Oracle® Fusion Middleware

Application Adapter for PeopleSoft User's Guide for Oracle WebLogic Server

11*g* Release 1 (11.1.1.4.0)

E17055-04

April 2011

ORACLE

Oracle Fusion Middleware Application Adapter for PeopleSoft User's Guide for Oracle WebLogic Server, 11*g* Release 1 (11.1.1.4.0)

E17055-04

Primary Author: Stefan Kostial

Contributing Authors: Sunil Gopal, Marian Jones, Vikas Anand, Sunil Wadhwa, Vishal Saxena, Vimmika Dinesh

Contents

6 Integration With BPM Service Components in the Oracle SOA Suite

7 Configuring Outbound and Inbound Processing Using Oracle Service Bus

8 New Features

D Using PeopleSoft Integration Broker

Glossary

Index

Preface

Oracle Fusion Middleware Application Adapter for PeopleSoft User's Guide for Oracle WebLogic Server describes how to provide connectivity and integrate with PeopleSoft systems.

Audience

Oracle Fusion Middleware Application Adapter for PeopleSoft User's Guide for Oracle WebLogic Server is intended for those who integrate with PeopleSoft systems and develop applications.

Documentation Accessibility

Our goal is to make Oracle products, services, and supporting documentation accessible to all users, including users that are disabled. To that end, our documentation includes features that make information available to users of assistive technology. This documentation is available in HTML format, and contains markup to facilitate access by the disabled community. Accessibility standards will continue to evolve over time, and Oracle is actively engaged with other market-leading technology vendors to address technical obstacles so that our documentation can be accessible to all of our customers. For more information, visit the Oracle Accessibility Program Web site at `http://www.oracle.com/accessibility/`.

Accessibility of Code Examples in Documentation

Screen readers may not always correctly read the code examples in this document. The conventions for writing code require that closing braces should appear on an otherwise empty line; however, some screen readers may not always read a line of text that consists solely of a bracket or brace.

Accessibility of Links to External Web Sites in Documentation

This documentation may contain links to Web sites of other companies or organizations that Oracle does not own or control. Oracle neither evaluates nor makes any representations regarding the accessibility of these Web sites.

Access to Oracle Support

Oracle customers have access to electronic support through My Oracle Support. For information, visit `http://www.oracle.com/support/contact.html` or visit `http://www.oracle.com/accessibility/support.html` if you are hearing impaired.

Related Documents

For more information, see the following documents in the Oracle Enterprise Repository 11*g* Release 1 (11.1.1.4.0) documentation set:

- *Oracle Fusion Middleware Application Adapters Installation Guide for Oracle WebLogic Server*
- *Oracle Fusion Middleware Application Adapter Upgrade Guide for Oracle WebLogic Server*
- *Oracle Fusion Middleware Application Adapter Best Practices Guide for Oracle WebLogic Server*
- Oracle's Unified Method (OUM)

  A wealth of additional Governance information can be found within Oracle's Unified Method (OUM). OUM can be used by Oracle employees, Oracle Partner Network Certified Partners or Certified Advantage Partners, and Clients who either participate in the OUM Customer Program or are engaged on projects where Oracle provides consulting services. OUM is a web-deployed toolkit for planning, executing and controlling software development and implementation projects.

  For more information about OUM, see the OUM FAQ at

  http://my.oracle.com/portal/page/myo/ROOTCORNER/KNOWLEDGEAREAS1/BUSINESS_PRACTICE/Methods/Learn_about_OUM.html

Conventions

The following text conventions are used in this document:

Convention	Meaning
boldface	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
italic	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
`monospace`	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

1 Introduction

Oracle WebLogic Server connects to a PeopleSoft system through Oracle Application Adapter for PeopleSoft, which provides connectivity and carries out interactions on a PeopleSoft system. This chapter contains the following topics:

1.1 Adapter Features

Oracle Application Adapter for PeopleSoft provides a means to exchange real-time business data between PeopleSoft systems and other applications, databases, and external business partner systems. The adapter enables inbound and outbound processing with PeopleSoft. Oracle Application Adapter for PeopleSoft can be deployed as a J2EE Connector Architecture (J2CA) version 1.0 resource adapter. This deployment is referred to as Oracle Adapter J2CA. It can also be deployed as a Web services servlet and is referred to as Oracle Adapter Business Services Engine (BSE).

Oracle Application Adapter for PeopleSoft uses XML messages to enable non-PeopleSoft applications to communicate and exchange transactions with PeopleSoft using services and events. The roles of services and events are outlined as follows:

- Services: Enable applications to initiate a PeopleSoft business event.
- Events: Enable applications to access PeopleSoft data only when a PeopleSoft business event occurs.

To support event functionality, channels are supported. A **channel** represents configured connections to particular instances of back-end or other types of systems.

The channel is the adapter component that receives events in real time from the enterprise information system (EIS) application. The channel component can be a File reader, an HTTP listener, a TCP/IP listener, or an FTP listener. A channel is always EIS specific. The adapter supports multiple channels for a particular EIS, which enables the user to choose the optimal channel component based on deployment requirements.

Oracle Application Adapter for PeopleSoft provides:

- Synchronous and asynchronous, bidirectional message interactions for PeopleSoft component interfaces and PeopleSoft Application Messaging / Integration Broker.

- Oracle WebLogic Server Adapter Application Explorer (Application Explorer), a GUI tool that explores PeopleSoft metadata and builds XML schemas or Web services.
- XML schemas and WSDL files for the J2CA 1.0 and J2CA 1.5 resource adapter.
- Web services for BSE.

The adapter connects to the PeopleSoft Application Server by accessing APIs for the component interfaces that correspond to its supported business objects. Every component interface contains data and business logic for the business component, thus alleviating a requirement for the adapter to duplicate the processes defined within the business component.

See Also: *Oracle Application Server Adapter Concepts Guide*

1.2 PeopleSoft Concepts

PeopleSoft enables integration with other applications and systems through its component interface framework and its Integration Broker (in release 8.4) or Application Messaging (in release 8.1) facility. Oracle Application Adapter for PeopleSoft uses the PeopleSoft framework and leverages various integration access methods to provide the greatest amount of flexibility and functionality. Integration access methods supported by Oracle Application Adapter for PeopleSoft include:

- PeopleSoft Java API using component interfaces
- PeopleSoft messages using PeopleSoft Application Messaging / Integration Broker

This section contains the following topics:

- Section 1.2.1, "PeopleSoft Component Interface"
- Section 1.2.2, "PeopleSoft Application Messaging / Integration Broker"

1.2.1 PeopleSoft Component Interface

In the PeopleSoft environment, a component interface is a container for distributing PeopleSoft application data among PeopleSoft logical systems and for exchanging PeopleSoft application data with non-PeopleSoft systems.

The component interface is based on an existing business process within PeopleSoft. An example is a purchase order entry, which can be a PeopleSoft-delivered process or a user-developed process. The component interface also inherits its methods (Add, Update, and so on) and its business logic from the underlying business process.

PeopleSoft delivers generic component interfaces with each of its applications. These are called Enterprise Integration Points (EIP). Customers can also develop their own custom component interfaces, or they can modify EIP as required. Oracle Application Adapter for PeopleSoft supports both types of component interfaces.

1.2.2 PeopleSoft Application Messaging / Integration Broker

PeopleSoft Application Messaging / Integration Broker facilitates the integration of PeopleSoft XML with PeopleSoft. Oracle Application Adapter for PeopleSoft provides a handler that must be configured within the PeopleSoft application gateway using TCP/IP transport services.

1.3 Integration with PeopleSoft

Oracle Application Adapter for PeopleSoft enables you to:

- Access a PeopleSoft component using a component interface. Component methods are referred to as services.
- Receive messages from a PeopleSoft application. Messages are referred to as events.

When you access a PeopleSoft component from another application, you work with:

- Component interfaces. If a component interface does not exist, then create, secure, and test one. If the component interface exists but you modified it, then secure and test it. For more information, see your PeopleSoft documentation. Alternatively, you can secure and test the component interface and create the component interface API after you generate schemas or Web services.
- Component interface APIs. Create an API for the component interface.
- Schemas and Web services. Create schemas or Web services for the component methods.

For more information, see Chapter 2, "Configuring Oracle Application Adapter for PeopleSoft".

To receive a message from PeopleSoft, you work with:

- The Integration environment. Configure and test your PeopleSoft Integration Broker (release 8.4) or Application Messaging environment (release 8.1). To ensure that the environment is properly configured, see your PeopleSoft documentation.
- Message routing. Configure TCP/IP Target Connector (release 8.4), HTTP Target Connector (release 8.4), or TCP/IP Handler (release 8.1).

See Also:

- *Oracle Application Server Adapter Concepts Guide*
- *Oracle Fusion Middleware Application Adapters Installation Guide for Oracle WebLogic Server*

1.4 Adapter Architecture

Oracle Application Adapter for PeopleSoft uses Application Explorer with one of the following components:

- Oracle WebLogic Server Adapter Business Services Engine (BSE)
- Enterprise Connector for J2EE Connector Architecture (J2CA)

Application Explorer (used to configure PeopleSoft connections and create Web services and events) can be configured to work in a Web services environment with BSE. When working in a J2CA environment, the connector uses the Common Client Interface (CCI) to provide integration services using adapters instead of Web services.

This section contains the following topics:

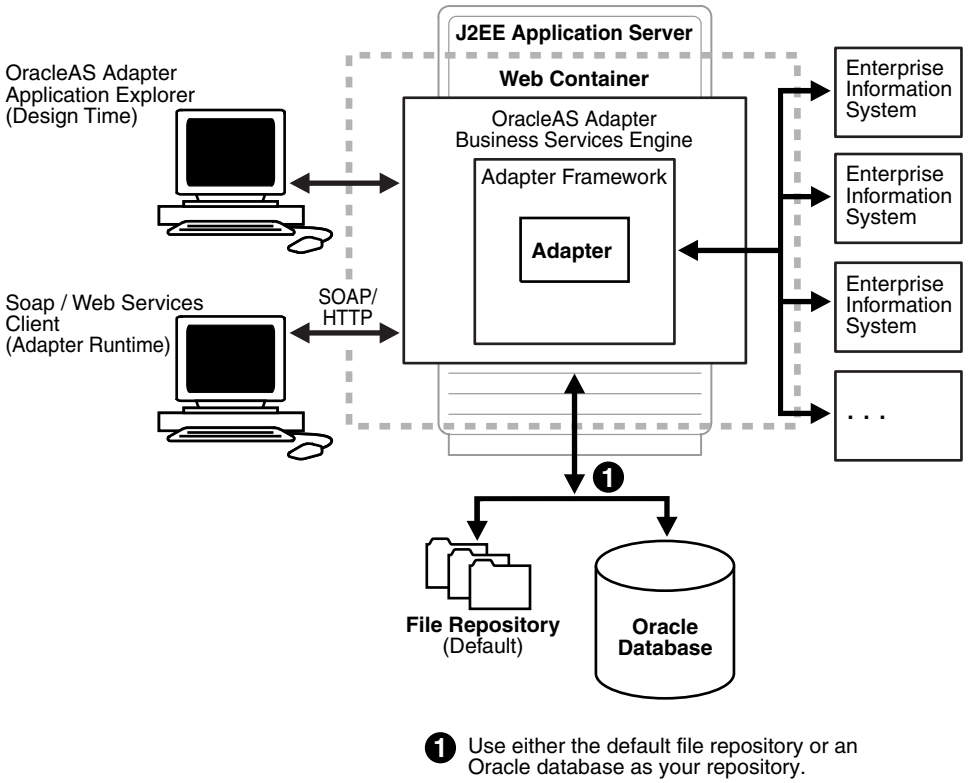
1.4.1 Oracle WebLogic Server Adapter Business Services Engine (BSE) Architecture

Figure 1–1 shows the generic architecture for the Oracle Web service adapter for packaged applications. The adapter works with BSE, as deployed to a Web container in a J2EE application server.

Application Explorer, a design-time tool deployed along with BSE, is used to configure adapter connections, browse EIS objects, configure services, and configure listeners to listen for EIS events. Metadata created while you perform these operations are stored in the repository by BSE.

BSE uses SOAP as a protocol for receiving requests from clients, interacting with the EIS, and sending responses from the EIS back to clients.

Figure 1–1 Oracle WebLogic Server Adapter Business Services Engine (BSE) Generic Architecture



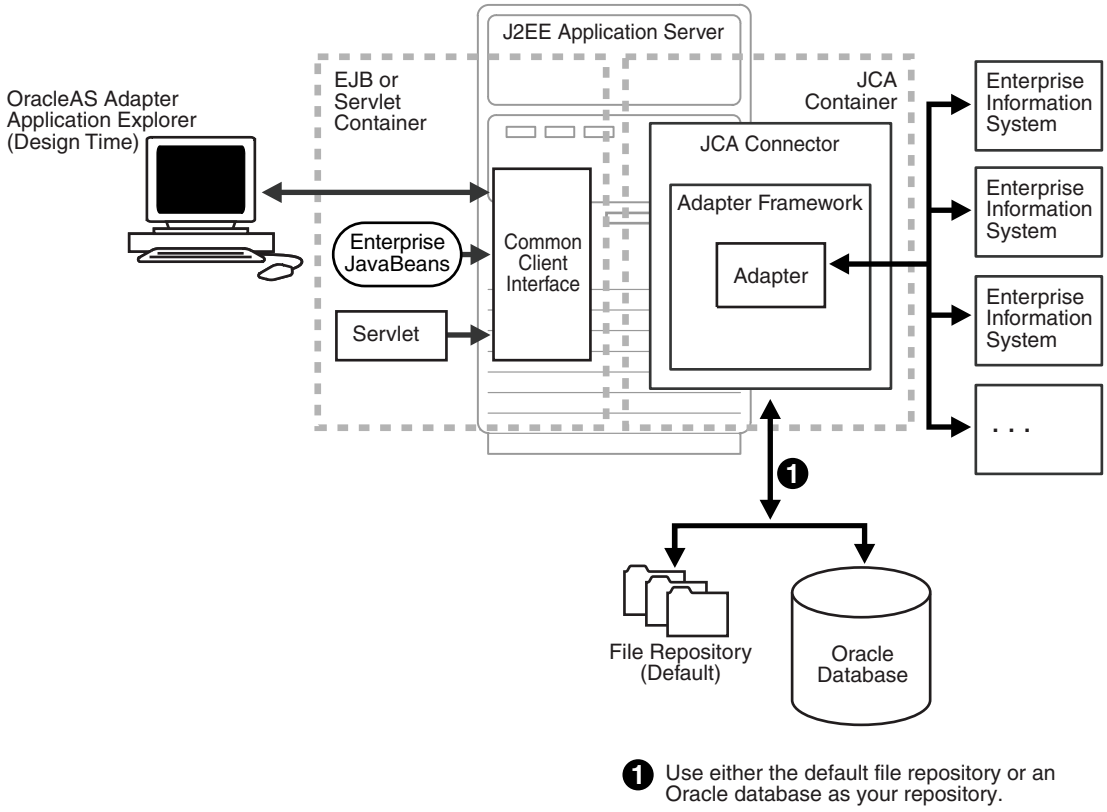
Note: Do not use a file repository for BSE in production environments.

1.4.2 Oracle WebLogic Server Adapter J2CA Architecture

Figure 1–2 shows the generic architecture for Oracle Adapter J2CA for packaged applications. Oracle Adapter J2CA is deployed to a standard J2CA Container and serves as a host container to the adapters. The connector is configured with a repository. The repository can be a file system or an Oracle database. It is deployed as a RAR file and has an associated deployment descriptor called `ra.xml`. You can create multiple connector factories by editing the Oracle WebLogic Server deployment descriptor `ra.xml`. For more information, see Chapter 3, "Oracle WebLogic Server Deployment and Integration".

Application Explorer, a design tool that works with the connector, is used to configure adapter connections, browse EIS objects, configure services, and configure listeners to listen for EIS events. Metadata created while you perform these operations are stored in the repository by the connector.

Figure 1–2 Oracle WebLogic Server Adapter J2CA Generic Architecture



1.5 BSE Versus Oracle Adapter J2CA Deployment

If you are using Oracle Application Adapter for PeopleSoft with Oracle SOA Suite components (for example, BPEL, Mediator, BPM, or OSB), then note that:

- Only Oracle Adapter J2CA deployment supports inbound integration (event notification) with Oracle SOA Suite components.
- Oracle Adapter J2CA and BSE deployments support outbound integration (request-response service) with Oracle SOA Suite components.

The following two factors explain the differences between deploying BSE and Oracle Adapter J2CA. Understanding these factors can help in selecting a deployment option.

1. BSE has the following advantages:
   - Can be deployed in a separate instance of Oracle WebLogic Server.
   - Provides better distribution of load.
   - Conforms more closely to the Service Oriented Architecture (SOA) model for building applications.
2. Oracle Adapter J2CA does provide slightly better performance than BSE.

2

Configuring Oracle Application Adapter for PeopleSoft

Oracle Adapter Application Explorer (Application Explorer) enables the processing of Component Interfaces and Messages.

External applications that access PeopleSoft through the adapter use either XML schemas or Web services to pass data between the external application and the adapter. You can use Application Explorer to create the required XML schemas and Web services.

This chapter contains the following topics:

2.1 Starting Application Explorer

To start Application Explorer:

1. Ensure that Oracle WebLogic Server is started, which is where Application Explorer is deployed.
2. Open the command prompt.
3. Navigate to the following directory:

   `<WLS_Home>\user_projects\domains\base_domain\bin`

4. Execute *`setDomainEnv.cmd`* (Windows) or *`. ./setDomainEnv.sh`* (UNIX/Linux).

   This command sets the class path and other environment variables for Application Explorer in the Oracle WebLogic Server environment. In addition, it allows Application Explorer to access the Oracle WebLogic Server APIs to publish WSDL files to the Oracle Service Bus (OSB) Console.

5. Do not close the command prompt.
6. Navigate to the following directory:

   For Oracle SOA Suite:

   <ORACLE_HOME>\soa\thirdparty\ApplicationAdapters\tools\iwae\bin\ae.bat

   In this example, *<ORACLE_HOME>* is the location where Oracle SOA Suite is installed.

   For OSB:

   <OSB_HOME>\Oracle_OSB1\3rdparty\ApplicationAdapters\tools\iwae\bin\ae.bat

   In this example, *<OSB_HOME>* is the location where Oracle Service Bus is installed.

   <OSB_Home>\3rdparty\ApplicationAdapters\tools\iwae\bin

7. Execute *ae.bat* (Windows) or *iwae.sh* (UNIX/Linux) to start Application Explorer.

Application Explorer starts. You are ready to define new targets to your PeopleSoft system.

Note: Before you run the **iwae.sh** file on UNIX or Linux platforms, the permissions must be changed. For example:

```
chmod +x  iwae.sh
```

2.2 Configuring Repository Settings

A repository holds information about configuration details, adapter targets, channels, and other configuration information. For more information on how to configure BSE and J2CA repository settings, see the *Oracle Fusion Middleware Application Adapters Installation Guide for Oracle WebLogic Server* (Section 2.8.4, "Configuring the Database Repository").

2.3 Creating a Repository Configuration

Before you use Application Explorer with Oracle Application Adapter for PeopleSoft, you must create a repository configuration. You can create two kinds of repository configurations, Web services and J2CA, depending on the container to which the adapter is deployed.

During design time, the repository is used to store metadata created when using Application Explorer to configure adapter connections, browse EIS objects, configure services, and configure listeners to listen for EIS events. The information in the repository is also referenced at run-time.

Web services and BSE refer to the same type of deployment. For more information, see "Adapter Features" on page 1-1.

This section contains the following topics:

- Section 2.3.1, "Creating a Configuration for BSE"
- Section 2.3.2, "Creating a Configuration for J2CA"
- Section 2.3.3, "Connecting to a BSE or J2CA Configuration"

2.3.1 Creating a Configuration for BSE

To create a repository configuration for BSE using Application Explorer, you must first define a new configuration.

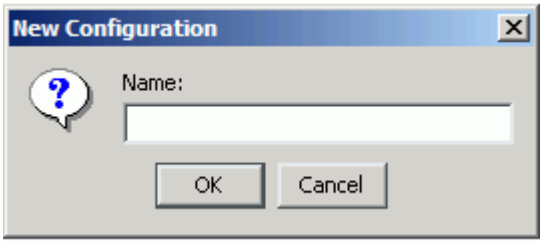
Defining a New Configuration for BSE

To define a new configuration for BSE:

1. Start the Application Explorer.
2. Right-click **Configurations** and select **New**.

   The New Configuration dialog is displayed, as shown in Figure 2–1.

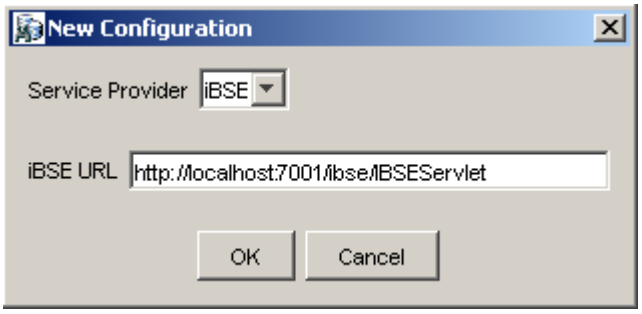
Figure 2–1 New Configuration Dialog



3. Enter a name for the new configuration (for example, myConfig) and click **OK**.

   The New Configuration dialog is displayed, as shown in Figure 2–2.

Figure 2–2 New Configuration Dialog - Service Provider List and iBSE URL



4. From the **Service Provider** list, select **iBSE**.
5. In the **BSE URL** field, accept the default URL or replace it with a different URL with the following format:

   `http://host name:port/ibse/IBSEServlet`

   Where *host name* is the system where Oracle WebLogic Server resides and *port* is the HTTP port for a managed Oracle WebLogic Server (for example, soa_server1).
6. Click **OK**.

   A node representing the new configuration appears beneath the root Configurations node, as shown in Figure 2–3.

Figure 2–3 New Configuration Node - myConfig

2.3.2 Creating a Configuration for J2CA

To create a configuration for Oracle Adapter J2CA using Application Explorer, you must first define a new configuration.

This section contains the following topic:

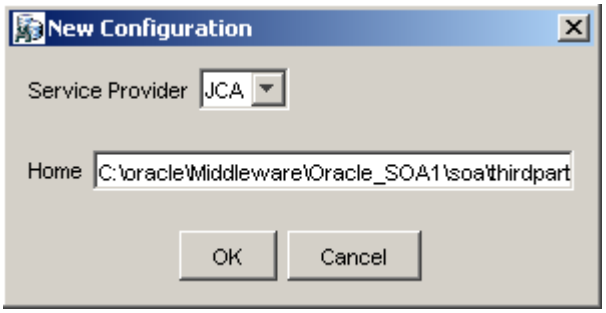
- Section 2.3.2.1, "HTTP Repository Connection"

To define a new configuration for J2CA:

1. Start the Application Explorer.
2. Right-click **Configurations** and select **New**.

   The New Configuration dialog is displayed, as shown in Figure 2–4.

Figure 2–4 New Configuration Dialog



3. Enter a name for the new configuration (for example, myConfig) and click **OK**.
4. From the **Service Provider** list, select **JCA**.
5. Click **OK**.

   A node representing the new configuration appears beneath the root Configurations node, as shown in Figure 2–5.

Figure 2–5 New Configuration Node - myConfig

The Oracle Adapter J2CA configuration folder is stored in a location based on your adapter installation:

For Oracle SOA Suite:

`<ORACLE_HOME>\soa\thirdparty\ApplicationAdapters\config\configuration_name`

In this example, `<ORACLE_HOME>` is the location where Oracle SOA Suite is installed.

For OSB:

`<OSB_HOME>\Oracle_OSB1\3rdparty\ApplicationAdapters\config\configuration_name`

In this example, *<OSB_HOME>* is the location where Oracle Service Bus is installed.

The *configuration_name* is the name of the configuration you created (for example, SampleConfig).

2.3.2.1 HTTP Repository Connection

J2CA users can create an HTTP repository connection, which enables them to generate and store WSDL documents remotely. Perform the following steps to create an HTTP repository connection in Application Explorer. To use the HTTP repository, ensure that the iwafjcaivp test tool is successfully deployed and running.

1. Start the Application Explorer.
2. Right-click the **Configurations** node in the left pane and select **New**.

   The New Configuration dialog opens.
3. Type a name for the configuration and click **OK**.
4. Select **JCA** from the Service Provider list box and enter an HTTP target value in the Home field.

   Use the following format for the HTTP target value:

   ```
   http://host name:port/iwafjca/JCAServlet
   ```

   For example:

   ```
   http://iwserv14:8001/iwafjca/JCAServlet
   ```
5. Click **OK**.

   The new HTTP repository connection is added to the Configurations node.

   Once you connect to the remote server, you can create new Adapter targets, generate WSDL documents, and store them in the remote server.

   Note: When you configure an Adapter target with the J2CA HTTP repository, you are not required to restart the Oracle WebLogic Server for run time purposes.

2.3.3 Connecting to a BSE or J2CA Configuration

To connect to a new configuration:

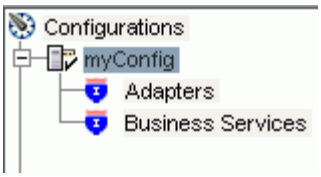
1. Right-click the configuration to which you want to connect, for example, myConfig.
2. Select **Connect**.

Nodes appear for Adapters, Events, and Business Services (also known as Web services). The Business Services node is only available for BSE configurations. If you are connected to a J2CA configuration, then the Business Services node is not shown.

Events are not applicable when using a BSE configuration. You can configure events using a J2CA configuration only.

An example of a BSE configuration named myConfig, as shown in Figure 2–6.

Figure 2–6 New BSE Configuration - myConfig Node



- Use the **Adapters** folder to create inbound interaction with PeopleSoft. For example, you use the PeopleSoft node in the Adapters folder to configure a service that updates PeopleSoft.
- Use the **Events** folder (available for J2CA configurations only) to configure listeners that listen for events in PeopleSoft.
- Use the **Business Services** folder (available for BSE configurations only) to test Web services created in the Adapters folder. You can also control security settings for the Web services by using the security features of the Business Services folder.

You are now ready to define new targets to PeopleSoft.

2.4 Establishing a Connection (Target) for PeopleSoft

Part of the application definition includes adding a target for Oracle Application Adapter for PeopleSoft. Setting up the target in Application Explorer requires information that is specific to the target.

To browse PeopleSoft business objects, you must create a target for the system you intend to use. The target serves as your connection point and is automatically saved after you create it. You must establish a connection to this system every time you start Application Explorer or after you disconnect from the system.

When you launch Application Explorer, the left pane displays (as nodes) the application systems supported by Application Explorer, based on the adapters that are installed.

This section contains the following topics:

- Section 2.4.1, "Defining a Target to PeopleSoft"
- Section 2.4.2, "Connecting to a Defined PeopleSoft Target"
- Section 2.4.3, "Managing a Target"

2.4.1 Defining a Target to PeopleSoft

To connect to PeopleSoft for the first time, you must define a new target. Oracle Application Adapter for PeopleSoft supports PeopleSoft standard security, in addition to component interface-level security. Once connected to the PeopleSoft application server, application security is managed by user ID, roles and privileges. For more information on PeopleSoft application security, see the appropriate PeopleSoft documentation.

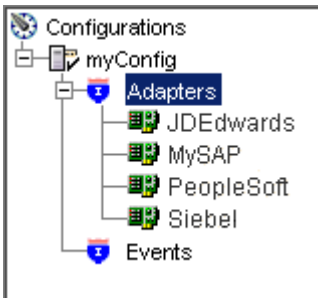
When you define a new target, you must restart the Oracle WebLogic Server to update the repository for run time purposes.

To define a target:

1. In the left pane, expand the **Adapters** node.

The applications systems supported by Application Explorer appear as nodes based on the adapters that are installed, as shown in Figure 2–7.

Figure 2–7 Adapters List



2. Right-click the **PeopleSoft** node and select **Add Target**.

   The Add Target dialog is displayed. Provide the following information:

   a. In the **Name** field, enter a descriptive name for the target, for example, **PSoftTarget**.

   b. In the **Description** field, enter a description for the target (optional).

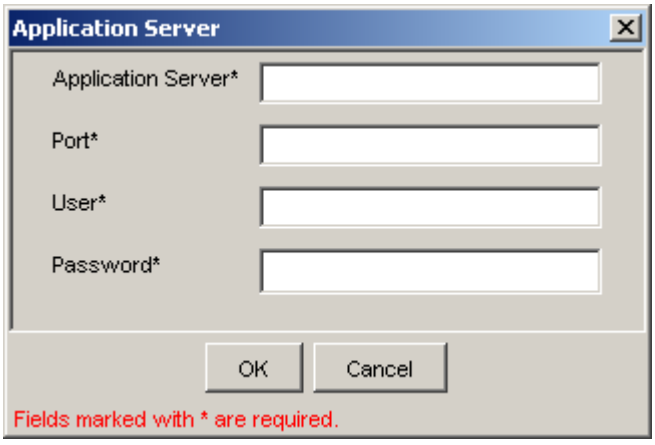
   c. From the **Target Type** list, select **Application Server**.

      This is the only possible value for target type.

3. Click **OK**.

   The Application Server dialog is displayed, as shown in Figure 2–8. You must specify connection information for PeopleSoft and the application server that is hosting PeopleSoft.

Figure 2–8 Application Server Dialog



Provide the following information:

a. In the **Application Server** field, enter the host name or IP address for the computer that is hosting the PeopleSoft application.

b. In the **Port** field, enter the port number where the PeopleSoft application is listening.

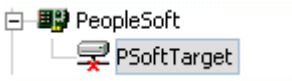
c. In the **User** field, enter a valid user ID for the PeopleSoft application.

d. In the **Password** field, enter a valid password for the PeopleSoft application.

4. Click **OK**.

   In the left pane, the new target (**PSoftTarget**) appears the PeopleSoft node, as shown in Figure 2–9.

Figure 2–9 Disconnected PeopleSoft Target Node



You are ready to connect to your PeopleSoft target.

2.4.2 Connecting to a Defined PeopleSoft Target

To connect to an existing target:

1. In the left pane, expand the **Adapters** node.
2. Expand the **PeopleSoft** node.
3. Click the target name (for example, **PSoftTarget**) under the PeopleSoft node.

   The Connection dialog displays the values you entered for connection parameters.

4. Verify your connection parameters.
5. Right-click the target name and select **Connect**.

   The x icon disappears, indicating that the node is connected. A list of PeopleSoft business objects is displayed, as shown in Figure 2–10.

Figure 2–10 PeopleSoft Business Objects

2.4.3 Managing a Target

Although you can maintain multiple open connections to different transaction processing systems, it is recommended that you disconnect from connections not in use. After you disconnect, you can modify an existing target.

You can modify the connection parameters when your system properties change. You also can delete a target. The following procedures describe how to disconnect from a target, edit a target, and delete a target.

This section contains the following topics:

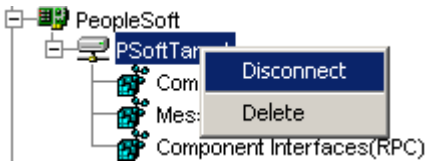
- Section 2.4.3.1, "Disconnecting from a Connection to PeopleSoft"
- Section 2.4.3.2, "Modifying Connection Parameters"
- Section 2.4.3.3, "Deleting a Connection to PeopleSoft"

2.4.3.1 Disconnecting from a Connection to PeopleSoft

To disconnect from a connection to PeopleSoft:

1. Expand the **Adapters** node.
2. Expand the **PeopleSoft** node.
3. Right-click the target to which you are connected (for example, PSoftTarget), and select **Disconnect**, as shown in Figure 2–11.

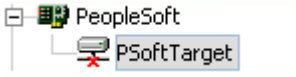
Figure 2–11 Disconnect



Disconnecting from PeopleSoft drops the connection with PeopleSoft, but the node remains.

The x icon appears, indicating that the node is disconnected, as shown in Figure 2–12.

Figure 2–12 Disconnected PeopleSoft Target Node



2.4.3.2 Modifying Connection Parameters

After you create a target for PeopleSoft using Application Explorer, you can edit any of the information that you provided previously.

When modify connection parameters for a defined target, you must restart the Oracle WebLogic Server to update the repository for run time purposes.

To edit a target:

1. Verify that the target you want to edit is disconnected.
2. Right-click the target and select **Edit**, as shown in Figure 2–13.

Figure 2–13 PSoftTarget Node Menu

The Application Server dialog displays the target connection information.

3. Change the properties in the dialog as required and click **OK**.

2.4.3.3 Deleting a Connection to PeopleSoft

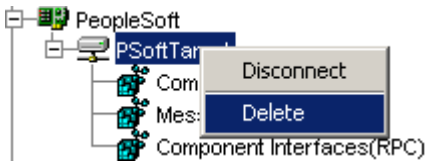
You can delete a connection, rather than just disconnecting and closing it. When you delete the connection, the node disappears from the list of PeopleSoft connections in the left pane of Application Explorer.

When you delete a connection, you must restart the Oracle WebLogic Server to update the repository for run time purposes.

To delete a connection to PeopleSoft:

1. Locate the target you want to delete.
2. Right-click the target (for example, PsoftTarget), and select **Delete**, as shown in Figure 2–14.

Figure 2–14 PSoftTarget Node - Delete Option



The node disappears from the list of available connections.

2.5 Viewing Application System Objects

After you are connected to PeopleSoft, Application Explorer enables you to explore and browse business object metadata. For example, Application Explorer enables you to view PeopleSoft Component Interface and Message metadata stored in the PeopleSoft business object repository.

For Component Interfaces(RPC), the adapter enables Delete, Insert, Query, Update, and Find.

To view application system objects:

1. Click the icon to the left of the target name, for example, PSoftTarget.

   The target expands and the available system objects are displayed, as shown in Figure 2–15.

Figure 2–15 PSoftTarget Node Objects

2. To expand the desired PeopleSoft repository node, click the icon to the left of the repository name, for example, Component Interfaces.

   A list of PeopleSoft Component Interfaces appears. You can now generate schemas.

Note: The Component Interfaces (RPC) node only displays the level 1 Component Interfaces.

2.6 Creating XML Schemas

After you browse the PeopleSoft business object repository, you can generate XML request and response schemas for the object you want to use with your adapter.

This section contains the following topics:

- Section 2.6.1, "Creating XML Request and Response Schemas Against BSE"
- Section 2.6.2, "Creating XML Request and Response Schemas Against the Oracle Adapter J2CA"

2.6.1 Creating XML Request and Response Schemas Against BSE

To create XML request and response schemas for a PeopleSoft Component Interface against a BSE implementation:

1. Expand the PeopleSoft node and then, expand the **Component Interfaces** node.
2. From the list of **Component Interfaces**, select **LOCATION**.
3. Click the **Request Schema** or **Response Schema** tab to view the request or response schema information.

   The schema you selected is displayed.

   After you browse the Component Interfaces and make a selection, the request and response XML schemas are automatically created for that Component Interface and stored in the repository you created.

2.6.2 Creating XML Request and Response Schemas Against the Oracle Adapter J2CA

To create XML request and response schemas for a PeopleSoft Component Interface against an Oracle Adapter J2CA implementation:

1. Expand the **PeopleSoft** node and then, expand the **Component Interfaces** node.
2. From the list of **Component Interfaces**, select **LOCATION**.
3. Click the **Request Schema** or **Response Schema** tab to view the request or response schema information.

   The schema you selected is displayed.

   After you browse the Component Interfaces and make a selection, the request and response XML schemas are automatically created for that Component Interface and stored in the repository you created.

2.7 Generating a WSDL (J2CA Configurations Only)

The Web Service Definition Language (WSDL) description of a service enables you to make the service available to other services within a host server. You use Application Explorer to create both request-response (outbound) and event notification (inbound) JCA services of the adapter.

Note: The **Create Inbound JCA Service (Event)** option is only available when the selected node supports events.

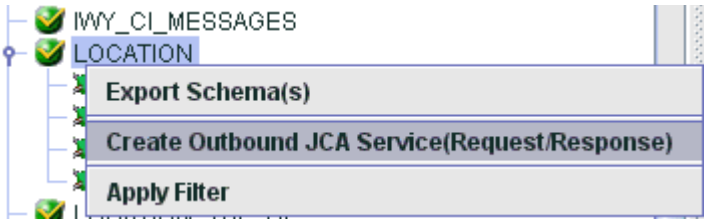
Note: PeopleSoft Component Interfaces only support services. As a result, only outbound WSDL files can be generated.

To generate a WSDL file for request-response service:

1. After you create a schema, right-click the respective object.

   The options are displayed, as shown in Figure 2–16.

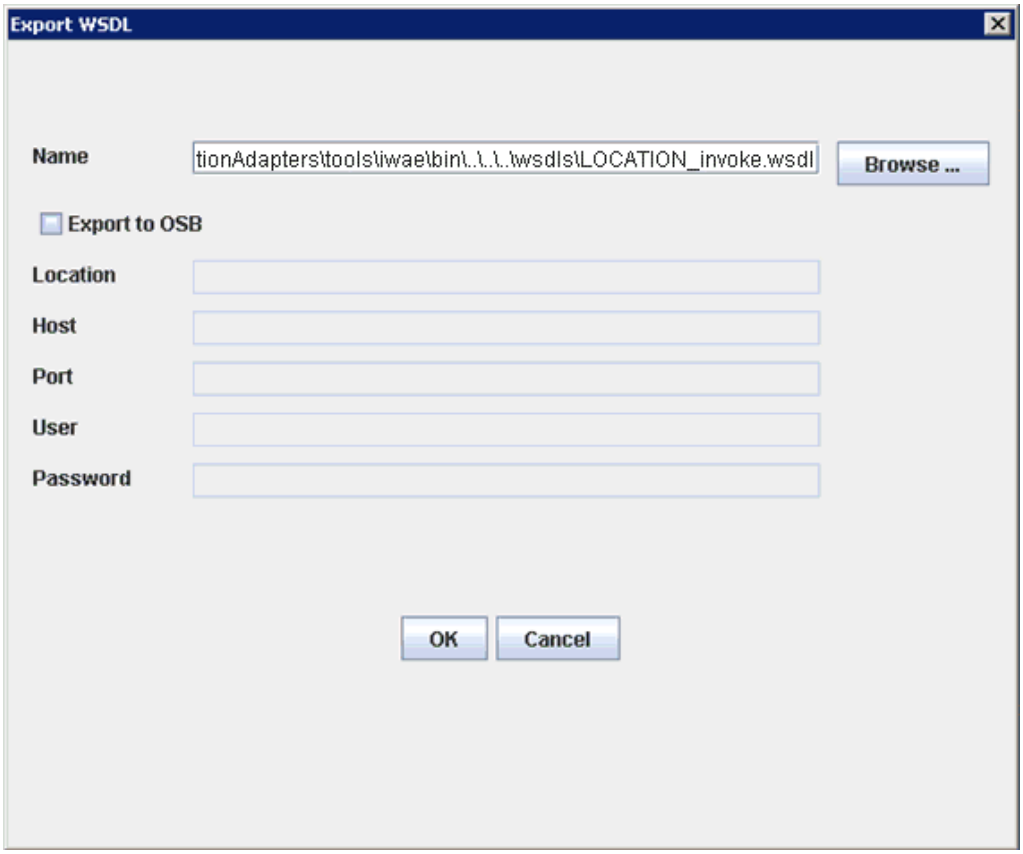
Figure 2–16 Create Outbound JCA Service (Request/Response) Option



2. Select **Create Outbound JCA Service (Request/Response)**.

   The Export WSDL dialog is displayed, as shown in Figure 2–17.

Figure 2–17 Export WSDL Dialog



3. Accept the default name for the file.

   The **.wsdl** file extension is added automatically. By default, the names of WSDL files generated for request-response services end with `_invoke`, while those generated for event notification end with `_receive`.

4. Click **OK**.

   The WSDL file is saved in the specified location.

The procedure for generating WSDL for event notification is similar to request-response. To generate WSDL for event notification, you must first create a channel for every event.

2.8 Creating and Testing a Web Service (BSE Configurations Only)

You can create Web services (also known as a **business service**) using Application Explorer. The PeopleSoft Component Interface called LOCATION is used as an example in the following procedure.

> **Note:** In a J2EE Connector Architecture (J2CA) implementation of adapters, Web services are not available. When the adapters are deployed to use Oracle Adapter J2CA, the Common Client Interface provides integration services using the adapters.

Creating a Web Service

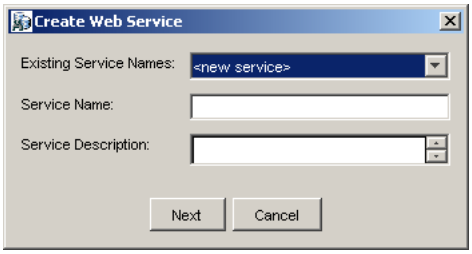
To create a Web service, perform the following steps:

1. Connect the created PeopleSoft target under the BSE configuration and expand the **Component Interfaces** node.
2. From the list of **Component Interfaces**, select **LOCATION**.
3. Right-click the node from which you want to create a **business service** and select **Create Web Service**, as shown in Figure 2–18.

Figure 2–18 Create Web Service Option

The Create Web Service dialog is displayed, as shown in Figure 2–19.

Figure 2–19 Create Web Service Dialog



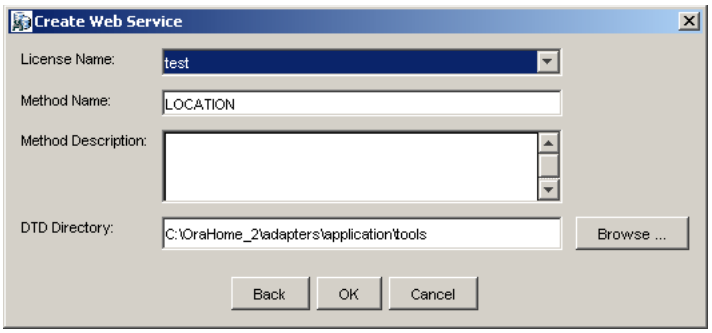
You can add the business function as a method for a new Web service or as a method for an existing one. Perform the following steps:

   a. From the **Existing Service Names** list, select either **<new service>** or an existing service.
   b. If you are creating a new service, then specify a service name. This name identifies the Web service in the list of services under the **Business Services** node.
   c. Enter a brief description for the service (optional).

4. Click **Next**.

   The license and method dialog is displayed, as shown in Figure 2–20.

Figure 2–20 License and Method Dialog



Perform the following steps:

a. In the **License Name** field, select one or more license codes to assign to the Web service. To select more than one, hold down the **Ctrl** key and click the licenses.

b. In the **Method Name** field, leave the default method name.

c. In the **Method Description** field, enter a brief description of the method (optional).

d. The **DTD Directory** field specifies a destination for your Web service. You may click **Browse** to change the default location.

5. Click **OK**.

   Application Explorer switches the view to the **Business Services** node, and the new Web service appears in the left pane.

6. Right-click the new Web service and select **Save WSDL** from the menu.

   The Save dialog is displayed.

7. Provide a name for the WSDL file and a location to save the WSDL file on your file system.

8. Click **Save**.

Testing a Web Service

After a Web service is created, you can test it to ensure that it functions properly. A test tool is provided for testing the Web service.

To test a business service:

1. Click the **Business Services** node to access your Web services.

2. Expand the **Services** node.

3. Select the name of the business service you want to test.

   The business service name appears as a link in the right pane.

4. In the right pane, click the named business services link.

   The test option appears in a separate BSE Servlet page. If you are testing a Web service that requires XML input, then an input field appears.

5. Enter the appropriate input.

6. Click **Invoke**.

   The BSE Servlet page displays the results.

Identity Propagation

If you test or execute a Web service using a third party XML editor, for example XMLSPY, then the user name and password values that you specify in the SOAP header must be valid and are used to connect to PeopleSoft. The user name and password values that you provided for PeopleSoft during target creation using Application Explorer are overwritten for this Web service request. The following is a sample SOAP header that is included in the WSDL file for a Web service:

```
<SOAP-ENV:Header>
  <m:ibsinfo xmlns:m="urn:schemas-iwaysoftware-com:iwse">
    <m:service>String</m:service>
    <m:method>String</m:method>
    <m:license>String</m:license>
    <m:disposition>String</m:disposition>
    <m:Username>String</m:Username>
    <m:Password>String</m:Password>
    <m:language>String</m:language>
  </m:ibsinfo>
</SOAP-ENV:Header>
```

You can remove the `<m:disposition>` and `<m:language>` tags from the SOAP header, since they are not required.

2.9 Configuring an Event Adapter

Events are generated by activity in an application system. You can use events to trigger an action in your application. For example, PeopleSoft may generate an event when customer information is updated. If your application performs an action when this happens, then your application is a consumer of this event.

Note: BSE configurations do not support events.

After you create a connection to your application system, you can add events using Application Explorer. To create an event, you must create a channel.

Note: If you are using a J2CA configuration, then you must create a new channel for every event object and select this channel when you generate WSDL. Creating a channel is required for J2CA configurations only.

A **channel** represents configured connections to particular instances of back-end systems. For more information, see "Creating and Editing a Channel" on page 2-15.

2.9.1 Creating and Editing a Channel

The following procedures describe how to create a channel for your event. All defined event ports must be associated with a channel.

When you create, modify, or delete a channel, you must restart the Oracle WebLogic Server to recognize the change and update the repository for run time purposes.

Note: If using a J2CA configuration, then you must create a new channel for every event and select this channel when creating an inbound service. Creating a channel is required for J2CA configurations only.

Creating a Channel Using Specific Protocols

You can create the following types of channels using Application Explorer:

- HTTP

  It is recommended to use HTTP channels with PeopleTools Version 8.4.

- TCP

  It is recommended to use TCP channels with PeopleTools Version 8.1.

- File

  It is recommended to use File channels for testing purposes only. Do not use File channels in a production environment.

Note: Channels can be configured and started only on the system where the Oracle Application Adapter for PeopleSoft is installed. Configuring and starting a channel for a remote host is not supported.

The following procedures explain how to create these channels.

2.9.1.1 Creating an HTTP Channel

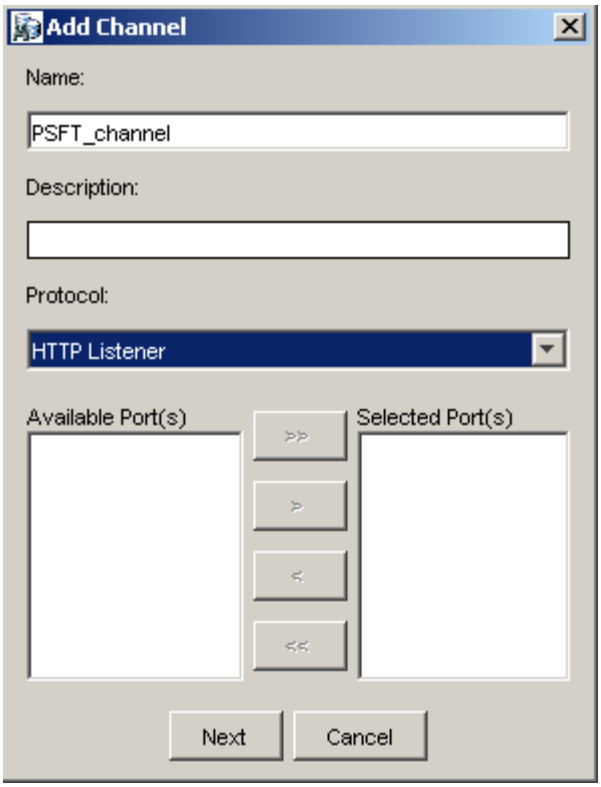
To create an HTTP Channel:

1. Click the **Events** node.
2. Expand the **PeopleSoft** node.

   The ports and channels nodes appear in the left pane.
3. Right-click **Channels** and select **Add Channel**.

   The Add Channel dialog is displayed, as shown in Figure 2–21.

Figure 2–21 Add Channel Dialog



Provide the following information:

a. Enter a name for the channel, for example, **PSFT_channel**.

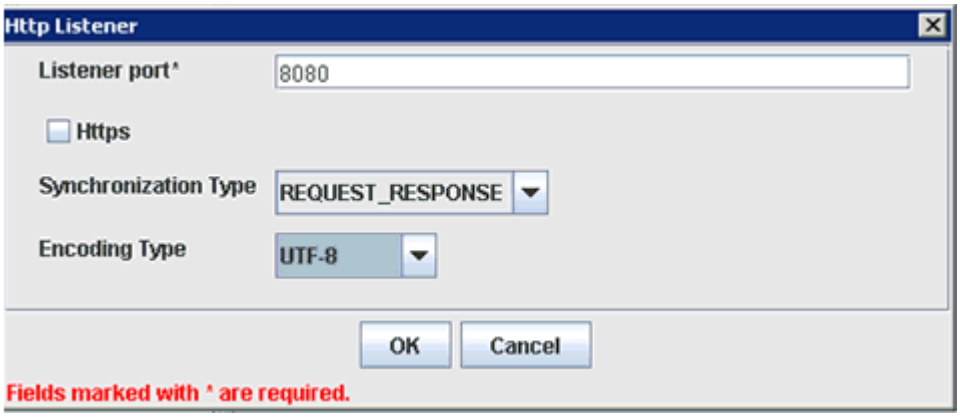
b. Enter a brief description.

c. From the **Protocol** list, select **HTTP Listener**.

4. Click **Next**.

The Http Listener dialog is displayed, as shown in Figure 2–22.

Figure 2–22 Http Listener Dialog



5. Enter the system information as specified in the following table:

Parameter	Description
Listener port	Port on which to listen for PeopleSoft event data.
Https	For a secure HTTP connection, select the **Https** check box. This option is currently not supported.
Synchronization Type	Choose from the following synchronization options: ■ REQUEST_RESPONSE ■ REQUEST_ACK **Important:** The PeopleSoft channel does not work if the synchronization type is set to REQUEST.
Encoding Type	Choose an encoding type to be used from the list. By default, ASCII is selected.

6. Click **OK**.

   A summary pane is displayed, providing the channel description, channel status, and available ports. All the information is associated with the channel you created.

   The channel appears under the channels node in the left pane.

   An X over the icon indicates that the channel is currently disconnected. You must start the channel to activate your event configuration.

   Note: If you are planning to integrate Oracle Application Adapter for PeopleSoft with BPM, BPEL, or OSB inbound process components, then do not start the channel. The channel is managed by the run-time server after the BPM, BPEL, or OSB process component is deployed. If you start the channel from Application Explorer for testing and debugging purposes, then stop it before run-time (when working with BPM, BPEL, or OSB process components).

7. Right-click the channel and select **Start**.

   The channel you created becomes active. The X over the icon in the left pane disappears.

8. To stop the channel, right-click the channel and select **Stop**.

2.9.1.2 Creating a TCP Channel

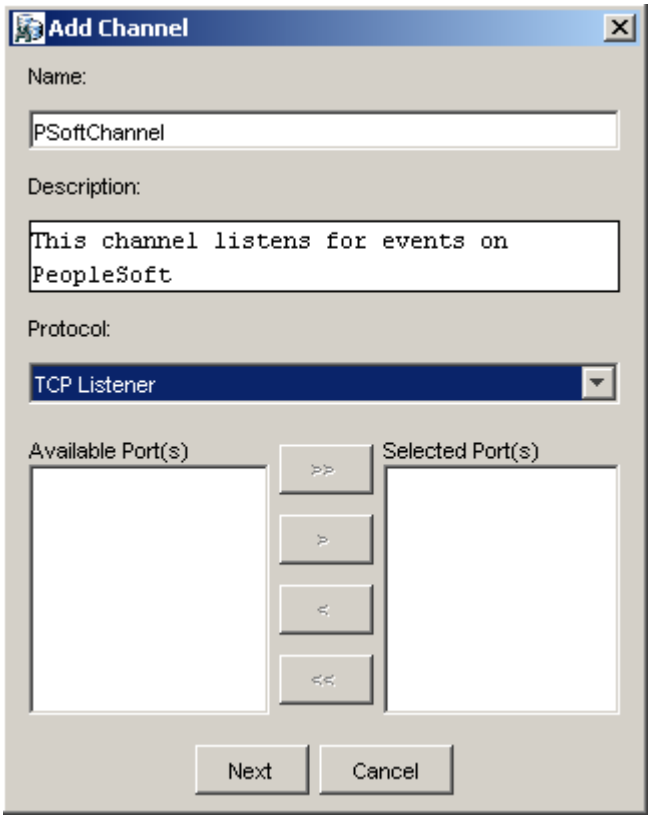
1. Click the **Events** node.
2. Expand the **PeopleSoft** node.

   The ports and channels nodes appear in the left pane.

3. Right-click **Channels** and select **Add Channel**.

   The Add Channel dialog is displayed, as shown in Figure 2–23.

Figure 2–23 Add Channel Dialog



Perform the following steps:

a. Enter a name for the channel, for example, PSoftChannel.

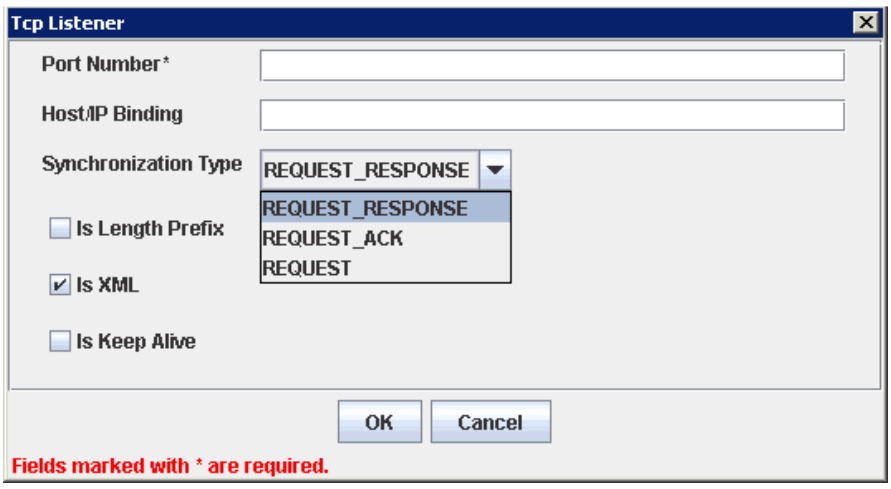
b. Enter a brief description.

c. From the **Protocol** list, select **TCP Listener**.

4. Click **Next**.

The Tcp Listener dialog is displayed, as shown in Figure 2–24.

Figure 2–24 TCP Listener Dialog



Provide the following information:

a. In the **Port Number** field, specify the port number for your TCP listener (required).

b. In the **Host/IP Binding** field, specify the host IP for your TCP listener (optional).

Note: Channels can be configured and started only on the system where the Oracle Application Adapter for PeopleSoft is installed. Configuring and starting a channel for a remote host is not supported.

---

c. From the **Synchronization Type** list, select from the following synchronization type options:

REQUEST_RESPONSE

REQUEST_ACK

REQUEST

Important: The PeopleSoft channel only works with one of these synchronization types.

d. **Is Length Prefix** check box: For PeopleSoft events that return data that is not in XML format. The TCP/IP event application must prefix the data with a 4-byte binary length field when writing data to the TCP/IP port.

e. **Is XML** check box: For PeopleSoft events that return data in XML format. No preparser is required.

f. **Is Keep Alive** check box: Maintains continuous communication between the event transaction and the channel.

5. Click **OK**.

The channel appears under the Channels node in the left pane, as shown in Figure 2–25.

Figure 2–25 Inactive PeopleSoft Channel Node

An X over the icon indicates that the channel is currently disconnected. You must start the channel to activate your event configuration.

Note: If you are planning to integrate Oracle Application Adapter for PeopleSoft with BPEL inbound or Mediator inbound process components, then do not start the channel. The channel is managed by the run-time server after the BPEL or Mediator process component is deployed. If you start the channel from Application Explorer for testing and debugging purposes, then stop it before run-time (when working with BPEL or Mediator process components).

---

6. Right-click the channel node and select **Start**.

   The channel becomes active, as shown in Figure 2–26.

Figure 2–26 Active PeopleSoft Channel Node

   The X over the icon disappears.

7. To stop the channel, right-click the connected channel node and select **Stop**.

   The channel becomes inactive and an X appears over the icon.

2.9.1.3 Creating a File Channel

To create a channel for the File listener:

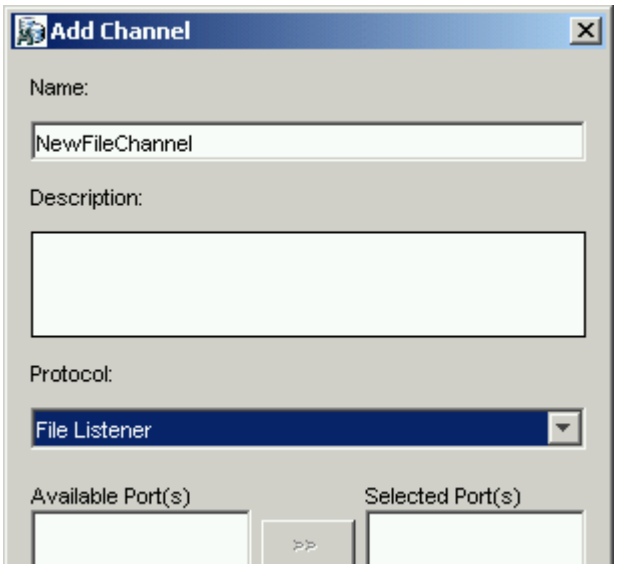
1. Click the **Events** node.
2. In the left pane, expand the **PeopleSoft** node.

   The ports and channels nodes appear.

3. Right-click **Channels** and select **Add Channel**.

   The Add Channel dialog is displayed, as shown in Figure 2–27.

Figure 2–27 Add Channel Dialog



   Perform the following steps:

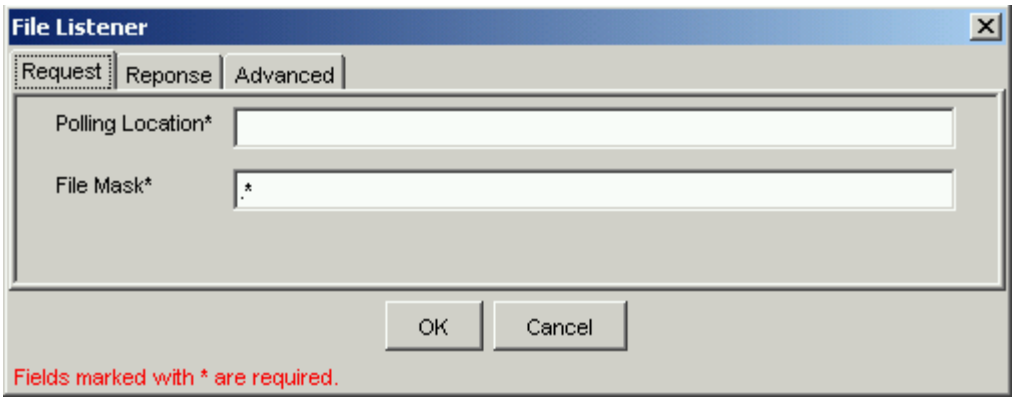
   a. Enter a name for the channel, for example, **NewFileChannel**.

   b. Enter a brief description (optional).

   c. From the **Protocol** list, select **File Listener**.

4. Click **Next**.
5. The File Listener dialog is displayed, as shown in Figure 2–28.

Figure 2–28 File Listener Dialog



Enter the system information as follows:

a. In the **Request** tab, enter values for the following parameters:

Parameter	Description
Polling Location	Target file system location for the PeopleSoft XML file.
File Mask	File name to be used for the output file generated by the operation.

b. In the **Response** tab, enter values for the following parameters:

Parameter	Description
Synchronization Type	Choose from the following synchronization options: ▪ REQUEST_RESPONSE ▪ REQUEST_ACK **Important:** The PeopleSoft channel does not work if the synchronization type is set to REQUEST.
Response/Ack Directory	Target file system location for the PeopleSoft XML file.

c. In the **Advanced** tab, enter values for the following parameters:

Parameter	Description
Error directory	Directory to which documents with errors are written.
Poll interval (msec)	Interval (in milliseconds) when to check for new input. The default is three seconds. Optional.
Processing Mode	**Sequential** indicates single processing of requests. **Threaded** indicates processing of multiple requests simultaneously.
Thread limit	If you selected threaded processing, then indicate the maximum number of requests that can be processed simultaneously.

6. Click **OK**.

A summary pane is displayed, providing the channel description and channel status. All the information is associated with the channel you created.

The channel appears under the channels node in the left pane. An X over the icon indicates that the channel is currently disconnected. You must start the channel to activate your event configuration.

Note: If you are planning to integrate Oracle Application Adapter for PeopleSoft with BPEL inbound or Mediator inbound process components, then do not start the channel. The channel is managed by the run-time server after the BPEL or Mediator process component is deployed. If you start the channel from Application Explorer for testing and debugging purposes, then stop it before run-time (when working with BPEL or Mediator process components).

7. Right-click the channel and select **Start**.

   The channel you created becomes active. The X over the icon in the left pane disappears.

8. To stop the channel, right-click the channel and select **Stop**.

2.9.1.4 Editing a Channel

You must stop the channel before you can edit it. When you edit the channel, you must also restart the Oracle WebLogic Server to update the repository for run time purposes. To edit a channel:

1. In the left pane, locate the channel you want to edit.
2. Right-click the channel and select **Edit**.

   The Edit channels pane is displayed.

3. Make the required changes to the channel configuration and click **Finish**.

2.9.1.5 Deleting a Channel

You must stop the channel before you can delete it. When you delete the channel, you must also restart the Oracle WebLogic Server to update the repository for run time purposes. To delete a channel:

1. In the left pane, locate the channel you want to delete.
2. Right-click the channel and select **Delete**.

   The channel disappears from the list in the left pane.

2.9.2 Schema Validation

Root validation, namespace validation, and schema validation for inbound processing (events) are supported for the Oracle Application Adapter for PeopleSoft with BPEL.

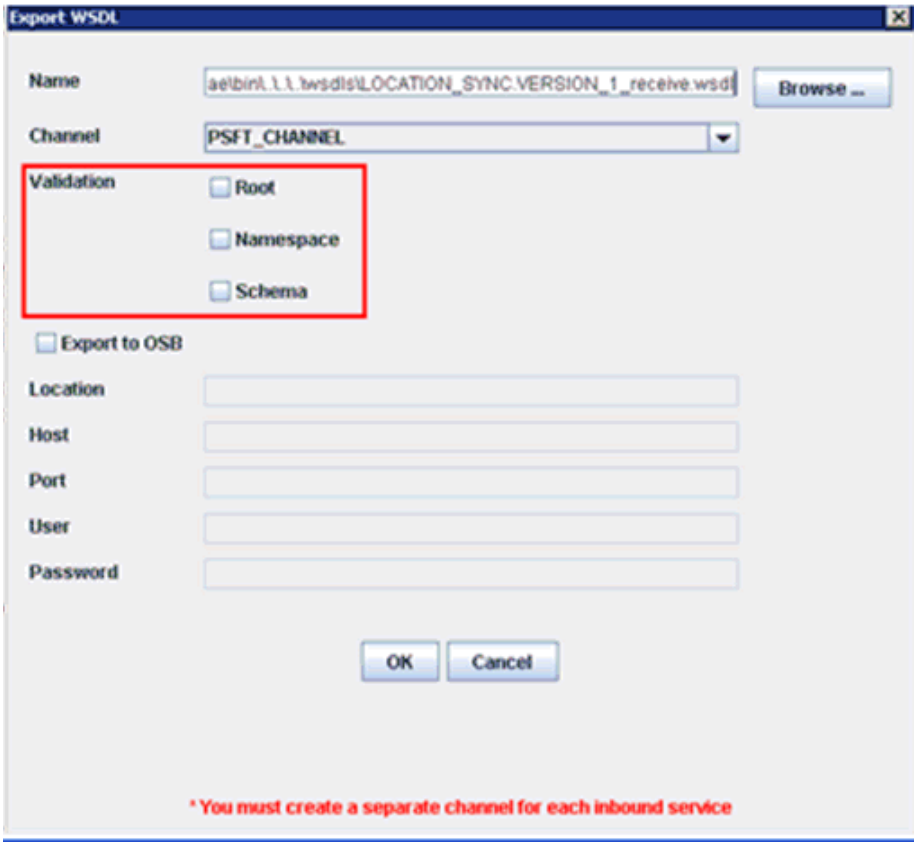
To validate inbound processing using the Oracle Application Adapter for PeopleSoft, perform the following steps. This procedure uses the LOCATION_SYNC.VERSION_1 PeopleSoft Message as an example for inbound processing.

1. Start Application Explorer.
2. Connect to the PeopleSoft target.
3. Expand the **Messages** node.
4. Verify that you have already created a channel for the PeopleSoft adapter.

5. Right-click the **LOCATION_SYNC.VERSION_1** node and select **Create Inbound JCA Service (event)**.

   The Export WSDL dialog opens and includes three check boxes for Root, Namespace, and Schema validation, as shown in Figure 2–29.

Figure 2–29 Export WSDL Dialog



- Selection of multiple validation options is allowed.
- Root validation is used to validate the root element in the inbound XML document.
- Namespace validation is used to validate the namespace in the inbound XML document.
- Schema validation is used to validate the inbound XML document with the schema in the WSDL document.
- During run time, validation is processed based on the validation options that are selected.
- If more than one validation option is selected, during run time if the first validation option fails, then the remaining validation options are not processed.
- Root and namespace validations are considered modest levels of validation. Schema validation is a stricter validation level.
- It is recommended to use root and namespace validation options together, unless the root element and namespace are different between the Messages in the PeopleSoft environment.

6. Generate the WSDL document and create the BPEL process.
7. Trigger the transactions (Messages) from the PeopleTools environment.

3

Oracle WebLogic Server Deployment and Integration

This chapter describes Oracle WebLogic Server (OracleWLS) deployment and integration with Oracle Application Adapter for PeopleSoft.

This chapter contains the following topics:

See Also:

- *Oracle Application Server Adapter Concepts Guide*

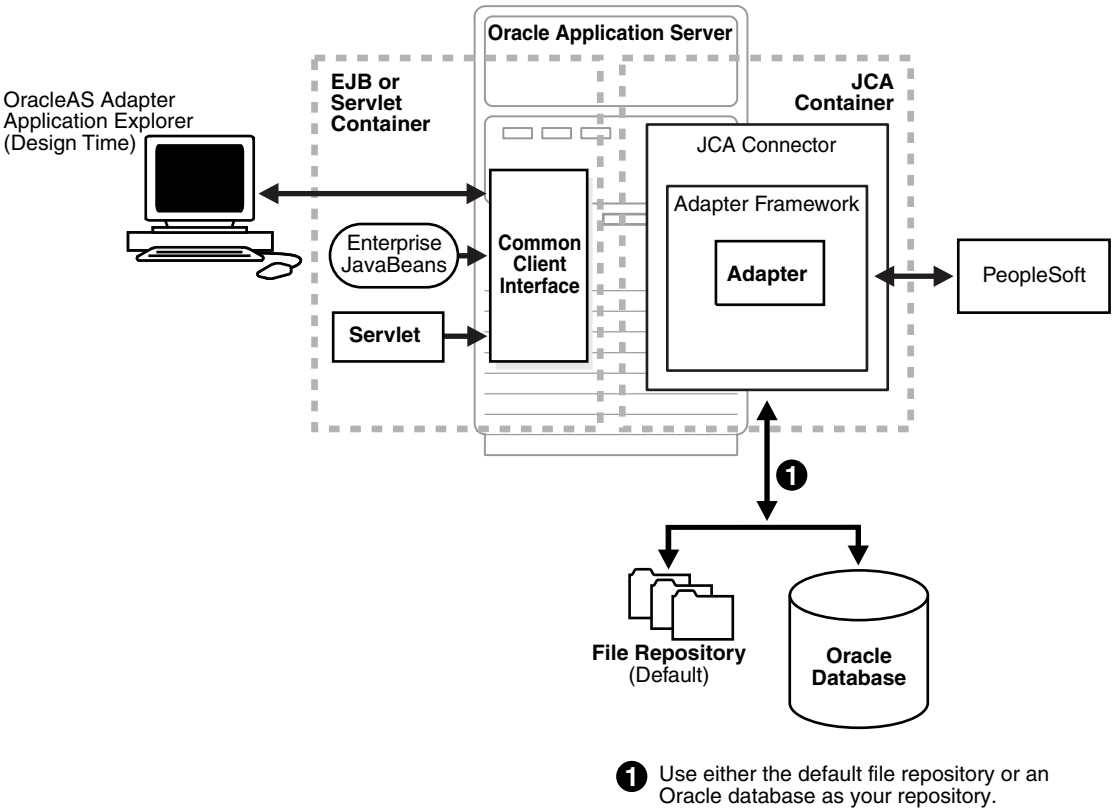
3.1 Adapter Integration with Oracle WebLogic Server

Oracle Application Adapter for PeopleSoft is deployed within an OracleWLS container during installation. All client applications run within the OracleWLS environment. In J2CA deployment, the Common Client Interface (CCI) integrates an OracleWLS client application with a resource adapter.

3.2 Deployment of Adapter

Figure 3–1 shows deployment of the J2CA Connector to the Oracle Application Server. In a run-time service scenario, an Enterprise Java Bean, servlet, or Java program client makes CCI calls to J2CA resource adapters. The adapters process the calls as requests and send them to the EIS. The EIS response is then sent back to the client.

Figure 3–1 Oracle Application Server J2CA Architecture



3.3 Updating Adapter Configuration

During the J2CA deployment of Oracle Application Adapter for PeopleSoft, OracleWLS generates a deployment descriptor called `ra.xml`, located in:

`<ADAPTER_HOME>\soa\thirdparty\ApplicationAdapters\iwafjca.rar\META-INF`

Your installation contains more than one file named `ra.xml`. The OracleWLS deployment descriptor that is described in this section is located in the directory specified above.

Note: Multiple managed connection factories are supported only for outbound processing (services).

Creating a Managed Connector Factory Object

The `ra.xml` descriptor provides OracleWLS-specific deployment information for resource adapters. For example, the `jca_sample` configuration in Application Explorer is represented in the `ra.xml` file as follows:

```
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE connector PUBLIC '-//Sun Microsystems, Inc.//DTD Connector 1.0//EN'
'http://java.sun.com/dtd/connector_1_0.dtd'>
<connector>
  <display-name>IWAFJCA10</display-name>
  <vendor-name>IWAY Software</vendor-name>
  <spec-version>1.0</spec-version>
  <eis-type>IWAF</eis-type>
```

```
  <version>1.0</version>
  <license>
    <license-required>false</license-required>
  </license>
  <resourceadapter>

<managedconnectionfactory-class>com.ibi.afjca.spi.IWAFManagedConnectionFactory</ma
nagedconnectionfactory-class>

<connectionfactory-interface>javax.resource.cci.ConnectionFactory</connectionfacto
ry-interface>

<connectionfactory-impl-class>com.ibi.afjca.cci.IWAFConnectionFactory</connectionf
actory-impl-class>
    <connection-interface>javax.resource.cci.Connection</connection-interface>

<connection-impl-class>com.ibi.afjca.cci.IWAFConnection</connection-impl-class>
    <transaction-support>NoTransaction</transaction-support>
    <config-property>
      <config-property-name>AdapterName</config-property-name>
      <config-property-type>java.lang.String</config-property-type>
      <config-property-value></config-property-value>
    </config-property>
    <config-property>
      <config-property-name>Config</config-property-name>
      <config-property-type>java.lang.String</config-property-type>
      <config-property-value></config-property-value>
    </config-property>
    <config-property>
      <config-property-name>IWayHome</config-property-name>
      <config-property-type>java.lang.String</config-property-type>
      <config-property-value>C:\oracle\Middleware\Oracle_
SOA1\soa\thirdparty\ApplicationAdapters</config-property-value>
    </config-property>
    <config-property>
      <config-property-name>IWayConfig</config-property-name>
      <config-property-type>java.lang.String</config-property-type>
      <config-property-value>jca_sample</config-property-value>
    </config-property>
    <config-property>
      <config-property-name>IWayRepoDriver</config-property-name>
      <config-property-type>java.lang.String</config-property-type>
      <config-property-value></config-property-value>
    </config-property>
    <config-property>
      <config-property-name>IWayRepoURL</config-property-name>
      <config-property-type>java.lang.String</config-property-type>
      <config-property-value></config-property-value>
    </config-property>
    <config-property>
      <config-property-name>IWayRepoUser</config-property-name>
      <config-property-type>java.lang.String</config-property-type>
      <config-property-value></config-property-value>
    </config-property>
    <config-property>
      <config-property-name>IWayRepoPassword</config-property-name>
      <config-property-type>java.lang.String</config-property-type>
      <config-property-value></config-property-value>
    </config-property>
    <config-property>
```

```
      <config-property-name>LogLevel</config-property-name>
      <config-property-type>java.lang.String</config-property-type>
      <config-property-value>DEBUG</config-property-value>
    </config-property>
    <authentication-mechanism>
      <authentication-mechanism-type>BasicPassword</authentication-mechanism-type>

<credential-interface>javax.resource.spi.security.PasswordCredential</credential-i
nterface>
    </authentication-mechanism>
    <reauthentication-support>true</reauthentication-support>
  </resourceadapter>
</connector>
```

The parameters defined in the ra.xml file are described in the following table:

Parameter Name	Description
IWayHome	The base installation directory for the OracleWLS packaged application adapter.
IWayConfig	The adapter configuration name as defined in Application Explorer. For example, Oracle Application Adapter for PeopleSoft has a preconfigured `jca_sample` configuration in Application Explorer.
IWayRepoURL	The URL to use when opening a connection to the database. This is necessary only when using an Oracle database as the repository.
IWayRepoUser	User name to use when connecting to the database. This is necessary only when using an Oracle database as the repository.
IWayRepoPassword	Password. If provided, it overwrites configuration. This is necessary only when using an Oracle database as the repository.
loglevel	It overwrites the level set by the ManagedConnectorFactory property.

Creating Multiple Managed Connector Factory Objects

To establish multiple managed connector factory objects, you must edit the `weblogic-ra.xml` file and add more `<connection-instance>` nodes. This file is located in:

<ADAPTER_HOME>\soa\thirdparty\ApplicationAdapters\iwafjca.rar\META-INF

For example, the first jca_configuration in Application Explorer is represented in the `weblogic-ra.xml` file as follows:

```
<?xml version="1.0"?>
<weblogic-connector xmlns="http://www.bea.com/ns/weblogic/90">
    <enable-access-outside-app>true</enable-access-outside-app>
    <enable-global-access-to-classes>true</enable-global-access-to-classes>
    <outbound-resource-adapter>
        <default-connection-properties>
        <pool-params>
        <initial-capacity>0</initial-capacity>
        </pool-params>
        <transaction-support>LocalTransaction</transaction-support>
        </default-connection-properties>
```

```
        <connection-definition-group>

<connection-factory-interface>javax.resource.cci.ConnectionFactory</connection-fac
tory-interface>
            <connection-instance>
                <jndi-name>eis/OracleJCAAdapter/DefaultConnection</jndi-name>
            </connection-instance>
        </connection-definition-group>
    </outbound-resource-adapter>
</weblogic-connector>
```

To create multiple managed connector factory objects, you must add new `<connection-instance>` nodes in the file. For example:

```
<?xml version="1.0"?>
<weblogic-connector xmlns="http://www.bea.com/ns/weblogic/90">

    <enable-access-outside-app>true</enable-access-outside-app>
    <enable-global-access-to-classes>true</enable-global-access-to-classes>

    <outbound-resource-adapter>
        <default-connection-properties>
        <pool-params>
        <initial-capacity>0</initial-capacity>
        </pool-params>
        <transaction-support>LocalTransaction</transaction-support>
        </default-connection-properties>
        <connection-definition-group>

<connection-factory-interface>javax.resource.cci.ConnectionFactory</connection-fac
tory-interface>
            <connection-instance>
                <jndi-name>eis/OracleJCAAdapter/DefaultConnection</jndi-name>
            </connection-instance>
            <connection-instance>
                <jndi-name>eis/OracleJCAAdapter/DefaultConnection1</jndi-name>
                <connection-properties>
                <properties>
                <property>
<name>IWayHome</name>
<value>C:\oracle\Middleware\Oracle_SOA1\soa\thirdparty\ApplicationAdapters</value>
                </property>
                <property>
                <name>IWayConfig</name>
                <value>jca_sample2</value>
                </property>
                <property>
    <name>IWayRepoURL</name>
    <value></value>
                </property>
                <property>
      <name>IWayRepoUser</name>
      <value></value>
                </property>
                <property>
      <name>IWayRepoPassword</name>
      <value></value>
                </property>
                <property>
      <name>LogLevel</name>
      <value>Debug</value>
```

```
                </property>
                </properties>
                </connection-properties>
             </connection-instance>
          </connection-definition-group>
    </outbound-resource-adapter>
</weblogic-connector>
```

If you do not specify a `<property>` element in the `<connection-instance>` section, the value is taken from the `ra.xml` file. You can specify the default properties in the `ra.xml` file and then override them as required in the `weblogic-ra.xml` file. In addition, note that the J2CA configuration (for example, jca_sample2) must already be created in Application Explorer.

Note: When you modify the `ra.xml` and `weblogic-ra.xml` files, the application server must be restarted. If the application server is already running, stop the application server and then restart it.

In addition, the `iwafjca.rar` file must be redeployed in the Oracle WebLogic Administration Console to activate these changes.

Modifying WSDL Files for Additional Connection Factory Values

Application Explorer generates the J2CA properties file using the default connection factory name `eis/OracleJCAAdapter/DefaultConnection`. If you created additional connection factories, the WSDLs generated for the additional configuration and connection factory should be changed to reflect the location field of the `jca:address` section in the J2CA properties file. The default J2CA properties file for the Oracle Application Adapter for PeopleSoft with a configuration of `isdsrv2_conn2` is shown in the following example.

Notice that the J2CA properties file has the following default connection factory: `eis/OracleJCAAdapter/DefaultConnection`

```
<jca:address location="eis/OracleJCAAdapter/DefaultConnection"
        ConnectionSpec="com.ibi.afjca.cci.IWAFConnectionSpec"
        cs.AdapterName="PeopleSoft" cs.Config="isdsrv2_conn2"
UIConnectionName="Connection1"/>
```

The connection factory value must be changed to the following: `eis/OracleJCAAdapter/DefaultConnection1`

For example:

```
<jca:address location="eis/OracleJCAAdapter/DefaultConnection1"
                      ConnectionSpec="com.ibi.afjca.cci.IWAFConnectionSpec"
                      cs.AdapterName="PeopleSoft" cs.Config="isdsrv2_conn2"
UIConnectionName="Connection1"/>
```

Note that only the value for the location field in the `jca:address` section should be modified. Do not modify any other field or section.

4

Integration With BPEL Service Components in the Oracle SOA Suite

Oracle Application Adapter for PeopleSoft integrates seamlessly with Oracle Business Process Execution Language (BPEL) Process Manager to facilitate Web service integration. Oracle BPEL Process Manager is based on the Service-Oriented Architecture (SOA). It consumes adapter services exposed as Web Service Definition Language (WSDL) documents.

This chapter contains the following topics:

4.1 Overview

To integrate with Oracle SOA Suite, Oracle Application Adapter for PeopleSoft must be deployed in the same WLS container as Oracle BPEL Process Manager. The underlying adapter services must be exposed as WSDL files, which are generated during design time in Oracle Application Adapter Application Explorer (Application Explorer) for both request-response (outbound) and event notification (inbound) services of the adapter. For more information, see Chapter 2, "Configuring Oracle Application Adapter for PeopleSoft".

The generated WSDL files are used to design the appropriate BPEL processes for inbound or outbound adapter services. A completed BPEL process must be successfully compiled in JDeveloper and deployed to a SOA server. Upon deployment to the SOA server, every newly built process is automatically deployed to the Oracle Enterprise Manager Console, where you run, monitor, and administer BPEL processes, and listen to adapter events.

4.2 Deployment of Adapter

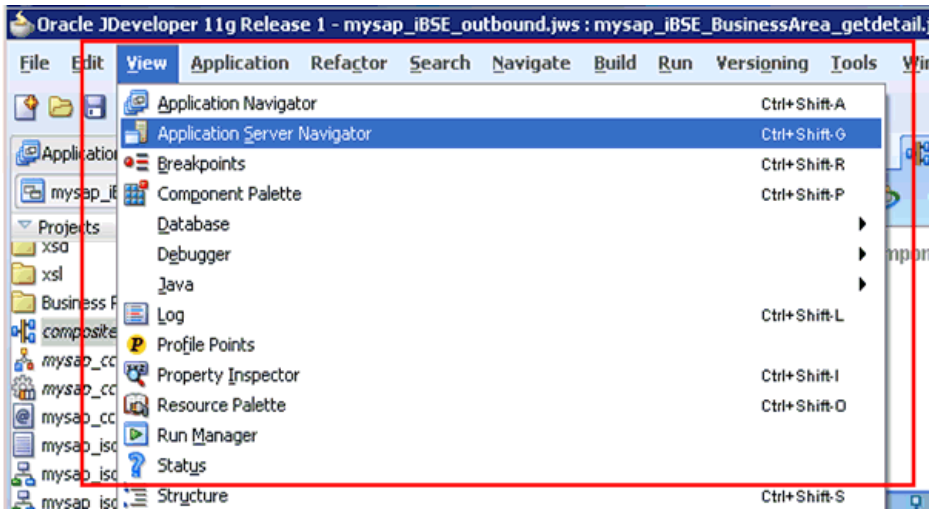
During installation, Oracle Application Adapter for PeopleSoft is deployed as a J2CA 1.0 resource adapter within the WLS container. The adapter must be deployed in the same WLS container as Oracle BPEL Process Manager.

4.3 Configuring a New Application Server Connection

To configure a new Application Server connection in Oracle JDeveloper:

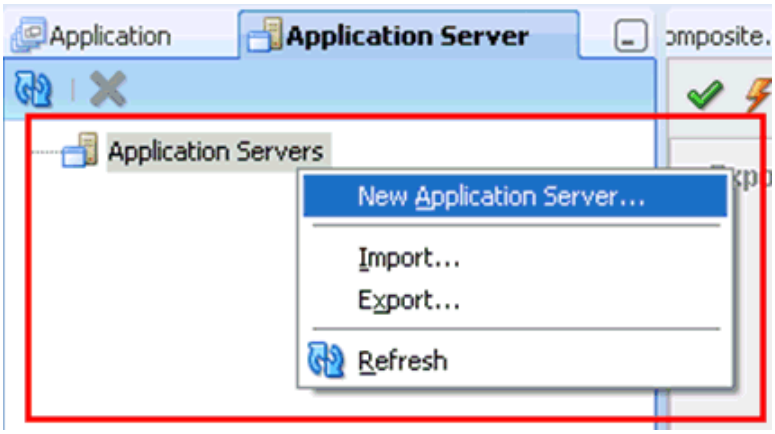
1. Open Oracle JDeveloper on your system.
2. From the menu bar, click **View** and select **Application Server Navigator**, as shown in Figure 4–1.

Figure 4–1 Application Server Navigator



The Application Server tab is displayed, as shown in Figure 4–2.

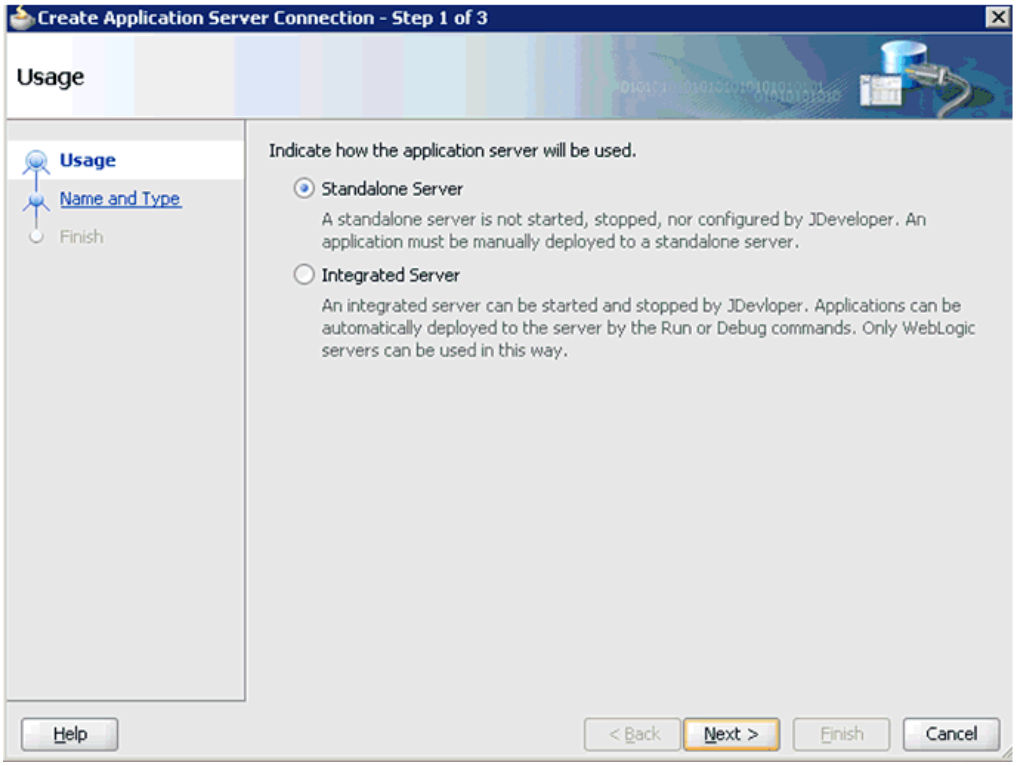
Figure 4–2 Application Server Tab



3. Right-click **Application Servers**, and then select **New Application Server**.

   The Create Application Server Connection Wizard is displayed, as shown in Figure 4–3.

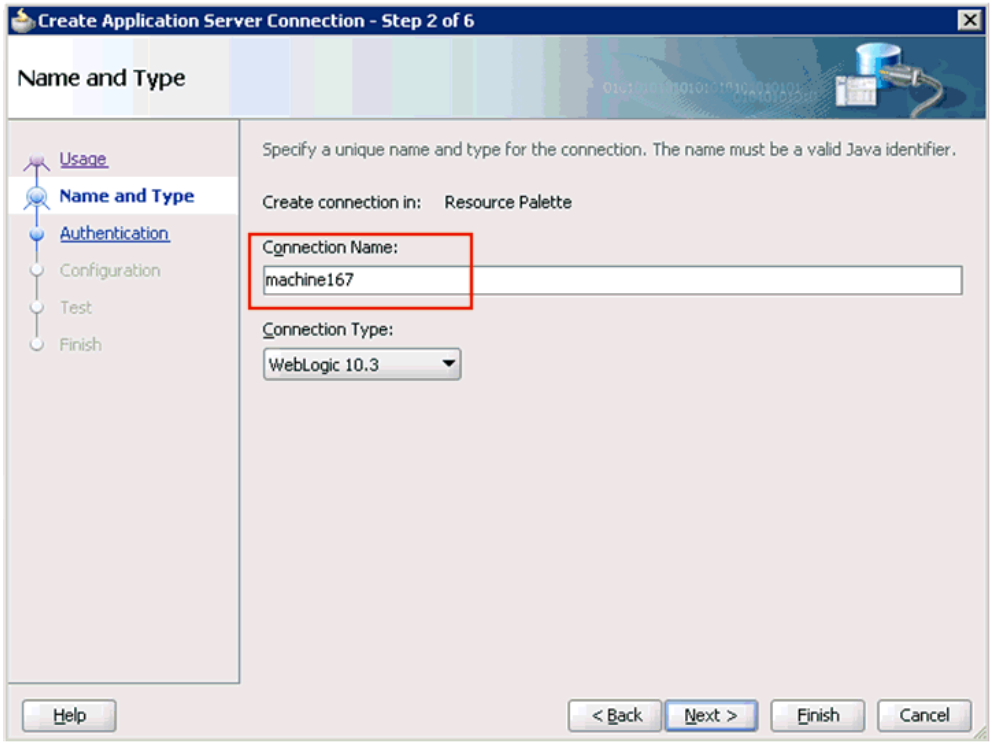
Figure 4–3 Create Application Server Connection Wizard - Usage Page



4. Accept the default selection (Standalone Server) and click **Next**.

   The Name and Type page is displayed, as shown in Figure 4–4.

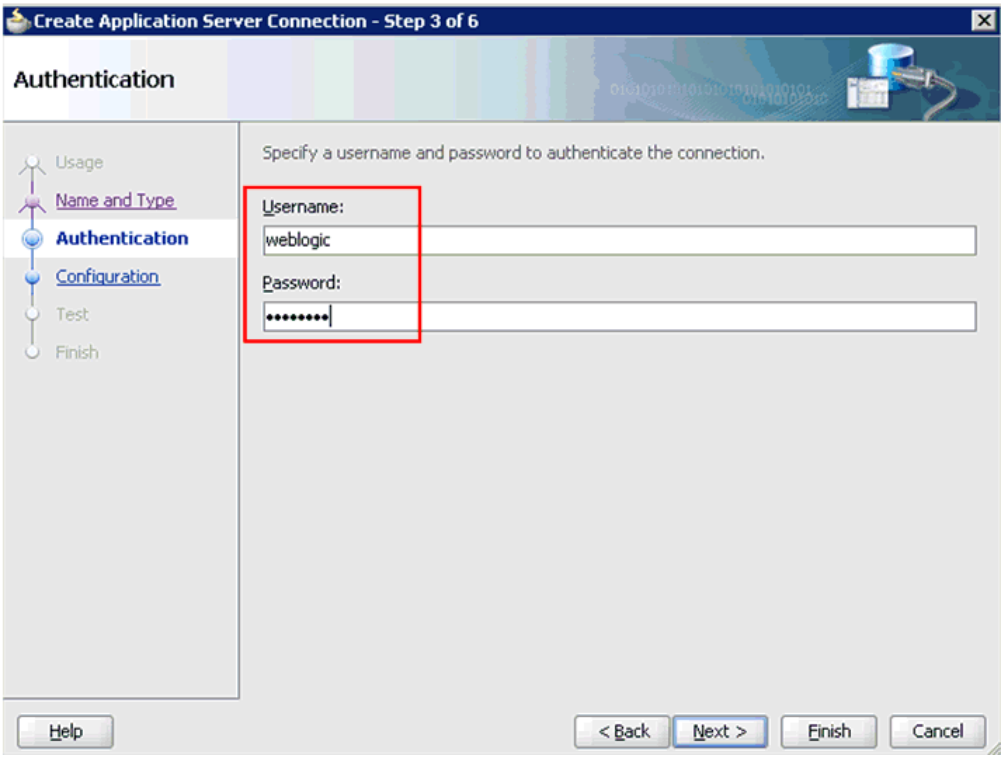
Figure 4–4 Name and Type Page



5. Specify a new name for the Application Server connection and click **Next**.

   The Authentication page is displayed, as shown in Figure 4–5.

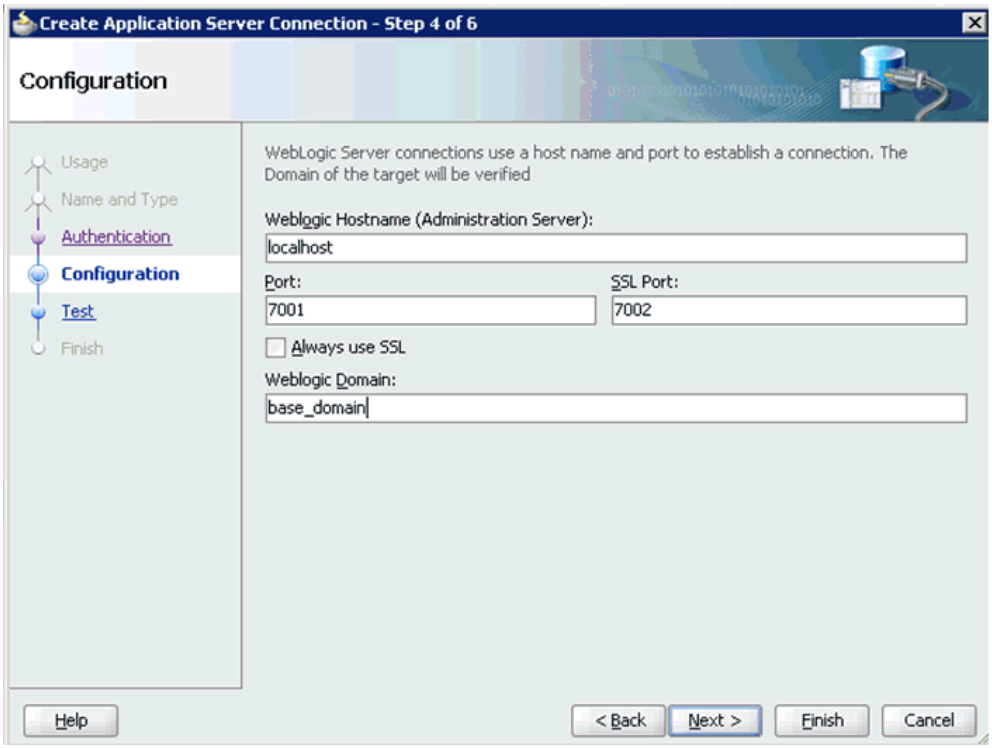
Figure 4–5 Authentication Page



6. Specify a valid user name (for example, weblogic) and a password (for example, welcome1) for your new connection.
7. Click **Next**.

