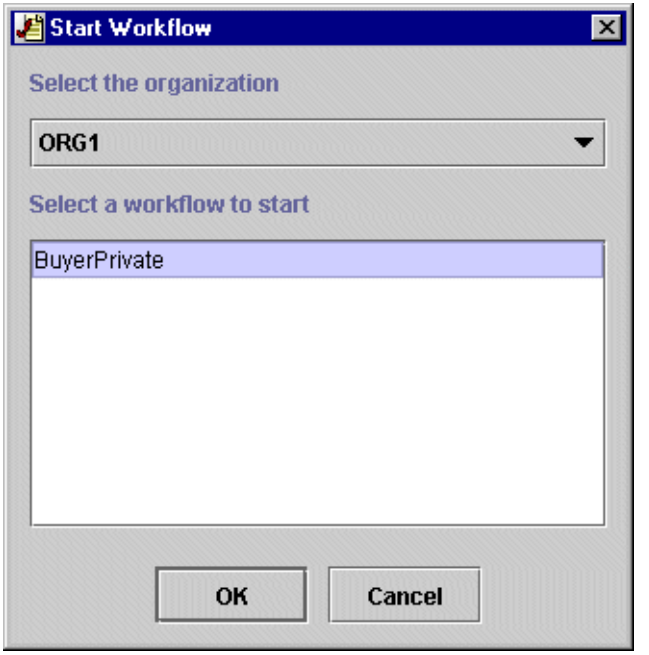


b. Select the joe tab.



c. From the Worklist menu bar, choose Workflow→Start a Workflow. The Start Workflow dialog box is displayed.

d. Select the BuyerPrivate workflow. Click OK.



e. To verify that the sample has run successfully, look for the following message in the `myserver.log` file:

```
CHANNEL MASTER SAMPLE RAN SUCCESSFULLY!!!
```

The `myserver.log` file is located in the `%WLI_HOME%\config\samples\logs` directory on a Windows platform and in the `$WLI_HOME/config/samples/logs` directory on a UNIX platform.

5. Exit the WebLogic Integration Worklist: From the Worklist menu bar, choose File→Exit.

6. If you want to run more B2B samples or complete the steps described in "Viewing the SupplierOnePrivate Workflow" on page 3-15 at this time, keep the samples launcher page open and keep the WebLogic Server running.

   If you do not want to run more B2B samples or complete the steps described in "Viewing the SupplierOnePrivate Workflow" on page 3-15 at this time, exit from your browser and shut down the WebLogic Server by completing the procedure appropriate for your platform:

- Windows:

  Choose Start→Programs→BEA WebLogic E-Business Platform→WebLogic Integration 2.1→Samples→Stop Server.

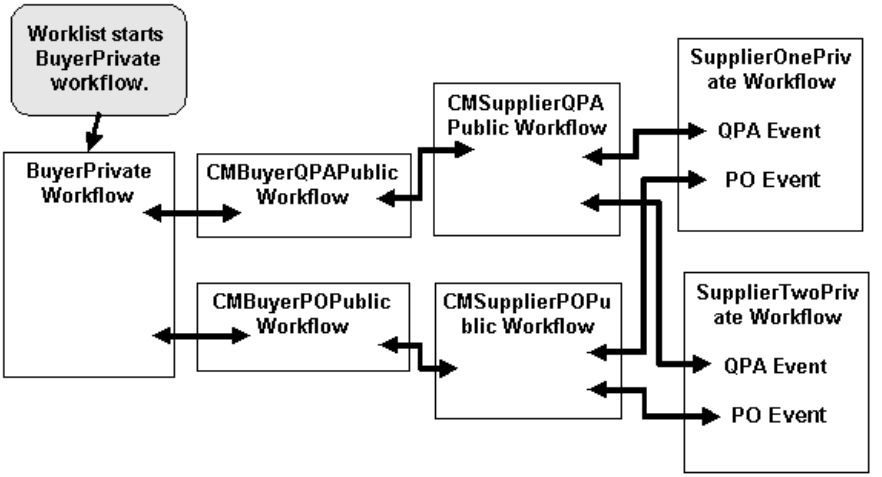
- UNIX:

```
cd $WLI_HOME/config/samples
stopWebLogic
```

Workflows Behind the Channel Master Sample

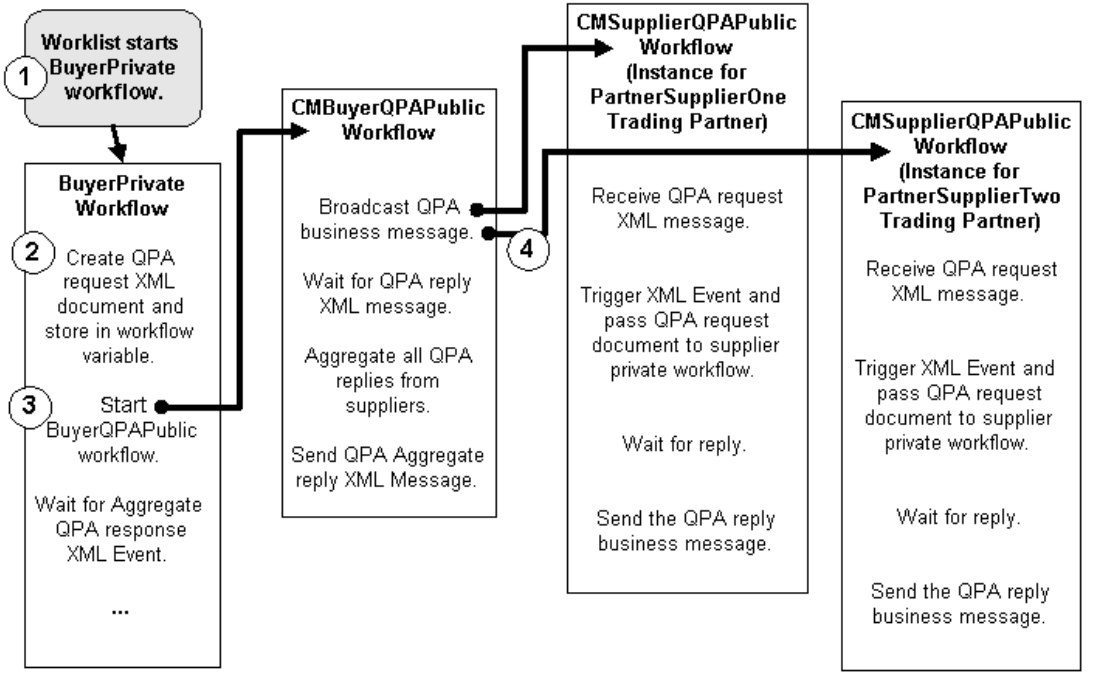
The following figure shows the high-level interactions between the different Channel Master workflows.

Figure 3-1 Interactions Among Channel Master Workflows



The following figure is the first of several that trace the execution flow of the Channel Master sample.

Figure 3-2 Tracing the Workflows: Steps 1-4



The following sequence provides details about each of the steps indicated by a corresponding number in Figure 3-2:

1. The user invokes the WebLogic Integration Worklist utility, which starts the BuyerPrivate workflow.
2. The BuyerPrivate workflow creates the QPA request XML document and stores it in a workflow variable.
3. The BuyerPrivate workflow starts the CMBuyerQPAPublic workflow.
4. The CMBuyerQPAPublic workflow broadcasts a QPA business message based on the QPA request document to all the suppliers. This broadcast causes two instances of the CMSupplierQPAPublic workflows to start: one for the PartnerSupplierOne trading partner and one for the PartnerSupplierTwo trading partner.

Two CMSupplierQPAPublic workflow instances are started because each trading partner has a collaboration agreement with the ChannelMasterHub trading partner that specifies the following: when a workflow receives a business message with the conversation definition name of CMQPAConversation and the conversation definition of 1.1, it must use the role name of CMSupplier.

The following listing shows the collaboration agreement between the ChannelMasterHub and the PartnerSupplierOne trading partner. (For more information about why the ChannelMasterHub trading partner is necessary, see "Multicast or Broadcast Messages" on page 3-23.)

Listing 3-1 Collaboration Agreement Section of Import Repository Data File

```
<collaboration-agreement
  name="CMQPAConversation|1.1|PartnerSupplierOne|ChannelMasterHub"
  global-identifier="CMQPAConversation|1.1|PartnerSupplierOne|ChannelMasterHub"
  version="1.1"
  status="ENABLED"
  conversation-definition-name="CMQPAConversation"
  conversation-definition-version="1.1">
  <party
    trading-partner-name="PartnerSupplierOne"
    party-identifier-name="PartnerSupplierOnePartyId"
    delivery-channel-name="PartnerSupplierOneDeliveryChannel"
    role-name="CMSupplier"/>
  <party
    trading-partner-name="ChannelMasterHub"
  party-identifier-name="ChannelMasterHubPartyId"
    delivery-channel-name="ChannelMasterHubDeliveryChannel"
    role-name="CMBuyer"/>
</collaboration-agreement>
```

This listing is an excerpt from the `BulkLoaderData.xml` file for the Channel Master sample. This file is used to import the data needed for the sample into the WebLogic Integration repository. It is located in the `%WLI_HOME%\samples\ChannelMaster\lib` directory on a Windows system and in `$WLI_HOME/samples/ChannelMaster/lib` on a UNIX system. Repository data can also be entered via the WebLogic Integration B2B Console.

A similar collaboration agreement for the PartnerSupplierTwo trading partner, in the import repository data file, specifies the following: when a workflow receives a business message with the conversation definition name of

CMQPAConversation and the conversation definition of 1.1, it must use the role name of CMSupplier.

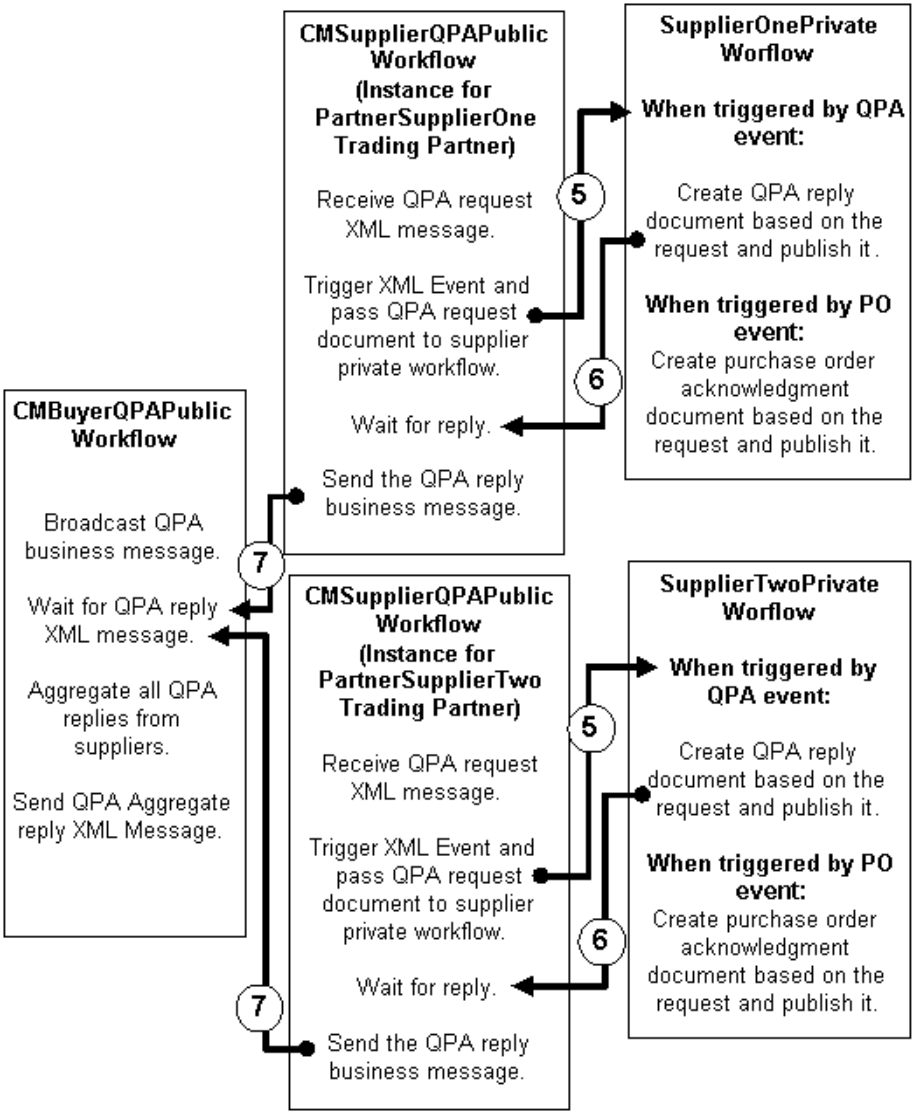
The conversation definition for CMQPAConverstion specifies that for the CMSupplier role, an instance of the CMSupplierQPAPublic workflow should be started, as shown in the following listing.

Listing 3-2 Conversation Definition in the Import Repository Data File

```
<conversation-definition
       name="CMQPAConversation"
       version="1.1"
       business-protocol-name="XOCP"
       protocol-version="1.1">
       <role
              name="CMBuyer"
              wlpi-template="CMBuyerQPAPublic">
              <process-implementation wlpi-org="ORG1" />
       </role>
       <role
              name="CMSupplier"
              wlpi-template="CMSupplierQPAPublic">
              <process-implementation wlpi-org="ORG1" />
       </role>
</conversation-definition>
```

The following figure shows the execution flow for steps 5-7. Each step is described in text after the figure.

Figure 3-3 Tracing the Workflows: Steps 5-7



5. Each instance of the CMBuyerQPAPublic workflow posts an internal XML event. When the CMSupplierQPAPublic workflow instance for PartnerSupplierOne posts an internal XML event, this event triggers the

SupplierOnePrivate workflow to start. When the CMSupplierQPAPublic workflow instance for PartnerSupplierTwo posts an internal XML event, this event triggers the SupplierTwoPrivate workflow to start.

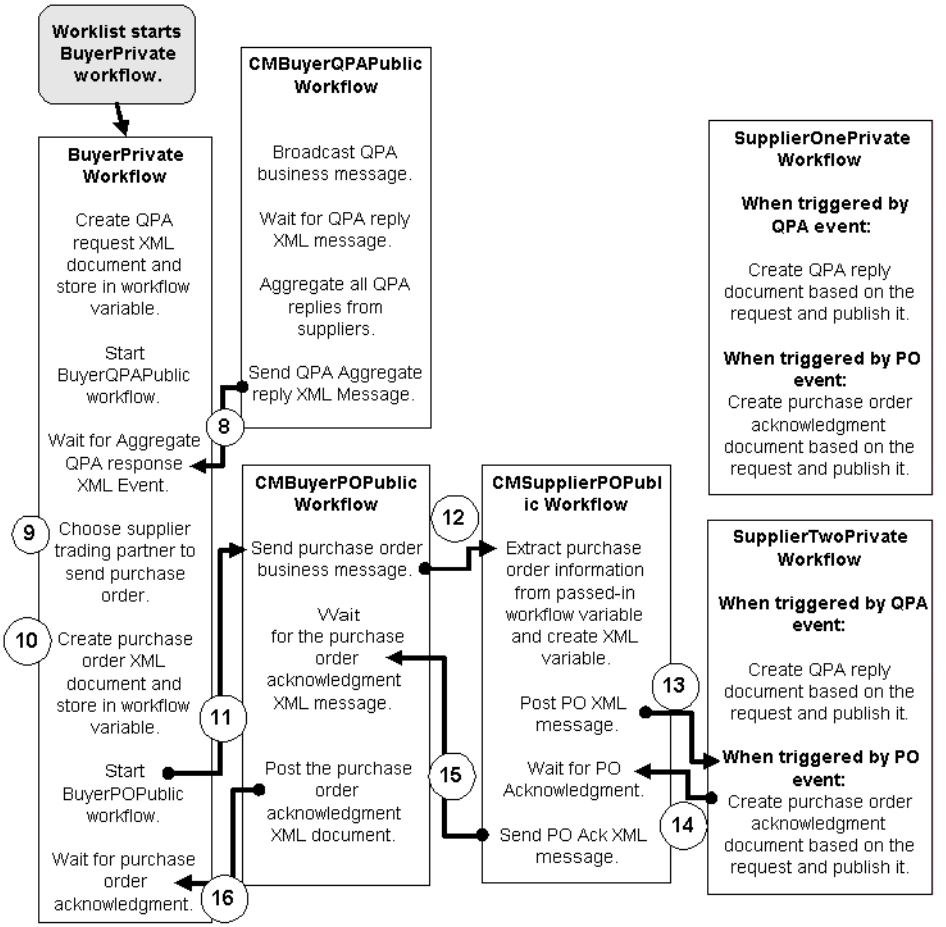
The PartnerSupplierOne trading partner triggers only the SupplierOnePrivate workflow. It does not trigger the SupplierTwoPrivate workflow because the start node for the SupplierOnePrivate workflow specifies that the workflow should start only if the triggering event comes from PartnerSupplierOne. For detailed directions on opening the SupplierOnePrivate workflow and viewing the conditions in which the SupplierOnePrivate workflow can be started, see "Viewing the SupplierOnePrivate Workflow" on page 3-15.

6. Both the SupplierOnePrivate and SupplierTwo Private workflows extract variable information from the QPA request, create QPA XML replies, and then post QPA XML reply messages as internal XML events.

7. Each instance of the CMSupplierQPAPublic workflow waits for a QPA XML reply message. Once a reply message is received, the CMSupplierQPAPublic workflow constructs a business message from the QPA XML reply message and sends it.

   The following figure shows the execution flow for steps 8-16. Each step is described in text after the figure.

Figure 3-4 Tracing the Workflows: Steps 8-16



8. The CMBuyerQPAPublic workflow sends an aggregate QPA XML reply message. The message contains price and availability information from each supplier.

9. The BuyerPrivate workflow that was waiting for the QPA XML reply begins execution again and chooses a supplier based on the QPA XML reply message.

10. The BuyerPrivate workflow creates a purchase order XML document and stores it in the POXml XML workflow variable.
11. The BuyerPrivate workflow starts the CMBuyerPOPublic workflow.
12. The CMBuyerPOPublic workflow creates and sends the purchase order business message. Then it waits for the purchase order acknowledgment receipt.
13. The CMSupplierPOPublic workflow extracts the purchase order information from the passed-in POMessage workflow variable, constructs the POXml XML workflow variable, posts the XML event, and then waits for the purchase order acknowledgment. PartnerSupplierTwo offers the best price and availability, so it is chosen as the supplier.
14. The SupplierTwo Private workflow extracts the variable information from the PO request, creates a PO XML reply, and then posts the PO XML reply message as an internal XML event.
15. The CMSupplierPOPublic workflow waits for a purchase order acknowledgment. Once such an acknowledgment is received, the CMSupplierPOPublic workflow sends an XML acknowledgment message back to the CMBuyerPOPublic workflow.
16. The CMBuyerPOPublic workflow waits for a purchase order acknowledgment. Once such an acknowledgment is received, the CMBuyerPOPublic workflow extracts information from the incoming XML document and then posts the purchase order XML acknowledgment document.
17. The BuyerPrivate workflow ends. (This step is not shown in Figure 3-4.)

Viewing the SupplierOnePrivate Workflow

The SupplierOnePrivate workflow accepts XML events only from the PartnerSupplierOne trading partner. To view the SupplierOnePrivate workflow and to see how the workflow limits the XML events it accepts, complete the following steps:

Note: If the instance of the WebLogic Server started by the `RunSamples` script is running, skip to step 3.

1. Run the `RunSamples` script by completing the procedure appropriate for your platform:

- Windows:

  Choose Start→Programs→BEA WebLogic E-Business Platform→WebLogic Integration 2.1→Samples→Run Samples.

- UNIX:

  a) Make sure your `PATH` environment variable includes the directory in which the Netscape executable (`netscape`) resides.

  b) Go to the WebLogic Integration home directory (the directory in which you installed WebLogic Integration). For example:

  ```
  cd /home/me/bea/wlintegration2.1
  ```

  c) Run the `setenv` script to set the top-level WebLogic Integration environment variables:

  ```
  . setenv.sh
  ```

  d) Run the `RunSamples` script:

  ```
  cd samples/bin
  RunSamples
  ```

Note: For UNIX systems, the directory in which the `netscape` executable resides must be included in your `PATH` environment variable. If it is not included, the samples launcher page cannot be displayed.

2. If the `RunSamples` script detects that the configuration section of the `RunSamples` script has been run before, the following prompt is displayed:

   ```
   The WebLogic Integration repository has already been created
   and populated, possibly from a previous run of this
   RunSamples script. Do you want to destroy all the current
   data in the repository and create and populate the
   WebLogic Integration repository, again?
   Y for Yes, N for No
   ```

   If you answer `N` to this question, the `RunSamples` script skips the steps for creating and populating the repository and runs only the step for booting the sample instance of the WebLogic Server.

   If you answer `Y` to this question, the `RunSamples` script recreates and repopulates the repository, and then it boots the sample instance of the WebLogic Server. When you answer `Y`, the `RunSamples` script destroys all the data currently in the repository and loads an unaltered version of the sample data into the repository. Answer `Y` only when the current sample data has been altered

or removed and you want a fresh or unaltered version of the sample data in the repository.

Now the `RunSamples` script starts an instance of the WebLogic Server as a background process and the samples launcher page is displayed.

3. Start the WebLogic Integration Studio by completing the procedure appropriate for your platform:

   - Windows:

     Choose Start→Programs→BEA WebLogic E-Business Platform→WebLogic Integration 2.1→Studio.

   - UNIX:

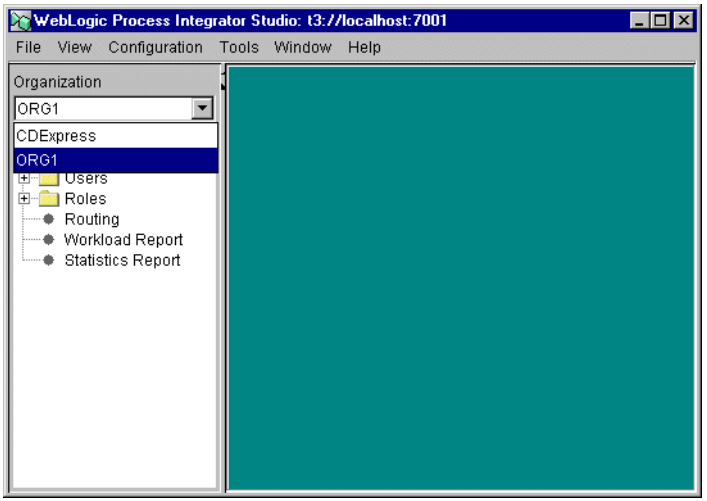
     ```
     cd $WLINT_HOME/bin
     studio
     ```

4. Log in to the WebLogic Integration Studio using the following information:

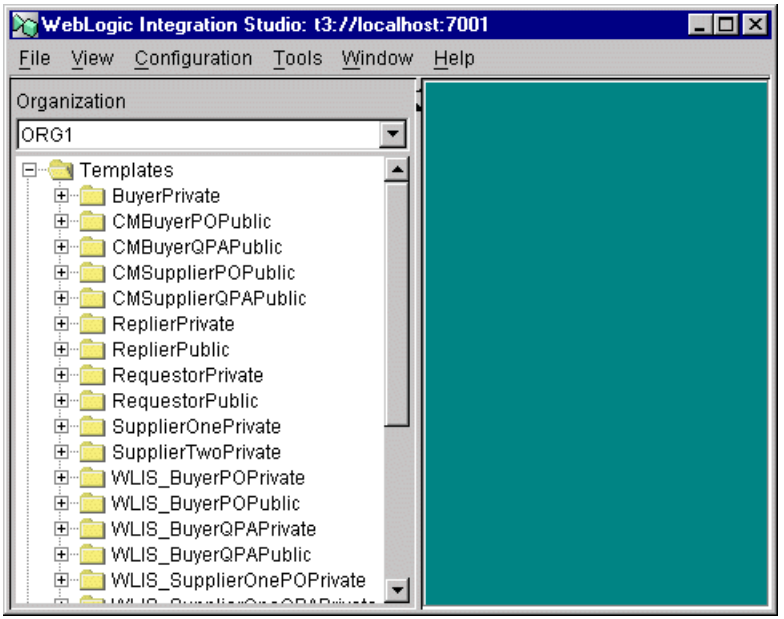
   - Login: `joe`
   - Password: `password`
   - URL: `t3//localhost:7001`

   The main WebLogic Integration Studio window is displayed.