   The Configuration page is displayed, as shown in Figure 4–6.

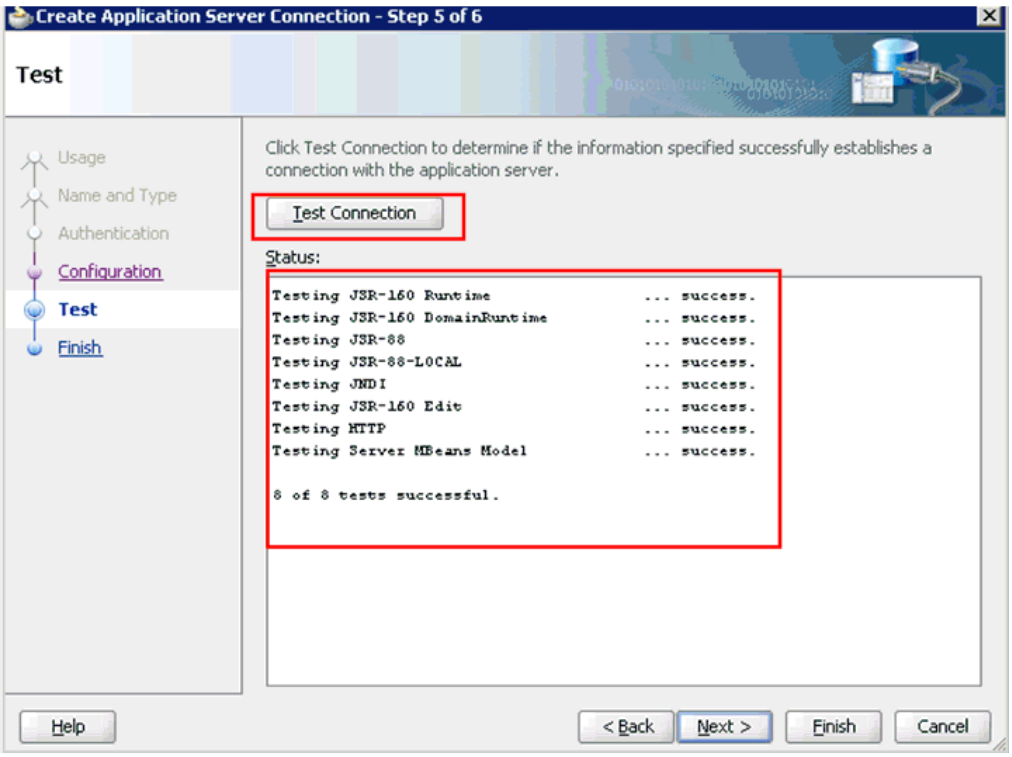
Figure 4–6 Configuration Page



8. Specify the Oracle WebLogic host name (for example, localhost), which is the machine IP where the process needs to deploy and Oracle WebLogic domain (for example, base_domain).
9. Click **Next**.

   The Test page is displayed, as shown in Figure 4–7.

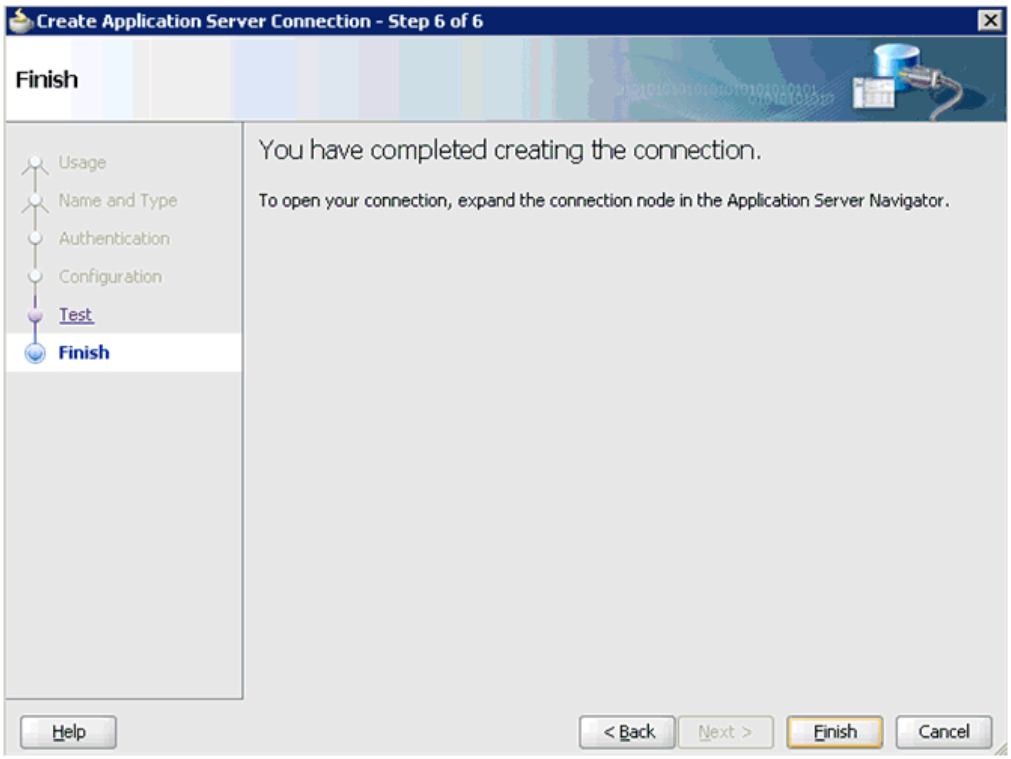
Figure 4–7 Test Page



10. Click **Test Connection**.
11. Ensure that the test status is successful.
12. Click **Next**.

    The Finish page is displayed, as shown in Figure 4–8.

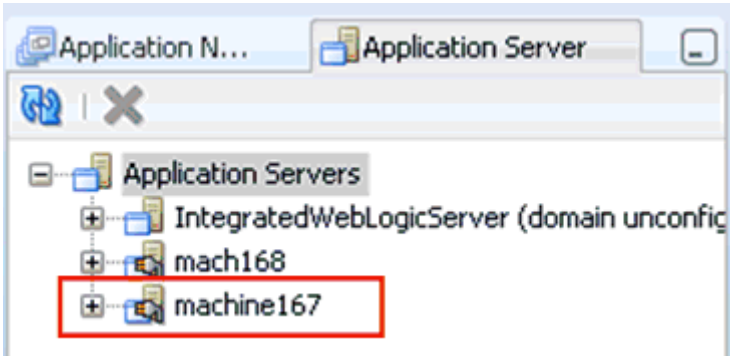
Figure 4–8 Finish Page



13. Click **Finish**.

    The new Application Server connection is listed in the left pane (Application Server tab), as shown in Figure 4–9.

Figure 4–9 New Application Server Connection



4.4 Designing an Outbound BPEL Process for Service Integration

The following tools are required to complete your adapter design-time configuration:

- Oracle Adapter Application Explorer (Application Explorer)
- Oracle JDeveloper BPEL Designer (JDeveloper) or Eclipse

Note: The examples in this chapter demonstrate the use of JDeveloper.

A sample outbound BPEL process is provided in the `etc/sample` folder of the application adapter installation.

Before you design a BPEL process, you must create a schema and generate the respective WSDL file using Application Explorer. For more information, see "Generating WSDL for Request/Response Service" on page 4-8.

4.4.1 Generating WSDL for Request/Response Service

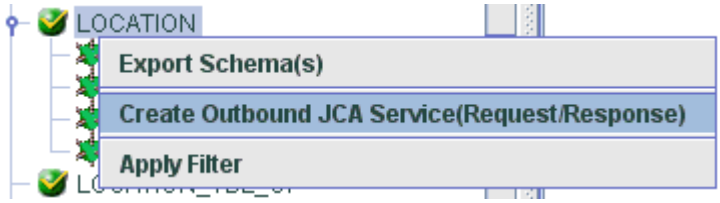
To generate WSDL for outbound interaction in Application Explorer:

1. Start **Application Explorer** and connect to a defined PeopleSoft target or create a new target.

   For more information, see "Defining a Target to PeopleSoft" on page 2-6.

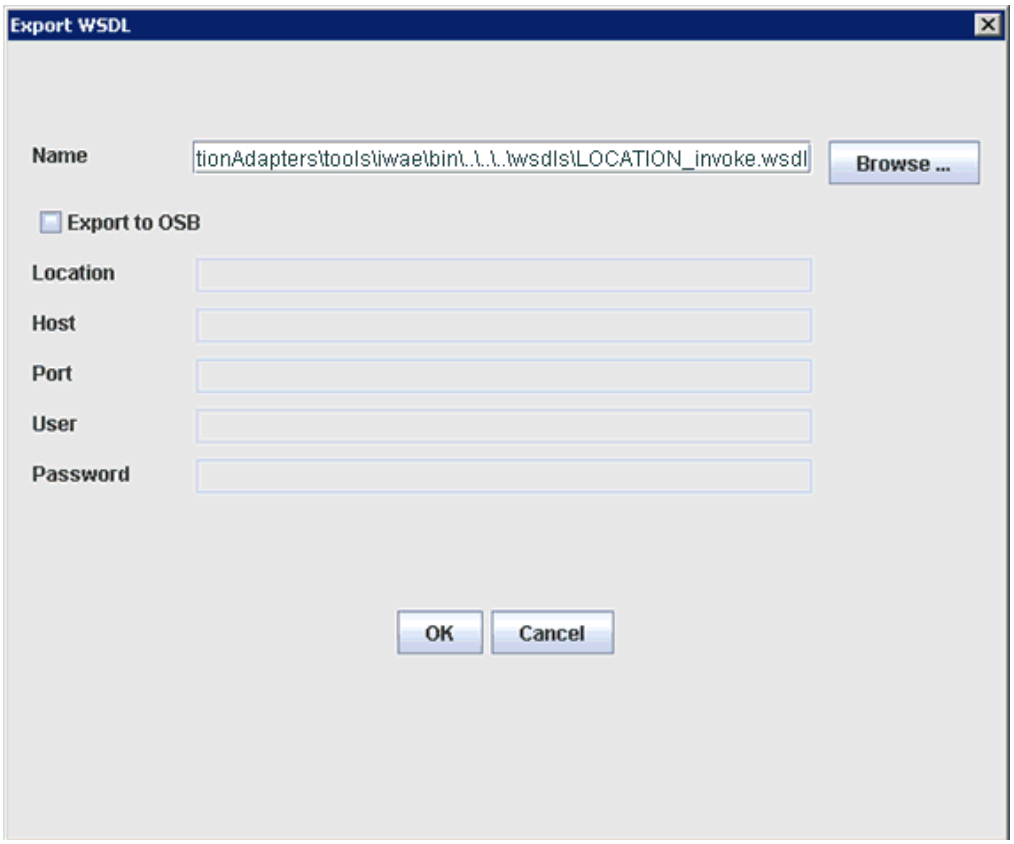
2. Expand **Component Interfaces** and select **LOCATION**.
3. Right-click **LOCATION**, and then select **Create Outbound JCA Service (Request/Response)**, as shown in Figure 4–10.

Figure 4–10 Create Outbound JCA Service (Request/Response) Option



The Export WSDL dialog is displayed, as shown in Figure 4–11.

Figure 4–11 Export WSDL Dialog



4. Specify an export location on your file system or accept the default path.

   The **.wsdl** file extension is added automatically. By default, the names of WSDL files generated for request-response services end with **_invoke**.

5. Click **OK**.

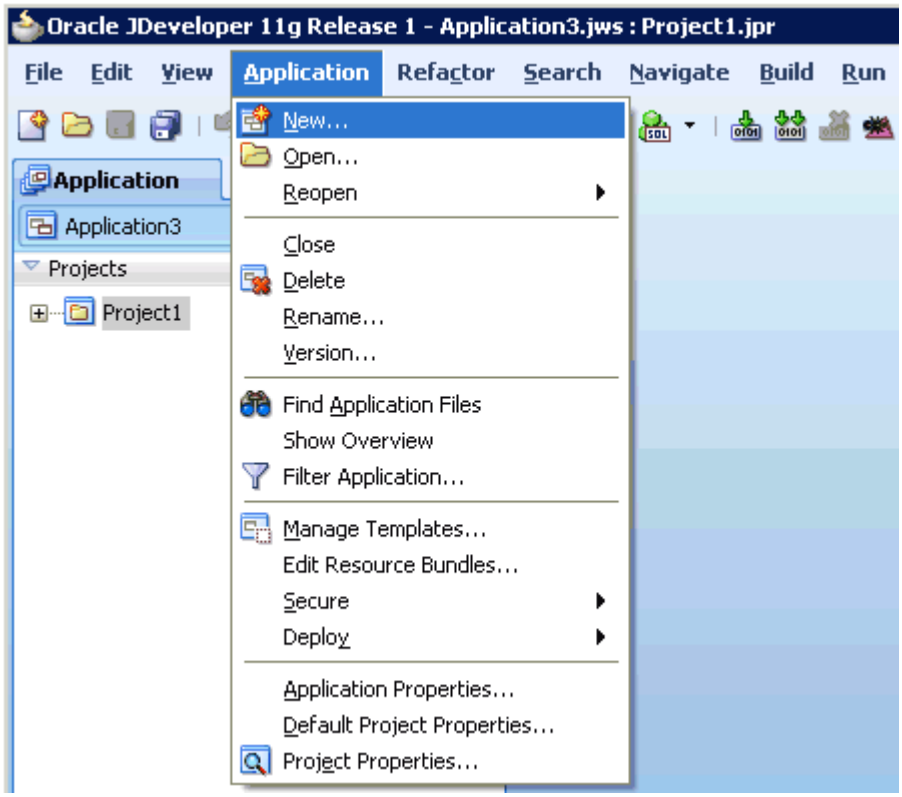
You can now create a new SOA application, which is the first step that is required to define a BPEL outbound process in JDeveloper.

4.4.2 Creating a New SOA Application for the Outbound BPEL Process

Perform the following steps to create a new SOA application for the outbound BPEL process:

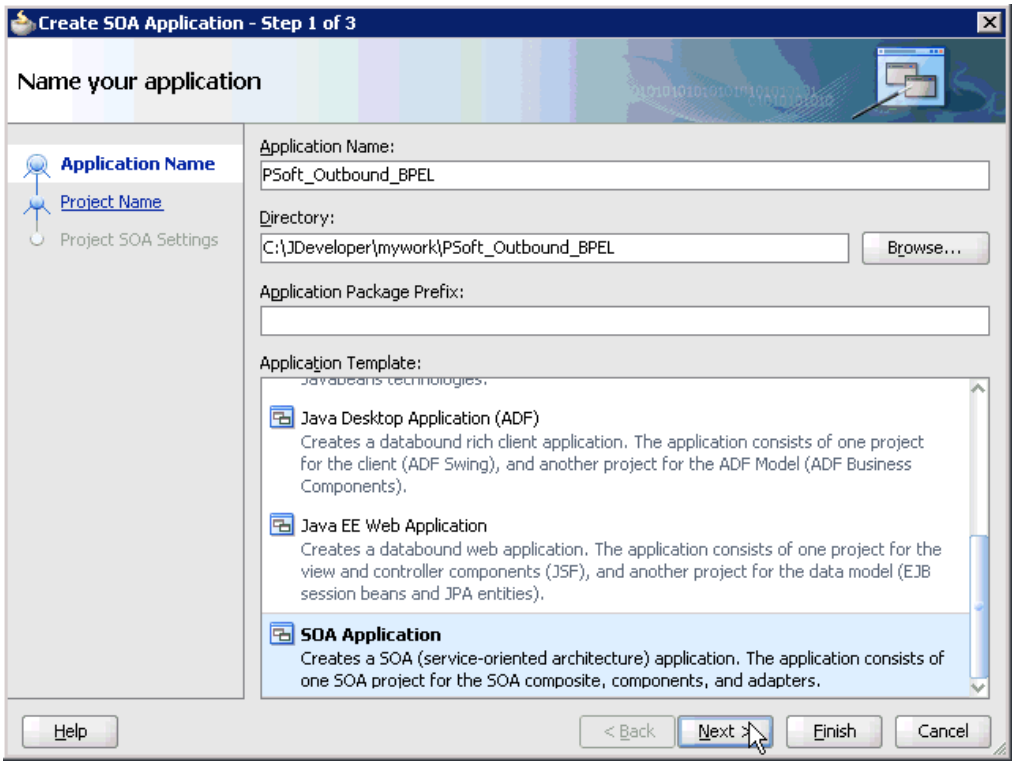
1. Open Oracle JDeveloper on your system.
2. Click **Application** in the menu bar and select **New** from the menu, as shown in Figure 4–12.

Figure 4–12 New Option



The Create SOA Application wizard is displayed, as shown in Figure 4–13.

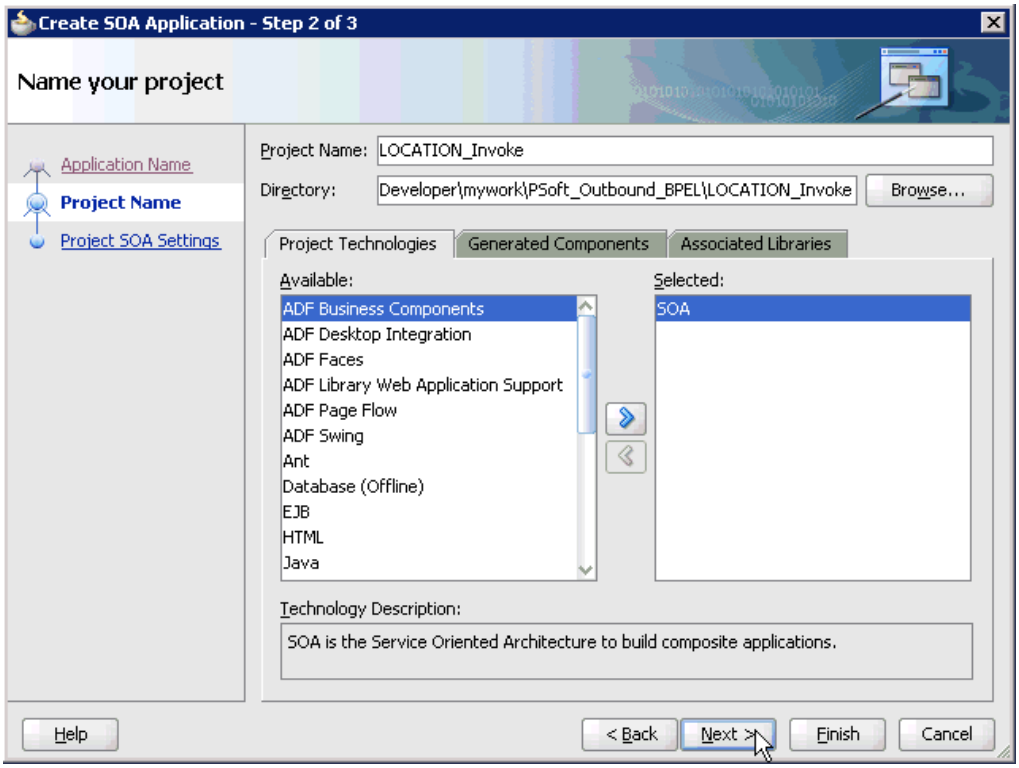
Figure 4–13 Create SOA Application Wizard



3. From the Application Template list, click **SOA Application**.
4. Enter a name for the new SOA application (for example, PSoft_Outbound_BPEL) and click **Next**.

   The Name your project page is displayed, as shown in Figure 4–14.

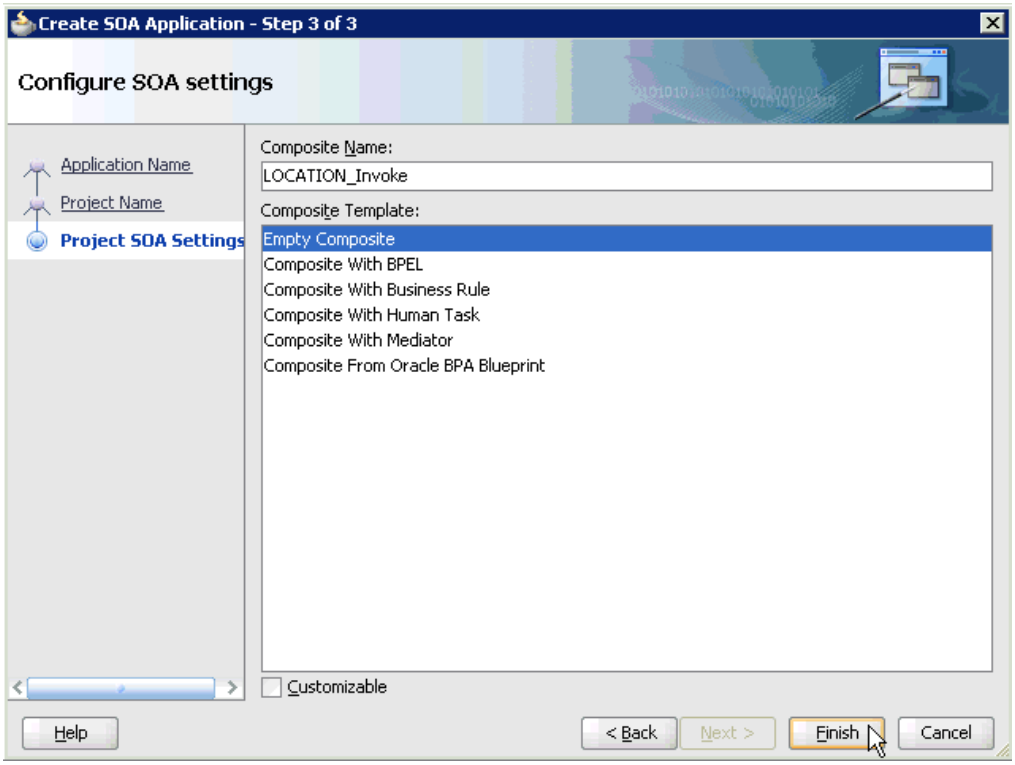
Figure 4–14 Name Your Project Page



5. Enter a project name (for example, LOCATION_Invoke) and click **Next**.

   The Configure SOA settings page is displayed, as shown in Figure 4–15.

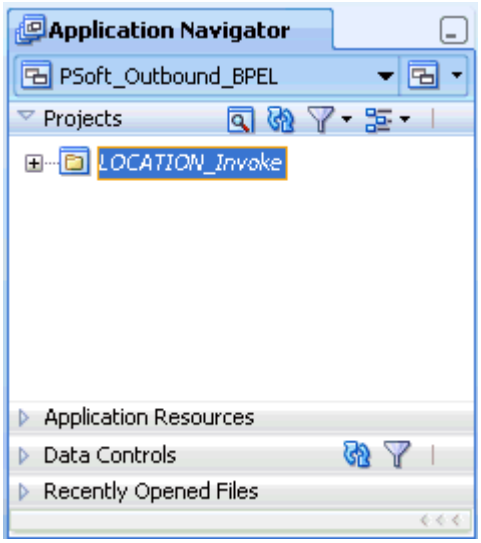
Figure 4–15 Configure SOA Settings Page



6. From the Composite Template list, select **Empty Composite** and click **Finish**.

   The new SOA application (PSoft_Outbound_BPEL) and associated project (LOCATION_Invoke) are added to the Application Navigator tab in the left pane, as shown in Figure 4–16.

Figure 4–16 New SOA Application and Associated Project



4.4.3 Defining a BPEL Outbound Process

This section describes how to define a BPEL outbound process, which consists of the following stages:

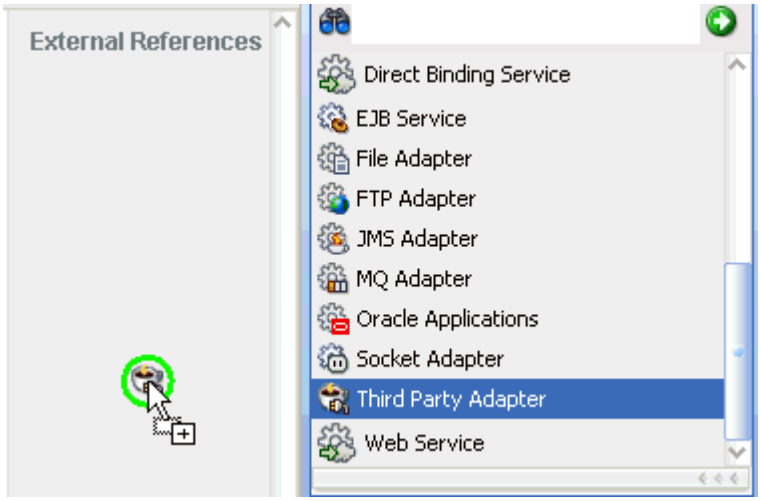
1. Configuring a Third Party Adapter Service Component
2. Configuring an Outbound BPEL Process Component

Configuring a Third Party Adapter Service Component

Perform the following steps to create a third party adapter service component:

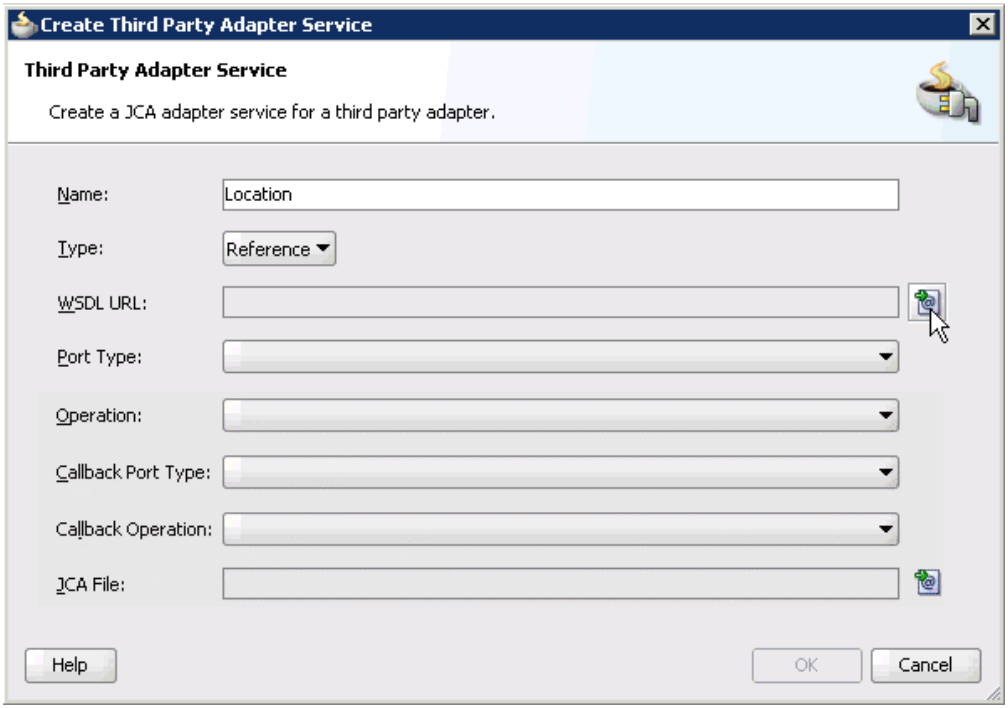
1. Drag and drop the **Third Party Adapter** component from the Component Palette tab (Service Adapters section) to the External References pane, as shown in Figure 4–17.

Figure 4–17 Third Party Adapter Component



The Create Third Party Adapter Service dialog is displayed, as shown in Figure 4–18.

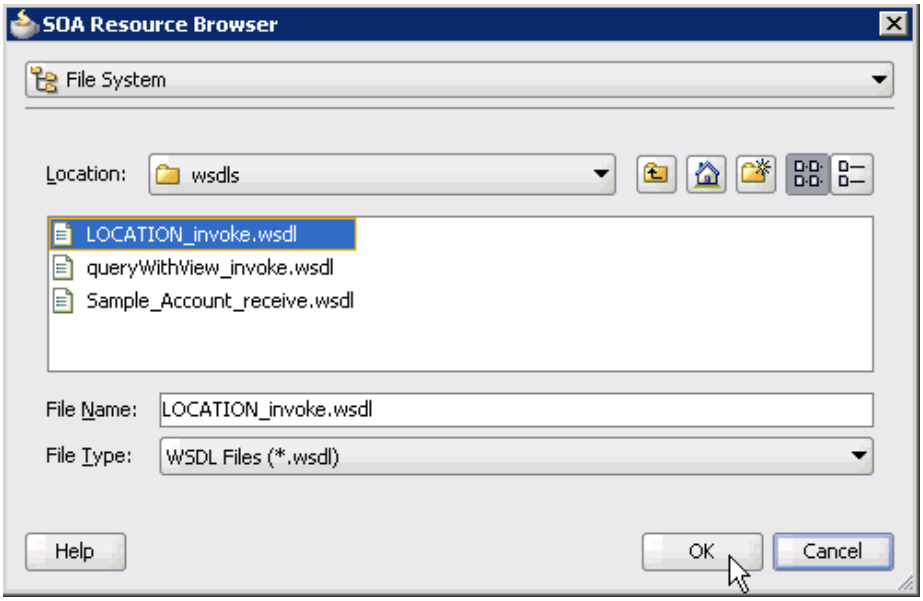
Figure 4–18 Create Third Party Adapter Service Dialog



2. Enter a name for the new third party adapter service.
3. Ensure that **Reference** is selected from the Type list (default).
4. Click the **Find existing WSDLs** icon, which is located to the right of the WSDL URL field.

   The SOA Resource Browser dialog is displayed, as shown in Figure 4–19.

Figure 4–19 SOA Resource Browser Dialog



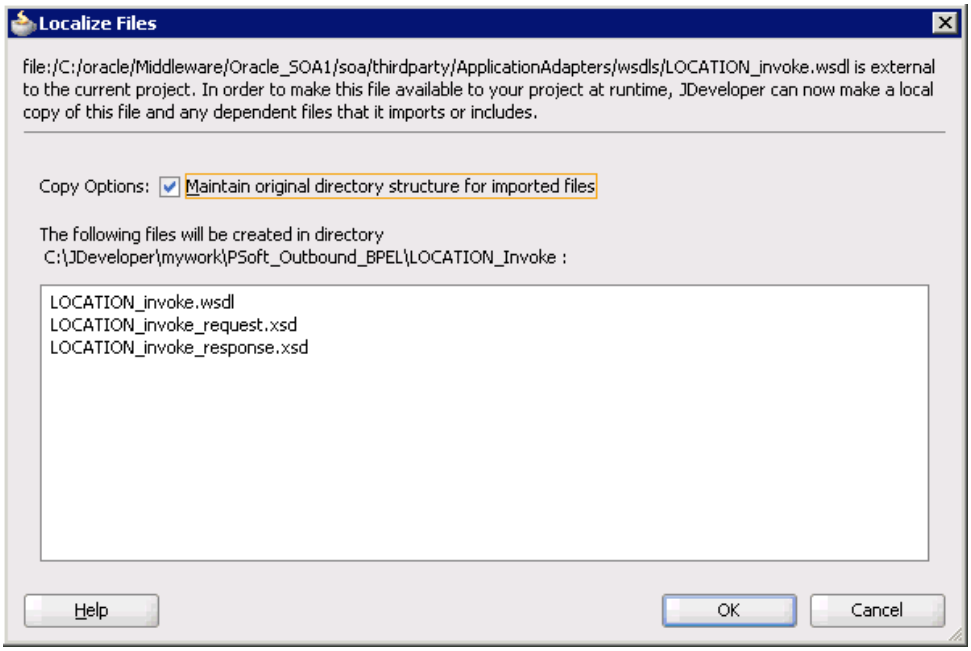
5. Browse and select an outbound WSDL file (for example, LOCATION_ invoke.wsdl) from the following directory:

```
<ADAPTER_HOME>\soa\thirdparty\ApplicationAdapters\wsdls
```

6. Click **OK**.

   The Localize Files dialog is displayed, as shown in Figure 4–20.

Figure 4–20 Localize Files Dialog

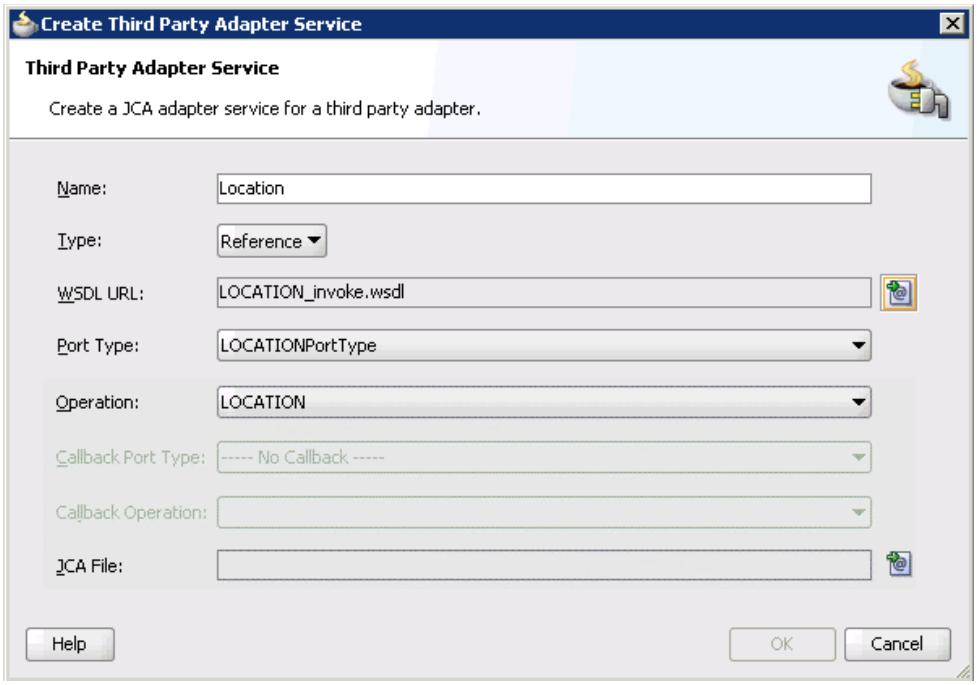


7. Click **OK**.

   The outbound WSDL file and associated request and response XML schema files (.xsd) are imported to the project folder that has been created.

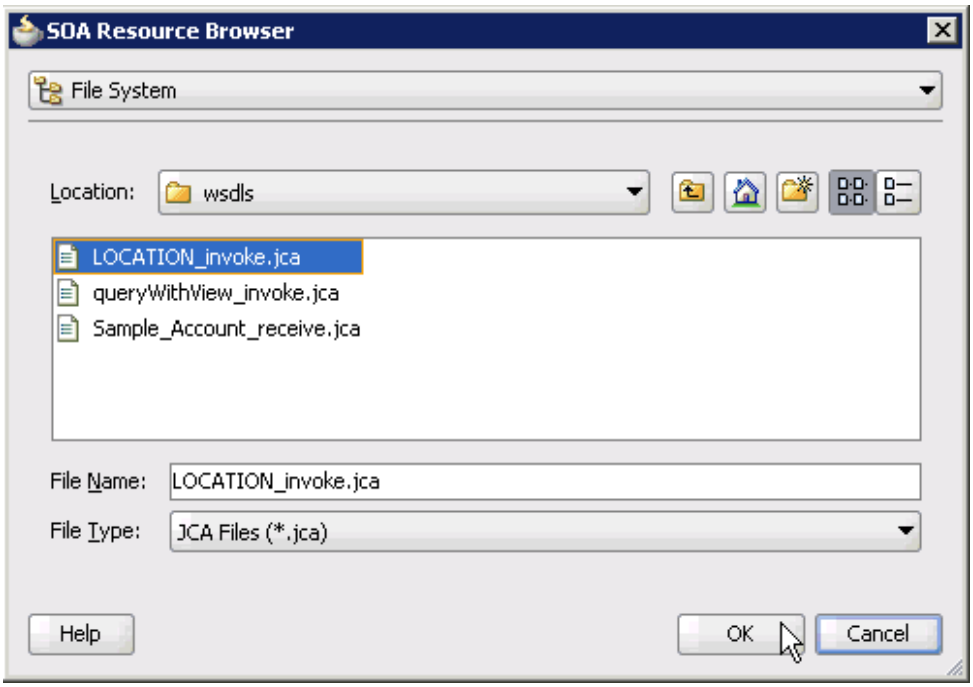
   You are returned to the Create Third Party Adapter Service dialog, as shown in Figure 4–21.

Figure 4–21 Create Third Party Adapter Service Dialog



8. Click the **Find JCA Files** icon, which is located to the right of the JCA File field. The SOA Resource Browser dialog is displayed, as shown in Figure 4–22.

Figure 4–22 SOA Resource Browser Dialog



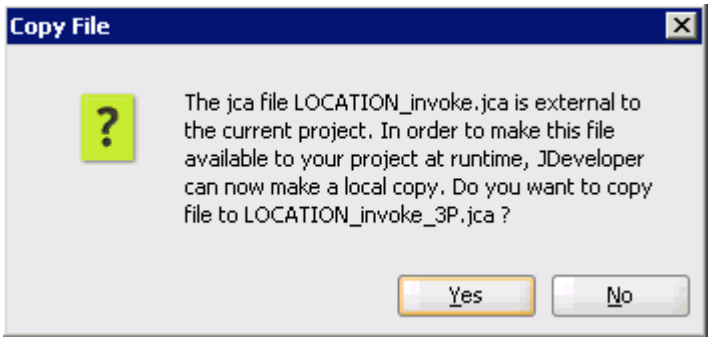
9. Browse and select the JCA properties file (for example, LOCATION_invoke.jca) from the following directory:

   `<ADAPTER_HOME>\soa\thirdparty\ApplicationAdapters\wsdls`

10. Click **OK**.

    The following message is displayed, as shown in Figure 4–23.

Figure 4–23 Copy File Confirmation Message

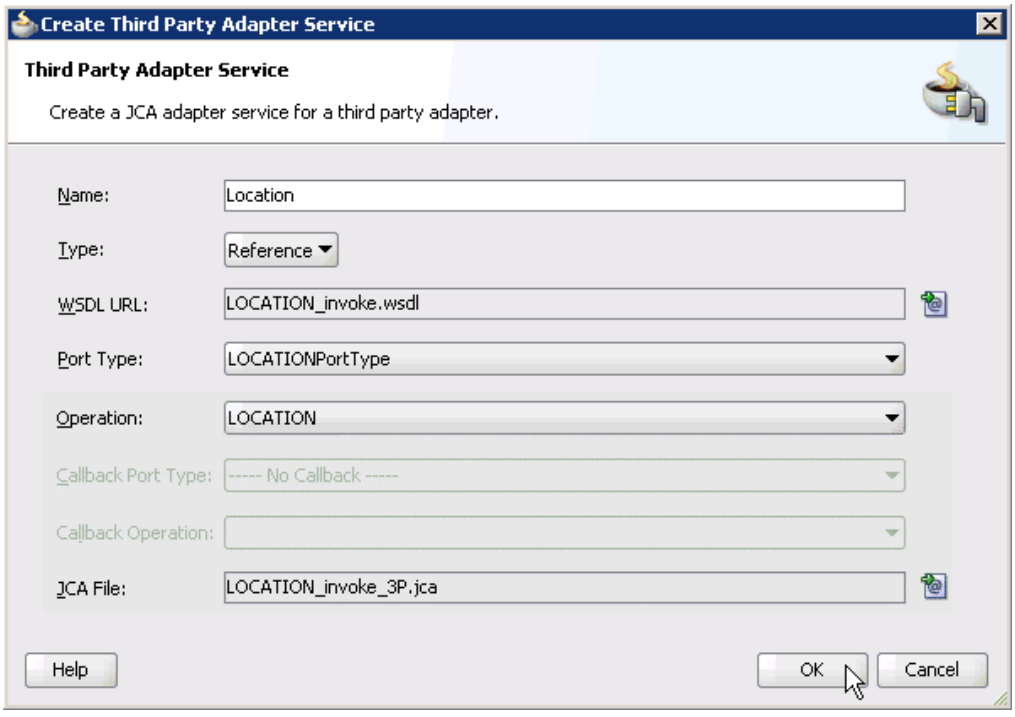


11. Click **Yes**.

    A copy of the JCA properties file is made in the project folder.

    You are returned to the Create Third Party Adapter Service dialog, as shown in Figure 4–24.

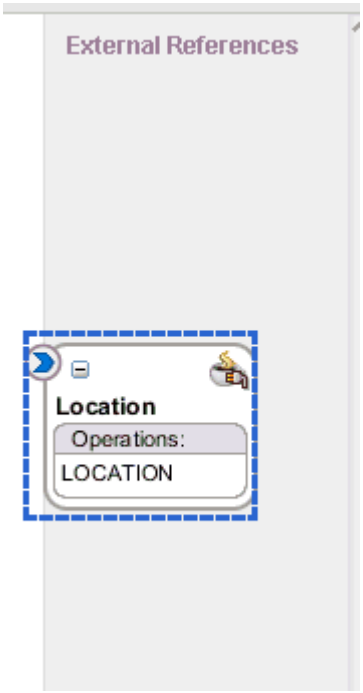
Figure 4–24 Create Third Party Adapter Service Dialog



12. Click **OK**.

    The third party adapter service component (Location) is created and displayed in the External References pane, as shown in Figure 4–25.

Figure 4–25 Third Party Adapter Service Component



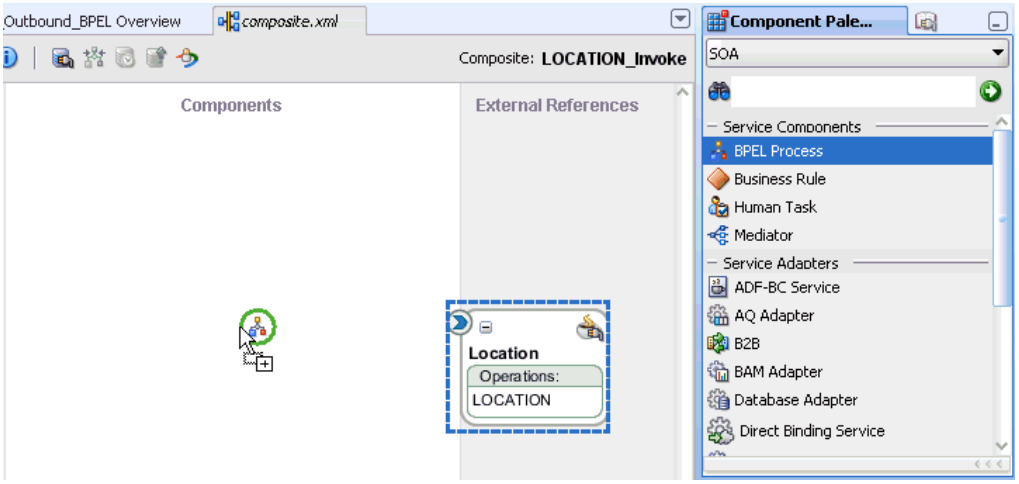
You are now ready to configure an outbound BPEL process component.

Configuring an Outbound BPEL Process Component

Perform the following steps to configure an outbound BPEL process component:

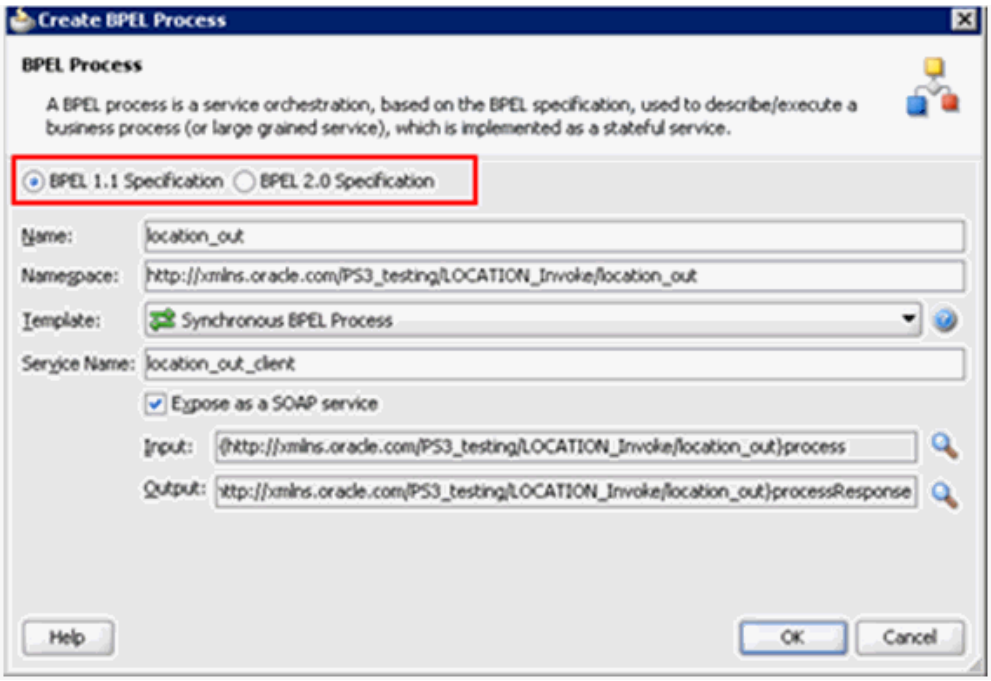
1. Drag and drop the **BPEL Process** component from the Component Palette tab (Service Components section) to the Components pane, as shown in Figure 4–26.

Figure 4–26 BPEL Process Component



The Create BPEL Process dialog is displayed, as shown in Figure 4–27.

Figure 4–27 Create BPEL Process Dialog



2. In the Name field, enter a name to identify the new outbound BPEL process component (for example, location_out).

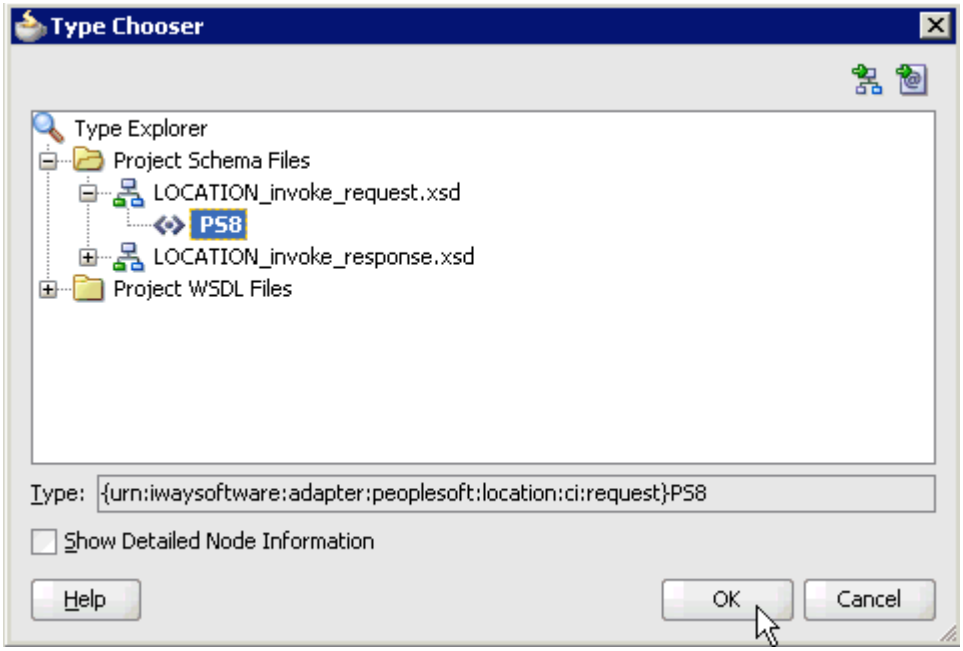
   By default, the BPEL specification is set to **BPEL 1.1 Specification**. The BBPEL Process also supports BPEL 2.0 Specification.

3. From the Template list, select **Synchronous BPEL Process**.

4. Click the **Browse Input Elements** icon, which is located to the right of the Input field to select the associated XML request schema file.

   The Type Chooser dialog is displayed, as shown in Figure 4–28.

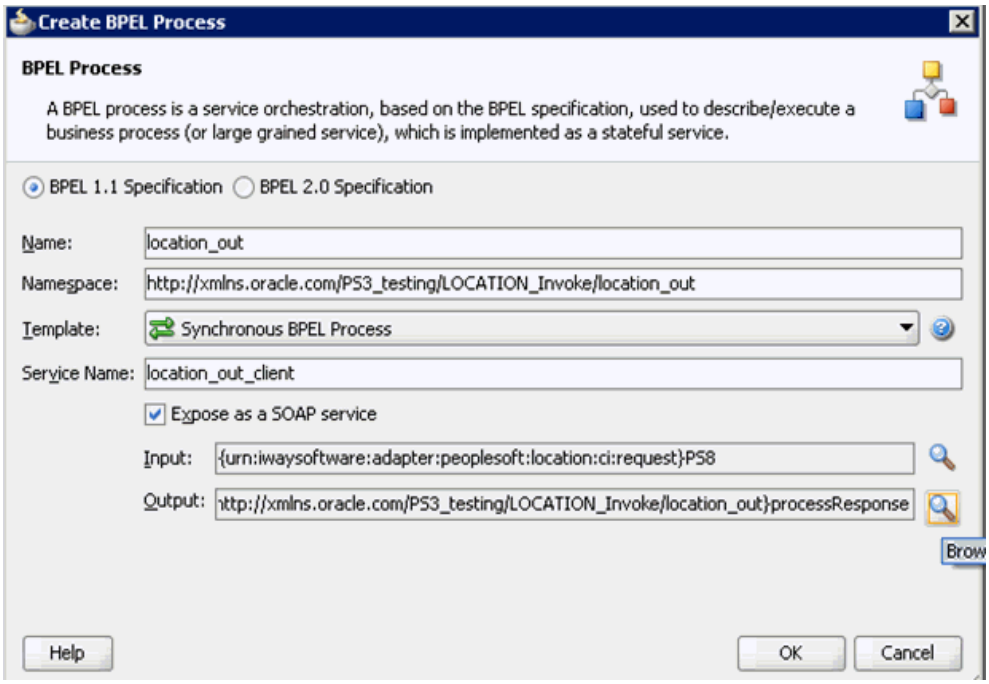
Figure 4–28 Type Chooser Dialog



5. Expand **Project Schema Files**, **LOCATION_invoke_request.xsd**, and select **PS8**.
6. Click **OK**.

   You are returned to the Create BPEL Process dialog, as shown in Figure 4–29.

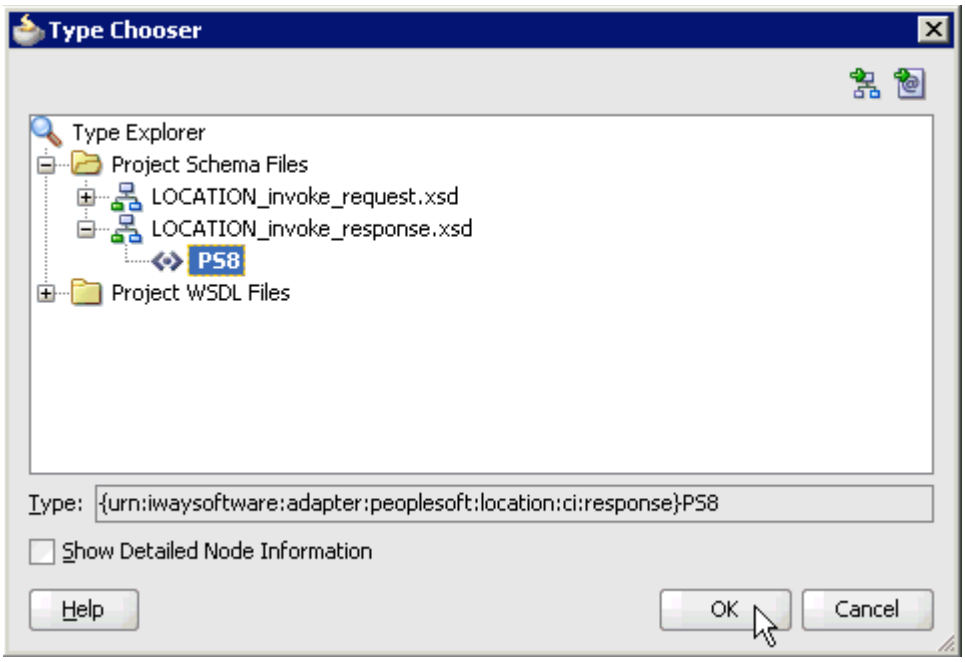
Figure 4–29 Create BPEL Process Dialog



7. Click the **Browse Output Elements** icon, which is located to the right of the Output field to select the associated XML response schema file.

   The Type Chooser dialog is displayed, as shown in Figure 4–30.

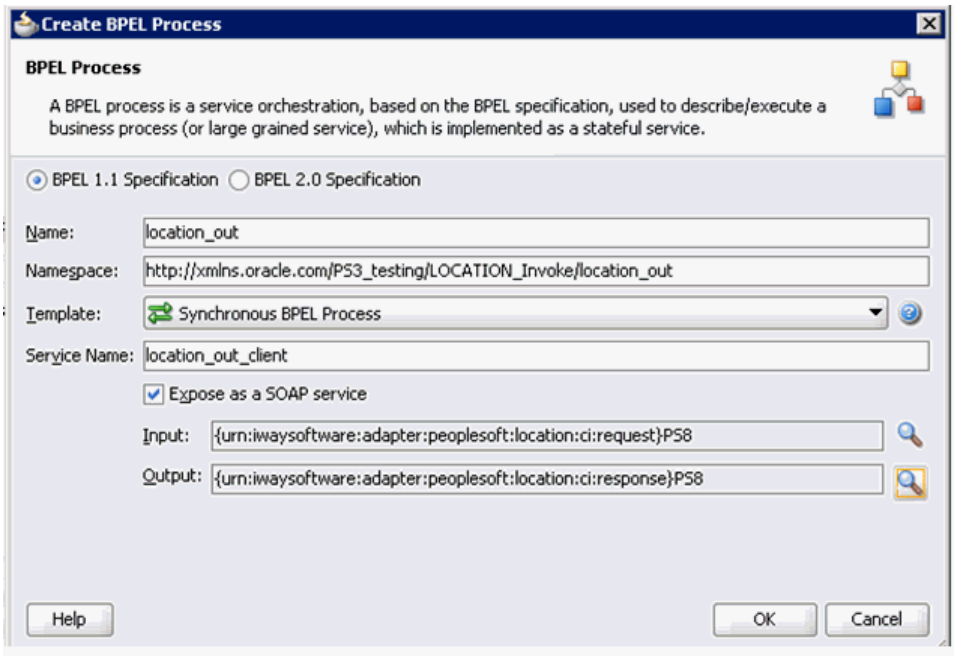
Figure 4–30 Type Chooser Dialog



8. Expand **Project Schema Files**, **LOCATION_invoke_response.xsd**, and select **PS8**.
9. Click **OK**.

   You are returned to the Create BPEL Process dialog, as shown in Figure 4–31.

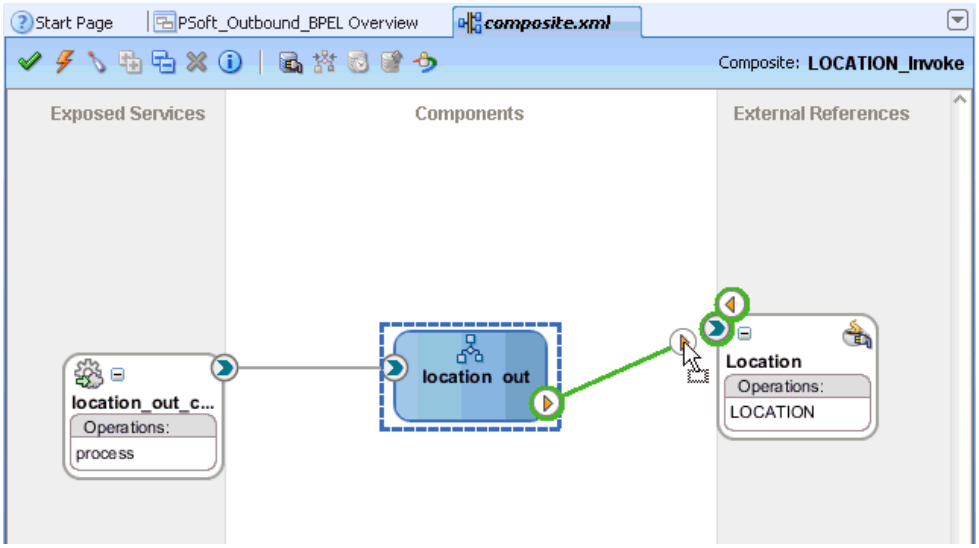
Figure 4–31 Create BPEL Process Dialog



10. Click **OK**.

11. Create a connection between the outbound BPEL process component (location_out) and the third party adapter service component (Location), as shown in Figure 4–32.

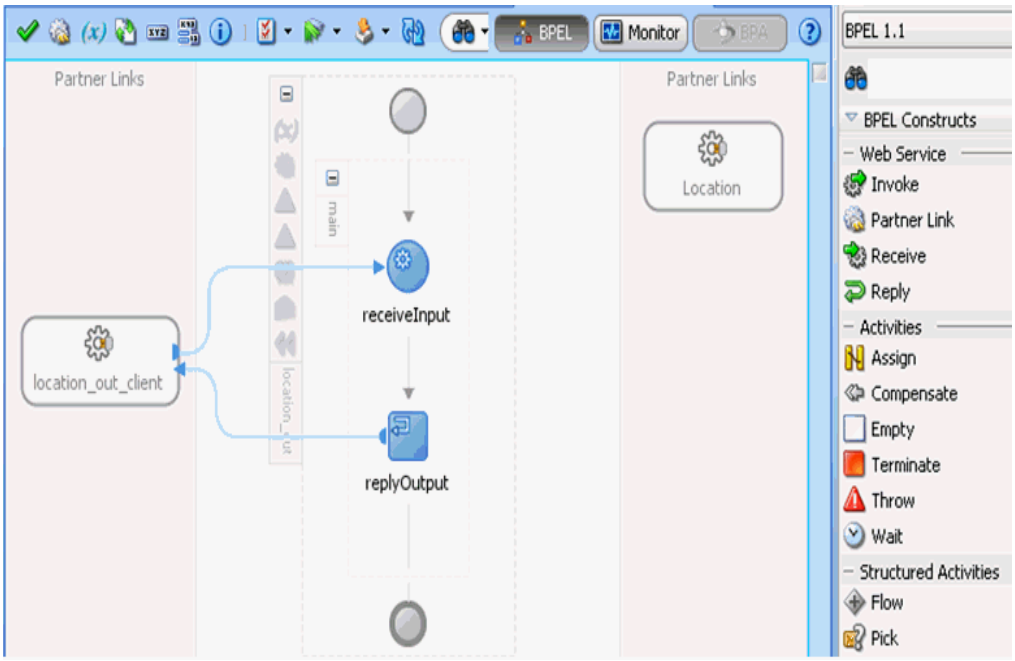
Figure 4–32 Component Connection



12. Double-click the outbound BPEL process component (location_out) in the Components pane.

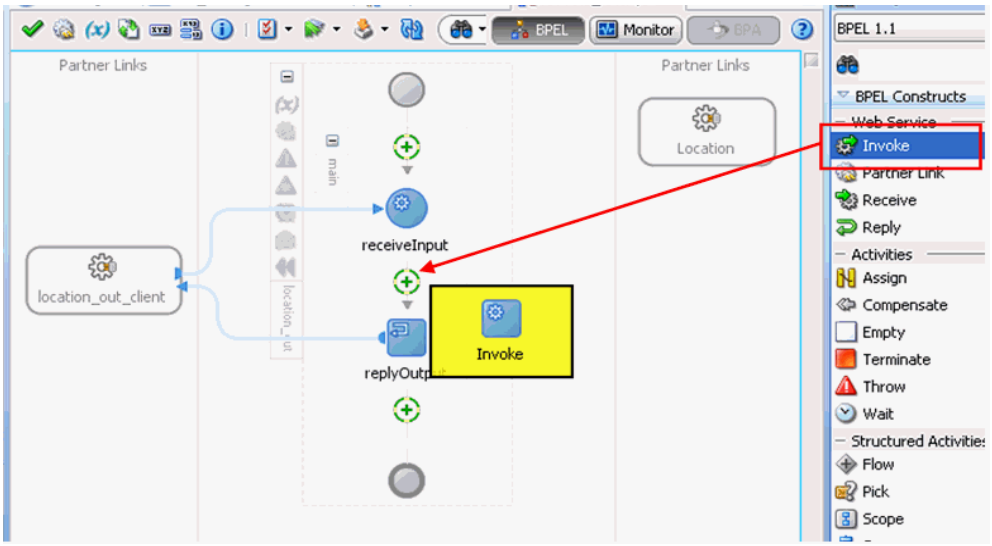
    The following is displayed, as shown in Figure 4–33.

Figure 4–33 Outbound BPEL Process Component



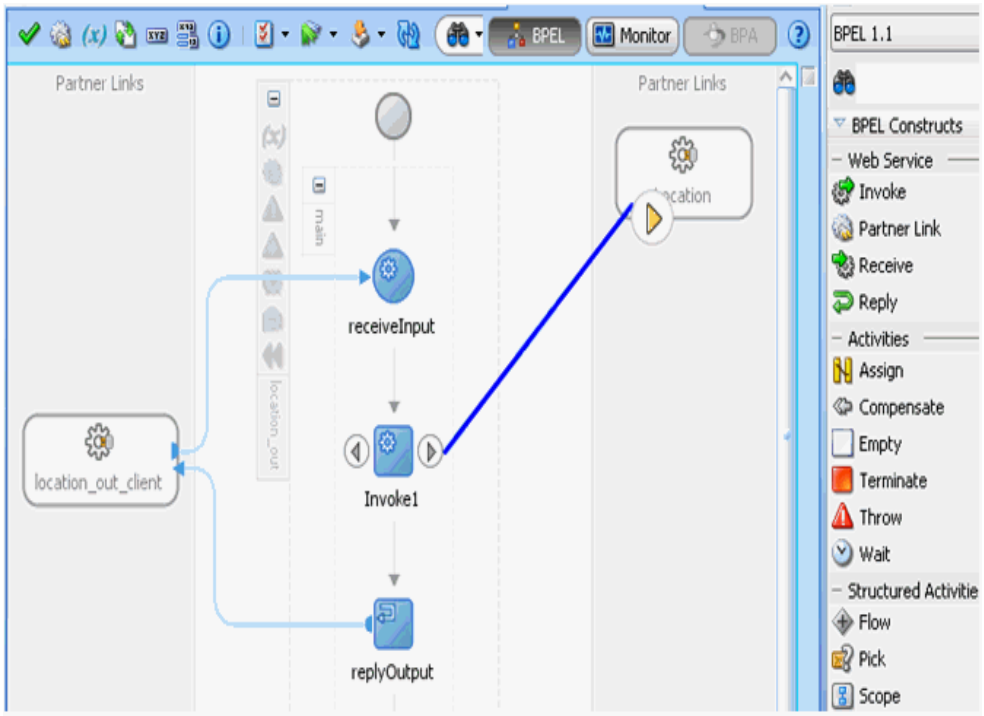
13. Drag and drop the **Invoke** activity component to the Components pane and place it between the **receiveInput** activity component and the **replyOutput** activity component, as shown in Figure 4–34.

Figure 4–34 Invoke Activity Component



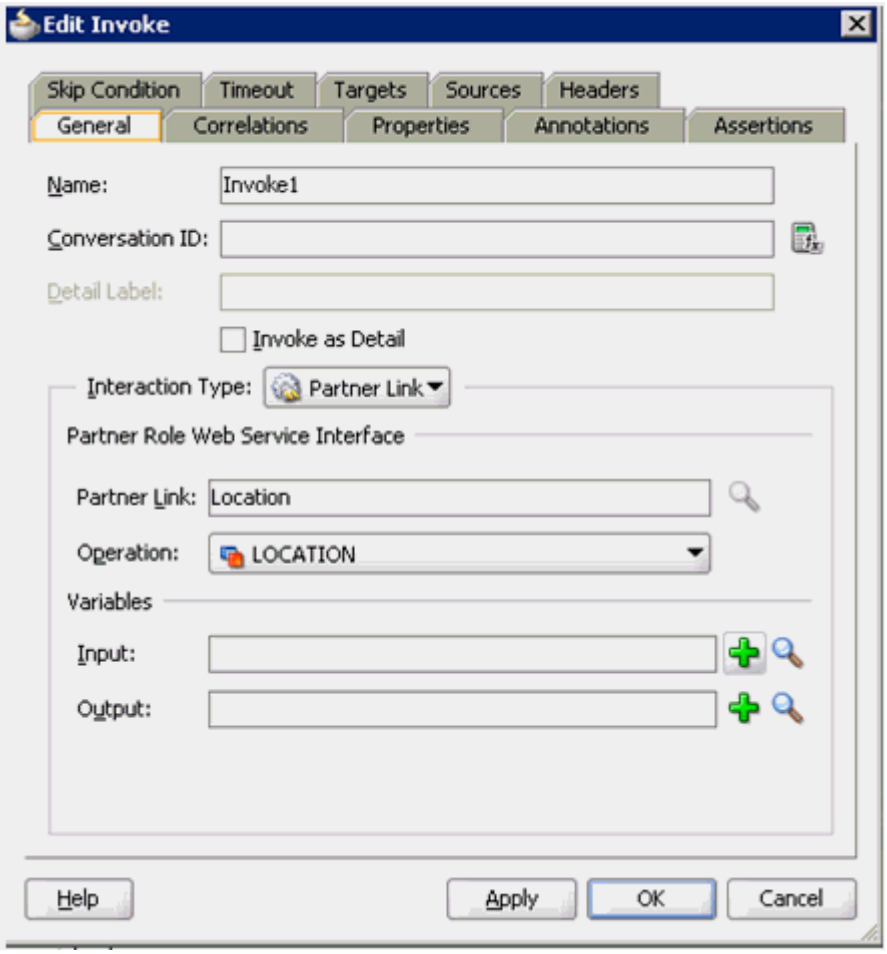
14. Create a connection between the new Invoke activity component (Invoke1) and the third party adapter service component (Location), as shown in Figure 4–35.

Figure 4–35 Created Connection



The Edit Invoke dialog is displayed, as shown in Figure 4–36.

Figure 4–36 Edit Invoke Dialog



15. Click the **Automatically Create Input Variable** icon, which is located to the right of the Input field to configure a new input variable.

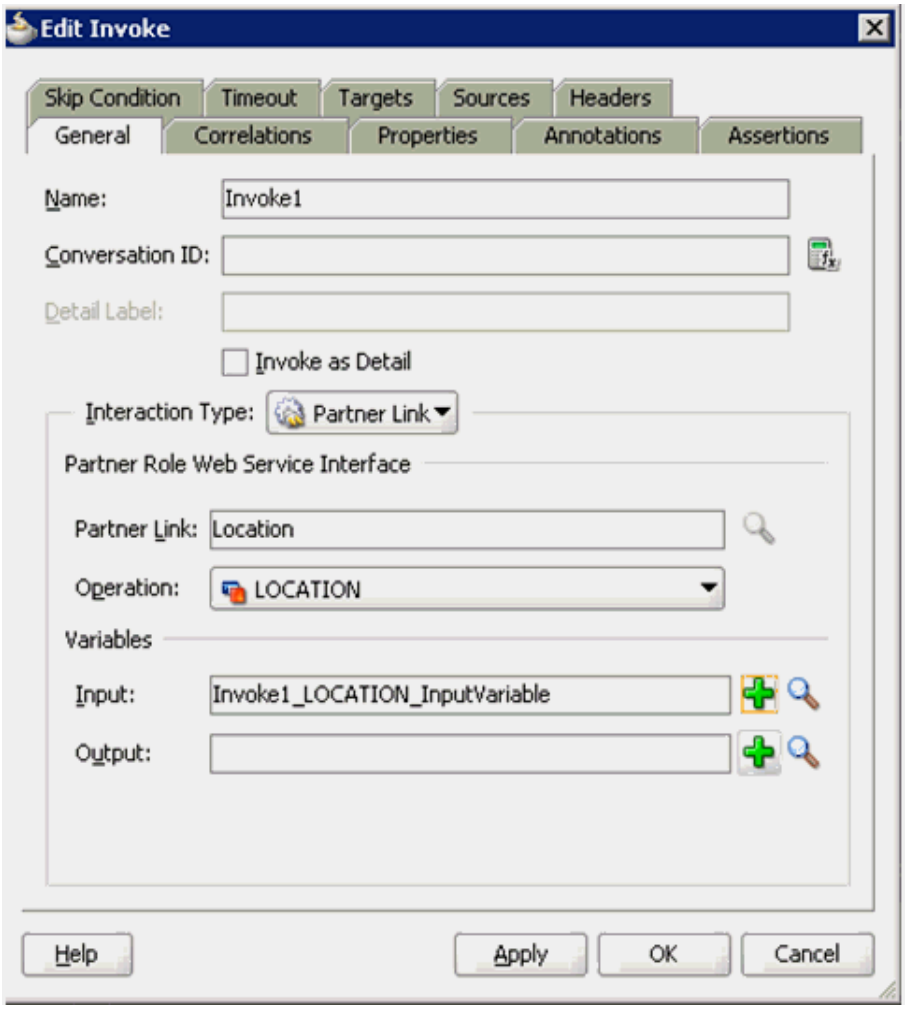
    The Create Variable dialog is displayed, as shown in Figure 4–37.

Figure 4–37 Create Variable Dialog

16. Accept the default values that are provided for the new input variable and click **OK**.

    You are returned to the Edit Invoke dialog, as shown in Figure 4–38.

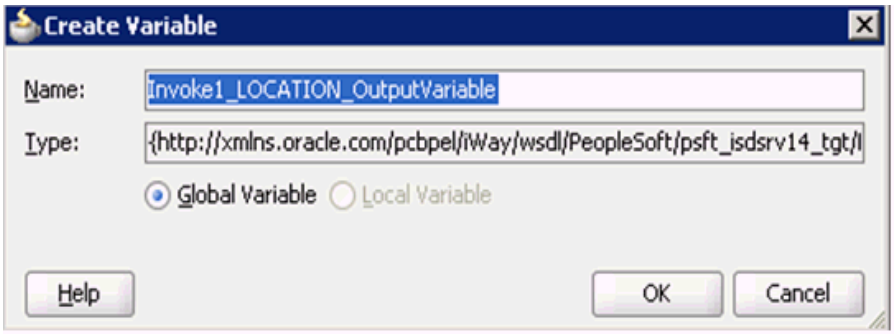
Figure 4–38 Edit Invoke Dialog



17. Click the **Automatically Create Output Variable** icon, which is located to the right of the Output field to configure a new output variable.

    The Create Variable dialog is displayed, as shown in Figure 4–39.

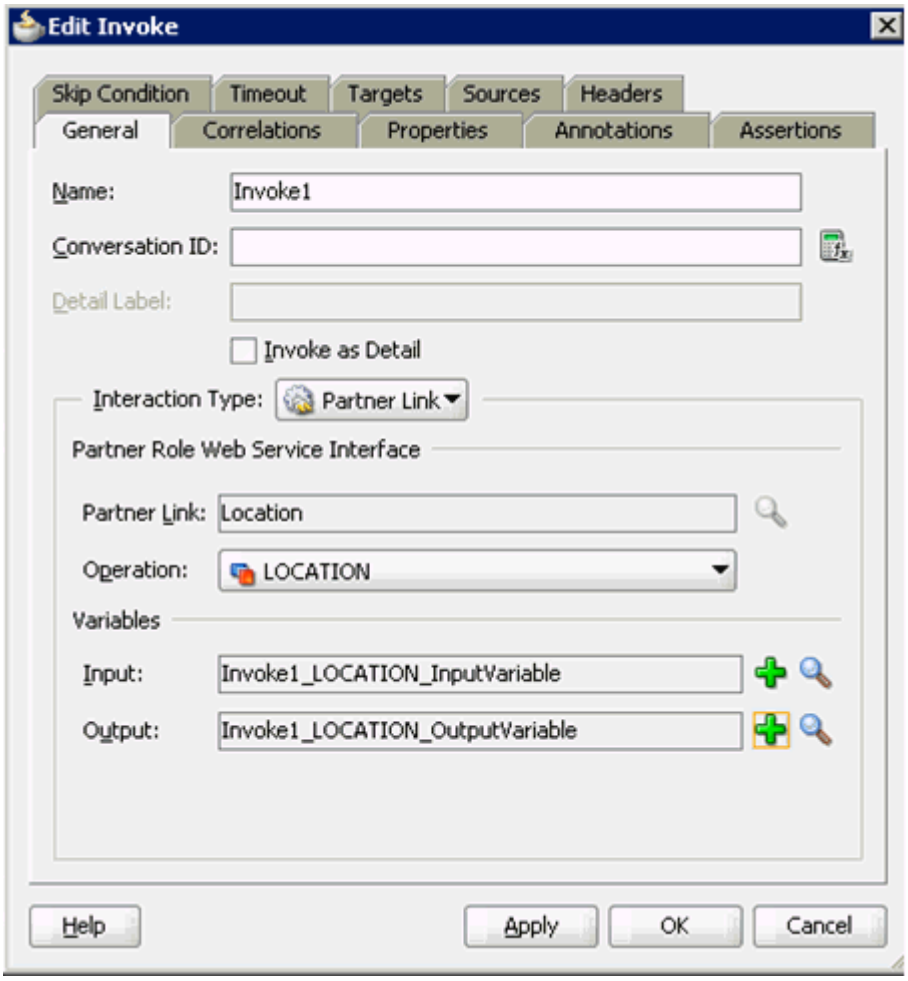
Figure 4–39 Create Variable Dialog



18. Accept the default values that are provided for the new output variable and click **OK**.

    You are returned to the Edit Invoke dialog, as shown in Figure 4–40.

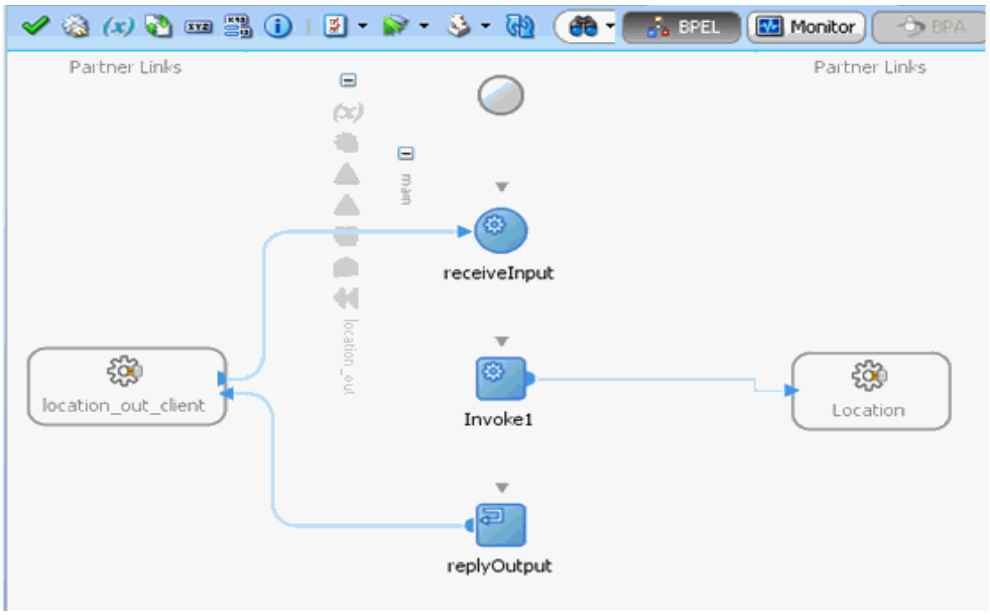
Figure 4–40 Edit Invoke Dialog



19. Click **Apply** and then **OK**.

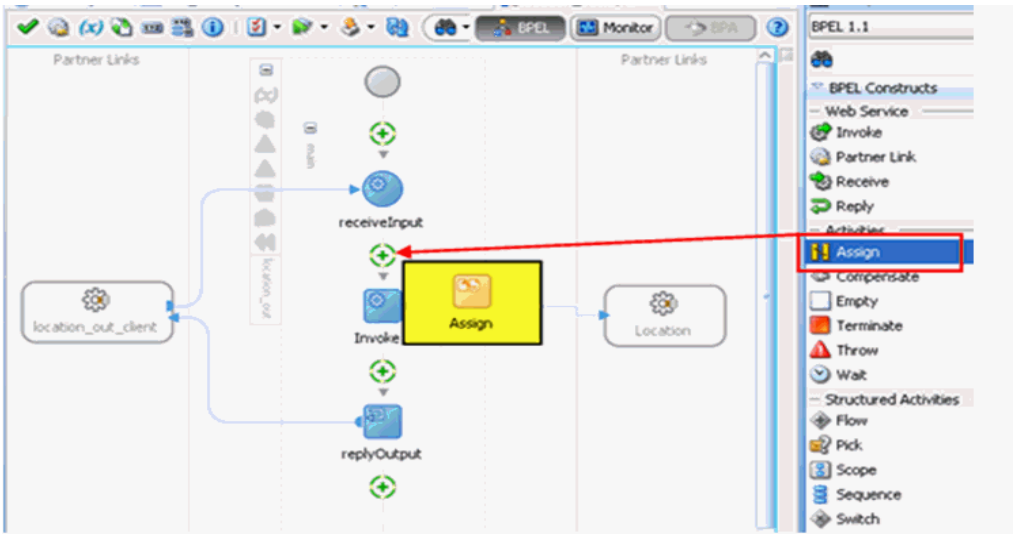
The Invoke activity component (Invoke1) is updated accordingly, as shown in Figure 4–41.

Figure 4–41 Invoke Activity Component



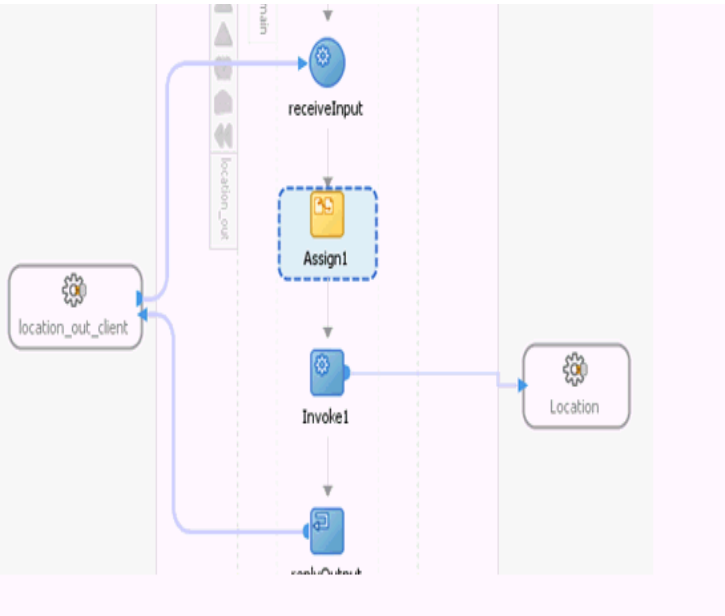
20. Drag and drop the **Assign** activity component to the Components pane and place it between the Receive activity component (receiveInput) and the Invoke activity component (Invoke1), as shown in Figure 4–42.

Figure 4–42 Assign Activity Component



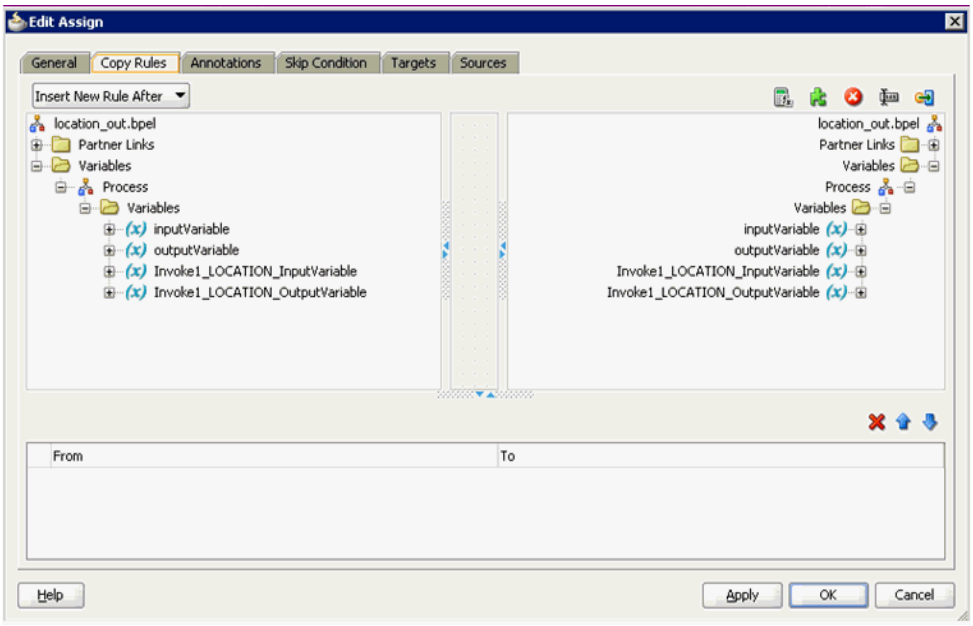
21. Double-click the new Assign activity component (**Assign1**), as shown in Figure 4–43.

Figure 4–43 Assign Activity Component



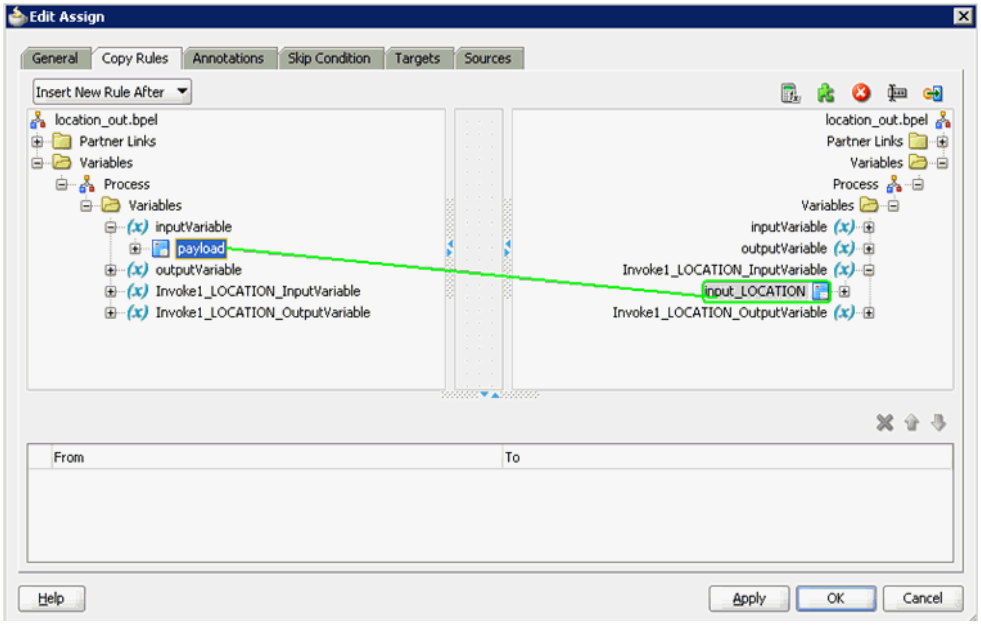
The Edit Assign dialog is displayed, as shown in Figure 4–44.

Figure 4–44 Edit Assign Dialog



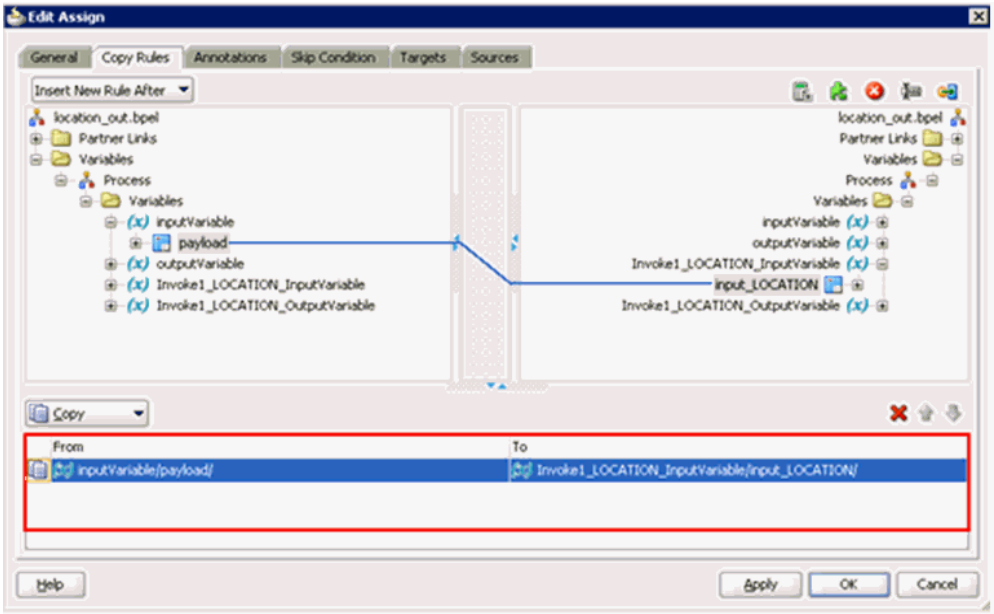
22. In the left pane, under Variables, expand **InputVariable**, and then select **payload**.
23. In the right pane, under Variables, expand **Invoke1_LOCATION_InputVariable** and select **input_ LOCATION**.
24. Drag and map the **payload** variable to the **input_ LOCATION** variable as shown in Figure 4–45.

Figure 4–45 Edit Assign Dialog



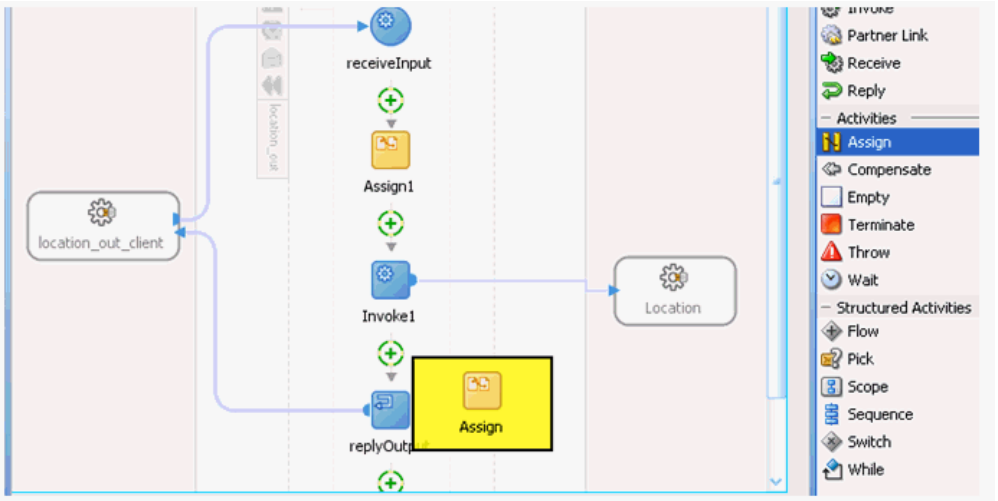
The mapped variables are populated in the highlighted area as shown in

Figure 4–46



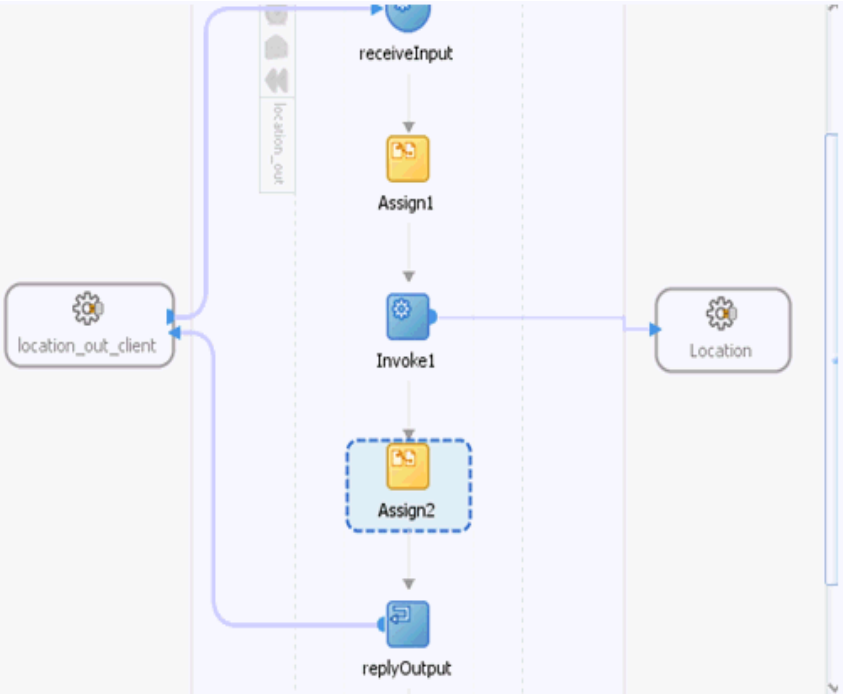
25. Click **Apply** and then **OK**.
26. Drag and drop the **Assign** activity component to the Components pane and place it between the Invoke activity (Invoke1) and the Reply activity (replyOutput), as shown in Figure 4–47.

Figure 4–47 Assign Activity Component



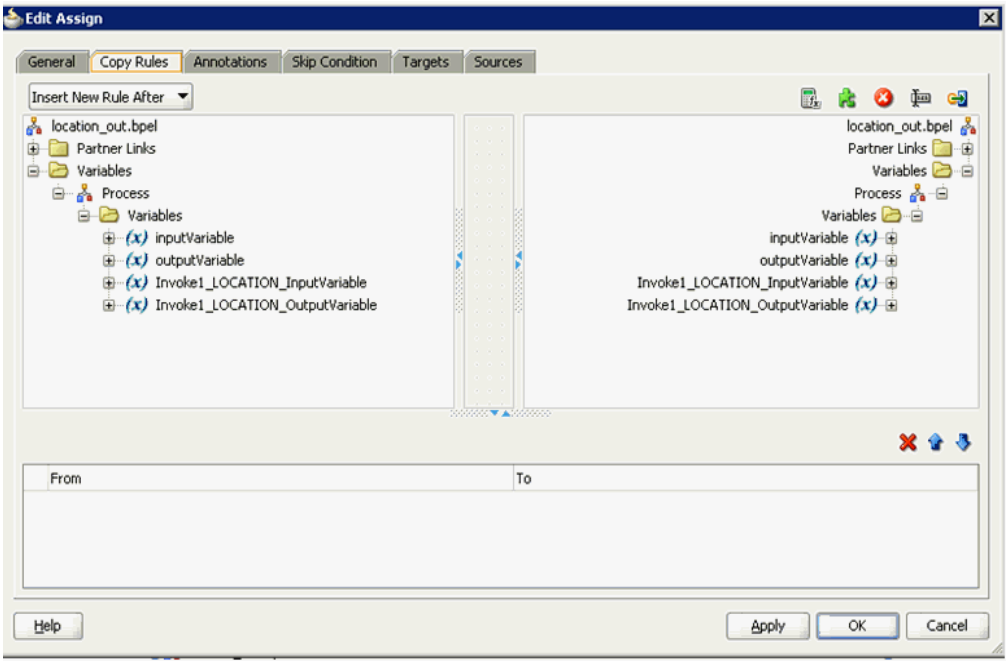
27. Double-click the new Assign activity component (**Assign2**), as shown in Figure 4–48.

Figure 4–48 Assign Dialog



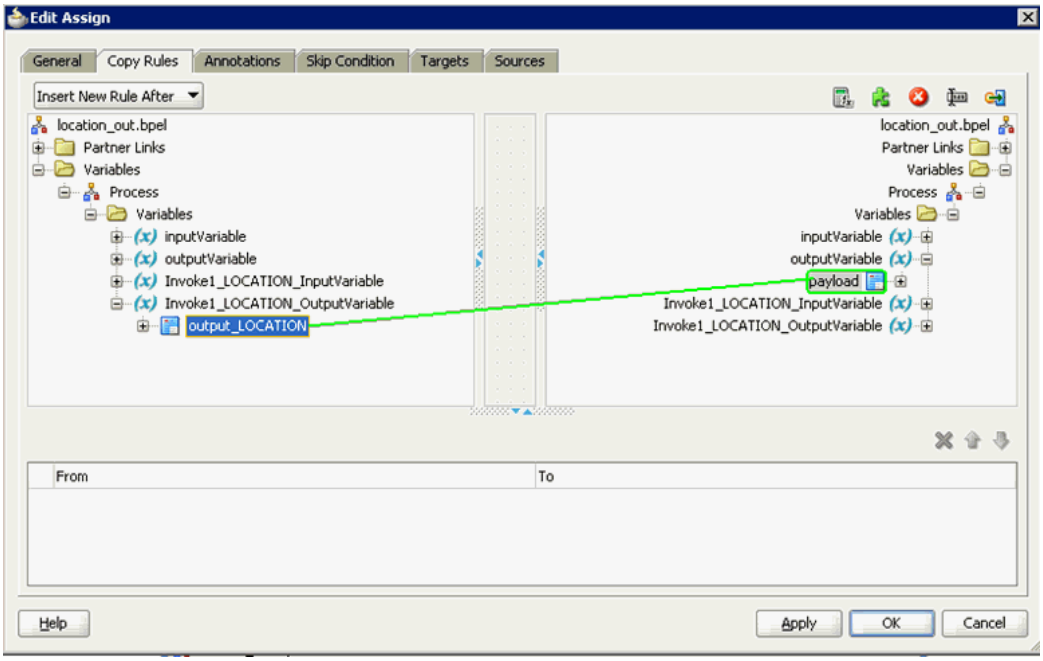
The Edit Assign dialog is displayed, as shown in Figure 4–49.

Figure 4–49 Edit Assign Dialog



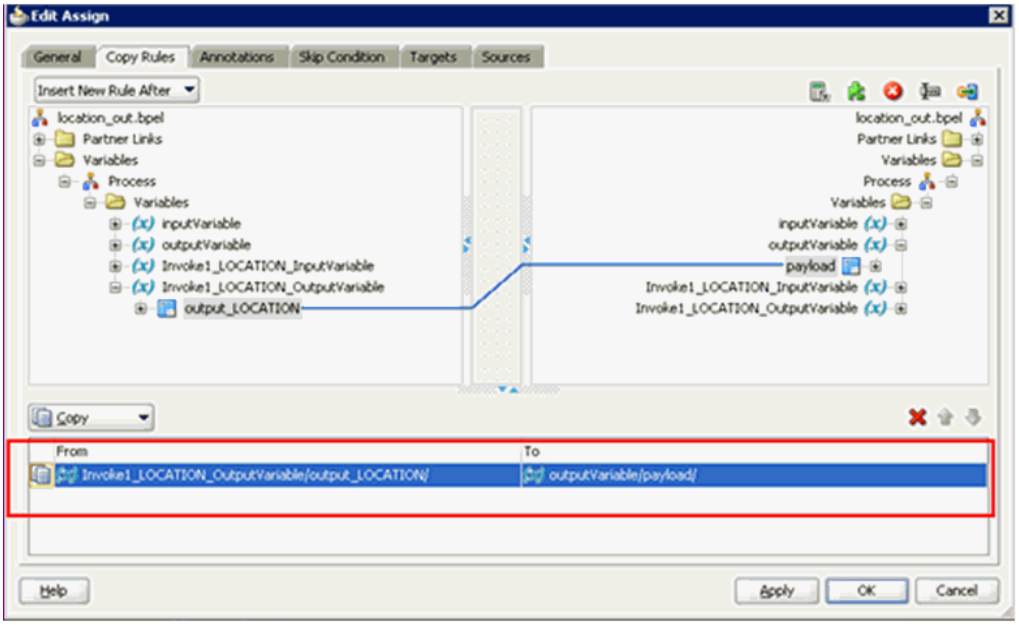
28. In the left pane, under **Variables**, expand **Invoke_1_LOCATION_OutputVariable**, and then select **output_LOCATION**.
29. In the right pane, under **Variables**, expand **outputVariable**, and then select **payload**.
30. Drag and map the output_LOCATION variable to the payload variable as shown in Figure 4–50.

Figure 4–50 Edit Assign Dialog



The mapped variables are populated in the highlighted area as shown in Figure 4–51.

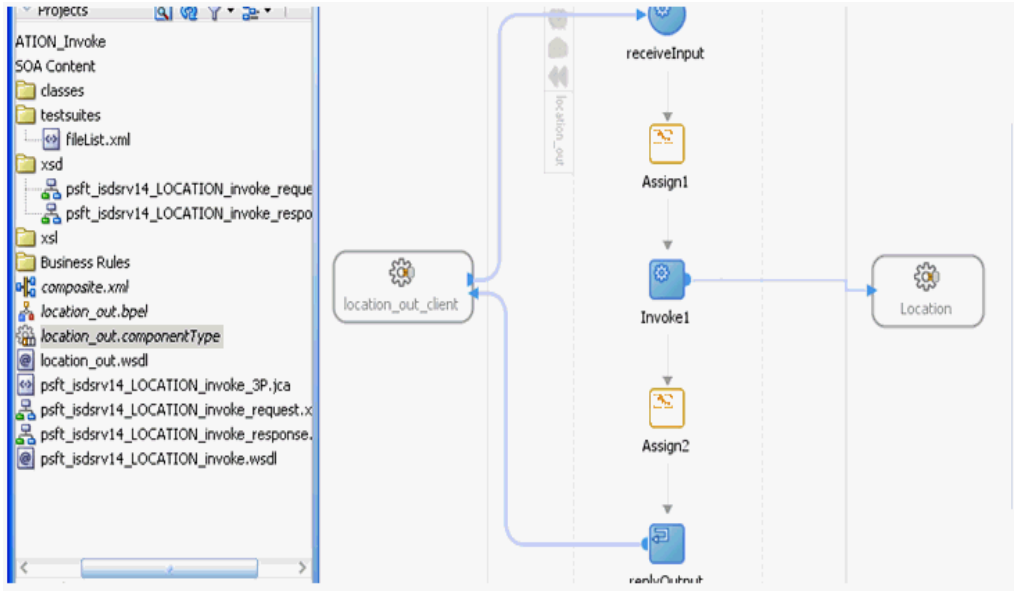
Figure 4–51 Edit Assign Dialog



31. Click **Apply** and then **OK**.

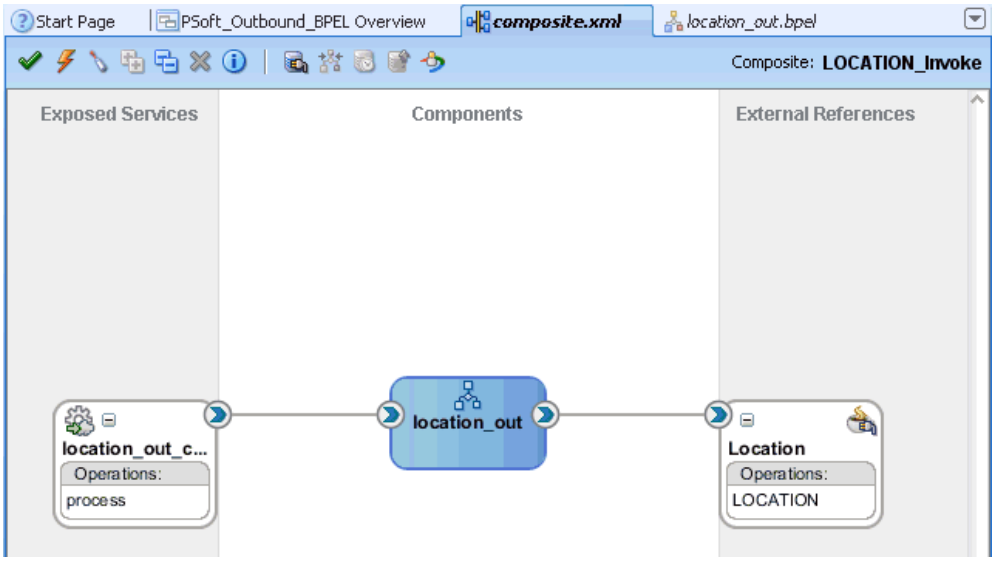
The completed activity flow is now displayed, as shown in Figure 4–52.

Figure 4–52 Completed Activity Flow



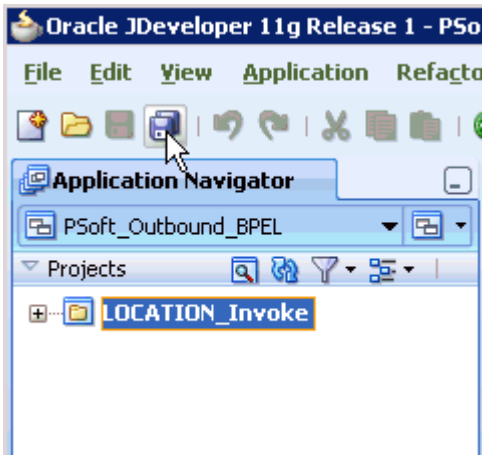
32. Double-click **composite.xml** in the left pane, as shown in Figure 4–53.

Figure 4–53 Composite.xml Tab



33. Click the **Save All** icon in the menu bar to save the new outbound BPEL process component that was configured, as shown in Figure 4–54.

Figure 4–54 Save All Icon



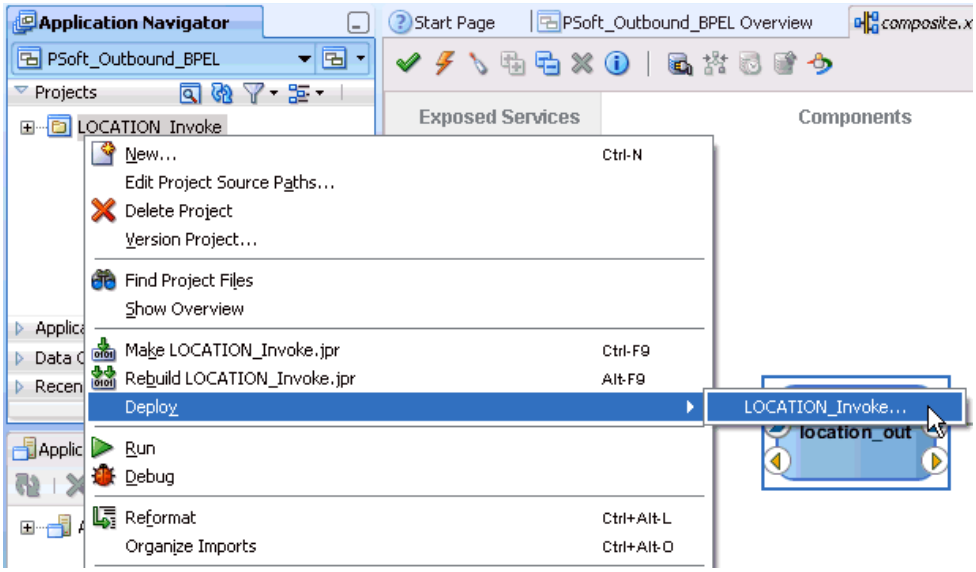
You are now ready to deploy the BPEL outbound process.

4.4.4 Deploying the BPEL Outbound Process

Perform the following steps to deploy the BPEL outbound process.

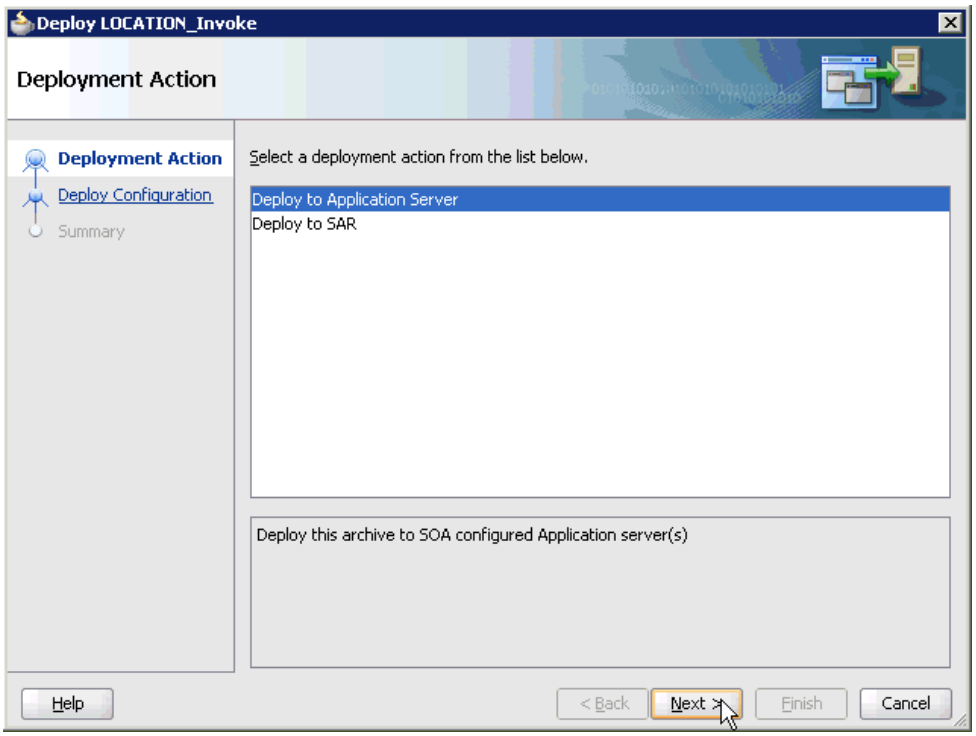
1. Right-click the project name in the left pane (for example, **LOCATION_Invoke**), select **Deploy**, and then click **LOCATION_Invoke**, as shown in Figure 4–55.

Figure 4–55 Deploy Option



The Deployment Action page is displayed, as shown in Figure 4–56.

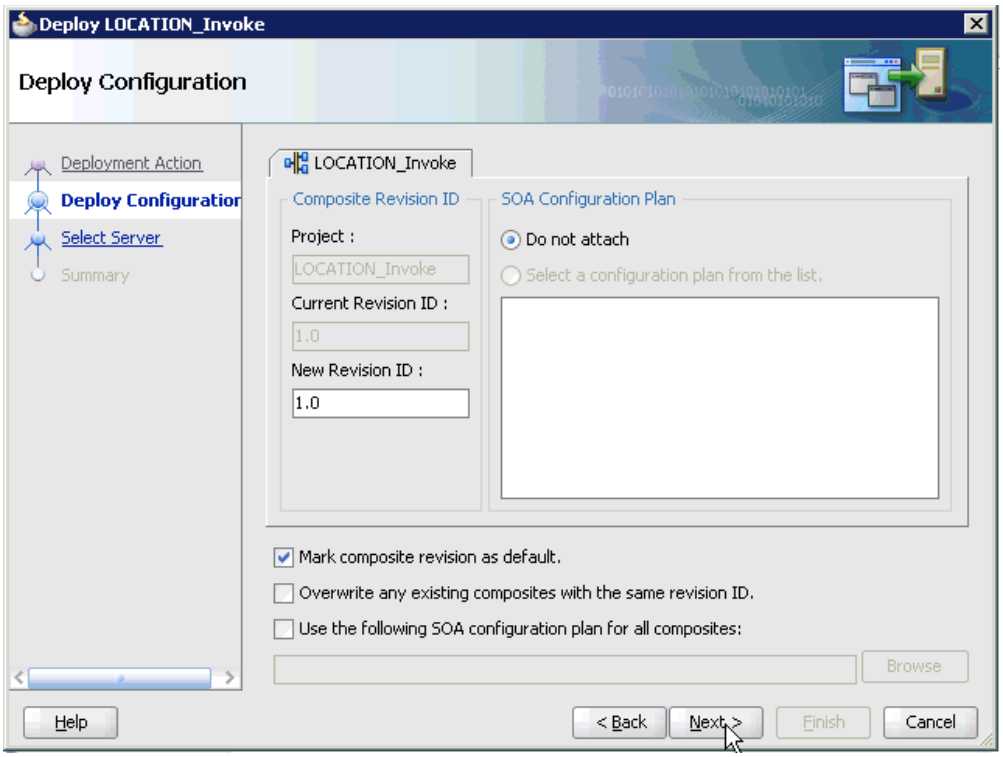
Figure 4–56 Deployment Action Page



2. Ensure that **Deploy to Application Server** is selected.
3. Click **Next**.

   The Deploy Configuration page is displayed, as shown in Figure 4–57.

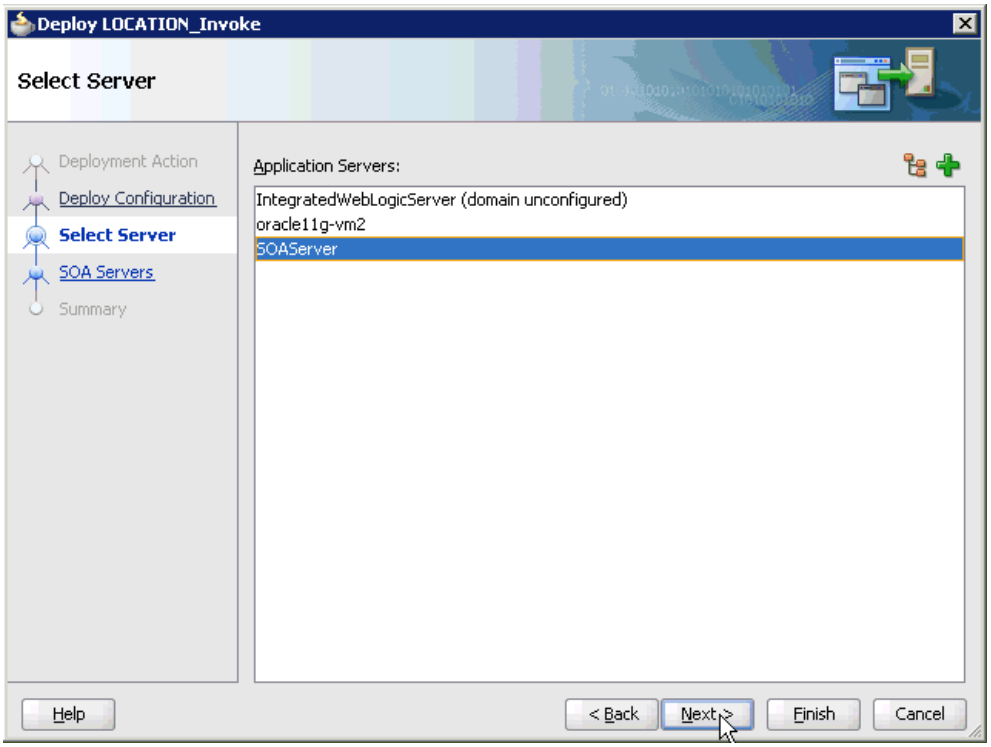
Figure 4–57 Deploy Configuration Page



4. Leave the default values selected and click **Next**.

   The Select Server page is displayed, as shown in Figure 4–58.

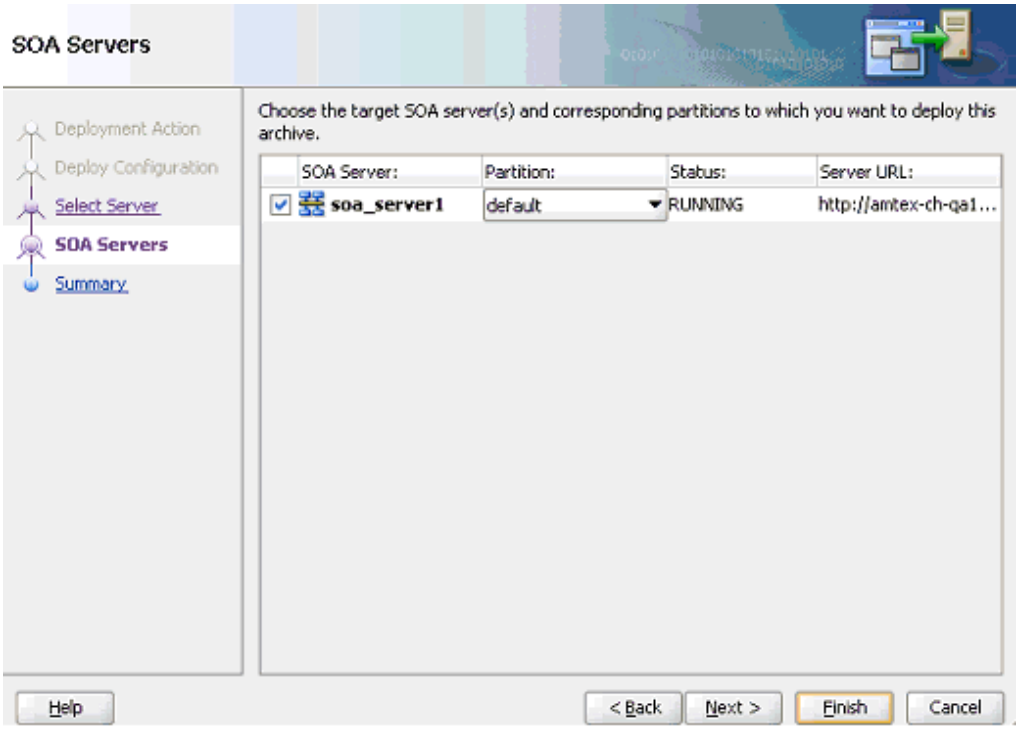
Figure 4–58 Select Server Page



5. Select an available application server that was configured and click **Next**.

   The SOA Servers page is displayed, as shown in Figure 4–59.

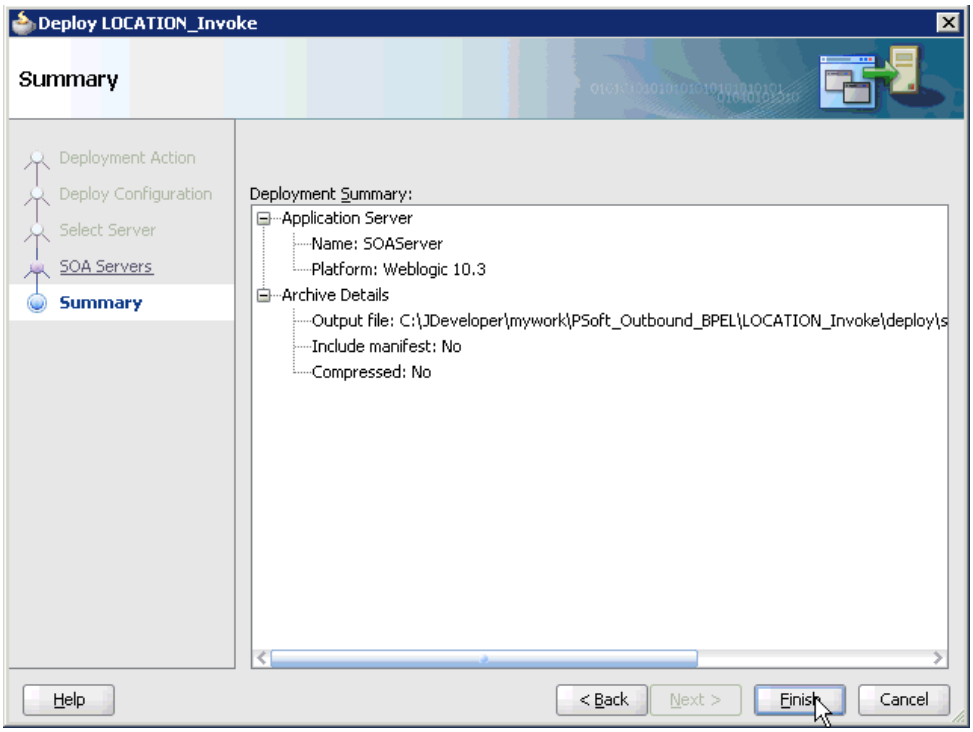
Figure 4–59 SOA Servers Page



6. Select a target SOA server and click **Next**.

   The Summary page is displayed, as shown in Figure 4–60.

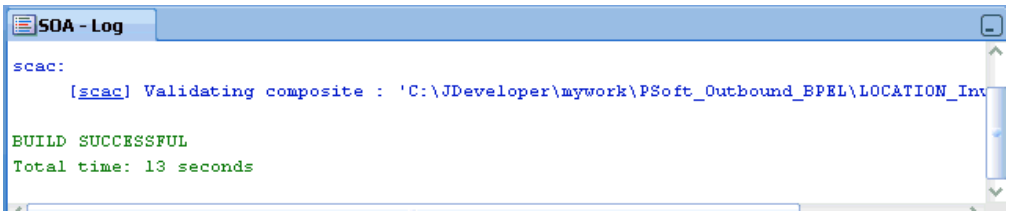
Figure 4–60 Summary Page



7. Review and verify all the available deployment information for your project and click **Finish**.

   The process is deployed successfully, as shown in Figure 4–61.

Figure 4–61 Successful Deployment Message



4.4.5 Invoking the Input XML Document in the Oracle Enterprise Manager Console

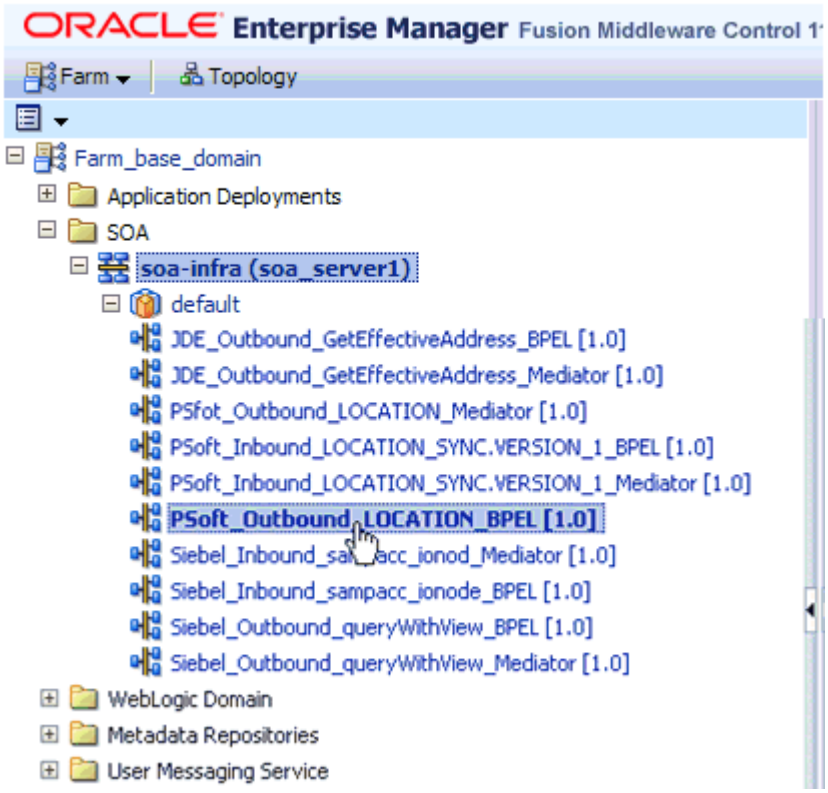
Perform the following steps to invoke the input XML document in the Oracle Enterprise Manager console.

1. Log in to the Oracle Enterprise Manager console by using the following URL:

   `http://localhost:7001/em`

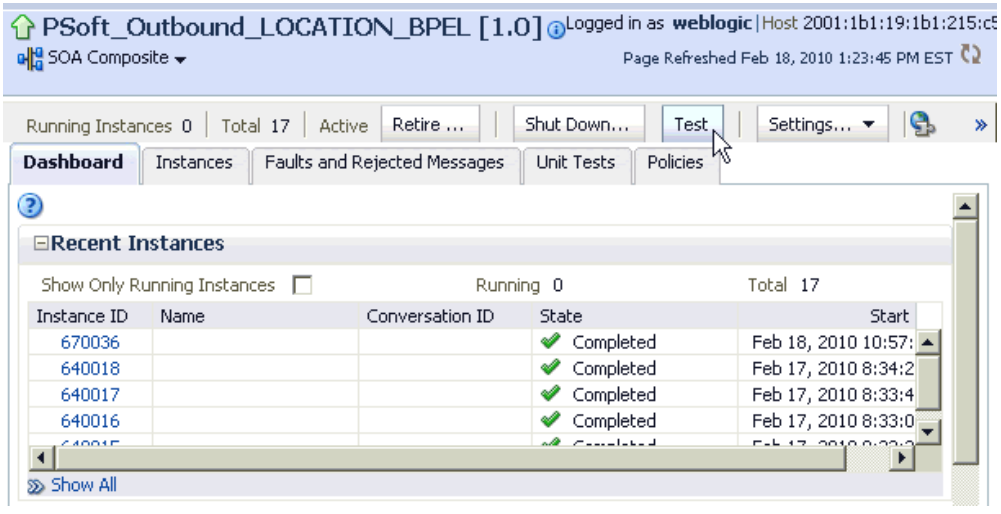
2. Expand your domain in the left pane followed by the **SOA** folder, as shown in Figure 4–62.

Figure 4–62 Oracle Enterprise Manager Console



3. Select an available project (for example, PSoft_Outbound_LOCATION_BPEL), as shown in Figure 4–63.

Figure 4–63 PSoft_Outbound_LOCATION_BPEL Project



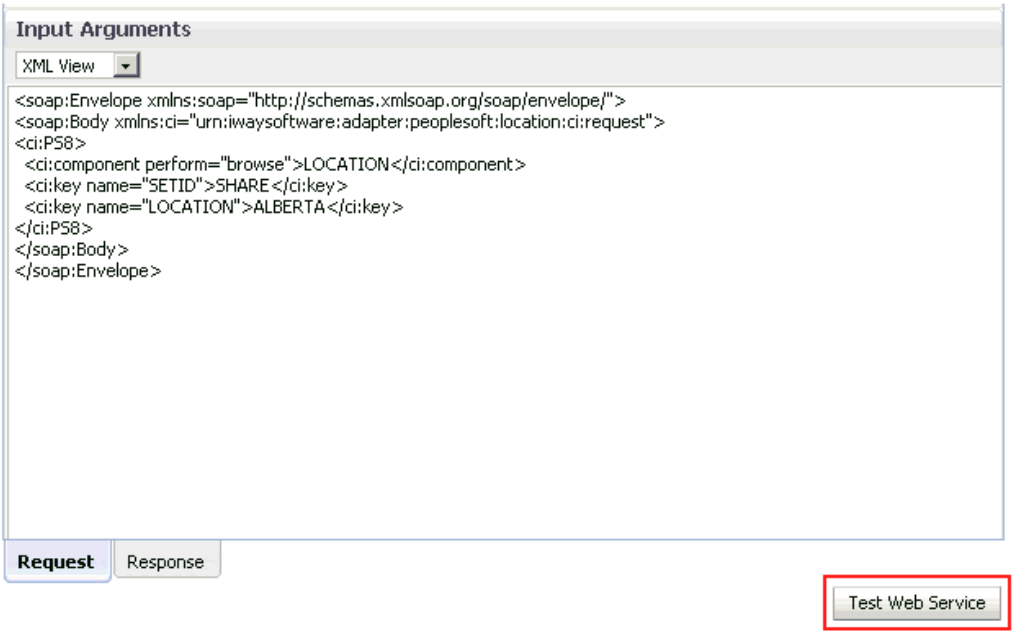
4. Click **Test** in the right pane.

   The Test Web Service page is displayed, as shown in Figure 4–64.

Figure 4–64 Test Web Service Page

5. Click the **Request** tab.
6. Scroll down to the Input Arguments section, as shown in Figure 4–65.

Figure 4–65 Input Arguments Section



7. Select **XML View** from the list in the upper-left corner.
8. Provide an appropriate input XML document in the Input Arguments area.

   For example:

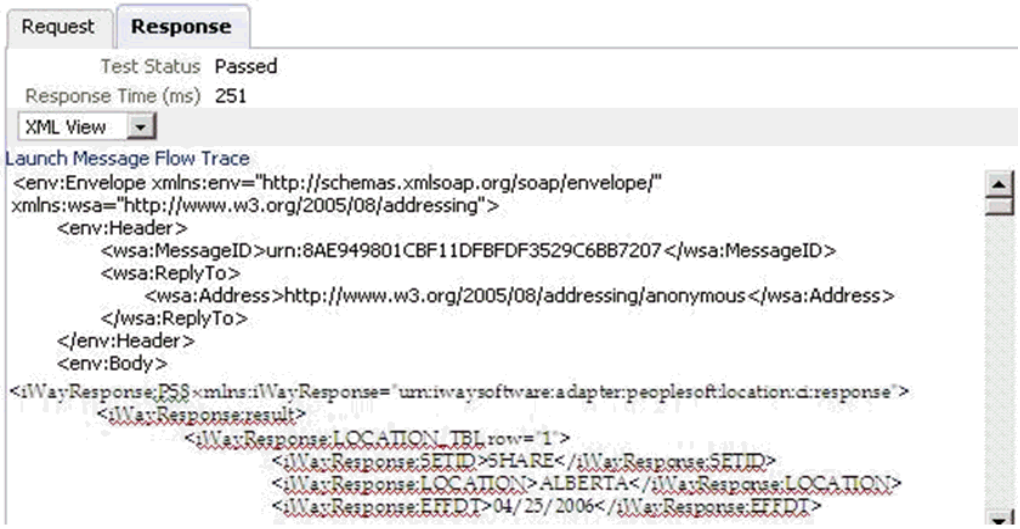
```
<soap:Envelope xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/">
<soap:Body xmlns:ci="urn:iwaysoftware:adapter:peoplesoft:location:ci:request">
<ci:PS8>
  <ci:component perform="browse">LOCATION</ci:component>
```

```
    <ci:key name="SETID">SHARE</ci:key>
    <ci:key name="LOCATION">ALBERTA</ci:key>
  </ci:PS8>
  </soap:Body>
  </soap:Envelope>
```

9. Click **Test Web Service**.

   The output response is received in the Response tab of the Oracle Enterprise Manager console, as shown in Figure 4–66.

Figure 4–66 Output Response Tab



4.4.6 Testing Outbound BPEL and Mediator Processes

When testing an outbound BPEL process or an outbound Mediator process from the Oracle Enterprise Manager console, do not use the XML envelopes that are generated by these consoles. Instead, remove them and use the XML payloads that are generated from the schemas, which conform to the WSDLs for namespace qualifications.

The Mediator data flows can be tested using the Oracle Enterprise Manager console. When creating a Mediator data flow and interactions, the Web services are created and registered with the Oracle WebLogic Server. For more information on how to create a Mediator outbound process, see Chapter 5, "Integration With Mediator Service Components in the Oracle SOA Suite".

4.5 Designing an Inbound BPEL Process for Event Integration

This section demonstrates how Oracle Application Adapter for PeopleSoft integrates with PeopleSoft to receive event data. In this example, a PeopleSoft event occurs when a customer record is added to a PeopleSoft system.

Samples have been provided for this usecase scenario in the `etc/sample` folder in Application Adapters installation.

The following tools are required to complete your adapter design-time configuration:

- Oracle Adapter Application Explorer (Application Explorer)
- Oracle JDeveloper BPEL Designer (JDeveloper) or Eclipse

Note: The examples in this chapter demonstrate the use of JDeveloper.

Before you design a BPEL process, you must generate the respective WSDL file using Application Explorer. For more information, see "Generating WSDL for Event Integration" on page 4-41.

4.5.1 Generating WSDL for Event Integration

You must create a separate channel for every event and select that channel when you generate WSDL for inbound interaction using Application Explorer.

Note: If two or more events share the same channel, event messages may not be delivered to the right BPEL process.

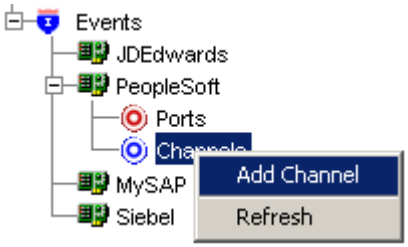
Creating a Channel

To create a channel:

1. Click the **Events** node.
2. Expand the **PeopleSoft** node.

   The ports and channels nodes appear in the left pane, as shown in Figure 4–67.

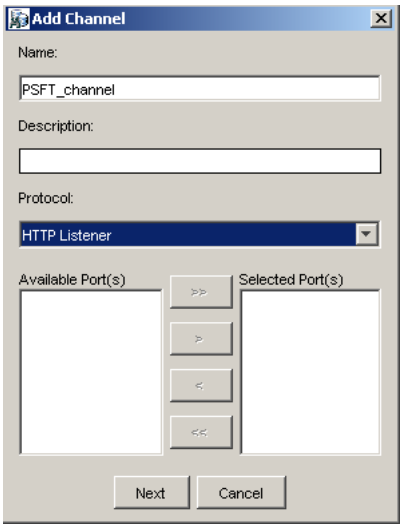
Figure 4–67 Expanded PeopleSoft Events Node



3. Right-click **Channels** and select **Add Channel**.

   The Add Channel dialog is displayed, as shown in Figure 4–68.

Figure 4–68 Add Channel Dialog



Provide the following information:

a. Enter a name for the channel, for example, **PSFT_Channel**.

b. Enter a brief description (optional).

c. From the Protocol list, select **HTTP Listener**.

4. Click **Next**.

5. When the HTTP listener dialog is displayed, enter the system information as specified in the following table:

Parameter	Description
Listener port	Port on which to listen for PeopleSoft event data.
Https	For a secure HTTP connection, select the **Https** check box.
Synchronization Type	Choose from the following synchronization options: ■ REQUEST_RESPONSE ■ REQUEST_ACK **Important:** The PeopleSoft channel does not work if the synchronization type is set to REQUEST.

6. Click **OK**.

The channel appears under the channels node in the left pane. An X over the icon indicates that the channel is currently disconnected.

Note: Do not start the channel, as it is managed by BPEL PM Server. If you start the channel for testing and debugging purposes, stop it before run-time.

Generating WSDL for Event Notification

After you create a channel and verify that it is not started, you must generate WSDL for the event using Application Explorer.

1. Start Application Explorer.

2. Expand the **Adapters** node.

   A list of all available adapters is displayed.

3. Expand **PeopleSoft**.

4. Click a target name under the **PeopleSoft** node, for example, **PSFTtarget**.

   The Logon pane on the right displays the saved parameters.

5. Verify your connection parameters.

6. Right-click the target name and select **Connect**.

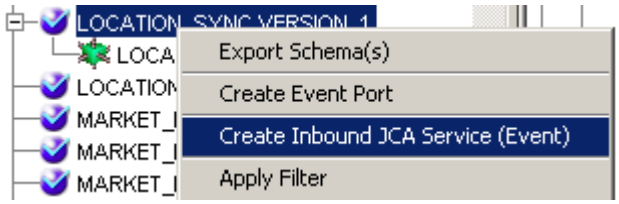
   The x icon disappears, indicating that the target is connected, as shown in Figure 4–69.

Figure 4–69 Connected PSFT Target

7. Expand **Messages** and select **LOCATION_SYNC.VERSION_1**.

8. Right-click **LOCATION_SYNC.VERSION_1**.

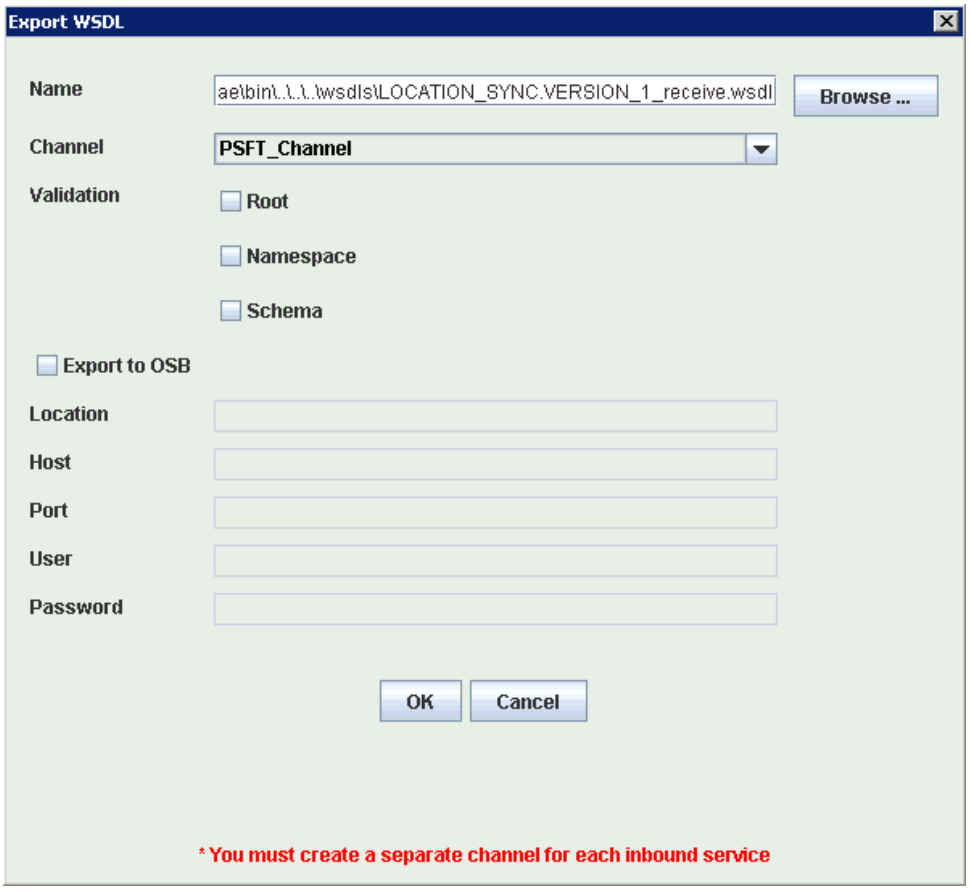
Figure 4–70 Create Inbound JCA Service (Event) Option



9. Select **Create Inbound JCA Service (Event)**, as shown in Figure 4–70.

   The Export WSDL dialog is displayed, as shown in Figure 4–71.

Figure 4–71 Export WSDL Dialog



Perform the following steps:

a. In the **Name** field, specify the name of the WSDL file.

The **.wsdl** file extension is added automatically. By default, the names of WSDL files generated for request-response services end with **_receive**.

b. From the **Channel** list, select the channel you created for this inbound service.

Important: You must create a separate channel for every event. Verify that the channel is stopped before run-time.

c. Three check boxes for Root, Namespace, and Schema validation are also available. Selection of multiple validation options is allowed.

- Root validation is used to validate the root element in the inbound XML document.

- Namespace validation is used to validate the namespace in the inbound XML document.

- Schema validation is used to validate the inbound XML document with the schema in the WSDL document.

During run time, validation is processed based on the validation options that are selected. If more than one validation option is selected, during run time if the first validation option fails, the remaining validation options are not processed. Root and namespace validations are considered modest levels of validation. Schema validation is a stricter validation level. It is recommended

to use root and namespace validation options together, unless the root element and namespace are different between the Messages in the PeopleSoft environment.

10. Click **OK**.

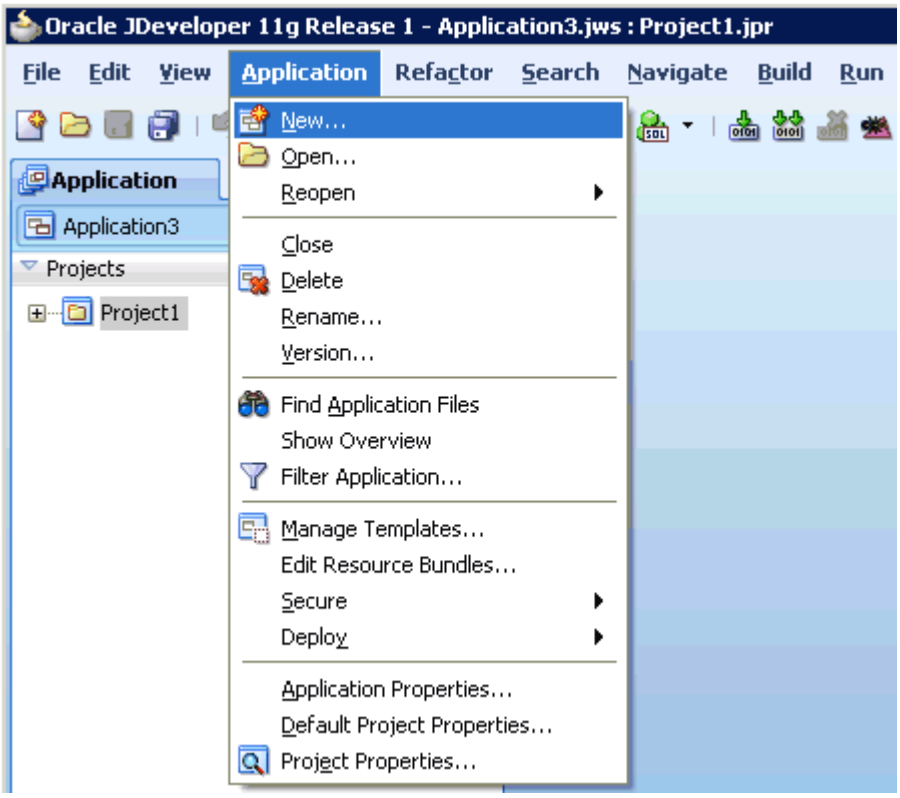
    You can now create a new SOA application, which is the first step that is required to define a BPEL inbound process in JDeveloper.

4.5.2 Creating a New SOA Application for the Inbound BPEL Process

Perform the following steps to create a new SOA application for the inbound BPEL process:

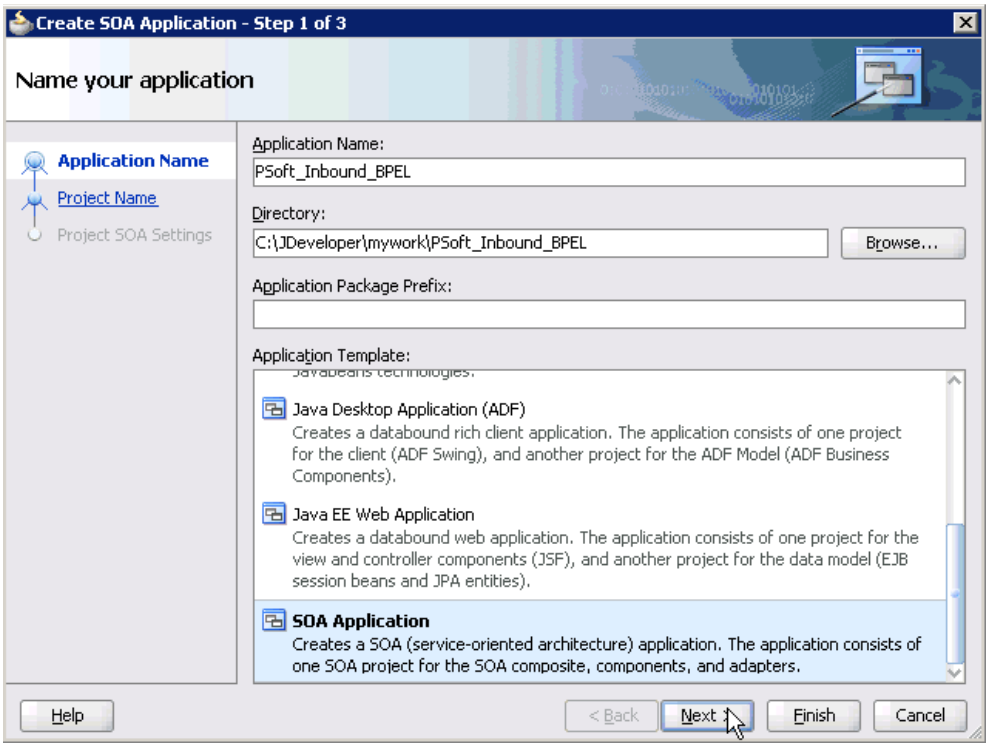
1. Open Oracle JDeveloper on your system.
2. Click **Application** in the menu bar and select **New** from the menu, as shown in Figure 4–72.

Figure 4–72 New Option



The Create SOA Application wizard is displayed, as shown in Figure 4–73.

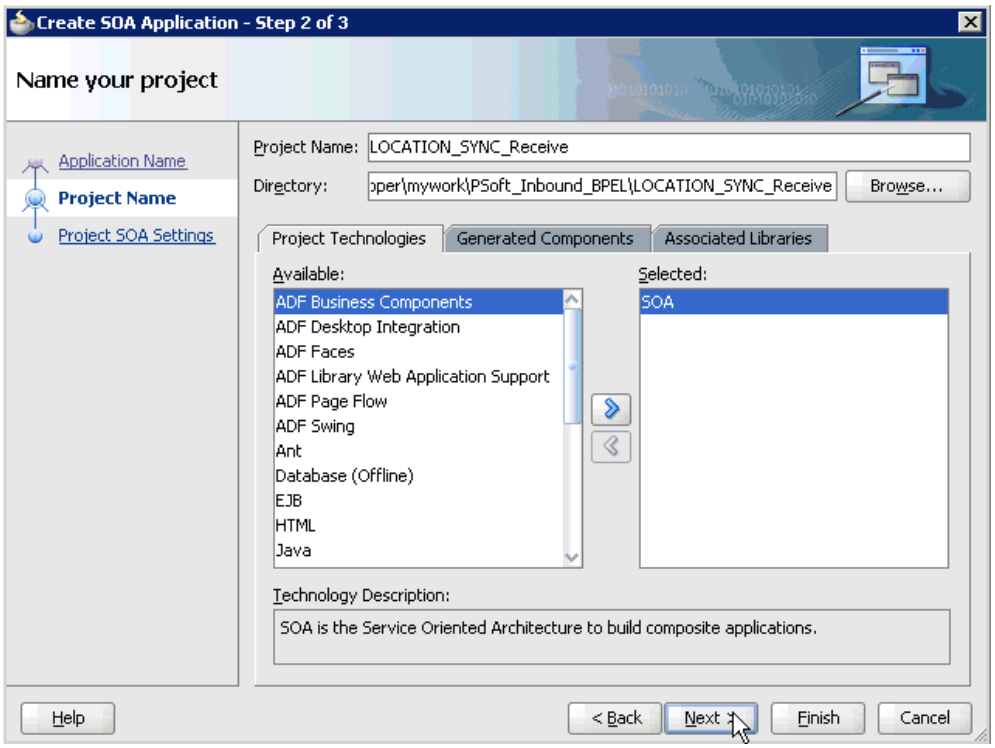
Figure 4–73 Create SOA Application Wizard



3. From the Application Template list, click **SOA Application**.
4. Enter a name for the new SOA application (for example, PSoft_Inbound_BPEL) and click **Next**.

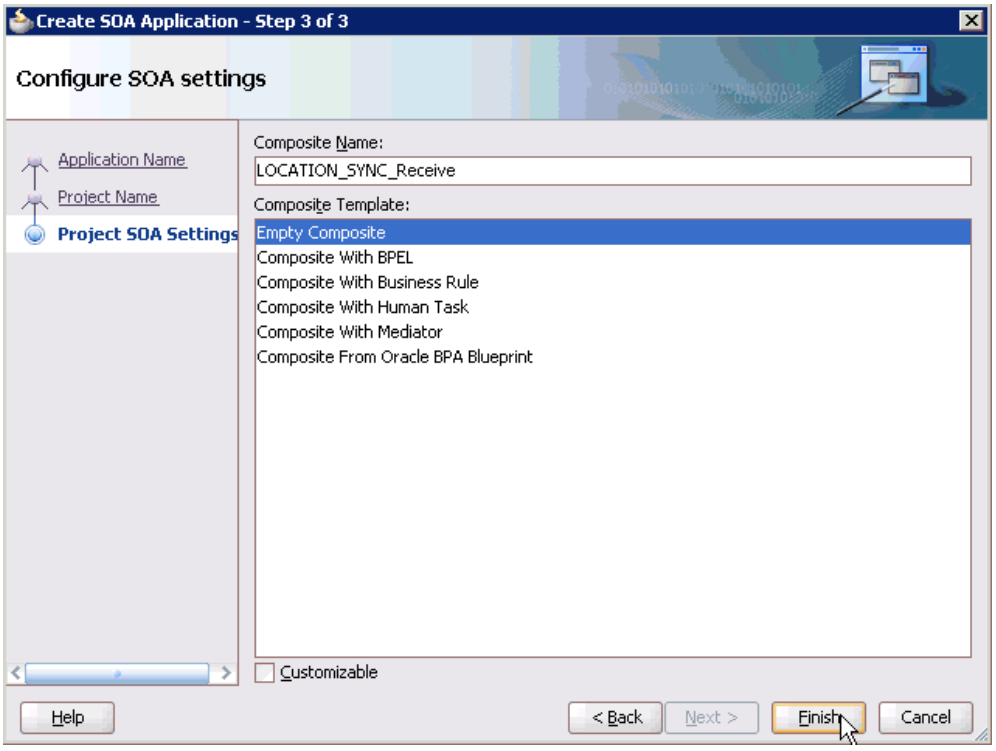
   The Name your project page is displayed, as shown in Figure 4–74.

Figure 4–74 Name Your Project Page



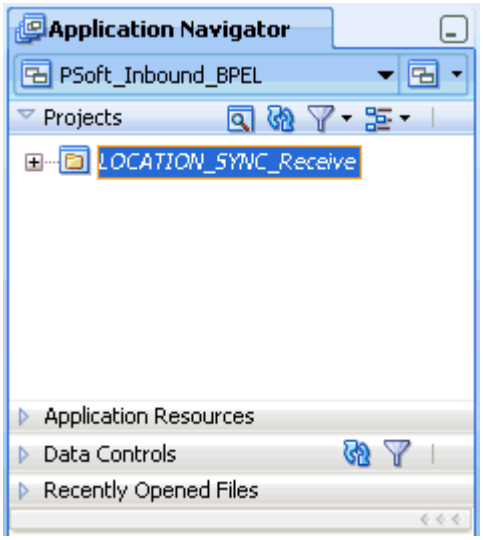
5. Enter a project name (for example, LOCATION_SYNC_Receive) and click **Next**. The Configure SOA settings page is displayed, as shown in Figure 4–75.

Figure 4–75 Configure SOA Settings Page



6. From the Composite Template list, select **Empty Composite** and click **Finish**.

Figure 4–76 Application Navigator Tab



The new SOA application (PSoft_Inbound_BPEL) and associated project (LOCATION_SYNC_Receive) are added to the Application Navigator tab in the left pane, as shown in Figure 4–76.

4.5.3 Defining a BPEL Inbound Process

This section describes how to define a BPEL inbound process, which consists of the following stages:

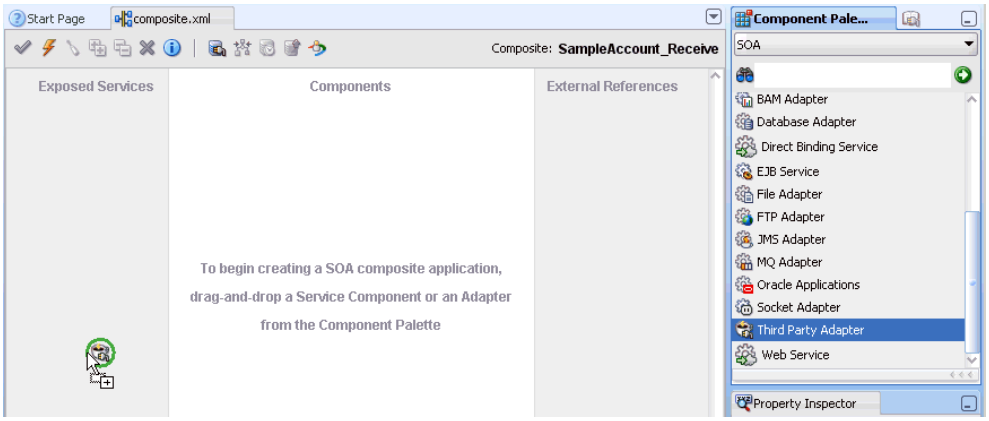
1. Configuring a Third Party Adapter Service Component
2. Configuring an Inbound BPEL Process Component

Creating a Third Party Adapter Service Component

Perform the following steps to create a third party adapter service component:

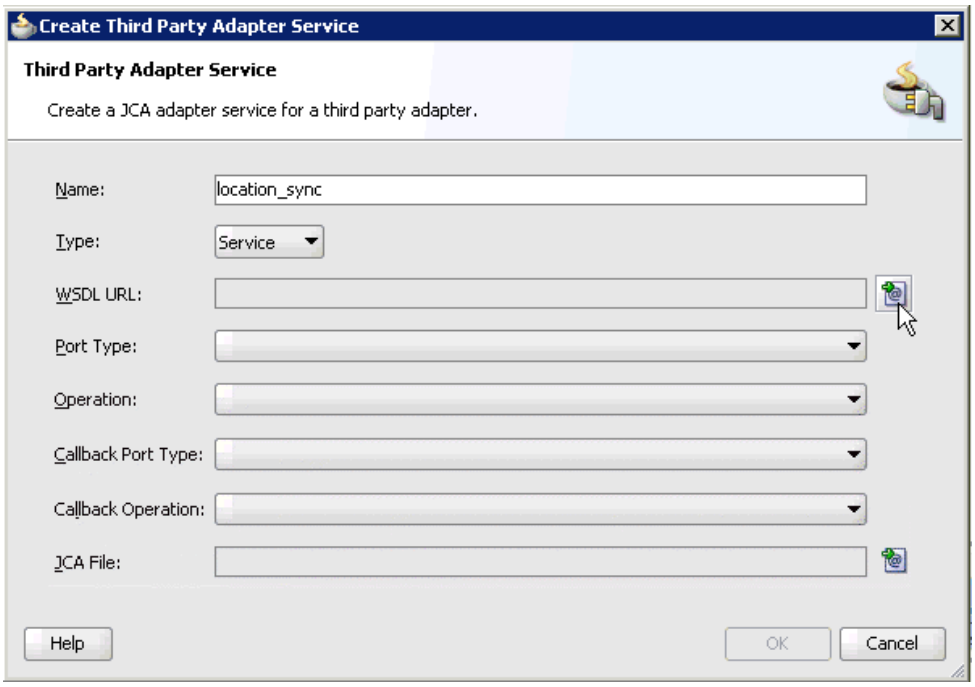
1. Drag and drop the **Third Party Adapter** component from the Component Palette tab (Service Adapters section) to the Exposed Services pane, as shown in Figure 4–77.

Figure 4–77 Third Party Adapter Component



The Create Third Party Adapter Service dialog is displayed, as shown in Figure 4–78.

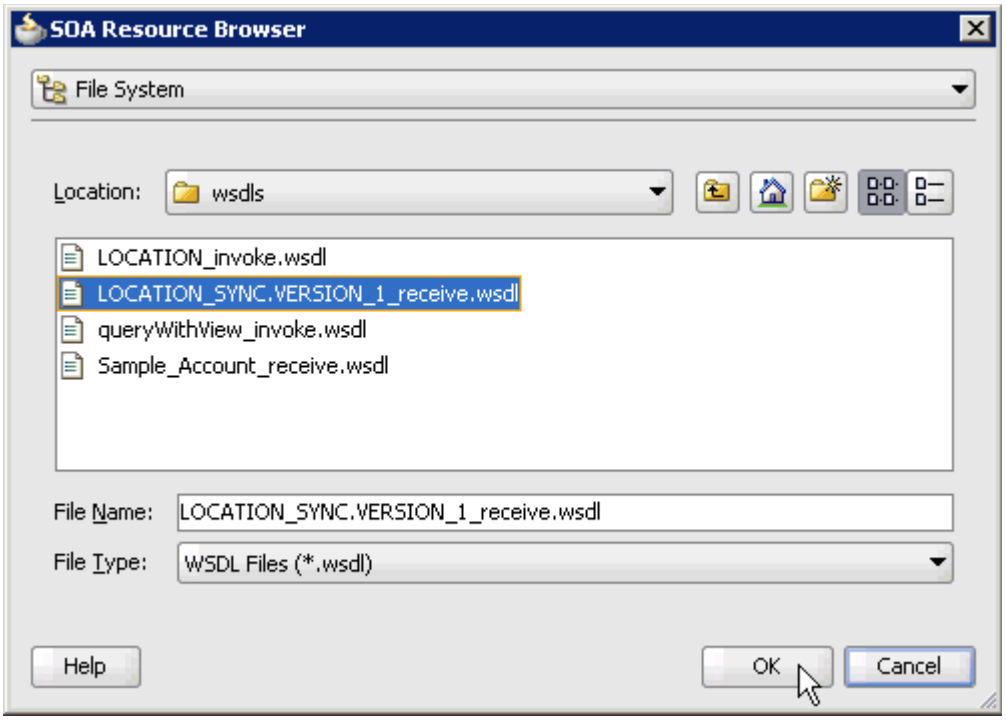
Figure 4–78 Create Third Party Adapter Service Dialog



2. Enter a name for the third party adapter service.
3. Ensure that **Service** is selected from the Type list (default).
4. Click the **Find existing WSDLs** icon, which is located to the right of the WSDL URL field.

   The SOA Resource Browser dialog is displayed, as shown in Figure 4–79.

Figure 4–79 SOA Resource Dialog



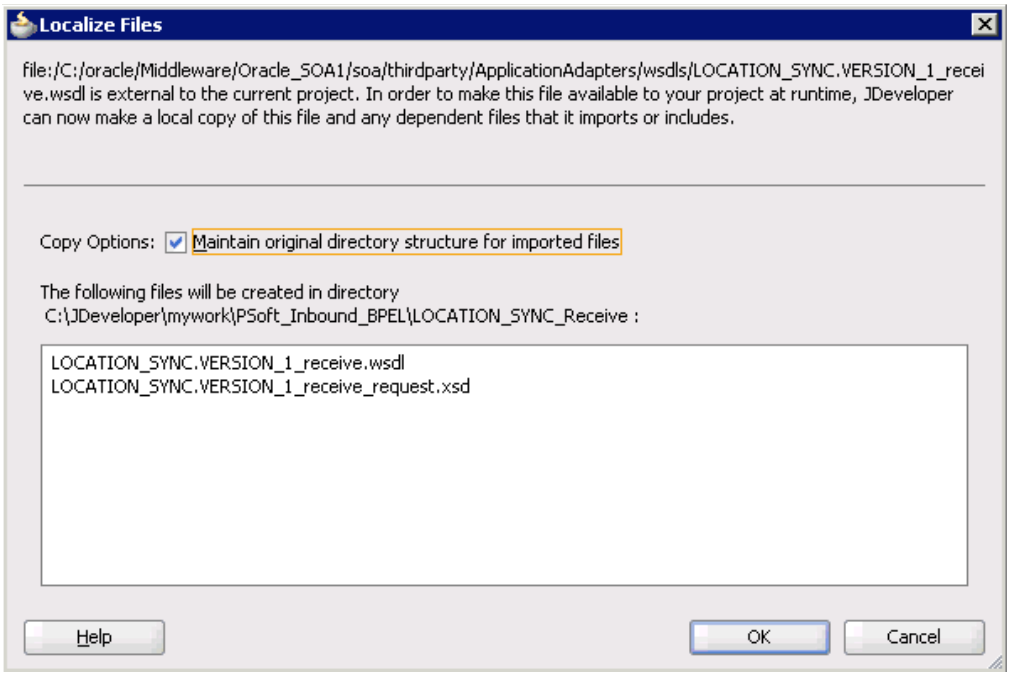
5. Browse and select an inbound WSDL file (for example, LOCATION_SYNC.VERSION_1_receive.wsdl) from the following directory:

   `<ADAPTER_HOME>\soa\thirdparty\ApplicationAdapters\wsdls`

6. Click **OK**.

   The Localize Files dialog is displayed, as shown in Figure 4–80.

Figure 4–80 Localize Files Dialog

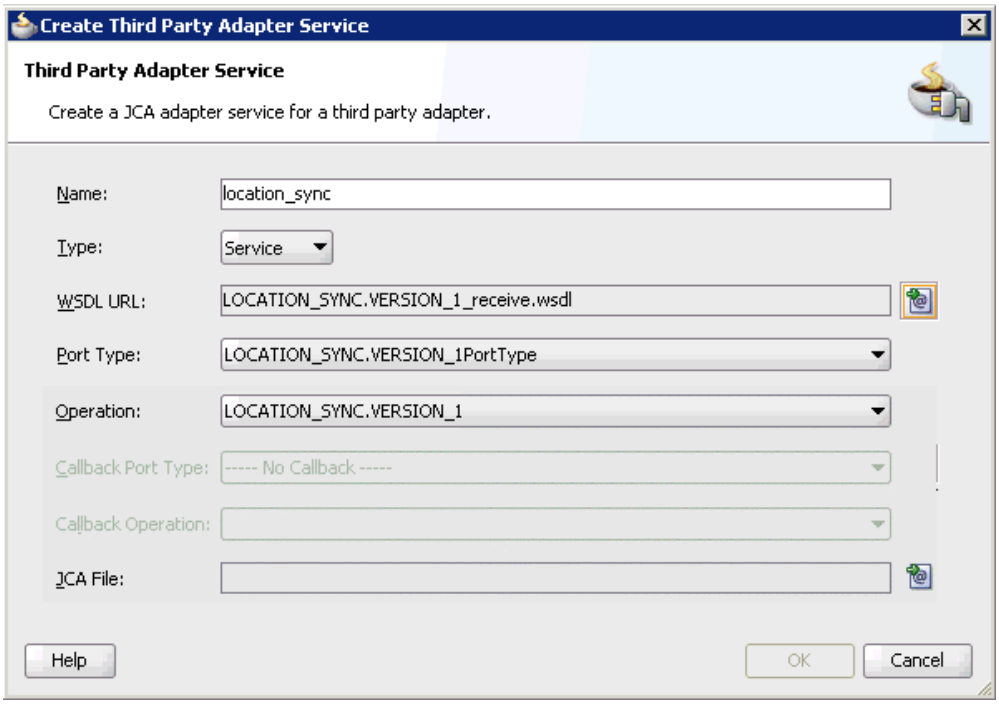


7. Click **OK**.

   The inbound WSDL file and associated receive/request XML schema file (.xsd) are imported to the project folder that has been created.

   You are returned to the Create Third Party Adapter Service dialog, as shown in Figure 4–81.

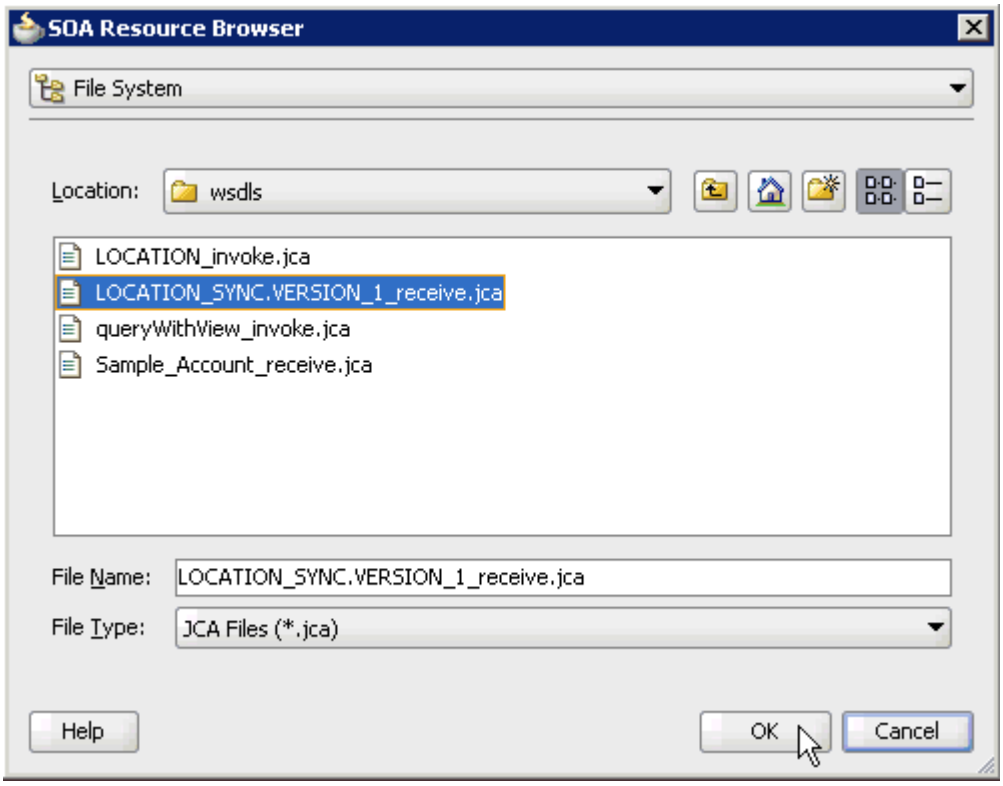
Figure 4–81 Create Third Party Adapter Service Dialog



8. Click the **Find JCA Files** icon, which is located to the right of the JCA File field.

   The SOA Resource Browser dialog is displayed, as shown in Figure 4–82.

Figure 4–82 SOA Resource Browser Dialog



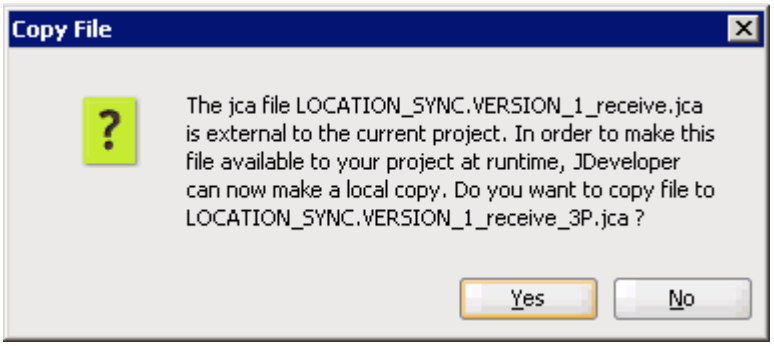
9. Browse and select the JCA properties file (for example, LOCATION_SYNC.VERSION_1_receive.jca)from the following directory:

   `<ADAPTER_HOME>\soa\thirdparty\ApplicationAdapters\wsdls`

10. Click **OK**.

    The following message is displayed, as shown in Figure 4–83.

Figure 4–83 Copy File Confirmation Message

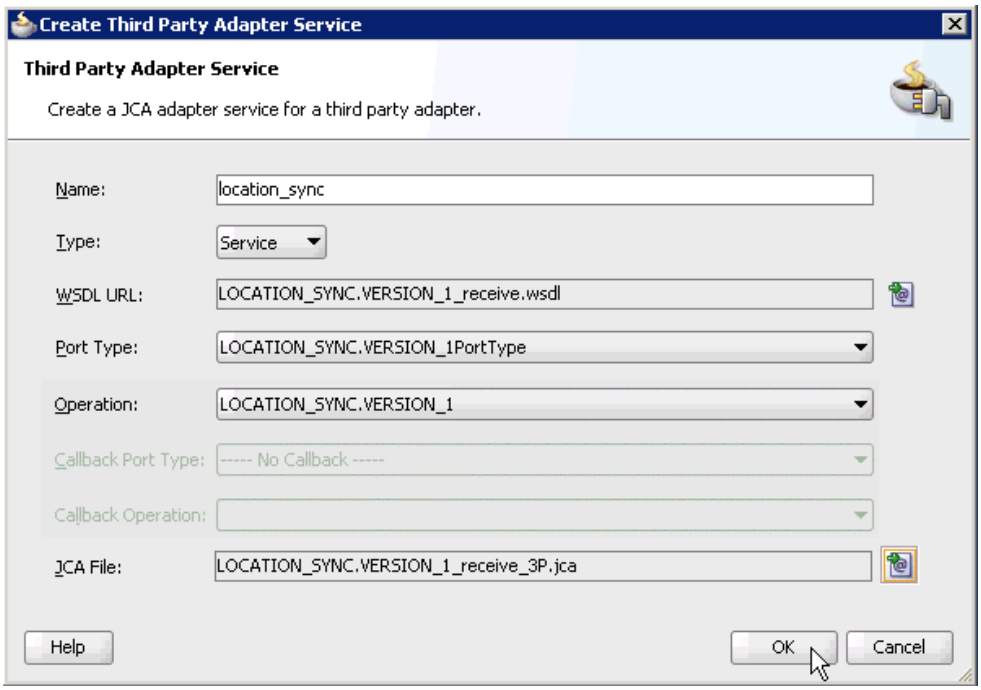


11. Click **Yes**.

    A copy of the JCA properties file is made in the project folder.

You are returned to the Create Third Party Adapter Service dialog, as shown in Figure 4–84.

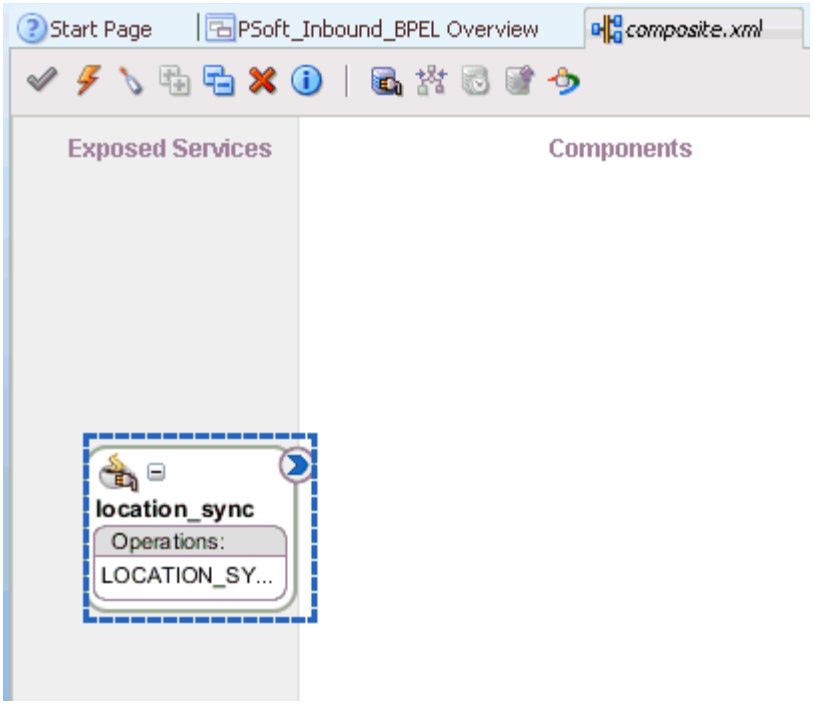
Figure 4–84 Create Third Party Adapter Service Dialog



12. Click **OK**.

    The third party adapter service component (location_sync) is created and displayed in the Exposed Services pane, as shown in Figure 4–85.

Figure 4–85 Third Party Adapter Service Component



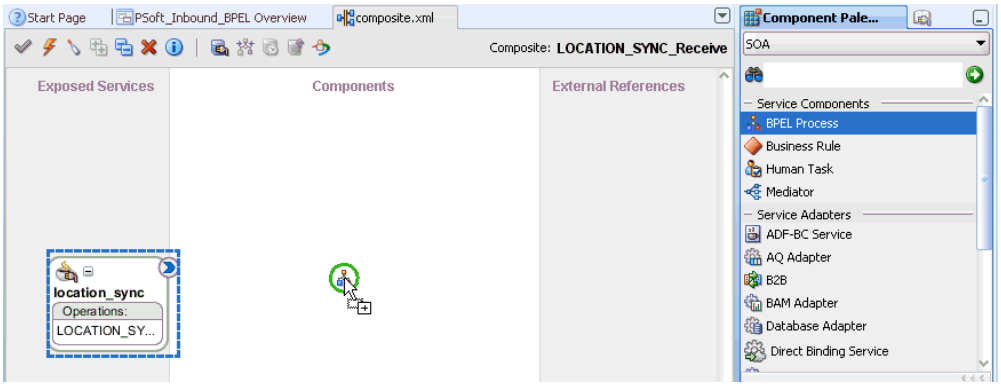
You are now ready to configure an inbound BPEL process component.

Creating an Inbound BPEL Process Component

Perform the following steps to create an inbound BPEL process component:

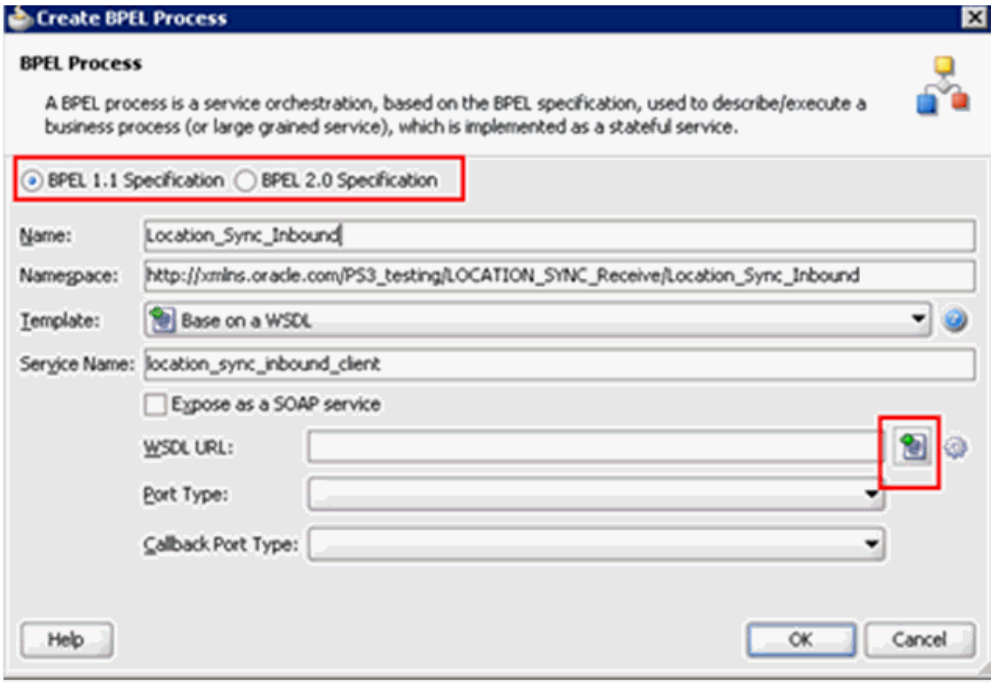
1. Drag and drop the **BPEL Process** component from the Component Palette tab (Service Components section) to the Components pane, as shown in Figure 4–86.

Figure 4–86 BPEL Process Component



The Create BPEL Process dialog is displayed, as shown in Figure 4–87.

Figure 4–87 Create BPEL Process Dialog



2. In the Name field, enter a name to identify the new inbound BPEL process component (for example, Location_Sync_Inbound).

   By default, the BPEL specification is set to **BPEL 1.1 Specification**. The BBPEL Process also supports BPEL 2.0 Specification.

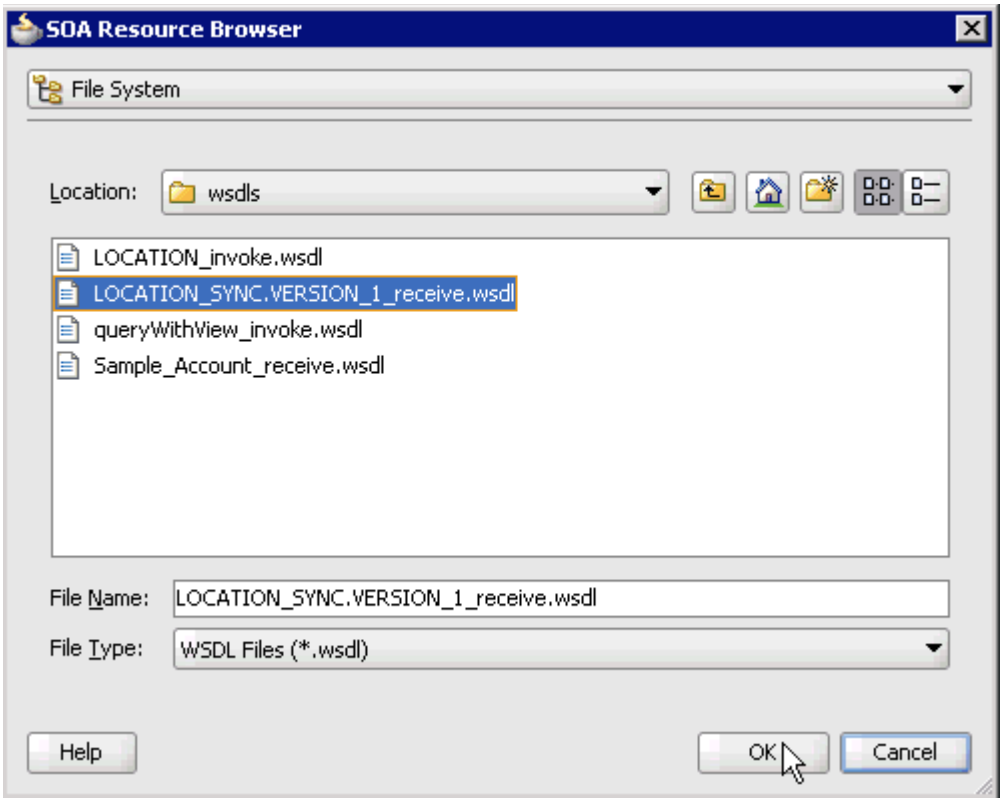
3. From the Template list, select **Base on a WSDL**.

4. Uncheck the **Expose as SOAP service** check box.

5. Click the **Find existing WSDLs** icon, which is located to the right of the WSDL URL field.

   The SOA Resource Browser dialog is displayed, as shown in Figure 4–88.

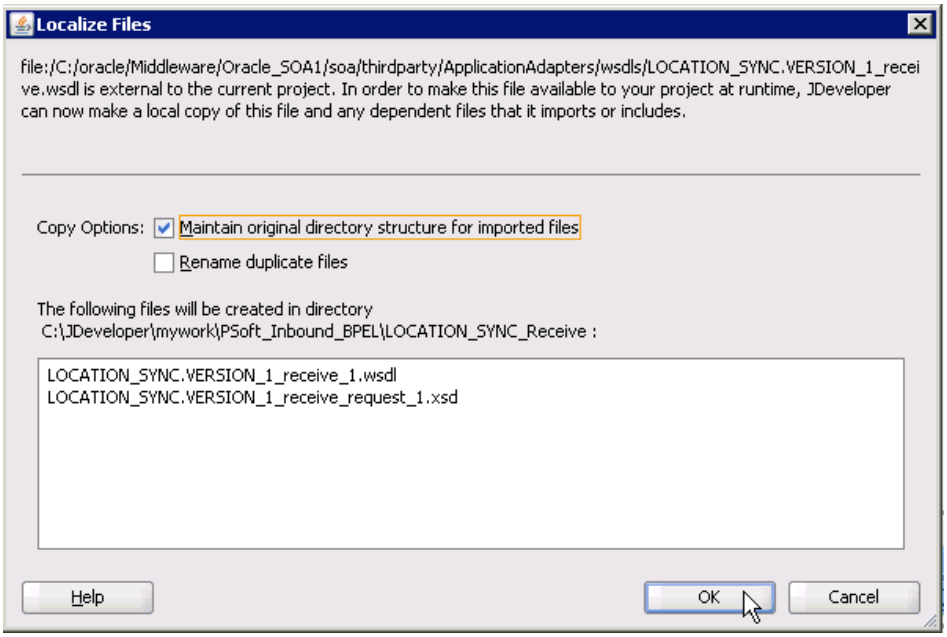
Figure 4–88 SOA Resource Browser



6. Browse and select an inbound WSDL file (for example, LOCATION_SYNC.VERSION_1_receive.wsdl) from the default WSDL location.
7. Click **OK**.

   The Localize Files dialog is displayed, as shown in Figure 4–89.

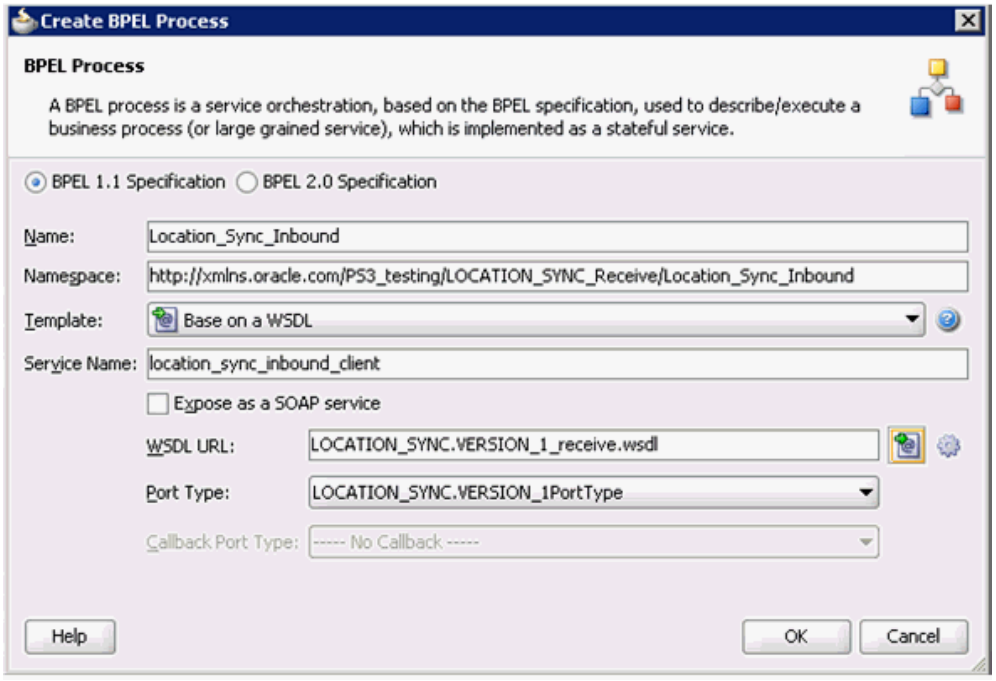
Figure 4–89 Localize Files Dialog



8. Uncheck the **Rename duplicate files** option in the Copy Options area, and then click **OK**.

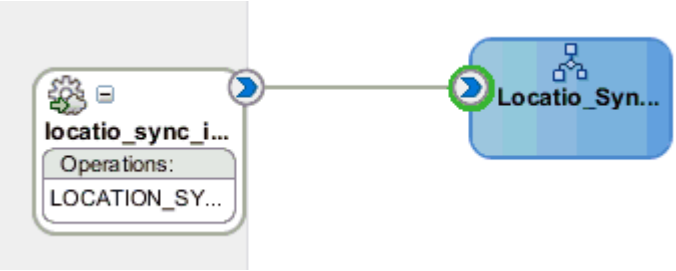
   You are returned to the Create BPEL Process dialog, as shown in Figure 4–90.

Figure 4–90 Create BPEL Process Dialog



9. Click **OK**.

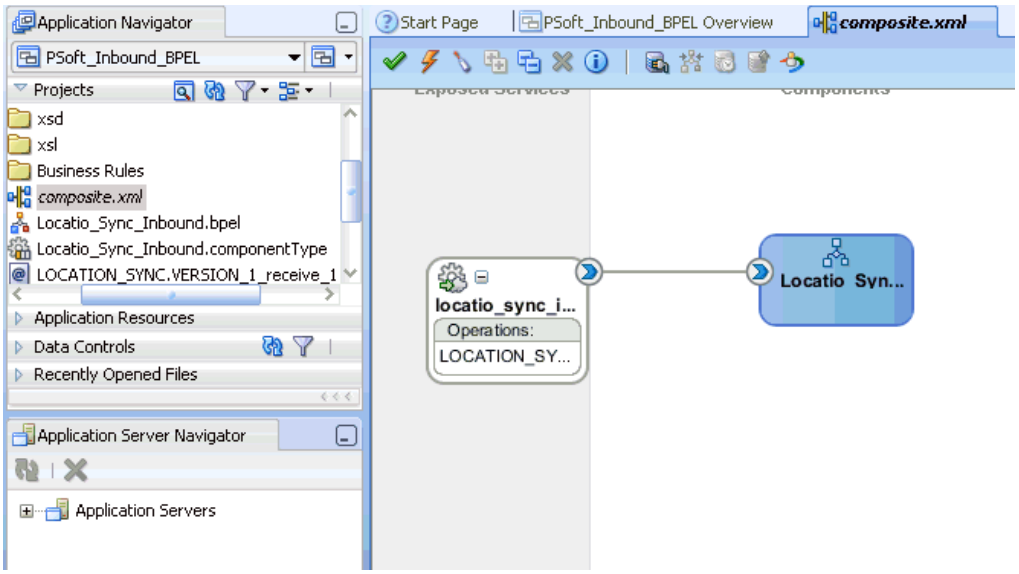
Figure 4–91 Created Connection



10. Create a connection between the third party adapter service component (location_sync) and the inbound BPEL process component (Location_Sync_Inbound), as shown in Figure 4–91.

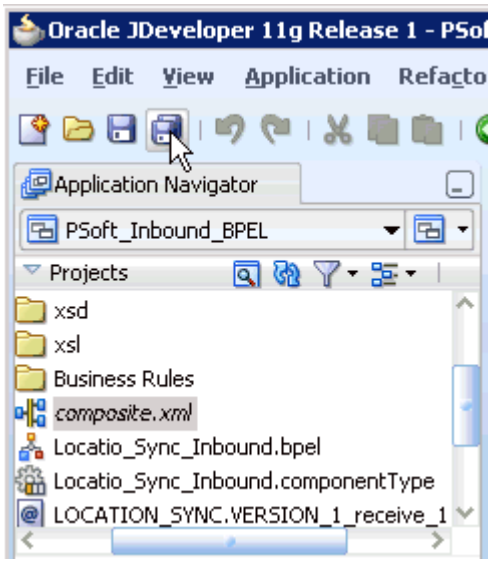
11. Double-click **composite.xml** in the left pane, as shown in Figure 4–92.

Figure 4–92 Composite.xml File



12. Click the **Save All** icon in the menu bar to save the new inbound BPEL process component that was configured, as shown in Figure 4–93.

Figure 4–93 Save All Icon



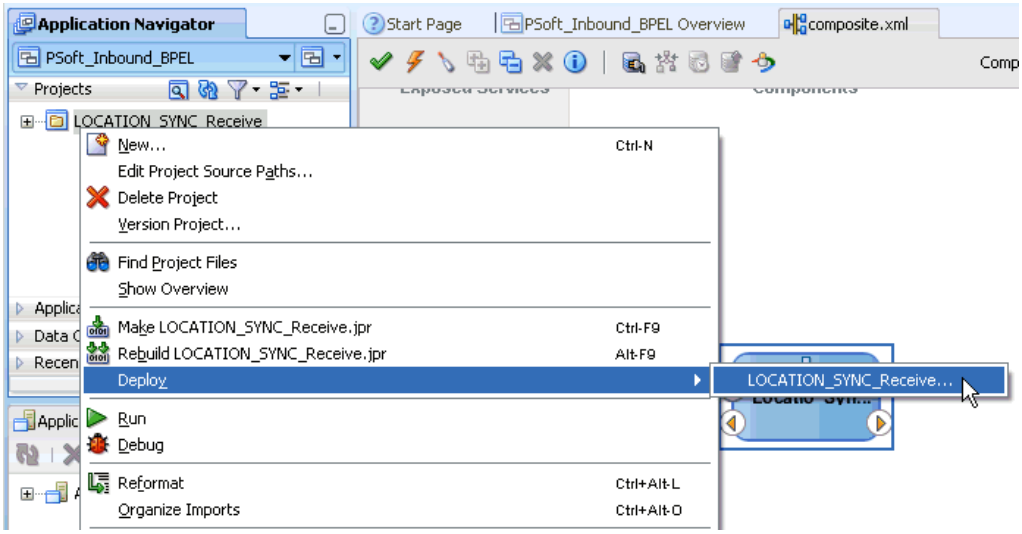
You are now ready to deploy the BPEL inbound process.

4.5.4 Deploying the BPEL Inbound Process

Perform the following steps to deploy the BPEL inbound process.