5. Expand the drop-down list under Organization (in the left pane) and select ORG1.

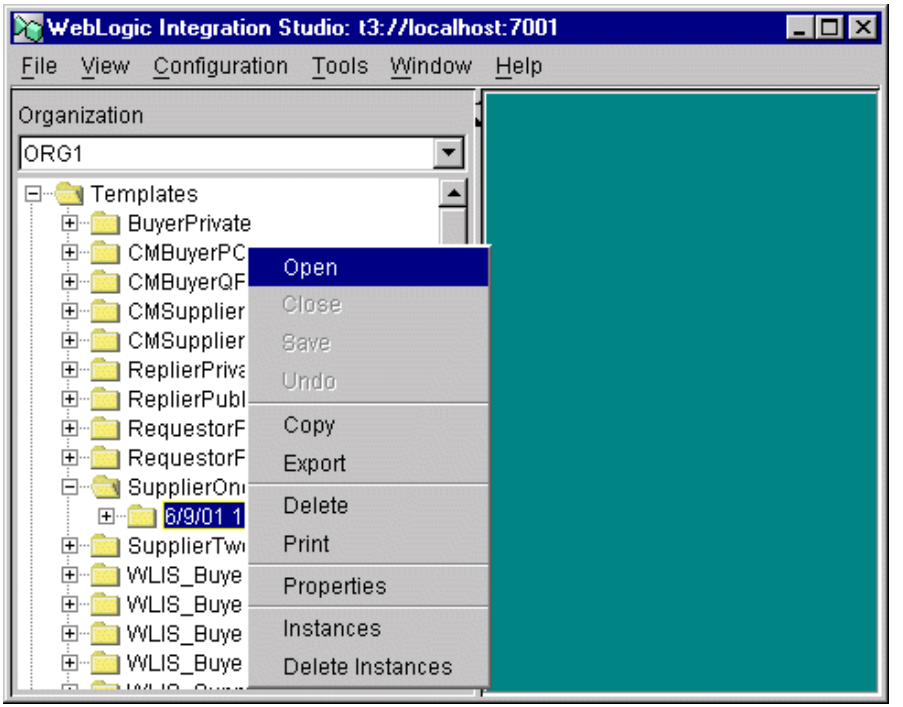


6. Expand the Templates folder in the left pane. A list of all the templates for the samples are displayed.



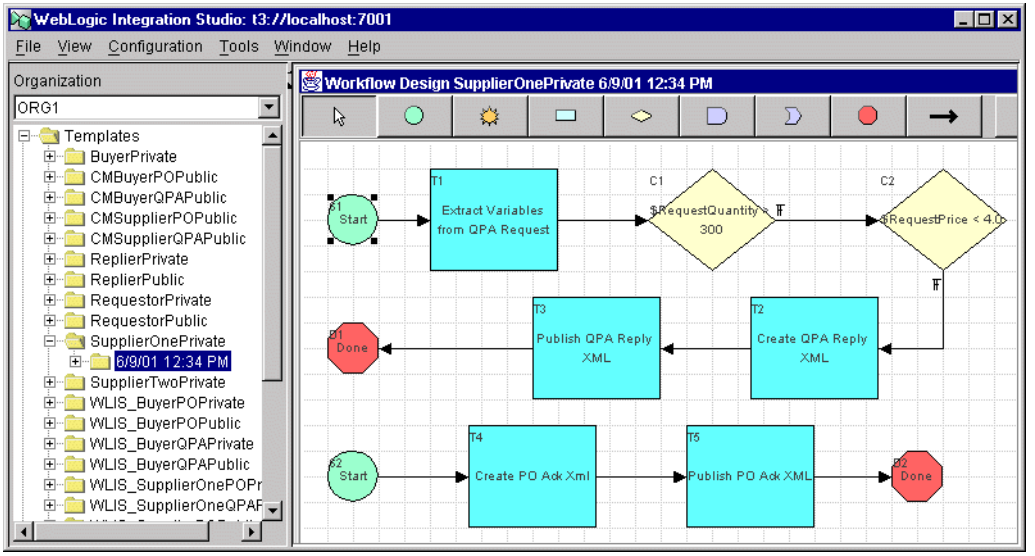
7. Expand the SupplierOnePrivate folder in the left pane.
8. Complete the following steps to open and view an instance of the SupplierOnePrivate workflow:

   a. Right-click the folder, named with a date, that is listed under the SupplierOnePrivate.



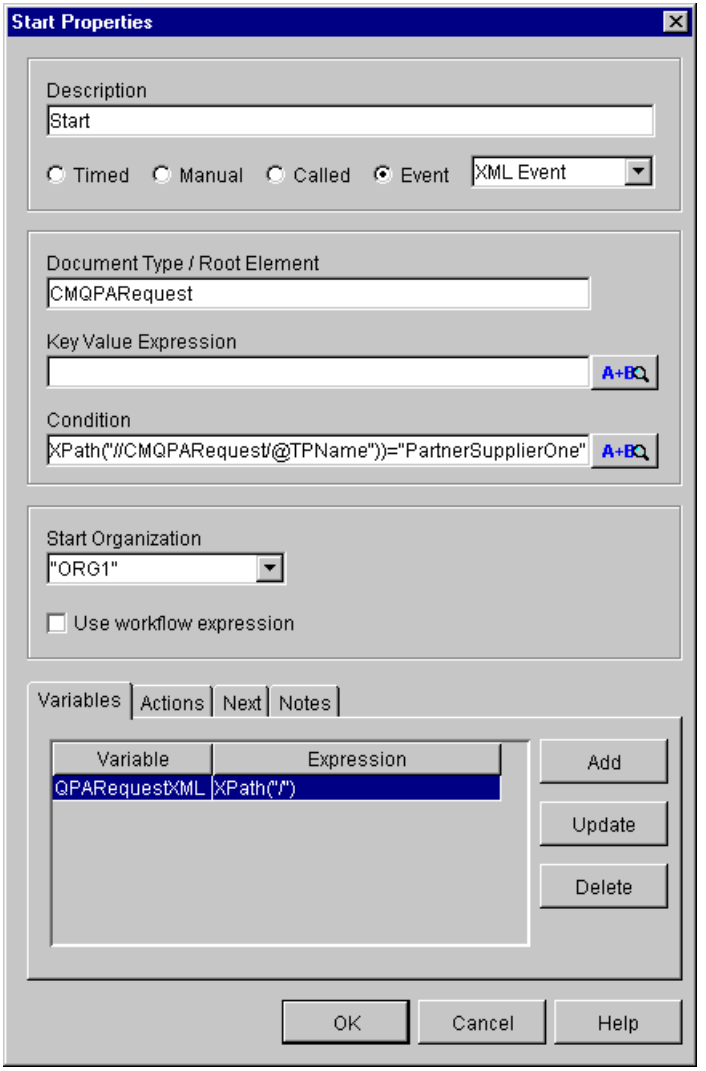
   b. Select Open.

      A graphical depiction of the workflow is displayed. It shows the start, task, decision, and event nodes that make up the SupplierOnePrivate workflow.



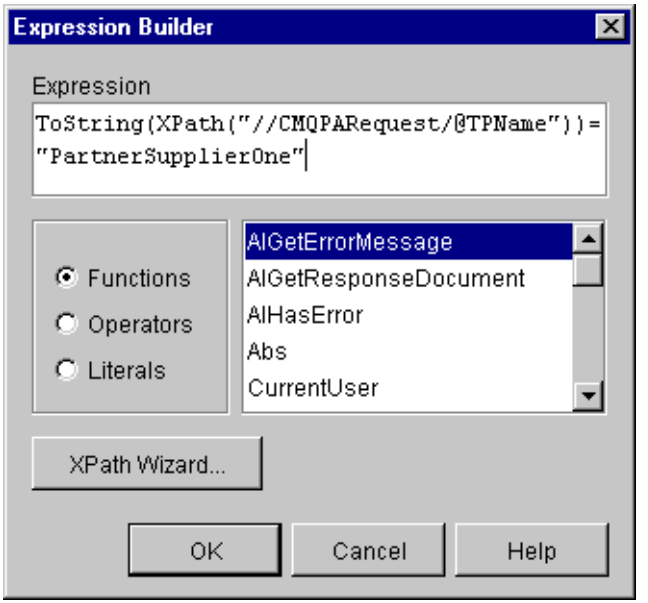
9. Double-click the Start node in the top left corner of the right pane.

   The Start Properties dialog box is displayed.



Before this workflow can be started, the expression defined in the Condition field of the preceding Start Properties dialog box must be equal to true.

10. Double-click the A+B option to the right of the Condition Field. The Expression Builder dialog box is displayed.



The specified expression evaluates the XML message received by the workflow to determine whether the value of the CMQPARequest TPName node is PartnerSupplierOne. If it is, the expression is true and the workflow is started.

11. If you want to continue running B2B samples or complete the steps in "Viewing the SupplierOnePrivate Workflow" on page 3-15, keep the samples launcher page open and the sample instance of the WebLogic Server running.

    If you do not want to continue running B2B samples, shut down the sample instance of the WebLogic Server and exit from the browser in which you are running the samples launcher page. To shut down the WebLogic Server, complete the procedure appropriate for your platform:

    - Windows:

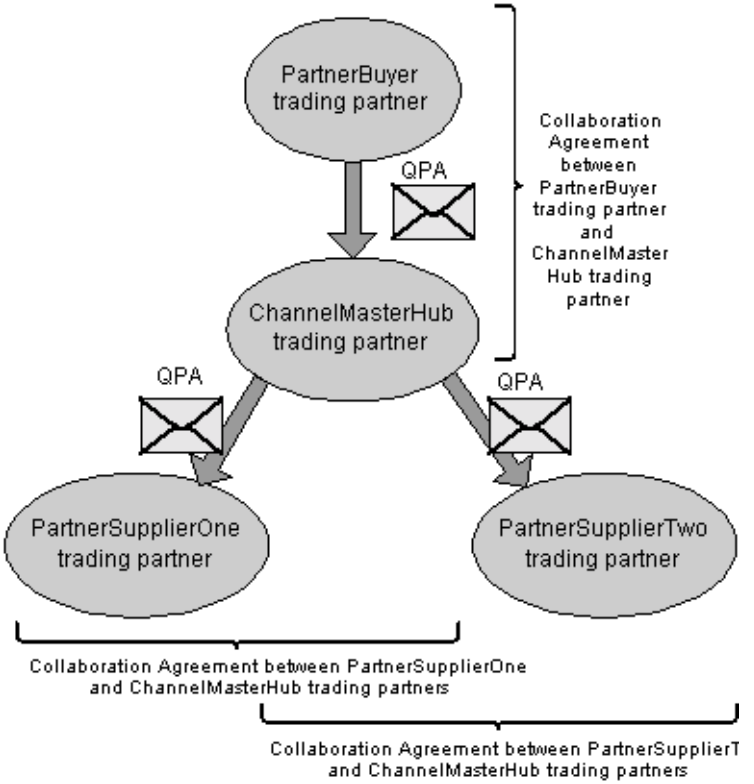
      Choose Start→Programs→BEA WebLogic E-Business Platform→WebLogic Integration 2.1→Samples→Stop Server.

    - UNIX:

      ```
      cd $WLI_HOME/config/samples
      stopWebLogic
      ```

Multicast or Broadcast Messages

Multicasting, or broadcasting of messages is supported only for the XOCP business protocol and only when messages are routed through a routing proxy delivery channel (hub). It is not supported for direct point-to-point communication. Consequently, the PartnerBuyer trading partner in the sample does not send a message directly to the PartnerSupplierOne and PartnerSupplierTwo trading partners. Instead, it sends the messages through the ChannelMasterHub trading partner via the routing proxy delivery channel. The following figure shows how multicast messages are routed among trading partners.



Caution: For simplicity, all the trading partners in this sample use the same WebLogic Server instance. In a production environment, the buyer and each supplier trading partner runs a separate WebLogic Server instance.

4 RosettaNet 2.0 Security Sample

The RosettaNet 2.0 Security sample shows how WebLogic Integration can be used to implement RosettaNet 2.0 PIP 3A2 and PIP 0A1 using workflows. Specifically, it shows two trading partners exchanging business messages that conform to the RosettaNet 2.0 PIP 3A2 standard.

This section includes the following topics:

- Introduction to the RosettaNet 2.0 Security Sample
- RosettaNet 2.0 Security Sample Overview
- Before Running the RosettaNet 2.0 Security Sample
- Running the RosettaNet 2.0 Security Sample
- Workflows Behind the RosettaNet 2.0 Security Sample

Introduction to the RosettaNet 2.0 Security Sample

RosettaNet is a non-profit consortium of companies that creates, implements, and promotes open e-business process standards. A RosettaNet Partner Interface Process (PIP) defines business processes between trading partners. PIP 3A2 provides an automated process that can be used by trading partners to request and provide product price and availability information.

The RosettaNet 2.0 Security sample demonstrates the implementation of PIP 3A2. It also implements PIP 0A1, which provides a mechanism for sending failure notifications. Finally, the sample demonstrates the WebLogic Integration security features required for RosettaNet 2.0 support: two-way SSL authentication, digital signatures, data encryption, and nonrepudiation.

For more information about implementing RosettaNet with WebLogic Integration, see *Implementing RosettaNet for B2B Integration*. For more information about using security with the B2B integration functionality of WebLogic Integration, see *Implementing Security with B2B Integration*.

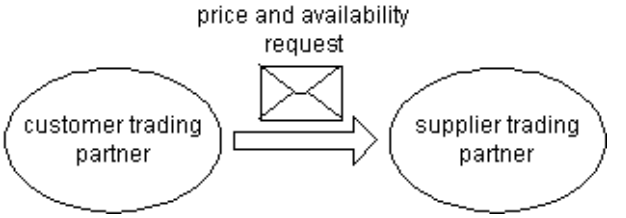
RosettaNet publishes several documents that are helpful in understanding the RosettaNet 2.0 PIPs used in this sample. The following documents and zip files are available in the Standards section at the RosettaNet Web site (`http://www.rosettanet.org`):

- Understanding a PIP Blueprint—Explains how to read a PIP blueprint. Available under Supporting Documents in the Standards section.
- PIP 3A2 - Request Quote zip file—Contains PIP 3A2 specification information and DTDs. Available under Standards, PIPs, Cluster 3: Order Management, Segment 3A: Quote and Order Entry, PIP 3A2: Request Price and Availability, Version R1.3.
- PIP 0A1 - Notification of Failure zip file—Contains PIP 0A1 specification information and DTDs. Available under Standards, PIPs, Cluster 0: RosettaNet Support, Segment 0A: Administrative, PIP 0A1: Nofication of Failure, Version R1.3.

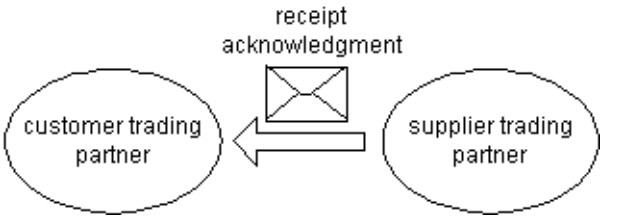
RosettaNet 2.0 Security Sample Overview

The following sequence provides a high-level overview of the communications between PIP 3A2 trading partners in this sample:

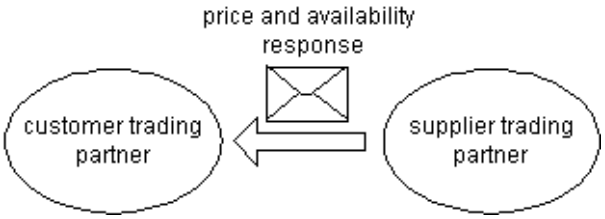
1. A customer trading partner sends a price and availability request to a supplier trading partner. Such a request might be sent, for example, by a computer manufacturer (customer trading partner) who wants to know whether a supplier can provide a certain quantity of memory chips at a particular price. The following figure shows the request being sent. The envelope in the following figure represents an XML message that contains the price and availability request.



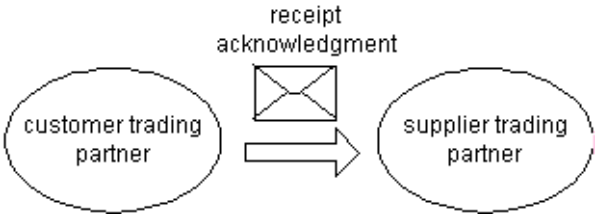
2. The supplier sends the customer an acknowledgment that it has received the request for price and availability.



3. The supplier sends the customer a response containing the quantity and the price at which the supplier will sell the requested item.



4. The customer sends a receipt acknowledgment to the supplier, indicating that it has received the price and availability response.



Before Running the RosettaNet 2.0 Security Sample

Before running the RosettaNet 2.0 Security sample, complete the following steps:

1. Follow the instructions in “Preparing to Run the Samples” on page 1-2.
2. Make sure the proxy settings on your browser do not prevent you from connecting to the sample WebLogic Server. For more information, see “Web Browser Configuration Requirements” in “WebLogic Integration Administration and Design Tools” in *Starting, Stopping, and Customizing BEA WebLogic Integration*.

Running the RosettaNet 2.0 Security Sample

Unlike the other B2B samples provided with WebLogic Integration, the RosettaNet 2.0 Security sample does not run in the samples domain and is not started from the samples launcher page.

To run the RosettaNet 2.0 Security sample, complete the following steps:

1. Go to the WebLogic Integration home directory (the directory in which you installed WebLogic Integration) by entering the appropriate command, as shown in the following examples:
   - Windows:

     ```
     cd bea\wlintegration2.1
     ```
   - UNIX:

     ```
     cd /home/me/bea/wlintegration2.1
     ```
2. Run the `setenv` script to set the top-level WebLogic Integration environment variables by entering the appropriate command for your platform:
   - Windows:

     ```
     setEnv
     ```
   - UNIX:

     ```
     ./setenv.sh
     ```
3. Go to the RosettaNet 2.0 Security sample `bin` directory by entering the appropriate command for your platform:
   - Windows:

     ```
     cd samples\RN2Security\bin
     ```
   - UNIX:

     ```
     cd samples/RN2Security/bin
     ```
4. Run the `RunRN2Security` script with one of the following options: cloudscape, mssql, oracle, or db2.

   The database specified on the command line must match the database that you entered using the installer for the samples domain.

For example, if oracle was specified for the samples domain, enter:

```
RunRN2Security oracle
```

Wait until both instances of the WebLogic Server finish booting before starting the next step. (The `RunRN2Security` script starts two instances of WebLogic Server as background processes.) When the servers finish booting, the following log message is displayed in your WebLogic Server console window:

```
RunRN2Security execution successful
```

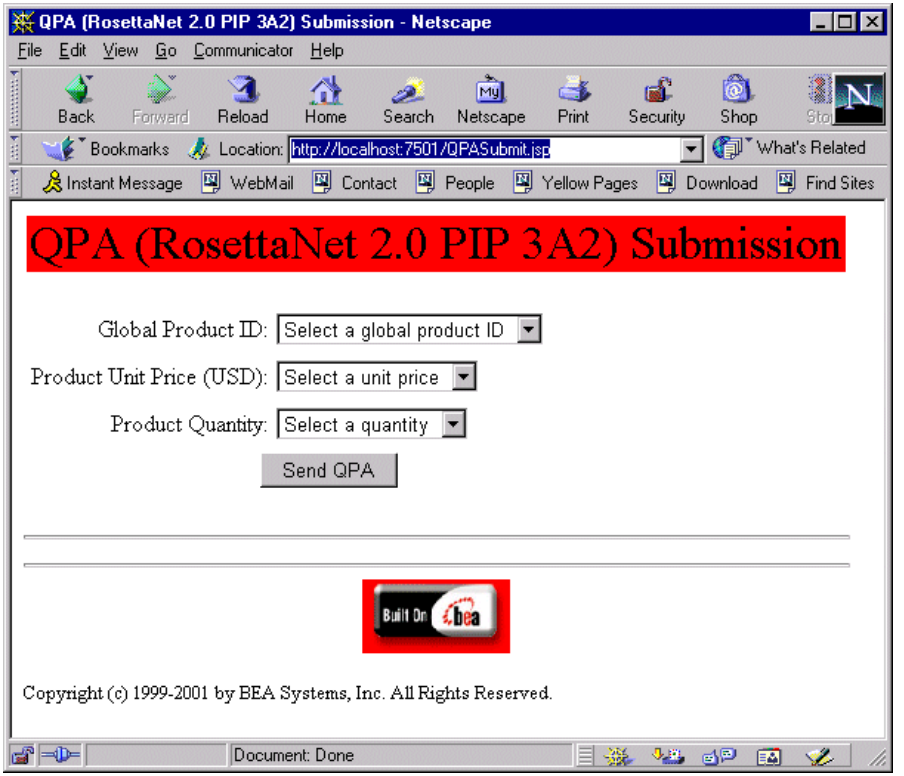
Warning: Unlike the other B2B samples, the RosettaNet 2.0 Security sample does not support the use of the WebLogic Integration Database Configuration Wizard to switch the database to be used with the samples domain.

Note: The Cloudscape database is not supported on UNIX systems. The DB2 database is not supported on Windows systems.

5. Start a browser. Load the QPASubmit JSP page by entering the following URL:

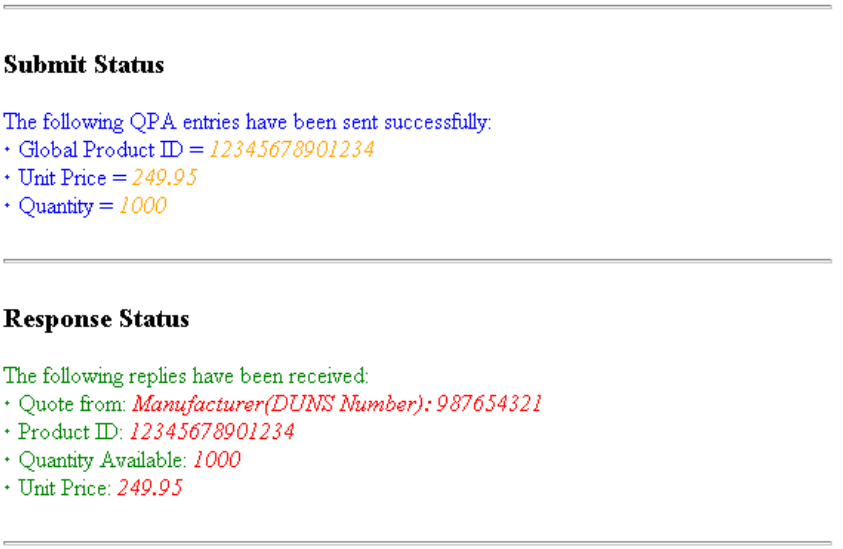
   ```
   http://localhost:7501/QPASubmit.jsp
   ```

   The QPA (RosettaNet 2.0 PIP 3A2) Submission page is displayed.



6. Select a Global Product ID, a Product Unit Price, and a Product Quantity. Click Send QPA.

   The following information about the status of the submission and responses to it are displayed in the browser.



7. If you want to complete the steps described in "A Peek at the Workflows" on page 4-11 at this time, keep both instances of the WebLogic Server running.