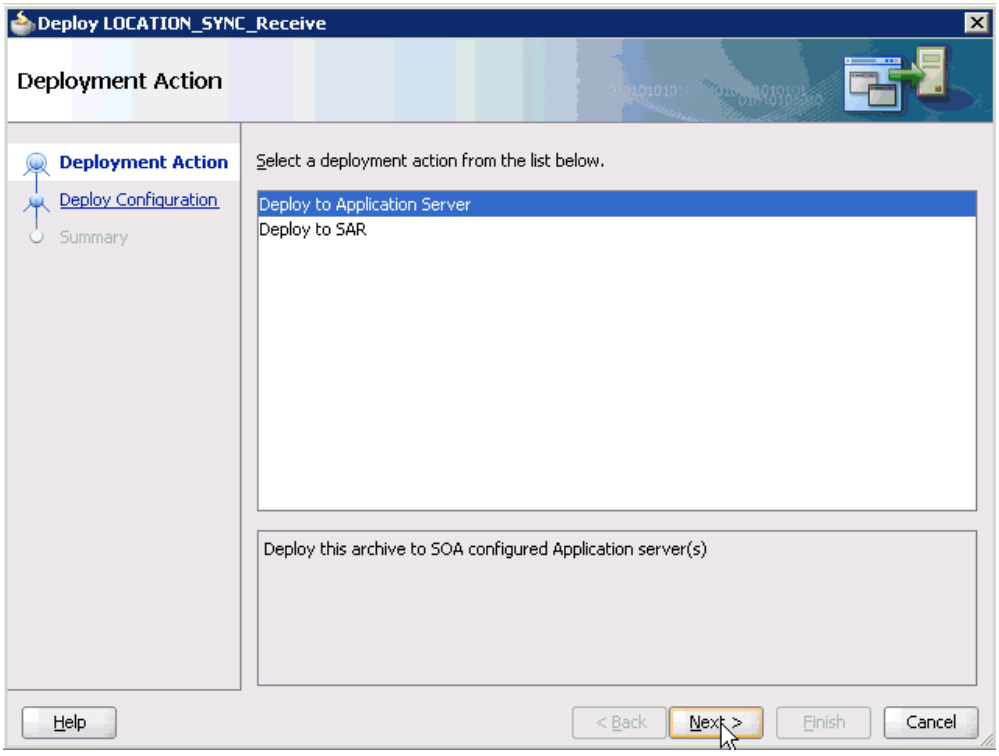
1. Right-click the project name in the left pane (for example, **LOCATION_SYNC_Receive**), select **Deploy**, and then click **LOCATION_SYNC_Receive**, as shown in Figure 4–94.

Figure 4–94 Deploy Option



The Deployment Action page is displayed, as shown in Figure 4–95.

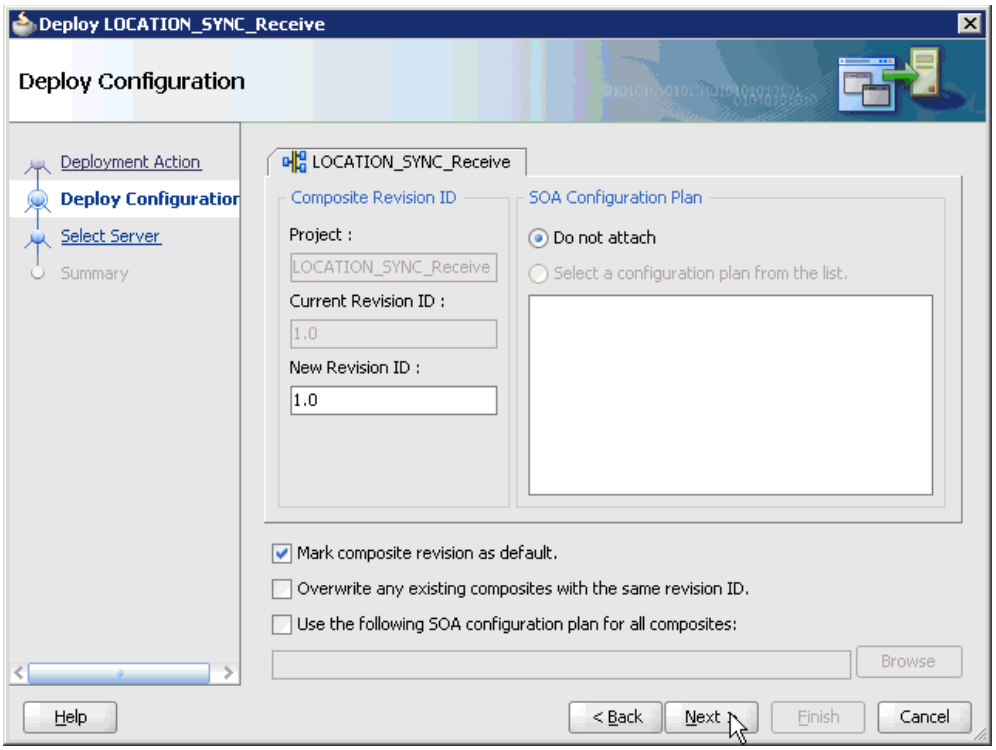
Figure 4–95 Deployment Action Page



2. Ensure that **Deploy to Application Server** is selected.
3. Click **Next**.

   The Deploy Configuration page is displayed, as shown in Figure 4–96.

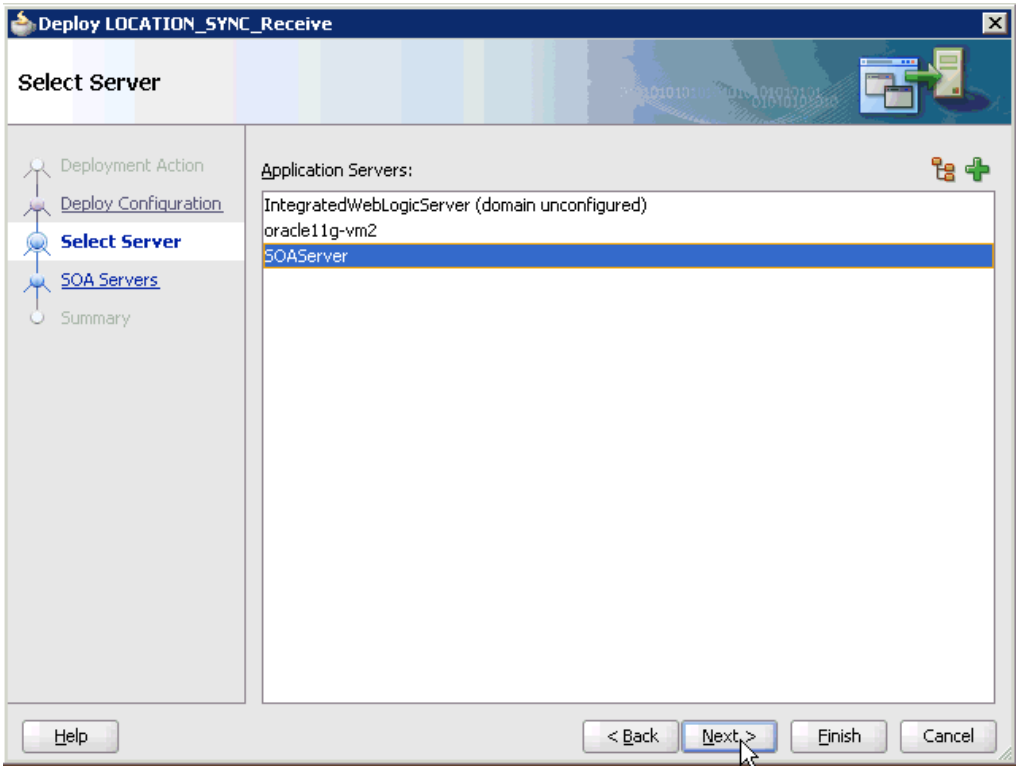
Figure 4–96 Deploy Configuration Page



4. Leave the default values selected and click **Next**.

   The Select Server page is displayed, as shown in Figure 4–97.

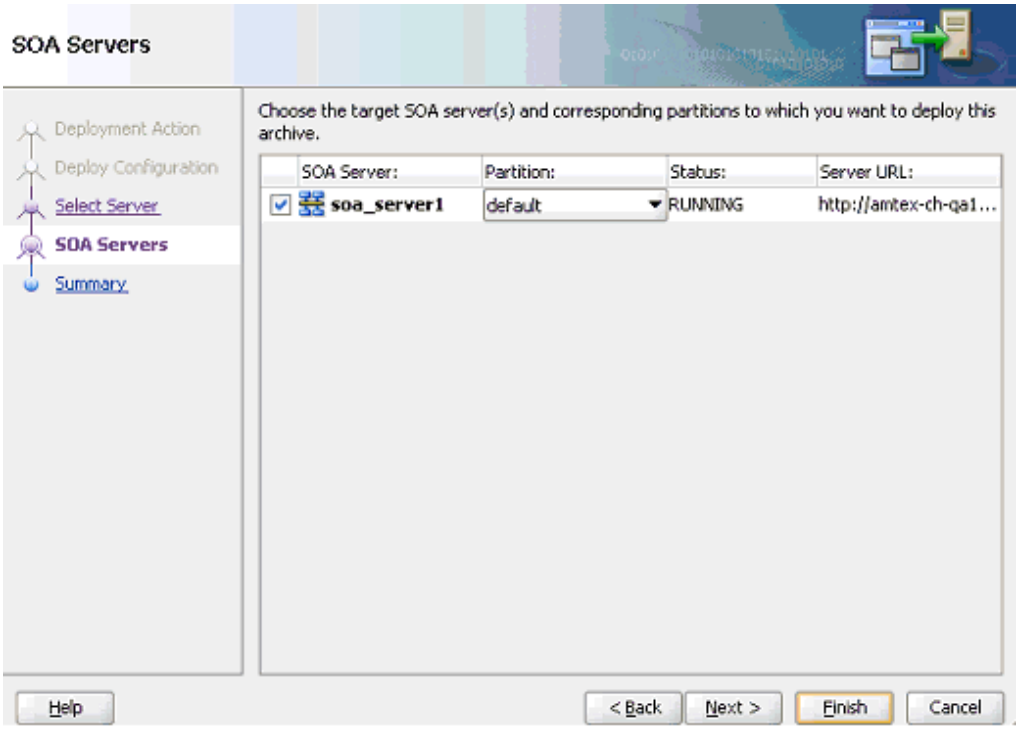
Figure 4–97 Select Server Page



5. Select an available application server that was configured and click **Next**.

   The SOA Servers page is displayed, as shown in Figure 4–98.

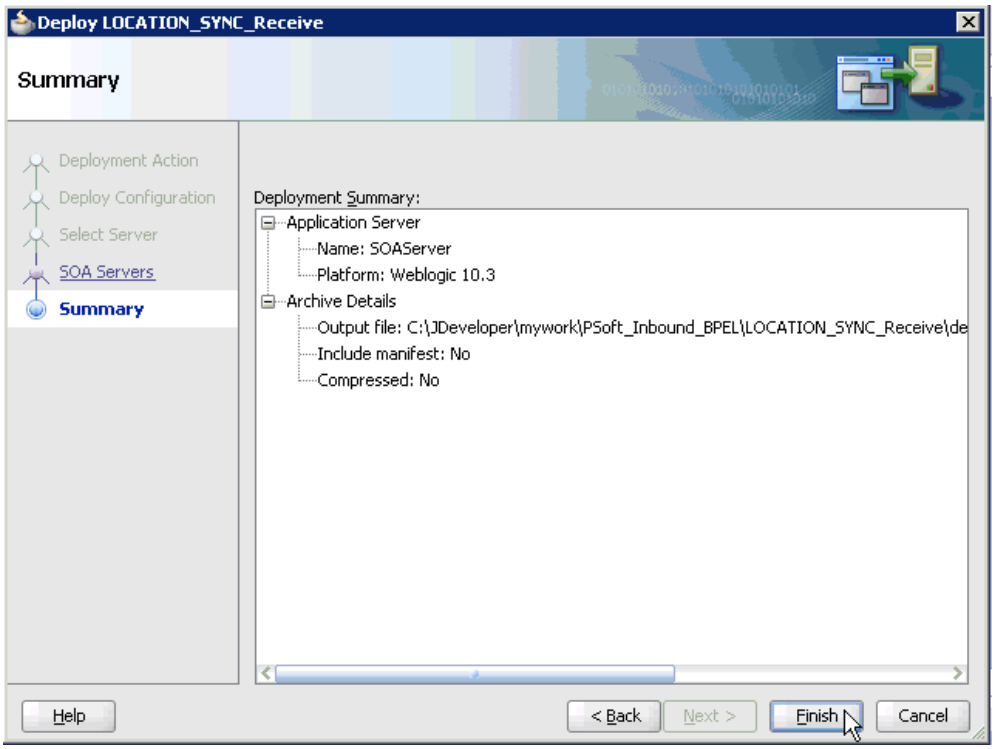
Figure 4–98 SOA Servers Page



6. Select a target SOA server and click **Next**.

   The Summary page is displayed, as shown in Figure 4–99.

Figure 4–99 Summary Page



7. Review and verify all the available deployment information for your project and click **Finish**.

   The process is deployed successfully, as shown in Figure 4–100.

Figure 4–100 Successful Deployment Message

Once event messages are triggered through PeopleSoft, successful instances are received in the Oracle Enterprise Manager console.

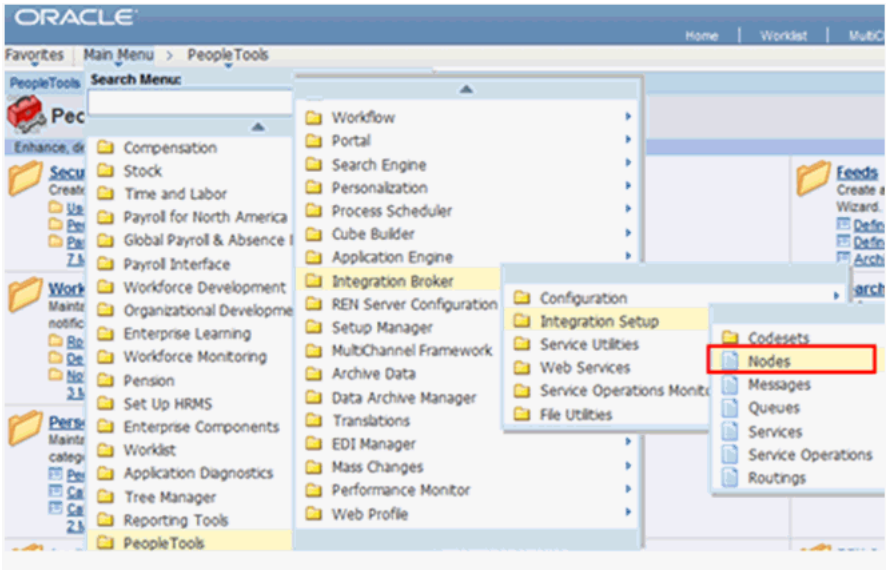
4.5.5 Triggering an Event in PeopleSoft

Events are generated by activity in an application system. For example, PeopleSoft may generate an event as customer information is updated in the system. The following topics describe how to trigger an event in PeopleSoft and verify the event using Oracle Application Adapter for PeopleSoft.

To trigger an event in PeopleSoft:

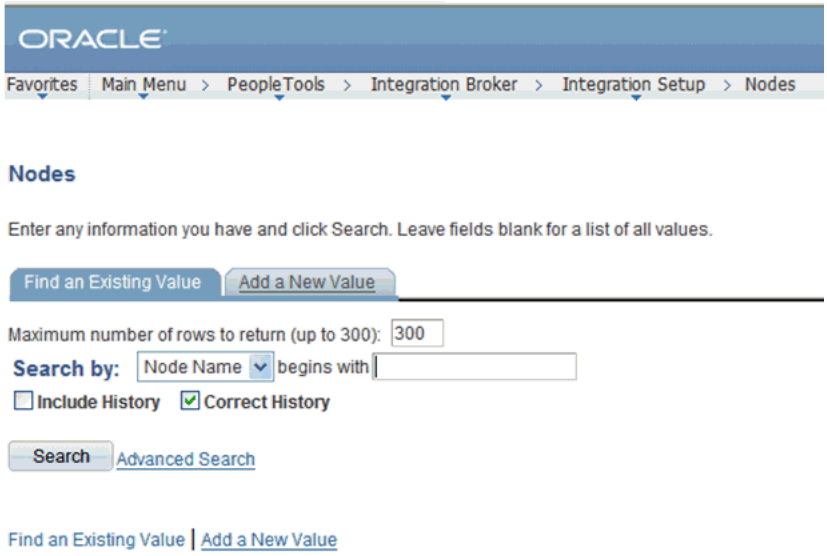
1. Log in to PeopleSoft, select **PeopleTools**, **Integration Broker**, **Integration Setup** and then **Nodes**, as shown in Figure 4–101.

Figure 4–101 PeopleTools Node Definitions



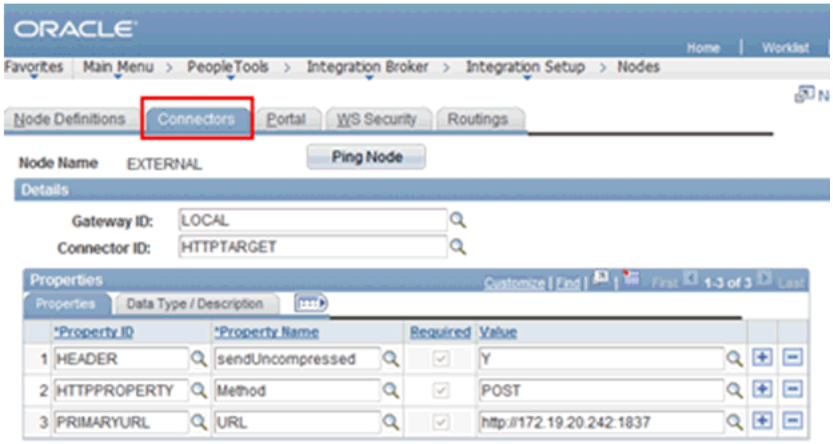
2. Enter the node name you are using, for example, `EXTERNAL`, then click **Search**, as shown in Figure 4–102.

Figure 4–102 External Node Name



3. Click the **Connectors** tab, as shown in Figure 4–103.

Figure 4–103 Connectors Tab



4. Enter **HTTPTARGET** in the **Connector ID** field; then enter the **listener URL** and its port in the **PRIMARYURL** field.
5. To save the configuration, click **Save**.

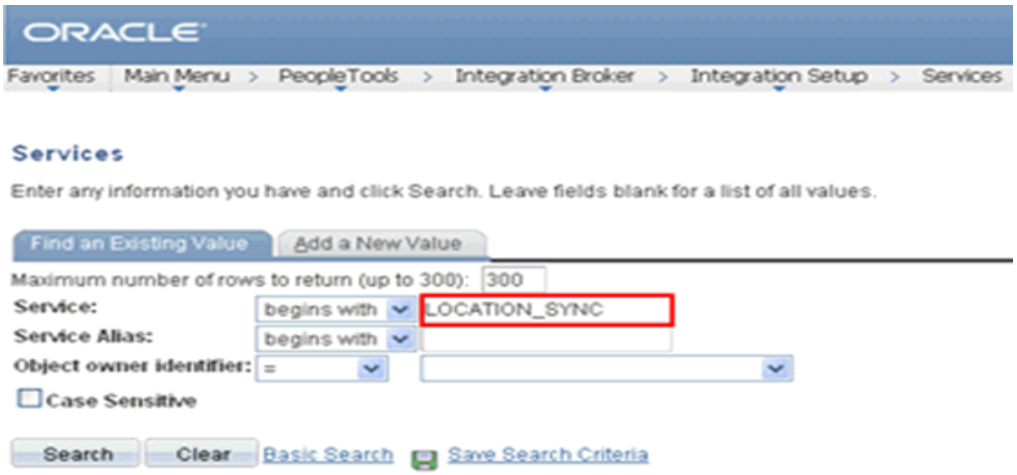
   A successful dialog window is displayed.

   To check the listener status, click on the **Ping Node** button and continue the triggering if a window appears, as shown in Figure 4–104.

Figure 4–104 Ping Node

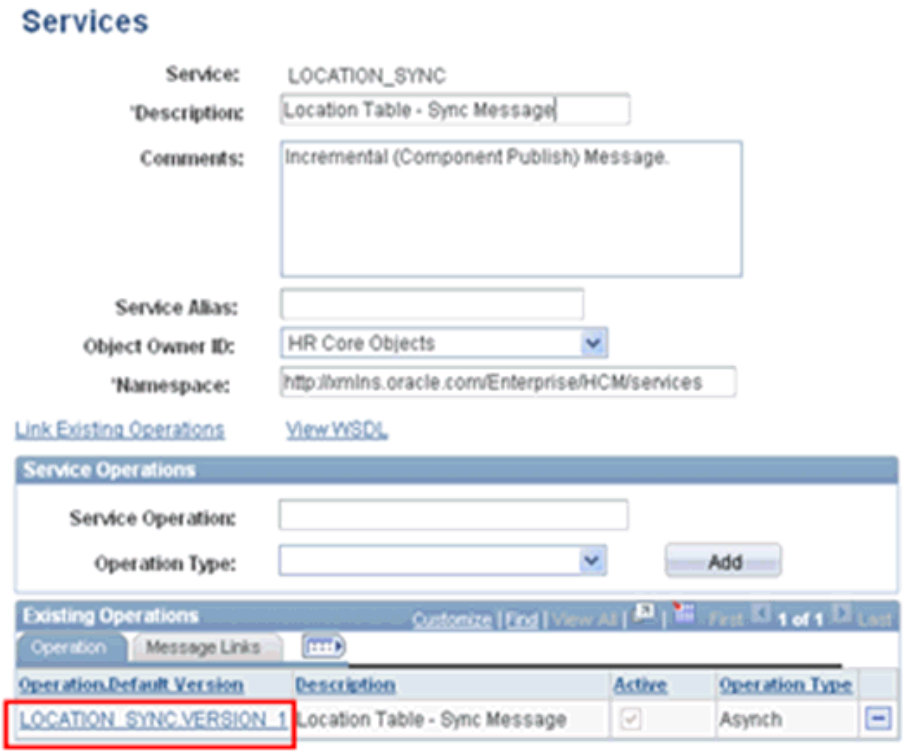
6. Select **Integration Broker**, **Integration Setup**, and then **Services** from the main menu.
7. Enter **LOCATION_SYNC** in the Services field, and then click **Search**, as shown in Figure 4–105.

Figure 4–105 Services



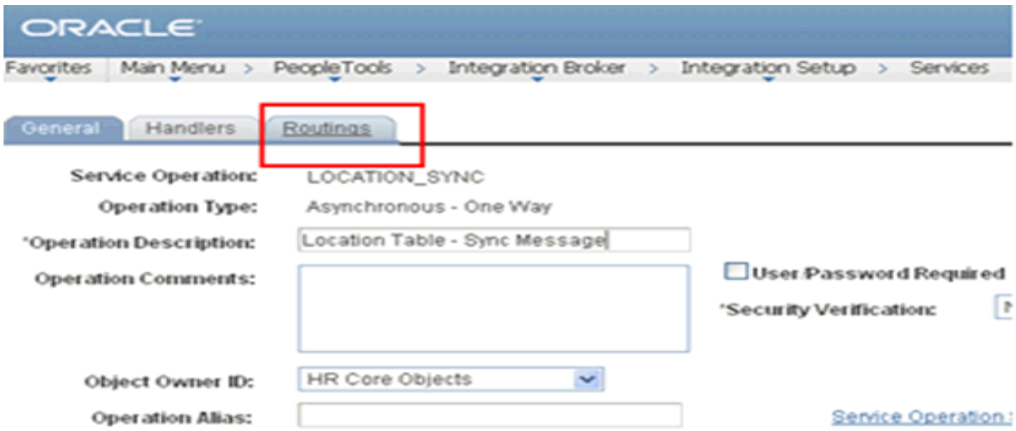
8. Click **LOCATION_SYNC.VERSION_1** in the Operation tab, as shown in Figure 4–106.

Figure 4–106 Operation Tab



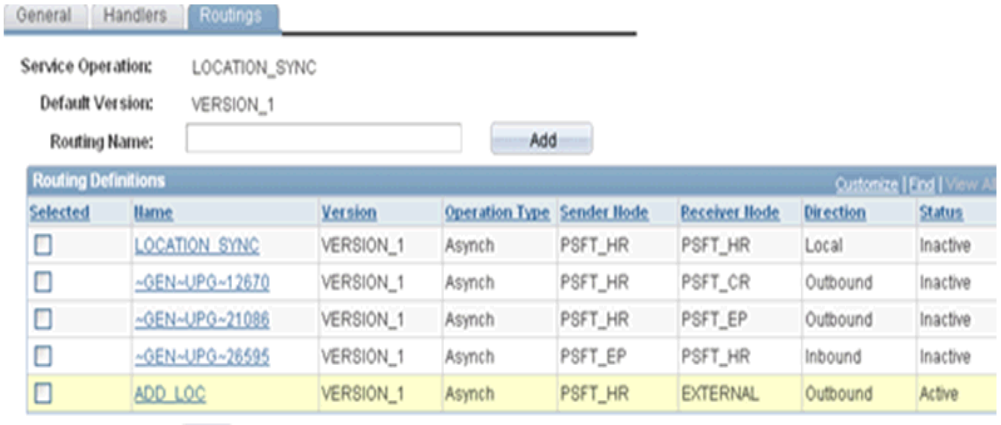
9. Click the **Routings** tab, as shown in Figure 4–107.

Figure 4–107 Routings Tab



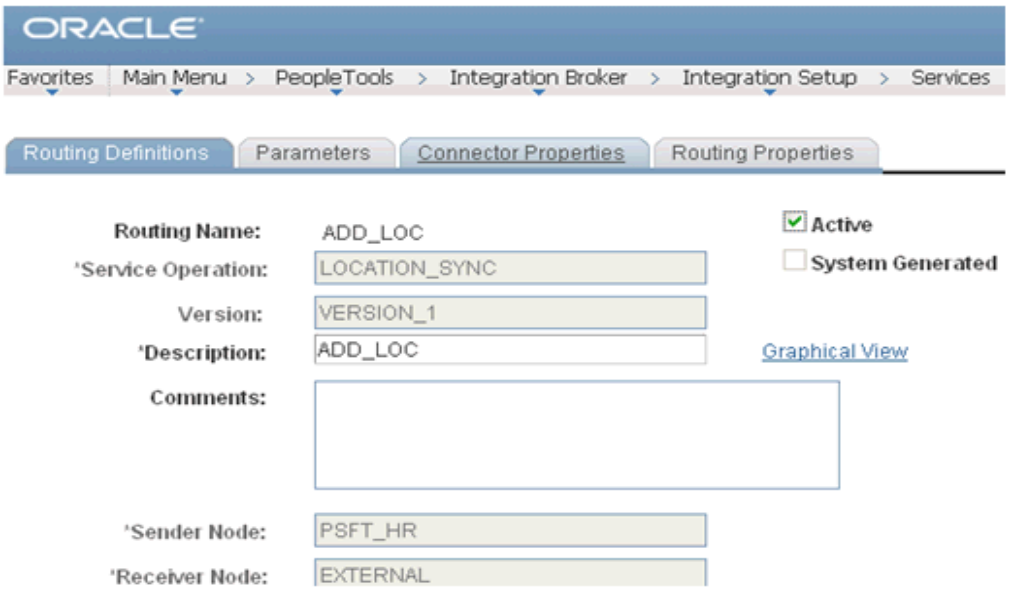
10. Click **ADD_LOC** in the Routing Definitions section, as shown in Figure 4–108.

Figure 4–108 Routing Definitions Section



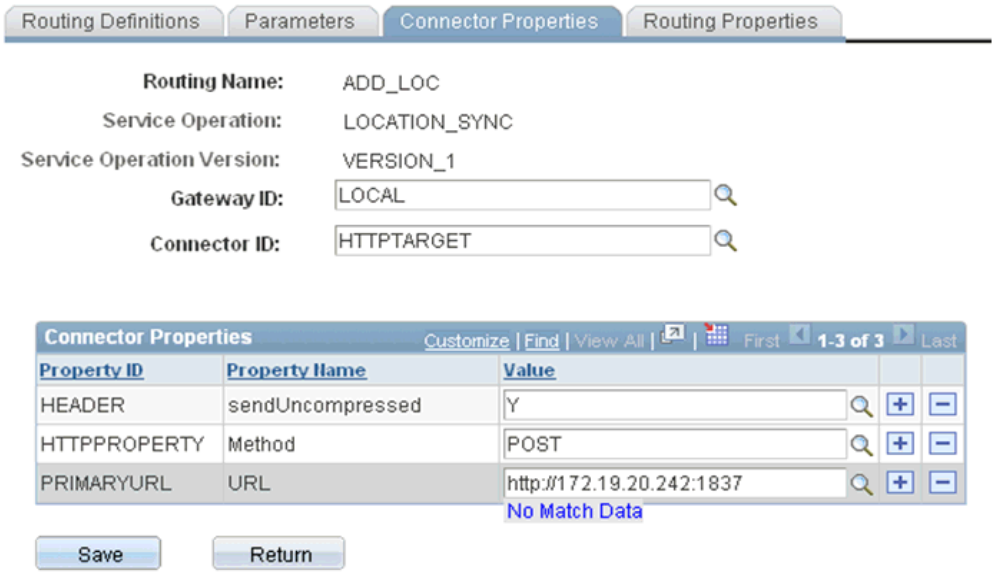
11. Click the **Connector Properties** tab, as shown in Figure 4–109.

Figure 4–109 Connector Properties Tab



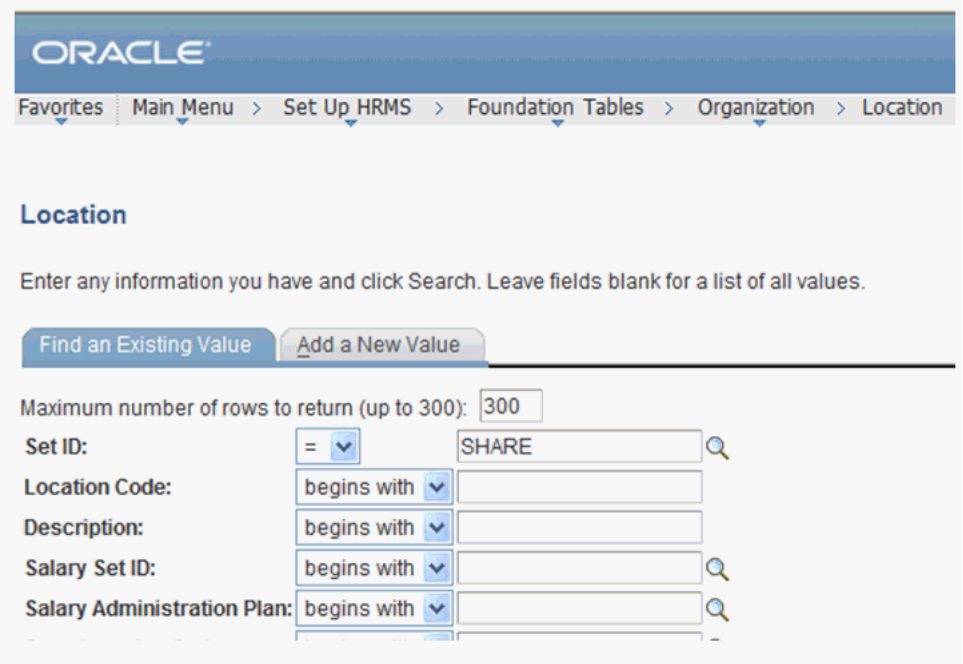
12. Enter the URL and the port number of the HTTP listener in the Connector Properties section and click **Save**, as shown in Figure 4–110.

Figure 4–110 Connector Properties Section



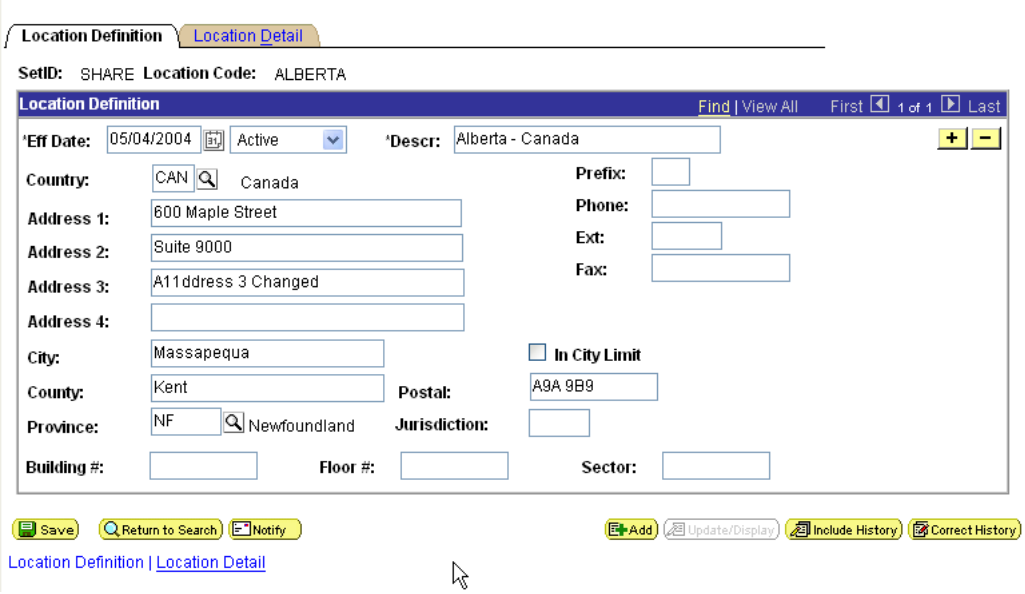
13. From the **Main Menu** in the left pane, select **Set Up HRMS**, **Foundation Tables**, **Organization**, and then **Location**, as shown in Figure 4–111.

Figure 4–111 PeopleSoft Integration Broker Connectors Tab



14. To find the location record you want to update, click **Search**; then make the changes and click **Save**, as shown in Figure 4–112.

Figure 4–112 Location Definition Pane



Verifying the Results

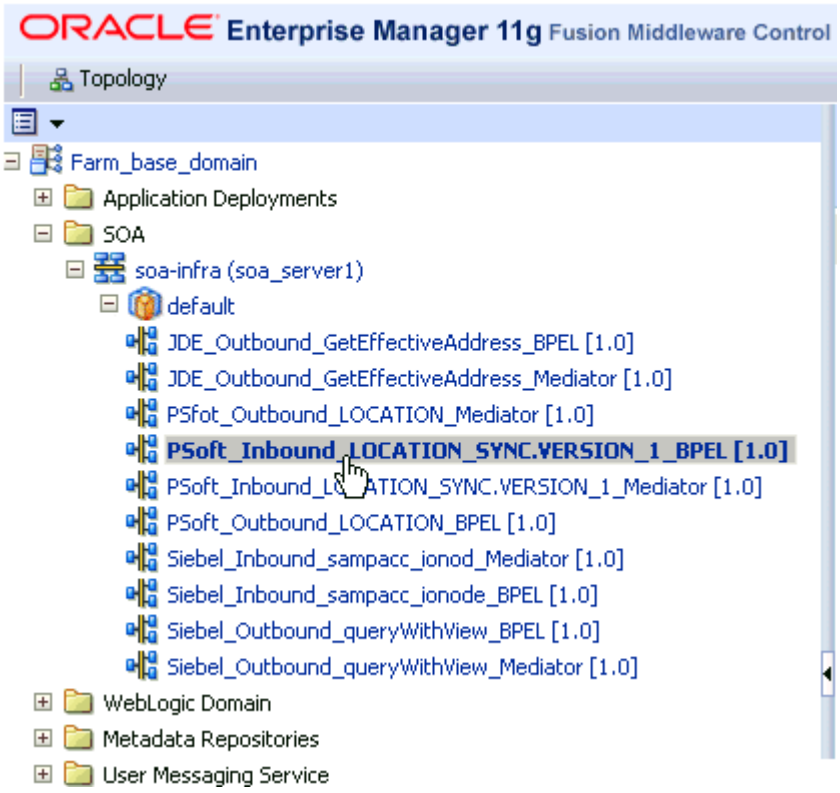
To verify your results:

1. Log in to the Oracle Enterprise Manager console by using the following URL:

   `http://localhost:7001/em`

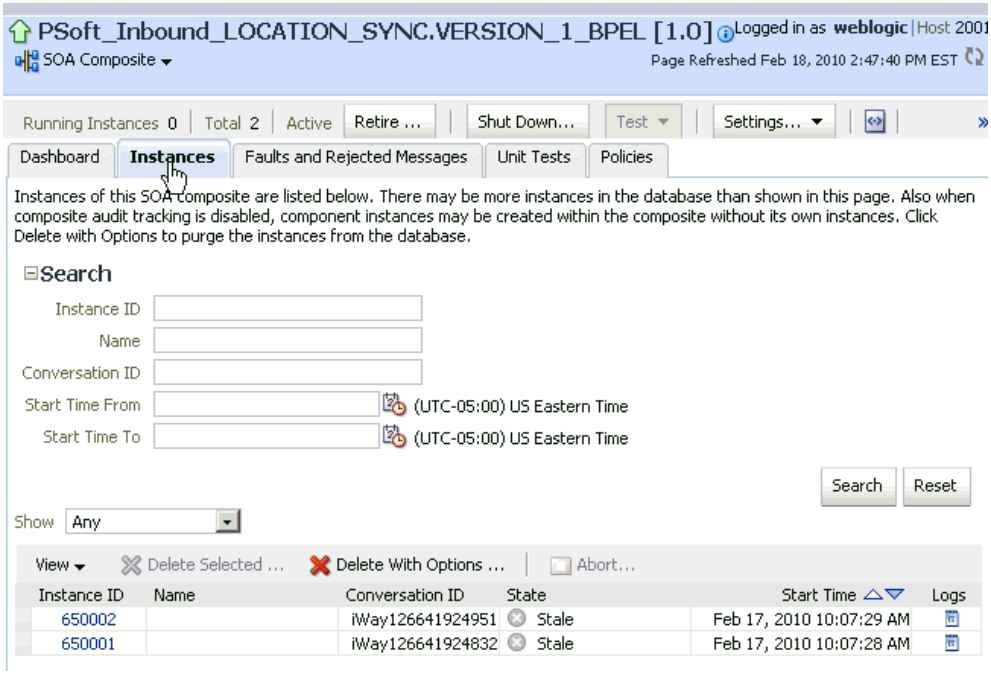
2. Expand your domain in the left pane followed by the **SOA** folder.

Figure 4–113 Oracle Enterprise Manager Console



3. Select an available project (for example, PSoft_Inbound_LOCATION_SYNC.VERSION_1_BPEL), as shown in Figure 4–113.

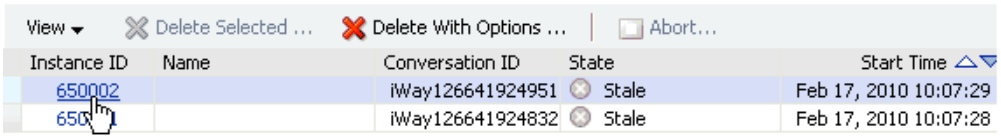
Figure 4–114 PSoft_Inbound_LOCATION_SYNC.VERSION_1_BPEL Project



4. Click the **Instances** tab in the right pane, as shown in Figure 4–114.

Recently received run-time events are displayed in the Instances tab, as shown in Figure 4–115.

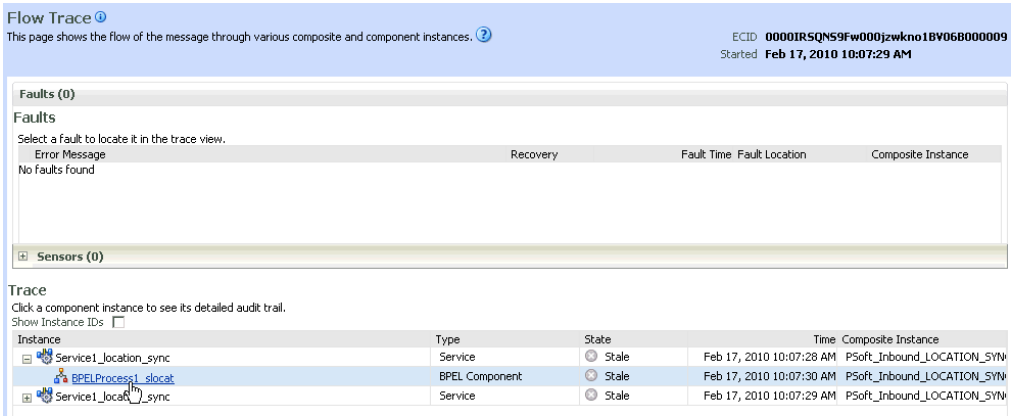
Figure 4–115 Recently Received Run-time Events



5. Select a PeopleSoft instance ID.

   The Flow Trace page is displayed, as shown in Figure 4–116.

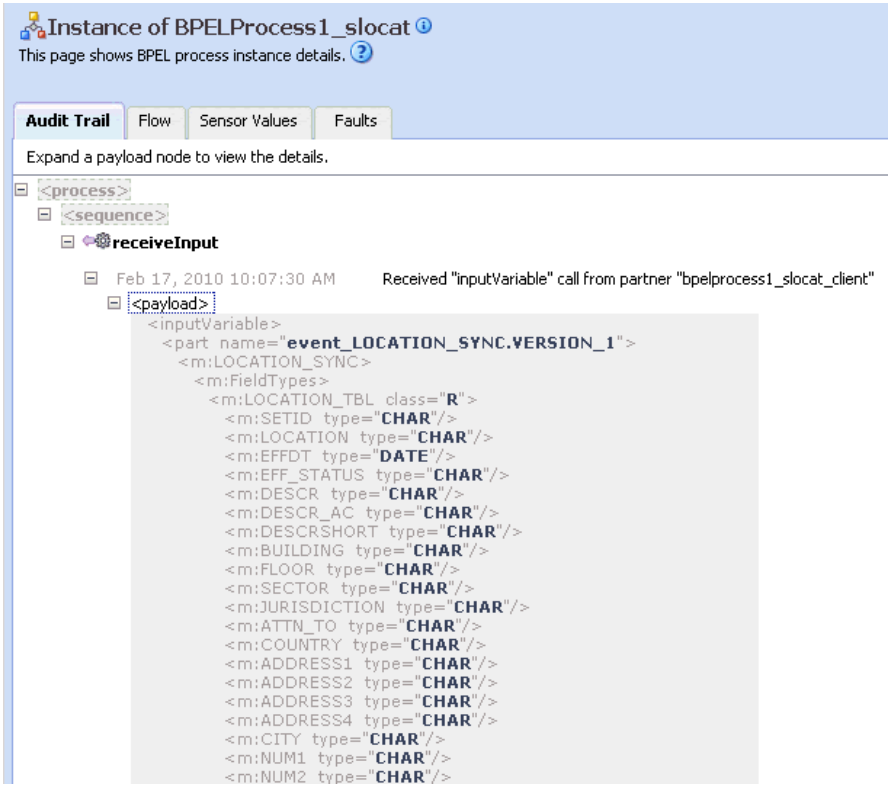
Figure 4–116 Flow Trace Page



6. Select a component instance to view its detailed audit trail.

   The Instance page for the selected component is displayed, as shown in Figure 4–117.

Figure 4–117 Instance Page



7. Click the **Audit Trail** tab to view the event message.

   The message received from the PeopleSoft system is displayed in the Audit Trail tab.

5

Integration With Mediator Service Components in the Oracle SOA Suite

This chapter describes integration with Mediator service components in the Oracle SOA Suite. It contains the following topics:

- Section 5.1, "Configuring a New Application Server Connection"
- Section 5.2, "Configuring a Mediator Outbound Process"
- Section 5.3, "Configuring a Mediator Inbound Process"

The scenarios shown in this chapter require the following prerequisites.

Prerequisites

The following are installation and configuration requirements:

- Oracle Application Adapter for PeopleSoft must be installed on Oracle WebLogic Server.
- PeopleSoft must be configured for inbound and outbound processing.

> **See Also:** *Oracle Fusion Middleware Application Adapters Installation Guide for Oracle WebLogic Server*

The examples in this chapter present the configuration steps necessary for demonstrating service and event integration with PeopleSoft. Prior to using this material, you must be familiar with the following:

- How to configure Oracle Application Adapter for PeopleSoft for services and events. For more information, see Chapter 2, "Configuring Oracle Application Adapter for PeopleSoft".
- How to configure a new Application Server and Integration Server connection in Oracle JDeveloper. For more information, see Chapter 4, "Integration With BPEL Service Components in the Oracle SOA Suite".

Overview of Mediator Integration

Mediator provides a comprehensive application integration framework. Oracle Application Adapter for PeopleSoft used with Mediator enables you to seamlessly integrate enterprise software, eliminating the need to write custom code. Functional modeling, as opposed to custom coding solutions, allows for software reuse and reduces the complexity and management challenges that arise over the software lifecycle. This integration model consists of two components--high-level integration logic and low-level platform services.

Adapter integration with Oracle WebLogic Server, Mediator is a two-step process:

1. **Design Time:** Oracle Application Adapter for PeopleSoft is configured in Application Explorer for services and events, as described in Chapter 2, "Configuring Oracle Application Adapter for PeopleSoft". Integration logic is modeled in Oracle JDeveloper. Metadata are stored in repositories.
2. **Runtime:** The underlying platform treats this metadata as run-time instructions to enable the communication between participating applications.

5.1 Configuring a New Application Server Connection

For more information on how to configure a new Application Server connection in Oracle JDeveloper, see Section 4.3, "Configuring a New Application Server Connection".

5.2 Configuring a Mediator Outbound Process

The following example describes how to configure a Mediator outbound process to your PeopleSoft system, using a Mediator project in Oracle JDeveloper.

Prerequisites

Before you design a Mediator outbound process, you must generate the respective WSDL file using Application Explorer. For more information, see "Generating WSDL for Request/Response Service" on page 4-8.

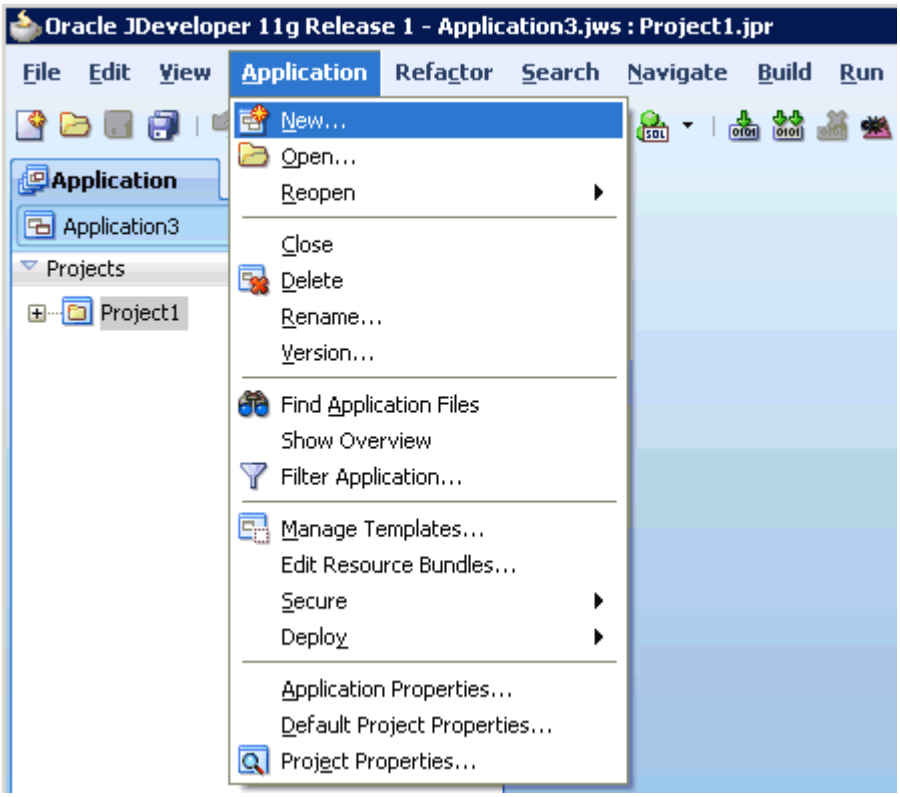
Samples have been provided for this usecase scenario in the `etc/sample` folder in Application Adapters installation.

5.2.1 Creating a New SOA Application for the Outbound Mediator Process

Perform the following steps to create a new SOA application for the outbound Mediator process:

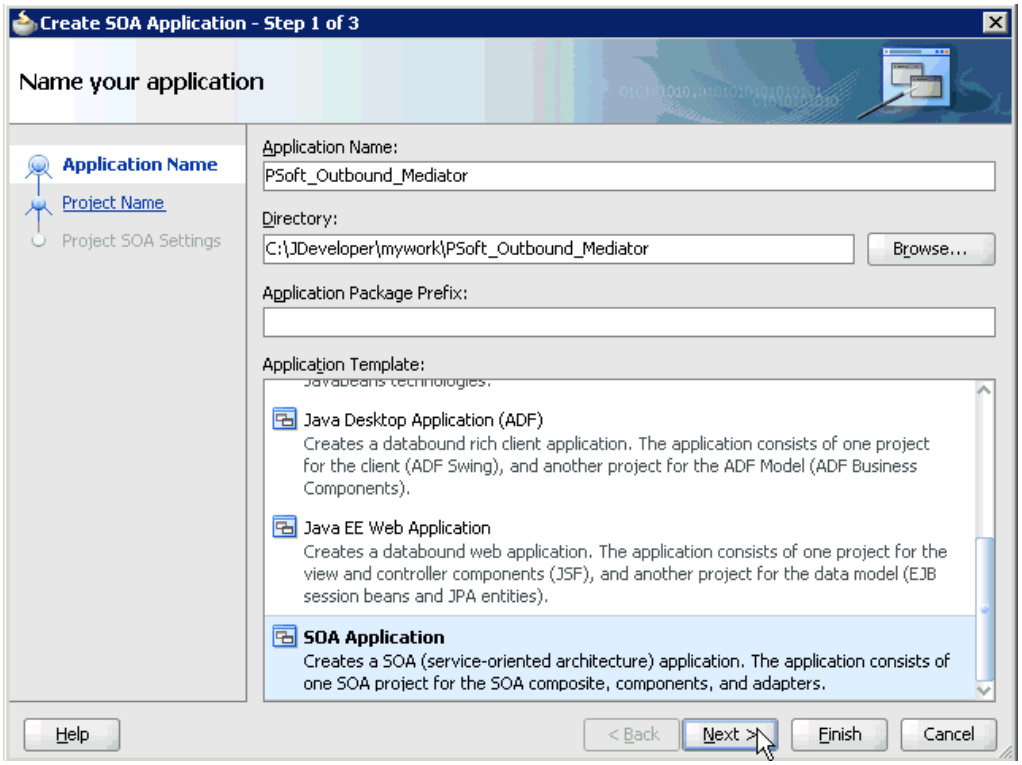
1. Open Oracle JDeveloper on your system.
2. Click **Application** in the menu bar and select **New** from the menu, as shown in Figure 5–1.

Figure 5–1 New Option



The Create SOA Application wizard is displayed, as shown in Figure 5–2.

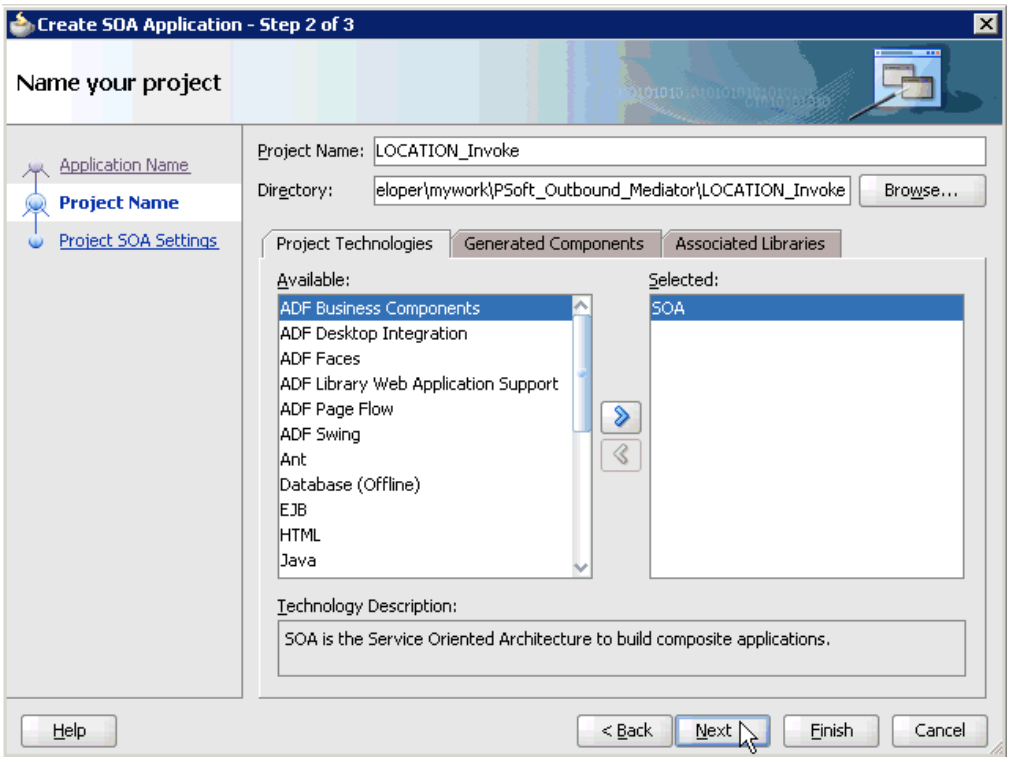
Figure 5–2 Create SOA Application Wizard



3. From the Application Template list, click **SOA Application**.
4. Enter a name for the new SOA application (for example, PSoft_Outbound_Mediator) and click **Next**.

   The Name your project page is displayed, as shown in Figure 5–3.

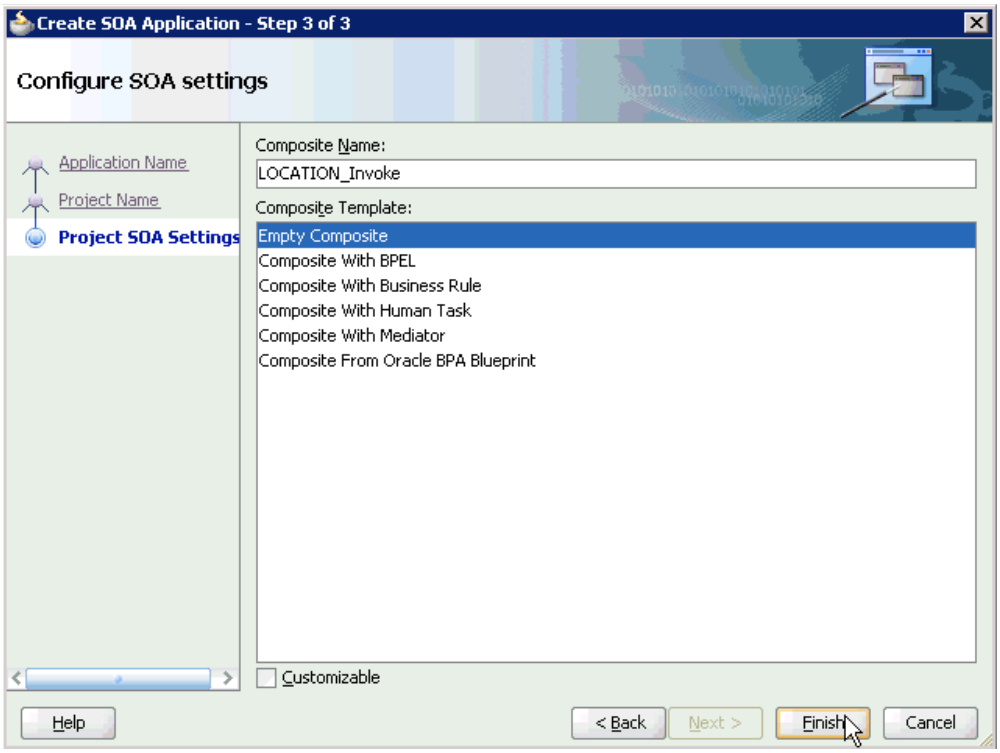
Figure 5–3 Name Your Project Page



5. Enter a project name (for example, LOCATION_Invoke) and click **Next**.

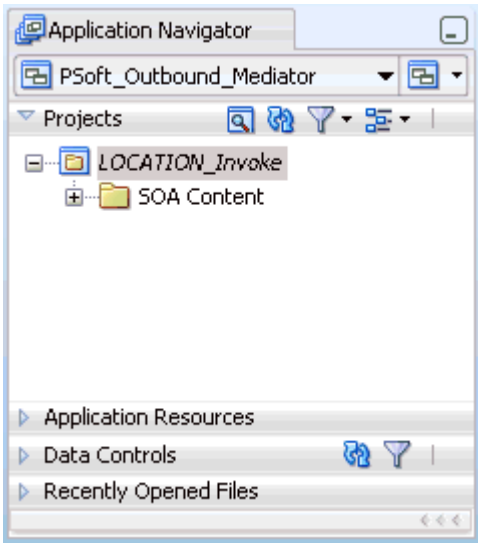
   The Configure SOA settings page is displayed, as shown in Figure 5–4.

Figure 5–4 Configure SOA Settings Page



6. From the Composite Template list, select **Empty Composite** and click **Finish**.

Figure 5–5 New SOA Application and Associated Project



The new SOA application (PSoft_Outbound_Mediator) and associated project (LOCATION_Invoke) are added to the Application Navigator tab in the left pane, as shown in Figure 5–5.

5.2.2 Defining a Mediator Outbound Process

This section describes how to define a Mediator outbound process, which consists of the following stages:

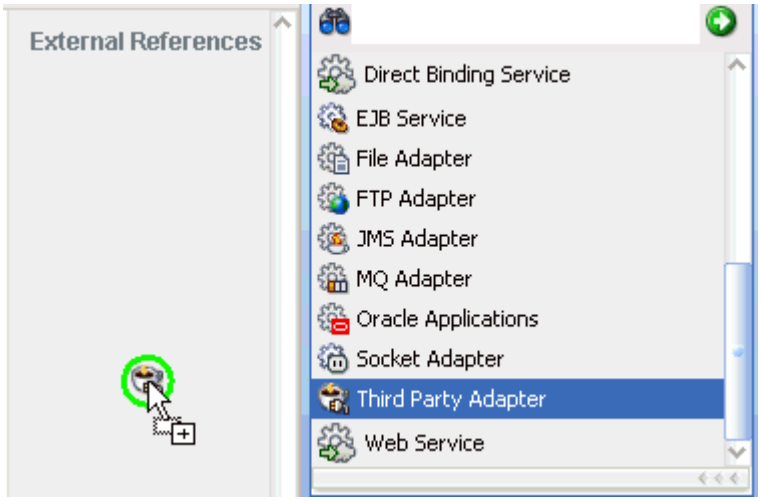
1. Configuring a Third Party Adapter Service Component
2. Configuring an Outbound Mediator Process Component
3. Configuring the Routing Rules

Configuring a Third Party Adapter Service Component

Perform the following steps to create a third party adapter service component:

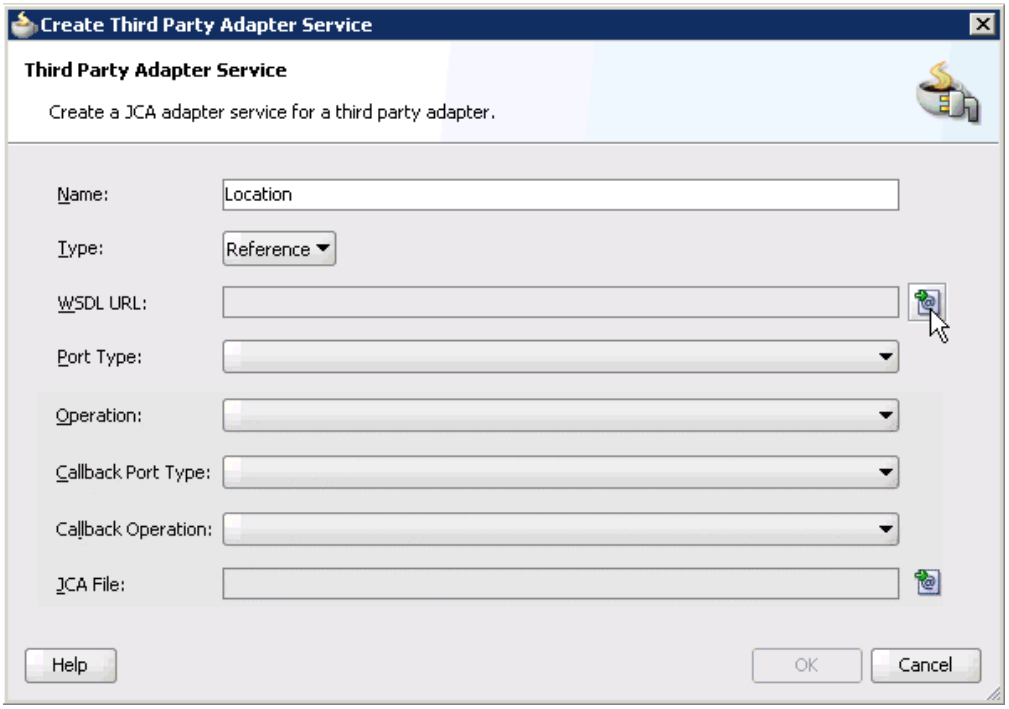
1. Drag and drop the **Third Party Adapter** component from the Component Palette tab (Service Adapters section) to the External References pane, as shown in Figure 5–6.

Figure 5–6 Third Party Adapter Component



The Create Third Party Adapter Service dialog is displayed, as shown in Figure 5–7.

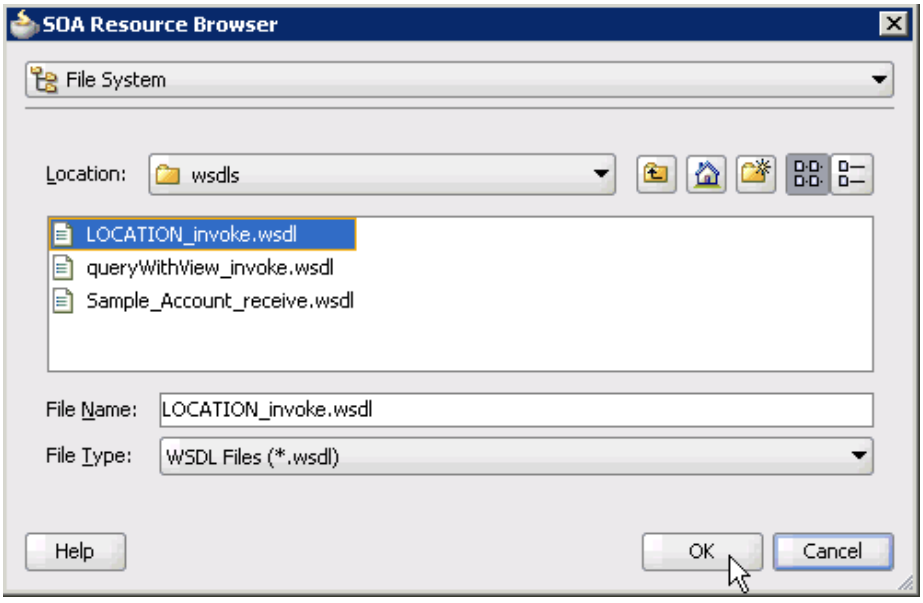
Figure 5–7 Create Third Party Adapter Service Dialog



2. Enter a name for the new third party adapter service.
3. Ensure that **Reference** is selected from the Type list (default).
4. Click the **Find existing WSDLs** icon, which is located to the right of the WSDL URL field.

   The SOA Resource Browser dialog is displayed, as shown in Figure 5–8.

Figure 5–8 SOA Resource Browser Dialog



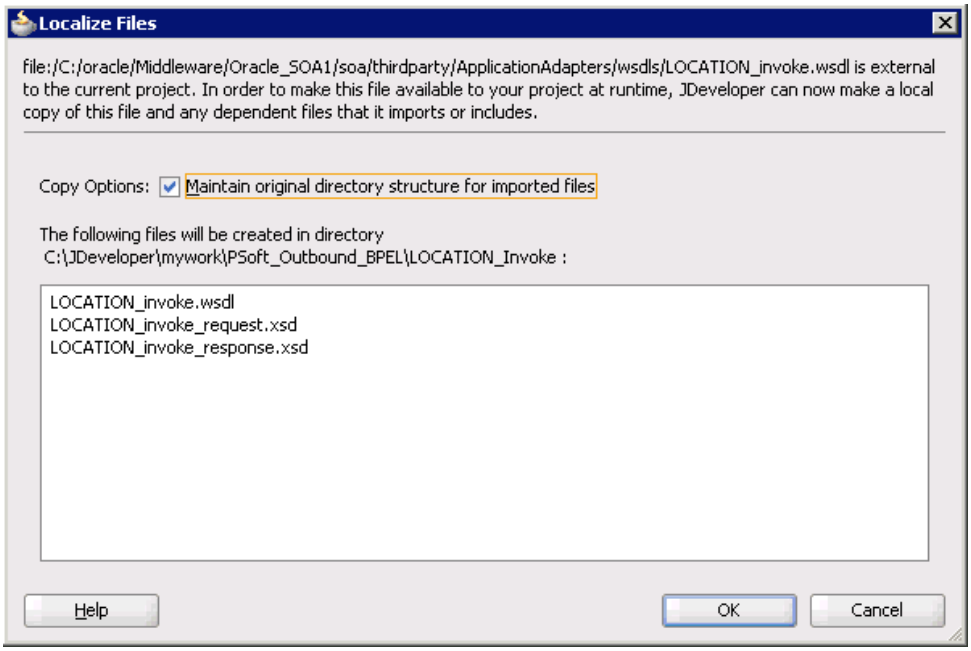
5. Browse and select an outbound WSDL file (for example, LOCATION_ invoke.wsdl) from the following directory:

<*ADAPTER_HOME*>\soa\thirdparty\ApplicationAdapters\wsdls

6. Click **OK**.

   The Localize Files dialog is displayed, as shown in Figure 5–9.

Figure 5–9 Localize Files Dialog

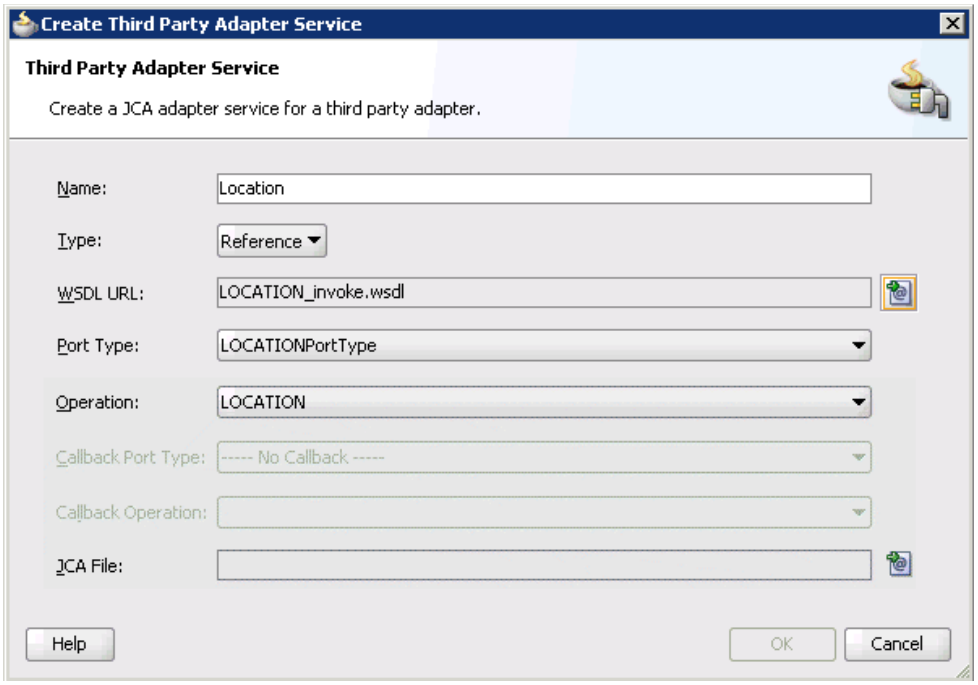


7. Click **OK**.

   The outbound WSDL file and associated request and response XML schema files (.xsd) are imported to the project folder that has been created.

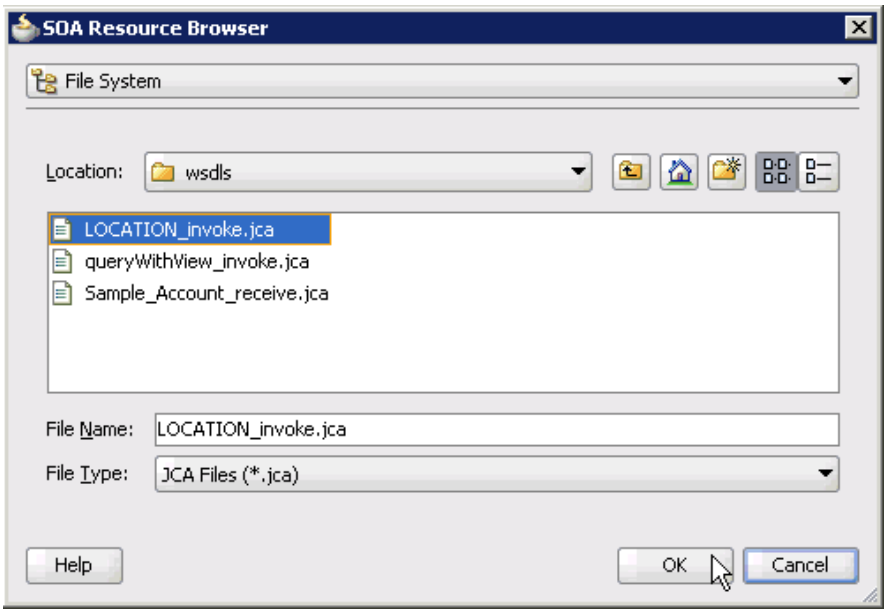
   You are returned to the Create Third Party Adapter Service dialog, as shown in Figure 5–10.

Figure 5–10 Create Third Party Adapter Service Dialog



8. Click the **Find JCA Files** icon, which is located to the right of the JCA File field. The SOA Resource Browser dialog is displayed, as shown in Figure 5–11.

Figure 5–11 SOA Resource Browser Dialog



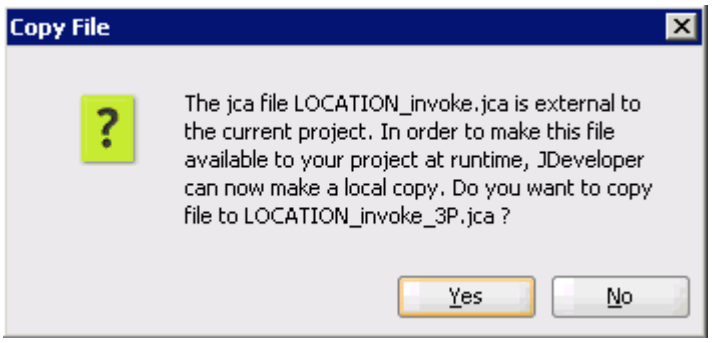
9. Browse and select the JCA properties file (for example, LOCATION_invoke.jca) from the following directory:

   `<ADAPTER_HOME>\soa\thirdparty\ApplicationAdapters\wsdls`

10. Click **OK**.

The following message is displayed, as shown in Figure 5–12.

Figure 5–12 Copy File Confirmation Message

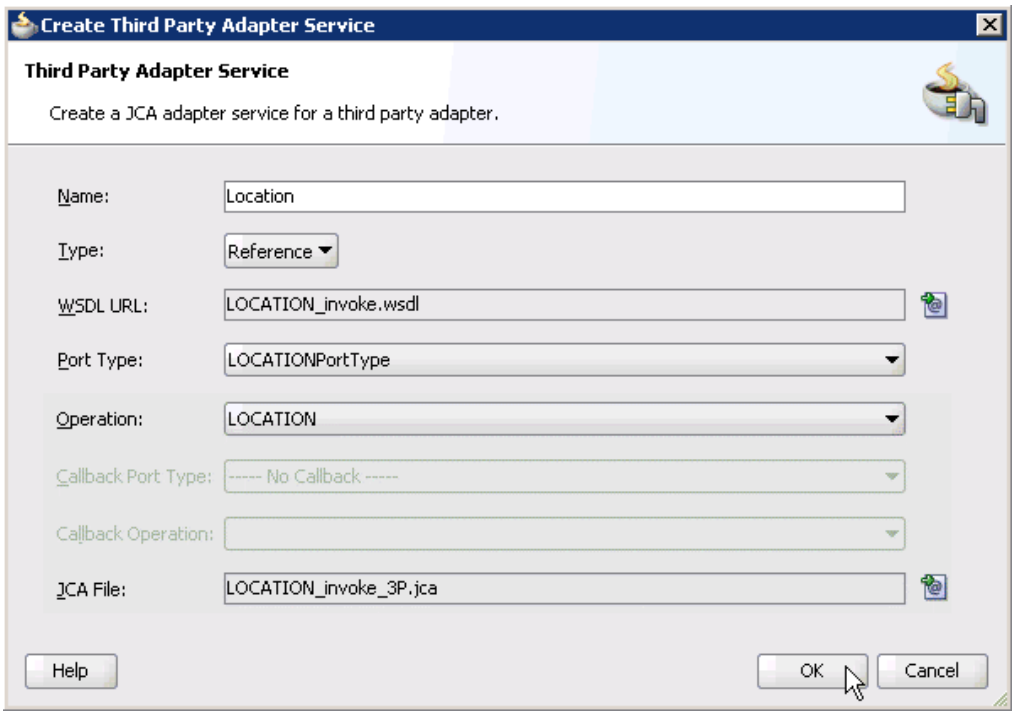


11. Click **Yes**.

    A copy of the JCA properties file is made in the project folder.

    You are returned to the Create Third Party Adapter Service dialog, as shown in Figure 5–13.

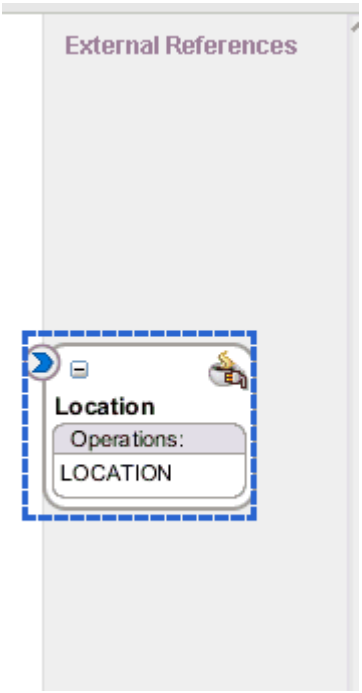
Figure 5–13 Create Third Party Adapter Service Dialog



12. Click **OK**.

    The third party adapter service component (Location) is created and displayed in the External References pane, as shown in Figure 5–14.

Figure 5–14 External References Pane



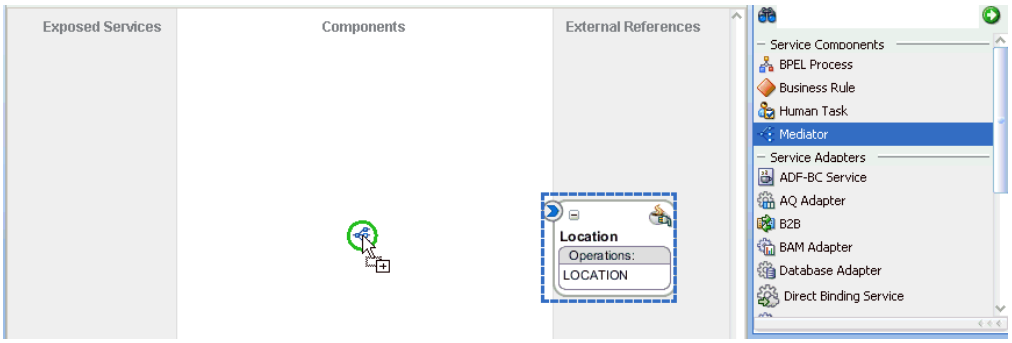
You are now ready to configure an outbound Mediator process component.

Configuring an Outbound Mediator Process Component

Perform the following steps to configure an outbound Mediator process component:

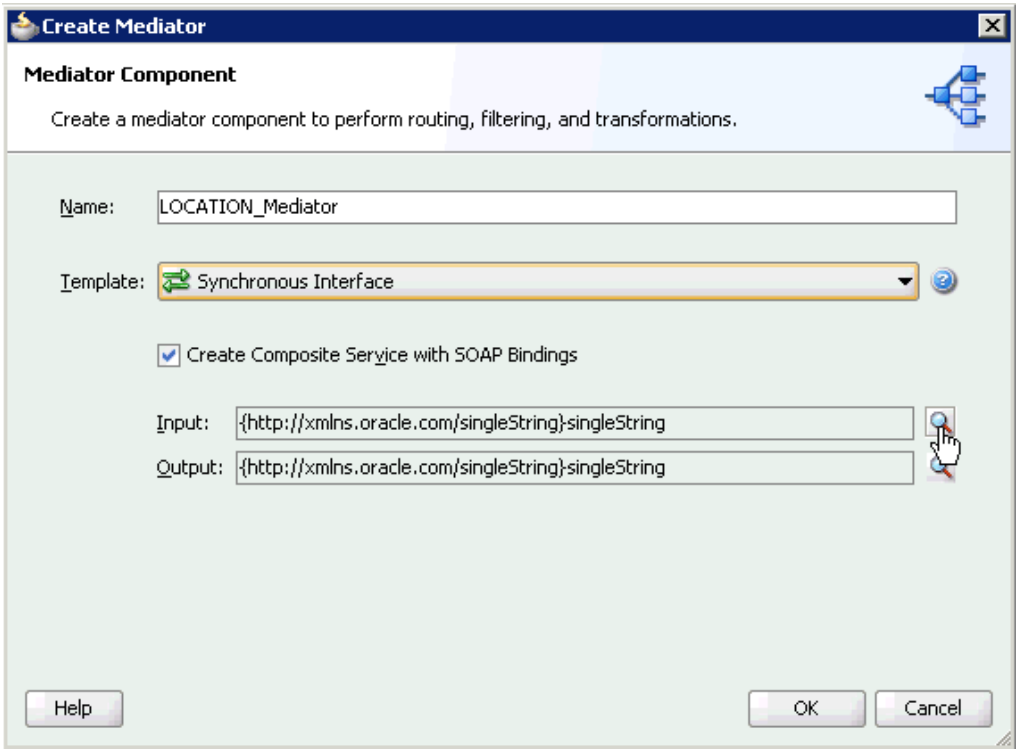
1. Drag and drop the **Mediator** component from the Component Palette tab (Service Components section) to the Components pane, as shown in Figure 5–15.

Figure 5–15 Mediator Component



The Create Mediator dialog is displayed, as shown in Figure 5–16.

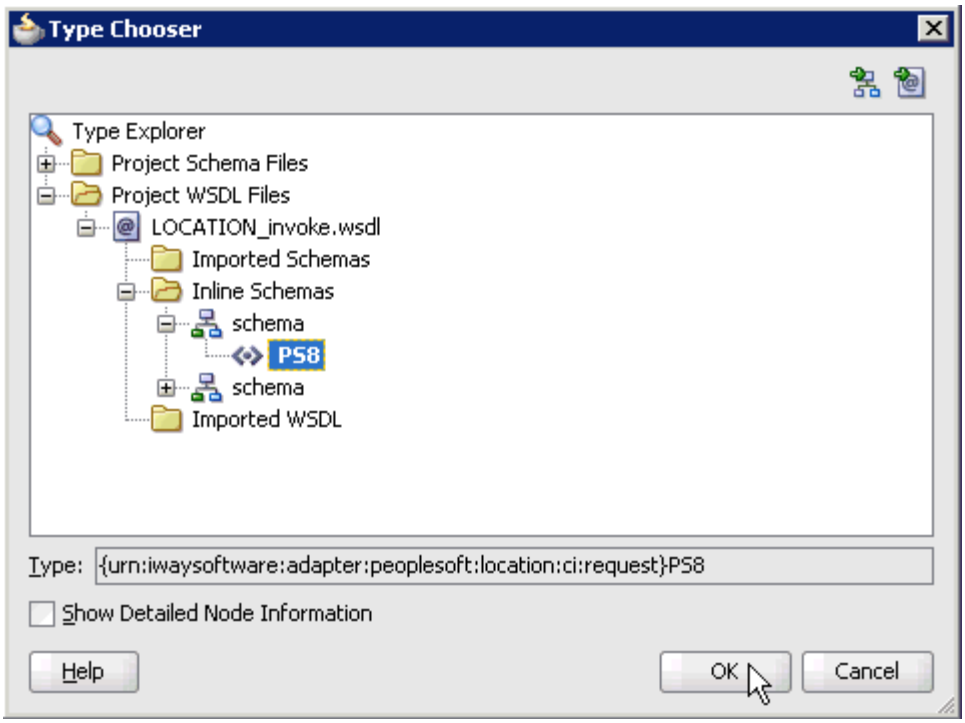
Figure 5–16 Create Mediator Dialog



2. In the Name field, enter a name to identify the new outbound Mediator process component (for example, LOCATION_Mediator).
3. From the Template list, select **Synchronous Interface**.
4. Click the **Browse Input Elements** icon, which is located to the right of the Input field to select the associated XML request schema file.

   The Type Chooser dialog is displayed, as shown in Figure 5–17.

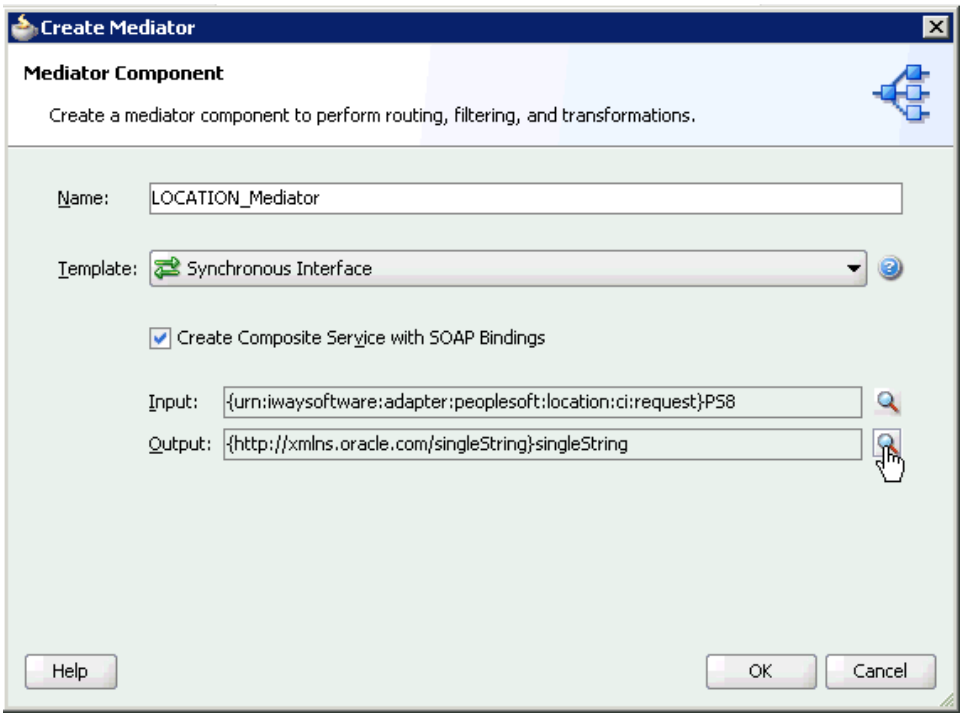
Figure 5–17 Type Chooser Dialog



5. Expand **Project WSDL Files**, **LOCATION_invoke.wsdl**, **Inline Schemas**, **schema**, and select **PS8**.
6. Click **OK**.

   You are returned to the Create Mediator dialog, as shown in Figure 5–18.

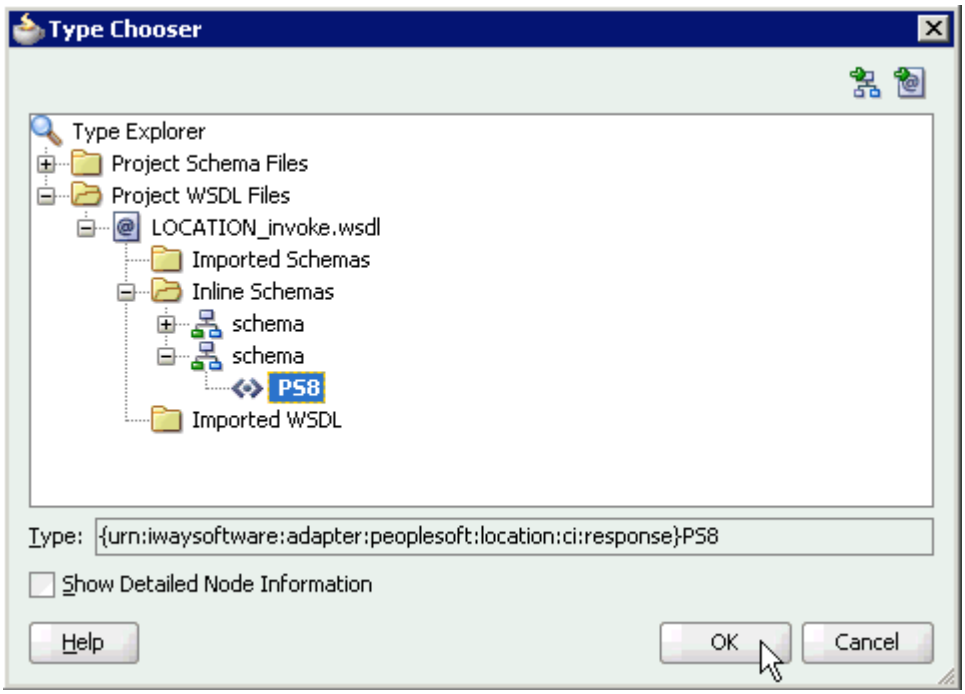
Figure 5–18 Create Mediator Dialog



7. Click the **Browse Output Elements** icon, which is located to the right of the Output field to select the associated XML response schema file.

   The Type Chooser dialog is displayed, as shown in Figure 5–19.

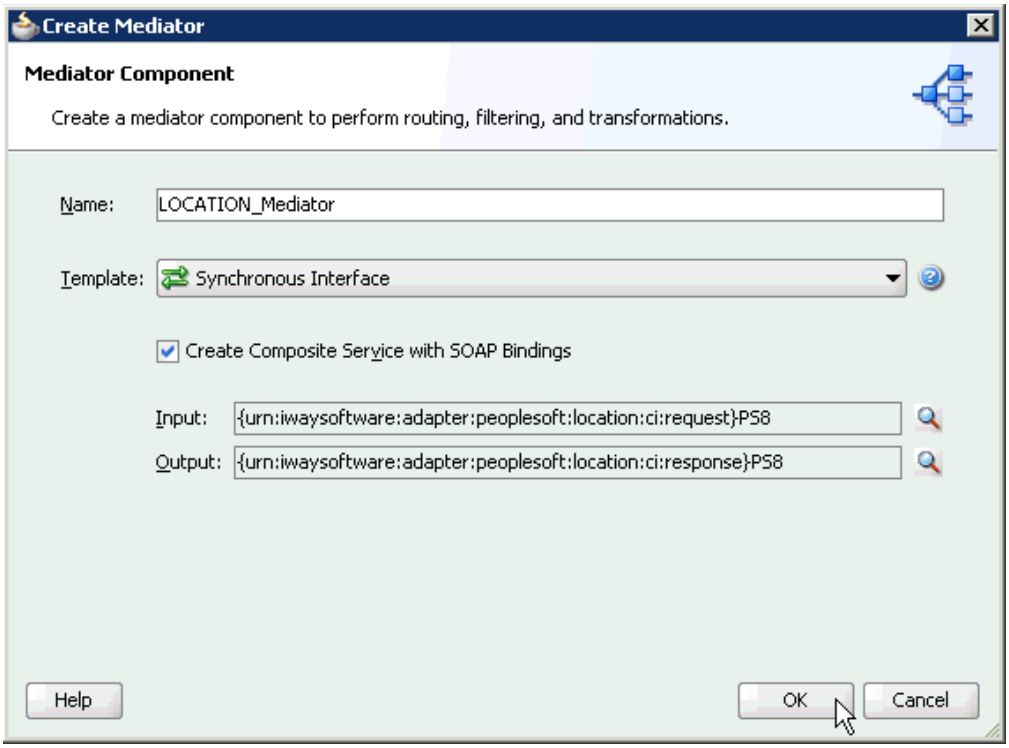
Figure 5–19 Type Chooser Dialog



8. Expand **Project WSDL Files**, **LOCATION_invoke.wsdl**, **Inline Schemas**, **schema**, and select **PS8**.
9. Click **OK**.

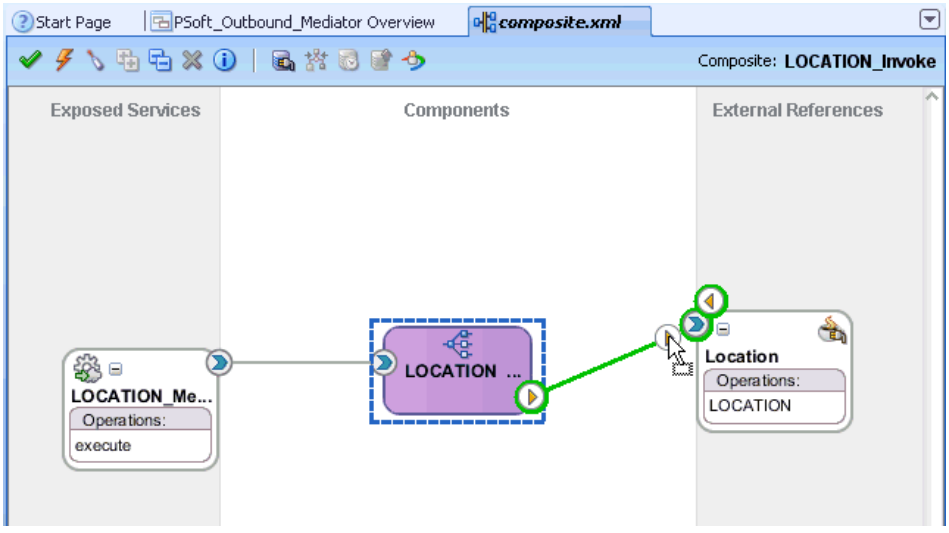
   You are returned to the Create Mediator dialog, as shown in Figure 5–20.

Figure 5–20 Create Mediator Dialog



10. Click **OK**.
11. Create a connection between the outbound Mediator process component (LOCATION_ Mediator) and the third party adapter service component (Location), as shown in Figure 5–21.

Figure 5–21 Created Connection



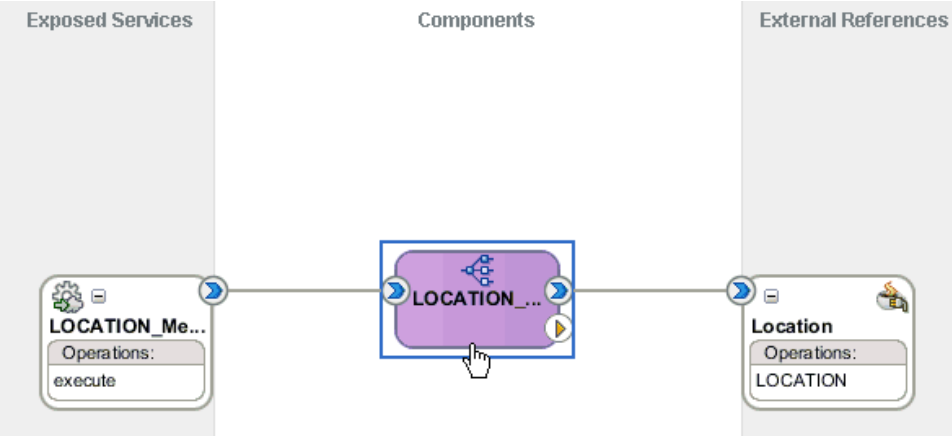
You are now ready to configure the routing rules.