   If you do not want to complete the steps described in "A Peek at the Workflows" on page 4-11 at this time, exit your browser and shut down both instances of the WebLogic Server by completing the following procedure:

   `StopRN2Security`

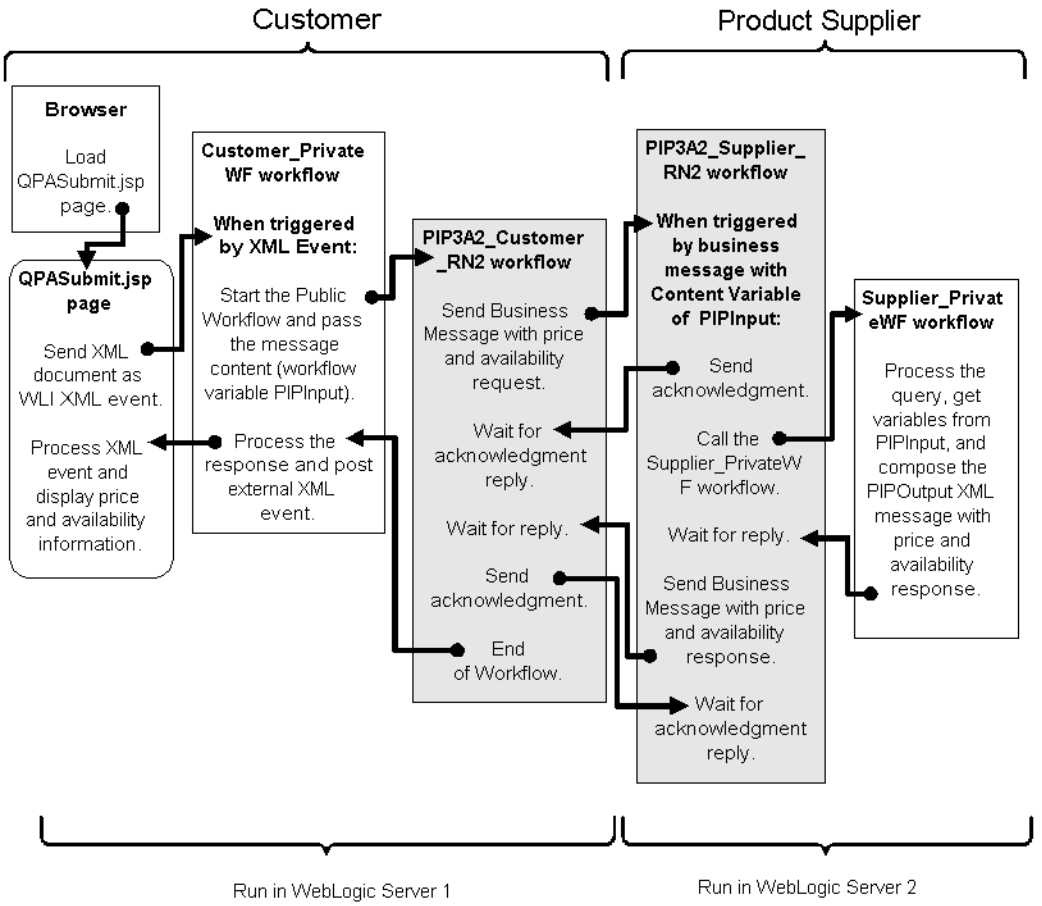
Workflows Behind the RosettaNet 2.0 Security Sample

The RosettaNet 2.0 Security sample shows how WebLogic Integration can be used to implement RosettaNet 2.0 PIP 3A2 and PIP 0A1 using workflows. A public process is part of a formal contract between trading partners that specifies the content and semantics of the messages they exchange. The public process between the two public workflows (PIP3A2_Customer_RN2 and PIP3A2_Supplier_ RN2) is the WebLogic

Integration implementation of the PIP 3A2 standard. A private process is specific to a particular business organization and is not visible outside that organization. The public workflows that implement PIP 3A2 are represented by the shaded rectangles in Figure 4-1. The private process is represented by the unshaded rectangles in Figure 4-1.

The following figure shows different interactions between various RosettaNet security sample workflows.

Figure 4-1 Interactions Among RosettaNet 2.0 Security Workflows



Note: The flow of logic shown in the figure illustrates only the sequence of workflows that is executed if no errors occur. This sequence does not contain any error-handling logic. For example, PIP 0A1, the workflow for issuing failure notifications, is not shown.

Before the flow of execution can start, two instances of the WebLogic Server must be booted. (One instance for the customer and the other for the supplier.) The flow of execution for this sample starts at the Browser square in the upper left corner of Figure 4-1. The following steps trace a portion of the flow of execution:

1. To start the flow of execution, the user launches a browser and loads the `QPASubmit.jsp` page.
2. The user then enters values on the JSP page and selects Submit.
3. The selection of Submit triggers an XML document to be sent as a WebLogic Integration XML event.
4. This event, in turn, triggers the Customer_PrivateWF workflow.
5. The first item in the Customer_PrivateWF workflow is executed.
6. As a result, the first action in the PIP3A2_Cusotmer_RN2 workflow (Send Business Message with price and availability request) is executed.

To trace the remainder of the execution flow, see Figure 4-1.

A Peek at the Workflows

To peruse the sample private and public workflows, complete the following steps:

1. Go to the WebLogic Integration home directory (the directory in which you installed WebLogic Integration) by entering the command appropriate for your platform, as shown in the following examples:
   - Windows:

     ```
     cd bea\wlintegration2.1
     ```
   - UNIX:

     ```
     cd /home/me/bea/wlintegration2.1
     ```
2. Run the `setenv` script to set the top-level WebLogic Integration environment variables by entering the command appropriate for your platform:
   - Windows:

     ```
     setenv
     ```

- UNIX:

  ```
  ./setenv.sh
  ```

3. Complete this step only if you have not booted two instances of the WebLogic Server by running the `RunRN2Security` script as described in "Running the RosettaNet 2.0 Security Sample" on page 4-5. Boot two instances of the WebLogic Server by performing the procedure appropriate for your platform and database, as shown in the following examples:

   - Windows:

     ```
     cd %WLI_HOME%\samples\RN2Security\bin
     RunRN2Security oracle
     ```

   - UNIX:

     ```
     cd $WLI_HOME/samples/RN2Security/bin
     RunRN2Secuirty oracle
     ```

     Wait until both instances of the WebLogic Server finishes booting before starting the next step. When the servers finish booting, the following log message is displayed in your WebLogic Server console window.

     ```
     RunRN2Security execution successful
     ```

4. Start the WebLogic Integration Studio by performing the procedure appropriate for your platform:

   - Windows:

     Choose Start→Programs→BEA WebLogic E-Business Platform→WebLogic Integration 2.1→Studio.

   - UNIX:

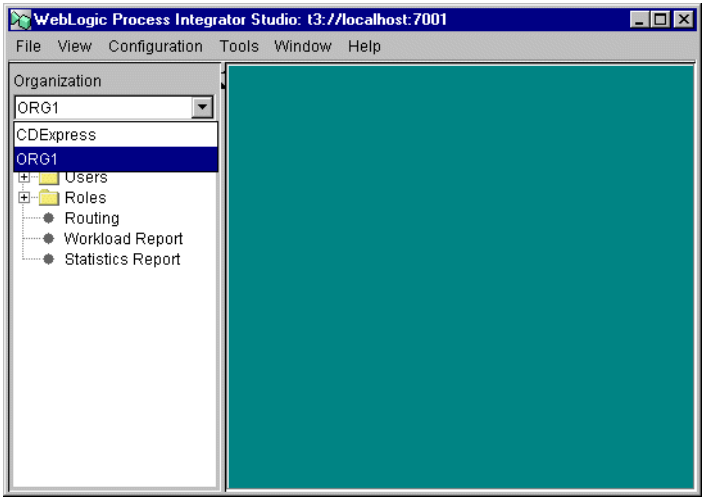
     ```
     cd $WLINT_HOME/bin
     studio
     ```

5. Log in to the WebLogic Integration Studio using the following information:

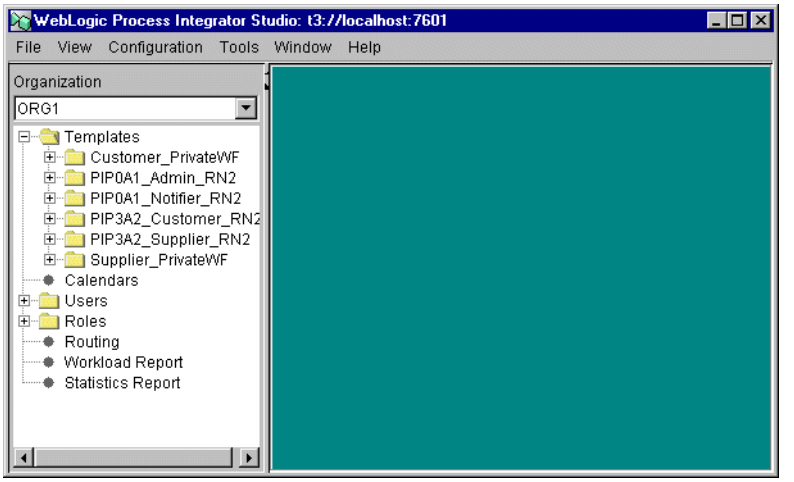
   - Login: `joe`
   - Password: `password`
   - URL: `t3//localhost:7501`

   The main WebLogic Integration Studio window is displayed.

6. Expand the drop-down list under Organization (in the left pane) and select ORG1.



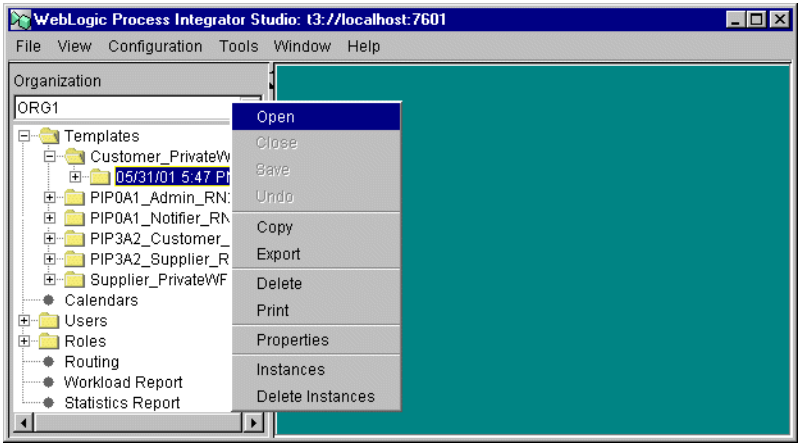
7. Expand the Templates folder in the left pane. A list of all the templates for the sample is displayed.



8. Expand the Customer_PrivateWF folder in the left pane.

9. Complete the following steps to open and view an instance of the Customer_PrivateWF workflow:

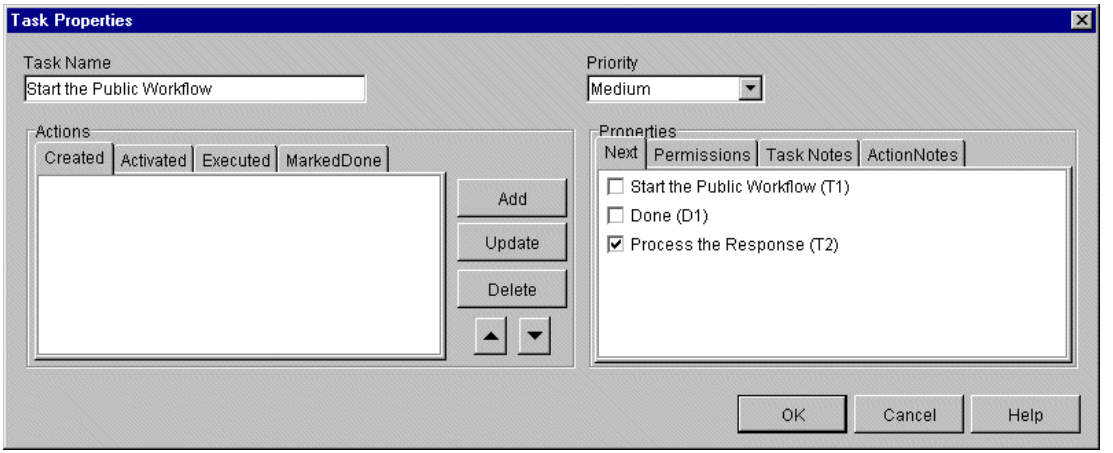
a. Right-click the folder, named with a date and time, in the Customer_PrivateWF folder. A menu is displayed.



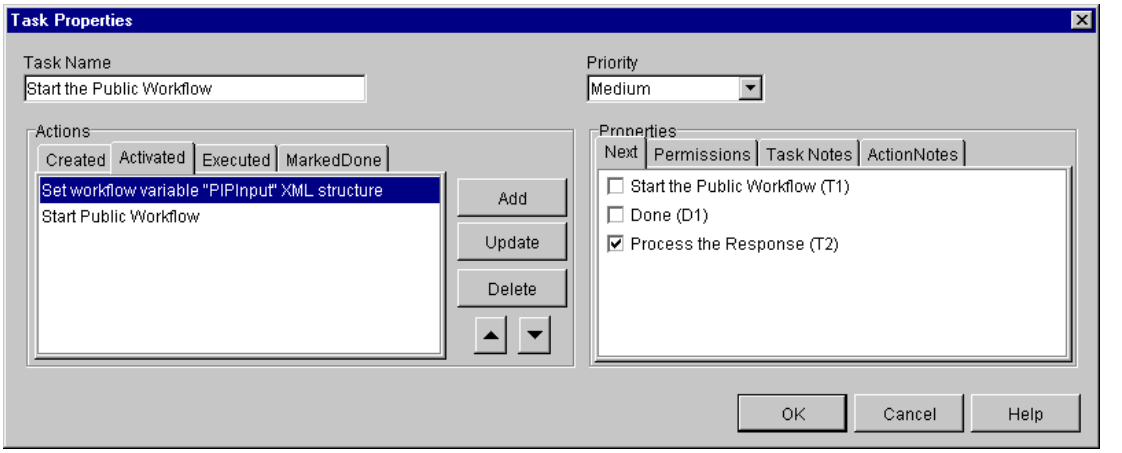
b. Select Open.

The start, task, decision, and event nodes that make up the Customer_PrivateWF workflow are displayed.

10. Double-click the Start the Public Workflow task. The Task Properties window is displayed.



11. Select the Activated tab.



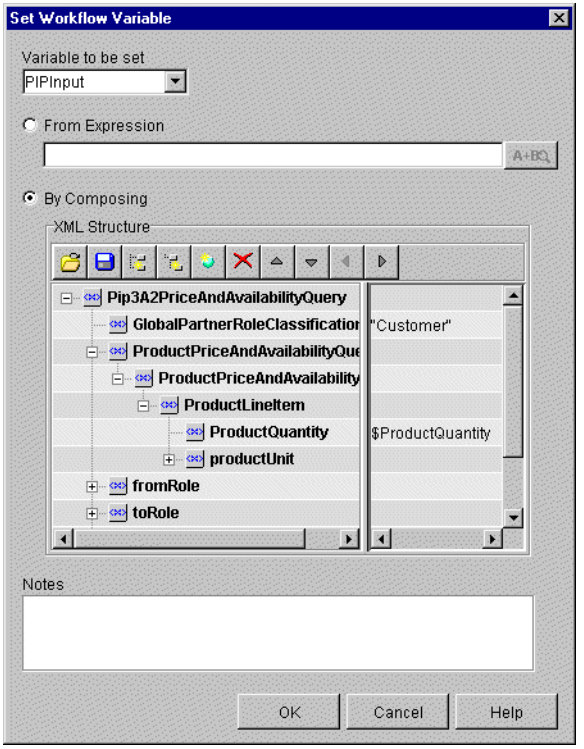
The actions that make up the Start the Public Workflow task are displayed.

12. Double-click Set workflow variable “PIPInput” XML structure to display the Set Workflow Variable window. This window shows how the PIPInput XML workflow variable is composed. (In this sample, PIPInput has been composed already; these steps show how to view it.) PIPInput is a mandatory WebLogic Integration RosettaNet Input workflow variable. It must be set in the private workflow before the public workflow is invoked. The format of this variable is XML that conforms to the RosettaNet PIP DTD for the PIP message being implemented. In this sample, the XML must conform to the `3A2PriceAndAvailabilityQueryMessageGuidline.dtd`. This DTD, supplied by RosettaNet, defines the content of the first message that the Customer trading partner passes to the Supplier trading partner. (See step 1 in the “RosettaNet 2.0 Security Sample Overview” on page 4-3.)

    In this sample, the private Customer_PrivateWF workflow sets the contents of the PIPInput workflow variable and calls the PIP3A2_Customer_RN2 workflow. The PIP3A2_Customer_RN2 workflow uses the contents of the PIPInput variable to construct an XML business message. This message is sent to the PIP3A2_Supplier_RN2 workflow when the Send Business Message Action is invoked. For a complete list of RosettaNet Template variables, see “RosettaNet Template Variables” in “Using Workflows with RosettaNet“ in *Implementing RosettaNet for B2B Integration*.

13. Expand the following nested nodes in the XML tree:

- Pip3A2PriceAndAvailabilityQuery
- ProductPriceAndAvailabiltyQuery
- ProductPriceAndAvailability
- ProductLineItem



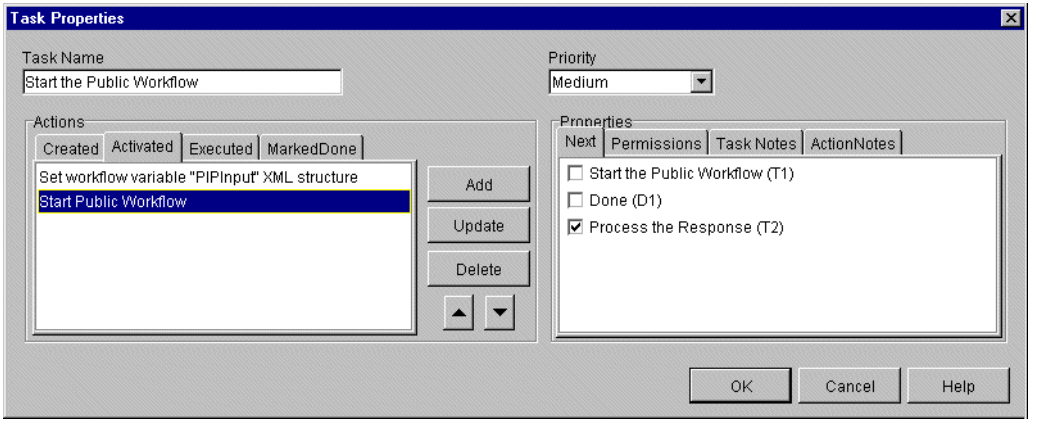
The values of two important nodes are set in the right pane:

- The GlobalPartnerRoleClassificationCode XML node is set to the string Customer.
- The ProductQuanity node is set to the value of the ProductQuantity workflow variable. The product quantity (the number of items requested by the customer) is set on the QPASubmit JSP page and passed to the workflow through the ProductQuantity workflow variable.

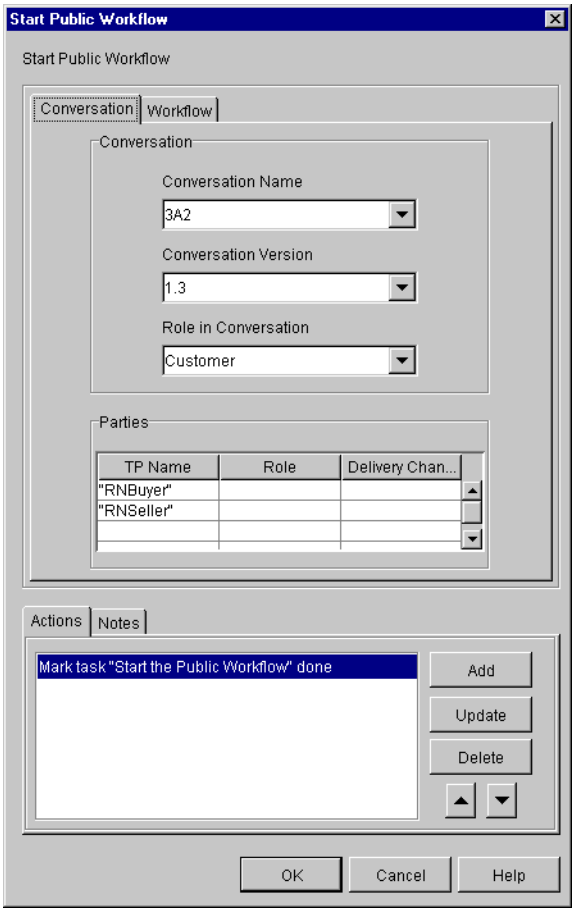
Note: This procedure is just one way of populating the PIPInput variable. The PIPInput variable can also be populated by reading in values from a file or by passing in the entire contents of an XML document.

14. Click Cancel in the Set Workflow Variable window.

15. In the Task Properties window, double-click Start Public Workflow on the Activated tab.



The Start Public Workflow window is displayed.



In this window, parameters are defined for the Start the Public Workflow action as follows:

- Conversation Name is set to 3A2.
- Conversation Version is set to 1.3.
- Role in Conversation is set to Customer.

In addition, two TP (trading partner) Names, RNBuyer and RNSeller, are specified in the Parties field. WebLogic Integration uses the conversation name,

conversation version, conversation role, and the trading partners specified as parties to locate the appropriate collaboration agreement to use for an action.

For the preceding action, WebLogic Integration searches the active collaboration agreements in the repository for a collaboration agreement between two trading partners named RNBuyer and RNSeller that specifies a conversation named 3A2, a conversation version of 1.3, with the role of customer. The following excerpt from the `rn2_peer1_sec.xml` file defines the collaboration agreement that fits the criteria for the preceding Start Public Workflow action.

Listing 4-1 Collaboration Agreement in the Import Repository Data File

```
<collaboration-agreement
    name="RN2|9.9|RosettaNet2|100"
    global-identifier="RN2|9.9|RosettaNet2|RNBuyer|RNSeller|102"
    version="1.0"
    status="ENABLED"
    conversation-definition-name="3A2"
    conversation-definition-version="1.3">
    <party
        trading-partner-name="RNBuyer"
        party-identifier-name="RNBuyerPID"
        delivery-channel-name="RNBuyerChannel"
        role-name="Customer"/>
    <party
        trading-partner-name="RNSeller"
        party-identifier-name="RNSellerPID"
        delivery-channel-name="RNSellerChannel"
        role-name="Product Supplier"/>
</collaboration-agreement>
```

The collaboration agreement defines the name and version of the conversation definition to be used between the specified parties. The collaboration agreement in Listing 4-1 specifies use of the conversation definition name of 3A2 and the conversation definition version of 1.3 between the RNBuyer trading partner in the role of Customer and the RNSeller trading partner in the role of Product Supplier.

Using the name and version of the conversation definition, as well as the assigned roles, WebLogic Integration can determine which workflow template to start. The conversation definition in Listing 4-2 specifies that for conversations named 3A2, with a version number of 1.3, and with a trading partner in the

customer role, an instance of the PIP3A2_Customer_RN2 workflow template will be started.

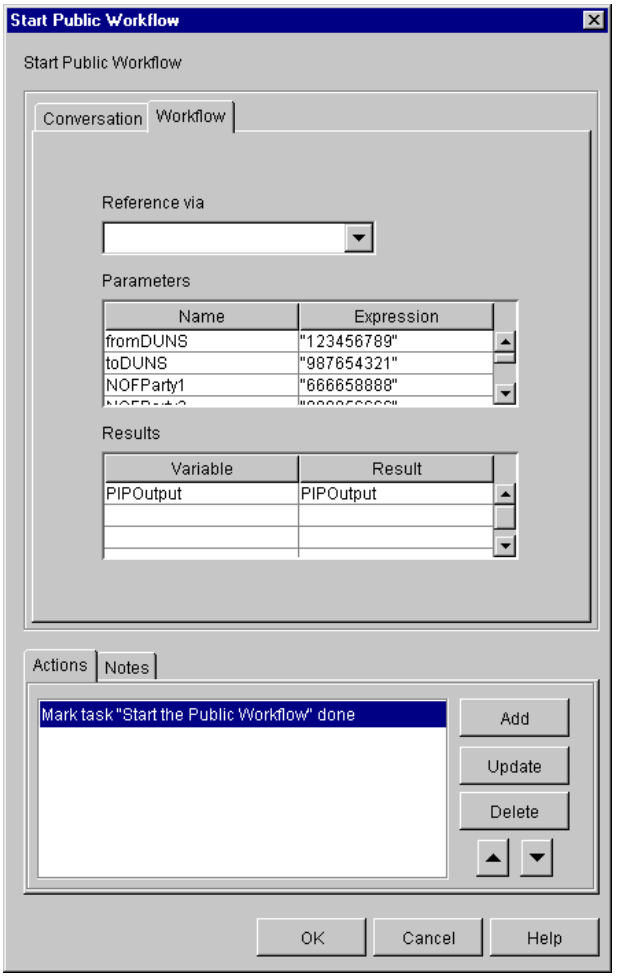
Listing 4-2 Conversation Definition in the Import Repository Data File

```
<conversation-definition
    name="3A2"
    version="1.3"
    business-protocol-name="RosettaNet"
    protocol-version="2.0">
    <role
        name="Customer"
        wlpi-template="PIP3A2_Customer_RN2">
        <process-implementation wlpi-org="ORG1"/>
    </role>
    <role
        name="Product Supplier"
        wlpi-template="PIP3A2_Supplier_RN2">
        <process-implementation wlpi-org="ORG1"/>
    </role>
</conversation-definition>
```

Thus the Start Public Workflow action triggers the PIP3A2_Customer_RN2 workflow, in this sample.