Configuring the Routing Rules

Perform the following steps to configure routing rules for the Mediator outbound process component:

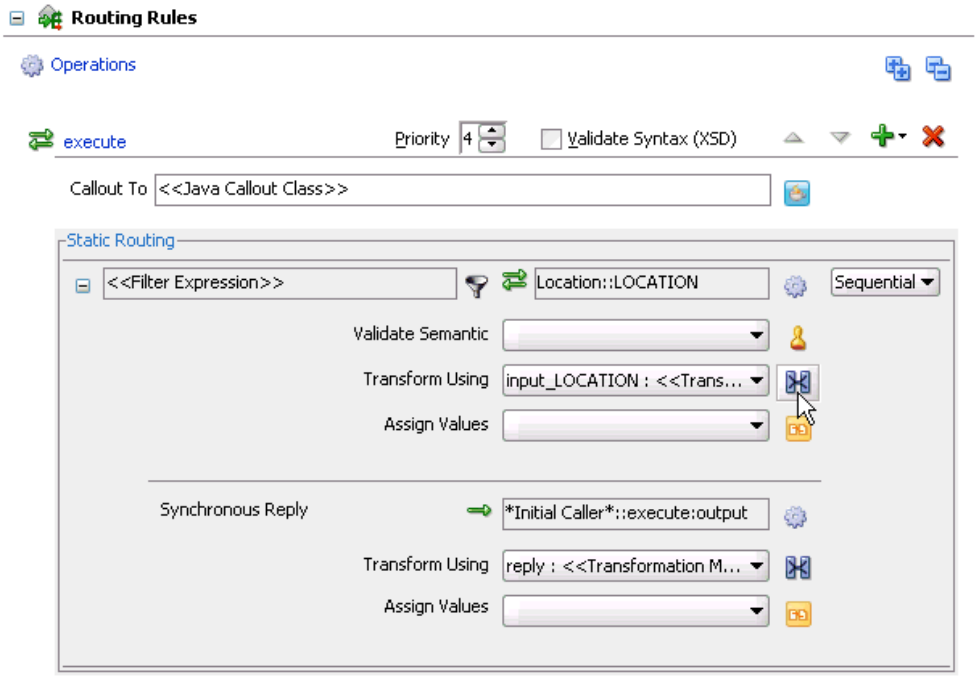
1. Double-click the outbound Mediator process component (LOCATION_ Mediator) in the Components pane, as shown in Figure 5–22.

Figure 5–22 Outbound Mediator Process Component



The Routing Rules dialog is displayed, as shown in Figure 5–23.

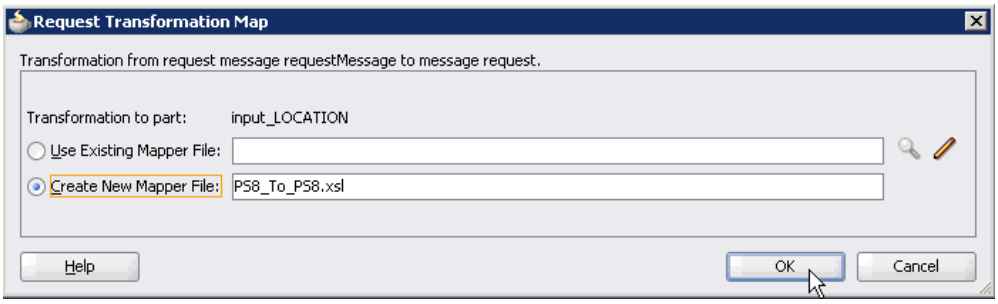
Figure 5–23 Routing Rules Dialog



2. In the <<Filter Expression>> area, click the **Select an existing mapper file or create a new one** icon to the right of the Transform Using field.

   The Request Transformation Map dialog is displayed, as shown in Figure 5–24.

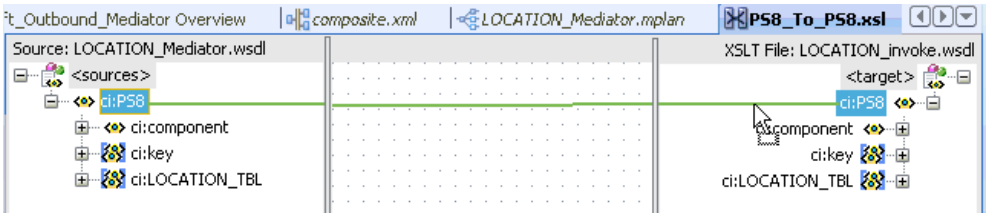
Figure 5–24 Request Transformation Map Dialog



3. Select the **Create New Mapper File** option and click **OK**.

   The PS8_To_PS8.xsl tab is displayed, as shown in Figure 5–25.

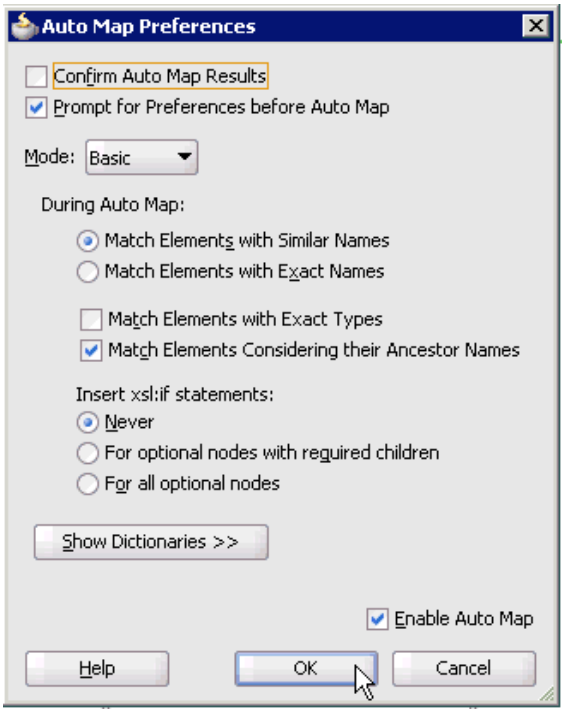
Figure 5–25 PS8_To_PS8.xsl Tab



4. Map the **ci:PS8** source element to the **ci:PS8** target element.

   The Auto Map Preferences dialog is displayed, as shown in Figure 5–26.

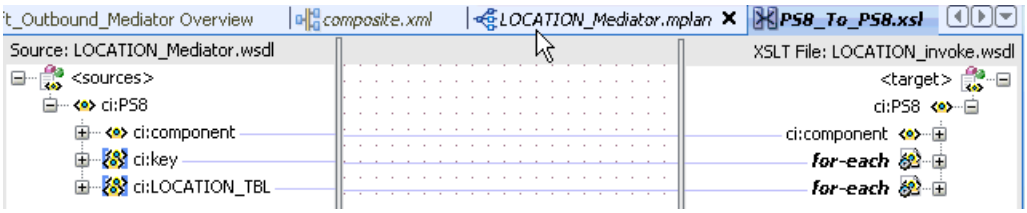
Figure 5–26 Auto Map Preferences Dialog



5. Retain the default values and click **OK**.

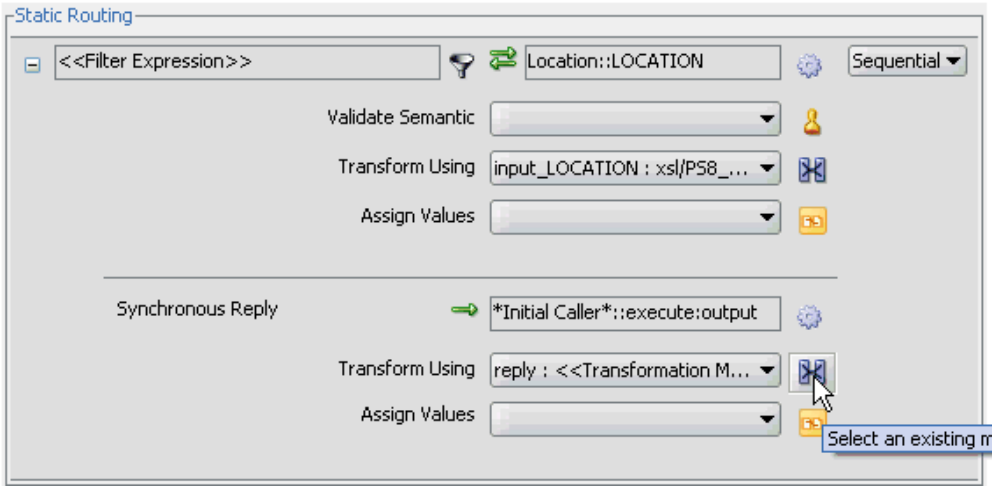
6. Click the **LOCATION_Mediator.mplan** tab, as shown in Figure 5–27.

Figure 5–27 LOCATION_Mediator.mplan Tab



You are returned to the Routing Rules dialog, as shown in Figure 5–28.

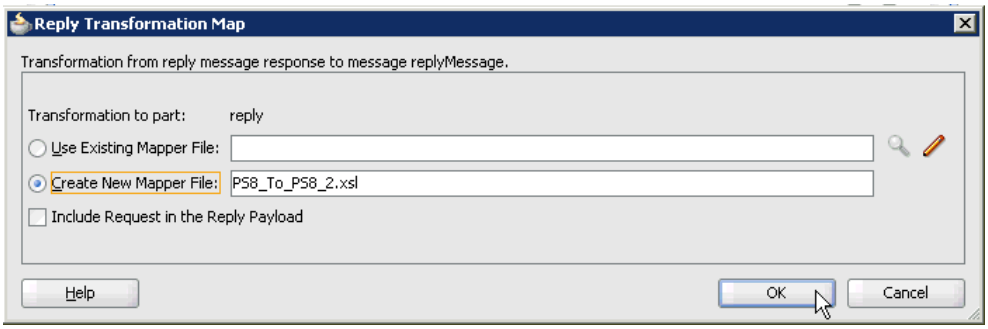
Figure 5–28 Routing Rules Dialog



7. In the Synchronous Reply area, click the **Select an existing mapper file or create a new one** icon to the right of the Transform Using field.

   The Reply Transformation Map dialog is displayed, as shown in Figure 5–29.

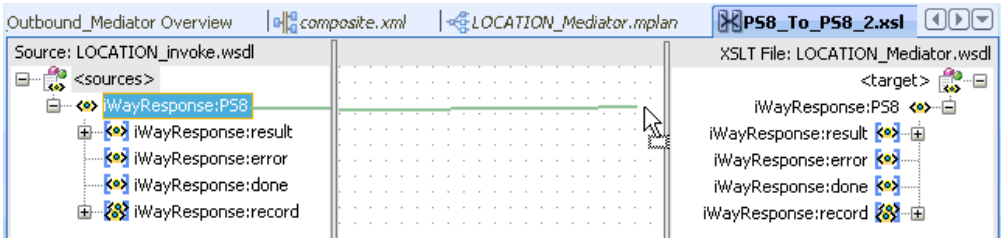
Figure 5–29 Reply Transformation Map Dialog



8. Select the **Create New Mapper File** option and click **OK**.

   The PS8_To_PS8_2.xsl tab is displayed, as shown in Figure 5–30.

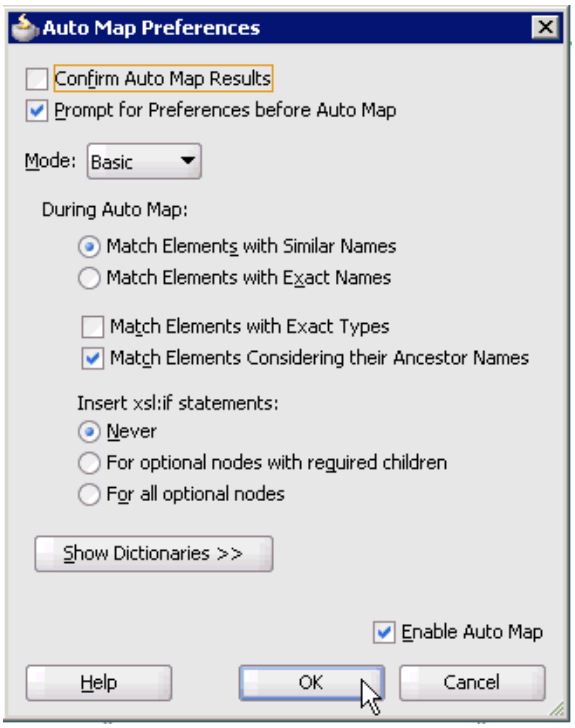
Figure 5–30 PS8_To_PS8_2.xsl Tab



9. Map the **iWayResponse:PS8** source element to the **iWayResponse:PS8** target element.

The Auto Map Preferences dialog is displayed, as shown in Figure 5–31.

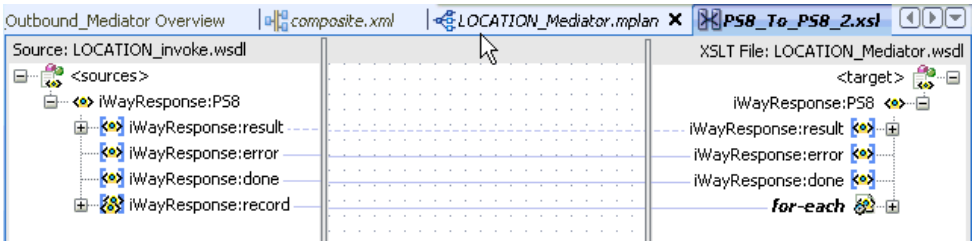
Figure 5–31 Auto Map Preferences Dialog



10. Retain the default values and click **OK**.

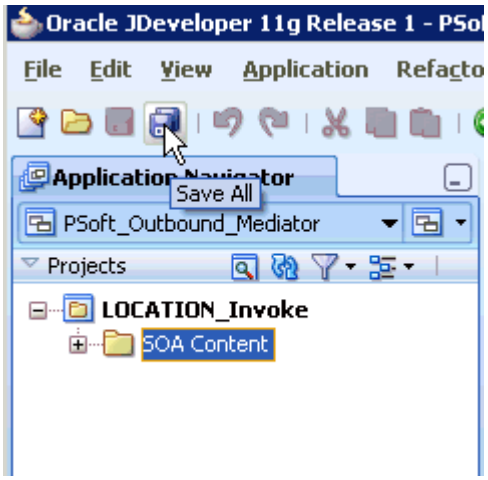
The mapping is completed, as shown in Figure 5–32.

Figure 5–32 Completed Mapping



11. Click the **Save All** icon in the menu bar to save the new outbound Mediator process component that was configured, as shown in Figure 5–33.

Figure 5–33 Save All Icon



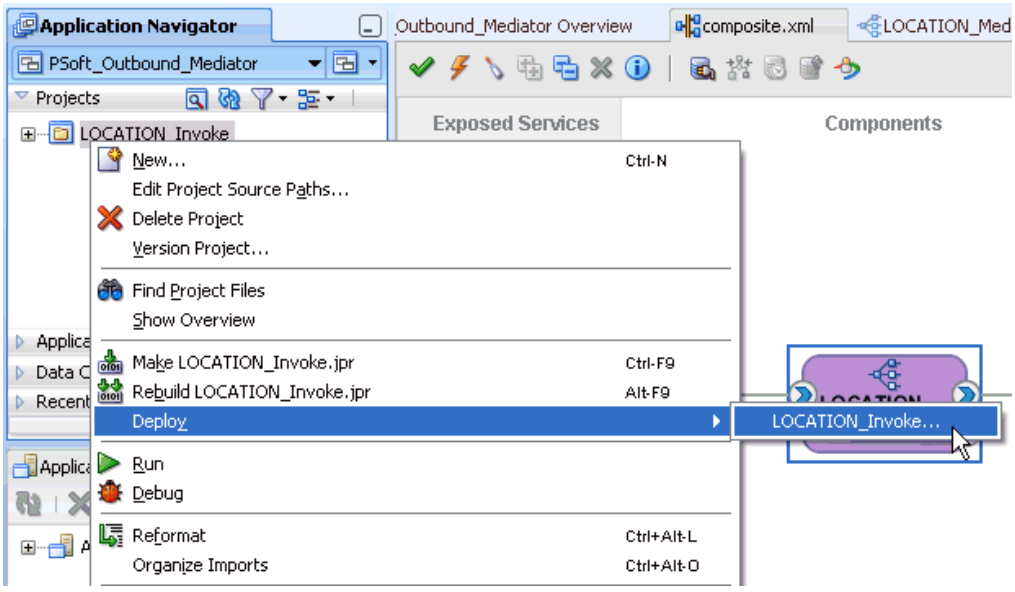
You are now ready to deploy the Mediator outbound process.

5.2.3 Deploying the Mediator Outbound Process

Perform the following steps to deploy the Mediator outbound process.

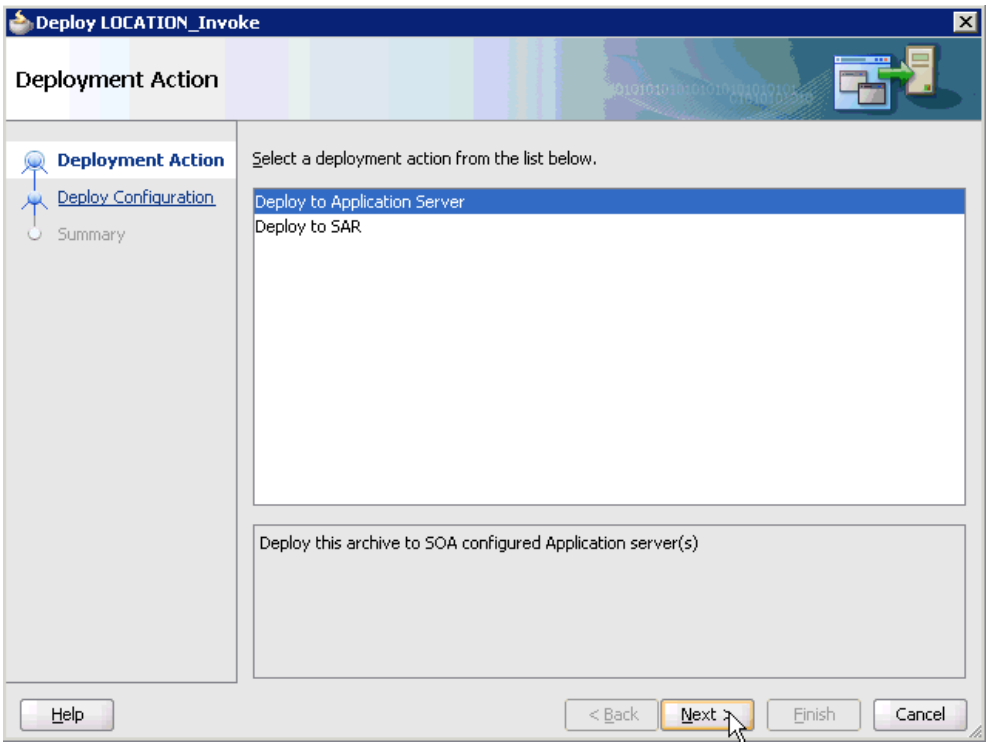
1. Right-click the project name in the left pane (for example, **LOCATION_Invoke**), select **Deploy**, and then click **LOCATION_Invoke**, as shown in Figure 5–34.

Figure 5–34 Deploy Option



The Deployment Action page is displayed, as shown in Figure 5–35.

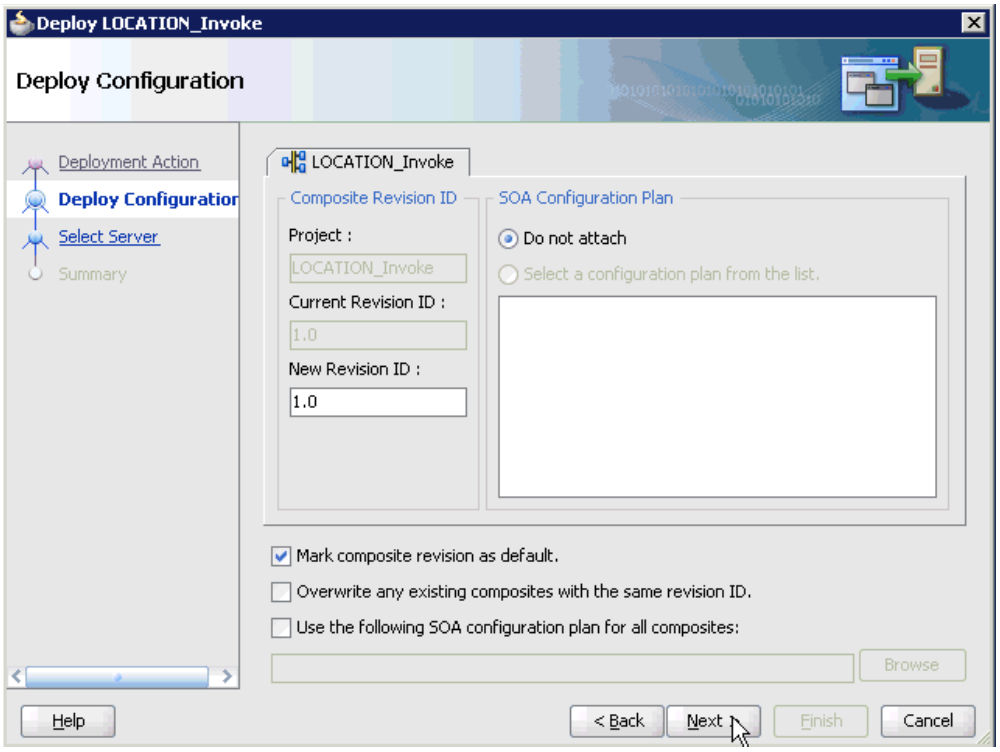
Figure 5–35 Deployment Action Page



2. Ensure that **Deploy to Application Server** is selected.
3. Click **Next**.

   The Deploy Configuration page is displayed, as shown in Figure 5–36.

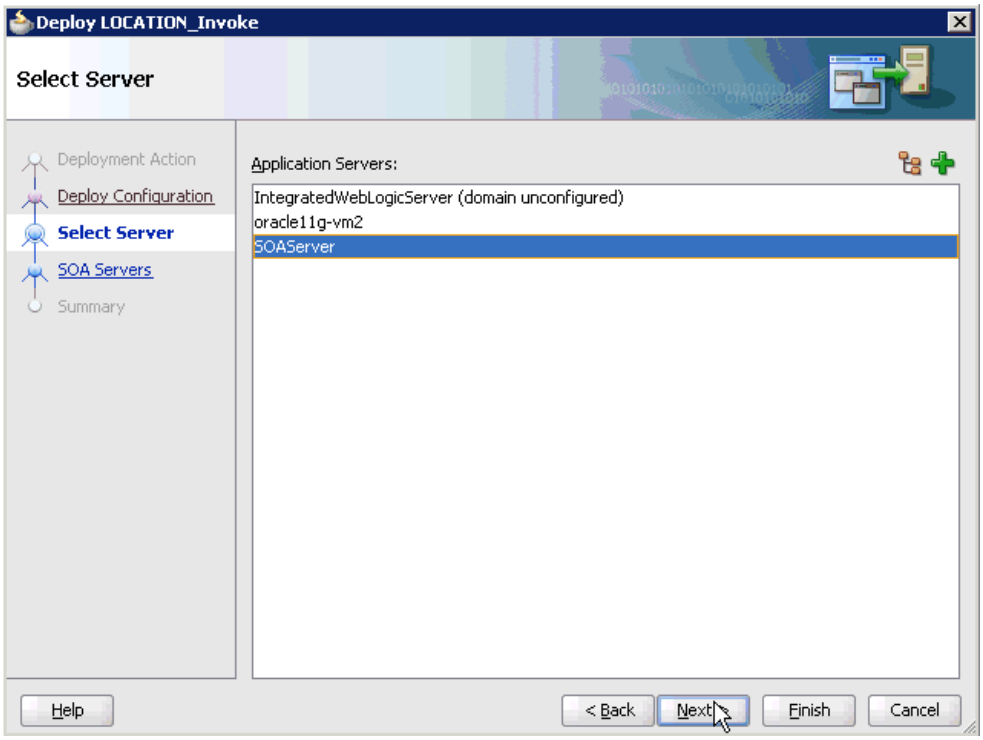
Figure 5–36 Deploy Configuration Page



4. Leave the default values selected and click **Next**.

   The Select Server page is displayed, as shown in Figure 5–37.

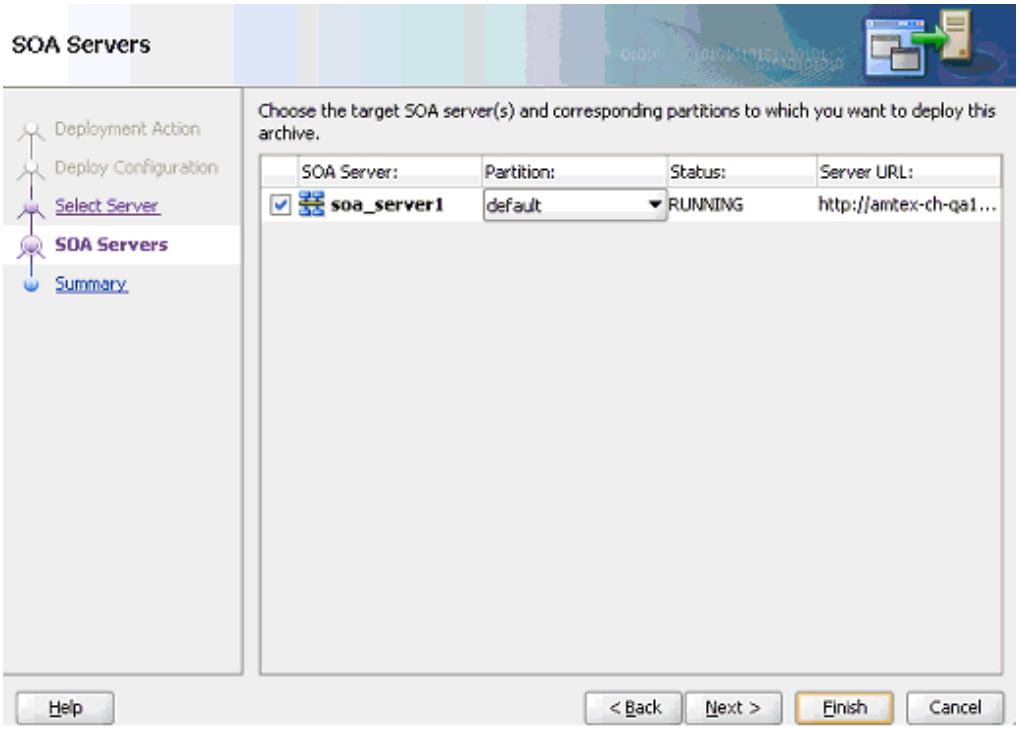
Figure 5–37 Select Server Page



5. Select an available application server that was configured and click **Next**.

   The SOA Servers page is displayed, as shown in Figure 5–38.

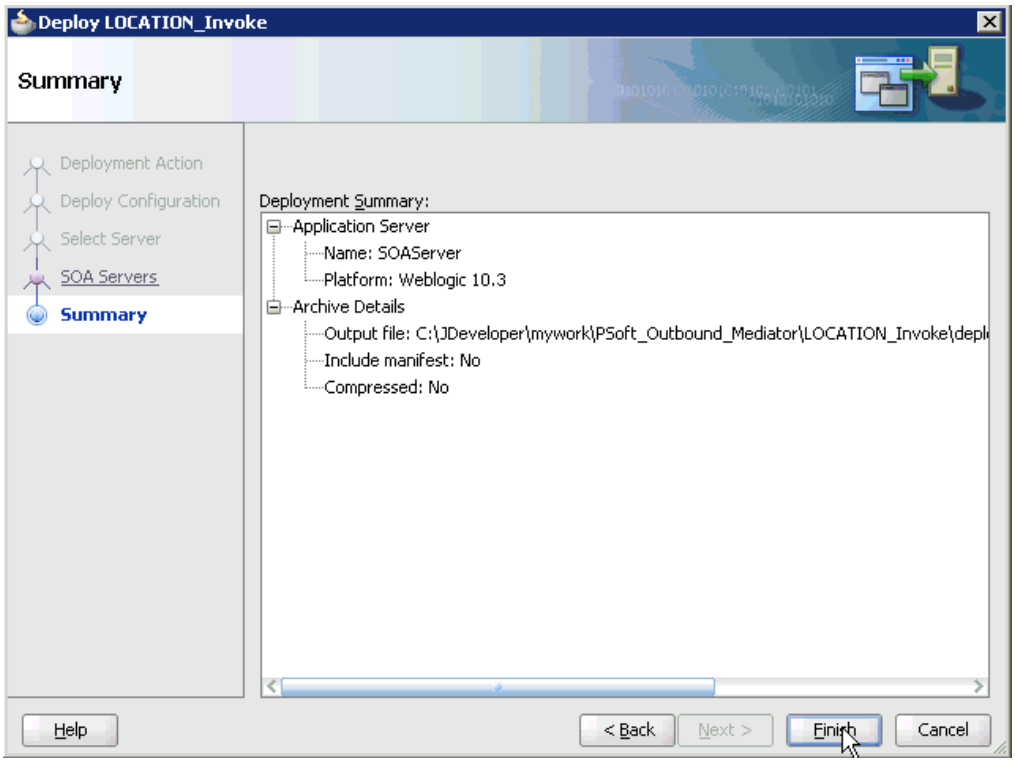
Figure 5–38 SOA Servers Page



6. Select a target SOA server and click **Next**.

   The Summary page is displayed, as shown in Figure 5–39.

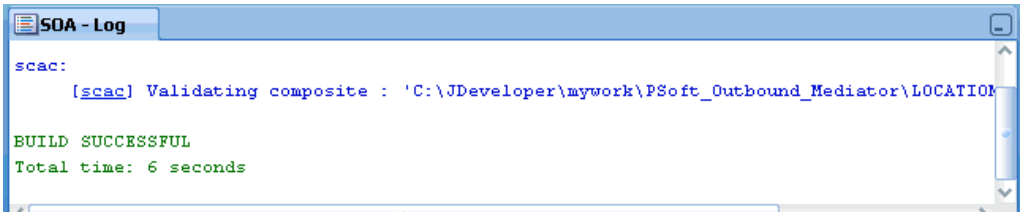
Figure 5–39 Summary Page



7. Review and verify all the available deployment information for your project and click **Finish**.

   The process is deployed successfully, as shown in Figure 5–40.

Figure 5–40 Successful Deployment Message



5.2.4 Invoking the Input XML Document in the Oracle Enterprise Manager Console

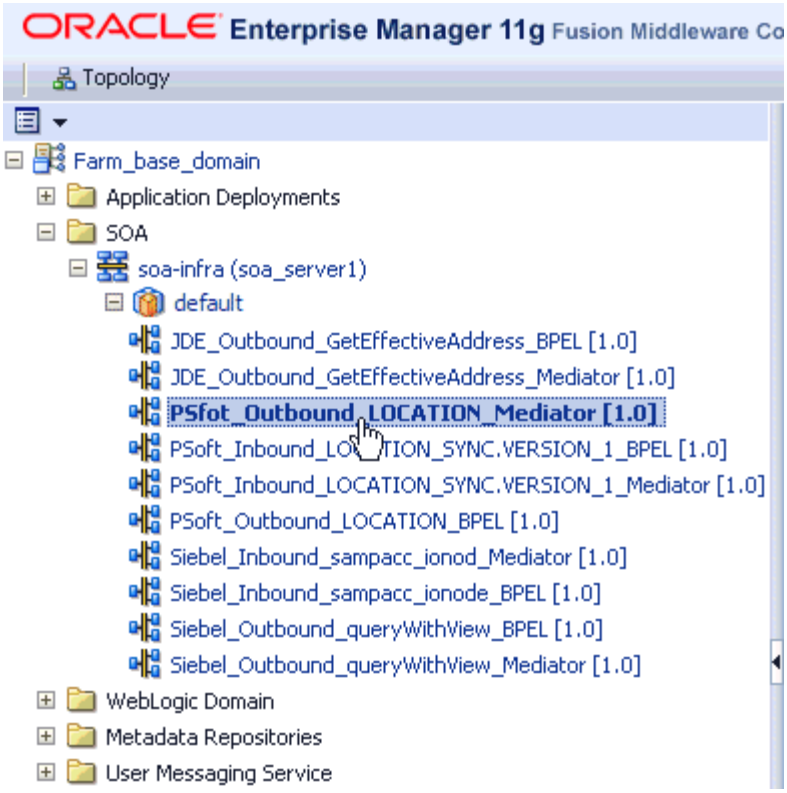
Perform the following steps to invoke the input XML document in the Oracle Enterprise Manager console.

1. Logon to the Oracle Enterprise Manager console by using the following URL:

   `http://localhost:7001/em`

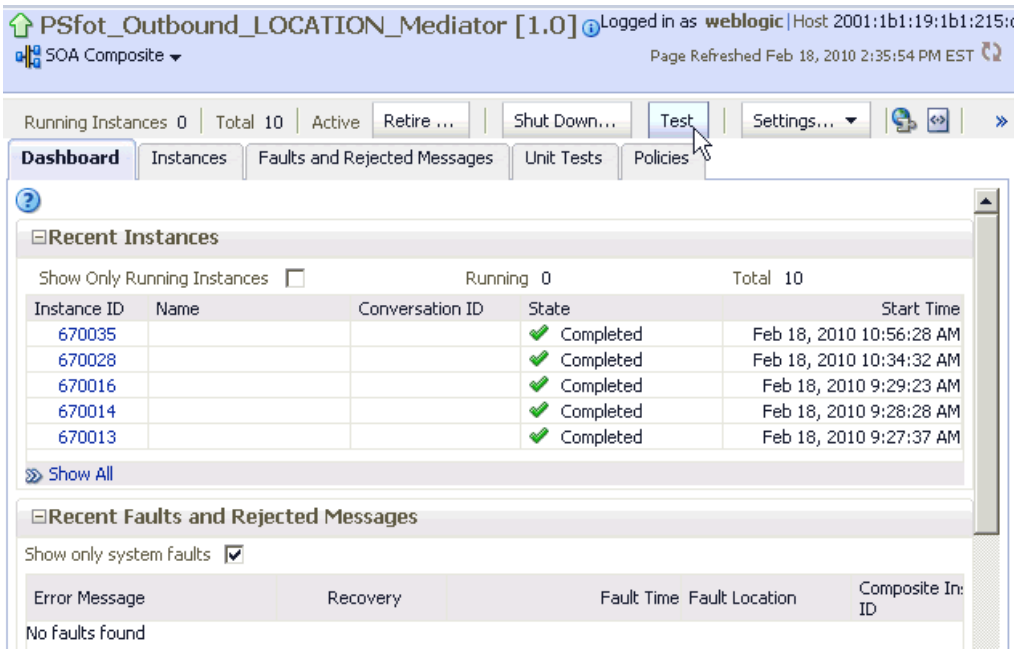
2. Expand your domain in the left pane followed by the **SOA** folder, as shown in Figure 5–41.

Figure 5–41 Oracle Enterprise Manager Console



3. Select an available project (for example, PSoft_Outbound_LOCATION_Mediator).

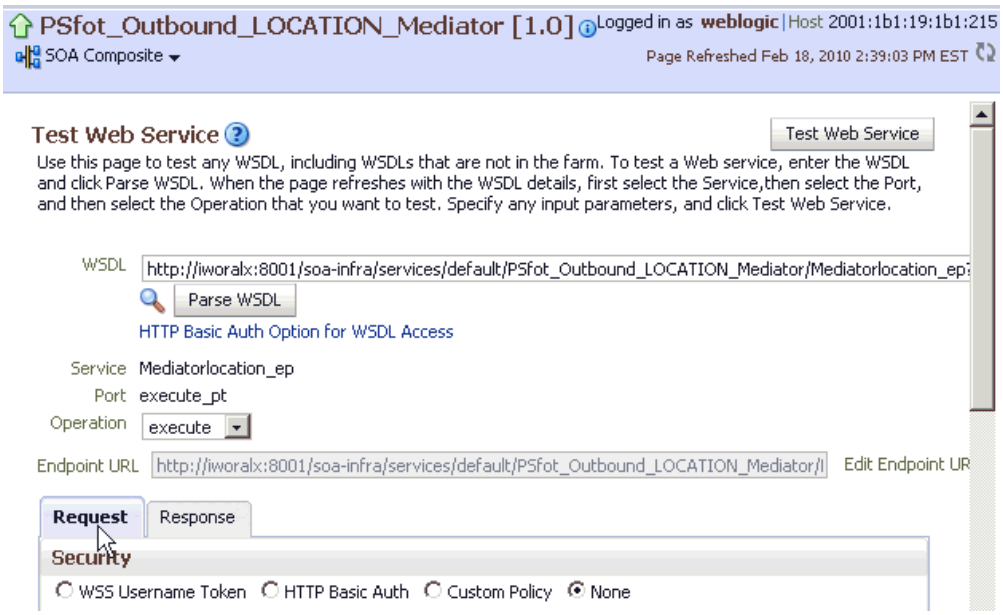
Figure 5–42 Test Button



4. Click **Test** in the right pane, as shown in Figure 5–42.

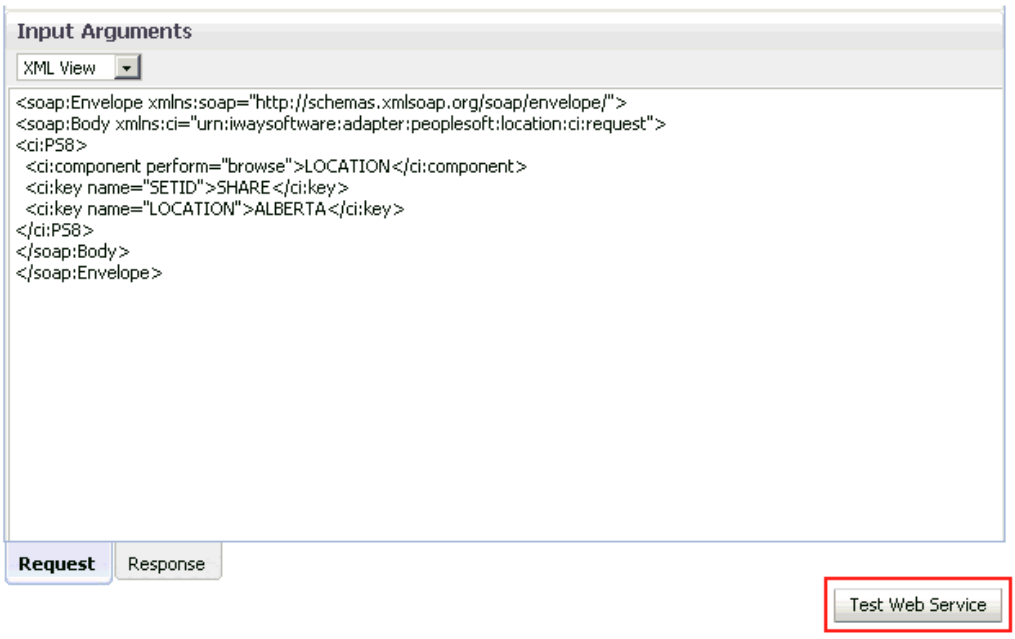
   The Test Web Service page is displayed, as shown in Figure 5–43.

Figure 5–43 Test Web Service Page



5. Click the **Request** tab.
6. Scroll down to the Input Arguments section, as shown in Figure 5–44.

Figure 5–44 Input Arguments Section



7. Select **XML View** from the list in the upper-left corner.
8. Provide an appropriate input XML document in the Input Arguments area.

   For example:

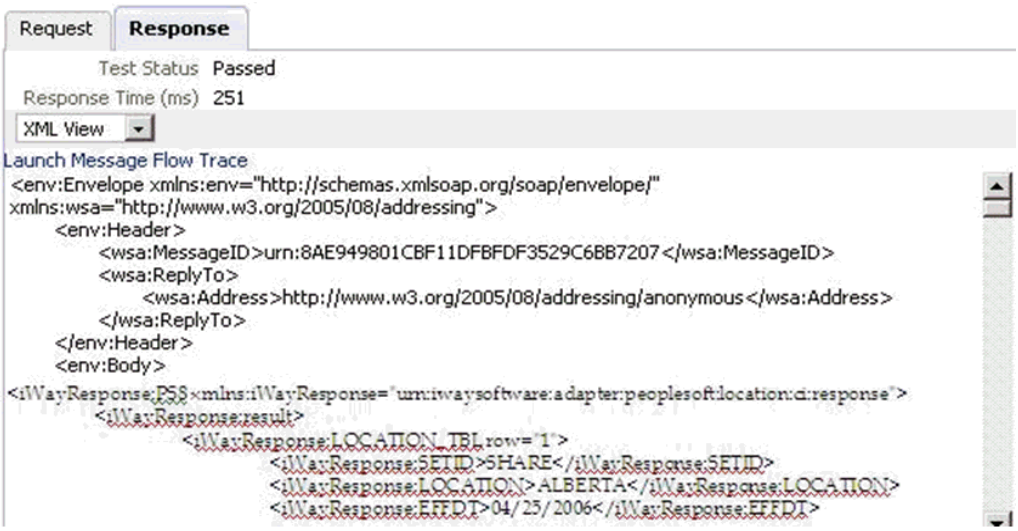
```
<soap:Envelope xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/">
<soap:Body xmlns:ci="urn:iwaysoftware:adapter:peoplesoft:location:ci:request">
<ci:PS8>
```

```
    <ci:component perform="browse">LOCATION</ci:component>
    <ci:key name="SETID">SHARE</ci:key>
    <ci:key name="LOCATION">ALBERTA</ci:key>
  </ci:PS8>
  </soap:Body>
  </soap:Envelope>
```

9. Click **Test Web Service**.

   The output response is received in the Response tab of the Oracle Enterprise Manager console, as shown in Figure 5–45.

Figure 5–45 Oracle Enterprise Manager Console



5.3 Configuring a Mediator Inbound Process

The following example describes how to configure a Mediator inbound process to your PeopleSoft system, using a Mediator project in Oracle JDeveloper.

Prerequisites

Before you design a Mediator inbound process, you must generate the respective WSDL file using Application Explorer. For more information, see "Generating WSDL for Event Integration" on page 4-41.

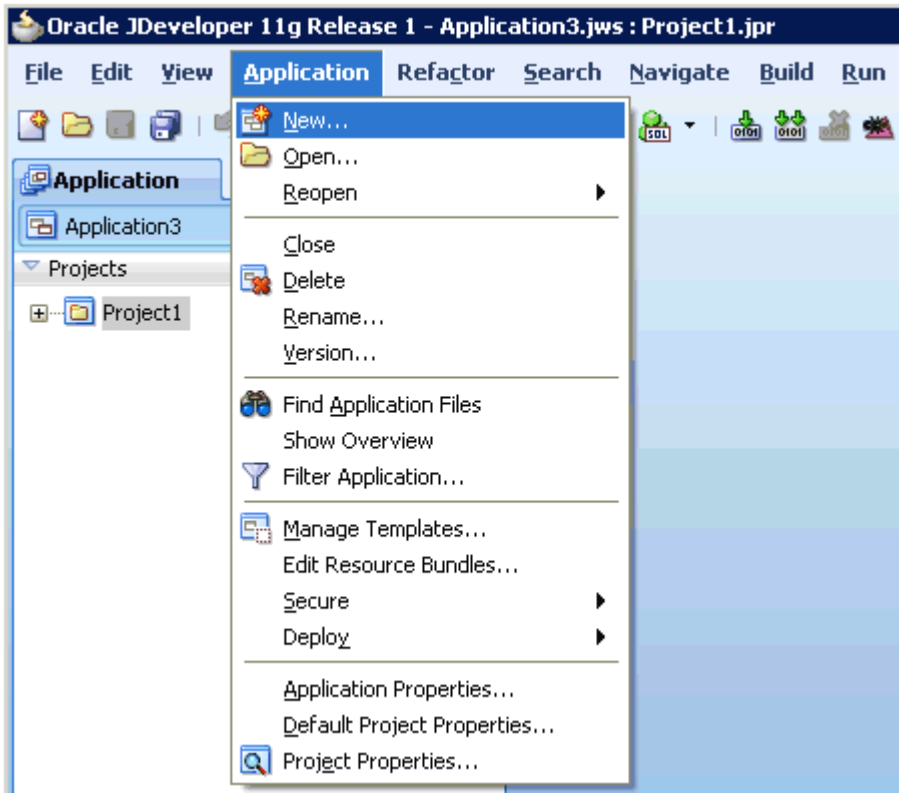
Samples have been provided for this usecase scenario in the `etc/sample` folder in Application Adapters installation.

5.3.1 Creating a New SOA Application for the Inbound Mediator Process

Perform the following steps to create a new SOA application for the inbound Mediator process:

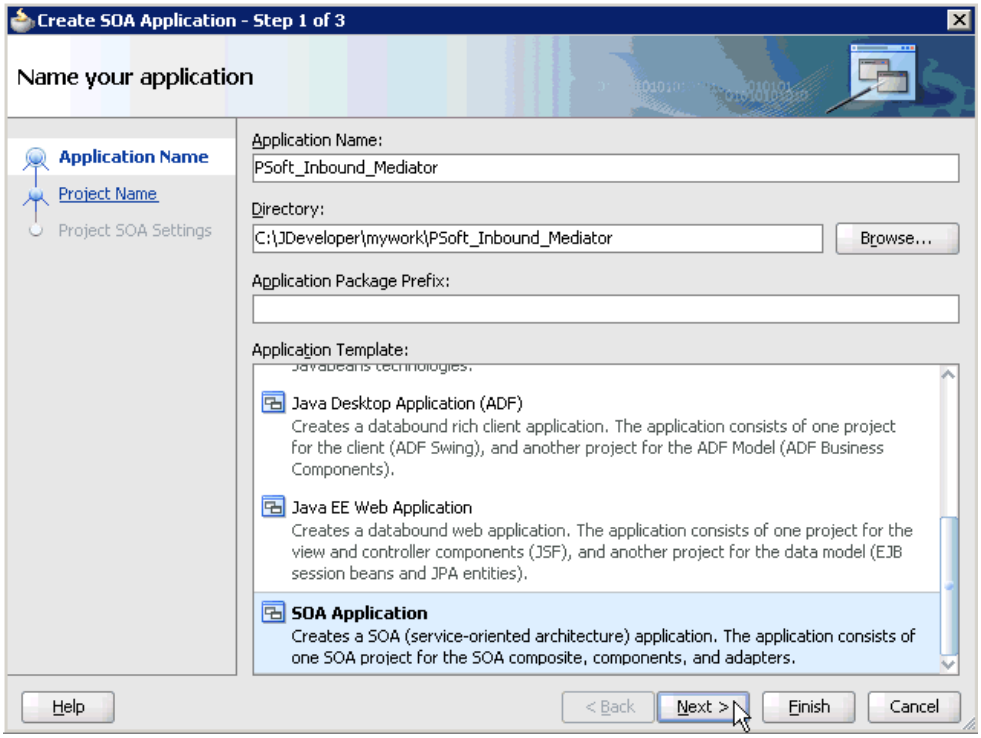
1. Open Oracle JDeveloper on your system.
2. Click **Application** in the menu bar and select **New** from the menu, as shown in Figure 5–46.

Figure 5–46 New Option



The Create SOA Application wizard is displayed, as shown in Figure 5–47.

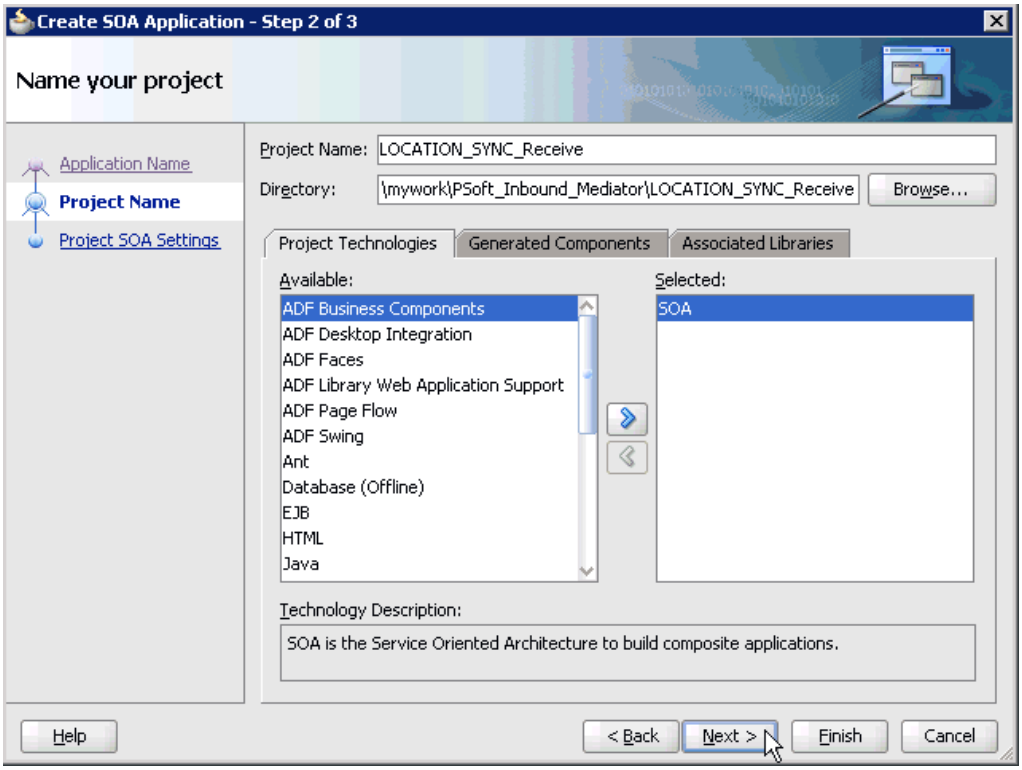
Figure 5–47 Create SOA Application Wizard



3. From the Application Template list, click **SOA Application**.
4. Enter a name for the new SOA application (for example, PSoft_Inbound_ Mediator) and click **Next**.

   The Name your project page is displayed, as shown in Figure 5–48.

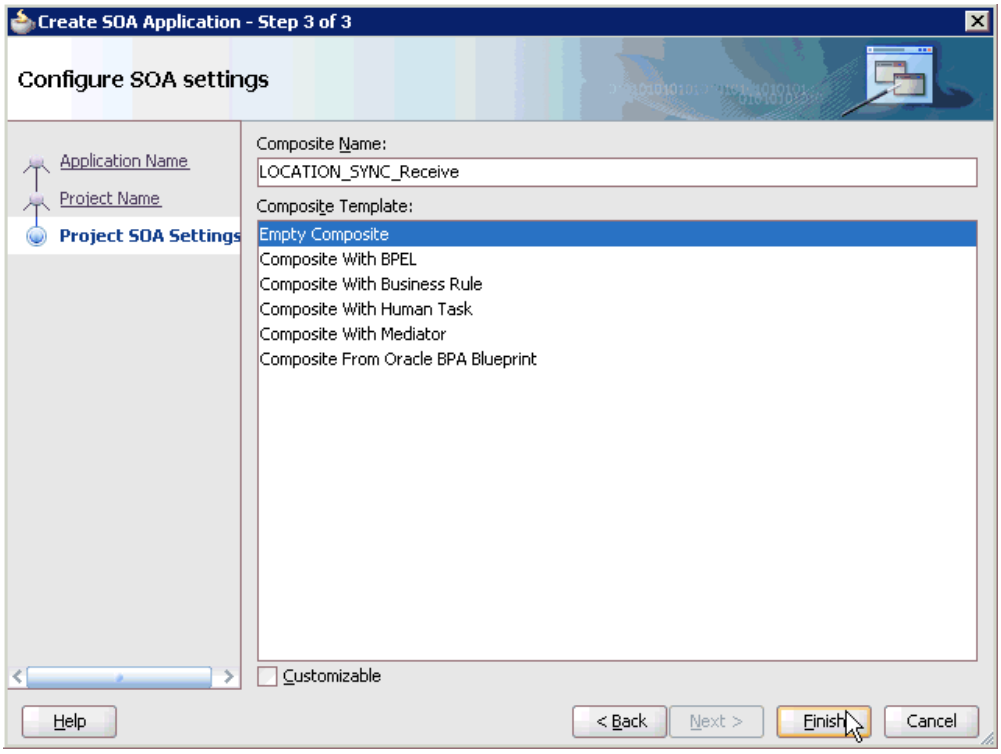
Figure 5–48 Name Your Project Page



5. Enter a project name (for example, LOCATION_SYNC_Receive) and click **Next**.

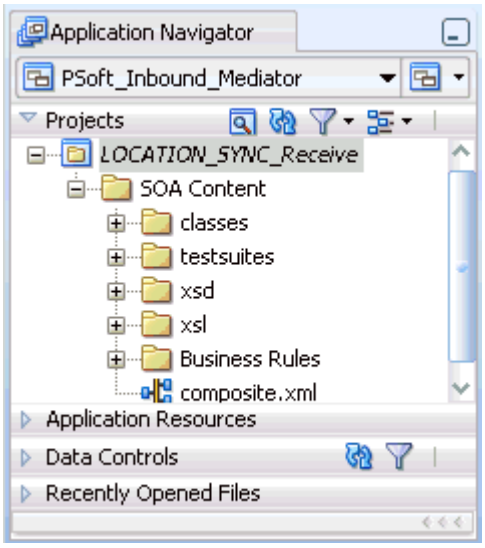
   The Configure SOA settings page is displayed, as shown in Figure 5–49.

Figure 5–49 Configure SOA Settings Page



6. From the Composite Template list, select **Empty Composite** and click **Finish**.

Figure 5–50 New SOA Application and Associated Project



The new SOA application (PSoft_Inbound_Mediator) and associated project (LOCATION_SYNC_Receive) are added to the Application Navigator tab in the left pane, as shown in Figure 5–50.

5.3.2 Defining a Mediator Inbound Process

This section describes how to define a Mediator inbound process, which consists of the following stages:

1. Configuring a Third Party Adapter Service Component
2. Configuring an Inbound Mediator Process Component With a File Adapter
3. Configuring the Routing Rules

Configuring a Third Party Adapter Service Component

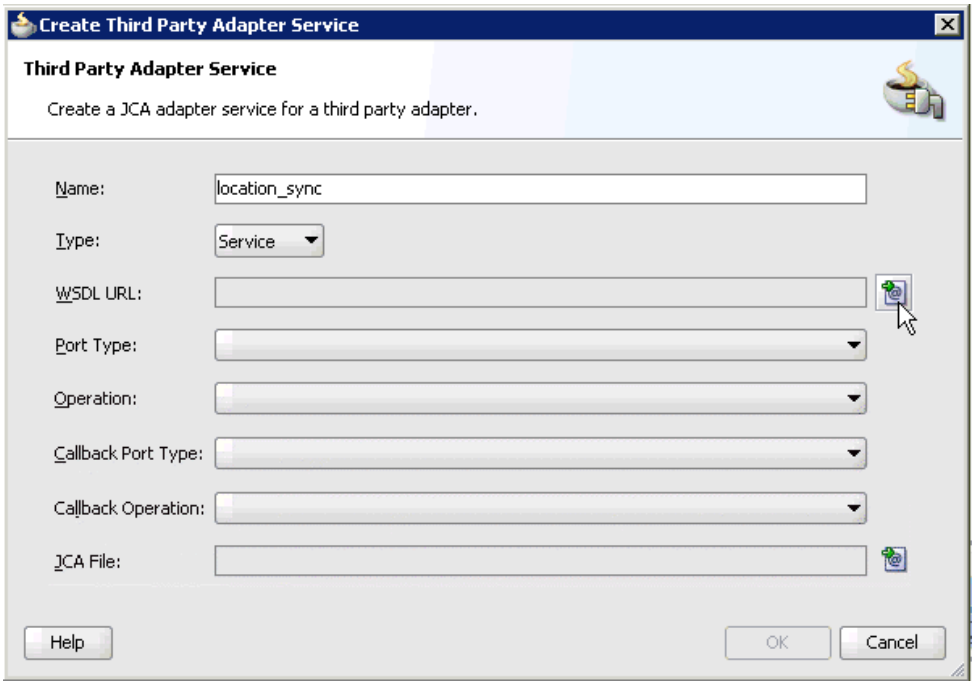
Perform the following steps to create a third party adapter service component:

1. Drag and drop the **Third Party Adapter** component from the Component Palette tab (Service Adapters section) to the Exposed Services pane, as shown in Figure 5–51.

Figure 5–51 Third Party Adapter Component

The Create Third Party Adapter Service dialog is displayed, as shown in Figure 5–52.

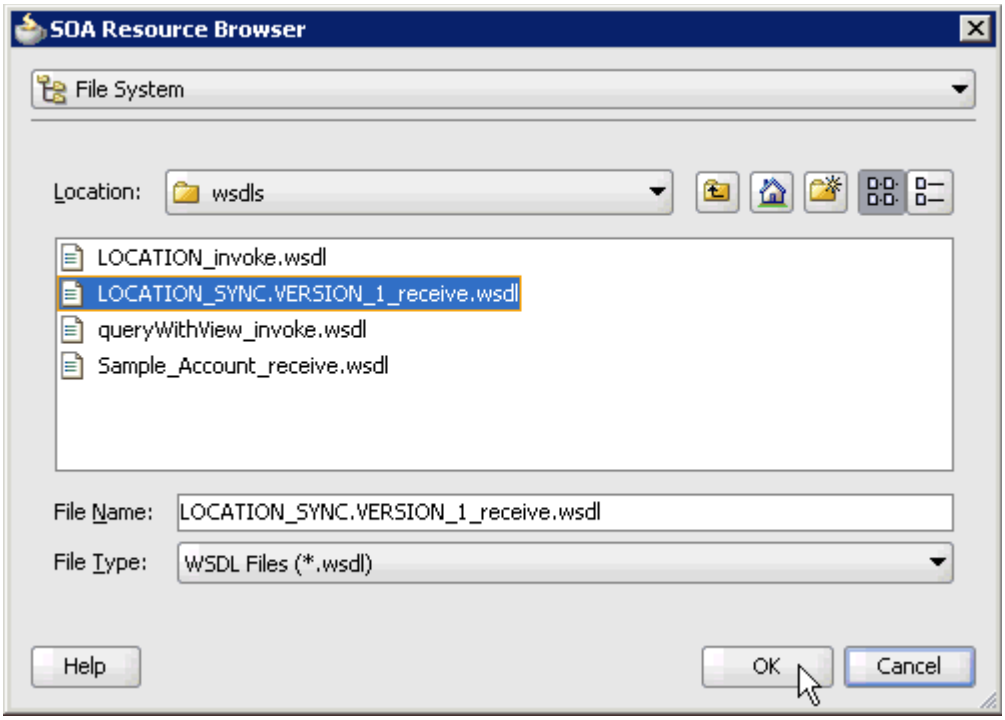
Figure 5–52 Create Third Party Adapter Service Dialog



2. Enter a name for the third party adapter service.
3. Ensure that **Service** is selected from the Type list (default).
4. Click the **Find existing WSDLs** icon, which is located to the right of the WSDL URL field.

   The SOA Resource Browser dialog is displayed, as shown in Figure 5–53.

Figure 5–53 SOA Resource Browser Dialog



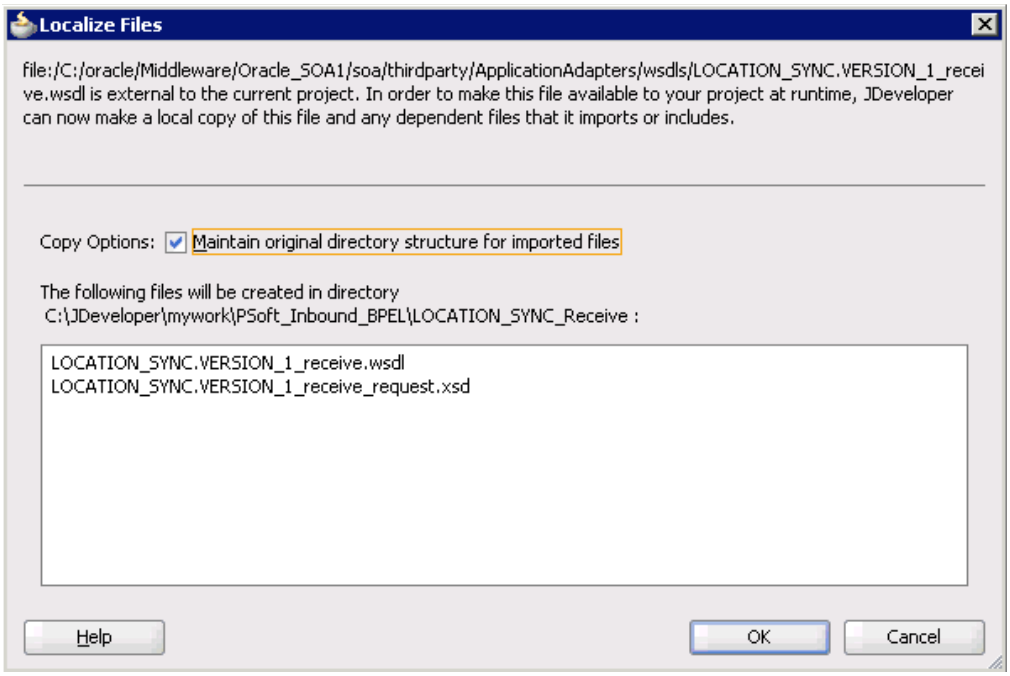
5. Browse and select an inbound WSDL file (for example, LOCATION_SYNC.VERSION_1_receive.wsdl) from the following directory:

   `<ADAPTER_HOME>\soa\thirdparty\ApplicationAdapters\wsdls`

6. Click **OK**.

   The Localize Files dialog is displayed, as shown in Figure 5–54.

Figure 5–54 Localize Files Dialog

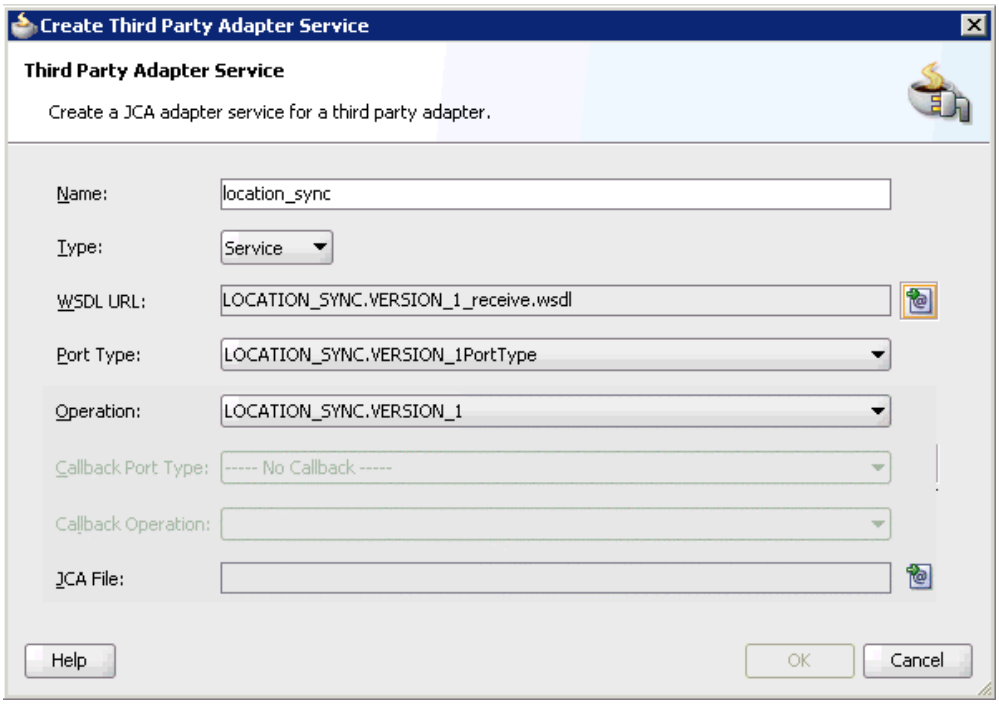


7. Click **OK**.

   The inbound WSDL file and associated receive/request XML schema file (.xsd) are imported to the project folder that has been created.

   You are returned to the Create Third Party Adapter Service dialog, as shown in Figure 5–55.

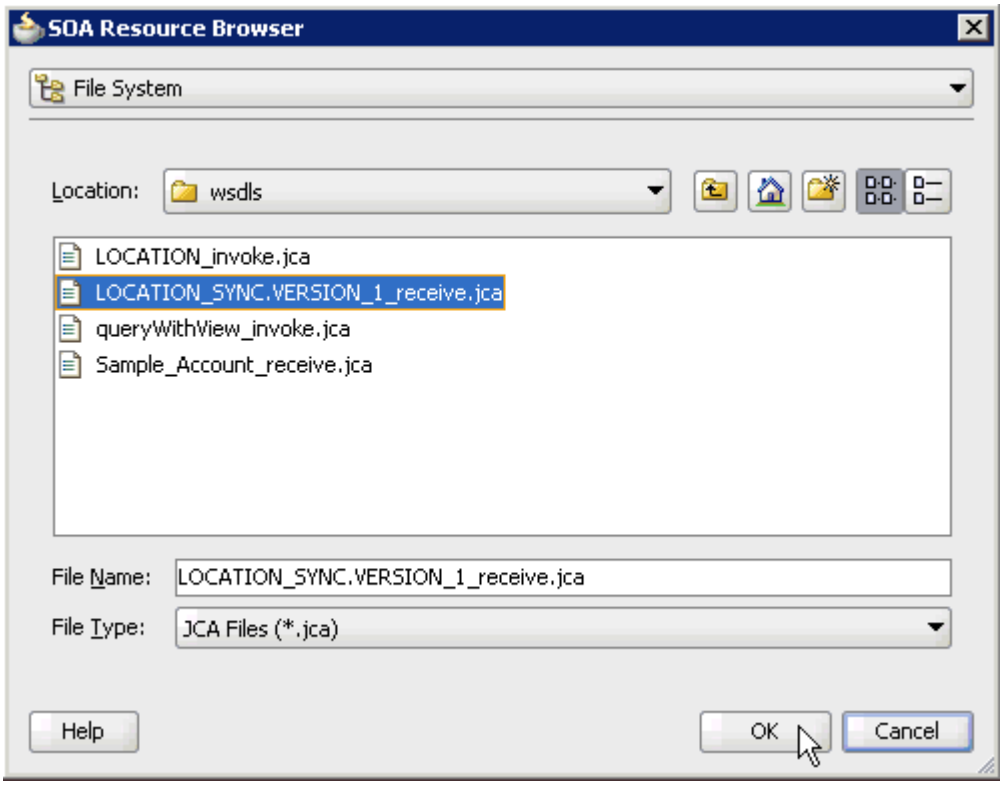
Figure 5–55 Create Third Party Adapter Service Dialog



8. Click the **Find JCA Files** icon, which is located to the right of the JCA File field.

   The SOA Resource Browser dialog is displayed, as shown in Figure 5–56.

Figure 5–56 SOA Resource Browser Dialog



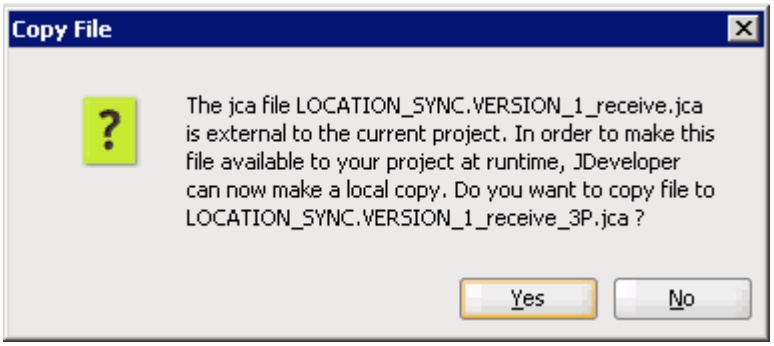
9. Browse and select the JCA properties file (for example, LOCATION_SYNC.VERSION_1_receive.jca)from the following directory:

   `<ADAPTER_HOME>\soa\thirdparty\ApplicationAdapters\wsdls`

10. Click **OK**.

    The following message is displayed, as shown in Figure 5–57.

Figure 5–57 Copy File Confirmation Message

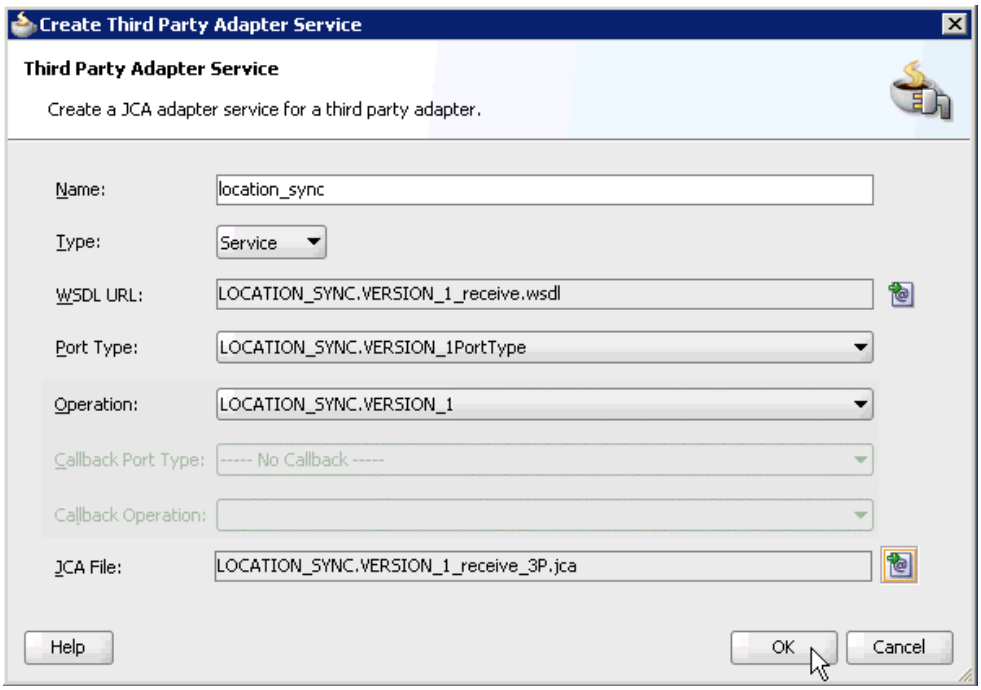


11. Click **Yes**.

    A copy of the JCA properties file is made in the project folder.

You are returned to the Create Third Party Adapter Service dialog, as shown in Figure 5–58.

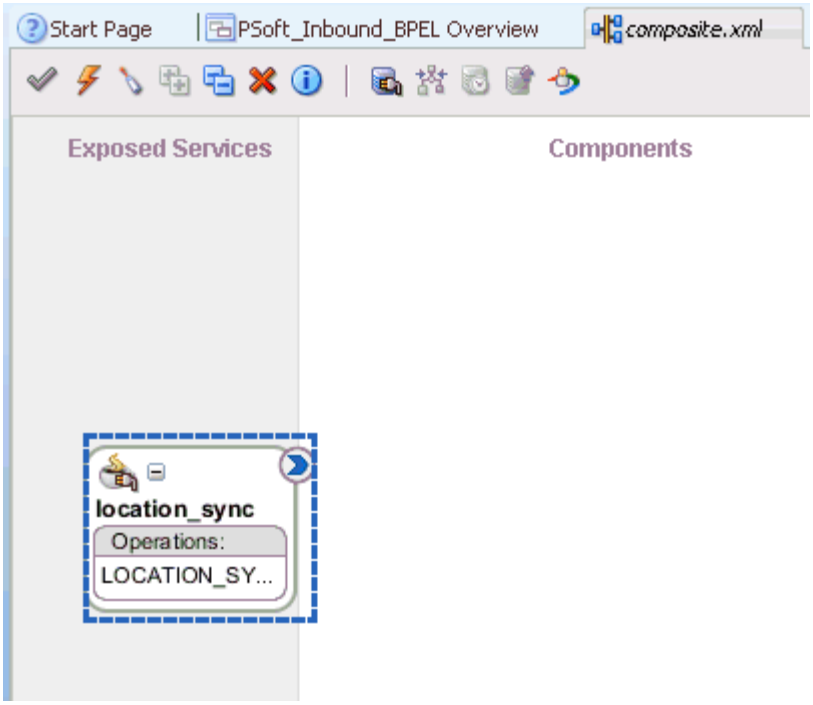
Figure 5–58 Create Third Party Adapter Service Dialog



12. Click **OK**.

    The third party adapter service component (location_sync) is created and displayed in the Exposed Services pane, as shown in Figure 5–59.

Figure 5–59 Third Party Adapter Service Component



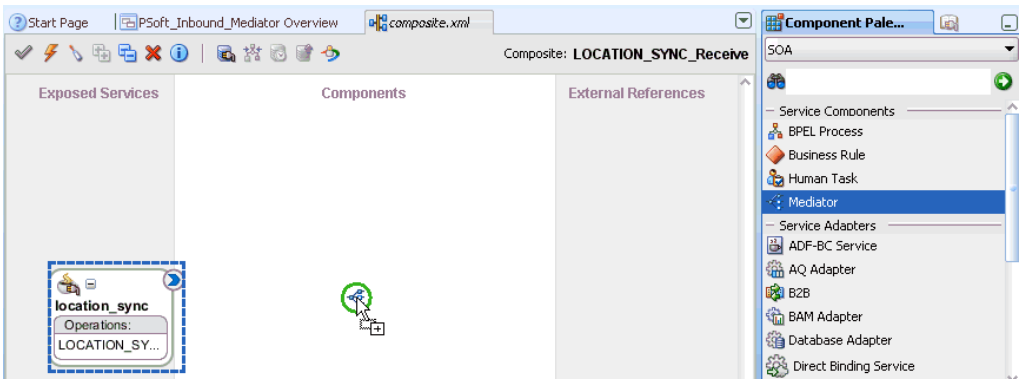
You are now ready to configure an inbound Mediator process component.

Configuring an Inbound Mediator Process Component With a File Adapter

Perform the following steps to configure an inbound Mediator process component with a File adapter.

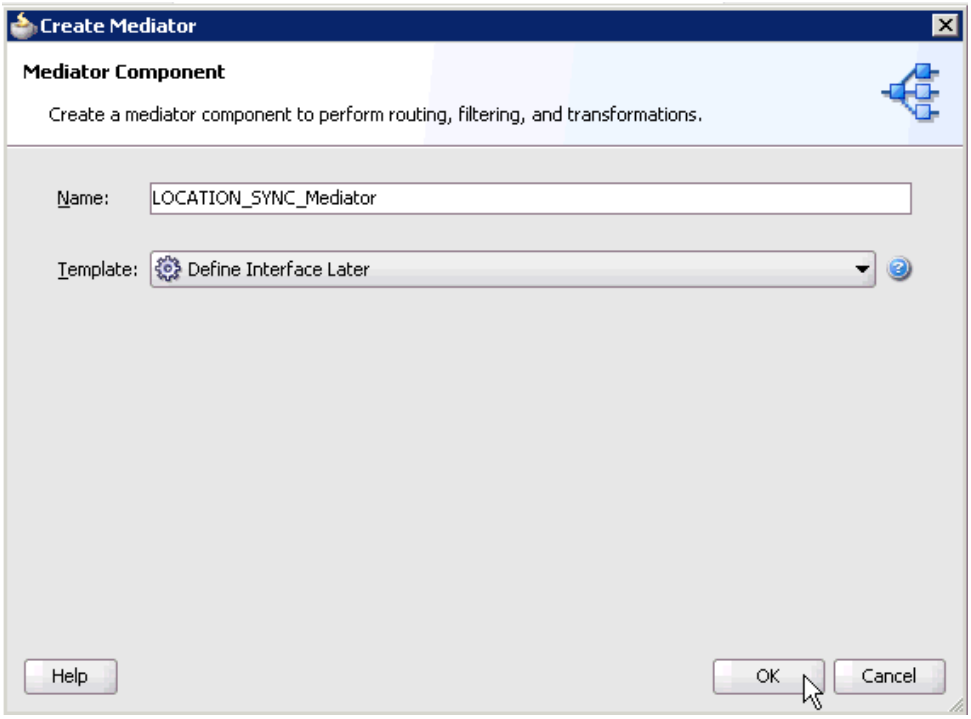
1. Drag and drop the **Mediator** component from the Component Palette tab (Service Components section) to the Components pane, as shown in Figure 5–60.

Figure 5–60 Mediator Component



The Create Mediator dialog is displayed, as shown in Figure 5–61.

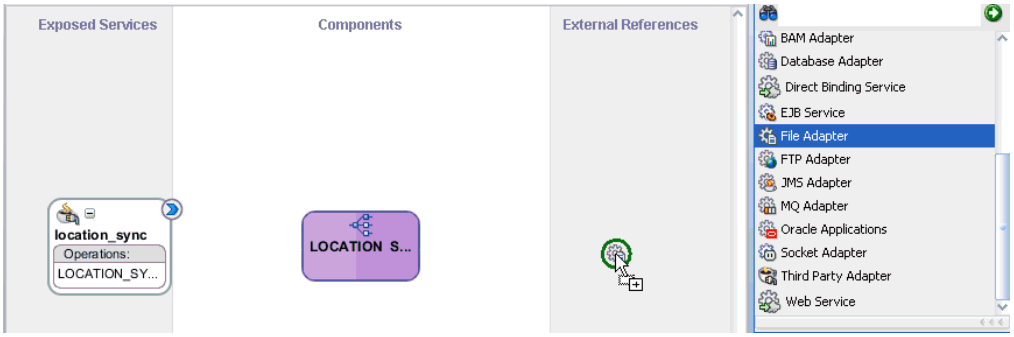
Figure 5–61 Create Mediator Dialog



2. In the Name field, enter a name to identify the new inbound Mediator process component (for example, LOCATION_SYNC_Mediator).
3. From the Template list, select **Define Interface Later**.
4. Click the **OK**.

   The new Mediator process component is added to the Components pane, as shown in Figure 5–62.

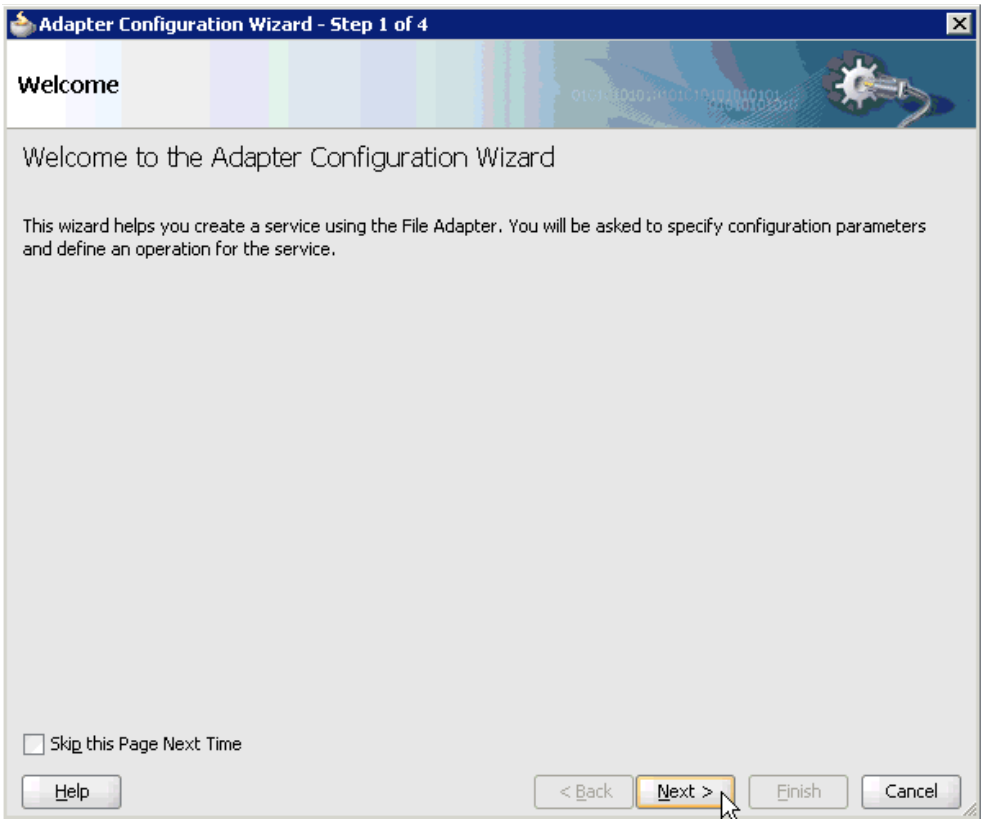
Figure 5–62 Mediator Process Component



5. Drag and drop the **File Adapter** component from the Service Adapters pane to the External References pane.

   The Adapter Configuration Wizard is displayed, showing the Welcome page, as shown in Figure 5–63.

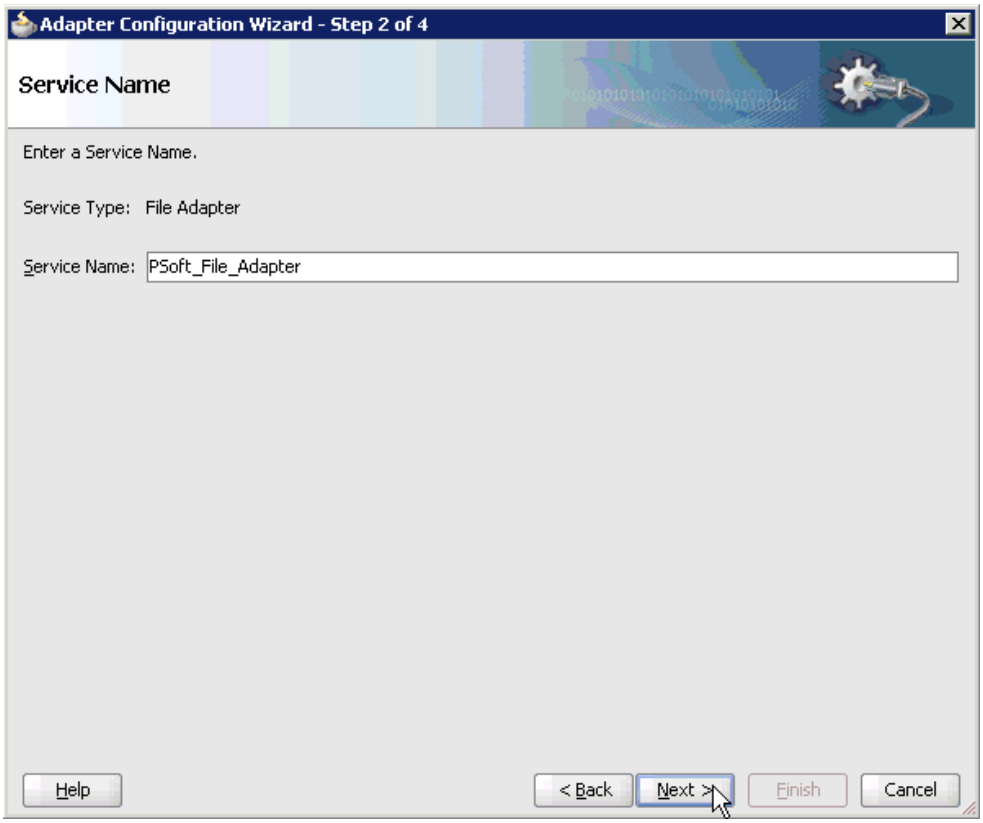
Figure 5–63 Adapter Configuration Wizard



6. Click **Next**.

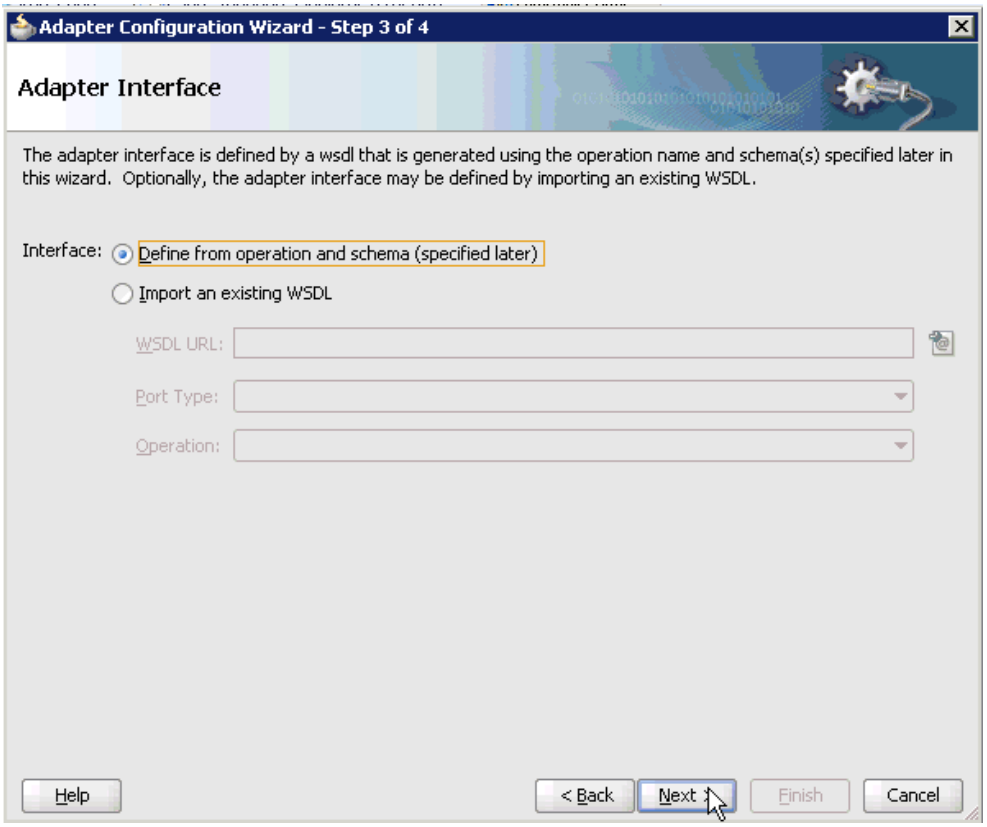
   The Service Name page is displayed, as shown in Figure 5–64.

Figure 5–64 Service Name Page



7. Type a name for the new File adapter in the Service Name field and click **Next**. The Adapter Interface page is displayed, as shown in Figure 5–65.

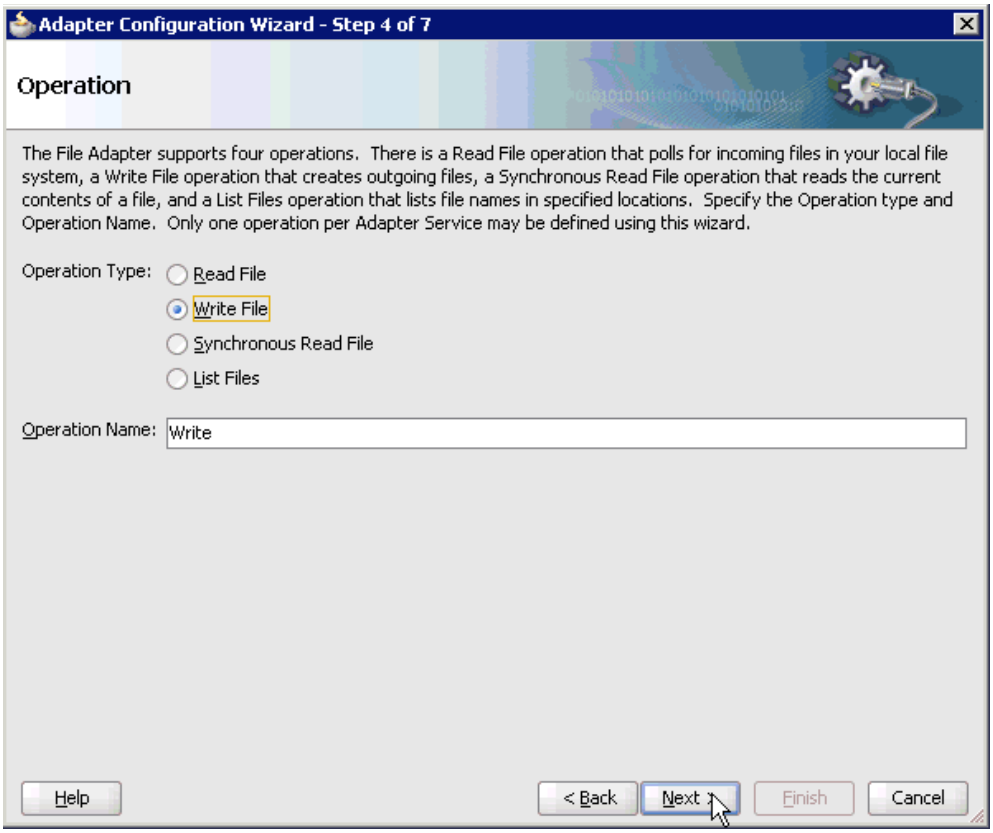
Figure 5–65 Adapter Interface Page



8. Ensure that the **Define from operation and schema (specified later)** option is selected.
9. Click **Next**.

   The Operation page is displayed, as shown in Figure 5–66.

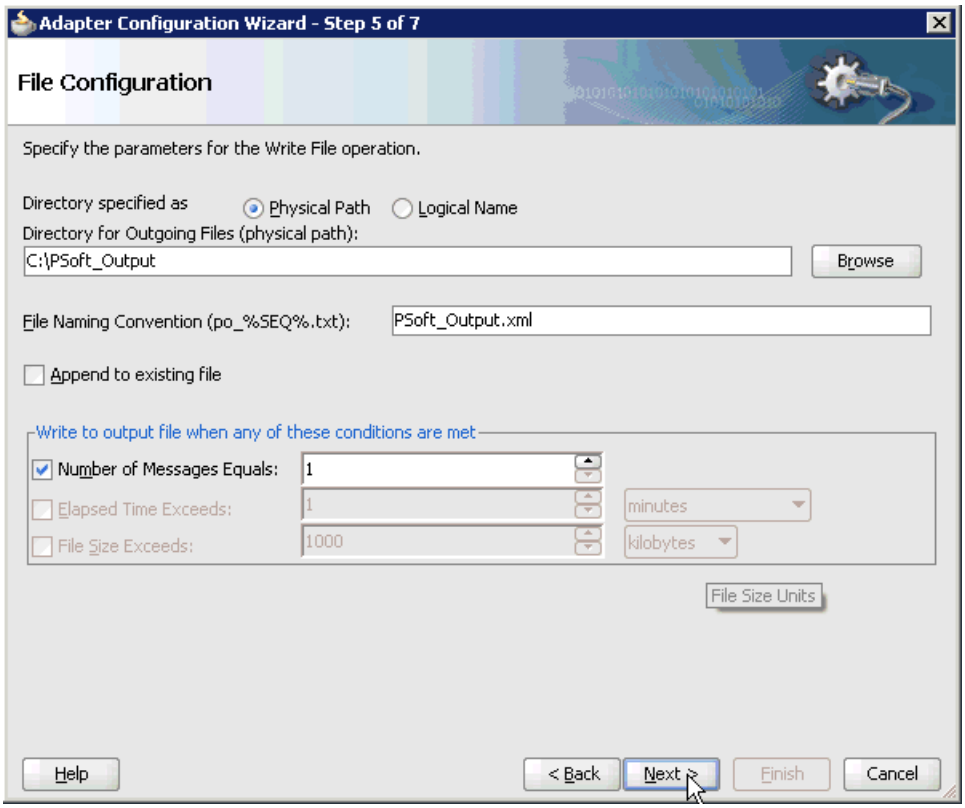
Figure 5–66 Operation Page



10. Select **Write File** from the list of Operation Type options and specify an Operation Name (for example, Write).
11. Click **Next**.

    The File Configuration page is displayed, as shown in Figure 5–67.

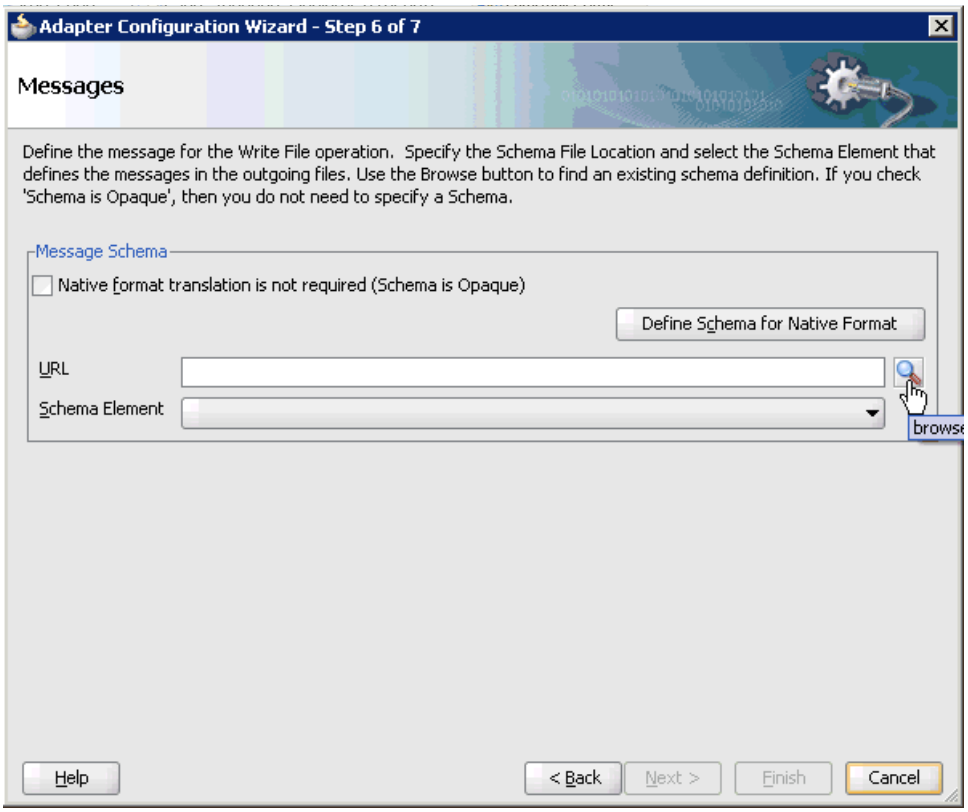
Figure 5–67 File Configuration Page



12. Specify a location on your file system where the output file is written.
13. In the File Naming Convention field, specify a name for the output file.
14. Click **Next**.