The conversation name and version number defined in the Start Public Workflow are the PIP name and version defined by RosettaNet for PIP 3A2. These parameters, along with values specified for the roles and trading partners, correspond to the conversation name, conversation version, role, and trading partners that are registered in the repository.

16. Select the Workflow tab.



The template variables to be passed to and received from the public PIP workflow are defined on the Workflow tab:

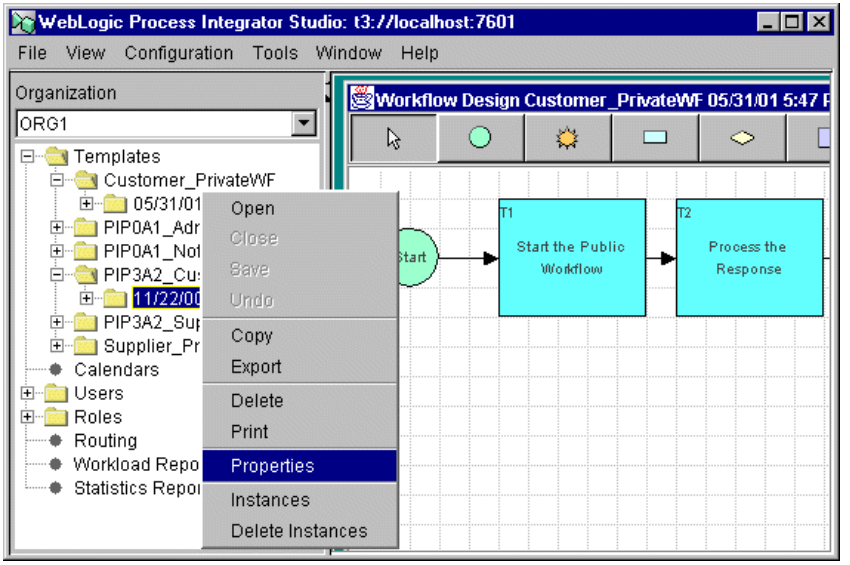
- The template variables passed to the public PIP workflow are listed under Parameters.
- The template variables returned by the public PIP workflow are listed under Results.

In this sample, the template variable `fromDUNS` is set by the Customer_PrivateWF in the Start Public Workflow action. It is passed to the PIP3A2_Customer_RN2 workflow when the PIP3A2_Customer_RN2 is invoked by the Customer_PrivateWF workflow. Some template variables for RosettaNet 2.0 are mandatory; others are optional.

The `fromDUNS` variable, which defines the DUNS number of the sender, is mandatory. (A DUNS number is a unique nine-digit identifier assigned to a business entity by Dun & Bradstreet.) The DUNS number specified in the `fromDUNS` variable must match the business ID defined in the repository for that trading partner. For a complete list of RosettaNet template variables, see "RosettaNet Template Variables" in "Using Workflows with RosettaNet" in *Implementing RosettaNet for B2B Integration*.

`PIPOutput` is a mandatory template variable that contains the service content of the received message. It is set by the PIP3A2_Customer_RN2 workflow and is passed to the Customer_PrivateWF workflow when the PIP3A2_Customer_RN2 workflow returns control back to the workflow that called it: Customer_PrivateWF.

17. Click Cancel in the Start Public Workflow window.
18. Click Cancel in the Task Properties window.
19. In the left pane of the main Studio window, expand the PIP3A2_Customer_RN2 folder. (The PIP3A2_Customer_RN2 workflow is called from the Customer_PrivateWF workflow.)

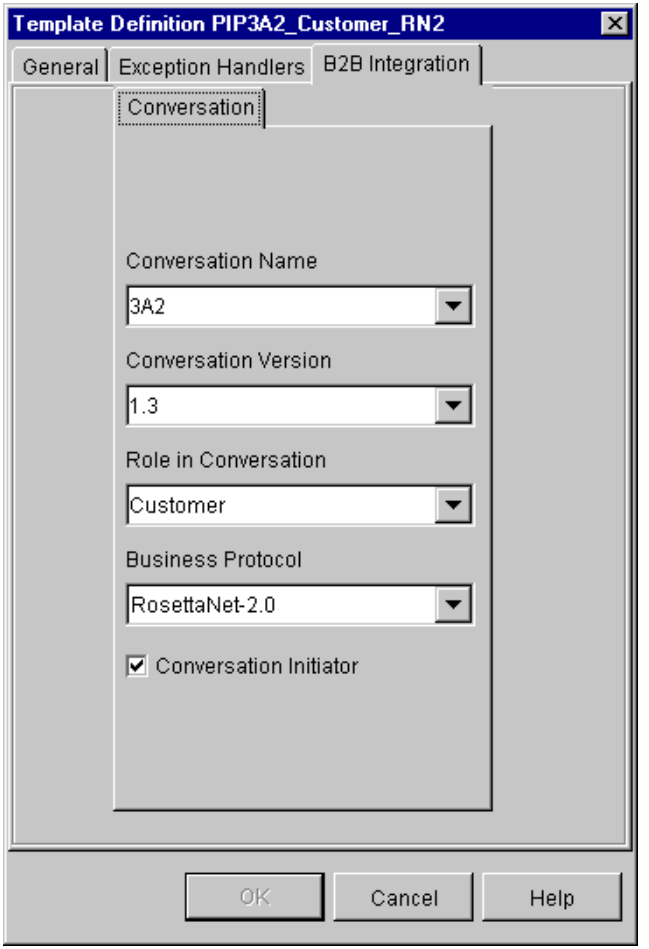


20. To view the properties of the PIP3A2_Customer_RN2 workflow, right-click the folder, named with a date and time, in the PIP3A2_Customer_RN2 folder. A menu is displayed. Select Properties.

21. The Template Definition PIP3A2_Customer_RN2 dialog box is displayed.

22. Select the B2B Integration tab.

    The Conversation tab (nested on the B2B Integration tab) is displayed.



The data entered on this tab specifies that the PIP3A2_Customer_RN2 workflow should be started if a Start Public Workflow action is invoked with the specified conversation and role.

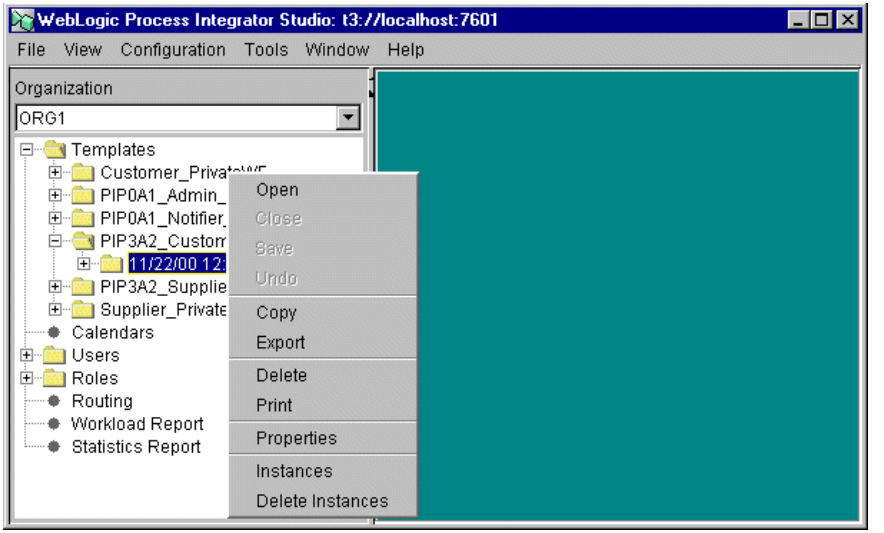
The conversation name, version, and role defined in this window:

- Match the PIP name, version, and role defined by RosettaNet for PIP 3A2.
- Correspond to the conversation name, version, and role that are registered in the repository.

23. Click OK.

24. Complete the following steps to open and view a PIP3A2_Customer_RN2 workflow instance:

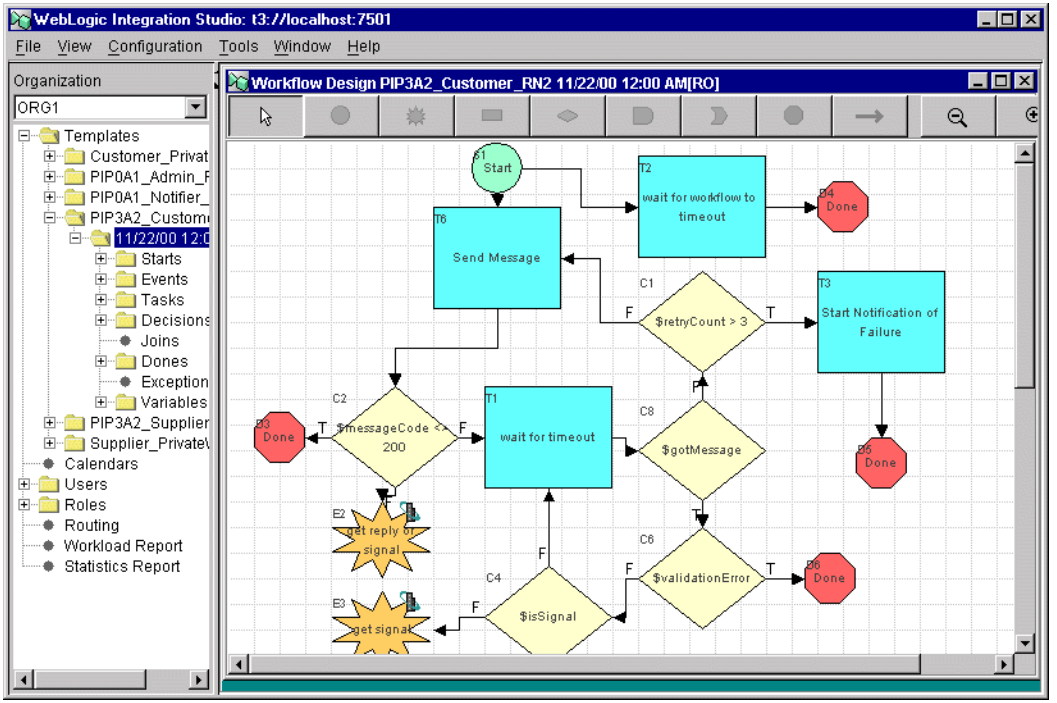
    a. Right-click the folder, named with a date and time, in the PIP3A2_Customer_RN2 folder. A menu is displayed.



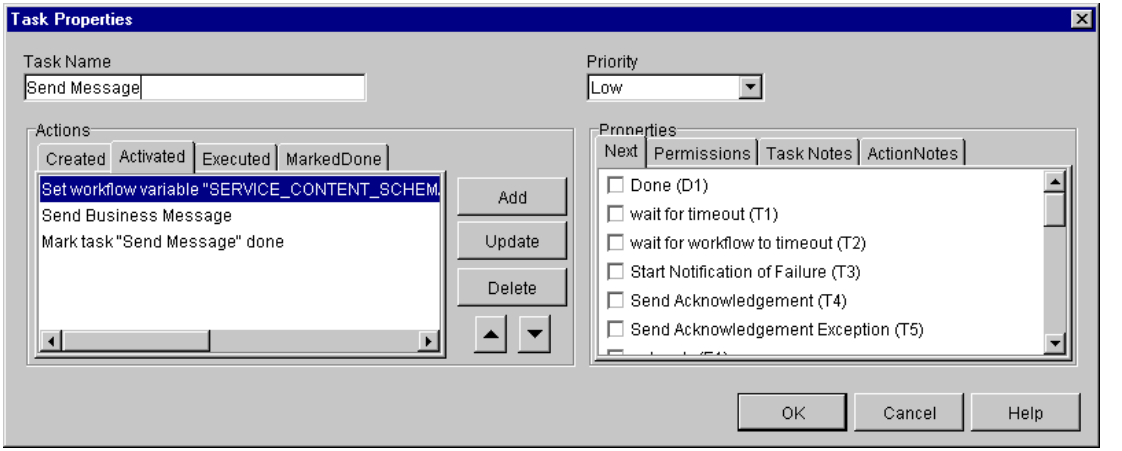
    b. Select Open.

    The start, task, decision, and event nodes that make up the PIP3A2_Customer_RN2 workflow are displayed.

    The Start node is the first task that is executed in this workflow.



25. Double-click the Send Message task. The Task Properties window is displayed.
26. Select the Activated tab.



The actions that make up the Send Message task are listed on the Activated tab.

27. In the left pane of the Task Properties window, double-click the Send Business Message action. This action sends an XML business message, which is based on the contents of the PIPInput XML workflow variable. (This variable was defined earlier in the private Customer_PrivateWF workflow.)

    Note: This step corresponds to step 1 in "RosettaNet 2.0 Security Sample Overview" on page 4-3.

28. Exit the WebLogic Integration Studio: From the Studio menu bar, choose File→Exit.

CHAPTER

5 Trading Partner Zeroweight Client Sample

The Trading Partner Zeroweight Client sample demonstrates two communication methods used when one or more trading partner hosts no BEA software: browsers and file sharing. The sample is based on business practice functions and business processes for a requestor and replier communicating via either a browser or a file-sharing client.

This section includes the following topics:

- Overview of the Zeroweight Client Sample
- Before Running the Zeroweight Client Sample
- Running the Zeroweight Client Sample
- Creating and Using Zeroweight Clients
- How to Recompile the Sample

Overview of the Zeroweight Client Sample

Most B2B integration conversations involve two trading partners that have both installed BEA WebLogic Integration. Browser and file-sharing clients provide a way to communicate with trading partners who have not installed BEA software. The Zeroweight Client sample demonstrates communication between a requestor trading partner using a browser client, and a replier trading partner using a file-sharing client.

Purpose of the Sample

The Zeroweight Client sample demonstrates how business communication can take place between a requestor and one or more repliers that do not have WebLogic Integration installations. This communication is accomplished using two types of zeroweight clients that are configured in a remote or host B2B integration installation:

- Browser client—Uses JSP served up by predefined WebLogic Integration business processes to initiate a conversation, and to send and receive messages. The Web host facilitates communication via JSP delivered, on demand, to the browser client. The browser client uses the WebLogic Integration JSP tag libraries to send and check messages through the B2B integration mailbox interface.
- File-sharing client—The requestor puts a message in a preconfigured mailbox located on the Web host. The replier uses a file-sharing client provided by WebLogic Integration to transfer messages between its mailboxes and file-sharing directories. The party using a file-sharing client in the conversation must have a pre-existing FTP installation.

In this sample, a business operation called by the replier's private workflow gets a request from a preconfigured directory, creates a reply based on the request, and puts the reply into a preconfigured output directory. An actual FTP server is not used; the sample uses the business operation to simulate an FTP server.

Zeroweight Client Sample Scenario and Diagrams

The Zeroweight Client sample scenario involves two trading partners (one requestor and one replier) who communicate via a remote WebLogic Integration installation that is preconfigured to handle zeroweight clients. The requestor sends a request for multiplication of two integer numbers. The replier performs the multiplication and returns the product to the requestor.

Use the browser of your choice on any machine other than the one on which you are running the samples instance of WebLogic Integration. As a result, the requestor does not have a local WebLogic Integration installation. Instead, it uses a browser to access the JSPs that reside on a remote installation of WebLogic Integration.

The JSPs create mailboxes and send XML requests using the JSP tag libraries provided by WebLogic Integration. The same JSPs are also used to check messages in the requestor's mailbox, and to delete messages from the requestor's and replier's mailboxes.

Note: The default configuration of the Zeroweight Client sample specifies that the samples instance of WebLogic Integration, the browser client, and the FTP Client run on the same machine. In a production deployment of the Zeroweight Client sample, however, WebLogic Integration, the browser client, and the FTP client run on different machines.

The replier also has no WebLogic Integration installation. It uses a third-party FTP server application to communicate with some trading partners. It may also use a proprietary mechanism for handling messages. The replier communicates with the requestor via a file-sharing client.

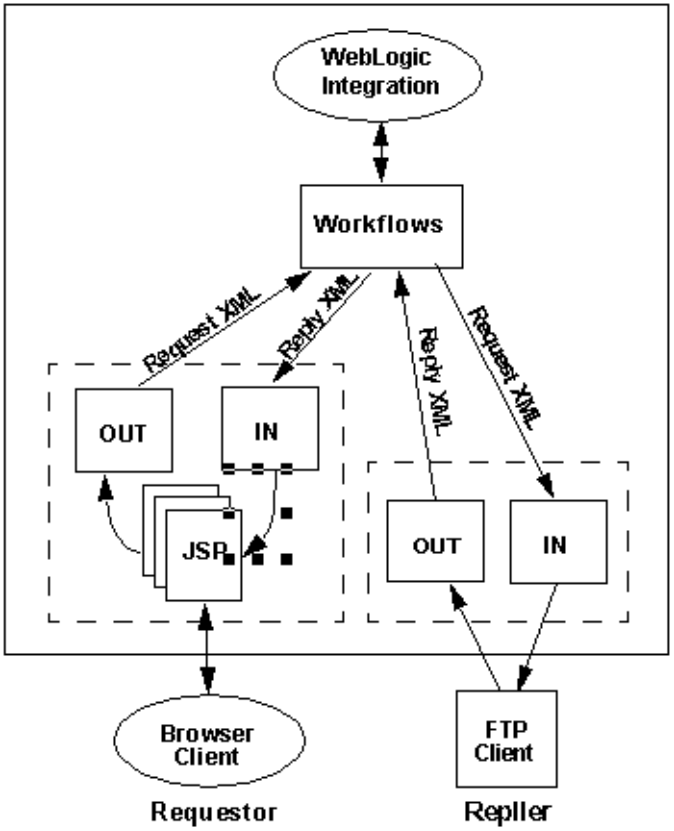
The Zeroweight Client sample demonstrates the following events:

1. Requestor's private workflow is triggered by an XML event sent from a JSP tag in the browser client.
2. Replier's public workflow is triggered by a reply placed in the replier's out mailbox by the file-sharing client.
3. Requestor's message and replier's message are put in the appropriate mailboxes.

In the Zeroweight Client sample, four preconfigured mailboxes are used. Each trading partner uses one inbox and one outbox, as follows:

- Requestor using a browser client uses `BrowserTP1_Inbox` and `BrowserTP1_Outbox`.
- Replier using a file-sharing client uses `FtpTP1_Inbox`, and `FtpTP1_Outbox`.

Figure 5-1 Zeroweight Client Deployment



Before Running the Zeroweight Client Sample

Before running the Zeroweight Client sample, complete the following steps:

1. Follow the instructions in "Preparing to Run the Samples" on page 1-2.
2. Make sure the proxy settings on your browser do not prevent you from connecting to the sample WebLogic Server. For more information, see "Web Browser Configuration Requirements" in "WebLogic Integration Administration and Design Tools" in *Starting, Stopping, and Customizing BEA WebLogic Integration*.

Running the Zeroweight Client Sample

To run the Zeroweight Client sample, complete the following steps:

1. Run the `RunSamples` script by completing the procedure appropriate for your platform:
   - Windows:

     Choose Start→Programs→BEA WebLogic E-Business Platform→WebLogic Integration 2.1→Samples→Run Samples.
   - UNIX:

     a) Make sure your `PATH` environment variable includes the directory in which the Netscape executable (`netscape`) resides.

     b) Go to the WebLogic Integration home directory (the directory in which you installed WebLogic Integration). For example:

     ```
     cd /home/me/bea/wlintegration2.1
     ```

c) Run the `setenv` script to set the top-level WebLogic Integration environment variables:

```
. setenv.sh
```

d) Run the `RunSamples` script:

```
cd samples/bin
RunSamples
```

Warning: For UNIX systems, the directory in which the `netscape` executable resides must be included in your `PATH` environment variable. If it is not included, the samples launcher page cannot be displayed.

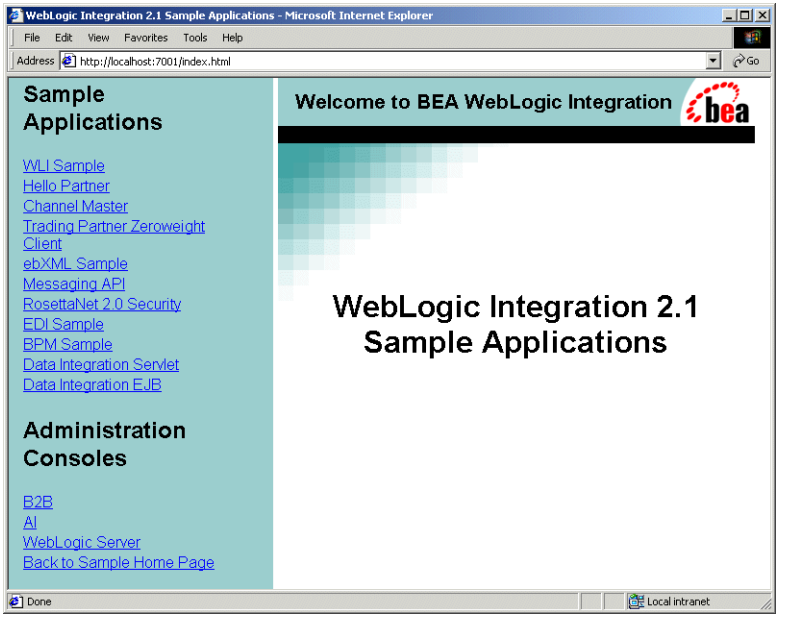
2. If the `RunSamples` script detects that the configuration section of the `RunSamples` script has been run before, the following prompt is displayed:

```
The WebLogic Integration repository has already been
created and populated, possibly from a previous run
of this RunSamples script. Do you want to destroy all the
current data in the repository and create and populate the
WebLogic Integration repository, again? Y for Yes, N for No
```

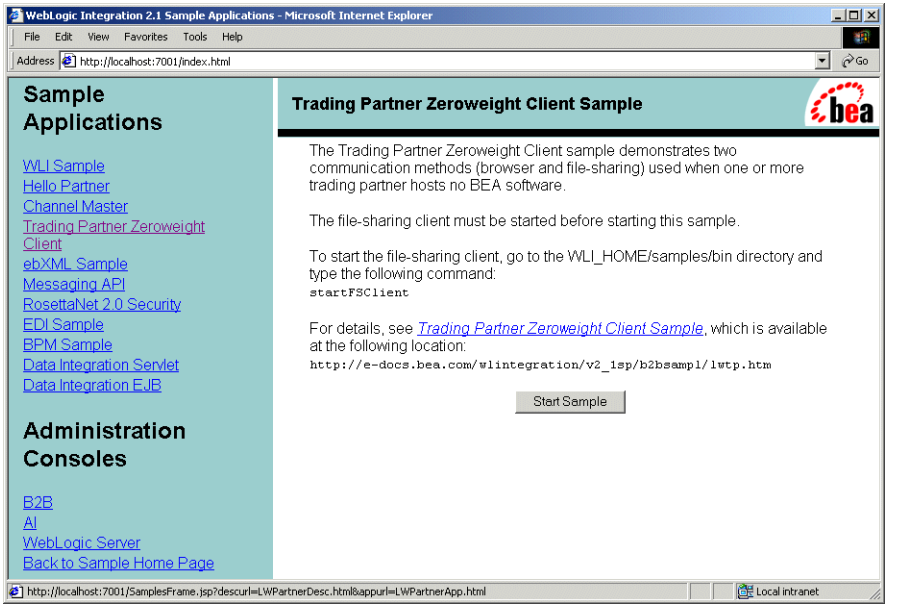
If you answer `N` to this question, the `RunSamples` script skips the steps for creating and populating the repository and runs only the step for booting the sample instance of WebLogic Server.

If you answer `Y` to this question, the `RunSamples` script recreates and repopulates the repository, and then it boots the sample instance of WebLogic Server. When you answer `Y`, the `RunSamples` script destroys all the data currently in the repository and loads an unaltered version of the sample data into the repository. Answer `Y` only when the current sample data has been altered or removed and you want a fresh or unaltered version of the sample data in the repository.

Now the `RunSamples` script starts an instance of WebLogic Server as a background process and the samples launcher page is displayed.



3. In the left pane, click the link for the Trading Partner Zeroweight Client application under Sample Applications. The Zeroweight Client Main Page is displayed in the right pane.



4. Launch the file-sharing client by completing the steps appropriate for your platform:

   - Windows:

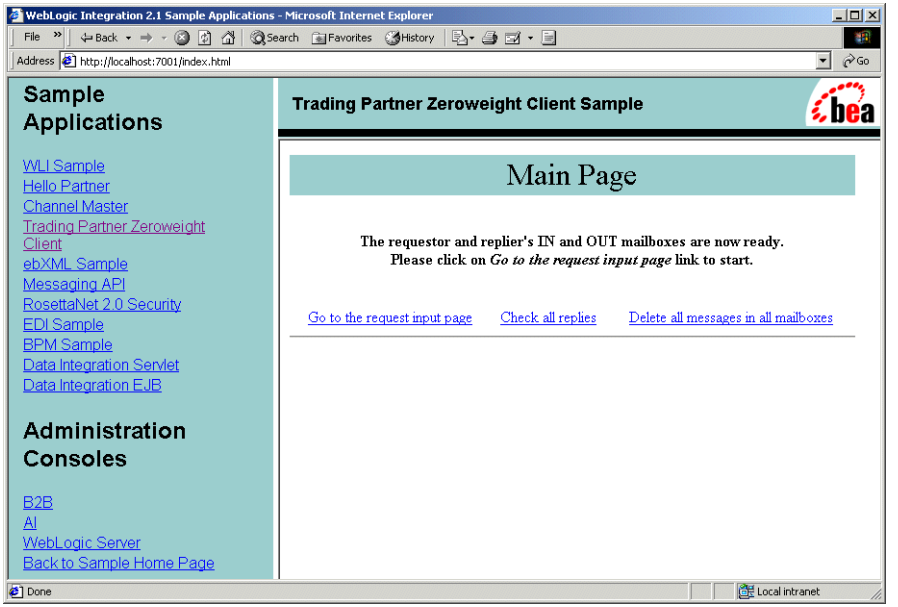
     ```
     cd %WLI_HOME%\samples\bin
     startFSClient.cmd
     ```

   - UNIX:

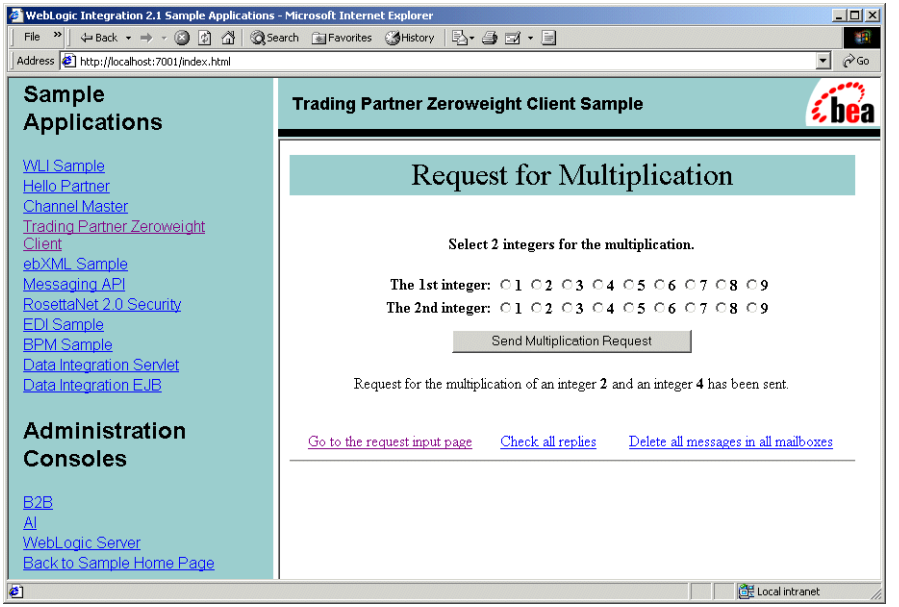
     ```
     cd $WLI_HOME/samples/bin
     startFSClient
     ```

   Note: If you start the file-sharing client before the first JSP is loaded, you get a repeated `Mailbox not found` exception. These exceptions can be ignored because mailboxes are created when the main JSP is loaded for the first time. Once the mailboxes are created, these exceptions no longer appear.

5. Click Start Sample. The following window is displayed.



6. Select the following option: Go to the request input page. The Request for Multiplication page is displayed.



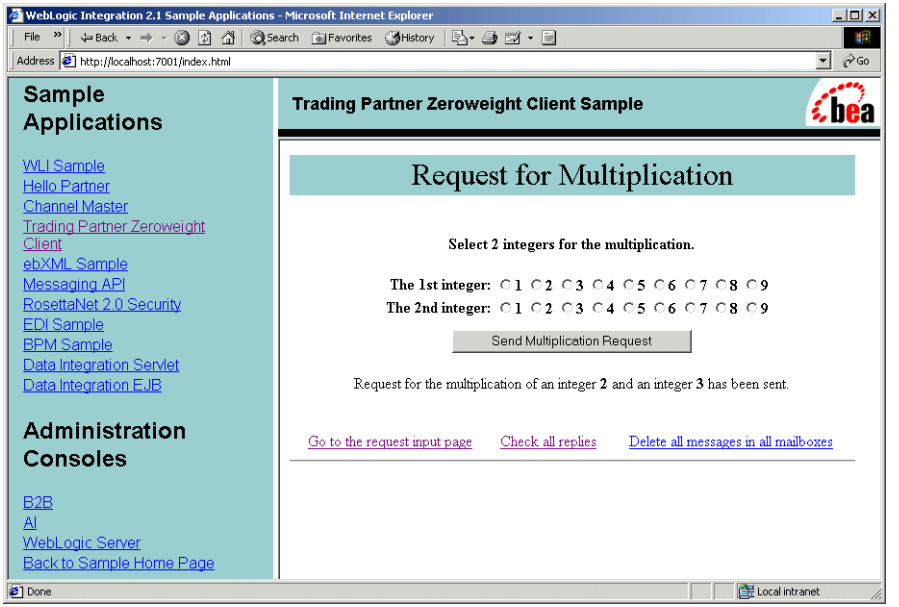
7. Now send a message to `BrowserTP1_Outbox`, manually, by completing the following steps:

   a. Select two integers.

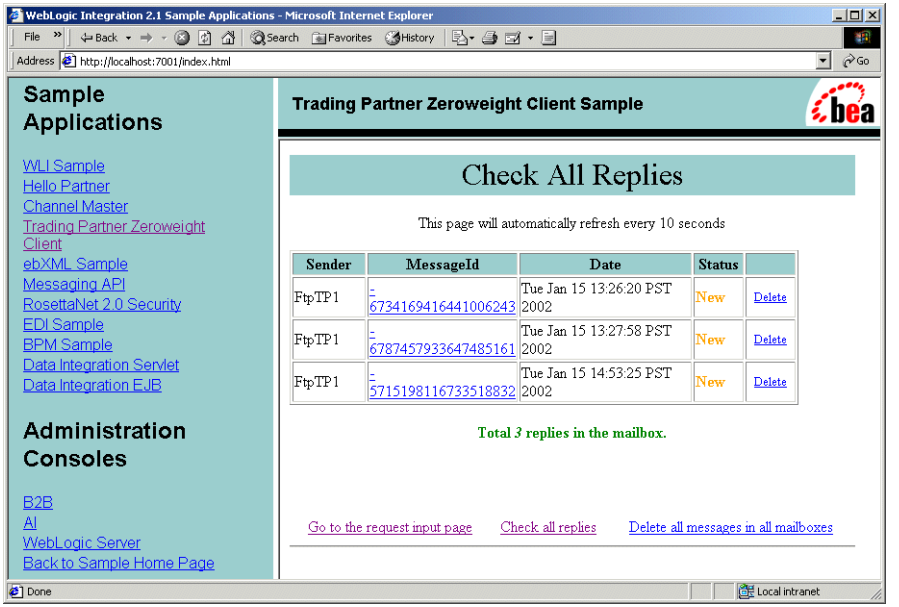
   b. Click Send Multiplication Request.

   Note: As a side effect of this step, `SendmsgTag` and the wrapper Mailbox API are tested.

   Your display is updated, as shown in the following figure.

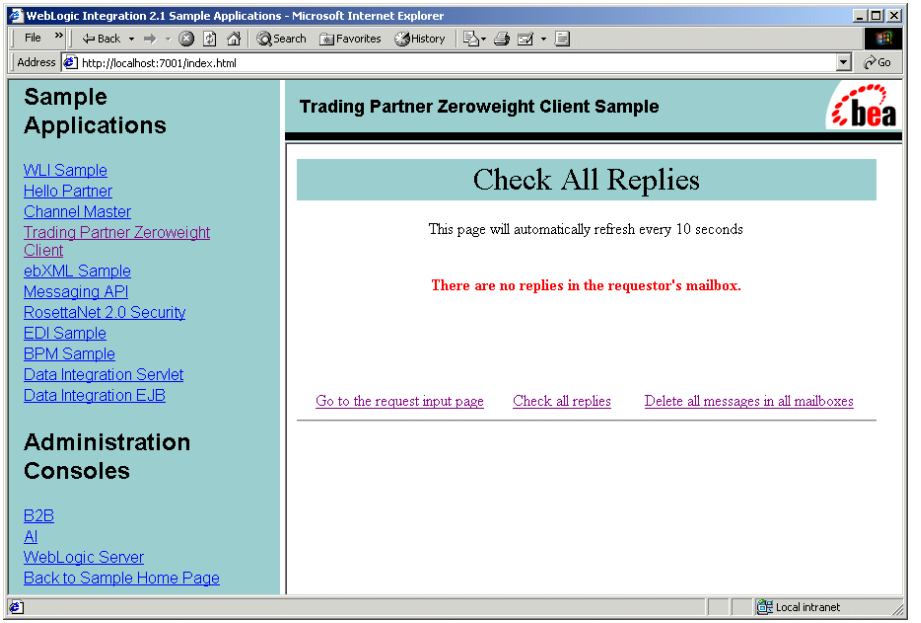

WebLogic Integration 2.1 Sample Applications - Microsoft Internet Explorer
File
Back
Search
Favorites
History
Address
http://localhost:7001/index.html
Go
Sample Applications
WLI Sample
Hello Partner
Channel Master
Trading Partner Zeroweight Client
ebXML Sample
Messaging API
RosettaNet 2.0 Security
EDI Sample
BPM Sample
Data Integration Servlet
Data Integration EJB
Administration Consoles
B2B
AI
WebLogic Server
Back to Sample Home Page
Trading Partner Zeroweight Client Sample
bea
Request for Multiplication
Select 2 integers for the multiplication.
The 1st integer: 1 2 3 4 5 6 7 8 9
The 2nd integer: 1 2 3 4 5 6 7 8 9
Send Multiplication Request
Request for the multiplication of an integer 2 and an integer 3 has been sent.
Go to the request input page
Check all replies
Delete all messages in all mailboxes
Done
Local intranet

8. To check the replies that have arrived in your incoming mailbox, click Check all replies. A list of replies is displayed.



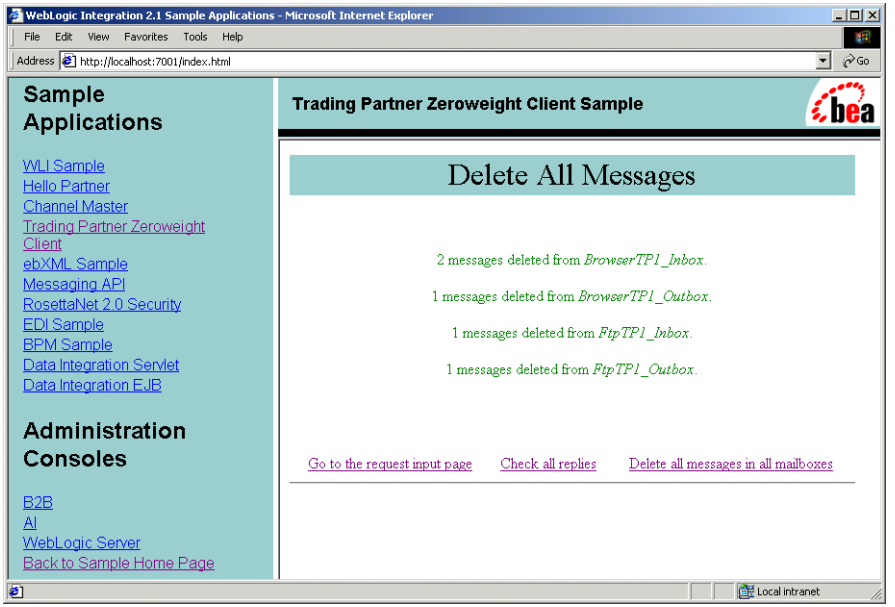
Note: When the list of replies is checked, `CheckallmsgTag` is checked, too.

If no replies are found, the following message is displayed.



9. To delete all messages from the incoming and outgoing mailboxes of all participating trading partners (which, in the sample, are the mailboxes for BrowserTP1and FtpTP1), complete the following steps:

   a. Click Delete all messages in all mailboxes. A list of all the messages in all the B2B integration mailboxes is displayed.



b. Click Delete all messages in all mailboxes again. The total number of messages deleted is displayed.

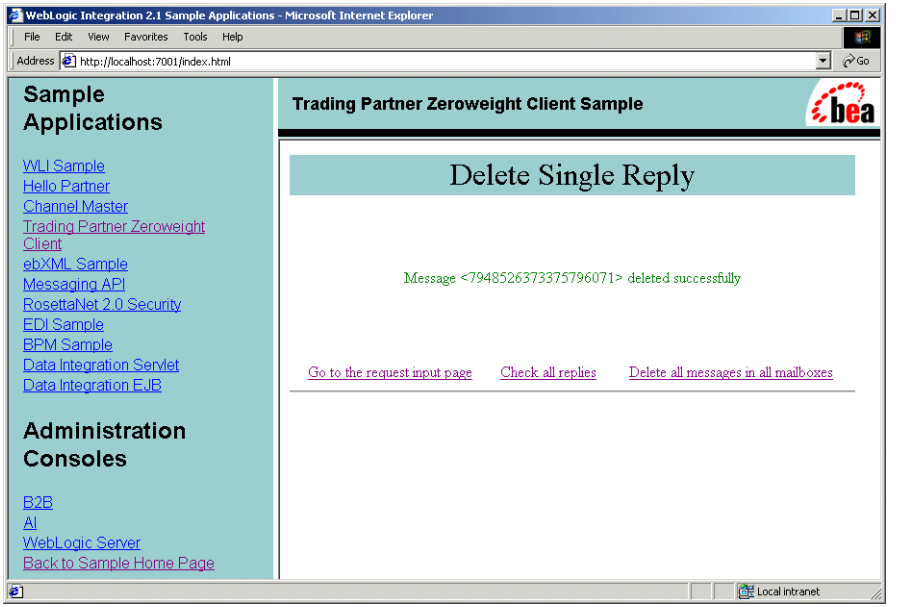
Note: As a side effect of this procedure you also test `DeleteallmsgTag`.

10. To delete a particular message from a mailbox, complete the following steps:

    a. In the Check All Replies window (shown in step 6), select a message.

    b. Click Delete.

       The Delete One Reply window confirms that the message has been deleted successfully.

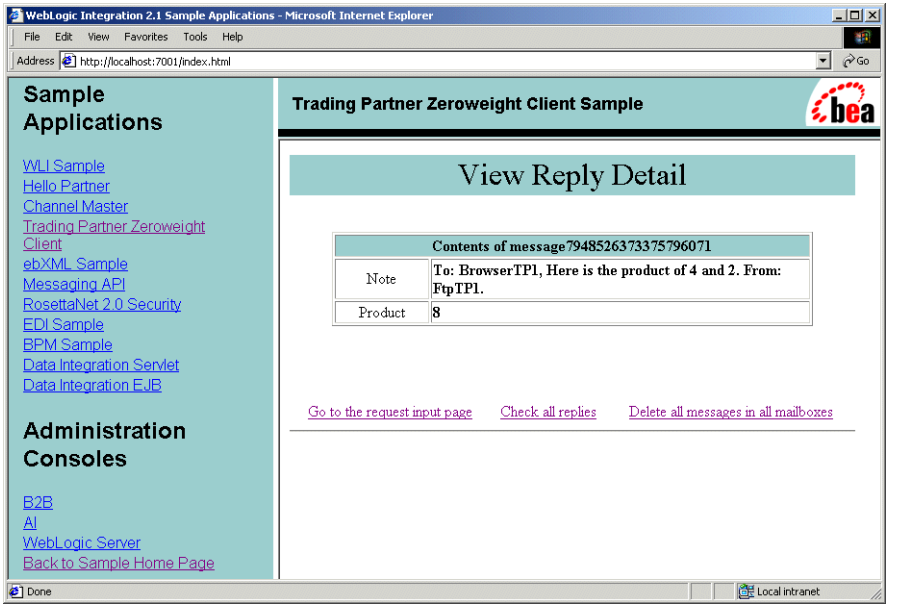


Note: As a side effect of this procedure, you also test `DeletemsgTag`.

11. To view details about messages, complete the following steps:

    a. Click the link labeled Check all replies.

    b. Select the message in the Message ID column that you want to view. The View Reply Detail window is displayed.



12. If you want to run more B2B samples at this time, keep the samples launcher page open and keep the WebLogic Server running.

    If you do not want to run more B2B samples at this time, exit from your browser and shut down the WebLogic Server by completing the procedure appropriate for your platform:

    - Windows:

      Choose Start→Programs→BEA WebLogic E-Business Platform→WebLogic Integration 2.1→Samples→Stop Server.

    - UNIX:

      ```
      cd $WLI_HOME/config/samples
      stopWebLogic
      ```

Creating and Using Zeroweight Clients

This section provides the following information about creating and configuring zeroweight clients:

- Zeroweight Client Source Files
- Using the JSP Tag Library
- Configuring a Zeroweight Client

Zeroweight Client Source Files

WebLogic Integration delivers all the source files you need to create your own zeroweight clients. The Zeroweight Client sample shares B2B integration information with the Hello Partner sample.

The following table lists all the files delivered specifically for the Zeroweight Client sample.

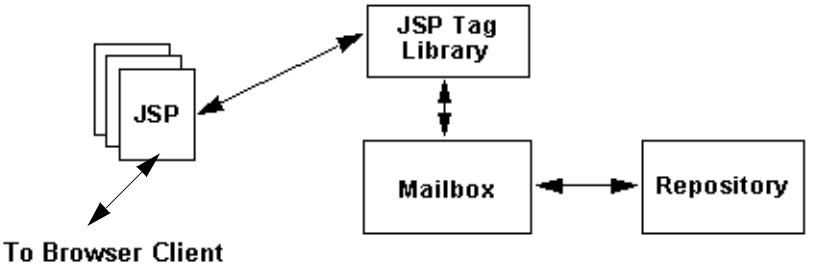
Source Directory	Subdirectories and Files	Contents
WLI_HOME\samples\zeroweightClient\src\wlcsamples\zeroClient		
	Contains the source files for the business operation and its helper, both of which are called by workflow instance.	
WLI_HOME\config\samples		
	LwcFileSync.dtd	DTD file for LwcFileSync.xml
	LwcFileSync.xml	File read by the file-sharing client. You must modify the following sections for your environment: ■ url ■ wlcfilesync *name* ■ directoryin ■ directoryout

Source Directory	Subdirectories and Files	Contents
WLI_HOME\samples\zeroClient\lib		
	Contains original copies of the `LwcFileSync.dtd` and `LwcFileSync.xml` files in *WLI_HOME*\config\samples.	
WLI_HOME\samples\bin\		
	■ `startFSClient.cmd` ■ `startFSClient`	Script that starts the file-sharing client that is responsible for the following tasks: ■ Transferring a request from the replier's in mailbox to its file-sharing directory ■ Transferring a reply from the replier's out directory to its out mailbox
WLI_HOME\config\samples\zeroClient\		
	`ftpDir\`	Directory created for the execution of the Zeroweight Client sample. Contains two directories (`FtpTP1_indir` and `FtpTP1_outdir`) that simulate the in and out directories on the file-sharing client. Names are hard-coded for the sample. **Note:** This directory and its subdirectories are created at run time.
	`web\`	Contains the files for the Web application, such as `*.jpg` and `*.jsp` files.
	`lwcWebApp\`	Contains the JSP tag library description file, and the `web.xml` file used by the Zeroweight Client Web application.
WLI_HOME\samples\zeroClient\src\wlcsamples\zeroClient\		
	`tags\`	Contains the reference implementation of the B2B integration JSP tag libraries. Used for message management by `com.bea.lwclient.LwcMailbox`.

Using the JSP Tag Library

The JSP tag library uses a wrapper to address the WebLogic Integration Messaging API. The JSP tag library is used with predefined workflows to interact with a mailbox, as shown in Figure 5-2.

Figure 5-2 Mailbox Scenario Using the JSP Tag Library



The mailbox shown here supplements the repository. The tag library accesses the mailbox as needed. The repository may also store mailbox messages.

Error handling is based on standard Java exception and error handling via the Mailbox API classes and JSP delivered to the browser client.

For a complete listing of the JSP tags, see Appendix A, "JSP Tag Reference."

Configuring a Zeroweight Client

This section is provided only for users who want to move the browser client or the file-sharing client to a machine other than the one on which the samples instance of WebLogic Integration is running. If you move a client in this way, follow the appropriate procedure in this section to configure your remote zeroweight client.

If you are running the Zeroweight Client sample and the samples instance of WebLogic Integration on the same machine, skip this section.

This section provides procedures for the following tasks:

- Configuring a File-Sharing Client
- Configuring a Browser Client

Configuring a File-Sharing Client

A zeroweight client is a process that WebLogic Integration runs in a dedicated Java Virtual Machine. As such, it needs no security mechanisms. WebLogic Integration can serve any number of zeroweight clients that are defined in the `LwcFileSync.xml` configuration file. For additional information, see "Edit the File-Sharing Configuration File" later in this section.

Edit the WebLogic Integration Configuration File

Add the zeroweight trading partner configuration information listed in Listing 5-1 to the configuration file for B2B integration: `config.xml`.

Listing 5-1 File-Sharing Client Configuration

```
<StartupClass
      ClassName="com.bea.lwclient.Startup"
      Name="LwcStartup"
      Targets="myserver"
/>
```

You can edit the configuration file in any of the following domains.

Domain	Pathname
Samples domain	*WLI_HOME*\config\samples\config.xml
WLIDOMAIN (supported production domain)	*WLI_HOME*\config\eaidomain\config.xml
EAIDOMAIN (supported production domain)	*WLI_HOME*\config\wlidomain\config.xml

Edit the File-Sharing Configuration File

To configure a zeroweight client, define it in `LwcFileSync.xml`. The file-sharing client configuration in `LwcFileSync.xml` must conform to `LwcFileSync.dtd`.

Note: `LwcFileSync.dtd` must reside in the directory from which the file-sharing client is started.

Listing 5-2 provides a sample DTD file. Replace the values shown in **`bold`** with values that are appropriate for your zeroweight client installation.