    The Messages page is displayed, as shown in Figure 5–68.

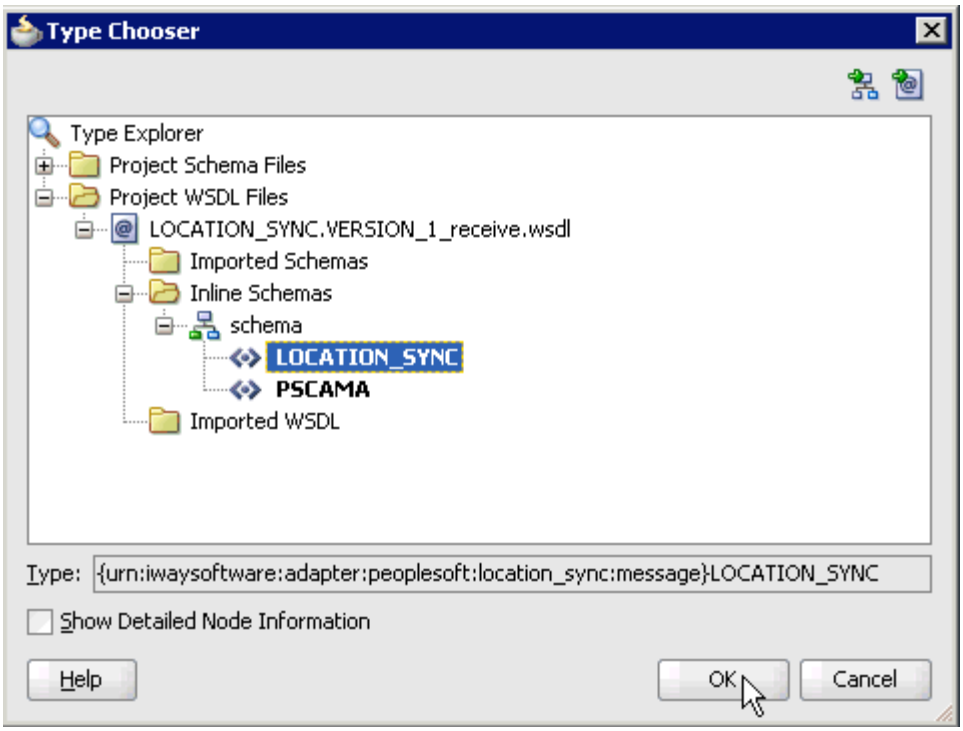
Figure 5–68 Messages Page



15. Click **browse for schema file**, which is located to the right of the URL field.

The Type Chooser dialog is displayed, as shown in Figure 5–69.

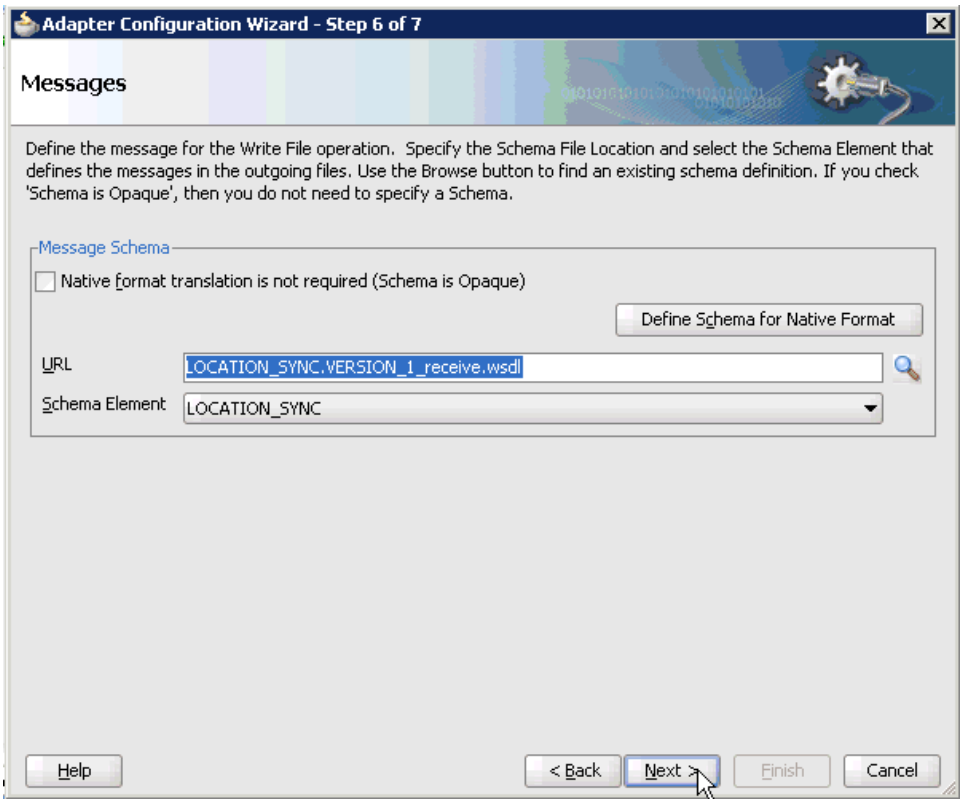
Figure 5–69 Type Chooser Dialog



16. Expand **Project WSDL Files**, **LOCATION_SYNC.VERSION_1_receive.wsdl**, **Inline Schemas**, and **schema**.
17. Select the available schema (for example, LOCATION_SYNC)
18. Click **OK**.

    You are returned to the Messages page, as shown in Figure 5–70.

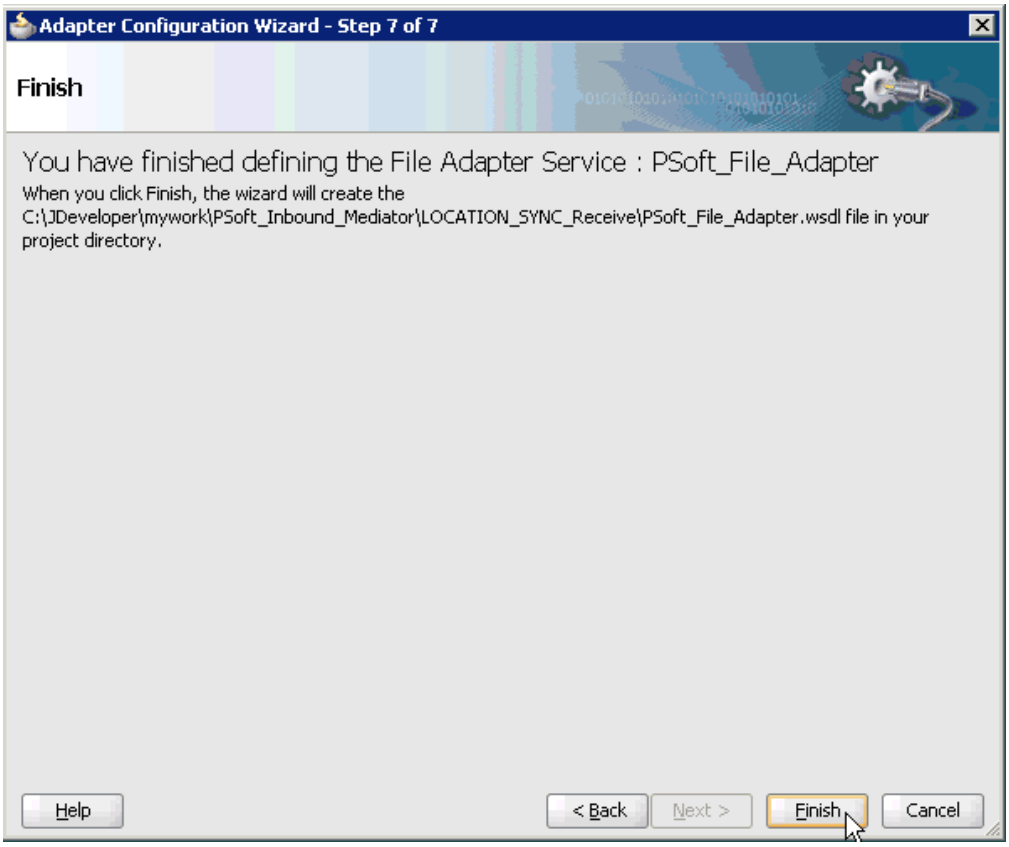
Figure 5–70 Messages Page



19. Click **Next**.

The Finish page is displayed, as shown in Figure 5–71.

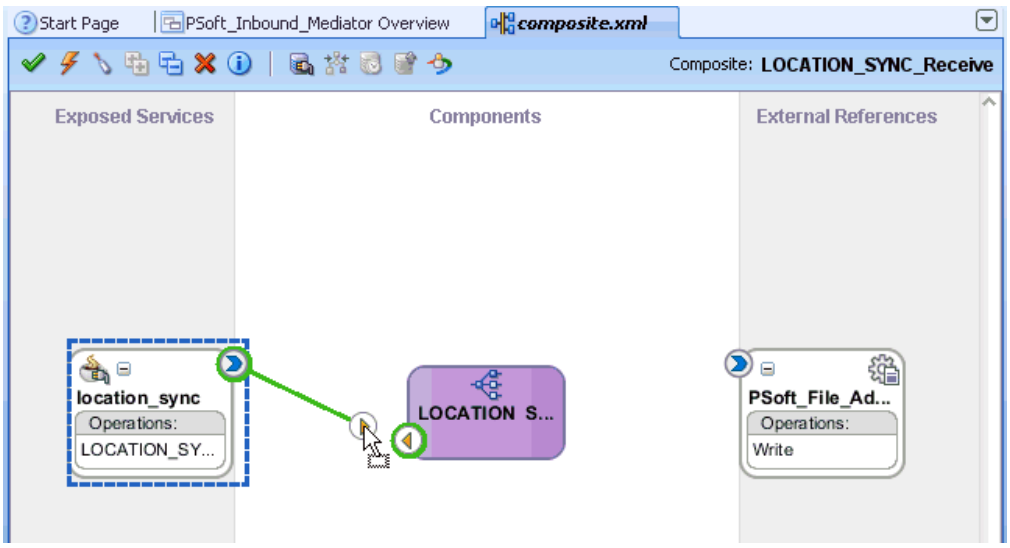
Figure 5–71 Finish Page



20. Click **Finish**.

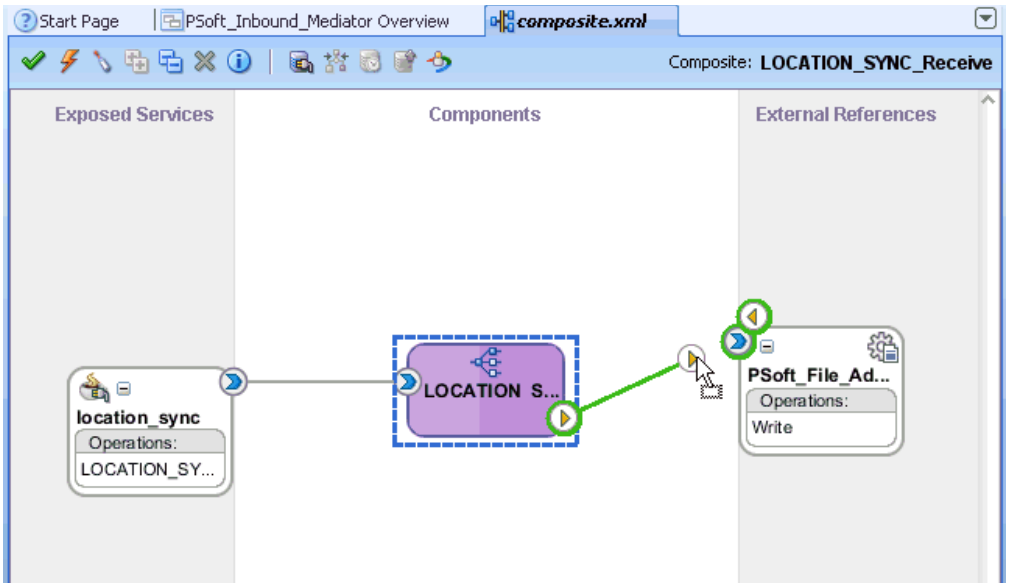
21. Create a connection between the inbound Mediator process component and the third party adapter service component, as shown in Figure 5–72.

Figure 5–72 Created Connection



22. Create a connection between the inbound Mediator process component and the File adapter component, as shown in Figure 5–73.

Figure 5–73 Created Connection



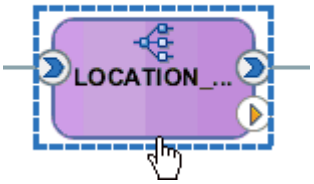
You are now ready to configure the routing rules.

Configuring the Routing Rules

Perform the following steps to configure routing rules for the Mediator inbound process component:

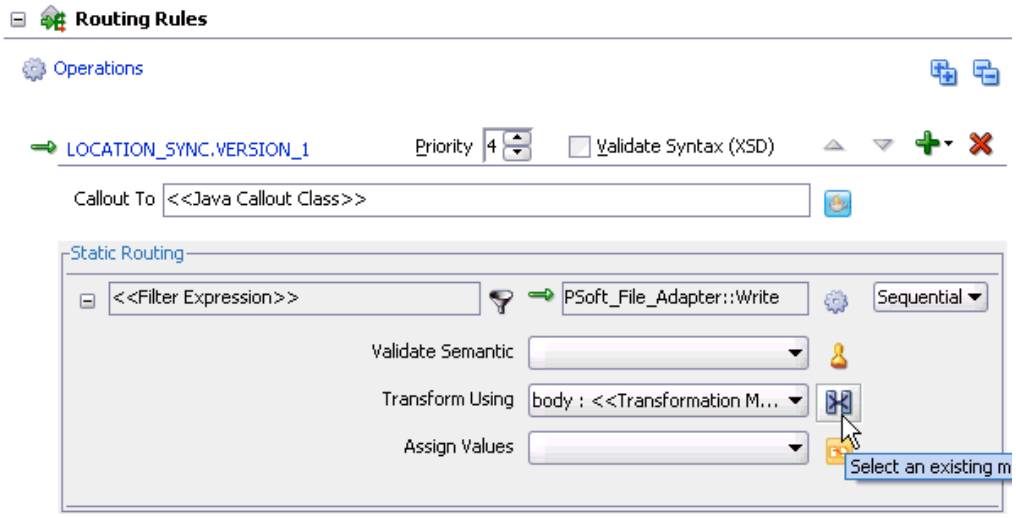
1. Double-click the inbound Mediator process component in the Components pane, as shown in Figure 5–74.

Figure 5–74 Inbound Mediator Process Component



The Routing Rules dialog is displayed, as shown in Figure 5–75.

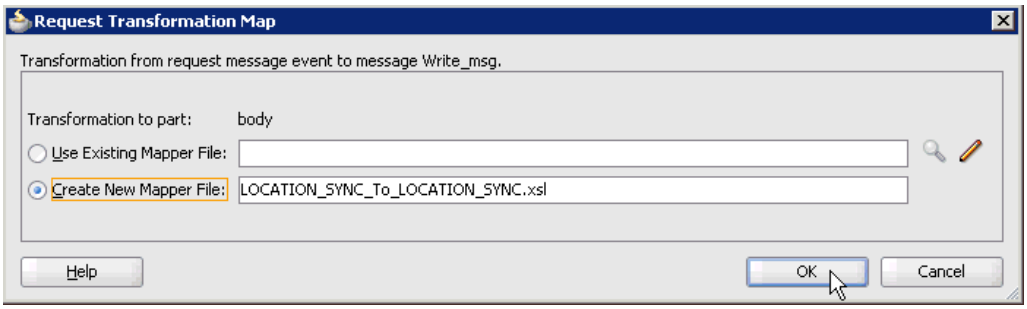
Figure 5–75 Routing Rules Dialog



2. In the <<Filter Expression>> area, click the **Select an existing mapper file or create a new one** icon to the right of the Transform Using field.

   The Request Transformation Map dialog is displayed, as shown in Figure 5–76.

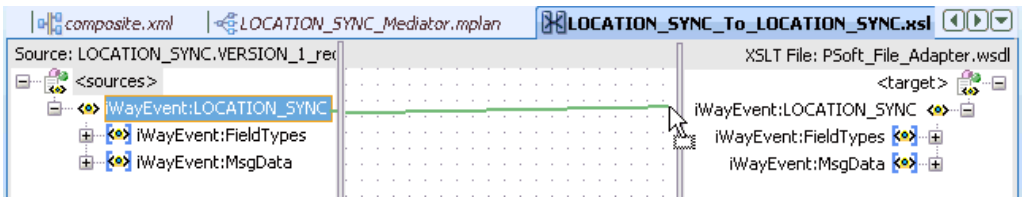
Figure 5–76 Request Transformation Map Dialog



3. Select the **Create New Mapper File** option and click **OK**.

   The LOCATION_SYNC_To_LOCATION_SYNC.xsl tab is displayed, as shown in Figure 5–77.

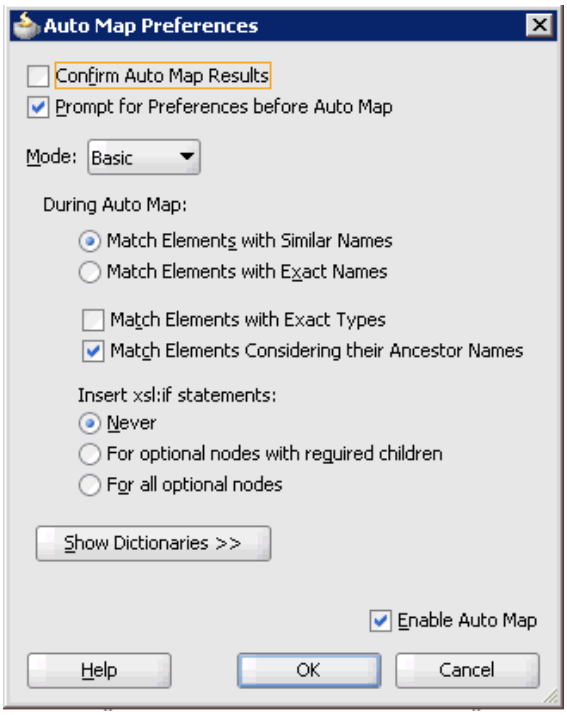
Figure 5–77 LOCATION_SYNC_To_LOCATION_SYNC.xsl Tab



4. Map the **iWayEvent:LOCATION_SYNC** source element to the **iWayEvent:LOCATION_SYNC** target element.

   The Auto Map Preferences dialog is displayed, as shown in Figure 5–78.

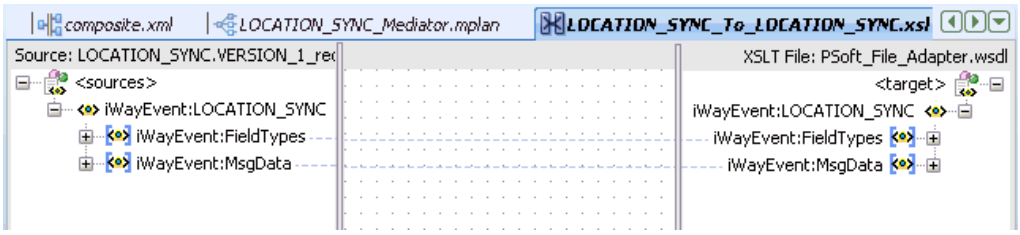
Figure 5–78 Auto Map Preferences Dialog



5. Retain the default values and click **OK**.

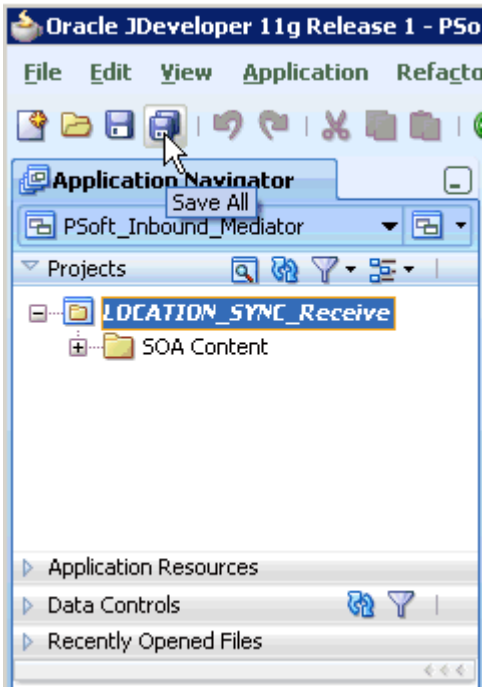
   The mapping is now complete, as shown in Figure 5–79.

Figure 5–79 Completed Mapping



6. Click the **Save All** icon in the menu bar to save the new inbound Mediator process component that was configured, as shown in Figure 5–80.

Figure 5–80 Save All Icon



You are now ready to deploy the Mediator inbound process. You can follow the same procedure that is described in "Deploying the BPEL Inbound Process" on page 4-58.

Once event messages are triggered through PeopleSoft, output XML is received in the location that was specified for the File adapter component. For more information on how to trigger events in PeopleSoft, see "Triggering an Event in PeopleSoft" on page 4-62.

6

Integration With BPM Service Components in the Oracle SOA Suite

Oracle Application Adapter for PeopleSoft integrates seamlessly with Oracle Business Process Management (BPM) to facilitate Web service integration. Oracle BPM is based on the Service-Oriented Architecture (SOA). It consumes adapter services exposed as Web Service Definition Language (WSDL) documents.

This chapter contains the following topics:

6.1 Overview

To integrate with Oracle BPM, Oracle Application Adapter for PeopleSoft must be deployed in the same WLS container as Oracle BPM. The underlying adapter services must be exposed as WSDL files, which are generated during design time in Oracle Adapter Application Explorer (Application Explorer) for both request-response (outbound) and event notification (inbound) services of the adapter. For more information, see "Generating a WSDL (J2CA Configurations Only)" on page 2-11.

The generated WSDL files are used to design the appropriate BPM processes for inbound or outbound adapter services. A completed BPM process must be successfully compiled in JDeveloper and deployed to a BPM server. Upon deployment to the BPM server, every newly built process is automatically deployed to the Oracle Enterprise Manager console, where you run, monitor, and administer BPM processes, and listen to adapter events.

6.2 Deployment of Adapter

During installation, Oracle Application Adapter for PeopleSoft is deployed as a J2CA 1.0 resource adapter within the WLS container. The adapter must be deployed in the same WLS container as Oracle BPM.

6.3 Configuring a New Application Server Connection

For more information on how to configure a new Application Server connection in Oracle JDeveloper, see Section 4.3, "Configuring a New Application Server Connection".

6.4 Designing an Outbound BPM Process Using Transformations for Service Integration

The following tools are required to complete your outbound design-time configuration:

- Oracle Adapter Application Explorer (Application Explorer)
- Oracle JDeveloper BPM Designer (JDeveloper) or Eclipse

> **Note:** The examples in this chapter demonstrate the use of JDeveloper.

Before you design a BPM process, you must generate the respective WSDL file using Application Explorer. For more information, see "Generating WSDL for Request/Response Service" on page 4-8.

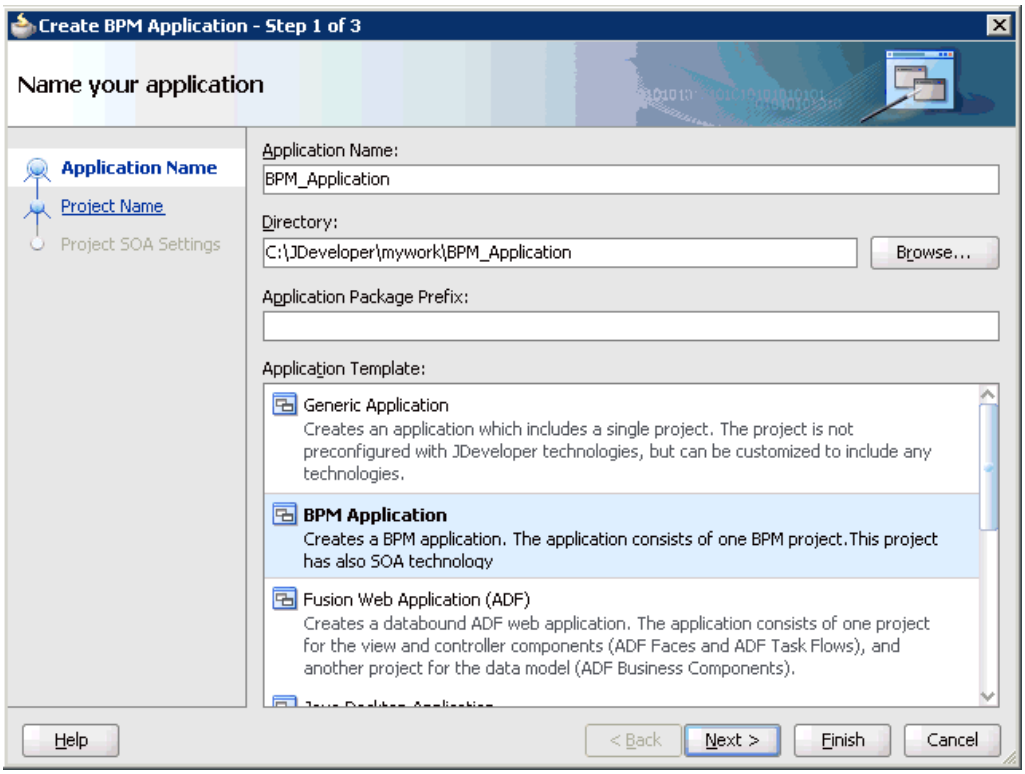
Samples have been provided for this usecase scenario in the `etc/sample` folder in Application Adapters installation.

6.4.1 Creating an Empty Composite for BPM

Perform the following steps to create an empty composite for BPM:

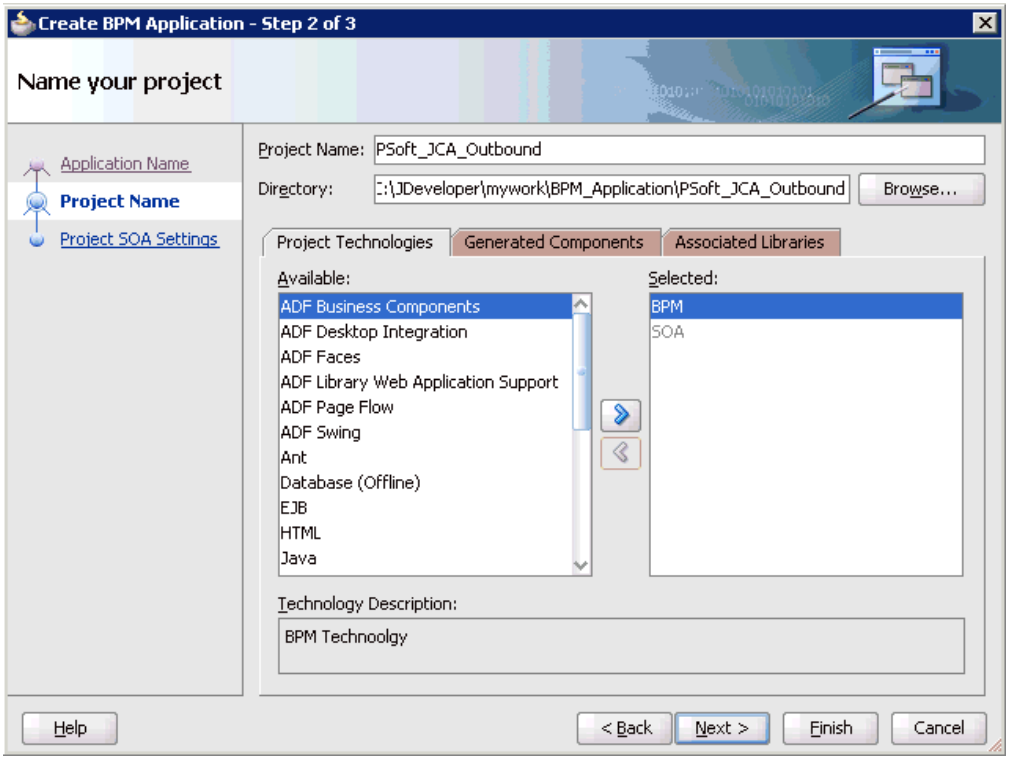
1. Create a new BPM application.
2. Enter a name for the new BPM application and click **Next**, as shown in Figure 6–1.

Figure 6–1 Name Your Application Page



The Name your project page is displayed, as shown in Figure 6–2.

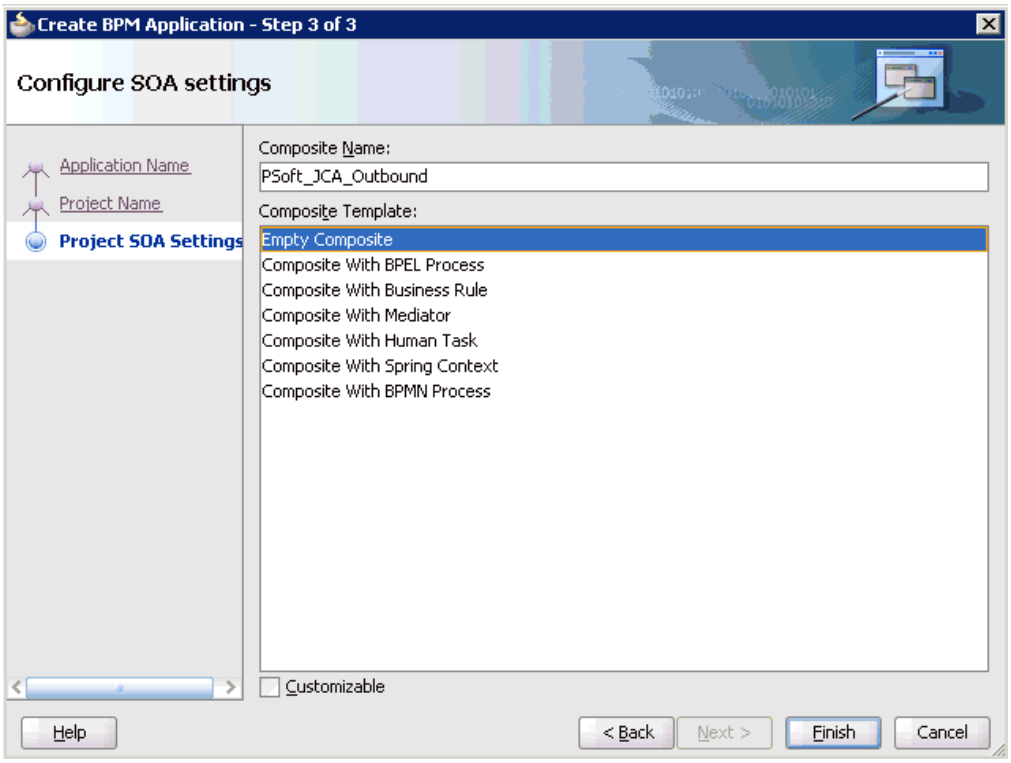
Figure 6–2 Name Your Project Page



3. Enter a project name (for example, PSoft_JCA_Outbound) and click **Next**.

   The Configure SOA settings page is displayed, as shown in Figure 6–3.

Figure 6–3 Configure SOA Settings Page



4. From the Composite Template list, select **Empty Composite** and click **Finish**.

6.4.2 Defining a BPM Outbound Process

This section describes how to define a BPM outbound process, which consists of the following stages:

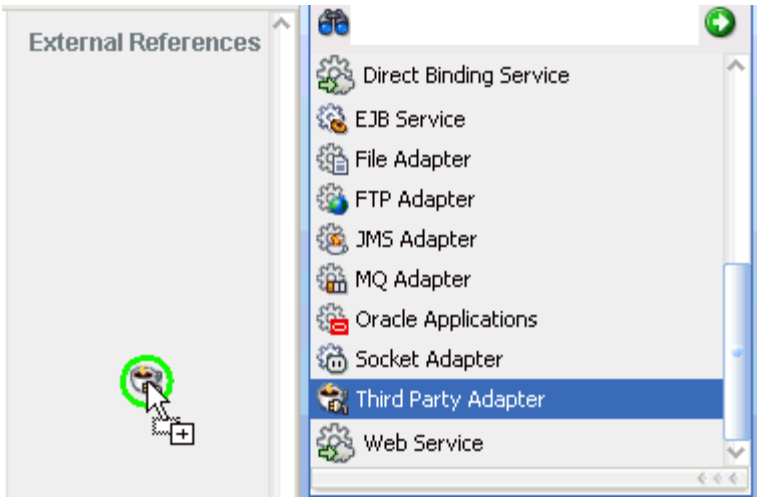
1. Configuring a Third Party Adapter Service Component
2. Configuring an Outbound BPM Process Component
3. Creating a File Adapter for the Write Operation

Configuring a Third Party Adapter Service Component

Perform the following steps to create a third party adapter service component:

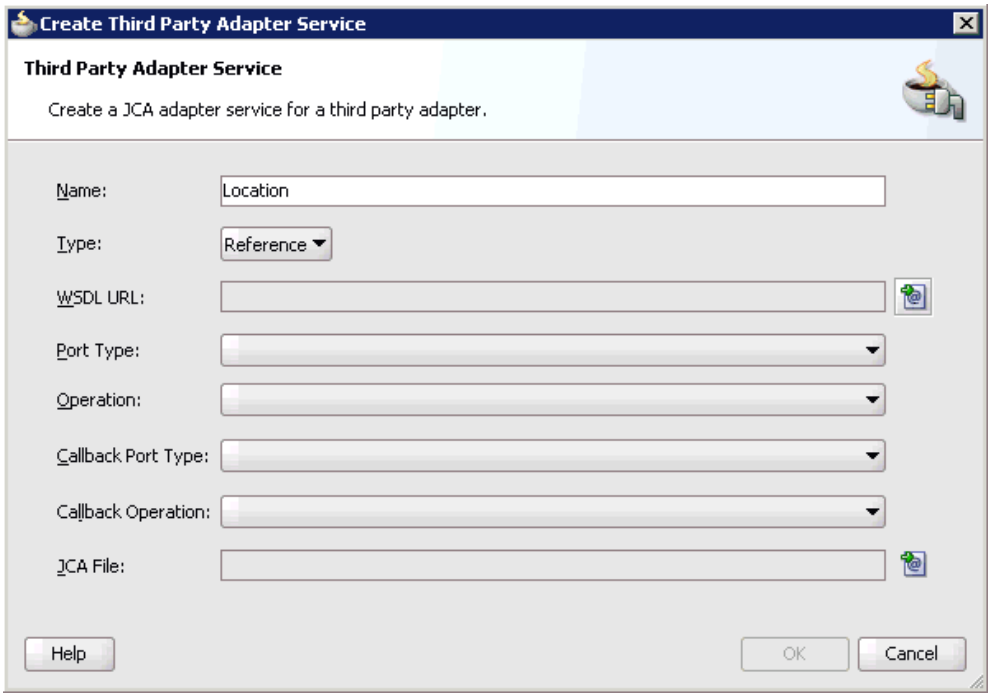
1. Drag and drop the **Third Party Adapter** component from the Service Adapters pane to the External References pane, as shown in Figure 6–4.

Figure 6–4 Third Party Adapter Component



The Create Third Party Adapter Service dialog is displayed, as shown in Figure 6–5.

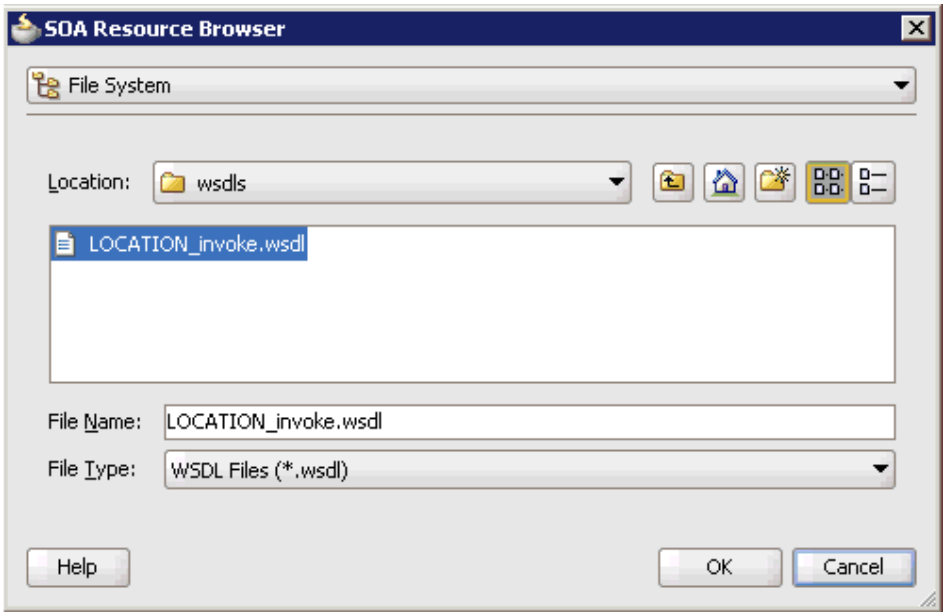
Figure 6–5 Create Third Party Adapter Service Dialog



2. Enter a name for the third party adapter service.
3. Ensure that **Reference** is selected from the Type list (default).
4. Click the **Find existing WSDLs** icon, which is located to the right of the WSDL URL field.

   The SOA Resource Browser dialog is displayed, as shown in Figure 6–6.

Figure 6–6 SOA Resource Browser Dialog



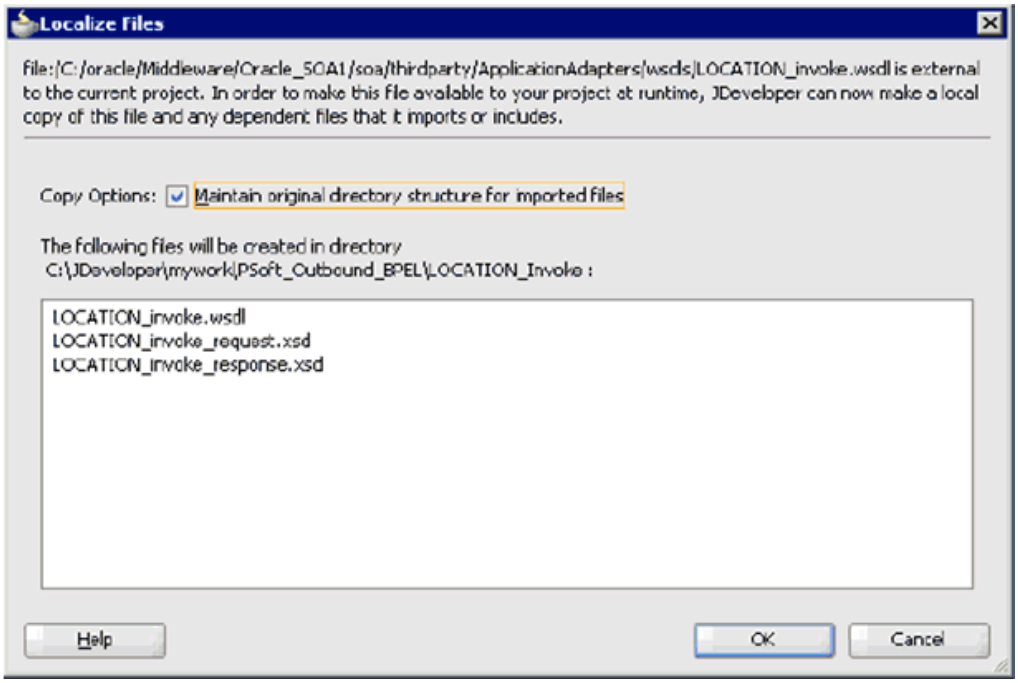
5. Browse and select an outbound PeopleSoft WSDL file from the following directory:

   `<ADAPTER_HOME>\soa\thirdparty\ApplicationAdapters\wsdls`

6. Click **OK**.

   The Localize Files dialog is displayed, as shown in Figure 6–7.

Figure 6–7 Localize Files Dialog

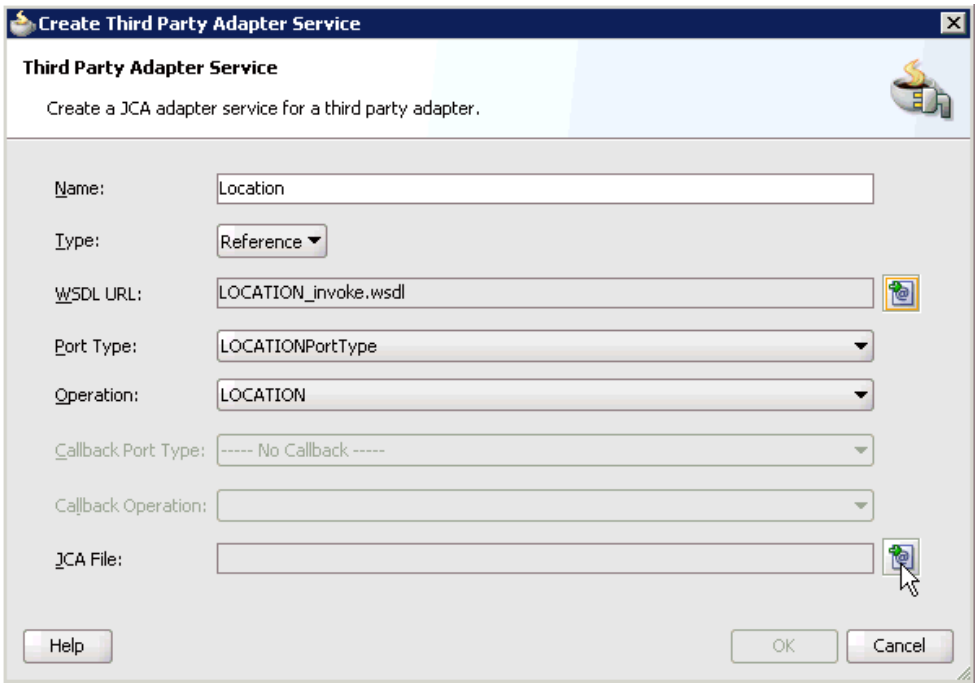


7. Click **OK**.

The outbound WSDL file and associated request and response XML schema files (.xsd) are imported to the project folder that has been created.

You are returned to the Create Third Party Adapter Service dialog, as shown in Figure 6–8.

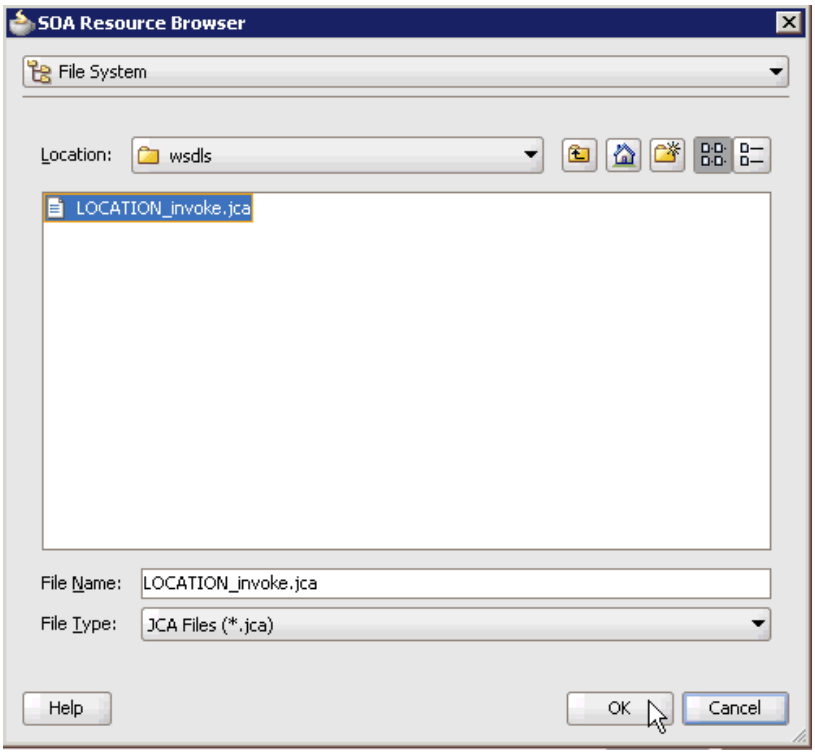
Figure 6–8 Create Third Party Adapter Service Dialog



8. Click the **Find JCA file** icon, which is located to the right of the JCA File field.

   The SOA Resource Browser dialog is displayed, as shown in Figure 6–9.

Figure 6–9 SOA Resource Browser Dialog



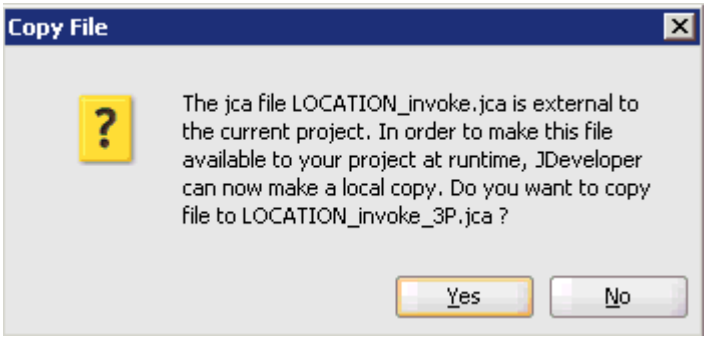
9. Browse and select the JCA properties file from the following directory:

   `<ADAPTER_HOME>\soa\thirdparty\ApplicationAdapters\wsdls`

10. Click **OK**.

    The following message is displayed, as shown in Figure 6–10.

Figure 6–10 Copy File Confirmation

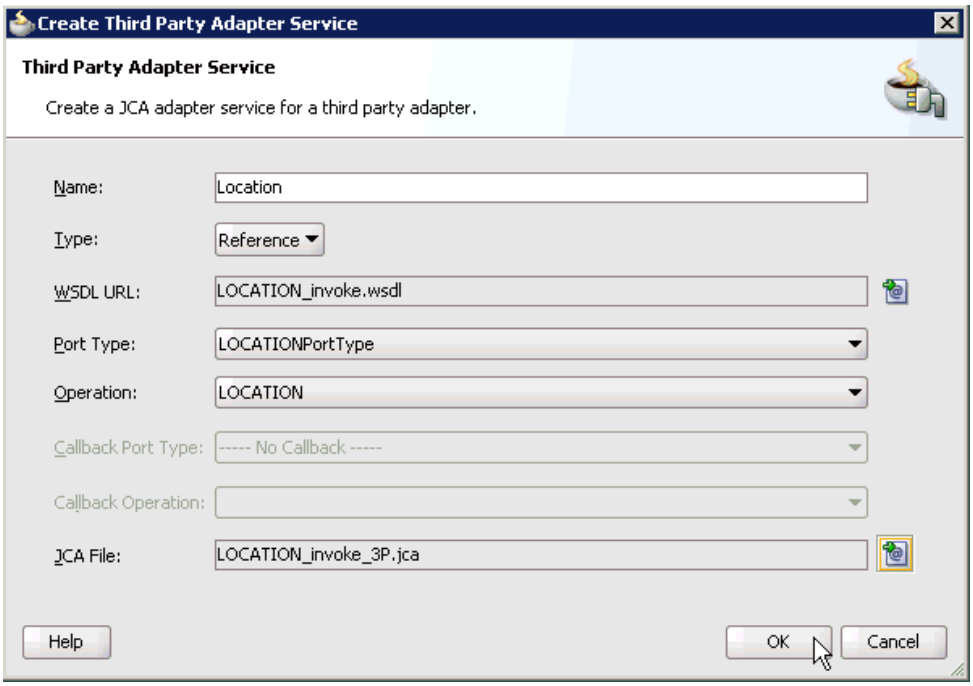


11. Click **Yes**.

    A copy of the JCA properties file is made in the project folder.

    You are returned to the Create Third Party Adapter Service dialog, as shown in Figure 6–11.

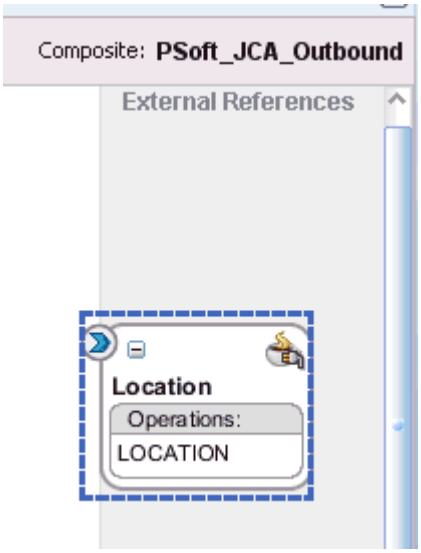
Figure 6–11 Create Third Party Adapter Service Dialog



12. Click **OK**.

The third party adapter service component (Location) is created and displayed in the External References pane, as shown in Figure 6–12.

Figure 6–12 Third Party Adapter Service Component



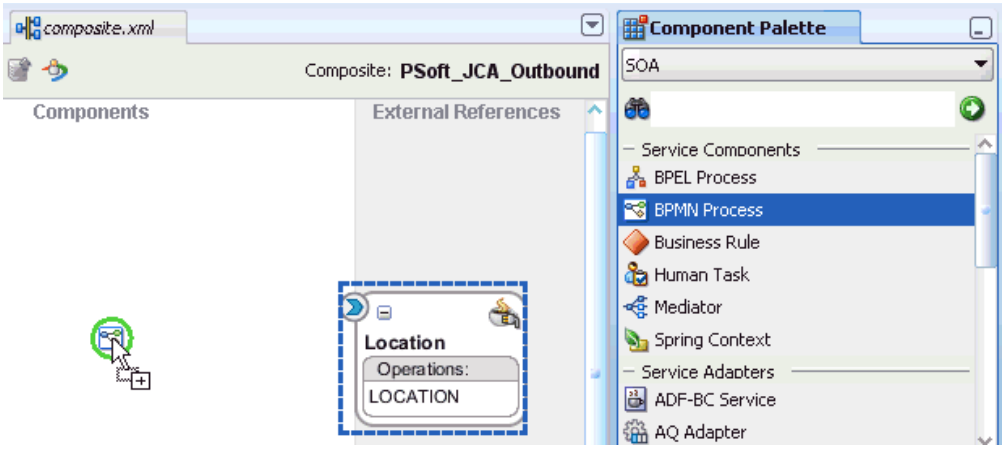
You are now ready to configure an outbound BPM process component.

Configuring an Outbound BPM Process Component

Perform the following steps to configure an outbound BPM process component:

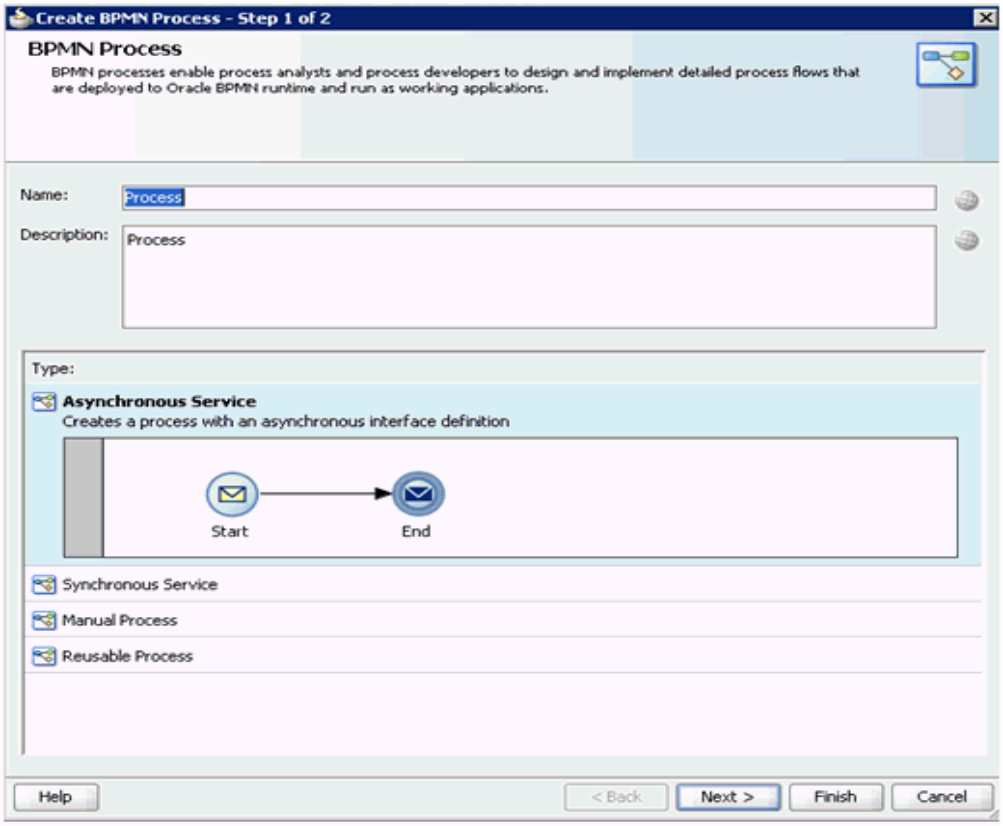
1. Drag and drop the **BPMN Process** component from the Service Components pane to the Components pane, as shown in Figure 6–13.

Figure 6–13 BPMN Process Component



The Create BPMN Process dialog is displayed, as shown in Figure 6–14.

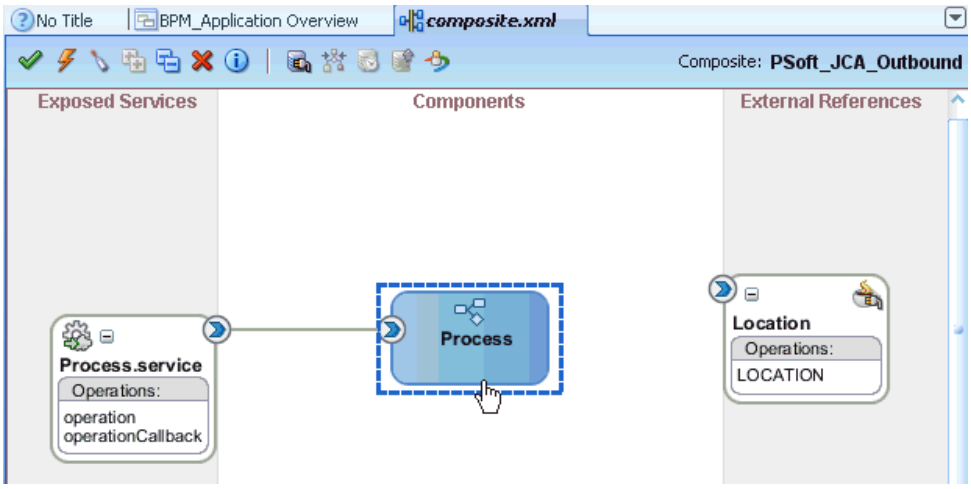
Figure 6–14 Create BPMN Process Dialog



2. Accept the default option that is selected in the **Type** area (Asynchronous Service) and click **Finish**.

   The BPMN Process component is created, as shown in Figure 6–15.

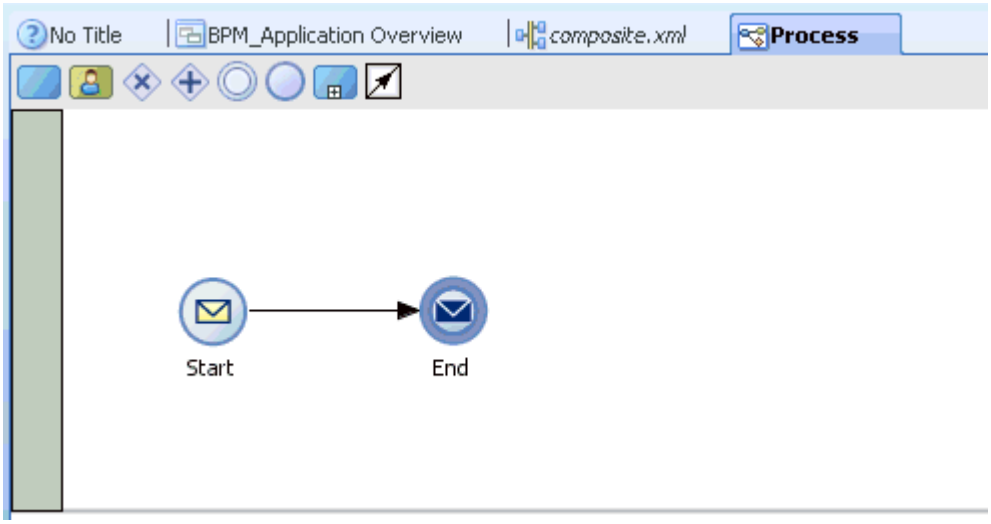
Figure 6–15 BPMN Process Component



3. Double-click the BPMN Process component in the Components pane.

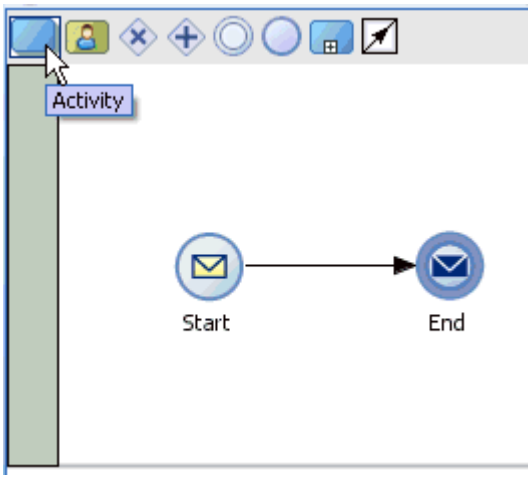
   The BPMN process is displayed, as shown in Figure 6–16.

Figure 6–16 BPMN Process



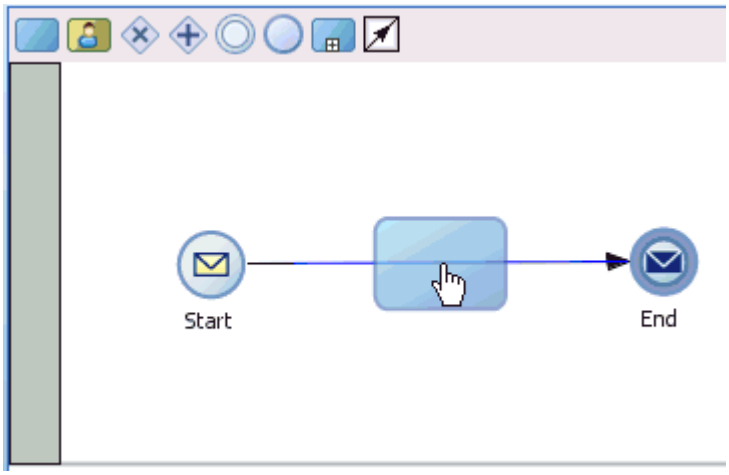
4. Click the **Activity** icon, as shown in Figure 6–17.

Figure 6–17 Activity Icon



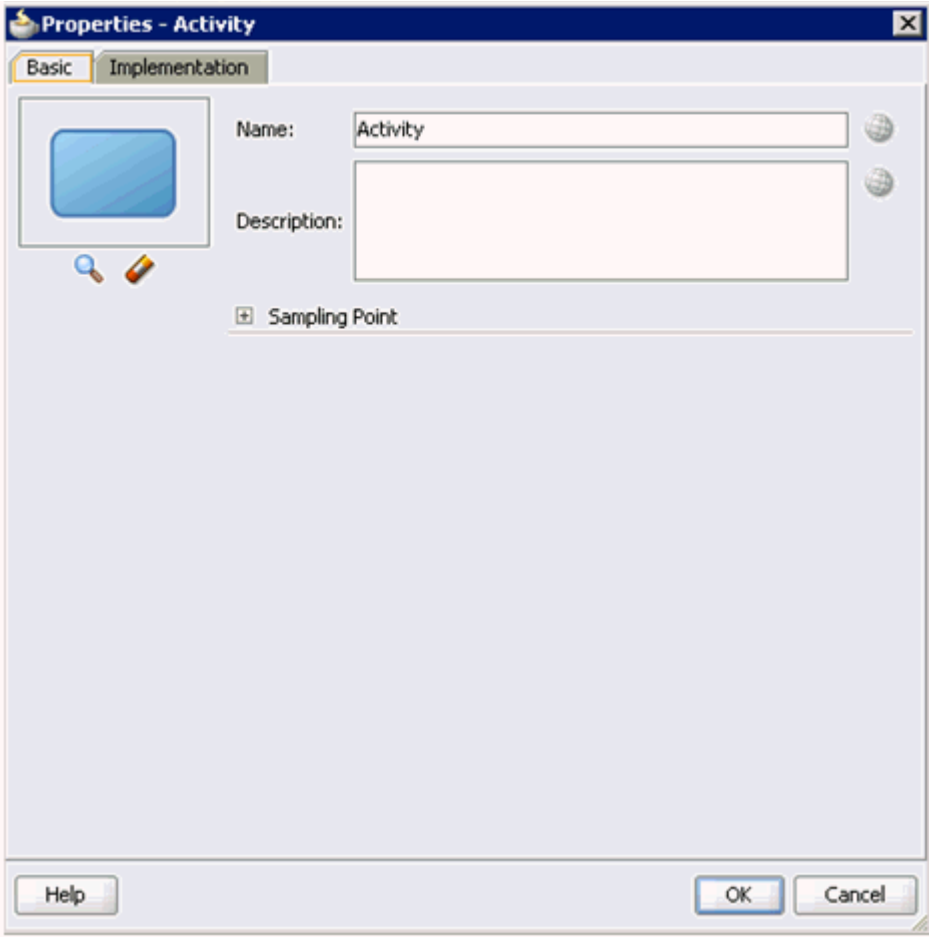
5. Drop the Activity icon on the wire between the Start and End event components, as shown in Figure 6–18.

Figure 6–18 Activity Icon



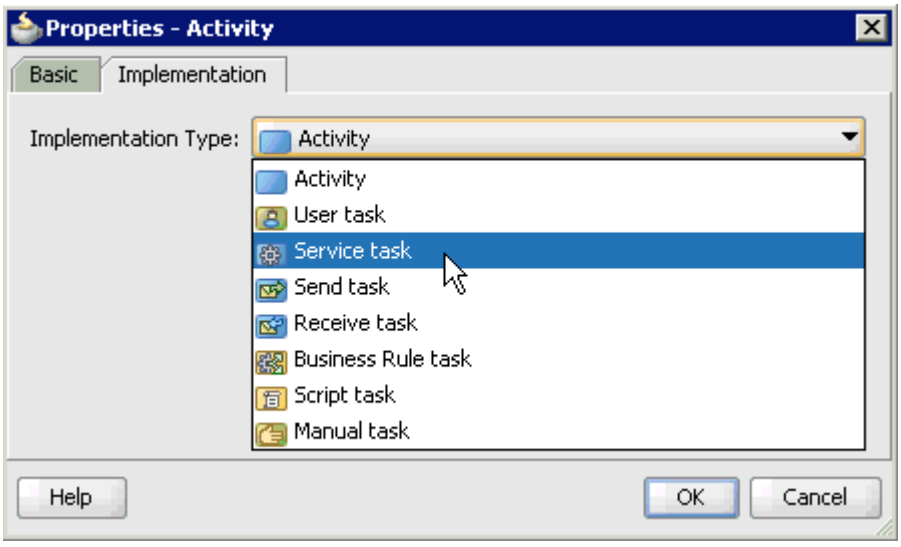
The Properties - Activity dialog is displayed, as shown in Figure 6–19.

Figure 6–19 Properties - Activity Dialog



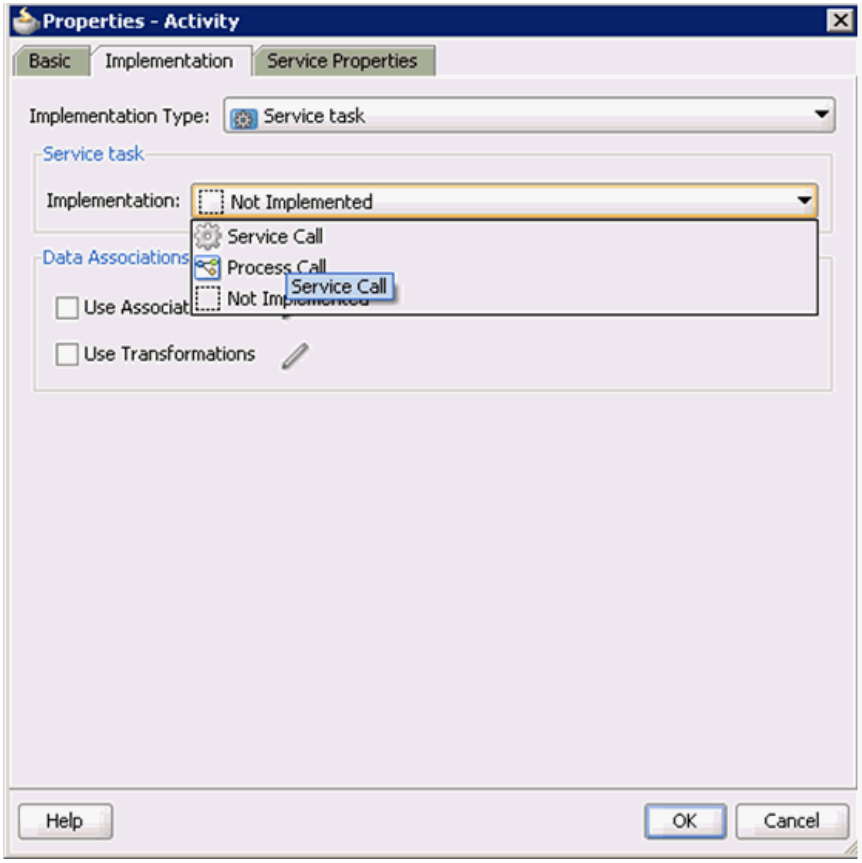
6. Click the **Implementation** tab.

Figure 6–20 Service Task



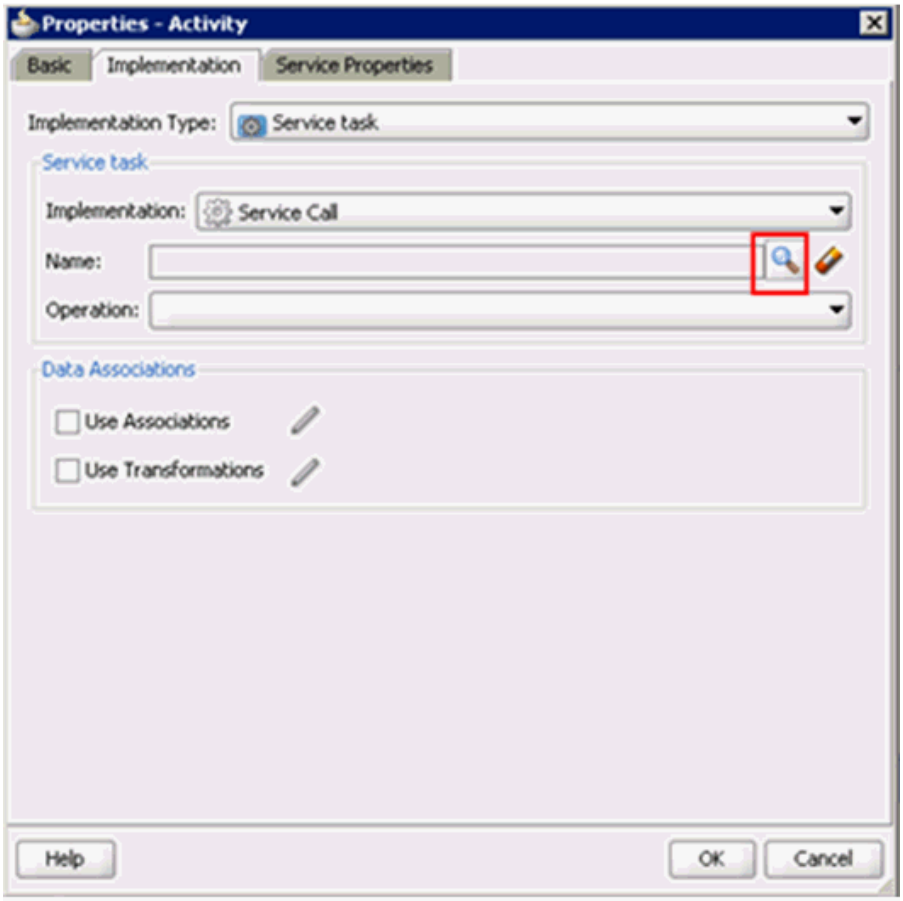
7. Select **Service Task** from the Implementation Type list, as shown in Figure 6–20.

Figure 6–21 Service Call



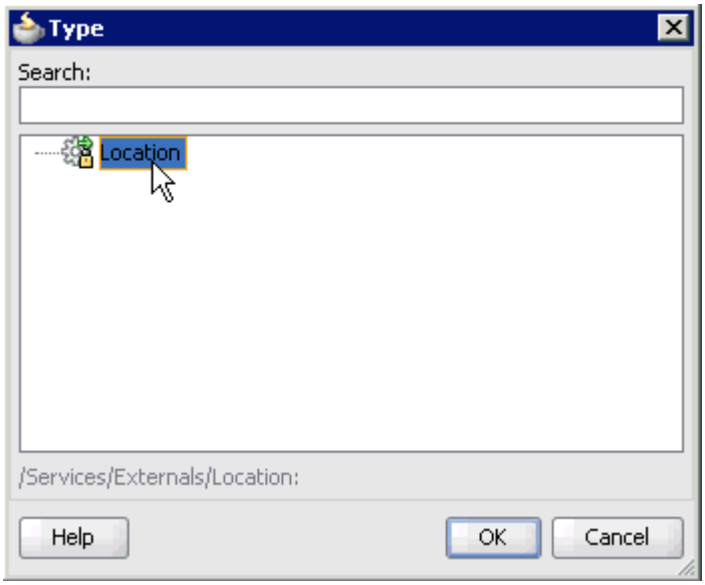
8. Select **Service Call** from the Implementation list, as shown in Figure 6–21.
9. Click the Browse icon to the right of the Name field, as shown in Figure 6–22.

Figure 6–22 Browse Icon



The Type dialog is displayed, as shown in Figure 6–23.

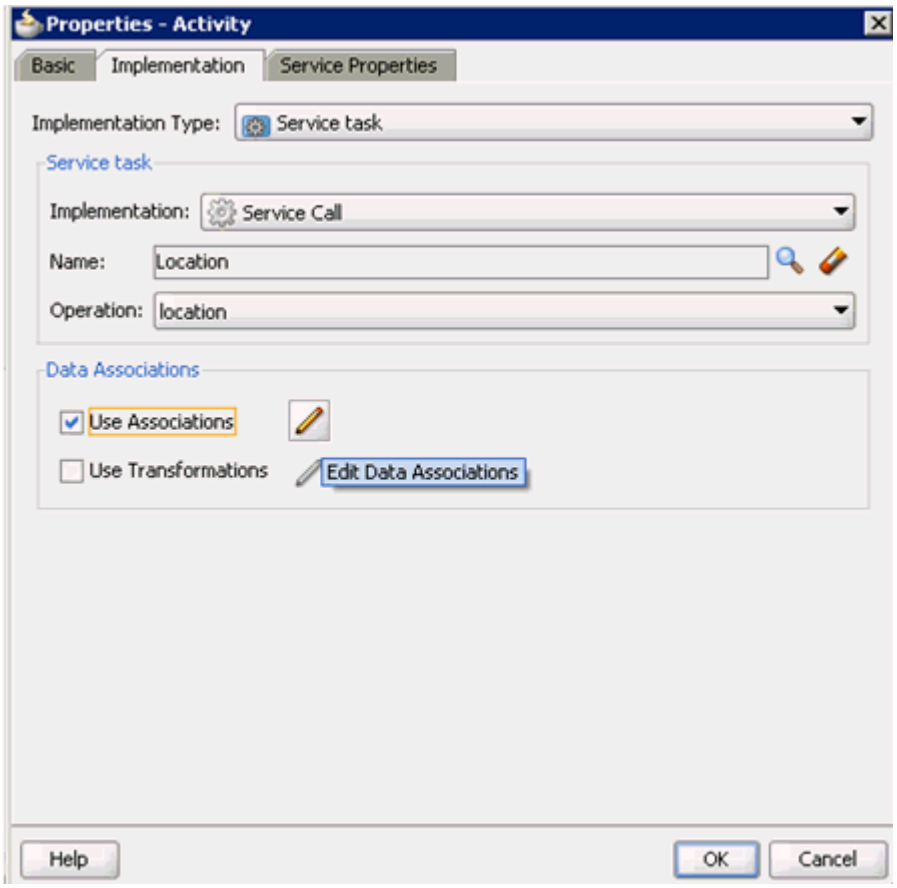
Figure 6–23 Type Dialog



10. Select the Third Party Service that has been created for PeopleSoft (for example, Location) and click **OK**.

    You are returned to the Properties - Activity dialog, as shown in Figure 6–24.

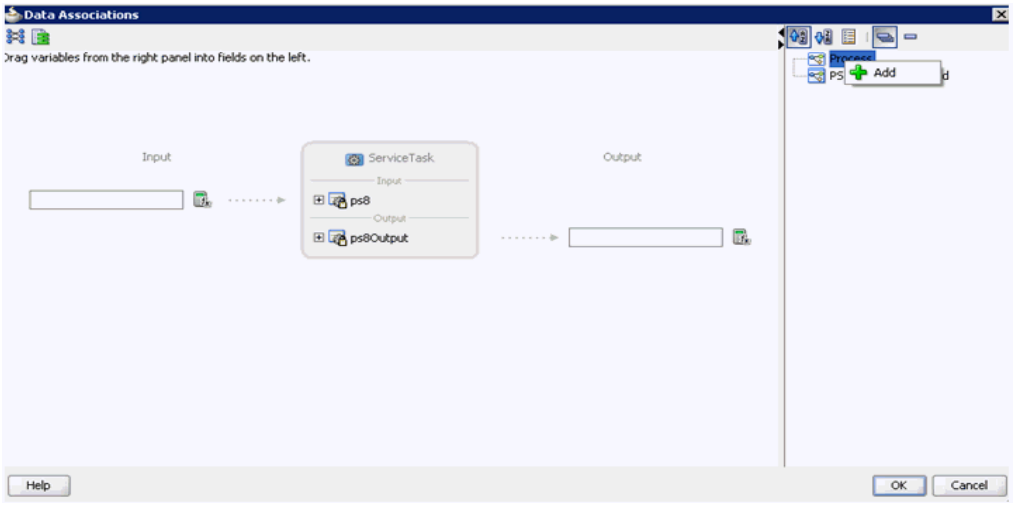
Figure 6–24 Properties - Activity Dialog



11. Select the **Use Associations** option that is located under Data Associations.
12. Click the **Edit Data Associations** icon.

    The Data Associations dialog is displayed, as shown in Figure 6–25.

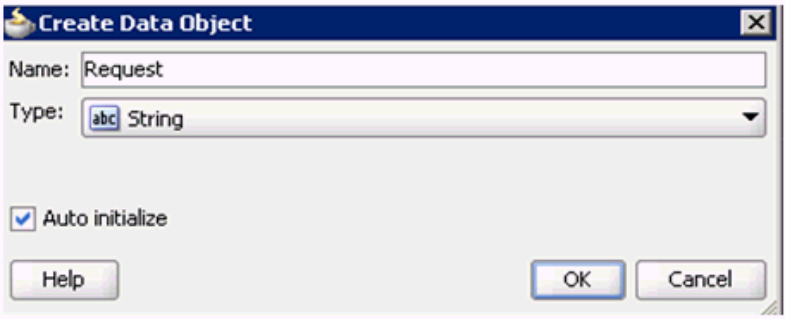
Figure 6–25 Data Associations Dialog



13. Right-click the **Process** node in the right pane and select **Add**.

    The Create Data Object dialog is displayed, as shown in Figure 6–26.

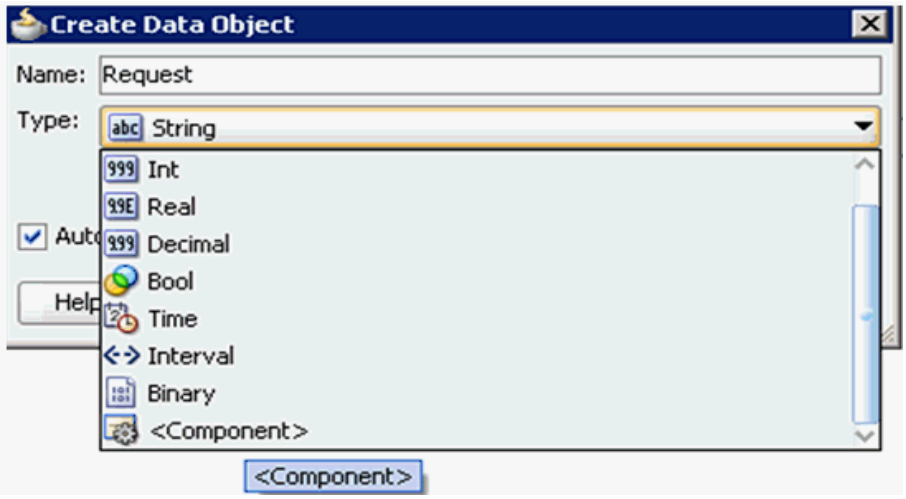
Figure 6–26 Create Data Object Dialog



14. Enter a name in the Name field (for example, Request) and click on the drop-down button in the Type field and select **<Component>** from the list.

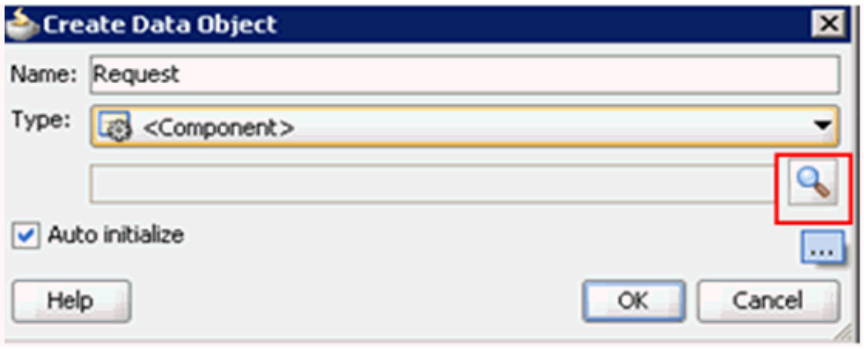
    The Create Data Object dialog is displayed, as shown in Figure 6–27.

Figure 6–27 Create Data Object Dialog



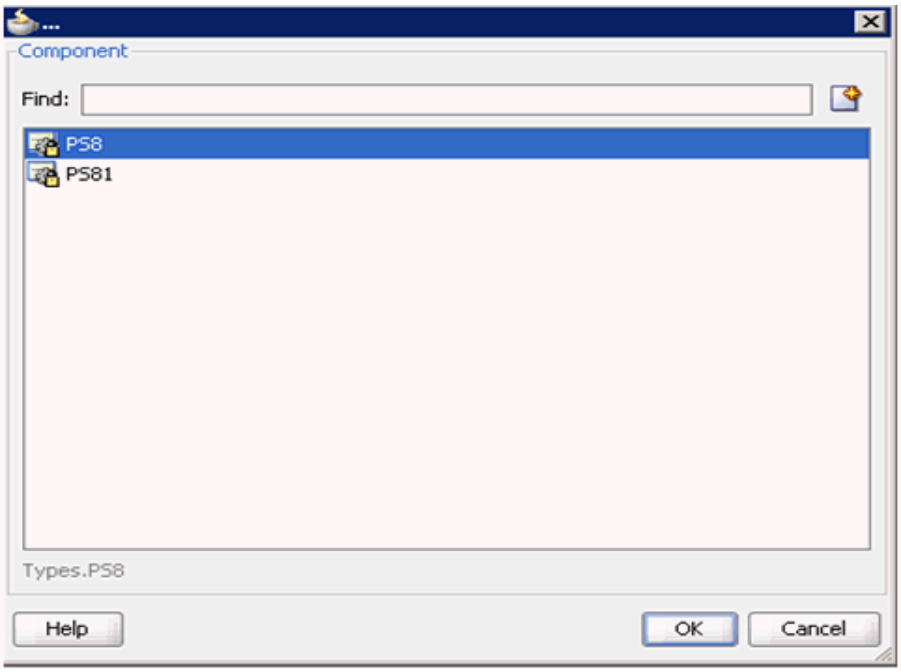
15. Click on the Browse button below the Type field, as shown in Figure 6–28.

Figure 6–28 Create Data Object



The Browse window opens, as shown inFigure 6–29.

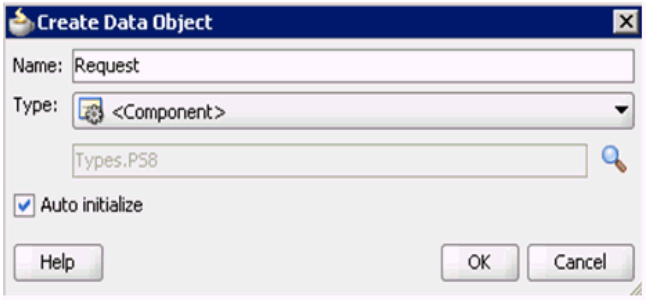
Figure 6–29 Browse Window



16. Select the first component (for example, PS8) and click **OK**.

    You are returned to the Create Data Object dialog, as shown in Figure 6–30.

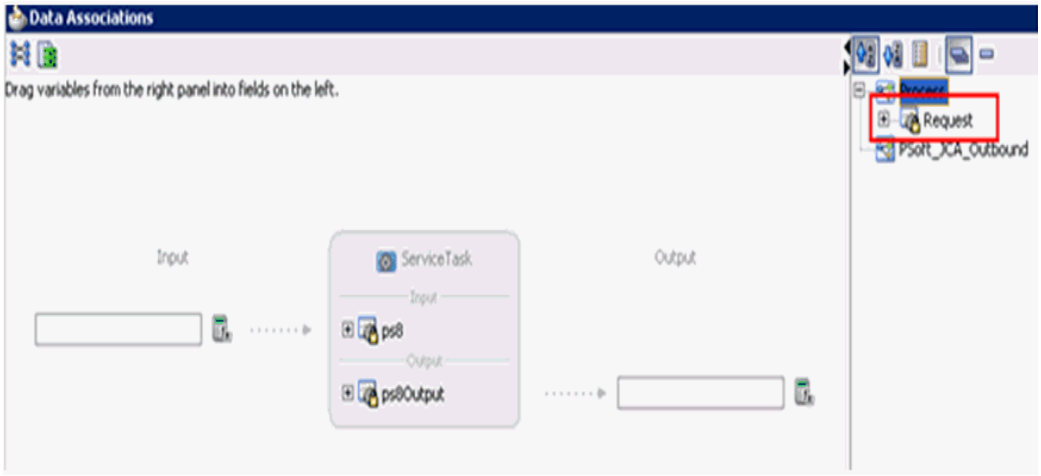
Figure 6–30 Create Data Object Dialog



17. Click **OK**.

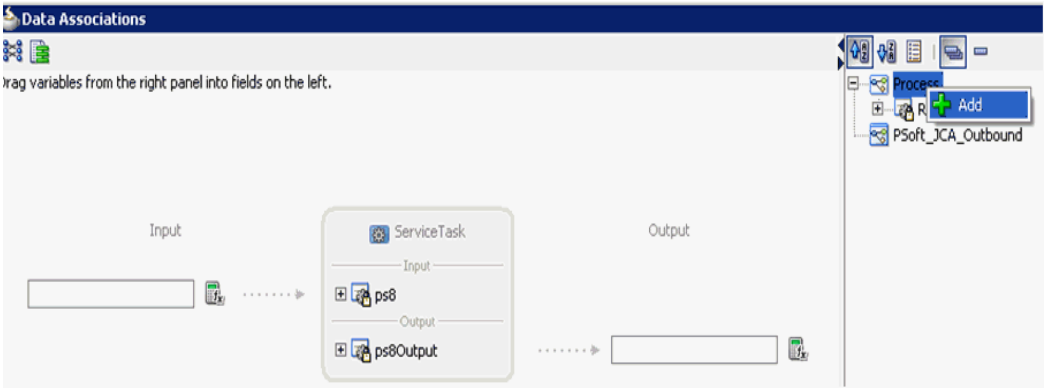
    The Data Object (for example, Request) that has been created is displayed under the Process node in the Data Associations dialog, as shown in Figure 6–31.

Figure 6–31 Data Associations Dialog



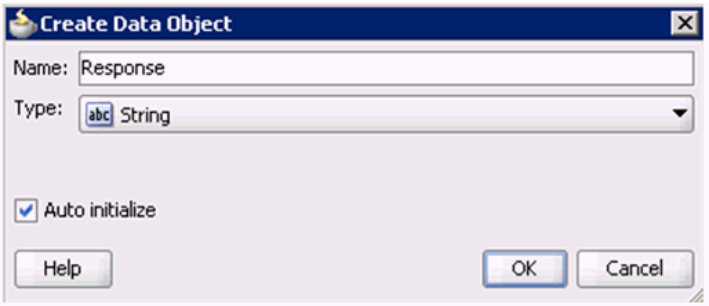
18. Create another Data Object by right-clicking the **Process** node in the right pane and selecting **Add**, as shown in Figure 6–32.

Figure 6–32 Add Option in Data Associations Dialog



The Create Data Object dialog is displayed, as shown in Figure 6–33.

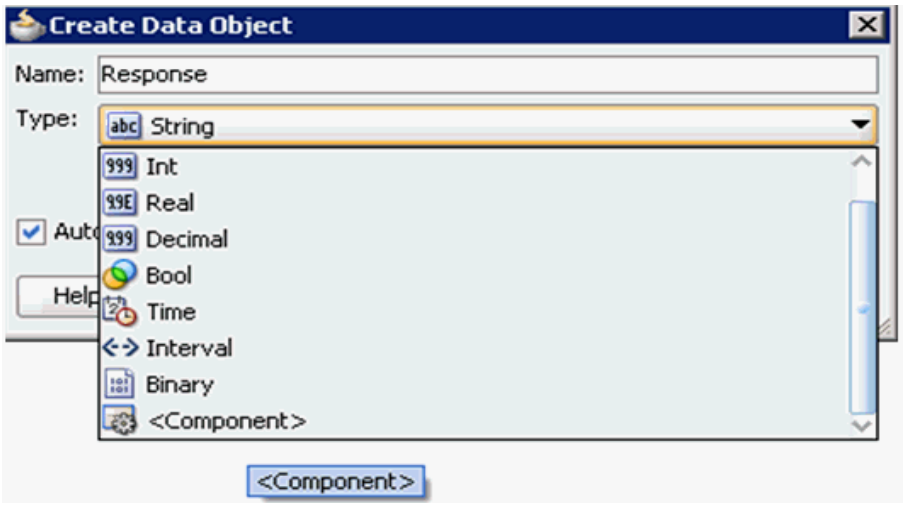
Figure 6–33 Create Data Object Dialog



19. Enter a name in the Name field (for example, Response) and click the drop-down button in the Type field and select **<Component>** from the list.

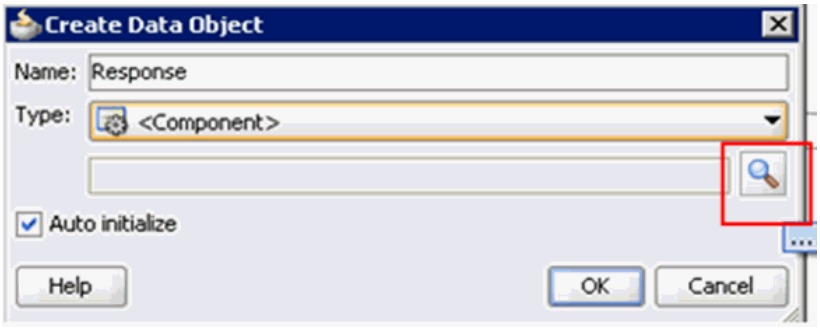
    The Create Data Object dialog is displayed, as shown in Figure 6–34.

Figure 6–34 Create Data Object



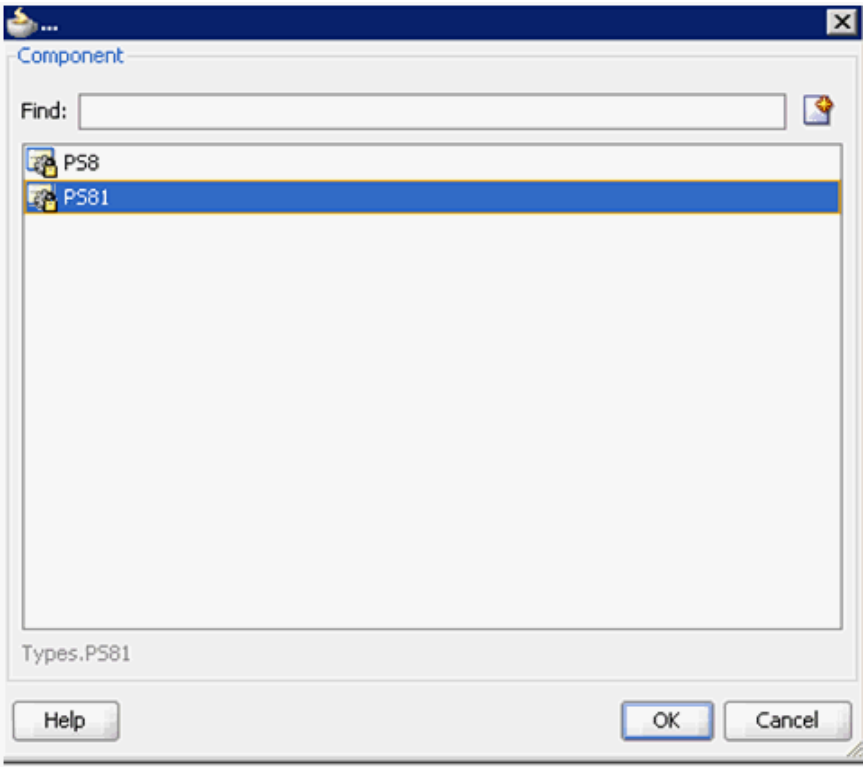
20. Click on the Browse icon below the Type field, as shown in Figure 6–35.

Figure 6–35 Browse Icon



The Browse window opens as shown in Figure 6–36.

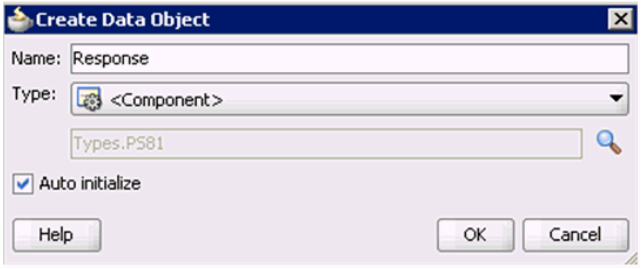
Figure 6–36 Browse Window



21. Select the second component (for example, PS81) and click **OK**.

    You are returned to the Create Data Object dialog, as shown in Figure 6–37.