Listing 5-2 Sample `LwcFileSync.dtd`

```
<!-- This DTD describes file sharing client configuration file -->
<!ELEMENT wlcfilesyncconfig (wlcfilesync*) >

<!--  maxThreads The upper limit for number of threads permissible -->
<!--  in thread pool at a given point in time  -->
<!ATTLIST wlcfilesyncconfig  maxThreads CDATA #REQUIRED>

<!--  minThreads The lower limit for number of threads permissible -->
<!-- in thread pool at a given point in time -->
<!ATTLIST wlcfilesyncconfig  minThreads CDATA #REQUIRED>

<!--  maxIdleTime The maximum time interval thread could be idle -->
<!-- else removed from the pool -->
<!ATTLIST wlcfilesyncconfig  maxIdleTime CDATA #REQUIRED>

<!--  pollInterval Time interval defining wait interval before polling -->
<!ATTLIST wlcfilesyncconfig  pollInterval CDATA #REQUIRED>

<!--  url Weblogic URL used for JNDI lookup  -->
<!ATTLIST wlcfilesyncconfig  url CDATA #REQUIRED>

<!--  debug flag used to turn debugging on/off  -->
<!ATTLIST wlcfilesyncconfig  debug (TRUE | FALSE) "FALSE">

<!--  The following element is used to configure details of  LWTP -->
<!ELEMENT wlcfilesync EMPTY>

<!--  LWTP name -->
<!ATTLIST wlcfilesync name CDATA #REQUIRED>

<!--  path of the incoming directory on local file system -->
<!ATTLIST wlcfilesync directoryin CDATA #REQUIRED>

<!--  path of the outgoing directory on local file system -->
<!ATTLIST wlcfilesync directoryout CDATA #REQUIRED>
```

Listing 5-3 provides a sample XML file in which file-sharing clients are defined as zeroweight trading partners. Replace the strings shown in **bold** with values appropriate for your zeroweight client installation.

Listing 5-3 Sample `LwcFileSync.xml`

```
<?xml version="1.0"?>
<!DOCTYPE wlcfilesyncconfig SYSTEM "LwcFileSync.dtd">
<wlcfilesyncconfig maxThreads="9"
            minThreads="3"
            maxIdleTime="5000"
            pollInterval="2000"
            url="t3://localhost:7001"
            debug="FALSE">
<wlcfilesync name="FtpTP1"
            directoryin="<WLI_HOME>/ftpDir/FtpTP1_indir"
            directoryout="<WLI_HOME>/ftpDir/FtpTP1_outdir"/>
</wlcfilesyncconfig>
```

Configuring a Browser Client

WebLogic Integration supports two methods of configuring a browser client, depending on the security paradigm to be used: HTTP and HTTPS, or SSL. The following sections provide instructions for these methods:

- Configuring an HTTP Browser Client
- Configuring an HTTPS (SSL) Browser Client

Configuring an HTTP Browser Client

To configure an HTTP zeroweight client, you must edit the `web.xml` file. To turn on security for a browser client, complete the following procedure:

1. The JSP developer responsible for the HTML user interface for trading partner zeroweight client Web applications uses the `sendmsg` tag and provides the following mandatory argument : security = ON or OFF.

The workflow template developers can also turn security on and off by invoking the `wlcsamples.zeroClient.LwcBizOp.putMessage()` method. This method also accepts a string as its last argument for SECURITY. To turn security on or off, the developer passes one of the following arguments: ON or OFF.

2. The person who deploys the hosted Web application modifies *`WLI_HOME`*`\samples\zeroweightClient\web\lwcWebApp\web.xml`, adding security constraints for all the users with permission to use the application.

   For example, to provide a new user with the security privileges required to use the Web application `lwcWebApp.war`, add the following code:

```
<security-constraint>
  <web-resource-collection>
    <web-resource-name>lwcWebApp</web-resource-name>
    <url-pattern>/*</url-pattern>
  </web-resource-collection>
 <auth-constraint>
   <role-name>newpartner</role-name>
 </auth-constraint>
</security-constraint>

<login-config>
 <auth-method>BASIC</auth-method>
</login-config>

<security-role>
  <role-name>newpartner</role-name>
</security-role>
```

3. Make sure the user named *`newpartner`* is a valid WebLogic Server user. You can assign this username through either the WebLogic Server Administration Console or the WebLogic Integration B2B Console. For details, see the *BEA WebLogic Server Administration Guide* or *Administering B2B Integration*, respectively.

4. Using the B2B Console, map *`newpartner`* user must be mapped to a valid trading partner zeroweight client in two steps:

   a. Create a trading partner zeroweight client.

   b. Map the user's identification to the appropriate trading partner record.

   For details, see *Administering B2B Integration*.

5. Using the WebLogic Integration Studio, create a collaboration agreement between *newpartner* and the B2B integration hub. For details, see *Using the WebLogic Integration Studio*.

Configuring an HTTPS (SSL) Browser Client

To configure a zeroweight HTTPS (SSL) client, perform the following steps:

1. Configure certificates on both the browser and the B2B integration nodes.
2. Create a WebLogic Server user called `newpartner`, who can run the browser on behalf of a trading partner zeroweight client. You can create this user through either the WebLogic Server Administration Console or the WebLogic Integration B2B Console.
3. Using the B2B Console, create the trading partner zeroweight client.
4. Map *newpartner* to the appropriate trading partner record.
5. Using the WebLogic Integration B2B Console, create a collaboration agreement between the zeroweight client and the B2B integration hub. For details, see *Administering B2B Integration*.

How to Recompile the Sample

If you have made any changes to the sample you must recompile it before you can run it. To recompile your modified sample, complete the following procedure:

1. Set the required environment variables by entering the commands appropriate for your platform:
   - Windows:

     ```
     cd %WLIHOME%\bin
     setenv
     ```

   - UNIX:

     ```
     cd $WLI_HOME/bin
     ./setenv.sh
     ```

2. Go to the following directory:

   ```
   cd samples\zeroweightClient\project
   ```

3. Execute the following command:

   ```
   ant all
   ```

6 Messaging API Sample

The Messaging API sample shows how the WebLogic Integration Messaging API can be used. Specifically, it demonstrates the use of two message-delivery mechanisms available with the Messaging API and the logic plug-in feature of WebLogic Integration B2B.

This section includes the following topics:

- Overview of the Messaging API Sample
- Before Running the Messaging API Sample
- Running the Messaging API Sample

Overview of the Messaging API Sample

WebLogic Integration supports two methods of sending business messages:

1. Using application workflows created in the WebLogic Integration Studio. The application workflows contain actions that send business messages. The RosettaNet 2.0 Security and Channel Master samples are examples of workflow applications that send business messages.
2. Using a Java application that invokes the WebLogic Integration Messaging API to send business messages.

This sample uses the second method.

The WebLogic Integration Messaging API supports two message-delivery mechanisms:

- Synchronous—The sending application waits until the published message is delivered to the destination(s). The messaging system returns control to the application once the outcome of the activity of publishing the message is known. The application waits until a time-out occurs or the status of the activity becomes known, whichever happens first.
- Deferred Synchronous—Control returns to the application after a message is published. An `XOCPMessageToken` object is returned to the application, which the application can later access to check the status of message delivery.

The sample demonstrates the use of both the synchronous and deferred synchronous message delivery mechanisms.

The Messaging API sample contains three trading partners (Partner1, Partner2, and Partner3) that send business messages. The Messaging API sample contains four Java source code files: `MdmTp1Servlet.java`, `MdmTp2Servlet.java`, `MdmTp3Servlet.java`, and `WaiterPlugin.java`.

This file. . .	Contains the source code for the . . .
`MdmTp1Servlet.java`	Partner1 trading partner
`MdmTp2Servlet.java`	Partner2 trading partner
`MdmTp3Servlet.java`	Partner3 trading partner
`WaiterPlugIn.java`	Hub filter logic plug-In

For more information about the `WaiterPlugIn.java` code, see “Tracing the Execution Flow” on page 6-6.

Before Running the Messaging API Sample

Before running the Messaging API sample, complete the following steps:

1. Follow the instructions in “Preparing to Run the Samples” on page 1-2.

2. Make sure the proxy settings on your browser do not prevent you from connecting to the sample WebLogic Server. For more information, see "Web Browser Configuration Requirements" in "WebLogic Integration Administration and Design Tools" in *Starting, Stopping, and Customizing BEA WebLogic Integration*.

Running the Messaging API Sample

To run the Messaging API sample, complete the following steps:

1. Run the `RunSamples` script by completing the procedure appropriate for your platform:
   - Windows:

     Choose Start→Programs→BEA WebLogic E-Business Platform→WebLogic Integration 2.1→Samples→Run Samples.
   - UNIX:

     a) Make sure your `PATH` environment variable includes the directory in which the Netscape (`netscape`) executable resides.

     b) Go to the WebLogic Integration home directory (the directory in which you installed WebLogic Integration). For example:

     ```
     cd /home/me/bea/wlintegration2.1
     ```

     c) Run the `setenv` script to set the top-level WebLogic Integration environment variables:

     ```
     . setenv.sh
     ```

     d) Run the `RunSamples` script:

     ```
     cd samples/bin
     RunSamples
     ```

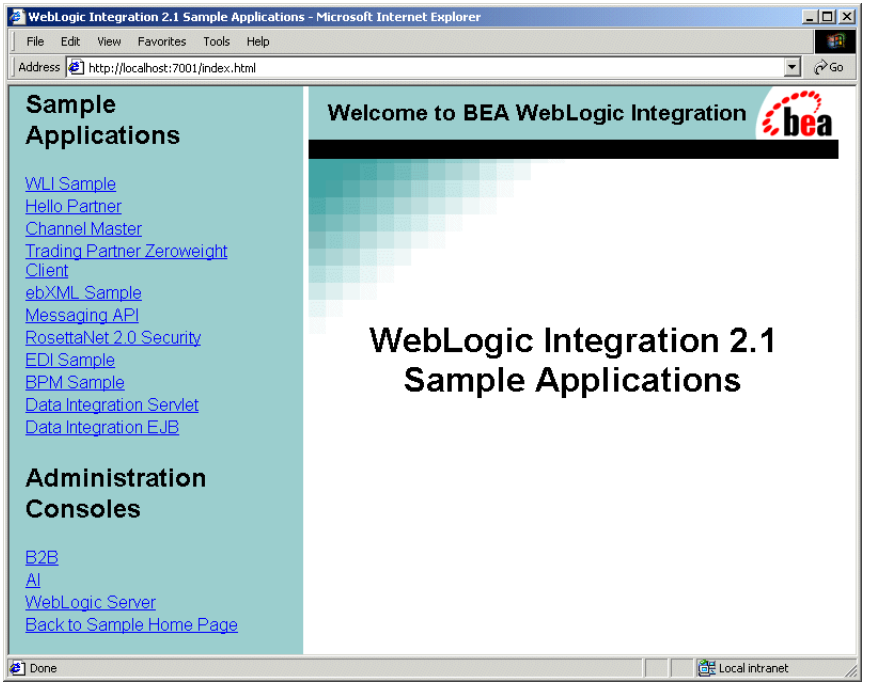
   Warning: For UNIX systems, the directory in which the `netscape` executable resides must be included in your `PATH` environment variable. If it is not included, the samples launcher page cannot be displayed.
2. If the `RunSamples` script detects that the configuration section of the `RunSamples` script has been run before, the following prompt is displayed:

```
The WebLogic Integration repository has already been
created and populated, possibly from a previous run
of this RunSamples script. Do you want to destroy all the
current data in the repository and create and populate the
WebLogic Integration repository, again? Y for Yes, N for No
```

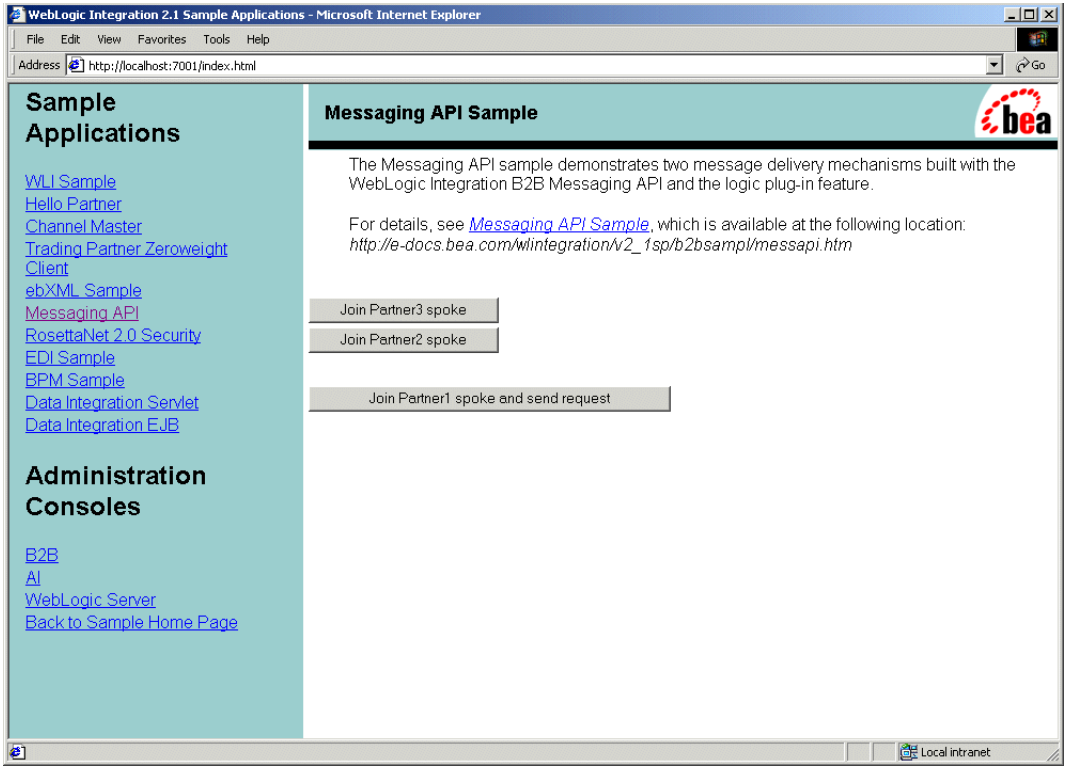
If you answer `N` to this question, the `RunSamples` script skips the steps for creating and populating the repository and runs only the step for booting the sample instance of the WebLogic Server.

If you answer `Y` to this question, the `RunSamples` script recreates and repopulates the repository, and then it boots the sample instance of the WebLogic Server. When you answer `Y` the `RunSamples` script destroys all the data currently in the repository and loads an unaltered version of the sample data into the repository. Answer `Y` only when the current sample data has been altered or removed and you want a fresh or unaltered version of the sample data in the repository.

Now the `RunSamples` script starts an instance of the WebLogic Server as a background process and the samples launcher page is displayed.



3. Click the link for the Messaging API under Sample Applications, in the left pane of the samples launcher page. A menu of options for the Messaging API sample is displayed in the right pane.



4. Click Join Partner3 spoke.
5. Click Join Partner2 spoke.
6. Click Join Partner1 spoke and send request.

   If the Messaging API sample is executed successfully, the following output is displayed at the bottom of the right pane:

```
Partner1 process flow:
Starting XOCPAppplication... done.
Creating conversation : verifierConversation:1.0:
requestor_Partner1_1001029696695_341001029696695...done.
send string for Message 1 = FIRST MESSAGE
```

```
Sending message 1 using synchronous deferred delivery method to Partner 2
Sending a second message before checking for acknowledgment on the first
send string for Message 2 = SECOND MESSAGE
Sending message 2 using synchronous delivery method to Partner 3
success status for message 2
Waiting for Message 2 response... done.
Processing reply for Message 2:
Received string for Message 2 = partner3 -- second message
Verification for Message 2 SUCCESS

Doing something else... done
Waiting acknowledgment for Message 1... Acknowledgment received
Success status for message 1
Waiting for Message 1 response... done
Processing reply:
Received string for Message 1 = partner2 -- first message
Verification for Message 1 SUCCESS

Terminating conversation:verifierConversation:1.0:
requestor_Partner1_1001029696695_341001029696695
success
Shutting down session... done.
```

7. If you want to run more B2B samples at this time, keep the samples launcher page open and keep the sample instance of the WebLogic Server running.

   If you do not plan on running more B2B samples at this time, shut down the instance of the WebLogic Server by completing the procedure appropriate for your platform:

   - Windows:

     Choose Start→Programs→BEA WebLogic E-Business Platform→WebLogic Integration 2.1→Samples→Stop Server.

   - UNIX:

     ```
     cd $WLI_HOME/config/samples
     stopWebLogic
     ```

Tracing the Execution Flow

The following steps trace the execution flow of the Messaging API sample:

1. The `RunSamples` script is started, with the following results:

a. The sample instance of the WebLogic Server is started.

b. A browser opens and displays the samples launcher page.

c. On the samples launcher page, the Messaging API link is clicked: the Messaging API sample page is displayed. This page in turn, displays three options: Join Partner3 spoke, Join Partner2 spoke, and Join Partner1 spoke and send request.

2. The Join Partner3 spoke option is selected, with the following results:

   a. An HTTP request is posted to the `MdmTp3` servlet.

   b. `MdmTp3`, in turn, invokes the `doPost` method from `MdmTp3Servlet.java`.

   c. `doPost` method starts trading partner Partner3's XOCPApplication.

3. The Join Partner2 spoke option is selected, with the following results:

   a. An HTTP request is posted to the `MdmTp2` servlet.

   b. `MdmTp2` in turn, invokes the `doPost` method from `MdmTp2Servlet.java`.

   c. The `doPost` method starts trading partner Partner2's XOCPApplication.

4. The Join Partner1 spoke and send request option is selected, with the following results:

   a. An HTTP request is posted to the `MdmTp1` servlet.

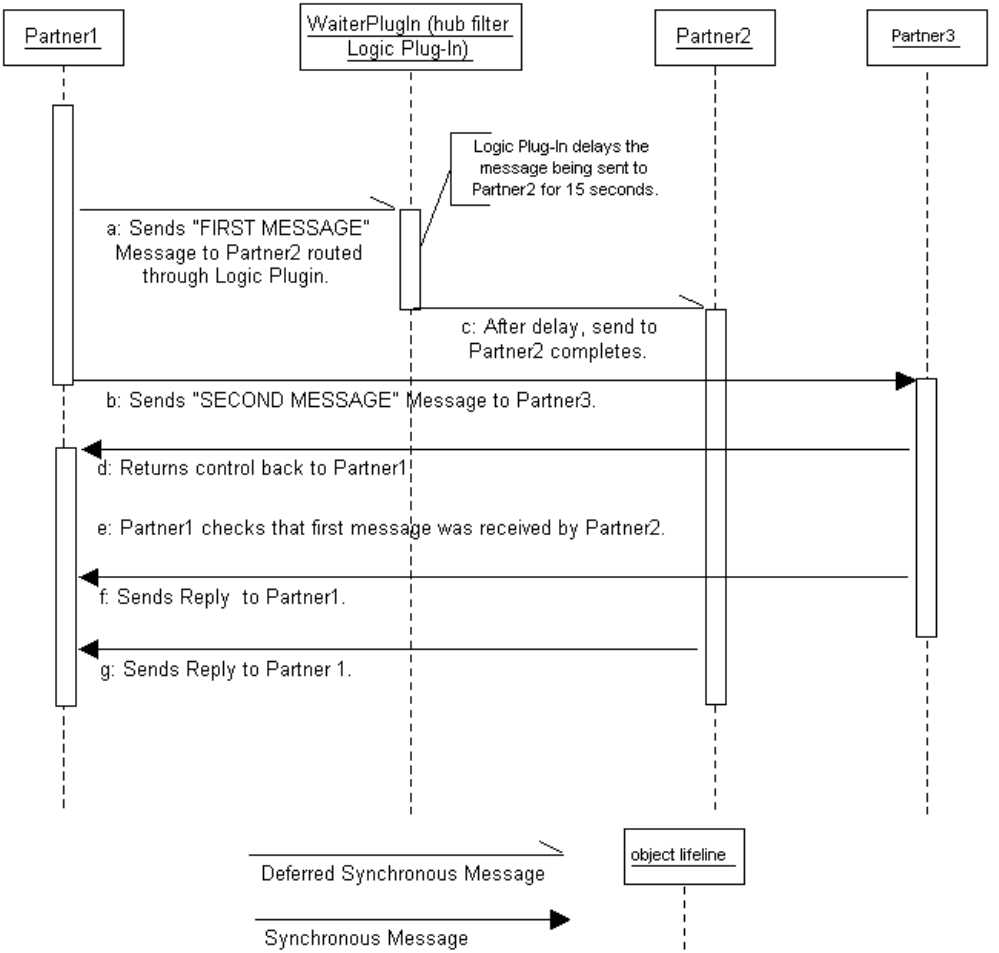
   b. `MdmTp1`, in turn, invokes the `doPost` method from `MdmTp1Servlet.java`.

   c. The `doPost` method starts trading partner Partner1's XOCPApplication.

   d. The `doPost` sends the first message, triggering a series of messages among the three trading partners (Partner1, Partner2, and Partner3). All three trading partners in this sample register with the WebLogic Integration repository to use the VerifierHubChannel delivery channel and to participate in the verifierConversation conversation. Partner1 is registered with the repository in the role of requester. Partner2 and Partner3 are registered in the role of replier.

   The following figure shows the sequence in which these business messages are most likely to be sent and received. (The exact sequence is timing related and depends on the thread scheduling of the Java virtual machine.)

Figure 6-1 Interactive Diagram of the Flow of Messages Among Trading Partners



The following sequence provides details about each of the steps indicated by a corresponding letter in Figure 6-1:

a. Partner1 sends a message with the text `FIRST MESSAGE` to Partner2. This message is sent deferred synchronously. Consequently, Partner1 does not wait or block for a return from Partner2, but it continues executing tasks.

   The nonblocking aspect of the message is represented in the Interaction diagram (Figure 6-1) by Partner1's Object lifeline. When Partner initially becomes active, the representation of Partner1's lifeline changes from a dashed line (indicating an inactive state) to a narrow rectangle (indicating an active state). The lifeline remains active after Partner1 sends the first message. By remaining active, Partner1 can do other tasks, such as sending another message, as shown in the next step.

   All the messages sent in this sample are routed through the hub. A logic plug-in called `WaiterPlugIn` has been added to the filter chain of the hub. When messages are routed though the hub, the `process` method of the `WaiterPlugIn` class is executed. The `process` method checks the target recipient of the outgoing message. If the target recipient is Partner2, `process` sleeps for 15 seconds. Otherwise, it sends the message immediately. In the example shown in Figure 6-1, the first message, which was sent by Partner1 to Partner2, is delayed by 15 seconds.

b. While the first message is still being processed, Partner1 sends the second message, with the text `SECOND MESSAGE,` to Partner3. This message is sent synchronously. Consequently, Partner1 must block or wait until Partner3 returns before Partner1 can process other tasks.

c. Notice how this blocking of Partner1 is represented in Figure 6-1. Because the second message is synchronous, the representation of Partner1's lifeline changes from a narrow rectangle (indicating an active state) to a dashed line (indicating an inactive state) after Partner1 sends the second message. The change to an inactive state means that Partner1 must block or wait until the message is sent and acknowledged by Partner3 before it can become active and start doing other tasks again.

   The second message and all the reply messages of this sample are routed through the hub, where the `process` method of `WaiterPlugIn` is executed on them. Each of these messages passes through the hub without delay because the recipient of the message is not Partner2. Routing of these messages through the hub filter logic plug-in is not shown in Figure 6-1.

d. After the first message is delayed in the hub for 15 seconds, the hub routes it to Partner2.

e. Control is returned to Partner1 after the synchronous send to Partner3 completes. At this point Partner1 becomes active again, as shown by the change in its lifeline, in Figure 6-1, from a dashed line (representing an inactive state) to a narrow rectangle (representing an active state).

f. Partner1verifies that the first message was received by Partner2.

g. Partner3 takes the text of the second message, converts it to lowercase, and adds the prefix `partner 3--` to it. It then sends the modified message back to Partner1.

h. Partner2 takes the text of the first message, converts it to lowercase, and adds the prefix `partner 2--` to it. It then sends the modified message back to Partner1.

5. The results are displayed by Partner1 on an HTML page. This step is not represented in Figure 6-1.

CHAPTER

7 ebXML Sample

The ebxML sample demonstrates how two trading partners exchange business messages using the ebXML business protocol. The ebXML sample application is provided in the `\samples\ebxml` directory of your WebLogic Integration installation.

This section includes the following topics:

- Overview of the ebXML Sample
- Before Running the ebXML Sample
- Running the ebXML Sample
- How the Sample Works

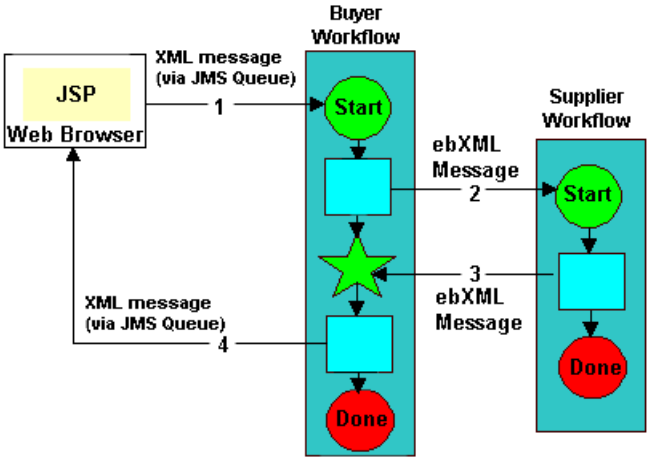
Overview of the ebXML Sample

WebLogic Integration supports the ebXML business protocol for the exchange of business messages in e-business transactions. The ebXML sample demonstrates how two workflows are used to manage an ebXML-based conversation between two trading partners, each of which deploys WebLogic Integration.

The workflows in the sample are named `ebXMLConversationInitiator` and `ebXMLConversationResponder`. They choreograph the exchange of ebXML messages for trading partners, in the roles of initiator and participant, in a query price and availability (QPA) conversation. The sample provides a Java Server Page (JSP) you can use to initiate the QPA process and to display QPA request and response data.

The following figure illustrates the data flow between the trading partners involved in this sample QPA business transaction.

Figure 7-1 Data Flow in the QPA Business Process



The following sequence provides a high-level overview of the communications between the trading partners in this sample:

1. As the buyer, you use the Web form provided to select a product, a unit price for it and the quantity you want. The JSP containing the Web form sends an XML message to a JMS queue and triggers the buyer's (`ebXMLConversationInitiator`) workflow.

2. The buyer's workflow sends a query price and availability (QPA) message, with the product details you selected, to the supplier trading partner. The QPA message is in ebXML format.

   The ebXML message sent by the buyer's workflow (`ebXMLConversationInitiator`) triggers the supplier's workflow (`ebXMLConversationResponder`) for this conversation.

3. The supplier's workflow processes the QPA and sends a response, also in ebXML format, to the buyer trading partner.

4. The buyer's workflow (`ebXMLConversationInitiator`) receives the QPA response ebXML message and writes it to an XML file. A JSP parses the XML and displays the QPA response in the buyer's Web browser.

   This step marks the end of the QPA business process.

Before Running the ebXML Sample

Before running the ebXML sample, complete the following steps:

1. Follow the instructions in "Preparing to Run the Samples" on page 1-2.
2. Make sure the proxy settings on your browser do not prevent you from connecting to the sample WebLogic Server. For more information, see "Web Browser Configuration Requirements" in "WebLogic Integration Administration and Design Tools" in *Starting, Stopping, and Customizing BEA WebLogic Integration*.

Running the ebXML Sample

To run the ebXML sample:

1. Run the `RunSamples` script by completing the procedure appropriate for your platform:
   - Windows:

     Choose Start→Programs→BEA WebLogic E-Business Platform→WebLogic Integration 2.1→Samples→Run Samples.
   - UNIX:

     a) Make sure your `PATH` environment variable includes the directory in which the Netscape (`netscape`) executable file resides.

     Warning: On a UNIX system, if the pathname of the `netscape` executable file is not specified in your `PATH` environment variable, the samples launcher page cannot be displayed.

     b) Go to the WebLogic Integration home directory (the directory in which you installed WebLogic Integration). For example:

     ```
     cd /home/bea/wlintegration2.1
     ```

c) Run the `setenv` script to set the top-level WebLogic Integration environment variables:

```
. setenv
```

d) Run the `RunSamples` script:

```
cd samples/bin
RunSamples
```

2. If the `RunSamples` script detects that its configuration section has already been run, the following prompt is displayed:

```
The WebLogic Integration repository has already been
created and populated, possibly from a previous run
of this RunSamples script. Do you want to destroy all the
current data in the repository and create and populate the
WebLogic Integration repository, again? Y for Yes, N for No
```

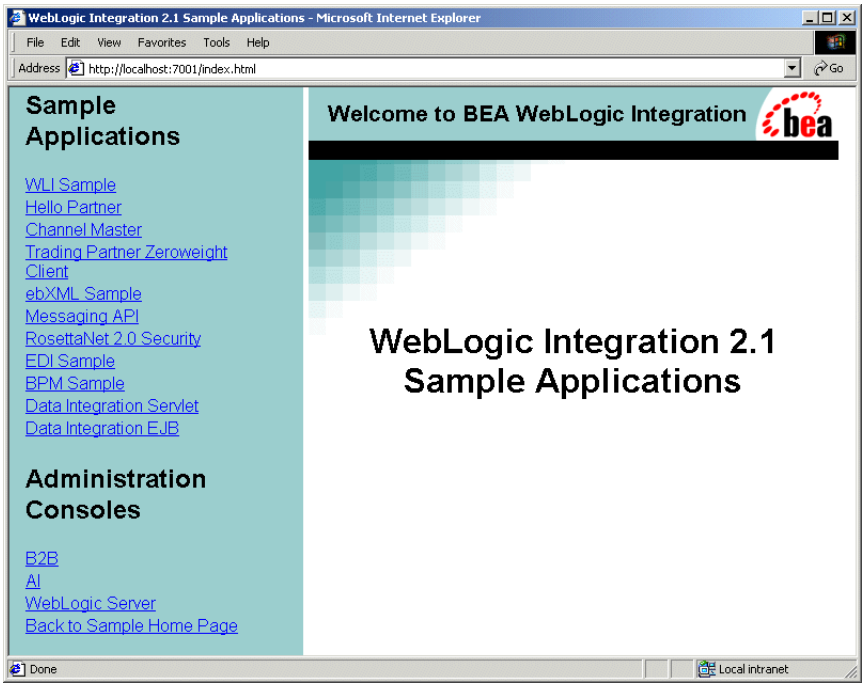
If you answer `N` to this question, the `RunSamples` script skips the steps for creating and populating the repository and runs only the step for booting WebLogic Server in the sample domain.

If you answer `Y` to this question, the `RunSamples` script recreates and repopulates the repository, and then it boots WebLogic Server in the sample domain. When you answer `Y`, the `RunSamples` script destroys all the data currently in the repository and loads an unaltered version of the sample data into the repository. Answer `Y` in the following circumstances:

- If you used the service pack upgrade installer to upgrade your WebLogic Integration installation, and this is the first time you run the ebXML sample. (The ebXML sample is a new sample for this service pack—you must run the `RunSamples` script to populate the repository with the data necessary to run it.)
- When the current sample data has been altered or removed and you want a fresh or unaltered version of the sample data in the repository.

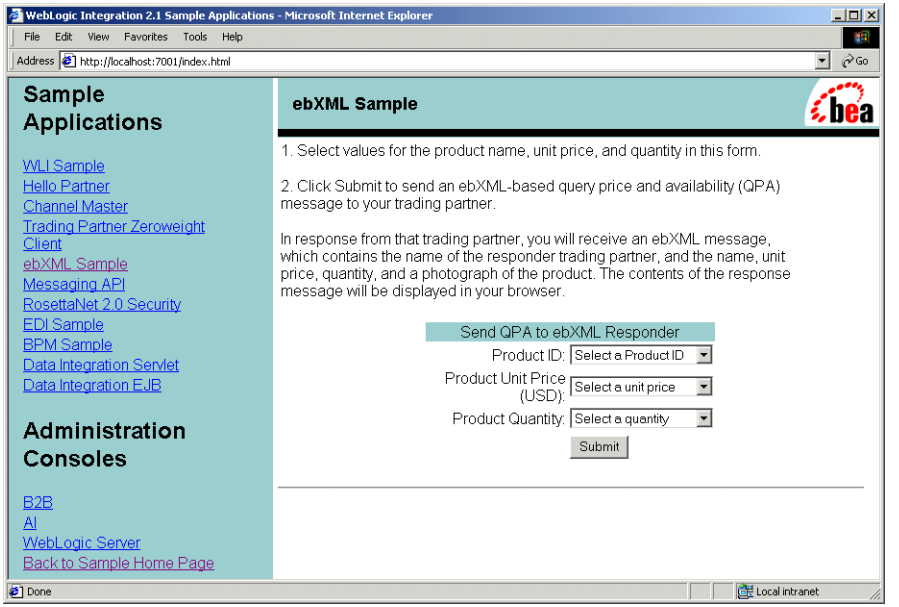
Now the `RunSamples` script starts an instance of WebLogic Server as a background process and the samples launcher page is displayed.

Figure 7-2 Samples Launcher Page



3. Click the ebXML Sample link, listed under Sample Applications in the left pane of the samples launcher page. The ebXML sample is displayed in the right pane.

Figure 7-3 ebXML Sample Launcher Page



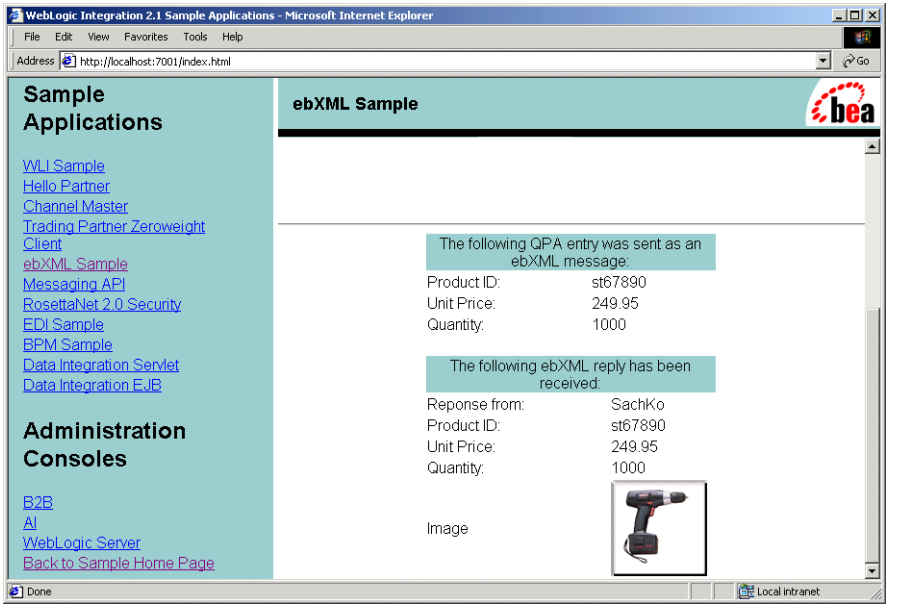
4. Select values in the Product ID, Product Unit Price, and Product Quantity fields on this form, and click Submit.

   An ebXML-based QPA message is sent to the supplier trading partner.

5. The supplier trading partner processes the QPA message and sends a response ebXML message to you (the buyer trading partner).

   The response is displayed in your Web browser.

Figure 7-4 Response Message



6. If you want to run more WebLogic Integration samples at this time, keep the samples launcher page open and keep WebLogic Server running.

   If you do not want to run more samples at this time, exit from your browser and shut down WebLogic Server by completing the procedure appropriate for your platform:

   - Windows:

     Choose Start→Programs→BEA WebLogic E-Business Platform→WebLogic Integration 2.1→Samples→Stop Server.

   - UNIX:

     ```
     cd $WLI_HOME/config/samples/bin
     stopWebLogic
     ```

How the Sample Works

This section includes the following topics:

- Introduction
- Loading the Repository Data
- Understanding the Repository Data
- Understanding the Workflows

Introduction

The configuration data to support this sample application is bulk loaded into the WebLogic Integration repository when you run the `RunSamples` script during the sample setup (see "Running the ebXML Sample" on page 7-3). WebLogic Integration allows you to bulk load configuration data or enter it through the WebLogic Integration B2B Console. You do not need to run the B2B Console when you run the ebXML sample, but you can use it to view the repository data after the data is bulk loaded for the sample.

Two workflows provided in this sample choreograph the exchange of ebXML-based business messages in a QPA conversation. These workflows manage the sender and receiver sides of the ebXML message exchange.

An exhaustive discussion of how to configure your B2B integration environment is beyond the scope of this document. However, this section briefly describes the WebLogic Integration repository data that is used in the sample application. This section also describes the implementation of the workflows on the sender side and receiver side of the sample ebXML business transaction. Key workflow design elements, tasks, and events are highlighted.

Loading the Repository Data

The data required by the sample for integrating the trading partners is bulk loaded into the WebLogic Integration repository when you run the `RunSamples` script during the sample setup (see “Running the ebXML Sample” on page 7-3).

The `RunSamples` script loads the repository with the B2B configuration data contained in the following XML files:

- `SystemRepData.xml`—located in the `\dbscripts` directory in your WebLogic Integration installation directory, for example:

  `D:\bea\wlintegration2.1\dbscripts`

  The `SystemRepData.xml` file contains system data. The elements used by this sample include:

  - Business protocol definitions
  - Logic plug-ins

- `BulkLoaderData.xml`—located in the `\samples\ebxml\lib` directory in your WebLogic Integration installation directory, for example:

  `D:\bea\wlintegration2.1\samples\ebxml\lib`

  This `BulkLoaderData.xml` file contains data specific to the ebXML sample. It describes the following elements:

  - Trading partners
  - Conversation definitions
  - Collaboration agreements

Understanding the Repository Data

This section highlights important information about the following data elements that are bulk loaded to the WebLogic Integration repository for the ebXML sample application:

- Business Protocol Definitions
- Logic Plug-Ins
- Trading Partners
- Conversation Definitions
- Collaboration Agreements

Data from the `SystemRepData.xml` file and `BulkLoaderData.xml` file are imported into the WebLogic Integration repository to support the sample application. When you create ebXML applications, you can bulk load configuration data or enter it through the WebLogic Integration B2B Console. You can also access and configure bulk-loaded data using the B2B Console. For information about configuring the WebLogic Integration data required for e-business transactions, see "Getting Started" in *Implementing ebXML for B2B Integration*.

Business Protocol Definitions

The `SystemRepData.xml` file contains definitions for all the business protocols supported by WebLogic Integration including ebXML.The following excerpt from the `SystemRepData.xml` file shows the ebXML business protocol definition.

Listing 7-1 ebXML Business Protocol Definition

```
<business-protocol-definition
        name="ebXML"
        business-protocol-name="ebXML"
        protocol-version="1.0"
        endpoint-type="PEER">
        <java-class>com.bea.b2b.protocol.ebxml.EBXMLProtocol
        </java-class>
```

```
<decoder>EBXML-Decoder</decoder>
        <encoder>EBXML-Encoder</encoder>
</business-protocol-definition>
```

Logic Plug-Ins

Logic plug-ins are Java classes that intercept and process business messages at run time. Each business protocol is associated with standard router and filter logic plug-ins. The `SystemRepData.xml` file contains logic plug-in data for the XOCP, RosettaNet, cXML, and ebXML business protocols. This sample uses the ebXML logic plug-ins only:

- ebXML Encoder—The encoder forwards the message to the B2B transport service.
- ebXML Decoder—The decoder processes the ebXML headers, identifies the sending trading partner, enlists the sending trading partner in a conversation, prepares a reply to return to the sender, and forwards the message to the B2B scheduling service.

The following excerpt from the `SystemRepData.xml` file shows the ebXML Encoder and Decoder logic plug-ins.

Listing 7-2 ebXML Logic Plug-In Definition

```
<logic-plugin
        name="EBXML-Decoder"
        type="decoder">
        <java-class>com.bea.b2b.protocol.ebxml.EBXMLDecoder
        </java-class>
</logic-plugin>
<logic-plugin
        name="EBXML-Encoder"
        type="encoder">
        <java-class>com.bea.b2b.protocol.ebxml.EBXMLEncoder
        </java-class>
</logic-plugin>
```

Trading Partners

The ebXML sample scenario involves two business partners: a buyer and a supplier. In the WebLogic Integration environment, a trading partner must be configured for each business partner. In this case, two trading partners are configured in the `BulkLoaderData.xml` file: `ebXML-sender` and `ebXML-receiver`. For configuration elements, attributes, and subelements associated with these trading partners, see the following file: *`WLI_HOME`*`\samples\ebxml\lib\BulkLoaderData.xml`.

Conversation Definitions

The `BulkLoaderData.xml` file contains the conversation definition for the ebXML-based Query Price and Availability (QPA) conversation in this sample. The conversation definition is named `ebxmlQPA`. It contains two roles: Initiator and Participant. For the ebXML business protocol, all conversation definitions reference two roles with predefined names: Initiator and Participant.

The following listing is an excerpt from the `BulkloaderData.xml` file. It defines the `ebXMLQPA` conversation.

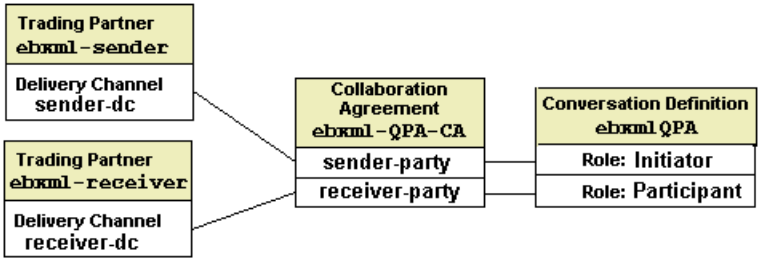
Listing 7-3 Conversation Definition in the BulkLoaderData.xml File

```
<conversation-definition
        name="ebxmlQPA"
        version="1.0"
        business-protocol-name="ebXML"
        protocol-version="1.0">
        <role
                name="Initiator">
        </role>
        <role
                name="Participant">
        </role>
</conversation-definition>
```

Collaboration Agreements

The `BulkLoaderData.xml` file contains the collaboration agreement used by the `ebxml-sender` and `ebxml-receiver` trading partners for this sample. The following figure illustrates the relationships between trading partners, parties to the collaboration agreement, and roles defined for the conversation in this sample application.

Figure 7-5 Collaboration Agreement Between Trading Partners in a QPA Conversation



The following listing is an excerpt from the `BulkloaderData.xml` file. It shows the elements of the `ebxml-QPA-CA` collaboration agreement.

Listing 7-4 Collaboration Agreement in the BulkLoaderData.xml File

```
<collaboration-agreement
        name="ebxml-QPA-CA"
        version="1.0"
        status="ENABLED"
        global-identifier="sachin/172.16.15.113:2423d2:
                                        ea8fe66b8f:-8000"
        conversation-definition-name="ebxmlQPA"
        conversation-definition-version="1.0">
        <party
                trading-partner-name="ebxml-sender"
                party-identifier-name="sender-party"
                delivery-channel-name="sender-dc"
                role-name="Initiator"/>
        <party
                trading-partner-name="ebxml-receiver"
                party-identifier-name="receiver-party"
                delivery-channel-name="receiver-dc"
                role-name="Participant"/>
</collaboration-agreement>
```

Understanding the Workflows

Two workflows manage the exchange of ebXML messages by the two trading partners, in the roles of initiator and participant, in this sample QPA conversation. The workflows, named `ebXMLConversationInitiator` and `ebXMLConversationResponder`, are loaded to the WebLogic Integration repository when you run the RunSamples script during the sample setup (see "Running the ebXML Sample" on page 7-3).

This section contains the following topics:

- Using the WebLogic Integration Studio
- Understanding the ebXMLConversationInitiator Workflow
- Understanding the ebXMLConversationResponder Workflow

Using the WebLogic Integration Studio

The WebLogic Integration Studio allows you to design new workflows and monitor running workflows using a familiar flowchart paradigm. You are not required to run the Studio when you run the ebXML sample, but you may find it useful for viewing the details of any workflow or workflow node, and for learning how nodes are defined and configured for this sample.

Launch the Studio by completing the procedure appropriate for your platform:

- To launch the Studio on a Windows system, do one of the following:
  - Use menus, as follows:

    a. Choose Start→Programs→BEA WebLogic E-Business Platform→WebLogic Integration 2.1→Studio.

    b. Log on to the Studio (user: `wlpisystem`; password: `wlpisystem`).
  - Invoke the `Studio` script from the command line, as follows:

    a. Open a command window.

    b. Go to the WebLogic Integration home directory (the directory in which you installed WebLogic Integration) and run the `setenv` script to set the top-level WebLogic Integration environment variables.

For example:

```
cd \bea\wlintegration2.1
setEnv.cmd
```

c. Go to the `bin` directory in the directory where you installed WebLogic Integration. For example, if WebLogic Integration is installed in the default location, enter the following:

```
cd \bea\wlintegration2.1\bin
```

d. Execute the `studio` command by entering:

```
studio
```

e. Log on to the Studio (user: `wlpisystem`; password: `wlpisystem`).

- To launch the Studio on a UNIX system, complete the following tasks:

  a. Go to the `bin` directory in the directory where you installed WebLogic Integration. For example, if WebLogic Integration is installed in the default location, enter the following:

  ```
  cd BEA_Home/wlintegration2.1/bin
  ```

  b. Start the Studio application by entering:

  ```
  . ./studio
  ```

  c. Log on to the Studio (user: `wlpisystem`; password: `wlpisystem`).

After you launch the Studio, you can view a workflow template and its properties by completing the following procedure:

1. In the left pane of the Studio, make sure ORG1 is selected in the Organization field.
2. In the left pane, double-click the Templates folder to display a list of workflow templates.
3. Expand the Templates folder to display the list of workflow template definitions. The template definitions of interest for this sample application are `ebXMLConversationInitiator` and `ebXMLConversationResponder`. They are imported, via the `workflow.jar` file, when you configure the sample, as described in "Running the ebXML Sample" on page 7-3.

4. Right-click a template definition, and select Open to open the workflow template in the Studio.

   Note: You can also expand a particular workflow template definition to display folders containing the Tasks, Decisions, Events, Joins, Starts, Dones, and Variables for that workflow template definition.

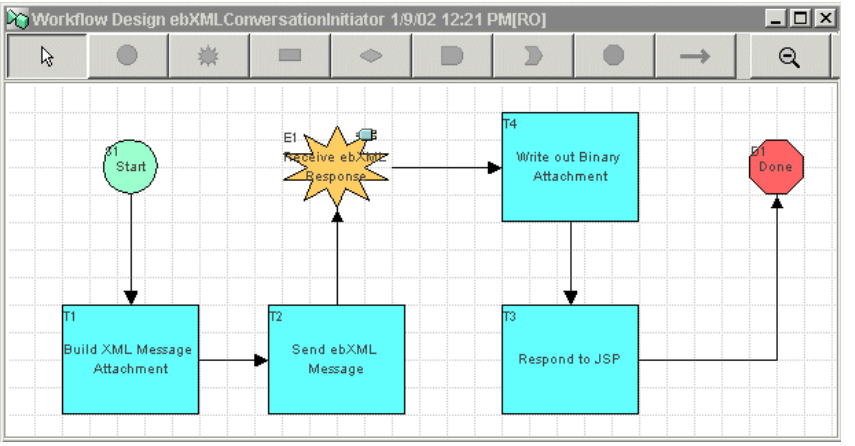
5. Double-click any node in the Studio to display the Properties dialog box for that node.

See *Using the WebLogic Integration Studio* for complete details about the Studio tools and functionality.

Understanding the ebXMLConversationInitiator Workflow

This section describes the workflow that manages the buyer side of the QPA conversation in the ebXML sample scenario. The following figure shows the `ebXMLConversationInitiator` workflow template in the Studio.

Figure 7-6 ebXMLConversationInitiator Workflow Template



The following sections define the key tasks and events at the nodes in the `ebXMLConversationInitiator` workflow template, shown in the preceding figure.