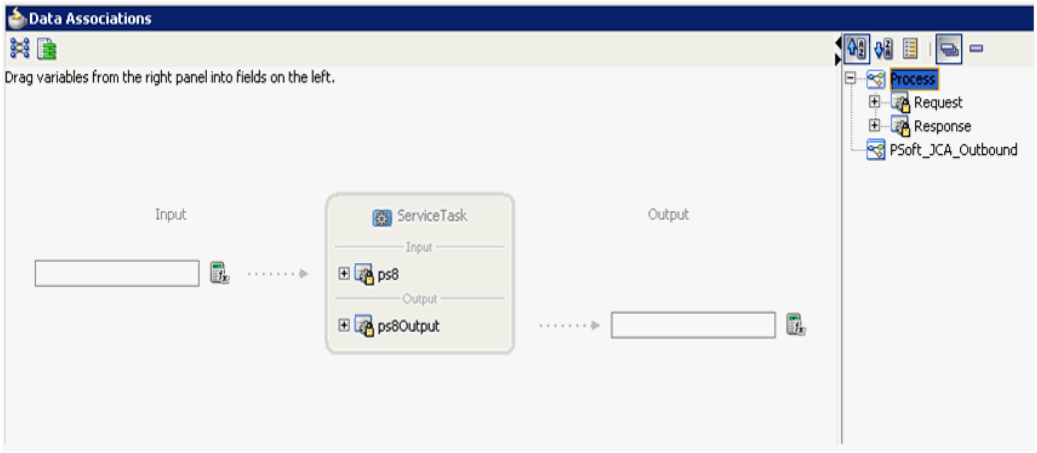
Figure 6–37 Create Data Object Dialog



22. Click **OK**.

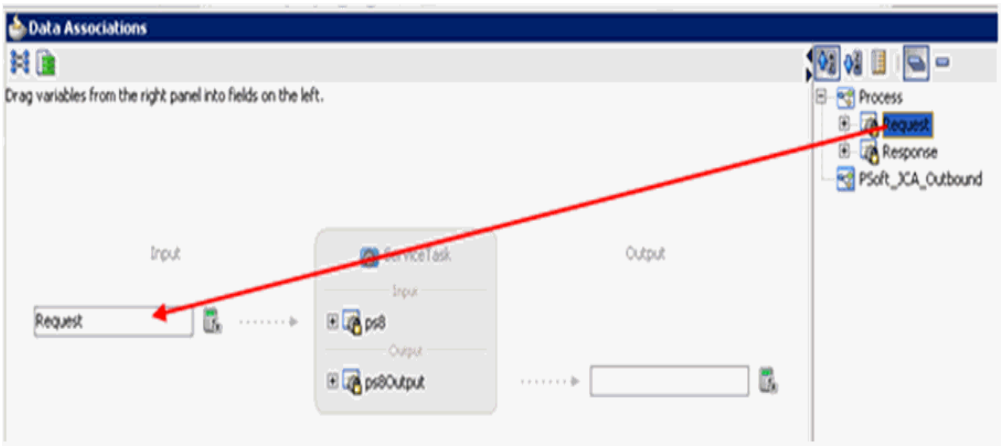
    The Data Object (for example, Response) that has been created is displayed under the Process node in the Data Associations dialog, as shown in Figure 6–38.

Figure 6–38 Data Associations Dialog



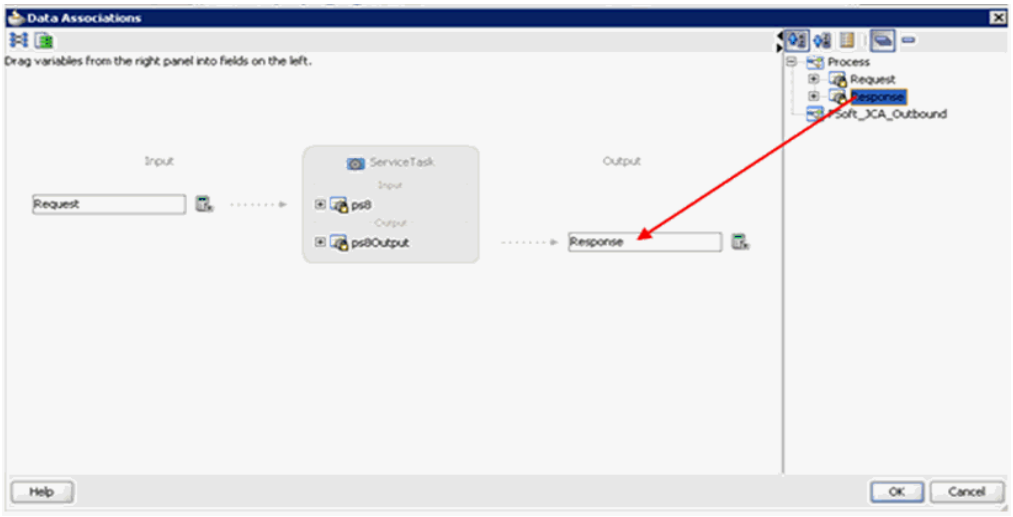
23. Select the Request Data Object under the Process node in the right pane and drag it to the field below the Inputs area, as shown in Figure 6–39.

Figure 6–39 Request Data Object



24. Select the Response Data Object under the Process node in the right pane and drag it to the field below the Outputs area, as shown in Figure 6–40.

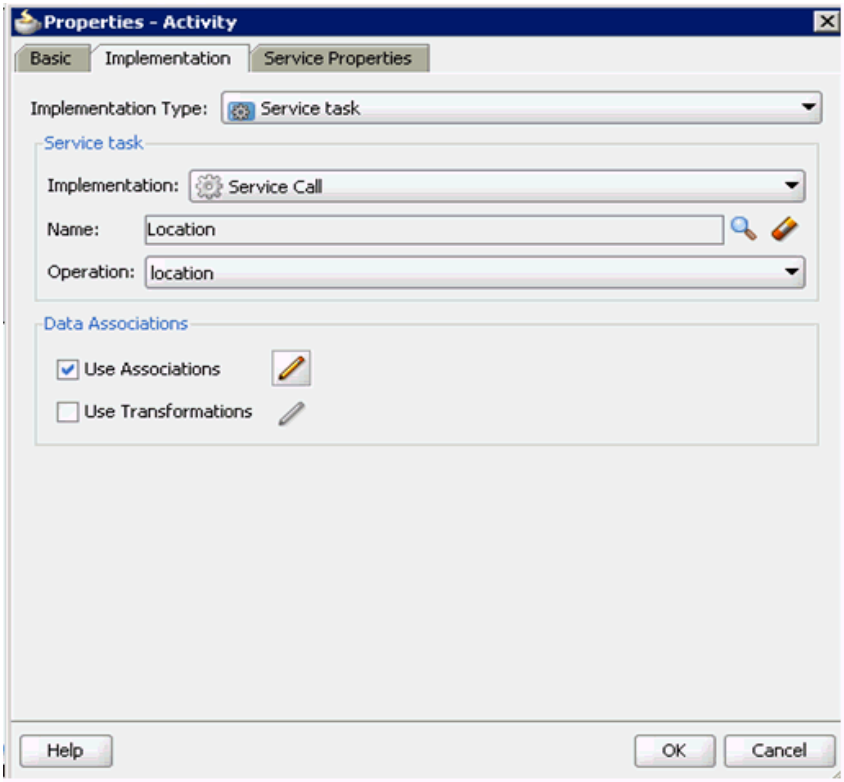
Figure 6–40 Response Data Object



25. Click **OK**.

You are returned to the Properties - Activity dialog, as shown in Figure 6–41.

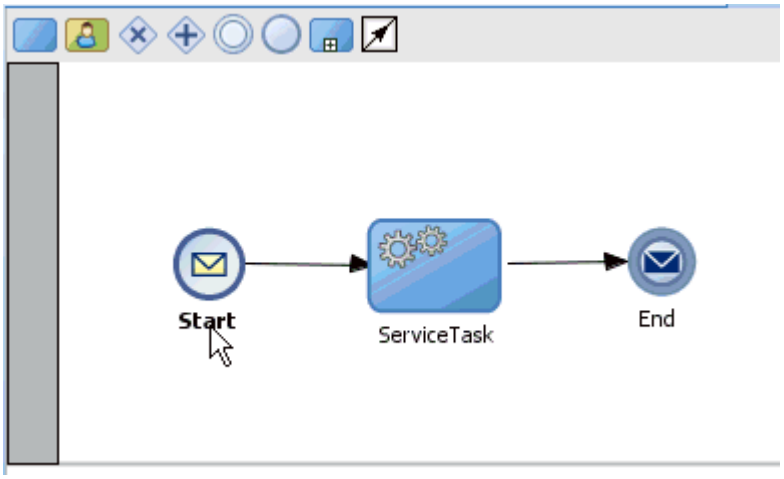
Figure 6–41 Properties - Activity Dialog



26. Click **OK**.

The Service Task is created between the Start and End Event components, as shown in Figure 6–42.

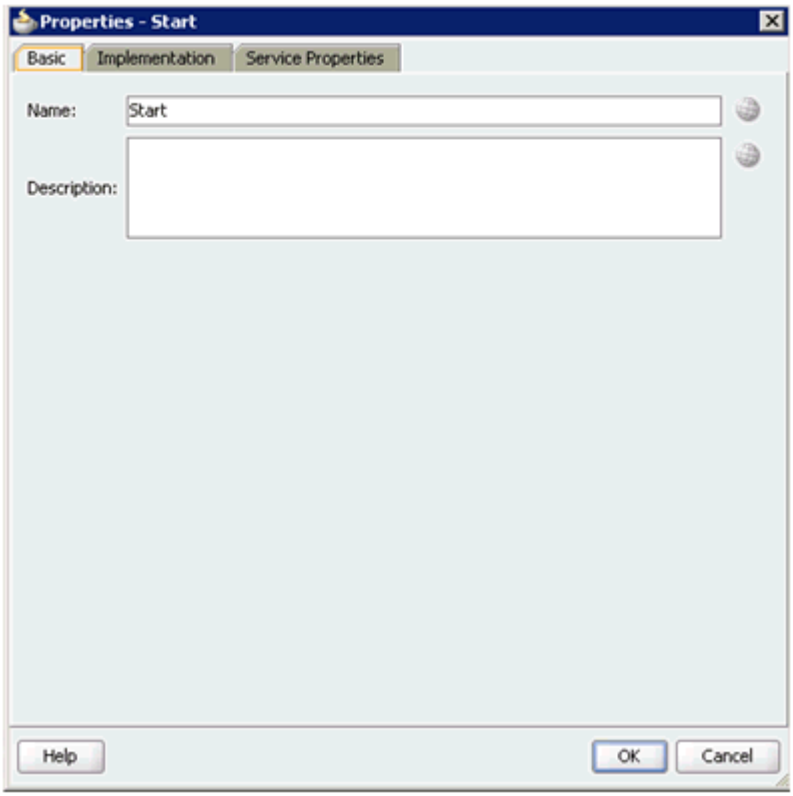
Figure 6–42 Service Task



27. Save the process and double-click the Start event component.

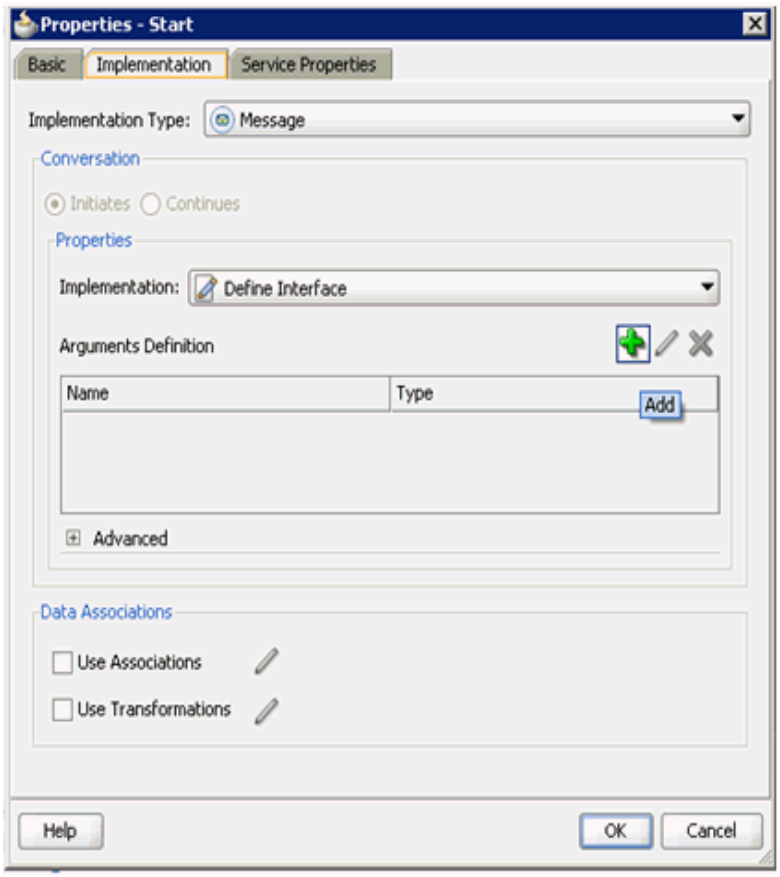
The Properties - Start dialog is displayed, as shown in Figure 6–43.

Figure 6–43 Properties - Start Dialog



28. Click the **Implementation** tab, as shown in Figure 6–44.

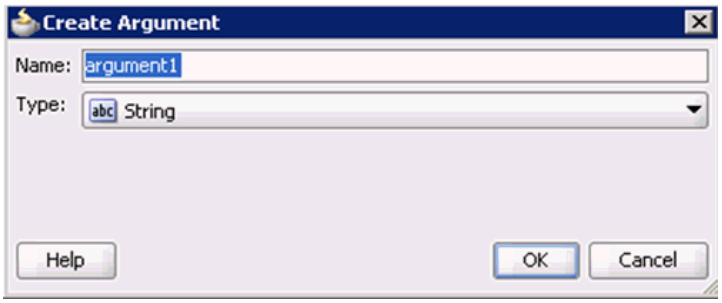
Figure 6–44 Implementation Tab



29. Click the **Plus** icon to the right of the Arguments Definition field.

The Create Argument dialog is displayed, as shown in Figure 6–45.

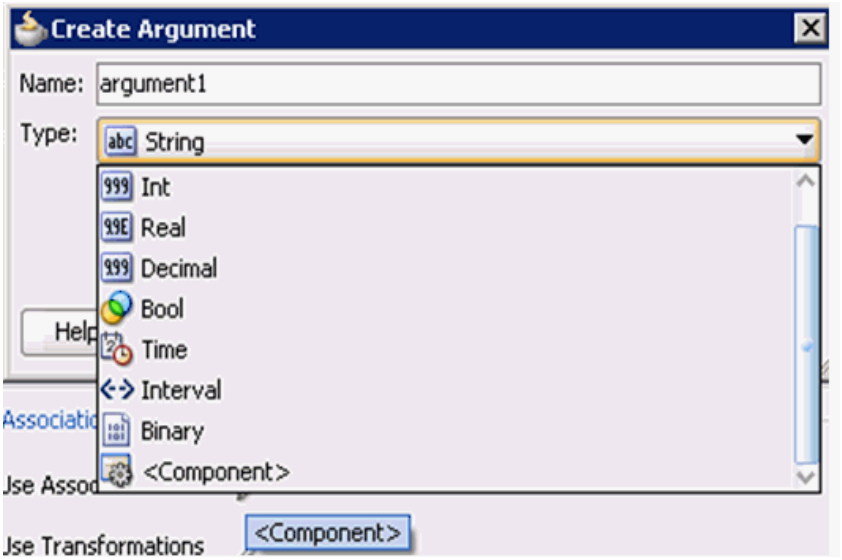
Figure 6–45 Create Argument Dialog



30. Enter a name in the Name field (for example, argument1) and click on the drop-down button in the Type field and select **<Component>** from the list.

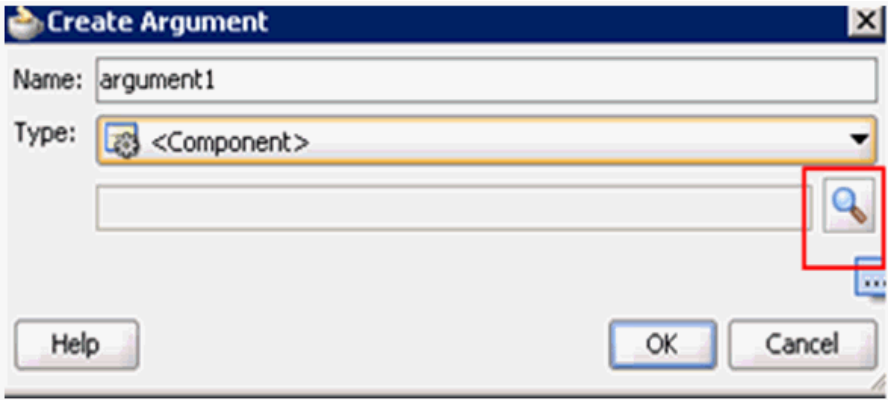
The Create Argument dialog is displayed, as shown in Figure 6–46.

Figure 6–46 Create Argument Dialog



31. Click on the Browse icon below the Type field, as shown in Figure 6–47.

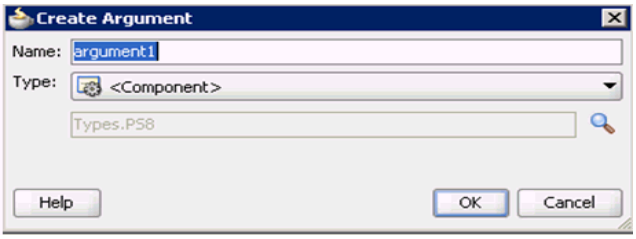
Figure 6–47 Create Argument



32. Select the first component (for example, PS8) and click **OK**.

You are returned to the Create Argument dialog, as shown in Figure 6–48.

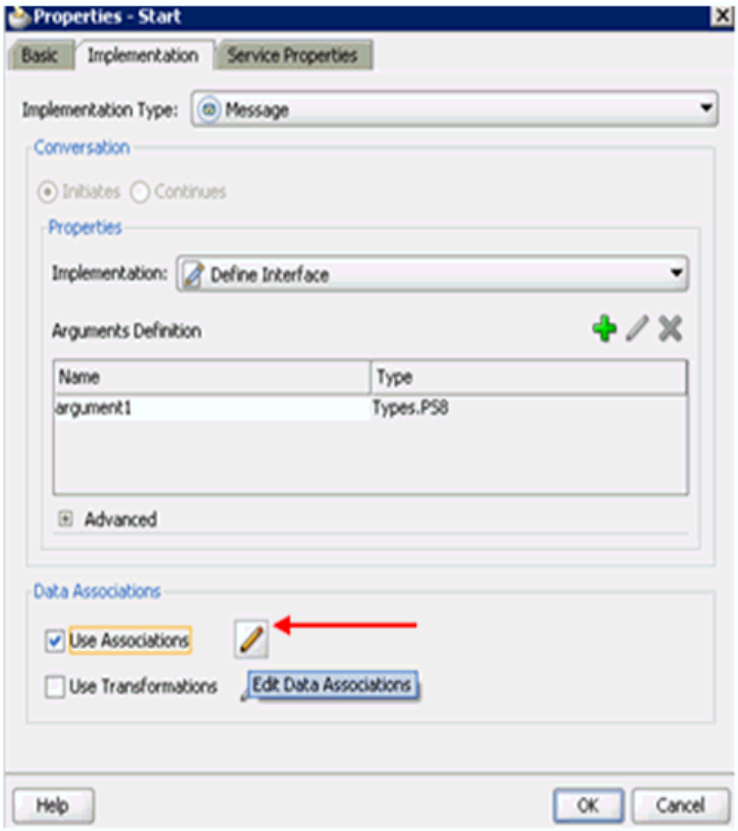
Figure 6–48 Create Argument Dialog



33. Click **OK**.

You are returned to the Properties - Start dialog, as shown in Figure 6–49.

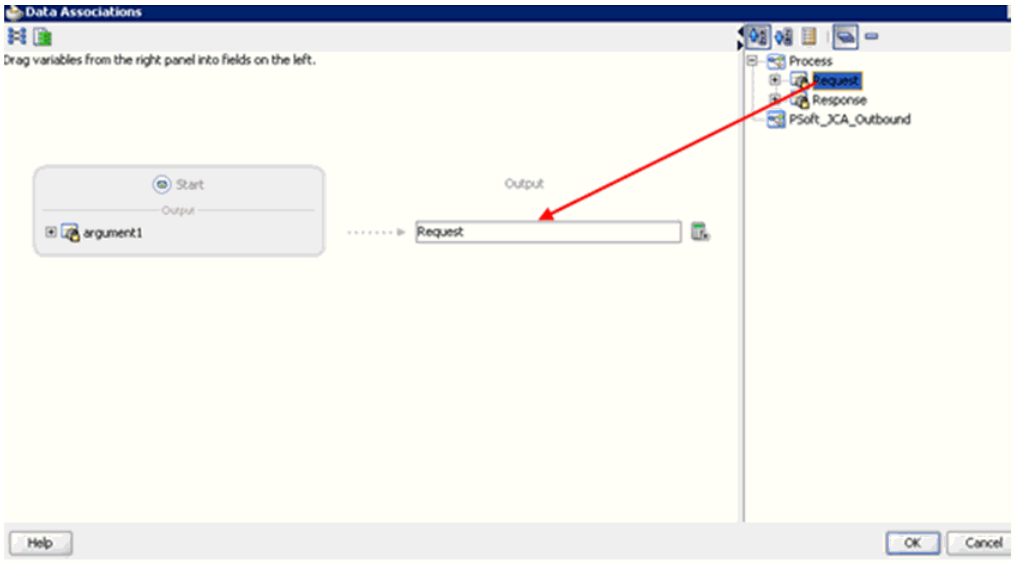
Figure 6–49 Properties - Start Dialog



34. Select the **Use Associations** option that is located under Data Associations.
35. Click the **Edit Data Associations** icon.

    The Data Associations dialog is displayed, as shown in Figure 6–50.
36. Select the Request Data Object under the Process node in the right pane and drag it to the field below the Outputs area.

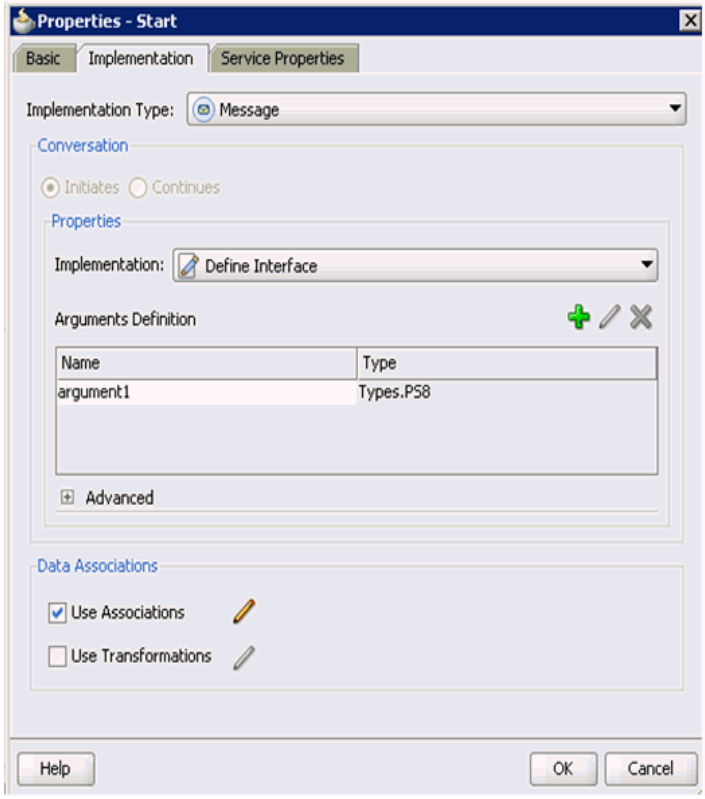
Figure 6–50 Data Associations Dialog



37. Click **OK**.

You are returned to the Properties - Activity dialog, as shown in Figure 6–51.

Figure 6–51 Properties - Activity Dialog

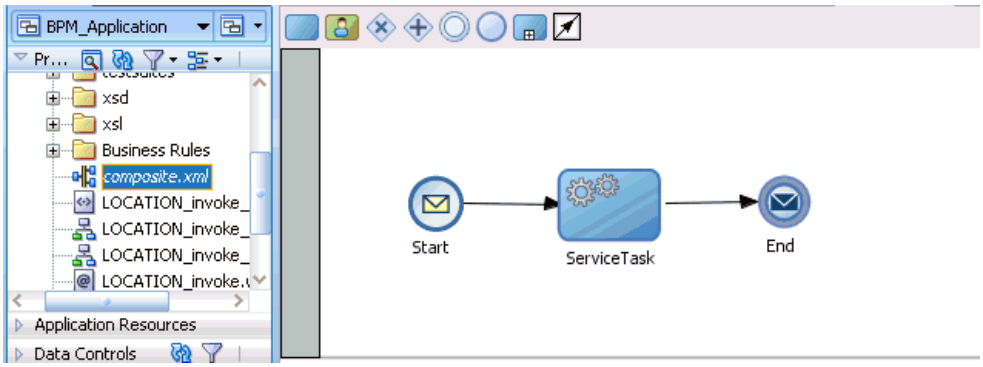


38. Click **OK**.

You are returned to the Process workspace area, as shown in Figure 6–52.

39. Double-click **composite.xml** in the left pane.

Figure 6–52 Process Workspace Area



40. Click the **Save All** icon in the menu bar to save the new outbound BPM process component that was configured.

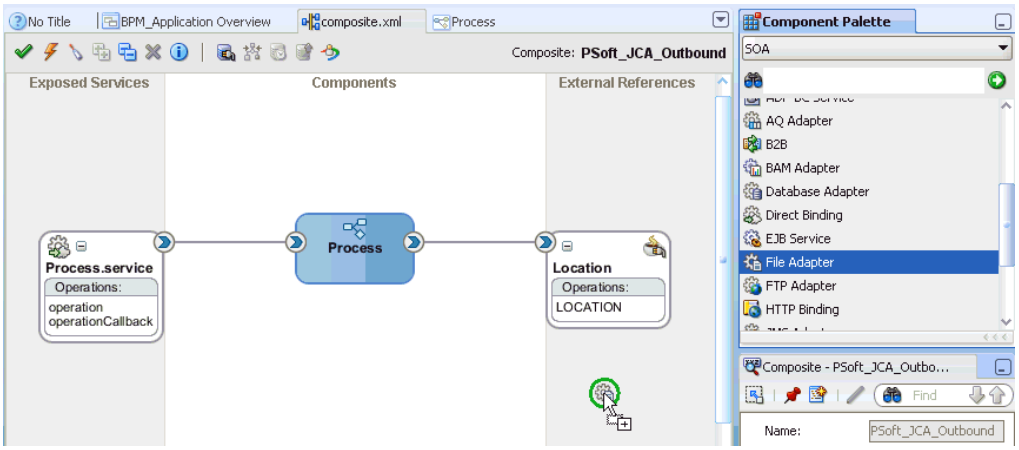
    You are now ready to create a File adapter for the write operation.

Creating a File Adapter for the Write Operation

Perform the following steps to create a File adapter for the write operation:

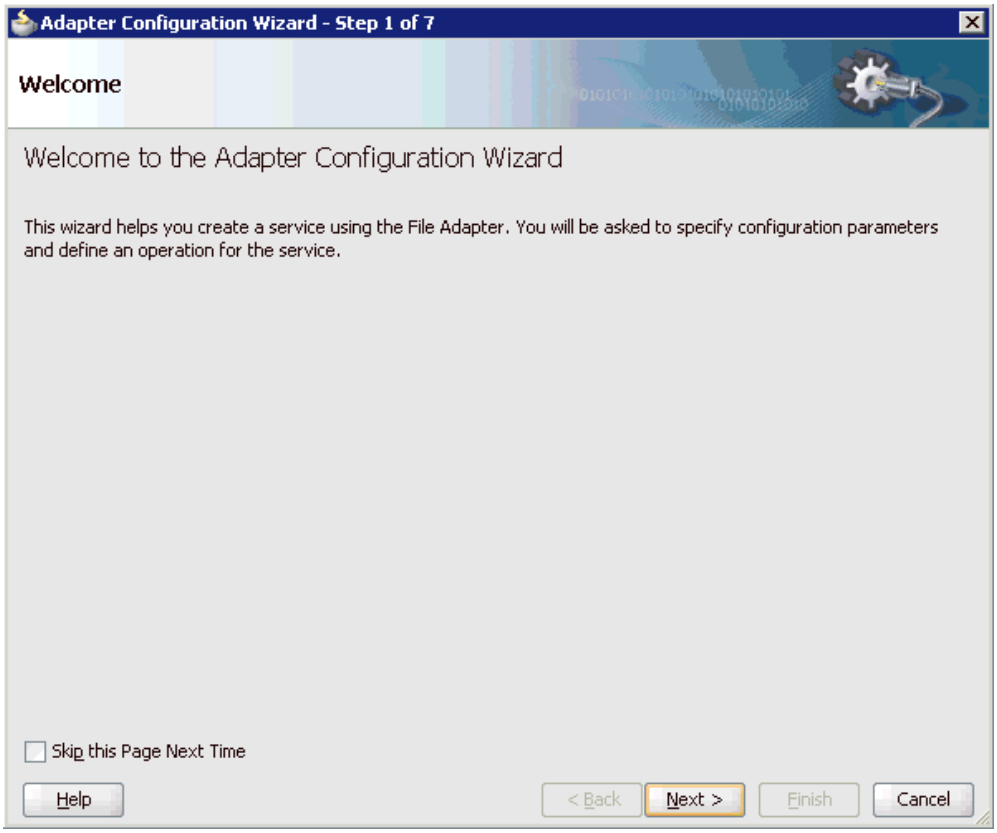
1. Drag and drop the **File Adapter** component from the Service Adapters pane to the External References pane, as shown in Figure 6–53.

Figure 6–53 File Adapter Component



The Adapter Configuration Wizard is displayed, as shown in Figure 6–54.

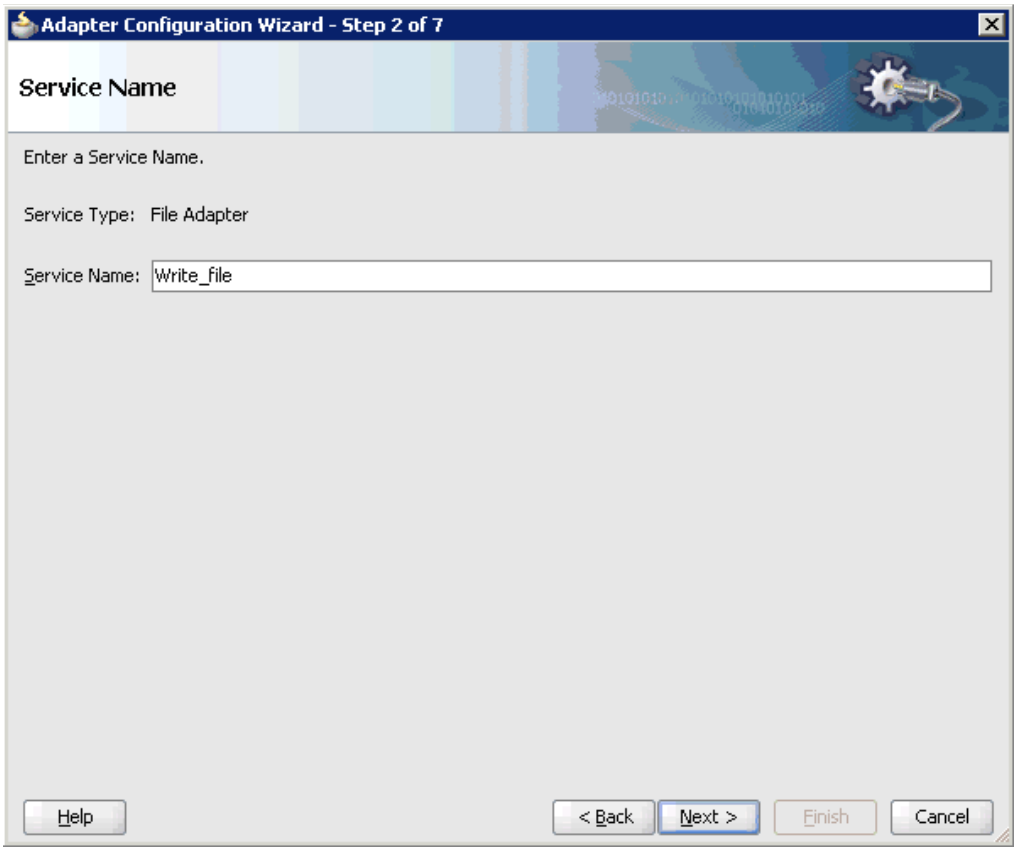
Figure 6–54 Adapter Configuration Wizard



2. Click **Next**.

   The Service Name page is displayed, as shown in Figure 6–55.

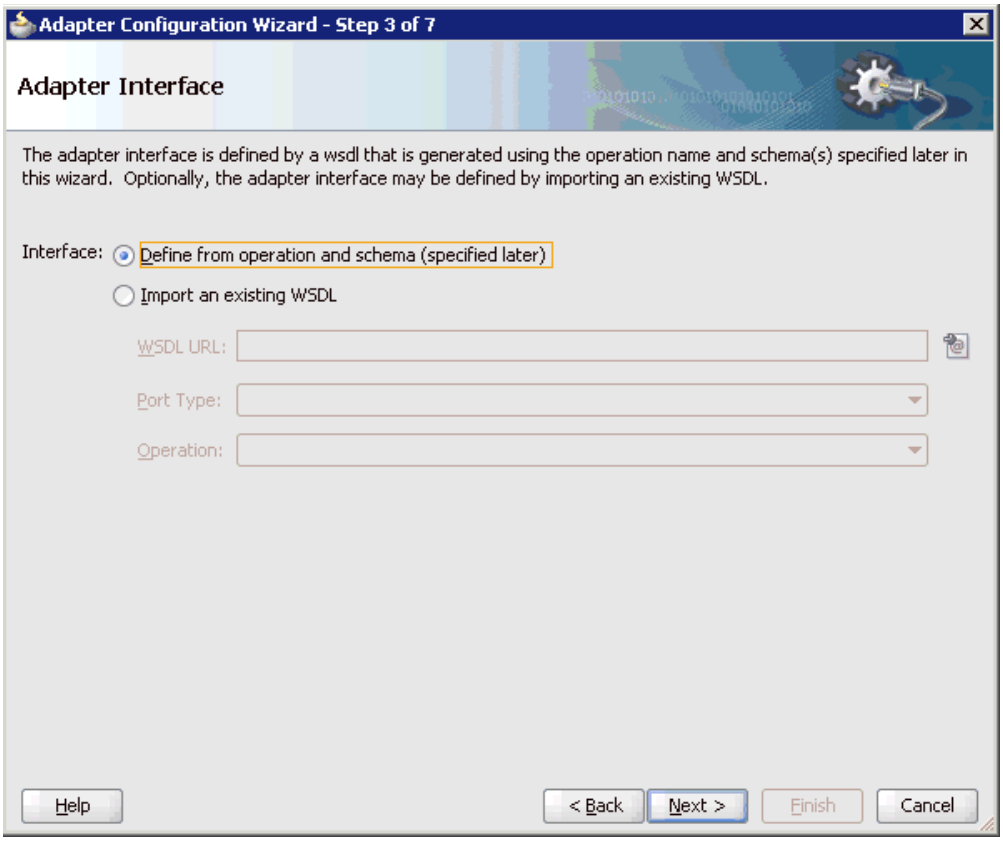
Figure 6–55 Service Name Page



3. Type a name for the new File adapter in the Service Name field and click **Next**.

   The Adapter Interface page is displayed, as shown in Figure 6–56.

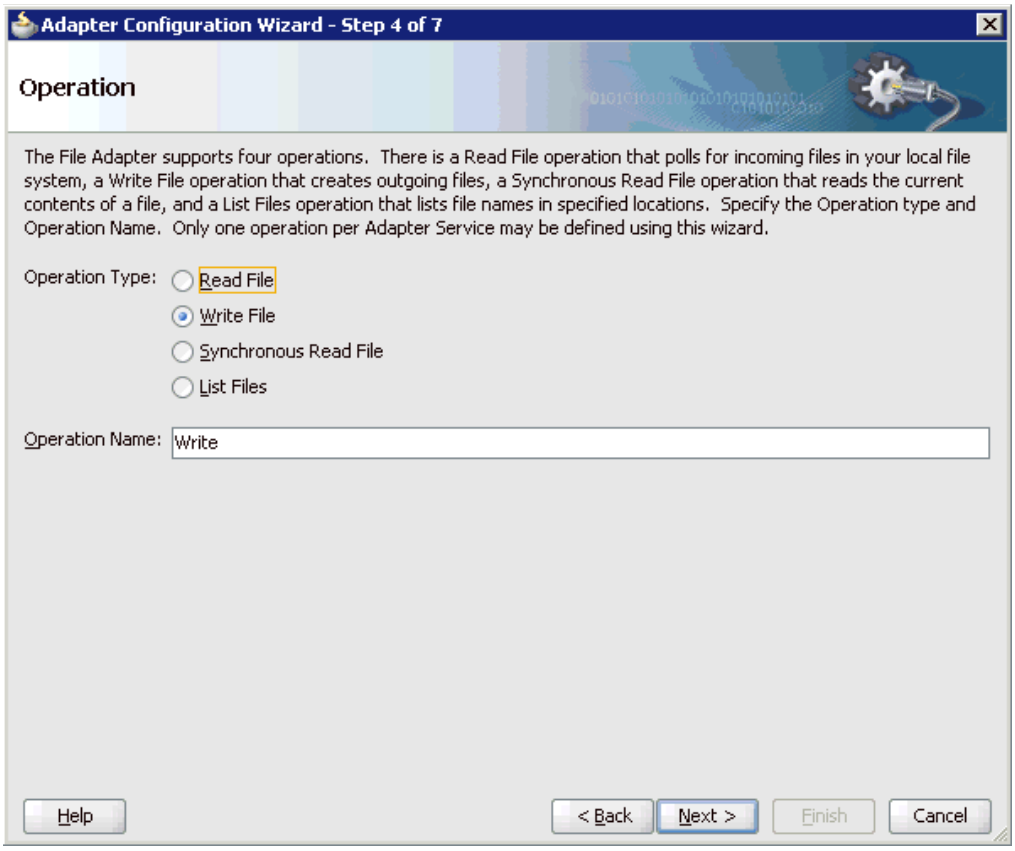
Figure 6–56 Adapter Interface Page



4. Ensure that the **Define from operation and schema (specified later)** option is selected.
5. Click **Next**.

   The Operation page is displayed, as shown in Figure 6–57.

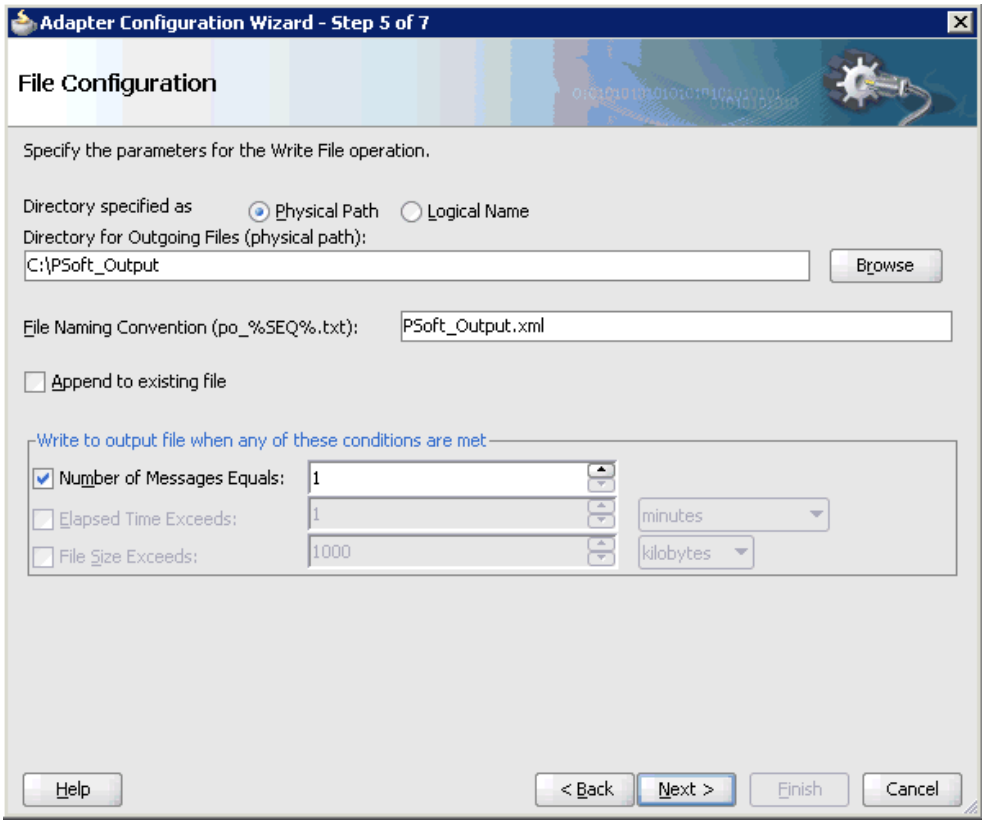
Figure 6–57 Operation Page



6. Select **Write File** from the list of Operation Type options and specify an Operation Name (for example, Write).
7. Click **Next**.

   The File Configuration page is displayed, as shown in Figure 6–58.

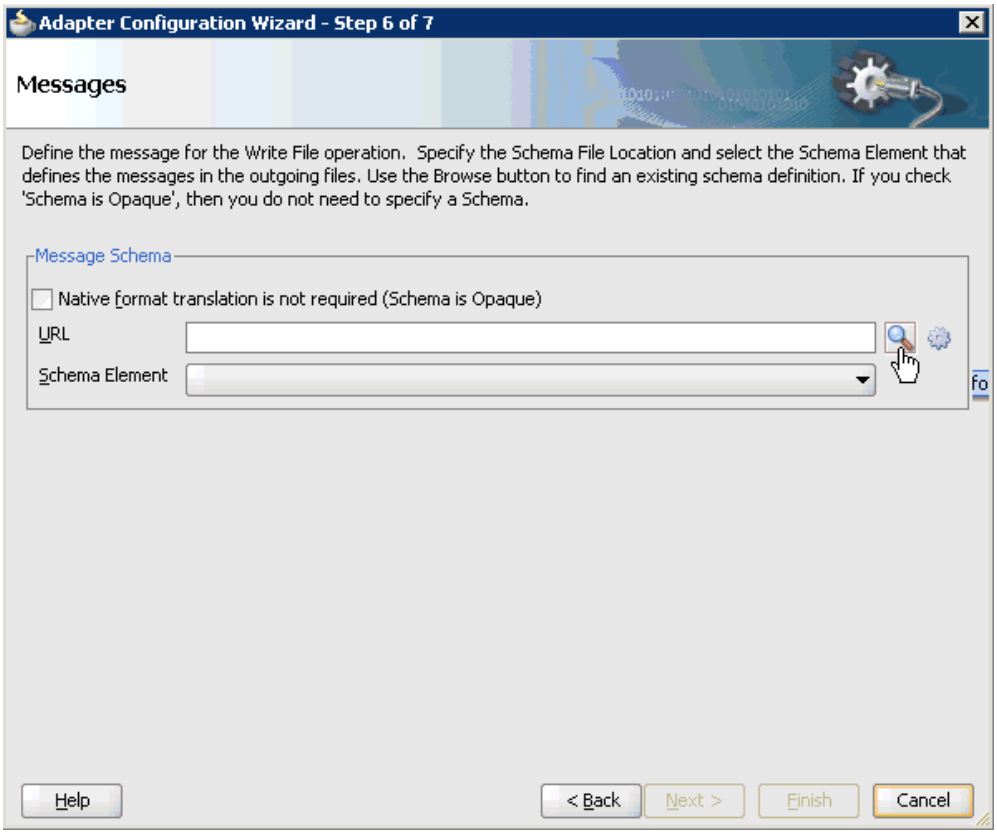
Figure 6–58 File Configuration Page



8. Specify a location on your file system where the output file is written.
9. In the File Naming Convention field, specify a name for the output file.
10. Click **Next**.

    The Messages page is displayed, as shown in Figure 6–59.

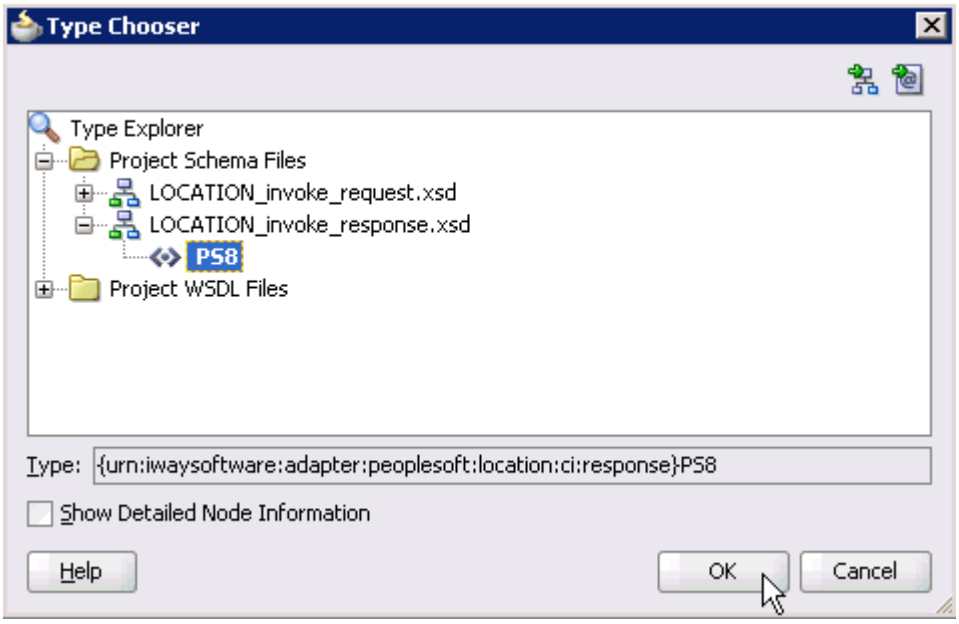
Figure 6–59 Messages Page



11. Click **Browse**, which is located to the right of the URL field.

The Type Chooser dialog is displayed, as shown in Figure 6–60.

Figure 6–60 Type Chooser Dialog

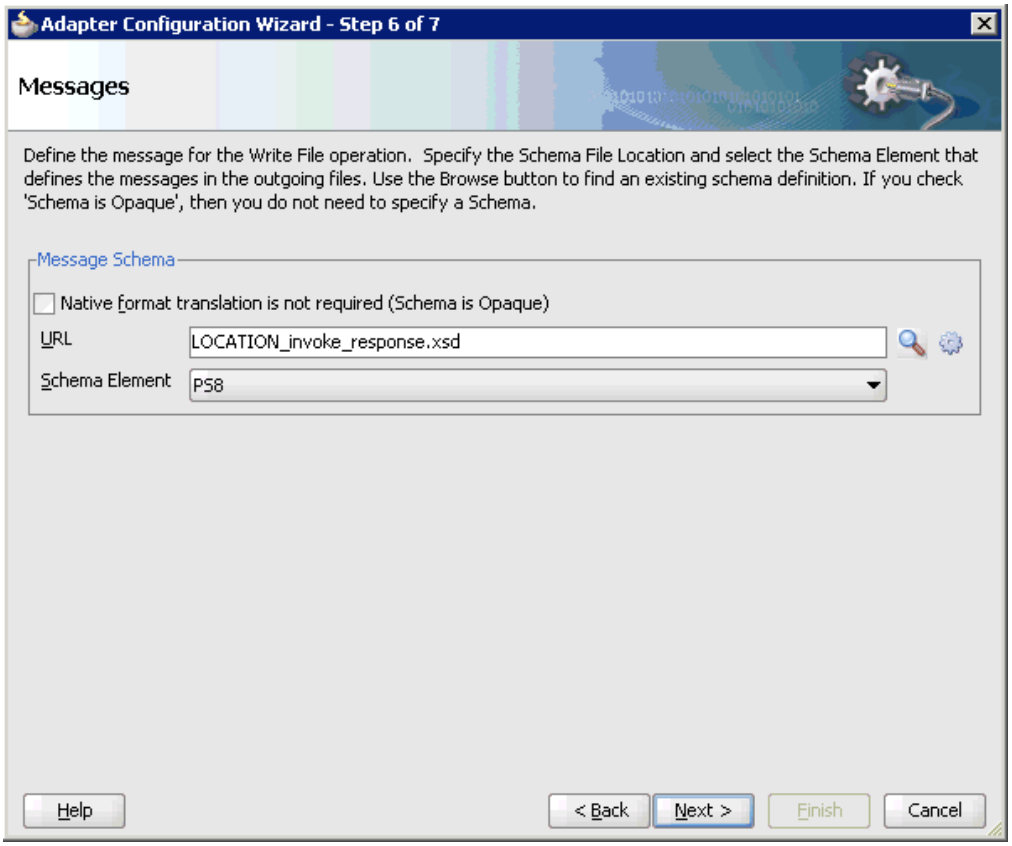


12. Expand **Project Schema Files** and **LOCATION_invoke_response.xsd**.

13. Select the available schema (for example, PS8).
14. Click **OK**.

    You are returned to the Messages page, as shown in Figure 6–61.

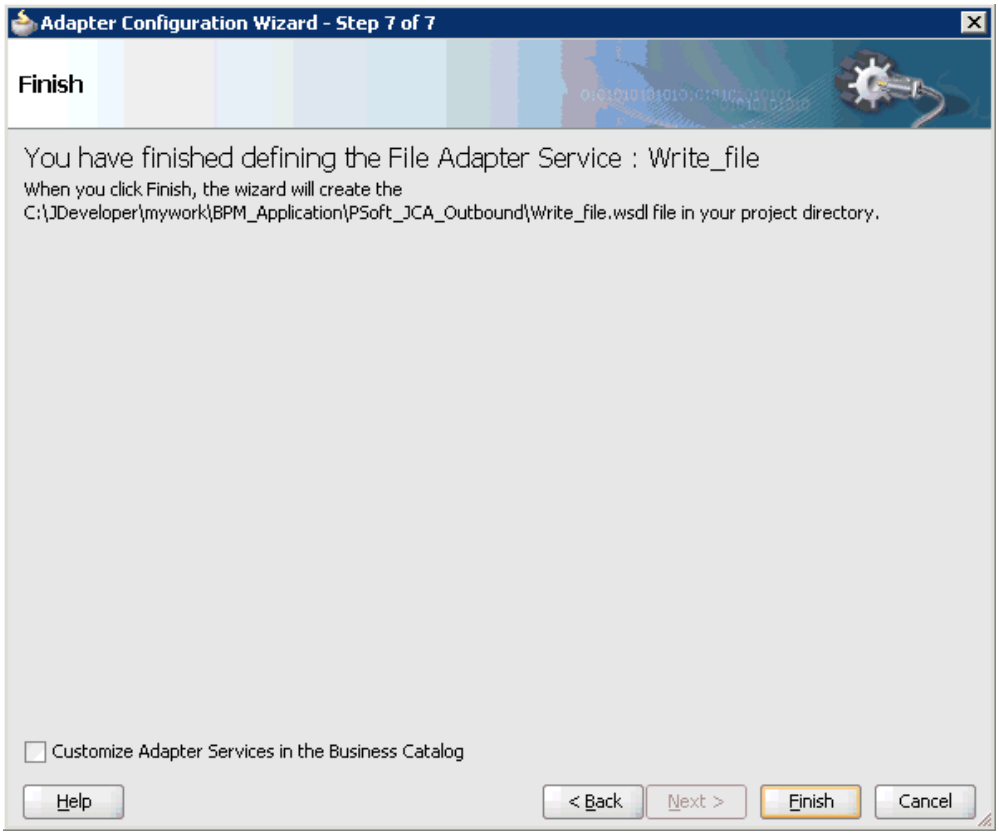
Figure 6–61 Messages Page



15. Click **Next**.

    The Finish page is displayed, as shown in Figure 6–62.

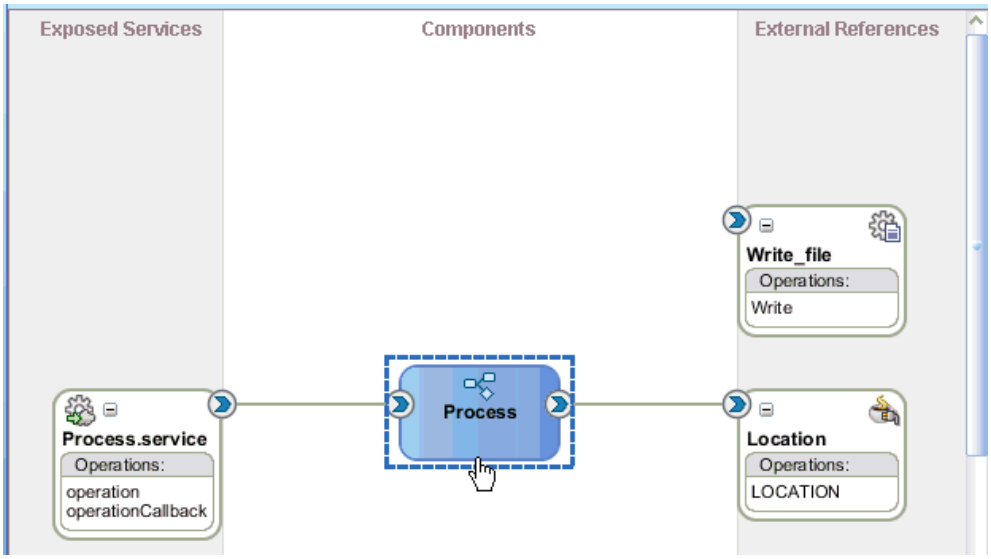
Figure 6–62 Finish Page



16. Click **Finish**.

The File Adapter service is created in the External References pane, as shown in Figure 6–63.

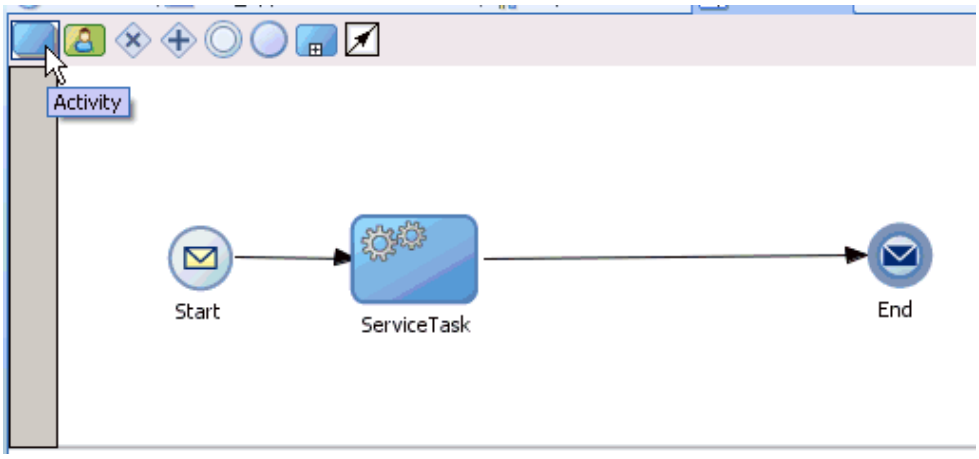
Figure 6–63 File Adapter Service



17. Double-click the BPMN Process component.

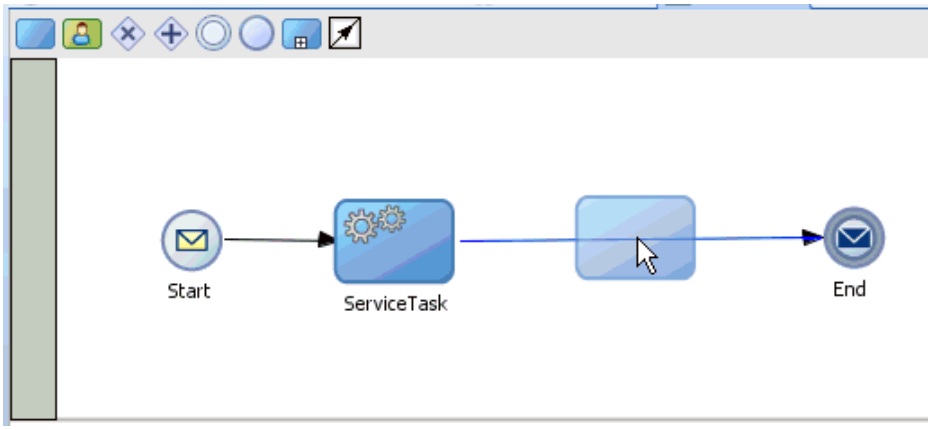
The BPMN process is displayed, as shown in Figure 6–64.

Figure 6–64 BPMN Process



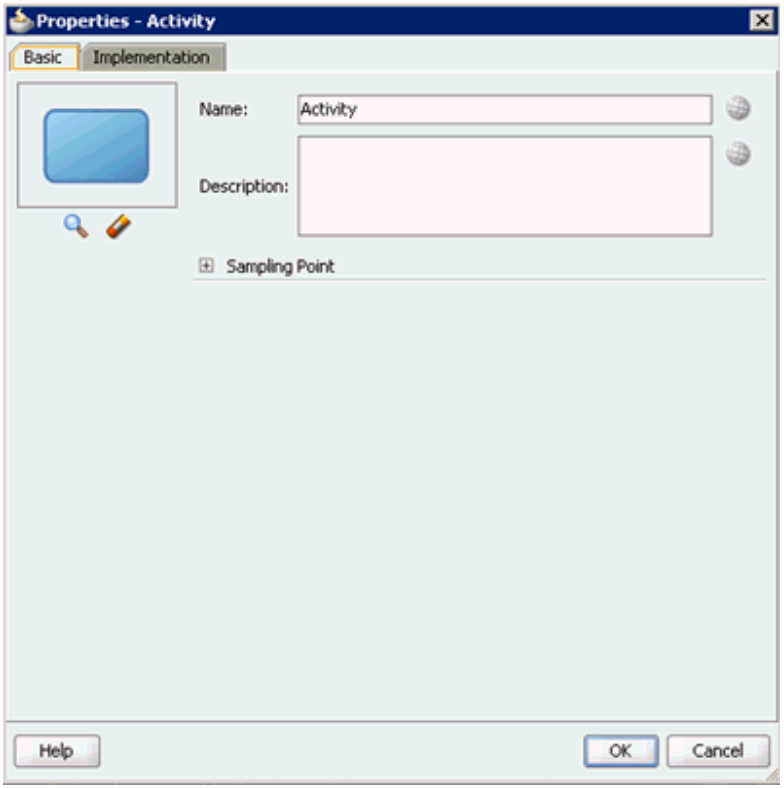
18. Click the **Activity** icon.
19. Drop the Activity icon on the wire between the Service Task and End event components, as shown in Figure 6–65.

Figure 6–65 Activity Icon



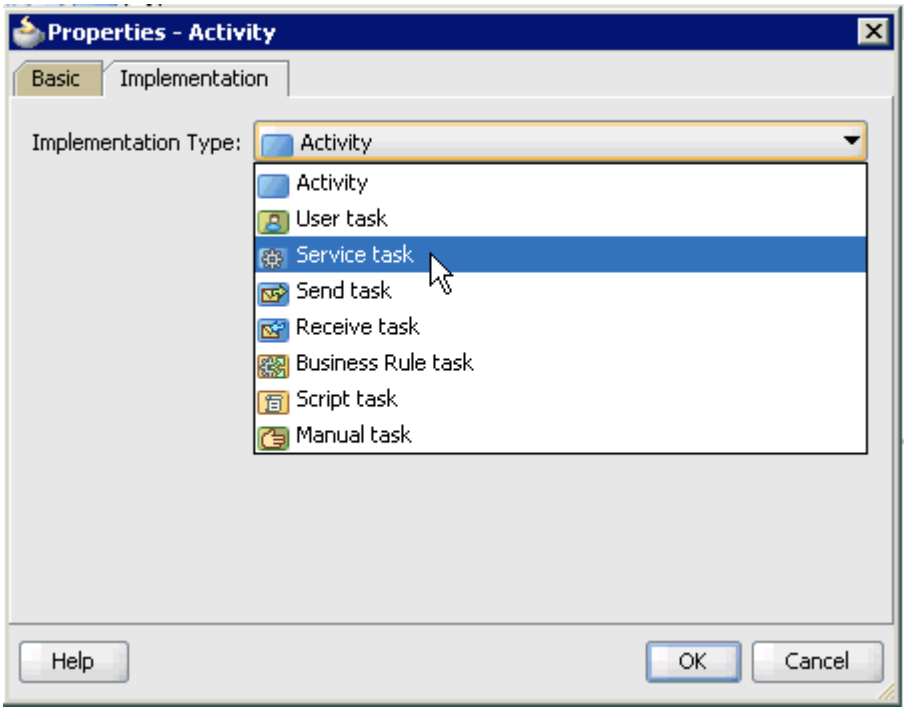
The Properties - Activity dialog is displayed, as shown in Figure 6–66.

Figure 6–66 Properties - Activity Dialog



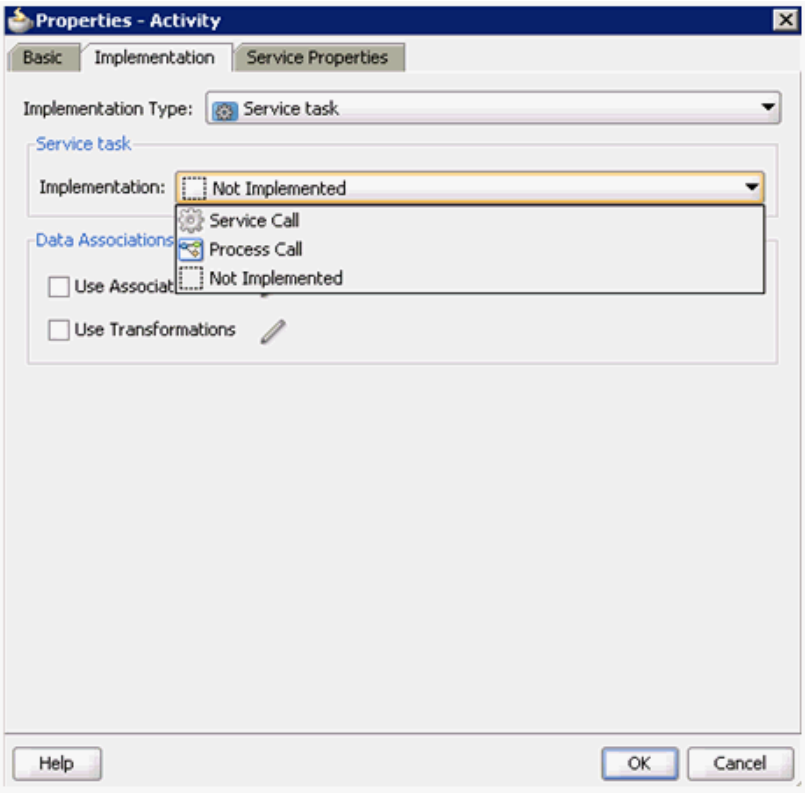
20. Click the **Implementation** tab.

Figure 6–67 Service Task



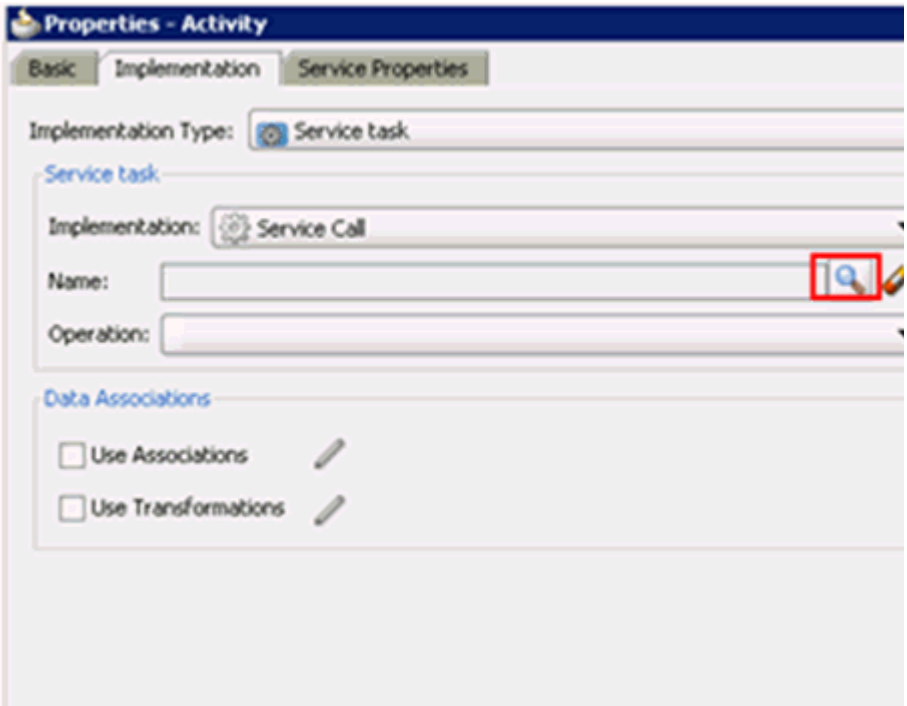
21. Select **Service Task** from the Implementation Type list, as shown in Figure 6–67.

Figure 6–68 Service Call



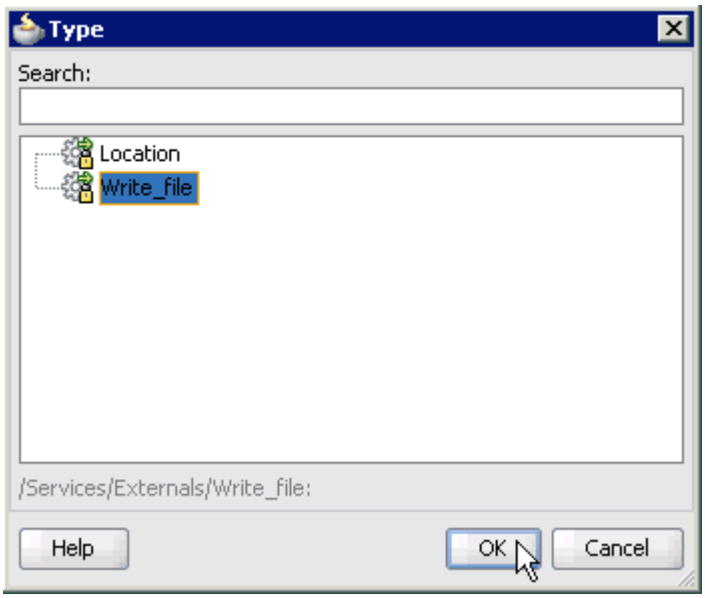
22. Select **Service Call** from the Implementation list, as shown in Figure 6–68.
23. Click the **Browse** icon to the right of the Name field, as shown in Figure 6–69.

Figure 6–69 Browse Icon



The Type dialog is displayed, as shown in Figure 6–70.

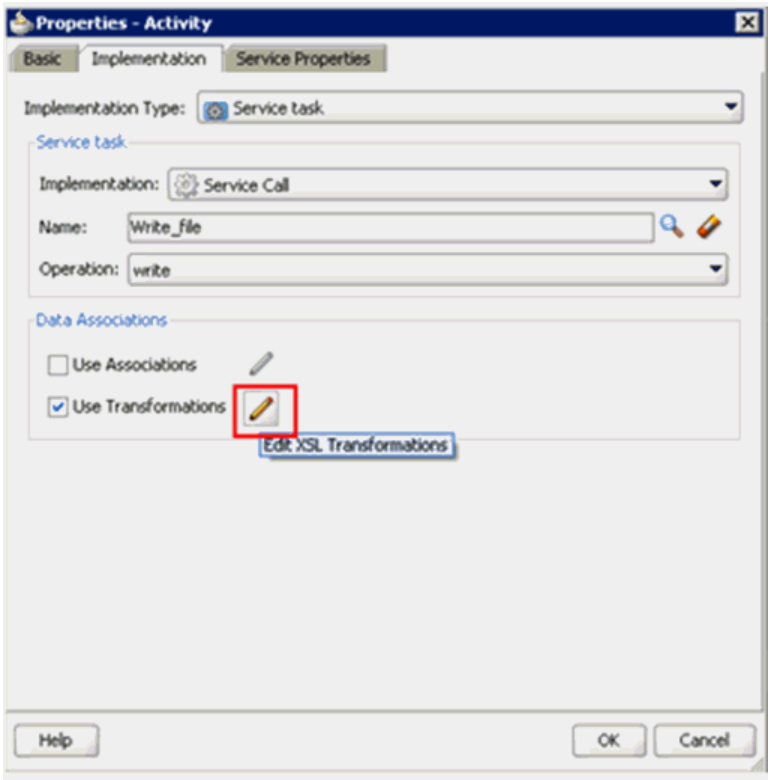
Figure 6–70 Type Dialog



24. Select the service for write operation that has been created (for example, Write_file) and click **OK**.

    You are returned to the Properties - ServiceTask1 dialog, as shown in Figure 6–71.

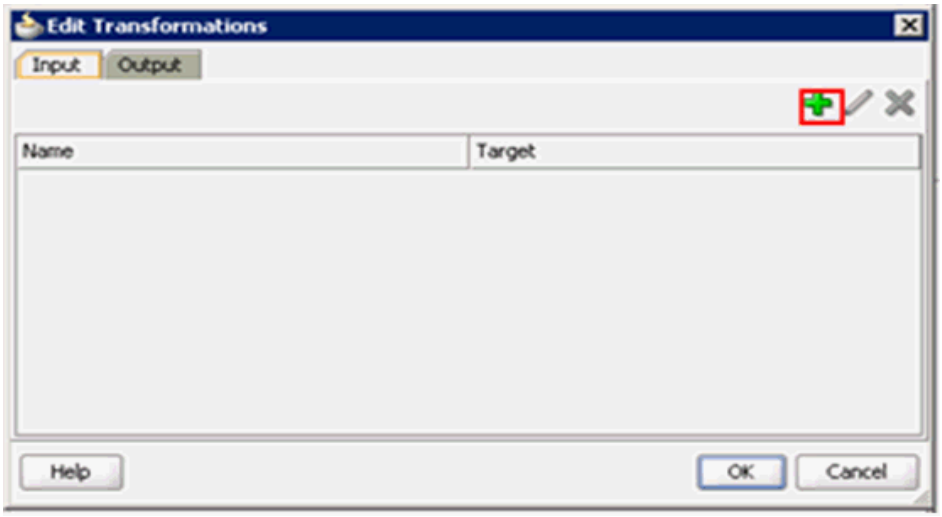
Figure 6–71 Properties - ServiceTask1 Dialog



25. Select the **Use Transformations** option that is located under Data Associations.
26. Click the **Edit Transformations** icon.

    The Edit Transformations dialog is displayed, as shown in Figure 6–72.

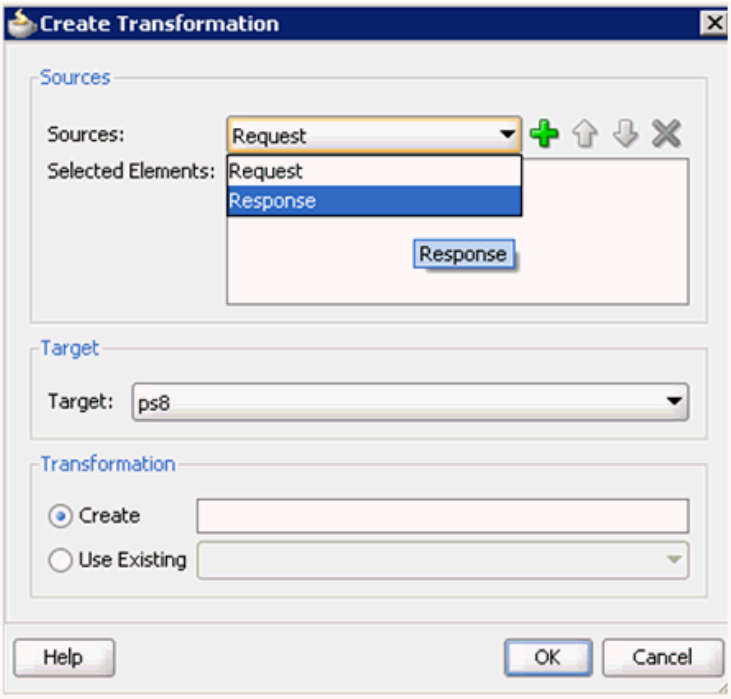
Figure 6–72 Edit Transformations Dialog



27. Click the **Plus** icon.

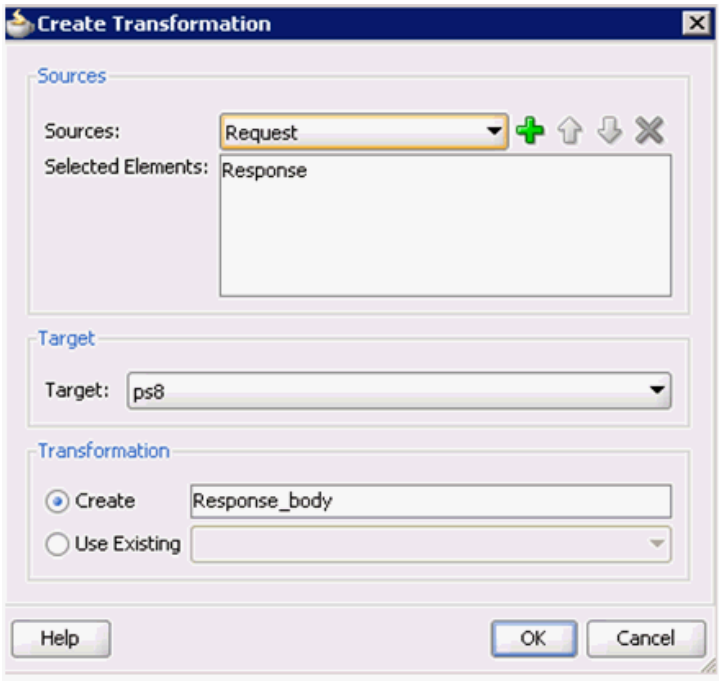
    The Create Transformation dialog is displayed, as shown in Figure 6–73.

Figure 6–73 Create Transformation Dialog



28. Select the **Response** Data Object that was created from the Sources list, as shown in Figure 6–74.

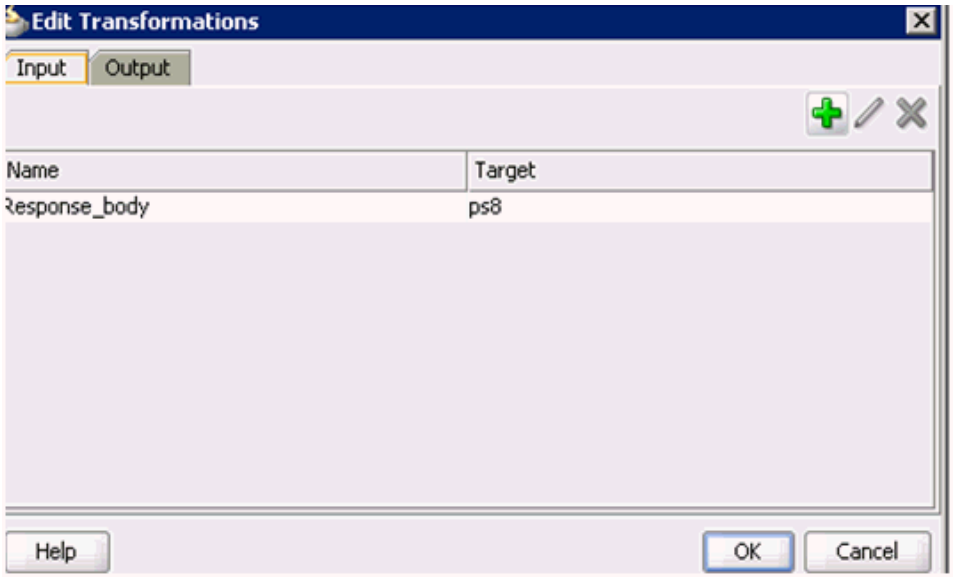
Figure 6–74 Create Transformation Dialog



29. Click the **Plus** icon so that the Data Object 'Response' is added to the Selected Elements area.
30. Accept the default value that is selected in the Target list, as shown in Figure 6–74.
31. Leave the default name displayed in the Create field and click **OK**.

    You are returned to the Edit Transformations dialog, as shown in Figure 6–75.

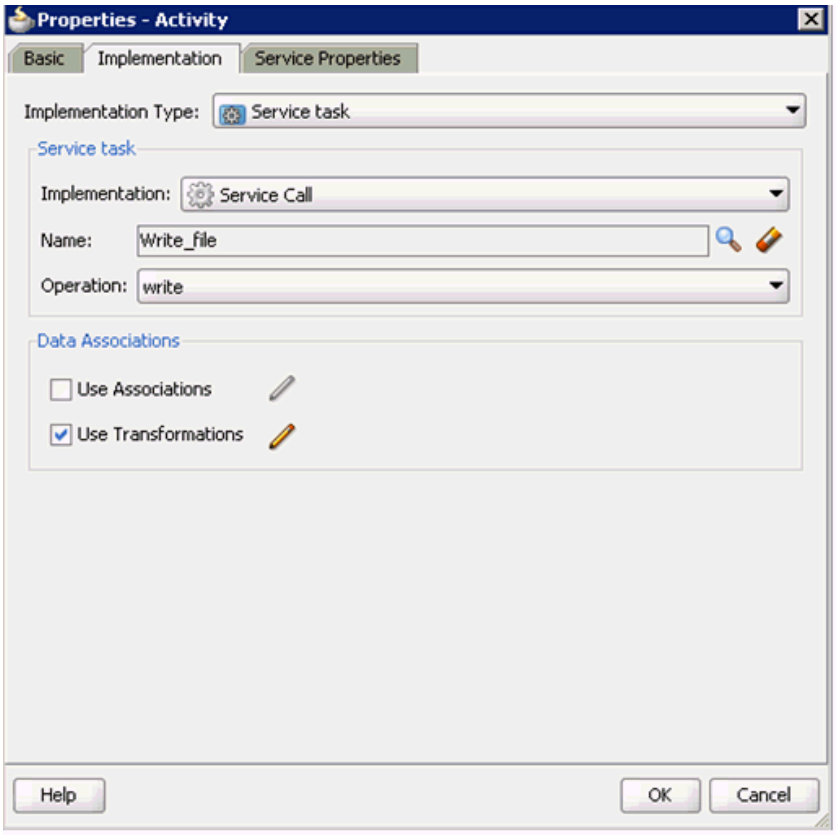
Figure 6–75 Edit Transformations Dialog



32. Click **OK**.

    You are returned to the Properties - Activity dialog, as shown in Figure 6–76.

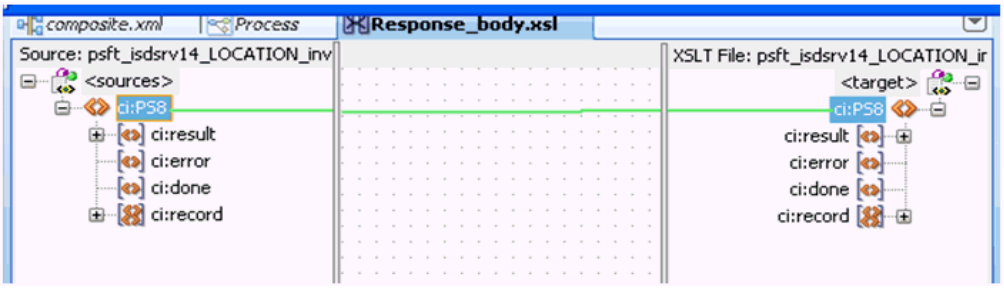
Figure 6–76 Properties - Activity Dialog



33. Click **OK**.

The Response_body.xsl tab is displayed, as shown in Figure 6–77.

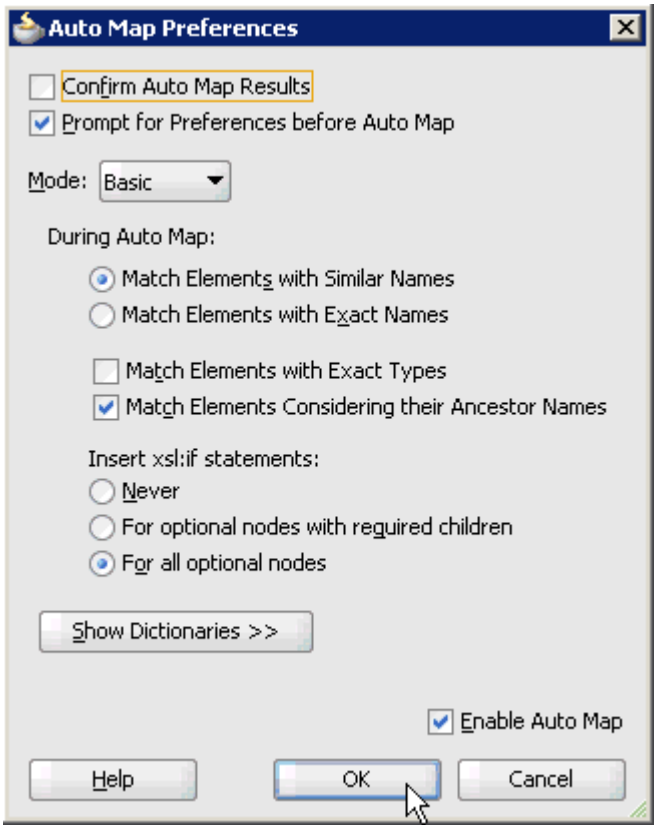
Figure 6–77 Response_body.xsl Tab



34. Automap the Source and Target elements.

The Auto Map Preferences dialog is displayed, as shown in Figure 6–78.

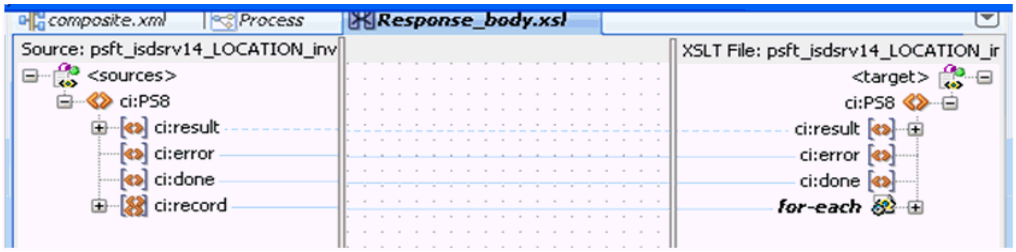
Figure 6–78 Auto Map Preferences Dialog



35. Accept the default values and click **OK**.

The transformation is completed, as shown in Figure 6–79.

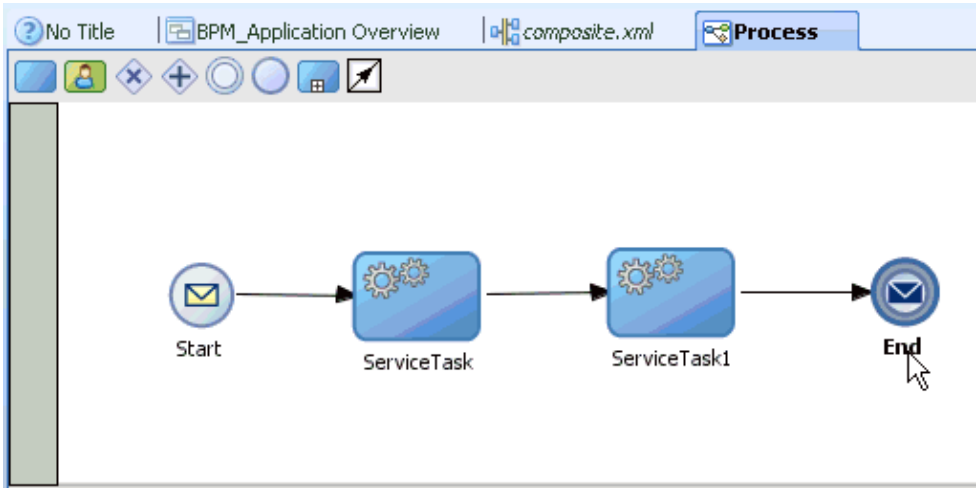
Figure 6–79 Completed Transformation



36. Save the transformation.

37. Return to the Process workspace area, as shown in Figure 6–80.

Figure 6–80 Process Workspace Area

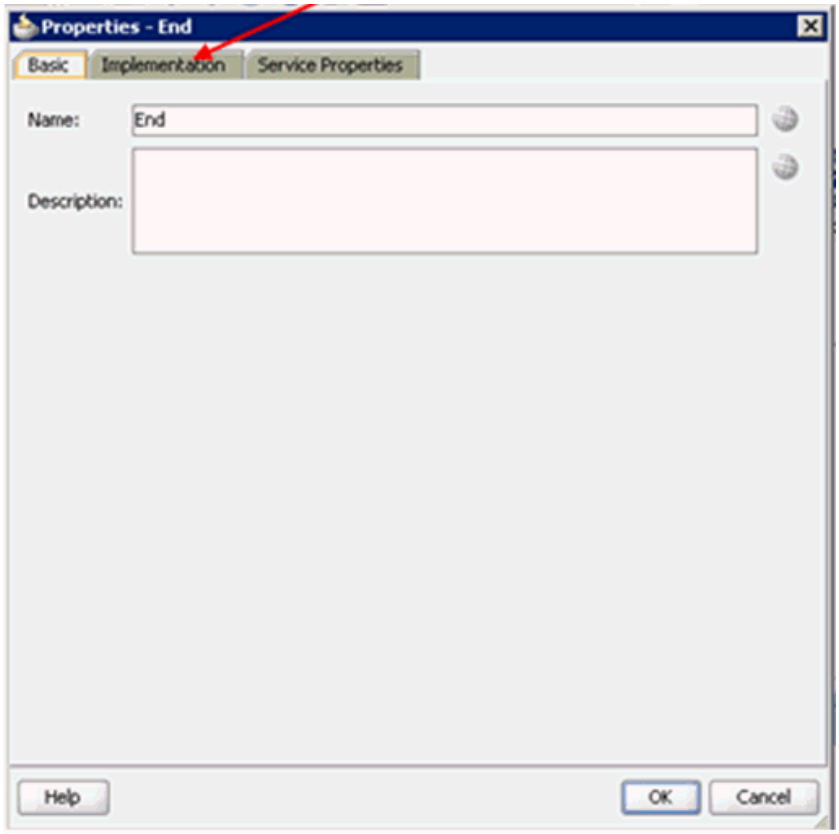


The ServiceTask1 component is created between the ServiceTask component and the End event component.

38. Save the process.
39. Double-click the **End** event component.

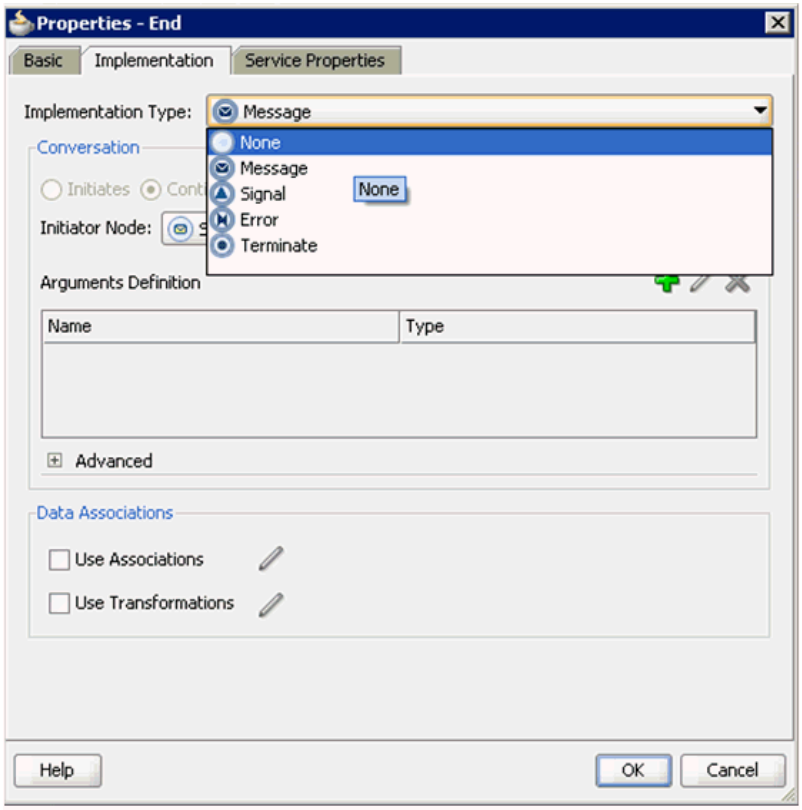
    The Properties - End dialog is displayed, as shown in Figure 6–81.
40. Click the **Implementation** tab.

Figure 6–81 Properties - End Dialog



41. Select **None** from the Implementation Type list, as shown in Figure 6–82.

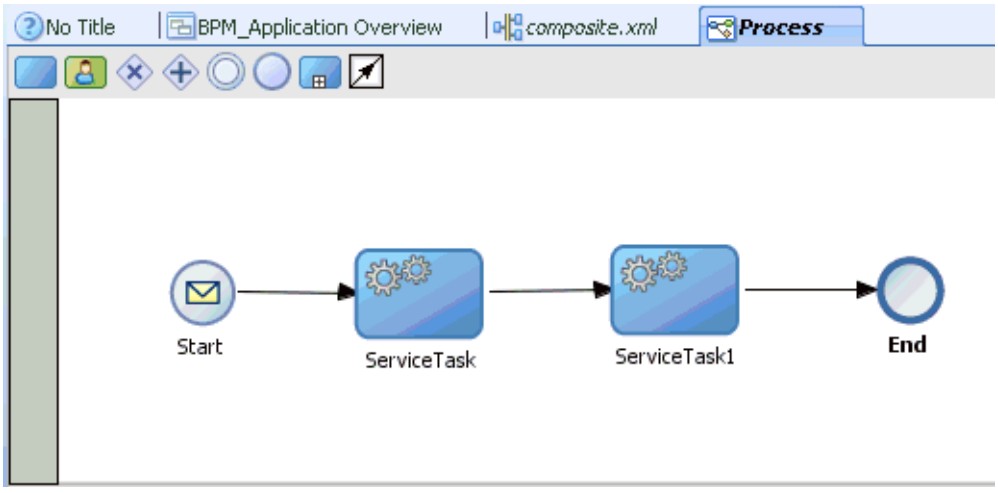
Figure 6–82 Implementation Type List



42. Click **OK**.

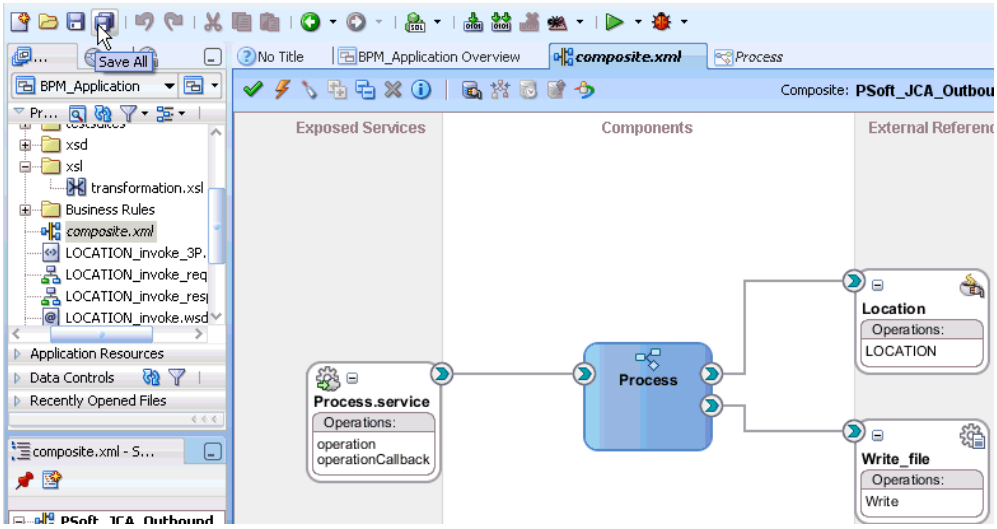
    You are returned to the Process workspace area, as shown in Figure 6–83.

Figure 6–83 Process Workspace Area



43. Save the Process and double-click the **composite.xml** file, as shown in Figure 6–84.

Figure 6–84 Composite.xml File



44. Click the **Save All** icon in the menu bar to save the new outbound BPM process component that was configured.

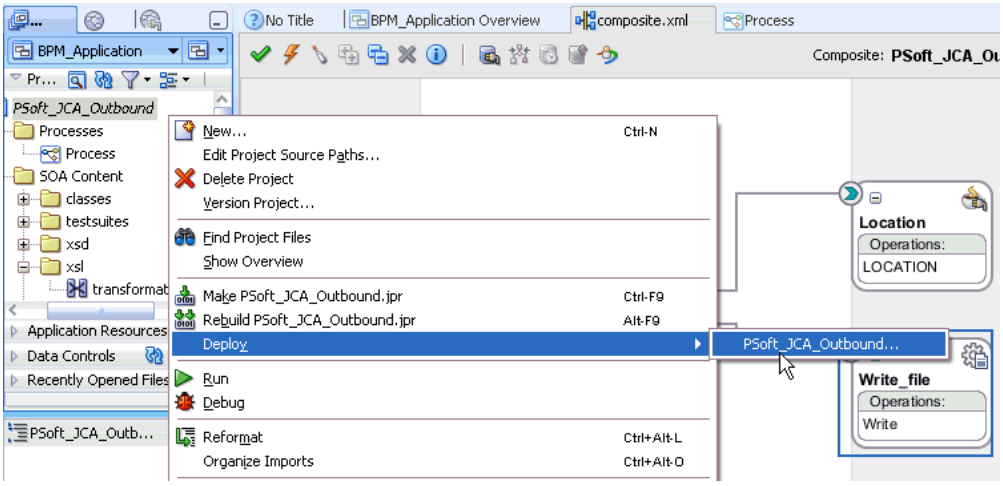
You are now ready to deploy the outbound BPM process.