- Start
- Build XML Message Attachment
- Send ebXML Message
- Receive ebXML Response
- Write Out Binary Attachment
- Respond to JSP
- Done

Start

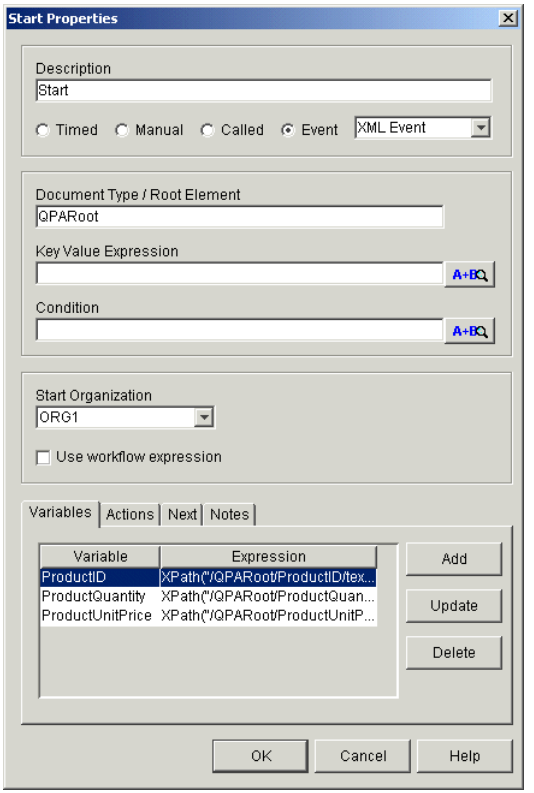
A QPA request is created as XML, based on your input to the HTML Web form (see Figure 7-3) when you run the sample. The XML is sent, via a JSP (`ebXML_Sample.jsp`), to a JMS queue.

The `ebXML_Sample.jsp` file can be found in the following directory in your WebLogic Integration installation:

`\config\samples\applications\DefaultWebApp_myserver`

The Start node is designed to start this `ebXMLConversationInitiator` workflow when an XML event is received from the JMS queue. The Start Properties dialog box for the Start node is displayed in the following figure.

Figure 7-7 Start Properties Dialog Box



Note the following property settings displayed in the preceding figure:

- Event→XML Event is selected as the start method. By designing this start node with the Event→XML Event option, you make sure that the workflow starts when an XML document arrives on a JMS queue.

  Note: Contrast this start method to that defined for Start Node in the `ebXMLConversationResponder` workflow (see "Start" on page 7-25).

- In the Document Type/Root Element field, `QPARoot` is the root element in the XML message that triggers this workflow.

- The Variables tab contains variables initialized from the incoming event data.

  The Start node extracts the message using XPath expressions, and stores the data in workflow variables: `ProductID`, `ProductQuantity`, and `ProductUnitPrice`.

Build XML Message Attachment

The `outXMLAttach` workflow variable is set at this task node. It holds the QPA Request XML message (`ebXMLQPARequest`) that will be sent to the supplier's workflow (`ebXMLConversationResponder`) as part of the ebXML message payload. (For details, see the next node in this workflow.)

Send ebXML Message

An action defined at this task node sends the first ebXML message in the QPA conversation. Because the `ebXMLConversationInitiator` workflow is designed for an ebXML-based conversation, this task node uses the Send ebXML Message action (provided by the ebXML plug-in to BPM).

You can define a Send ebXML Message action in the Studio as follows:

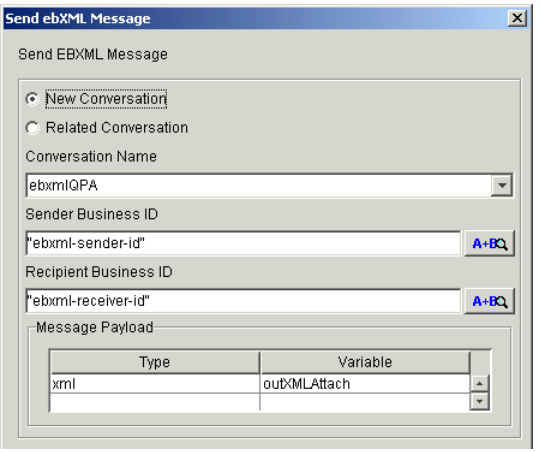
1. Double-click the task node to invoke the Task Properties dialog box.
2. Choose Actions→Add→ebXML Actions→Send ebXML Message.

   The Send ebXML Message dialog box is displayed.

To view the Send ebXML Message properties specified for this sample node:

1. Double-click the task node to invoke the Task Properties dialog box.
2. Choose Actions→Activated.
3. Double-click Send ebXML Message to display the Send ebXML Message dialog box shown in the following figure.

Figure 7-8 Send ebXML Message Dialog Box



Note the following Send ebXML Message properties in the preceding figure:

- New or Related Conversation—You must select either New Conversation or Related Conversation. In this case, New Conversation is selected because this action is designed to send an ebXML message to start a new conversation. For information about using the Related Conversation option, see "Send ebXML Response" on page 7-27.
- Conversation Name—After you select the New Conversation option, you must select the conversation in which the message is sent. In this case, the `ebxmlQPA` conversation is selected. The `ebxmlQPA` conversation definition is loaded in your WebLogic Integration repository when you configure this sample (see "Conversation Definitions" on page 7-12).
- Sender Business ID—After you select the New Conversation option, you must specify a business ID for the sender of the message. In this case, the value is static (`ebxml-sender-id`), but it can also be a dynamically evaluated value via the expression builder.

  Note: Quotes are required around the static value in this field.
- Recipient Business ID—After you select the New Conversation option, you must specify a business ID for the recipient of the message. In this case, the value is static (`ebxml-receiver-id`), but it can also be a dynamically evaluated value via the expression builder.

  Note: Quotes are required around the static value in this field.

- Message Payload—Specify a type (XML or binary) and an associated variable for each message attachment. You may provide entries for zero or more payloads. In this case, there is one attachment, the type is XML, and the variable is the `outXMLAttach` variable set at the previous node (Build XML Message Attachment).

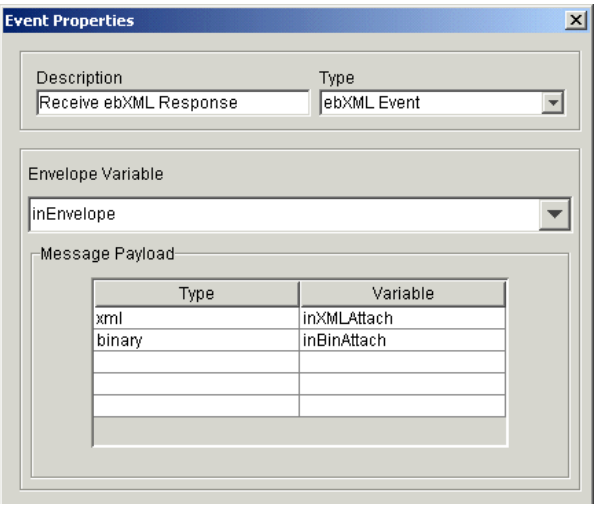
The message is sent asynchronously at this node. That is, in the Actions→Activated tab in the Task Properties dialog box, the following actions are specified in the order shown:

1. `Send ebXML Message`
2. `Mark task` "`Send ebXML Message`" `done`

Receive ebXML Response

The workflow waits, at this event node, for a specific ebXML event from the `ebXMLConversationResponder` workflow. Note that ebXML Event is selected in the Event Properties dialog box, displayed in the following figure.

Figure 7-9 Event Properties Dialog Box



When the ebXML event is received, the message envelope is stored in an envelope variable (`inEnvelope`, in this case), and the payload is stored in XML or binary variables, as appropriate. In this case, there are two attachments in the payload: one XML and one binary. They are assigned to the `inXMLAttach` and `inBinAttach` variables, respectively.

Write Out Binary Attachment

This task node first defines a Set Workflow Variable action that extracts the name of the image file from the incoming QPA Response XML document (`ebXMLQPAResponse`), and assigns that name to the `imageFileName` workflow variable. The Set Workflow Variable action performs these tasks by using the following XPath expression:

```
XPath("/ebXMLQPAResponse/ImageFileName/text()", $inXMLAttach))
```

Subsequently, an action that uses a business operation (`ebXMLSavePictureToWebApp`) is defined at this node. This action saves the binary attachment from the incoming ebXML message to the following location in your WebLogic Integration installation:

```
\config\samples\applications\DefaultWebApp_myserver\
```

The local file is consumed by a JSP. (See the description of the Respond to JSP node later in this section.)

To see the business operations defined for this sample, choose Configuration→Business Operations from the Studio task menu. The Business Operations dialog box containing a list of business operations is displayed. Double-click any business operation to see more information about it. You can find the Java class for the `ebXMLSavePictureToWebApp` business operation in the following location in your WebLogic Integration installation:

```
\samples\ebxml\src\ebxmlsamples\util\EBXMLBizOp.java
```

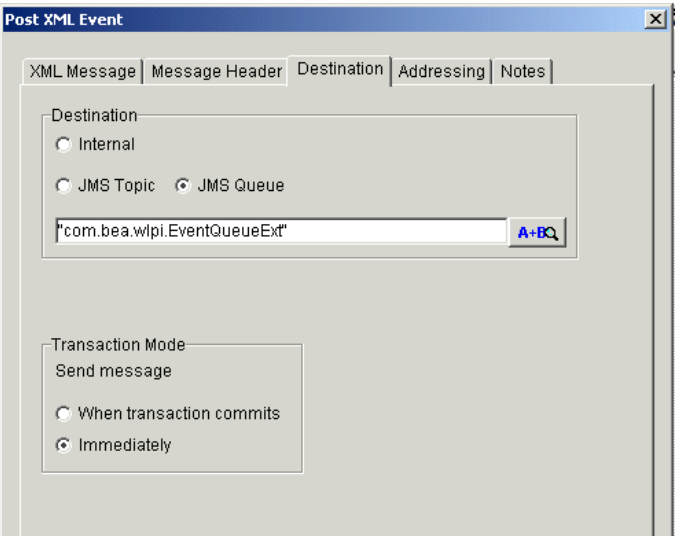
Respond to JSP

This task node defines a Post XML Event action. (You can define such an action for a node by double-clicking the node to display the Task Properties dialog box, then choosing Add→Integration Actions→Post XML Event.)

This action posts the XML from the response message (the `inXMLAttach` variable defined at the previous node) as an internal XML event. The JMS queue to which the XML event is posted is defined in the Destination tab, which is shown in the Post XML Event dialog box.

The Post XML Event dialog box for this node is displayed in the following figure.

Figure 7-10 Post XML Event Dialog Box: Destination Tab



In the preceding figure, note that JMS Queue is selected in the Destination field. This means that the message is posted to an internal queue that has been configured in WebLogic Server. You can enter a static JNDI name for the queue enclosed by quotation marks, or you can enter an expression that will determine the queue name at run time. In this case, the JNDI name of the internal JMS queue is `com.bea.wlpi.EventQueueExt`.

The XML message from the JMS queue is consumed by the `ebXML_Sample.jsp` file, which displays the contents of the QPA response message in your browser when you run the sample, as shown in Figure 7-4.

The `ebXML_Sample.jsp` file can be found in the following directory in your WebLogic Integration installation:

`\config\samples\applications\DefaultWebApp_myserver`

Done

Marks the end of the workflow. An ebXML-based conversation ends when the exchange of ebXML messages is complete for both trading partners.

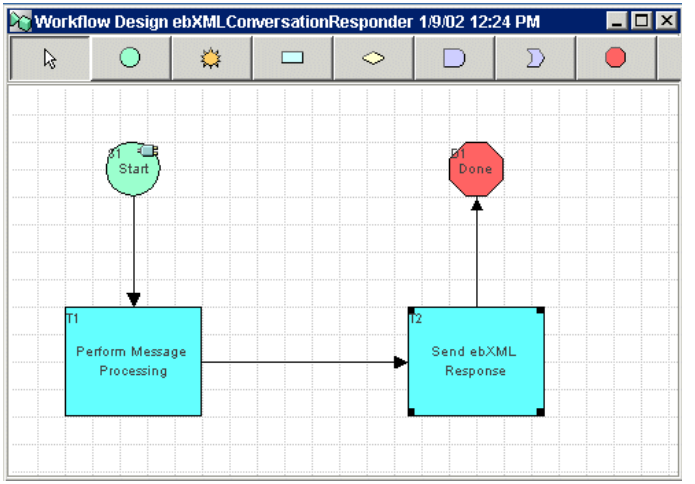
Contrast this behavior to that of the XOCP business protocol. WebLogic Integration supports an XOCP conversation management service, meaning that the workflow responsible for initiating the conversation also ends the conversation and sends an end-of-conversation message to each workflow in the conversation. (See "Ending Collaborative Workflows" in *Creating Workflows for B2B Integration.*)

In the case of an XOCP conversation, to define a conversation termination property, you select the Custom option on the Done node in the workflow that initiated the conversation. You do not end ebXML-based conversations in this way, however. Note, for example, that the Custom option for this Done node is not selected.

Understanding the ebXMLConversationResponder Workflow

This section describes the workflow that manages the supplier side of the QPA conversation in this ebXML sample scenario. The following figure shows the `ebXMLConversationResponder` workflow template in the Studio.

Figure 7-11 ebXMLConversationResponder Workflow Template



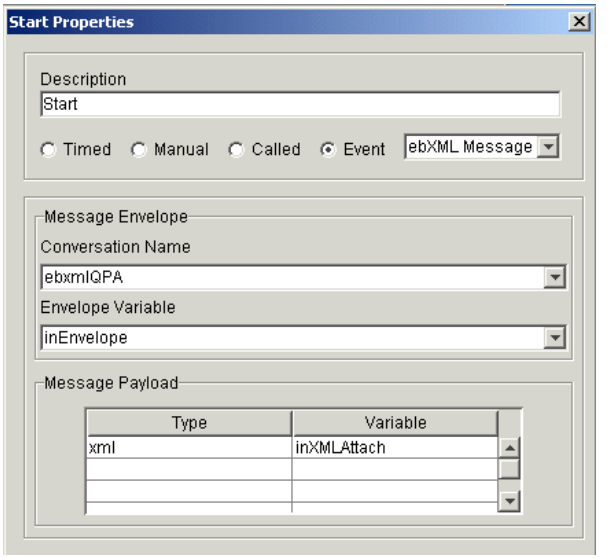
The following sections define the key tasks and events at the nodes in the `ebXMLConversationResponder` workflow template, shown in the preceding figure.

- Start
- Perform Message Processing
- Send ebXML Response
- Done

Start

This `ebXMLConversationResponder` workflow is designed for a trading partner in the participant role in an ebXML-based conversation. This workflow is started when it receives an ebXML message from a trading partner. The Studio provides an ebXML-specific option in the Start node to support the design of a workflow for the participant role in an ebXML-based conversation. The following figure shows the Start Properties dialog box.

Figure 7-12 Start Properties Dialog Box



Note the following property settings displayed in the preceding figure:

- The ebXML business protocol-specific start method is selected: the Event option is selected and ebXML Message is specified as the Event. Note that by designing this start node with the ebXML Message option specified, the workflow starts upon receipt of an ebXML message from a trading partner.

  Note: Contrast this start method to that defined for Start Node in the `ebXMLConversationInitiator` workflow (see "Start" on page 7-17).

- The `ebxmlQPA` conversation is specified in the Conversation Name field. The workflow starts upon receipt of an ebXML message in this conversation.

- The `inEnvelope` variable is specified in the Envelope Variable field. When the ebXML message is received, the message envelope is stored in this workflow variable.

- Specify a type (XML or binary) and an associated variable for each message attachment. You may provide entries for zero or more payloads. In this case, there is one attachment, the type is XML, and the associated variable is `inXMLAttach`.

Perform Message Processing

This task node processes the incoming ebXML message. Actions are defined to set workflow variables, and to perform business operations.

XPath expressions extract the product ID, quantity, and unit price from the incoming QPA ebXML message, and assign the data to the following workflow variables: `ProductID`, `ProductQuantity`, and `ProductUnitPrice`.

The following business operations are performed at this node:

1. `ebXMLGetQPAReply`—Creates the XML QPA response document, using the values extracted at this node for product ID, quantity, and unit price. The response document is assigned to the XML variable `outXMLAttach`.

2. `ebXMLGetPictureForProductID`—Takes, as input, the product ID, and returns the filename of an image file containing a picture of the specified product.

3. `file to binary`—Reads the binary data in the image file data in the file location returned by the `ebXMLGetPictureForProductID` business operation. The resulting binary data is assigned to the `outBinAttach` variable.

To see the business operations defined for this sample, choose Configuration→Business Operations from the Studio task menu. The Business Operations dialog box is displayed. It shows a list of business operations. Double-click any business operation to see more information about it.

You can find the Java classes for the `ebXMLGetQPAReply` and `ebXMLGetPictureForProductID` business operations in the following location in your WebLogic Integration installation:

```
\samples\ebxml\src\ebxmlsamples\util\EBXMLBizOp.java
```

You can find the Java class for the `file to binary` business operation in the following location in your WebLogic Integration installation:

```
\samples\wlis\src\examples\wlis\common\Utils.java
```

Send ebXML Response

At this task node an action is defined for sending an ebXML message in response to the ebXML message received by this trading partner in the QPA conversation. Because the `ebXMLConversationResponder` workflow is defined for an ebXML-based conversation, this task node uses the Send ebXML Message action (provided by the ebXML plug-in to BPM).

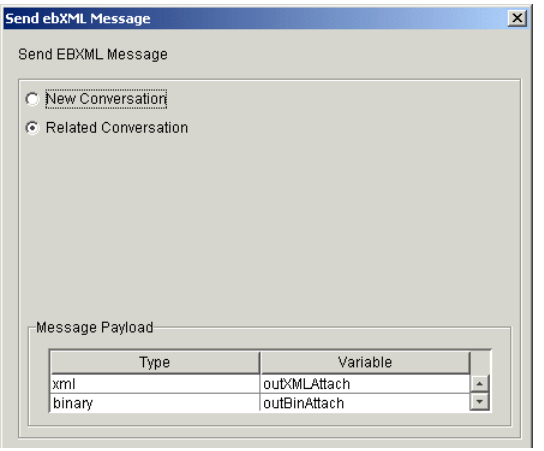
You can define a Send ebXML Message action in the Studio as follows:

1. Double-click the task node to invoke the Task Properties dialog box.
2. Choose Actions→Add→ebXML Actions→Send ebXML Message to display the Send ebXML Message dialog box.

To view the Send ebXML Message properties specified for this sample node:

1. Double-click the task node to invoke the Task Properties dialog box.
2. Choose Actions→Activated.
3. Double-click Send ebXML Message to display the Send ebXML Message dialog box shown in the following figure.

Figure 7-13 Send ebXML Message Dialog Box



Note the following properties for this ebXML sample task node in the preceding figure:

- New or Related Conversation—You must select either New Conversation or Related Conversation. In this case, Related Conversation is selected because this action is designed to send an ebXML message in response to a message received from a trading partner.

  When Related Conversation is selected, you do not need to specify the conversation name, sender business ID, or recipient business ID because the system obtains these attributes from the previous message exchange. For information about using the New Conversation option, see "Send ebXML Message" on page 7-19.

- Message Payload—Specify a type (XML or binary) and an associated variable for each message attachment. You may provide entries for zero or more payloads. In this case, there are two attachments. The first attachment is an XML file, and the associated variable is `outXMLAttach`; the second attachment is a binary file, and the associated variable is `outBinAttach`. Data was assigned to both variables at the previous node (Perform Message Processing).

Done

Marks the end of the workflow. For information about Done nodes in workflows that exchange ebXML messages, see the description of the Done node for the `ebXMLConversationInitiator` workflow in "Done" on page 7-24.

A JSP Tag Reference

A Java Server Pages (JSP) tag library is provided for trading partner zeroweight clients. It uses a wrapper to address the WebLogic Integration Messaging API. Error handling uses standard Java exception and error handling via WebLogic Integration Messaging API classes and JSP pages delivered to the zeroweight client.

This section provides reference information for the following JSP tags:

- `SendmsgTag`
- `ChecknewmsgTag`
- `CheckallmsgTag`
- `ReadmsgTag`
- `DeletemsgTag`
- `DeleteallmsgTag`
- `CreateboxTag`
- `RemoveboxTag`

SendmsgTag

Passes a business message to a mailbox for outgoing mail; provides message persistence for reliability.

Syntax

```
SendMsgTag (String mboxName, String sender, String message, String
URL, String security)
```

Returns

Returns `Message has been sent successfully` if the message was successfully sent to the JSP page in which `SendMsgTag` is embedded.

Variables

Variable	Description
`String mboxName`	Name of the mailbox. To run the sample, use one of the following names for the appropriate mailbox: ■ For incoming mail: *`trading_partner_name`*`_Inbox` ■ For outgoing mail: *`trading_partner_name`*`_Outbox`
`String message`	Message content.
`String sender`	Mailbox address for the sender. This may be an e-mail address or an FTP server address.
`String URL`	URL for the hosting trading partner.
`String security`	Value may be `ON` or `OFF`.

Example

```
sendmsg mboxname="<%=outboxName_browserTP1%>"
sender="<%=SENDER%>" message="<%=domAsStr%>" url="<%=url%>"
security="ON"/>
```

ChecknewmsgTag

Checks for new messages in the mailboxes for incoming and outgoing mail. Does not check for stored messages (see `CheckallmsgTag`).

Syntax `ChecknewmsgTag (String mboxName)`

Returns If the mailbox is empty, returns `No new message found in mailbox`. If the mailbox contains one or more new messages, the messages are displayed in HTML format.

Variables

Variable	Description
`mboxName`	Name of the mailbox. To run the sample, use one of the following names for the appropriate mailbox: ■ For incoming mail: *`trading_partner_name`*`_Inbox` ■ For outgoing mail: *`trading_partner_name`*`_Outbox`

CheckallmsgTag

Checks all messages in the mailbox, including stored messages.

Syntax `CheckallmsgTag (String mboxName)`

Returns If there are messages in the mailbox, they are displayed in HTML format. If the mailbox is empty, returns `No message found in mailbox`.

Variables

Variable	Description
`mboxName`	Name of the mailbox. To run the sample, use one of the following names for the appropriate mailbox: ■ For incoming mail: *`trading_partner_name`*`_Inbox` ■ For outgoing mail: *`trading_partner_name`*`_Outbox`

ReadmsgTag

Gets details about a specific message from the mailbox.

Syntax `ReadmsgTag (String mboxName, String msgId)`

Returns Message details are displayed in HTML format.

Variables

Variable	Description
`mboxName`	Name of the mailbox. To run the sample, use one of the following names for the appropriate mailbox: ■ For incoming mail: *`trading_partner_name`*`_Inbox` ■ For outgoing mail: *`trading_partner_name`*`_Outbox`
`msgID`	Unique message identifier.

DeletemsgTag

Deletes a specified message from the mailbox.

Syntax `DeletemsgTag (String mboxName, String msgID)`

Returns Returns `Message with messageID msgID deleted successfully`.

Variables

Variable	Description
`mboxName`	Name of the mailbox. To run the sample, use one of the following names for the appropriate mailbox: ■ For incoming mail: *`trading_partner_name`*`_Inbox` ■ For outgoing mail: *`trading_partner_name`*`_Outbox`
`msgID`	Unique message identifier.

DeleteallmsgTag

Deletes all messages from the mailbox.

Syntax `DeleteallmsgTag (String mboxName)`

Returns Returns `All messages were deleted successfully` when successful.

Variables

Variable	Description
`mboxName`	Name of the mailbox. To run the sample, use one of the following names for the appropriate mailbox: ■ For incoming mail: *`trading_partner_name`*`_Inbox` ■ For outgoing mail: *`trading_partner_name`*`_Outbox`

CreateMboxTag

Creates a mailbox.

Syntax `CreateMboxTag (String mboxName)`

Returns Returns no message.

Variable

Variable	Description
`mboxName`	Name of the mailbox. To run the sample, use one of the following names for the appropriate mailbox: ■ For incoming mail: *`trading_partner_name`*`_Inbox` ■ For outgoing mail: *`trading_partner_name`*`_Outbox`

RemovemboxTag

Removes a specific mailbox.

Syntax `RemovemboxTag (String mboxName)`

Returns Returns `Mailbox removed successfully`.

Variables

Variable	Description
`mboxName`	Name of the mailbox. To run the sample, use one of the following names for the appropriate mailbox: ■ For incoming mail: *`trading_partner_name`*`_Inbox` ■ For outgoing mail: *`trading_partner_name`*`_Outbox`