6.4.3 Deploying the BPM Outbound Process

Perform the following steps to deploy the BPM outbound process.

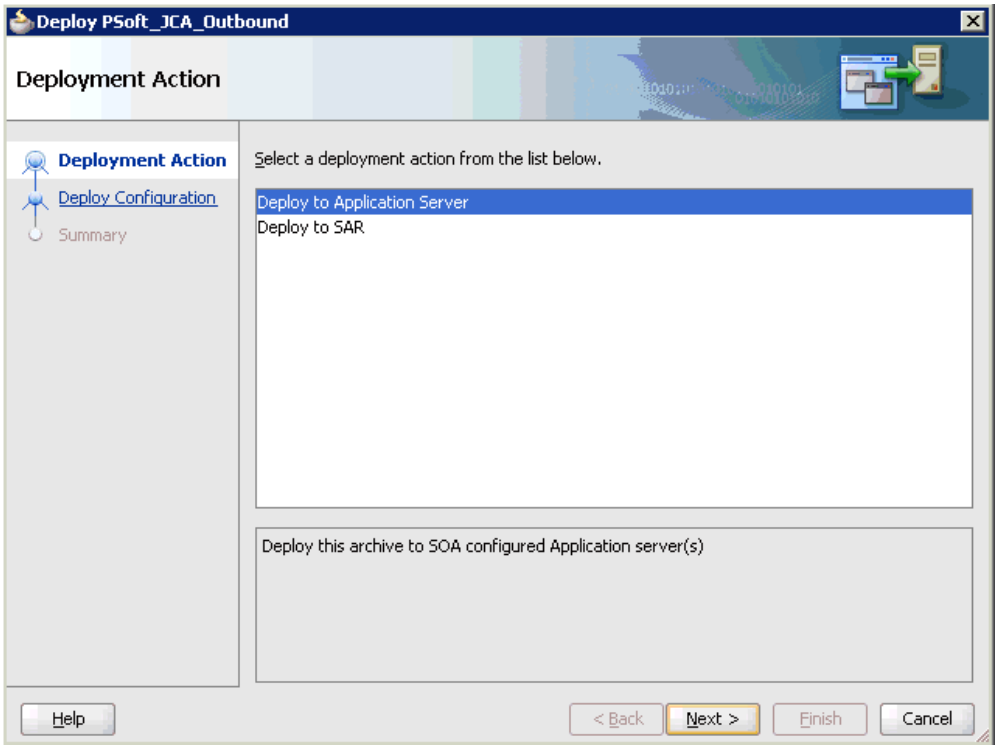
1. Right-click the project name in the left pane (for example, **PSoft_JCA_Outbound**), select **Deploy**, and then click **PSoft_JCA_Outbound**, as shown in Figure 6–85.

Figure 6–85 Deploy Option



The Deployment Action page is displayed, as shown in Figure 6–86.

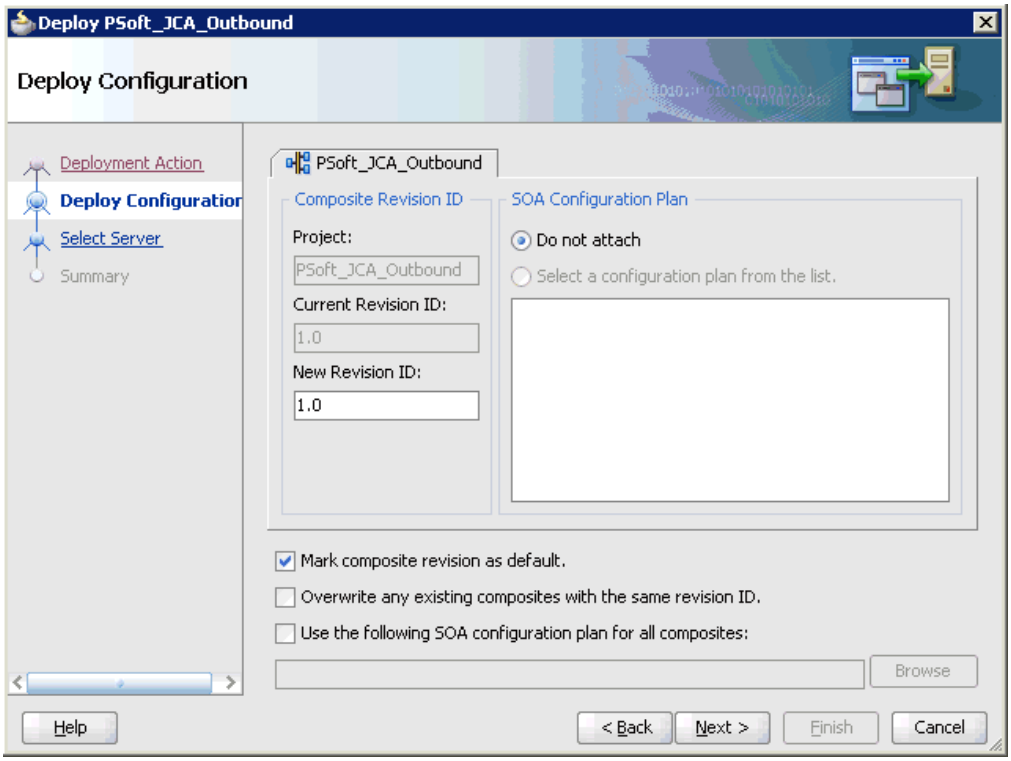
Figure 6–86 Deployment Action Page



2. Ensure that **Deploy to Application Server** is selected.
3. Click **Next**.

   The Deploy Configuration page is displayed, as shown in Figure 6–87.

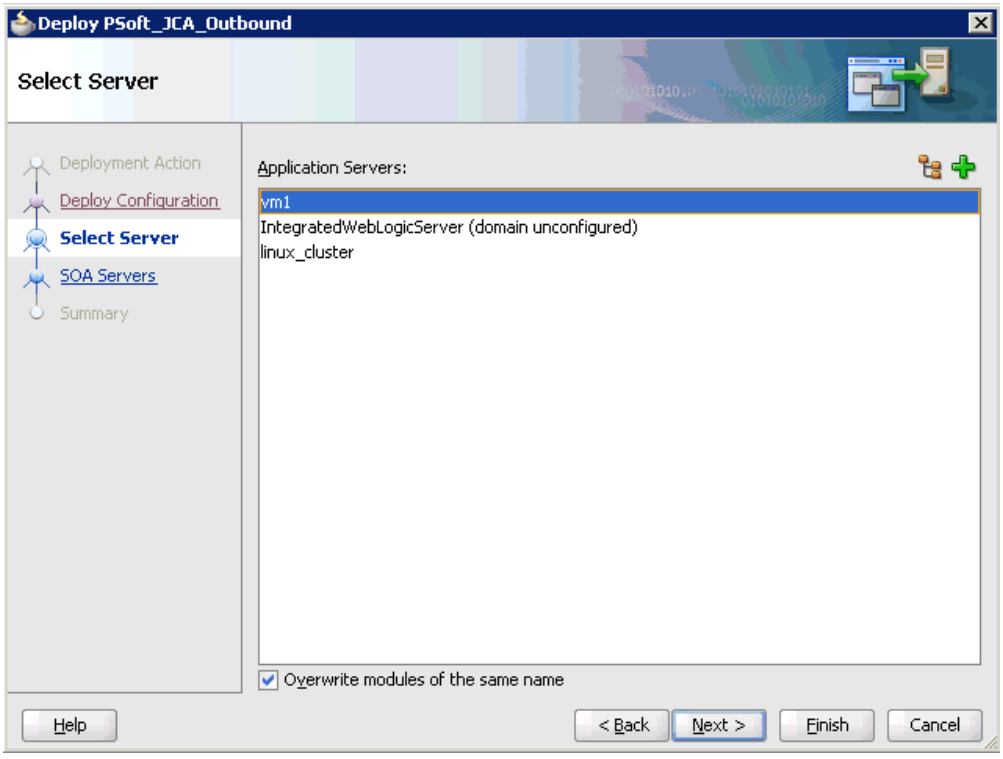
Figure 6–87 Deploy Configuration Page



4. Leave the default values selected and click **Next**.

   The Select Server page is displayed, as shown in Figure 6–88.

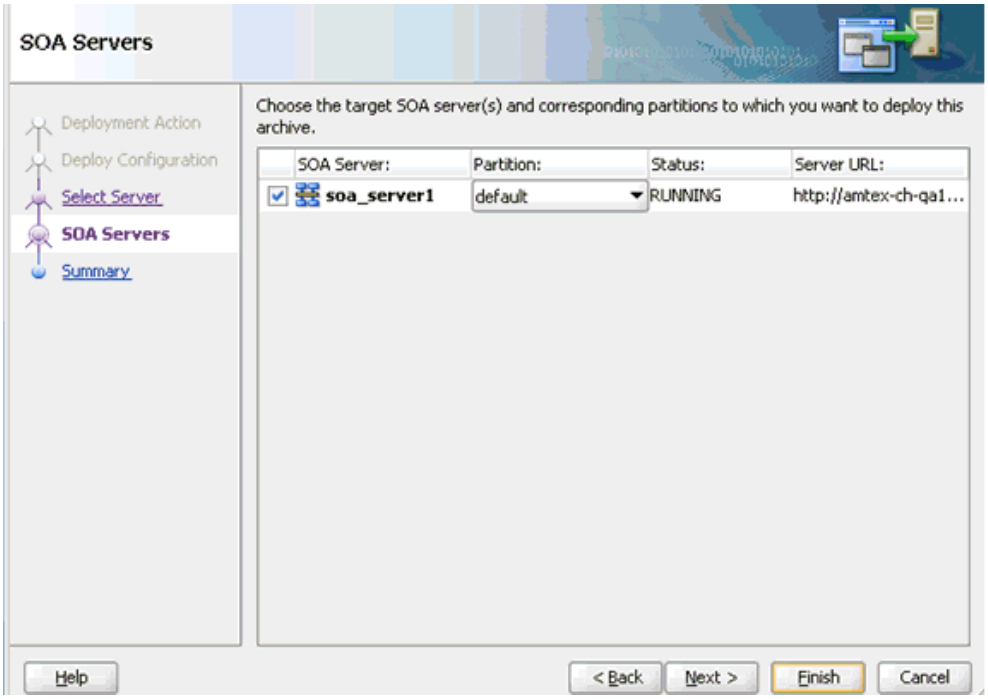
Figure 6–88 Select Server Page



5. Select an available application server that was configured and click **Next**.

   The SOA Servers page is displayed, as shown in Figure 6–89.

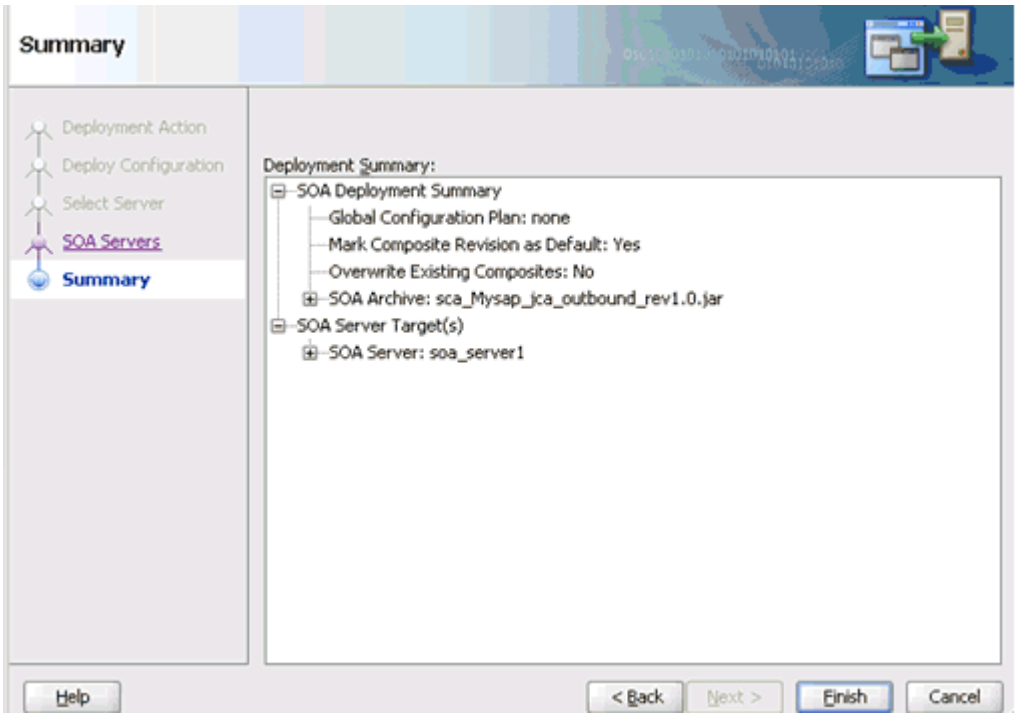
Figure 6–89 SOA Servers Page



6. Select a target SOA server and click **Next**.

   The Summary page is displayed, as shown in Figure 6–90.

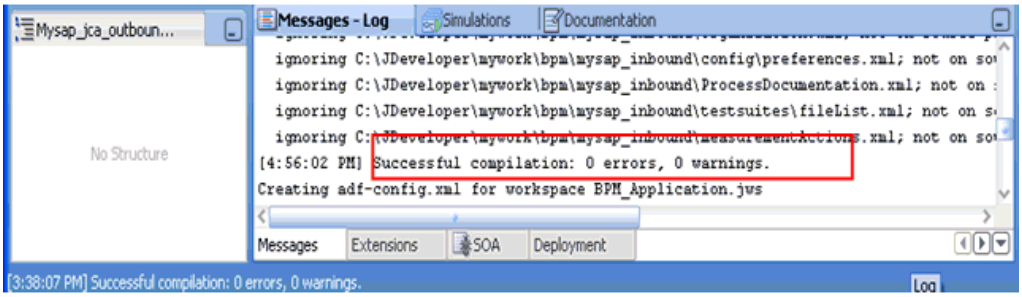
Figure 6–90 Summary Page



7. Review and verify all the available deployment information for your project and click **Finish**.

   The process is deployed successfully, as shown in Figure 6–91.

Figure 6–91 Successful Deployment Message



6.4.4 Invoking the Input XML Document in the Oracle Enterprise Manager Console

Perform the following steps to invoke the input XML document in the Oracle Enterprise Manager console.

1. Logon to the Oracle Enterprise Manager console, as shown in Figure 6–92.

Figure 6–92 Oracle Enterprise Manager Console

2. Expand your domain in the left pane followed by the **SOA** folder.
3. Select an available project (for example, PSoft_JCA_Outbound).
4. Click **Test**.
5. Click the **Request** tab.
6. Provide an appropriate input value in the Value field and click **Test Web Service**.

   A response is received in the Response tab to indicate that invocation was successful in the Oracle Enterprise Manager console.
7. Navigate to the defined output directory on your file system and open the XML response document that was received.

   The XML response document contains the generated output with values.

6.5 Designing an Inbound BPM Process Using Transformations for Event Integration

This section demonstrates how Oracle Application Adapter for PeopleSoft integrates with PeopleSoft to receive event data.

Samples have been provided for this usecase scenario in the `etc/sample folder` in the Application Adapters installation.

The following tools are required to complete your adapter design-time configuration:

- Oracle Adapter Application Explorer (Application Explorer)
- Oracle JDeveloper BPM Designer (JDeveloper) or Eclipse

> **Note:** The examples in this chapter demonstrate the use of JDeveloper.

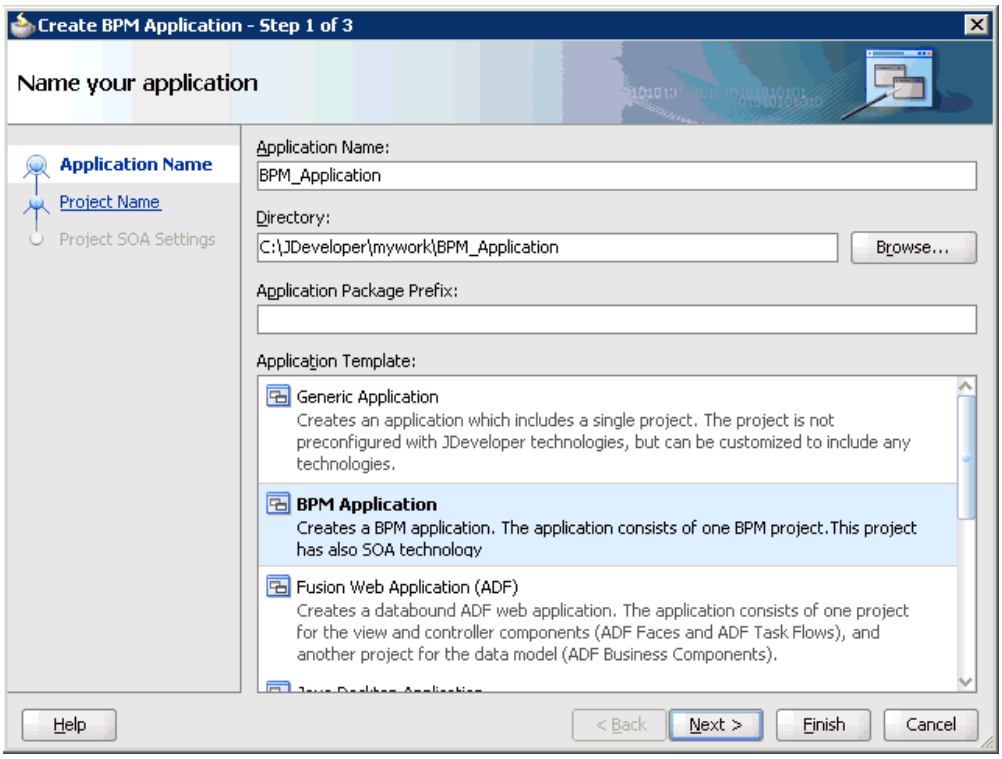
Before you design a BPM process, you must generate the respective WSDL file using Application Explorer. For more information, see "Generating WSDL for Event Integration" on page 4-41.

6.5.1 Creating an Empty Composite for BPM

Perform the following steps to create an empty composite for BPM:

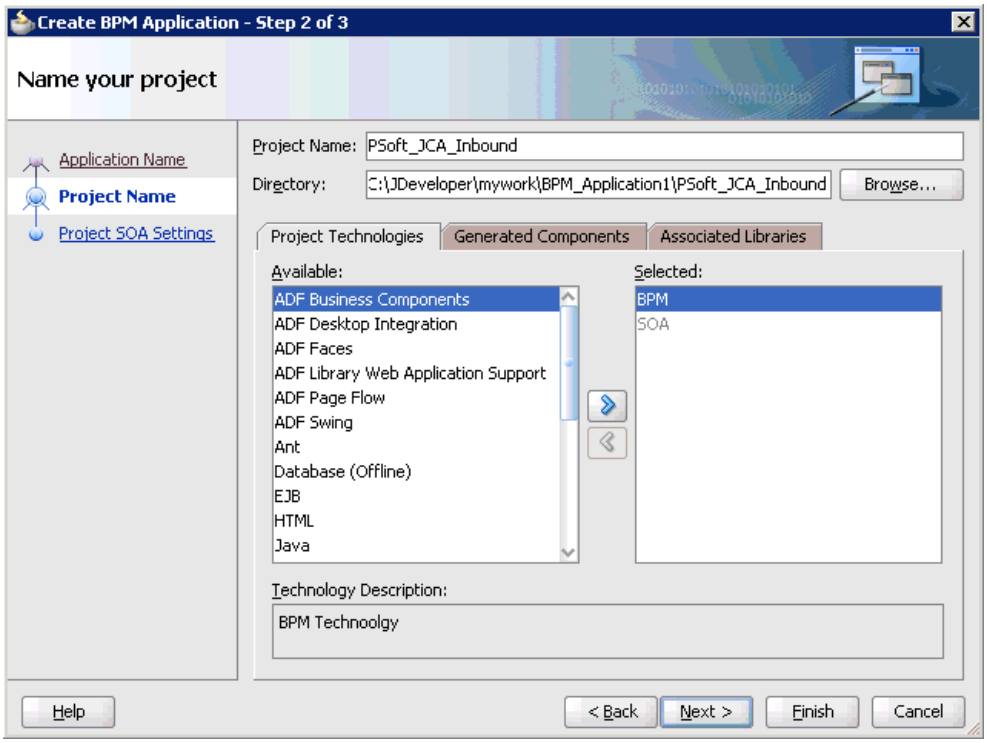
1. Create a new BPM application.
2. Enter a name for the new BPM application and click **Next**, as shown in Figure 6–93.

Figure 6–93 Name Your Application Page



The Name your project page is displayed, as shown in Figure 6–94.

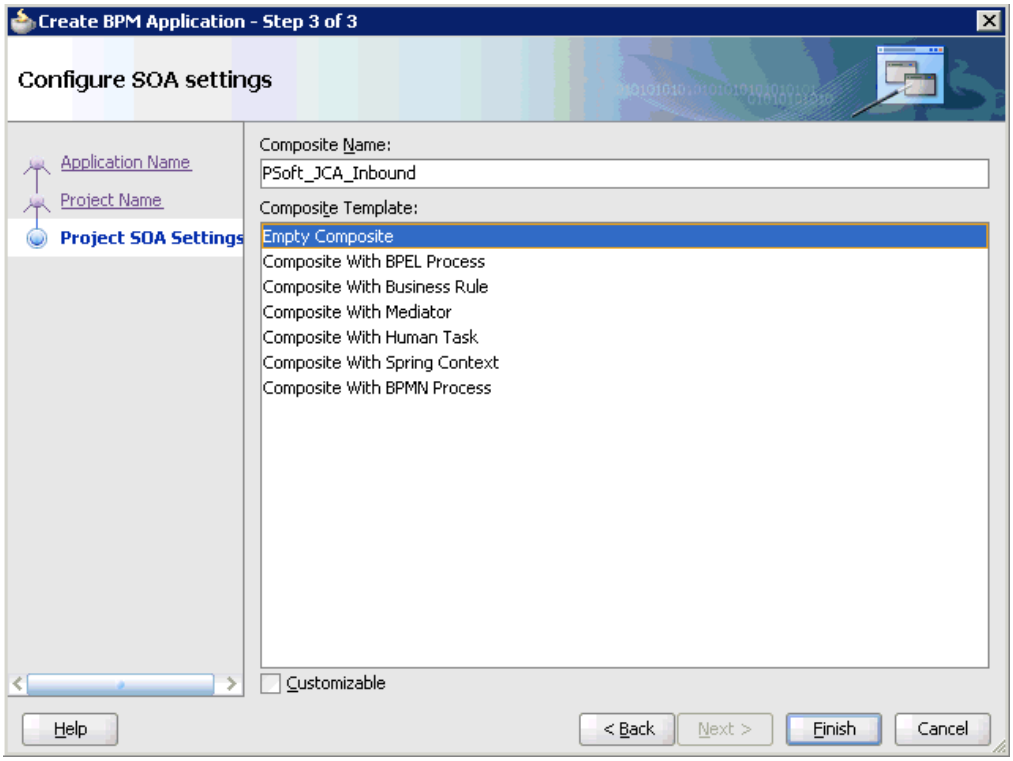
Figure 6–94 Name Your Project Page



3. Enter a project name (for example, PSoft_JCA_Inbound) and click **Next**.

   The Configure SOA settings page is displayed, as shown in Figure 6–95.

Figure 6–95 Configure SOA Settings Page



4. From the Composite Template list, select **Empty Composite** and click **Finish**.

6.5.2 Defining a BPM Inbound Process

This section describes how to define a BPM inbound process, which consists of the following stages:

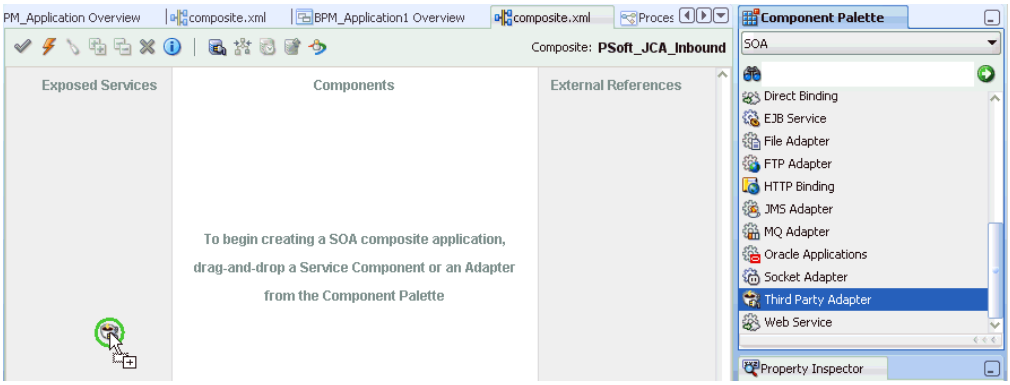
1. Configuring a Third Party Adapter Service Component
2. Configuring an Inbound BPM Process Component
3. Creating a File Adapter for the Write Operation

Configuring a Third Party Adapter Service Component

Perform the following steps to create a third party adapter service component:

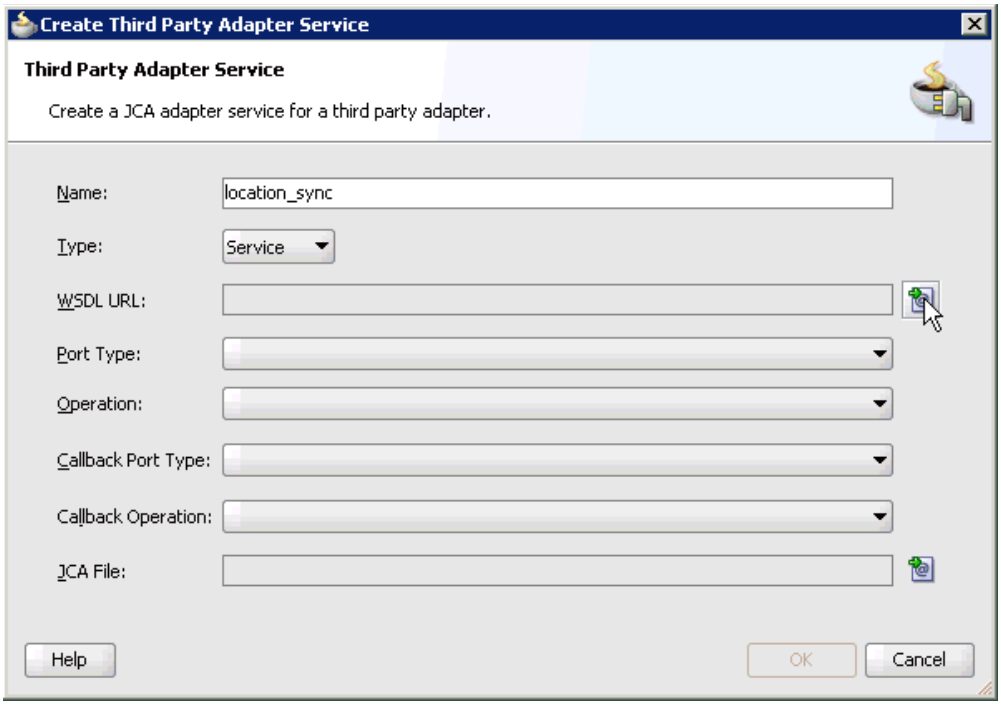
1. Drag and drop the **Third Party Adapter** component from the Service Adapters pane to the **Exposed Services** pane, as shown in Figure 6–96.

Figure 6–96 Third Party Adapter Component



The Create Third Party Adapter Service dialog is displayed, as shown in Figure 6–97.

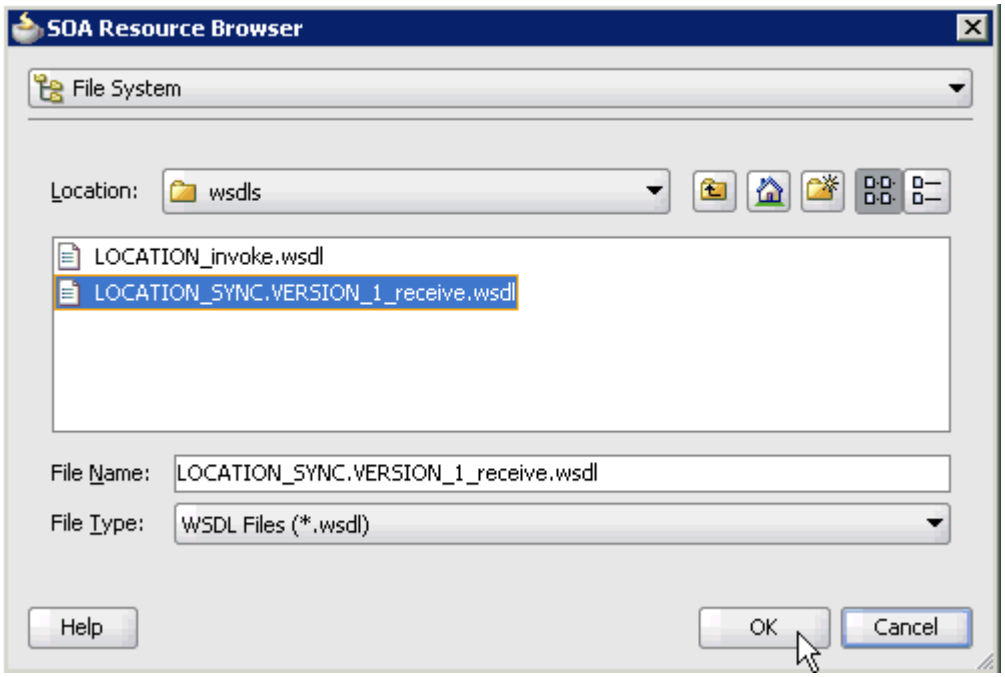
Figure 6–97 Create Third Party Adapter Service Dialog



2. Enter a name for the third party adapter service.
3. Ensure that **Service** is selected from the Type list (default).
4. Click the **Find existing WSDLs** icon, which is located to the right of the WSDL URL field.

   The SOA Resource Browser dialog is displayed, as shown in Figure 6–98.

Figure 6–98 SOA Resource Browser Dialog



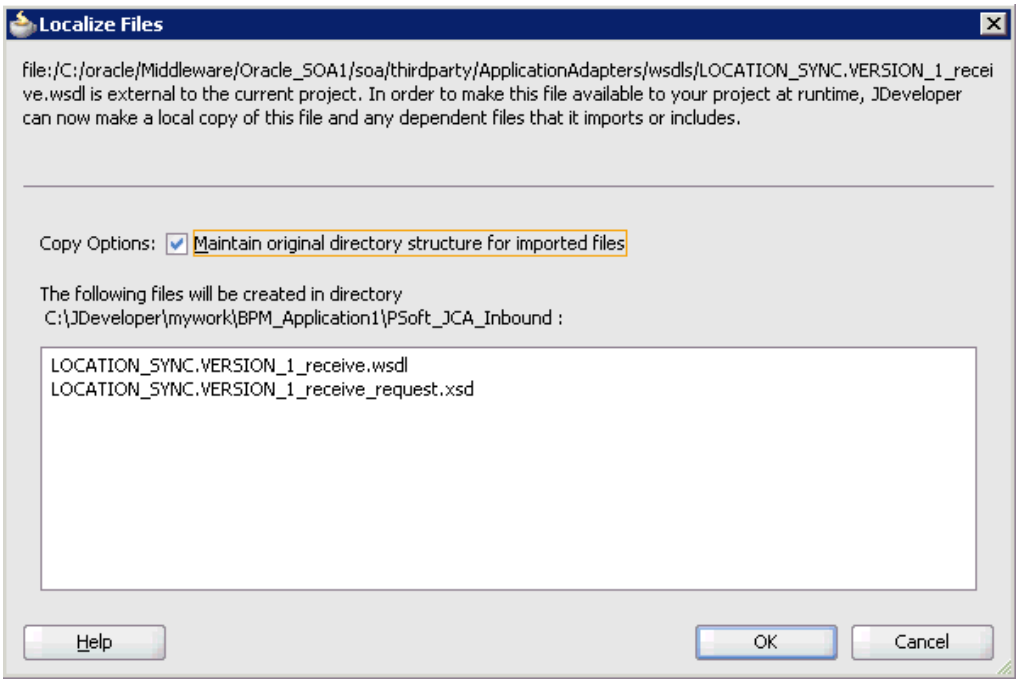
5. Browse and select an inbound WSDL file from the following directory:

   `<ADAPTER_HOME>\soa\thirdparty\ApplicationAdapters\wsdls`

6. Click **OK**.

   The Localize Files dialog is displayed, as shown in Figure 6–99.

Figure 6–99 Localize Files Dialog

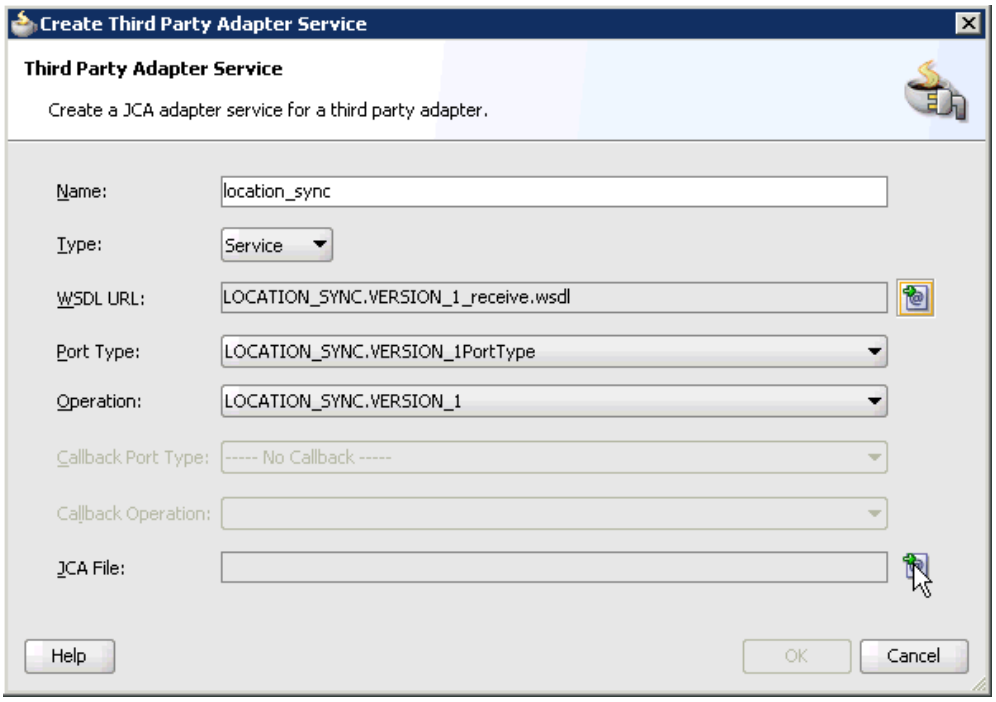


7. Click **OK**.

   The inbound WSDL file and associated receive_request XML schema file (.xsd) are imported to the project folder that has been created.

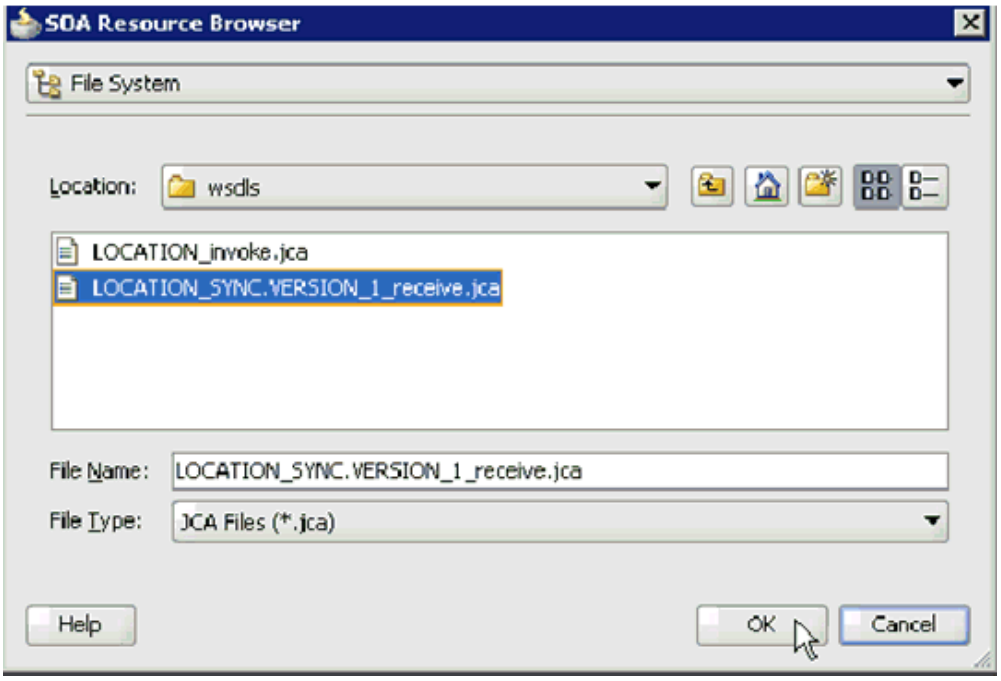
   You are returned to the Create Third Party Adapter Service dialog, as shown in Figure 6–100.

Figure 6–100 Create Third Party Adapter Service Dialog



8. Click the **Find JCA file** icon, which is located to the right of the JCA File field. The SOA Resource Browser dialog is displayed, as shown in Figure 6–101.

Figure 6–101 SOA Resource Browser Dialog



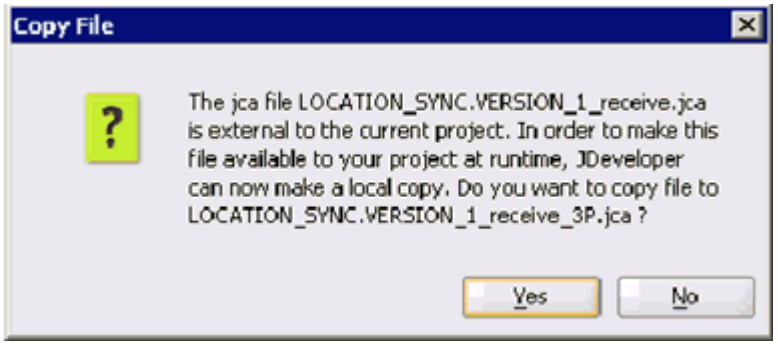
9. Browse and select the JCA properties file from the following directory:

   <ADAPTER_HOME>\soa\thirdparty\ApplicationAdapters\wsdls

10. Click **OK**.

    The following message is displayed, as shown in Figure 6–102.

Figure 6–102 Copy File Confirmation Message

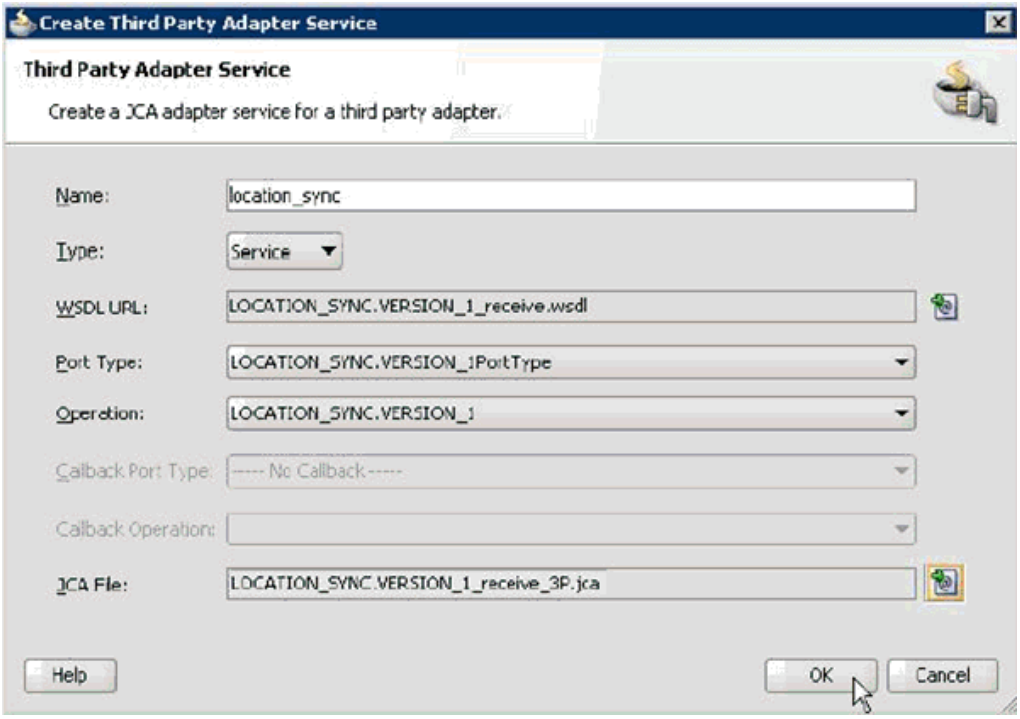


11. Click **Yes**.

    A copy of the JCA properties file is made in the project folder.

    You are returned to the Create Third Party Adapter Service dialog, as shown in Figure 6–103.

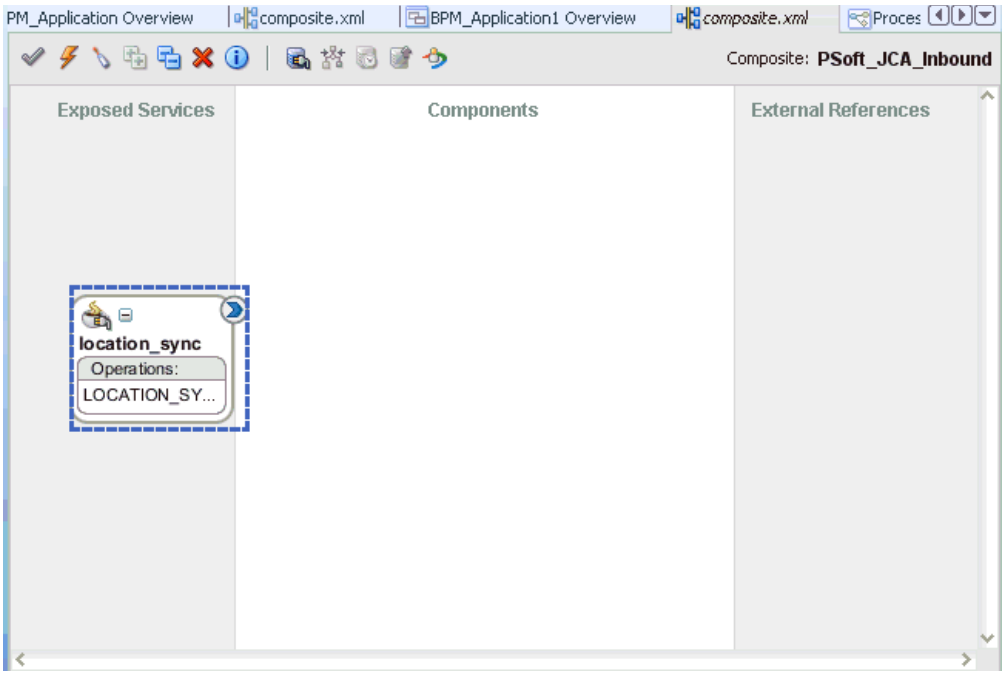
Figure 6–103 Create Third Party Adapter Service Dialog



12. Click **OK**.

    The third party adapter service component (location_sync) is created in the Exposed References pane, as shown in Figure 6–104.

Figure 6–104 Third Party Adapter Service Component



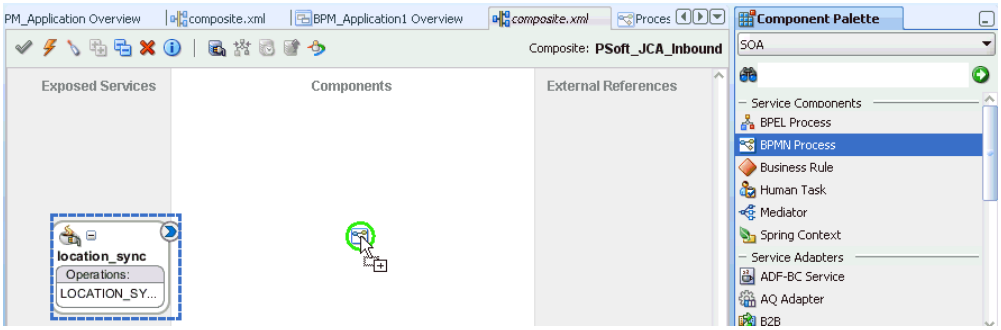
You are now ready to configure an inbound BPM process component.

Configuring an Inbound BPM Process Component

Perform the following steps to configure an inbound BPM process component:

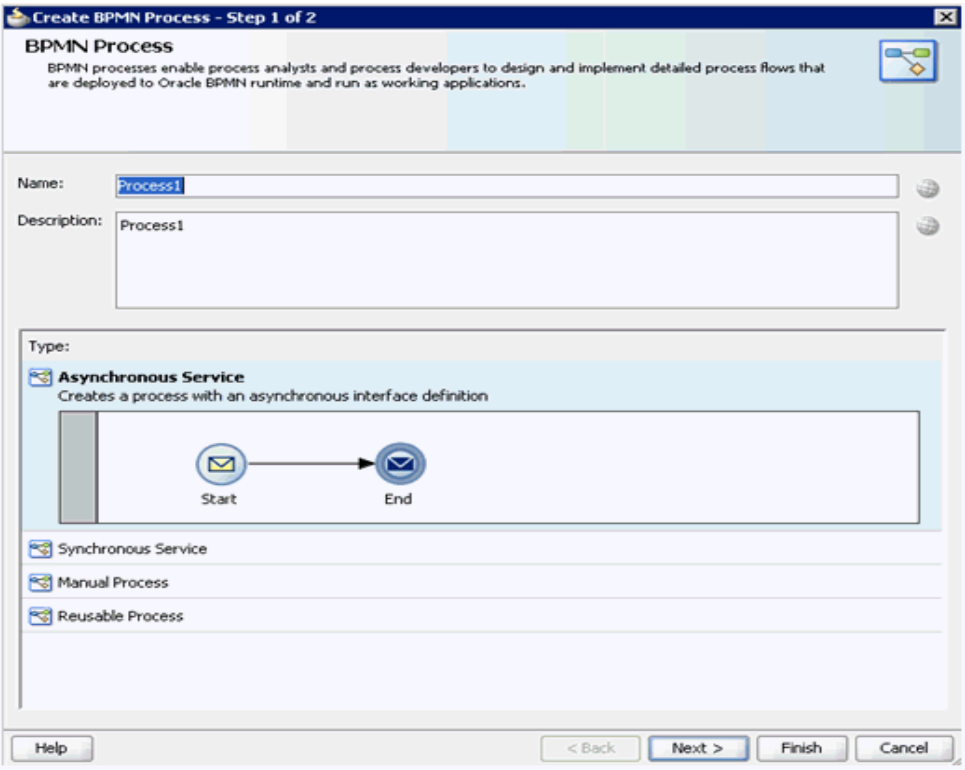
1. Drag and drop the **BPMN Process** component from the Service Components pane to the Components pane, as shown in Figure 6–105.

Figure 6–105 BPMN Process Component



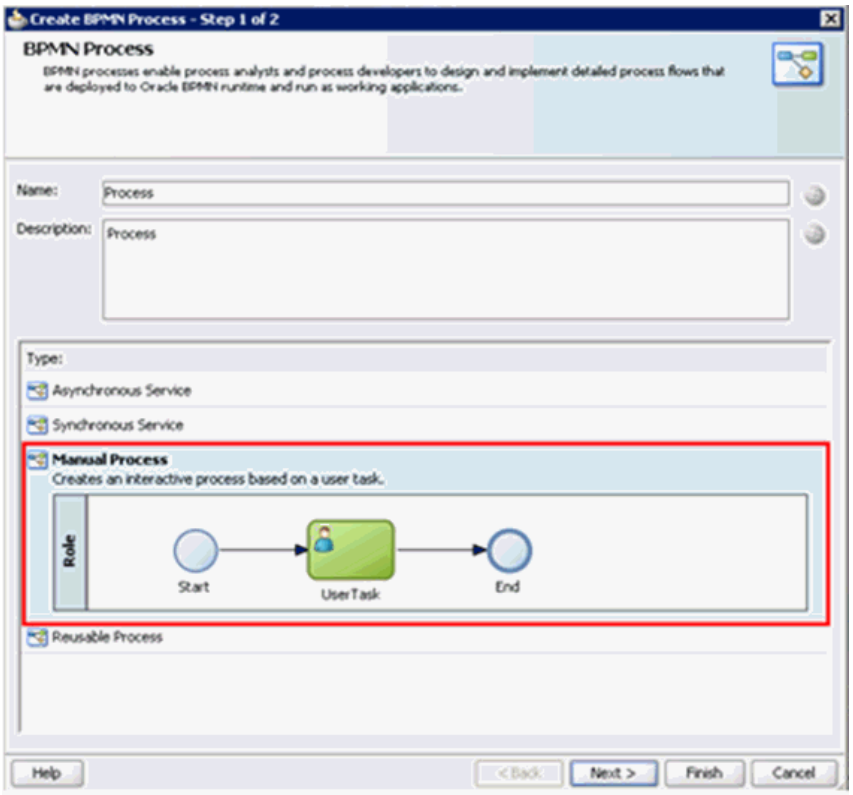
The Create BPMN Process dialog is displayed, as shown in Figure 6–106.

Figure 6–106 Create BPMN Process Dialog



2. Click on the **Manual Process** in the Type field as shown in Figure 6–107.

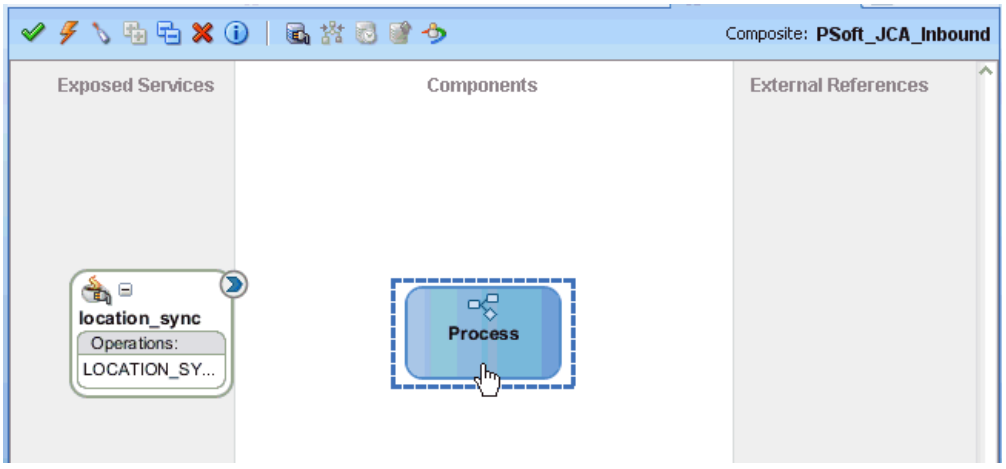
Figure 6–107 Manual Process



3. Click **Finish**.

   The BPMN Process component is created, as shown in Figure 6–108.

Figure 6–108 BPMN Process Component



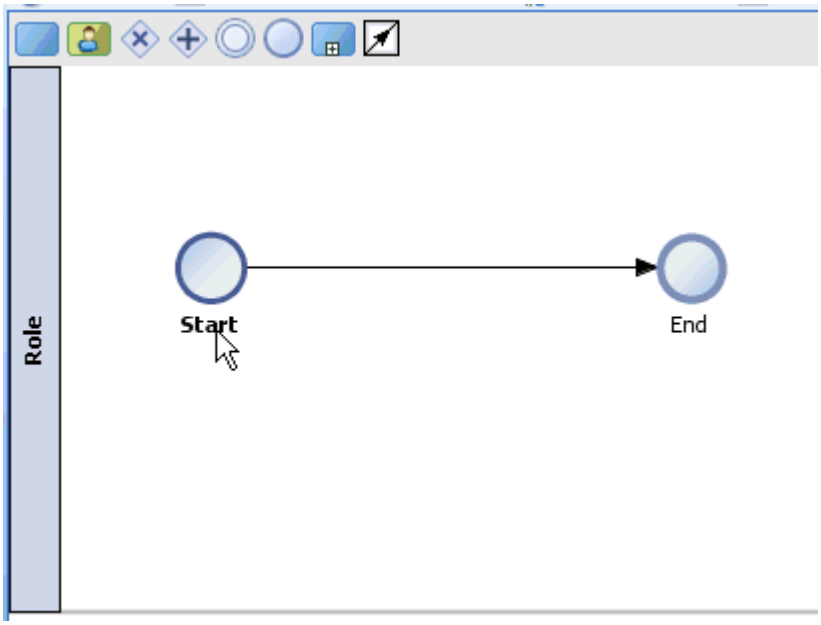
4. Double-click the BPMN Process component in the Components pane.

   The BPMN process is displayed, as shown in Figure 6–109.

Figure 6–109 BPMN Process

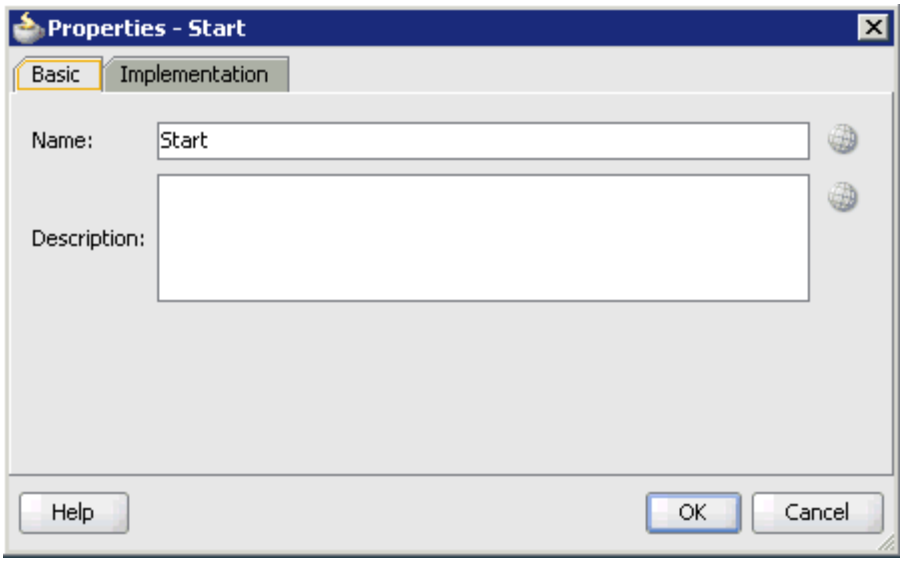
5. Right-click **UserTask** and select **Delete** from the menu.
6. Double-click the **Start** event component, as shown in Figure 6–110.

Figure 6–110 Start Event Component



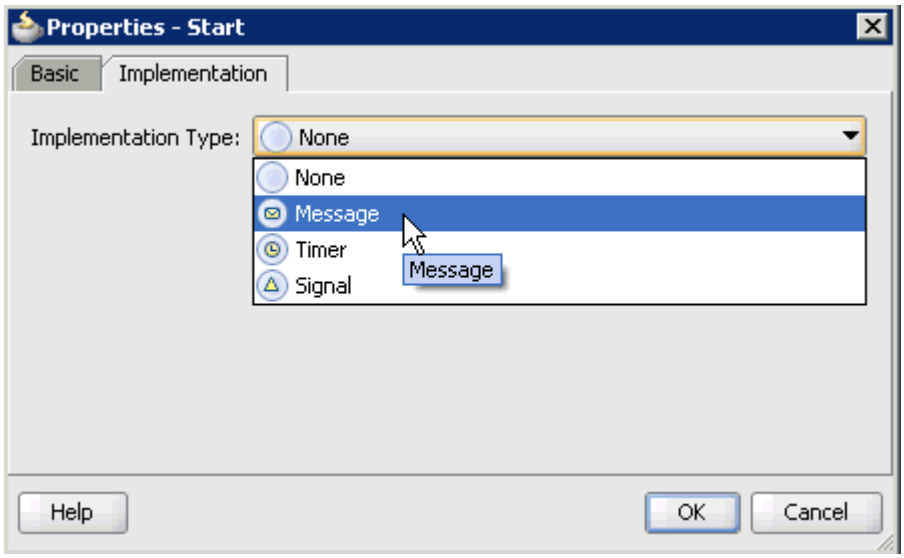
The Properties - Start dialog is displayed, as shown in Figure 6–111.

Figure 6–111 Properties - Start Dialog



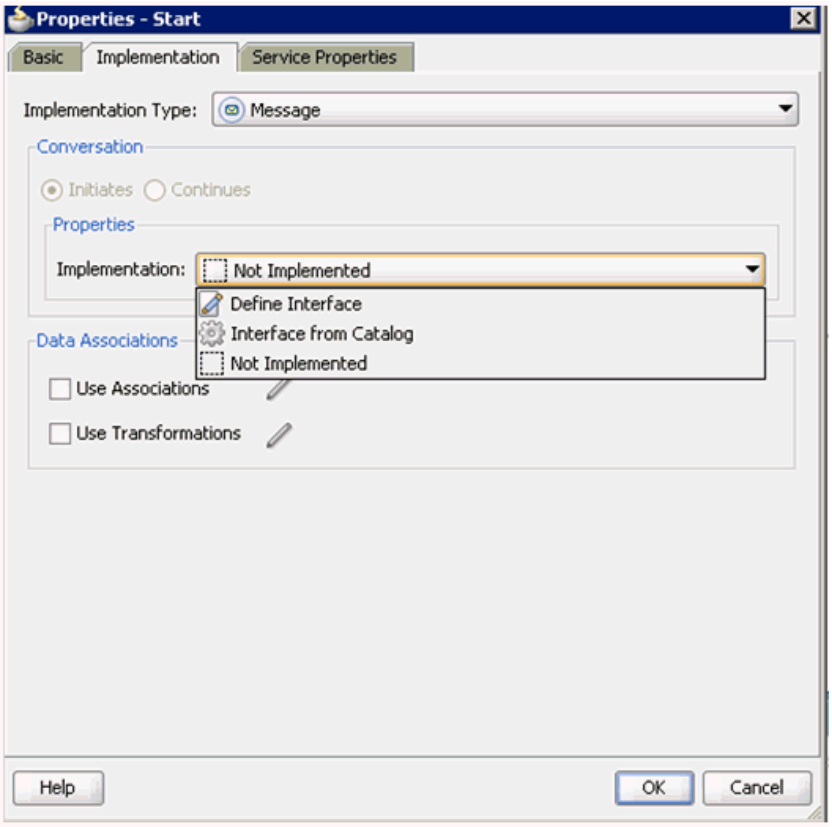
7. Click the **Implementation** tab, as shown in Figure 6–112.

Figure 6–112 Implementation Tab



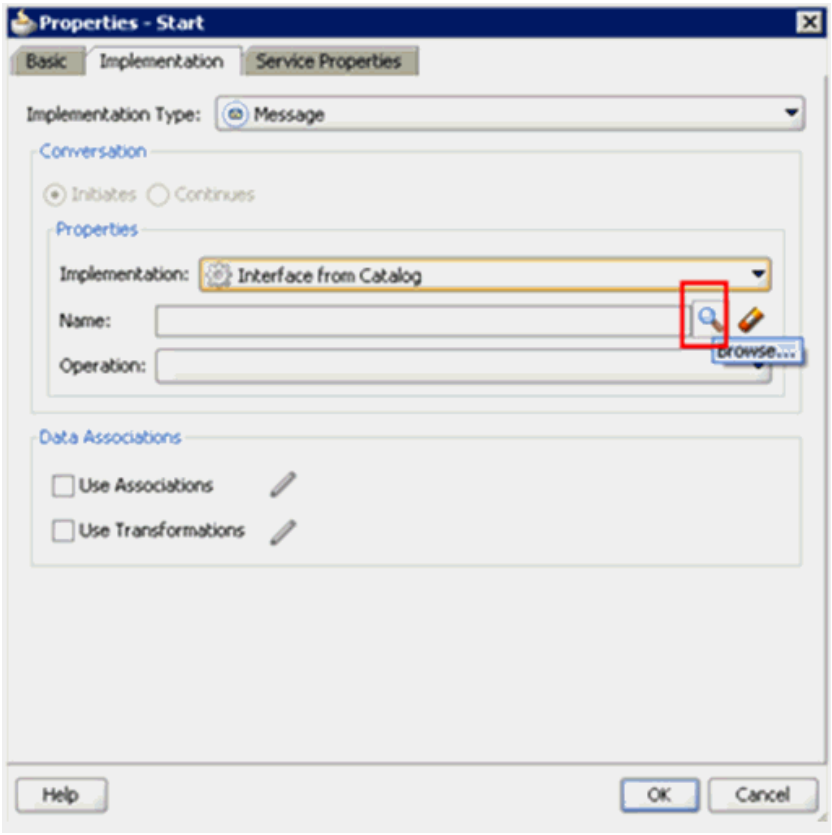
8. Select **Message** from the Implementation Type list, as shown in Figure 6–113.

Figure 6–113 Message



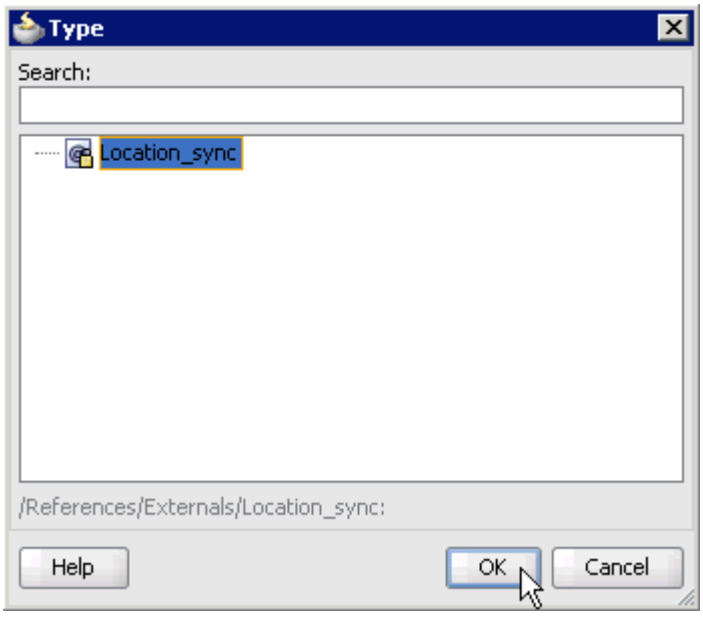
9. Select **Interface from Catalog** from the Implementation list.
10. Click the **Browse** icon to the right of the Name field, as shown in Figure 6–114.

Figure 6–114 Browse Icon



The Type dialog is displayed, as shown in Figure 6–115.

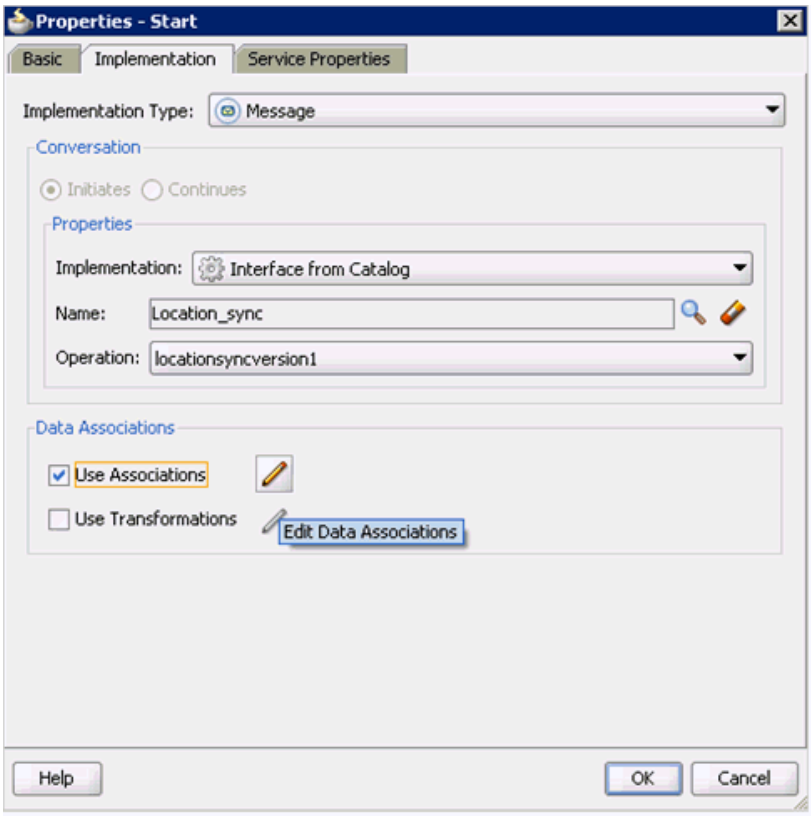
Figure 6–115 Type Dialog



11. Select the Third Party Service that has been created and click **OK**.

    You are returned to the Properties - Start dialog, as shown in Figure 6–116.

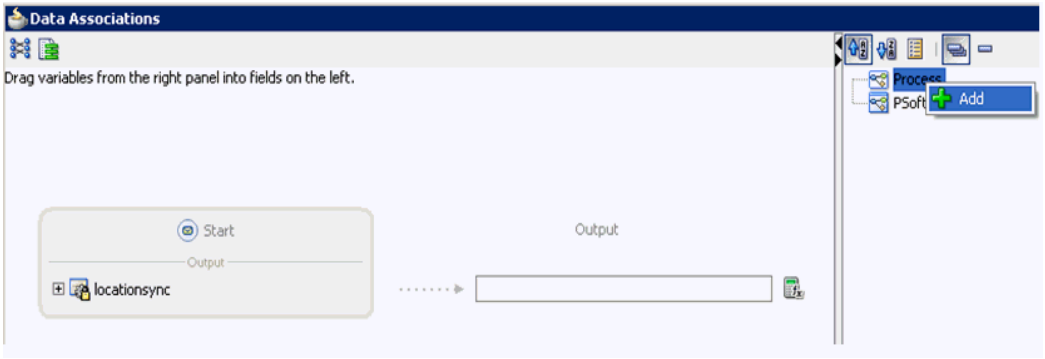
Figure 6–116 Properties - Start Dialog



12. Select the **Use Associations** option that is located under Data Associations.
13. Click the **Edit Data Associations** icon.

    The Data Associations dialog is displayed, as shown in Figure 6–117.

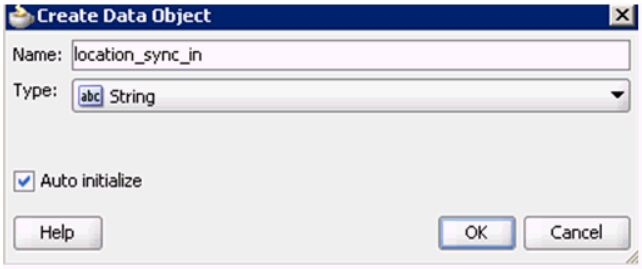
Figure 6–117 Data Associations Dialog



14. Right-click the **Process** node in the right pane and select **Add**.

    The Create Data Object dialog is displayed, as shown in Figure 6–118.

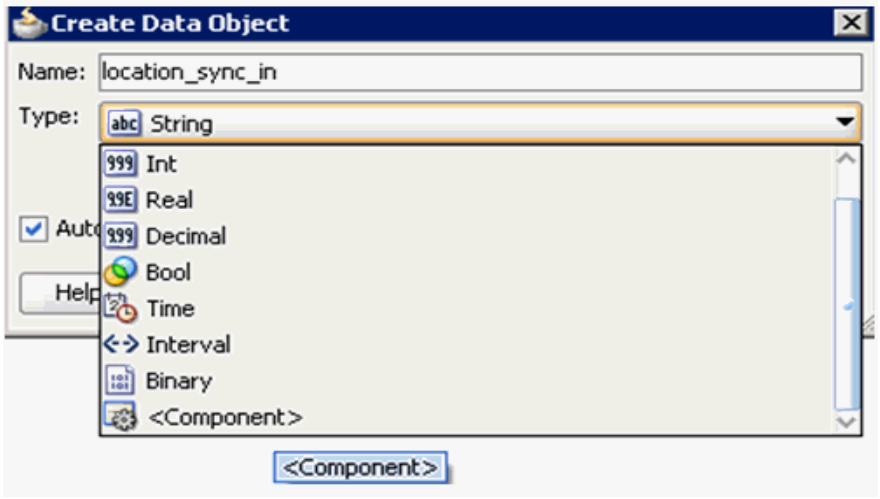
Figure 6–118 Create Data Object Dialog



15. Enter a name in the Name field (for example, location_sync_in) and click on the drop-down button in the Type field and select **<Component>** from the list.

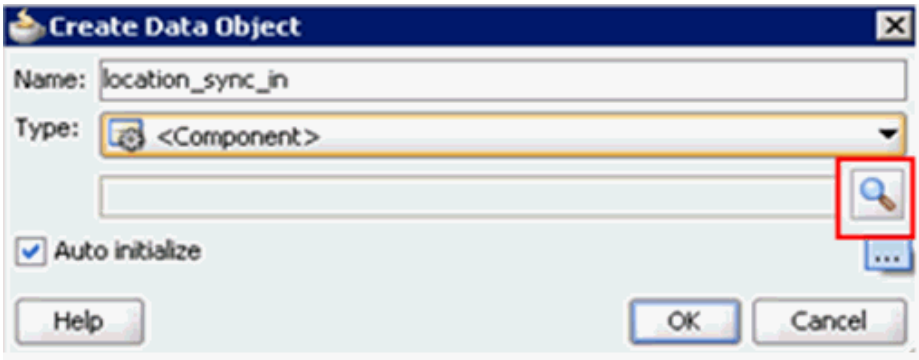
    The Create Data Object dialog is displayed, as shown in Figure 6–119.

Figure 6–119 Create Data Object Dialog



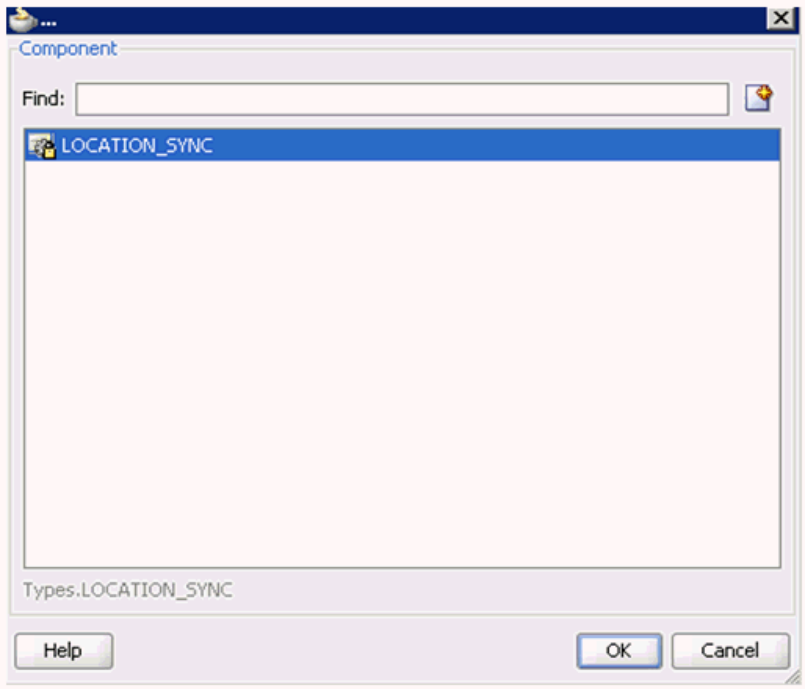
16. Click on the Browse icon below the Type field, as shown in Figure 6–120.

Figure 6–120 Create Data Object Dialog



    The Browse window opens as shown in Figure 6–121.

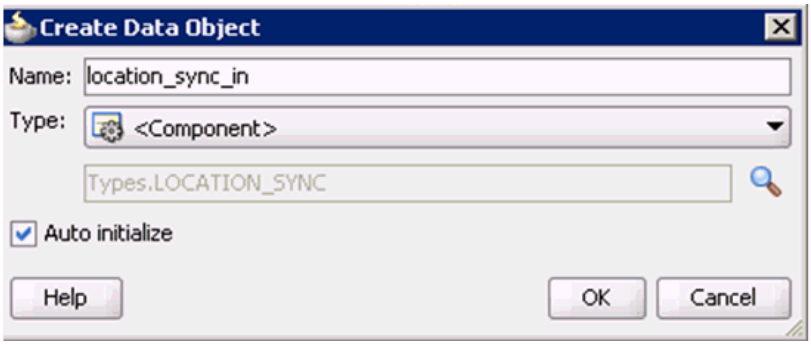
Figure 6–121 Browse Window



17. Select the first component (for example, LOCATION_SYNC) and click **OK**.

    You are returned to the Create Data Object dialog, as shown in Figure 6–122.

Figure 6–122 Create Data Object Dialog



18. Click **OK**.

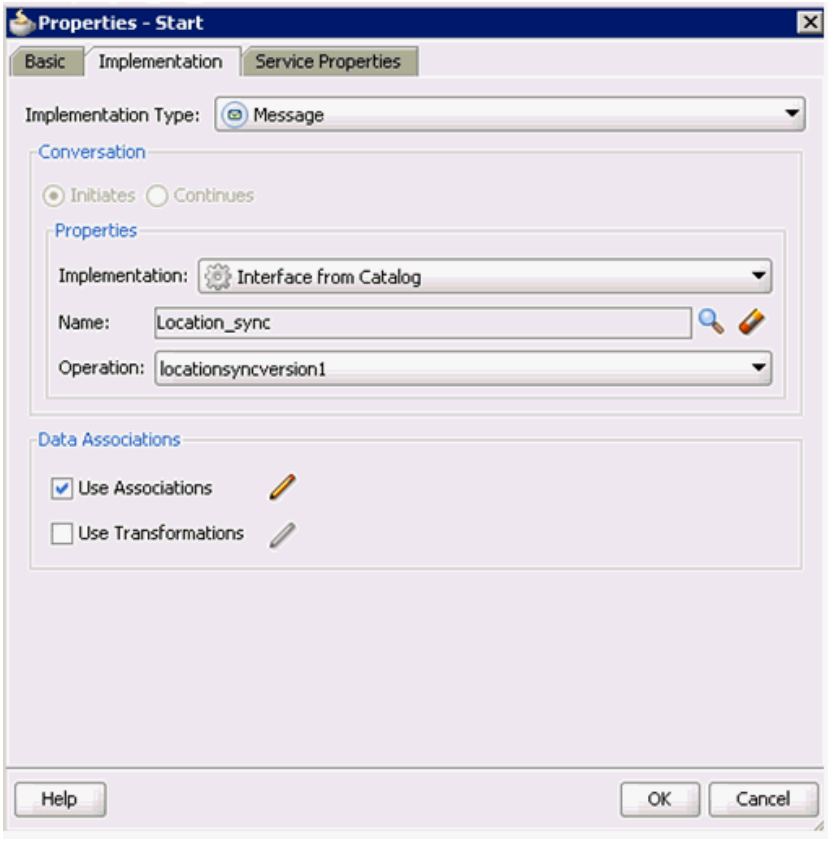
    The Data Object (for example, location_sync_in) that has been created is displayed under the Process node in the Data Associations dialog, as shown in Figure 6–123.

Figure 6–123 Data Associations Dialog

19. Select the **location_sync_in** Data Object under the Process node in the right pane and drag it to the field below the Outputs area.
20. Click **OK**.

    You are returned to the Properties - Start dialog, as shown in Figure 6–124.

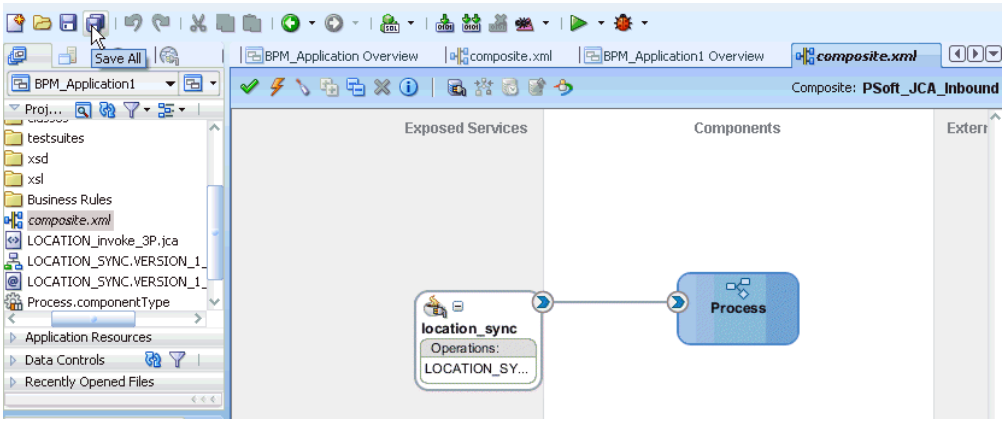
Figure 6–124 Properties - Start Dialog



21. Click **OK**.

    You are returned to the Process workspace area, as shown in Figure 6–125.
22. Double-click **composite.xml** in the left pane.

Figure 6–125 Process Workspace Area



23. Click the **Save All** icon in the menu bar to save the new inbound BPM process component that was configured.

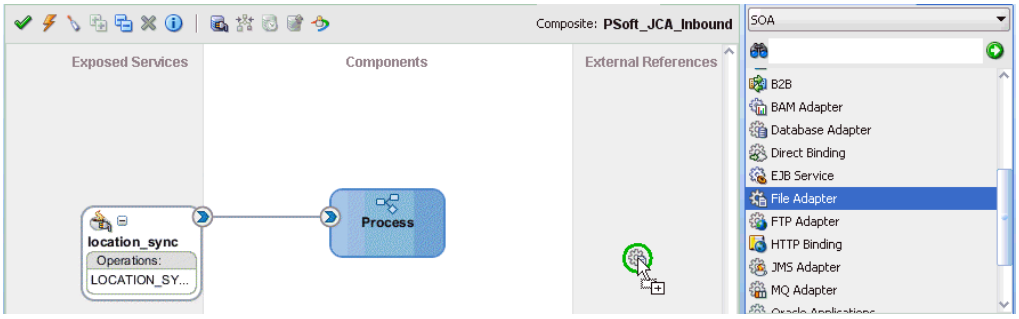
You are now ready to create a File adapter for the write operation.

Creating a File Adapter for the Write Operation

Perform the following steps to create a File adapter for the write operation:

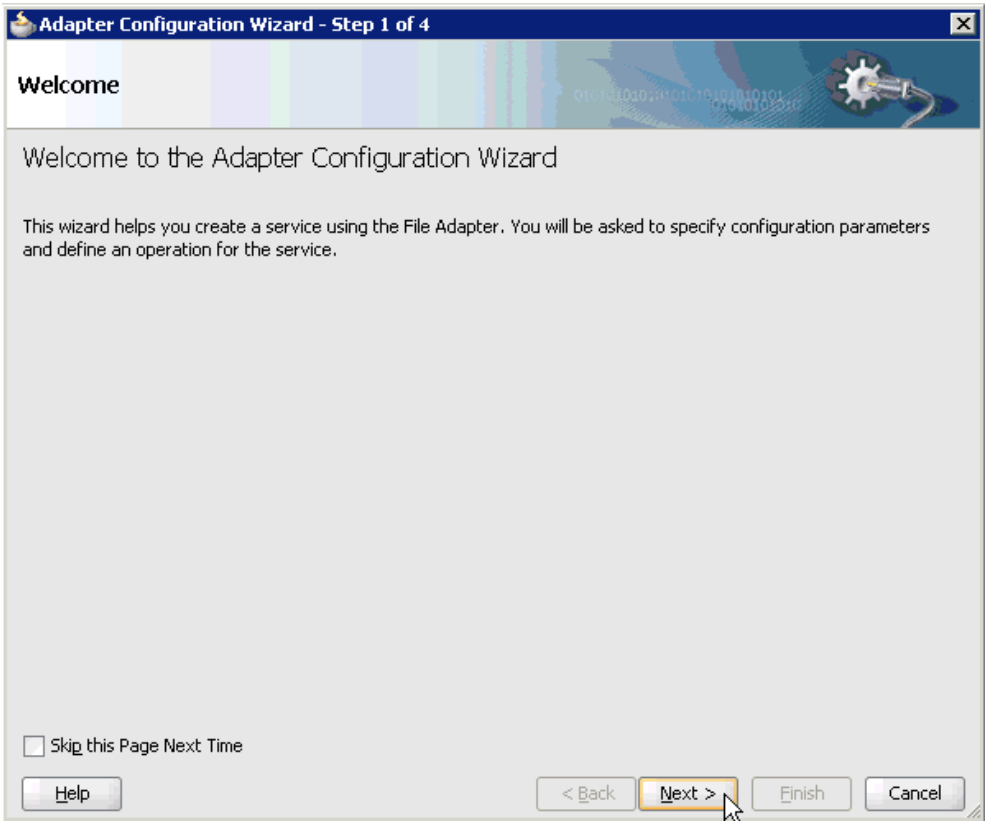
1. Drag and drop the **File Adapter** component from the Service Adapters pane to the External References pane, as shown in Figure 6–126.

Figure 6–126 File Adapter Component



The Adapter Configuration Wizard is displayed, as shown in Figure 6–127.

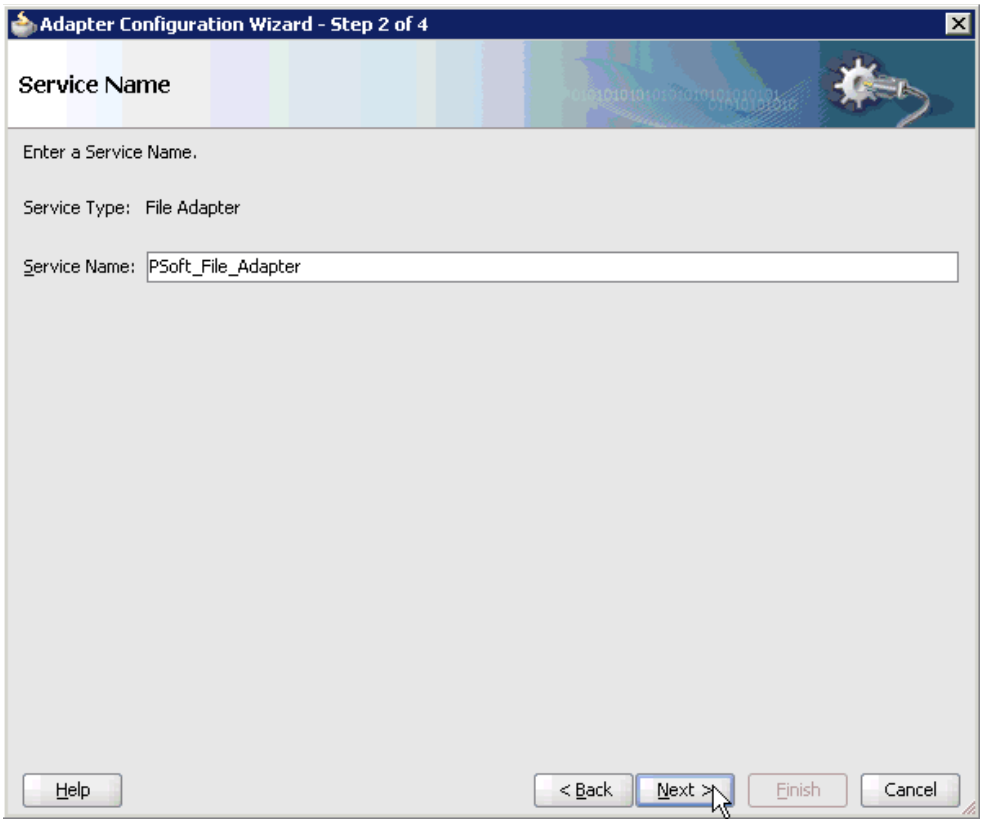
Figure 6–127 Adapter Configuration Wizard



2. Click **Next**.

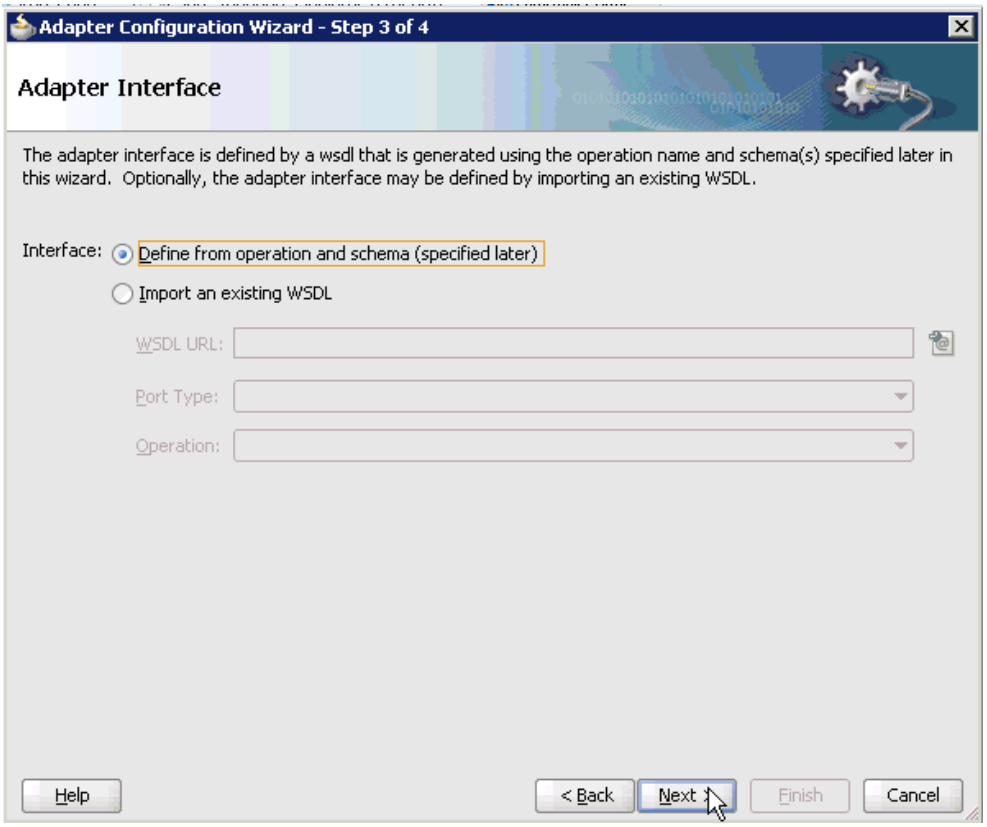
   The Service Name page is displayed, as shown in Figure 6–128.

Figure 6–128 Service Name Page



3. Type a name for the new File adapter in the Service Name field and click **Next**. The Adapter Interface page is displayed, as shown in Figure 6–129.

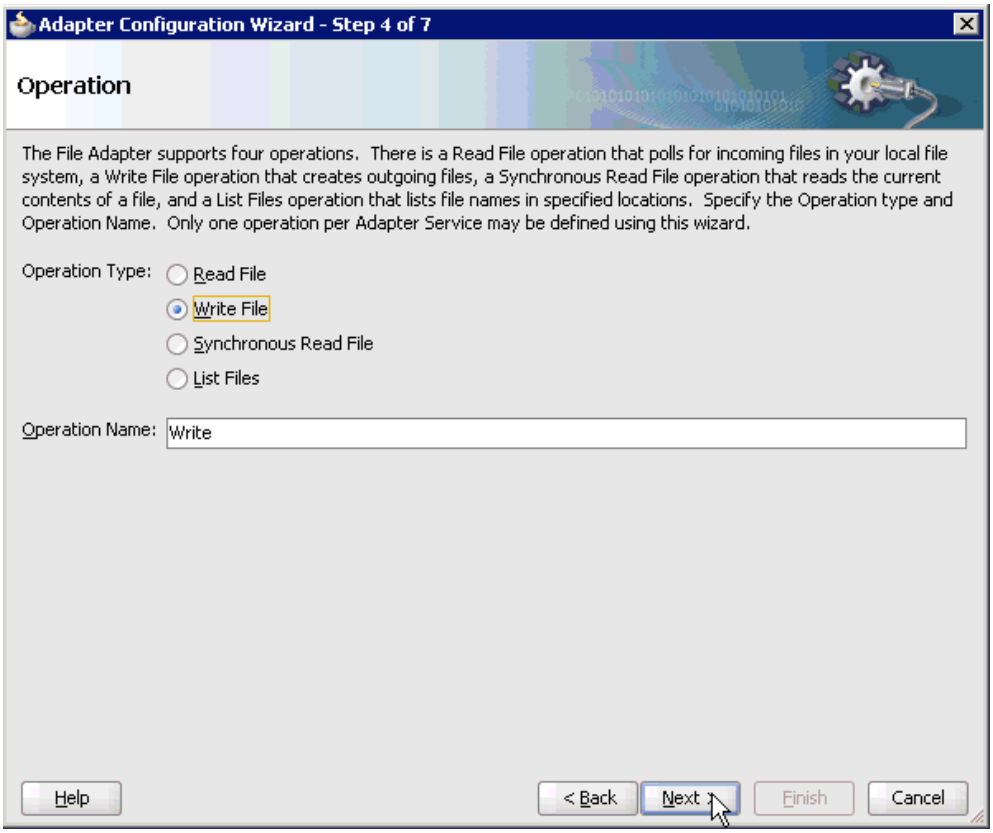
Figure 6–129 Adapter Interface Page



4. Ensure that the **Define from operation and schema (specified later)** option is selected.
5. Click **Next**.

   The Operation page is displayed, as shown in Figure 6–130.

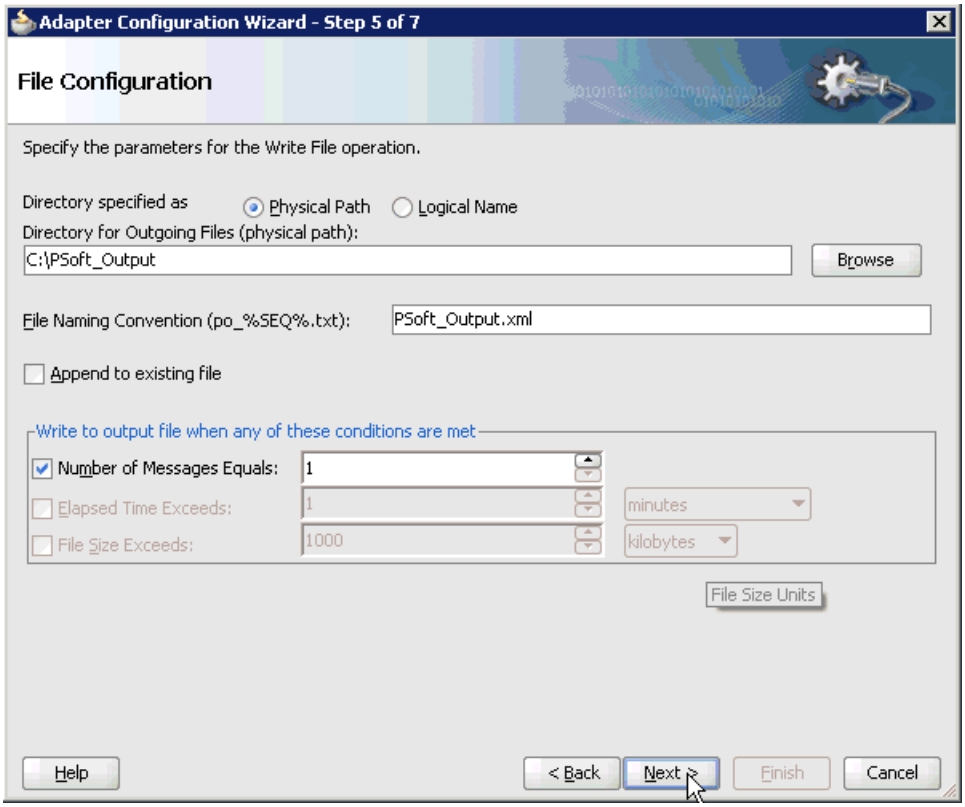
Figure 6–130 Operation Page



6. Select **Write File** from the list of Operation Type options and specify an Operation Name (for example, Write).
7. Click **Next**.

   The File Configuration page is displayed, as shown in Figure 6–131.

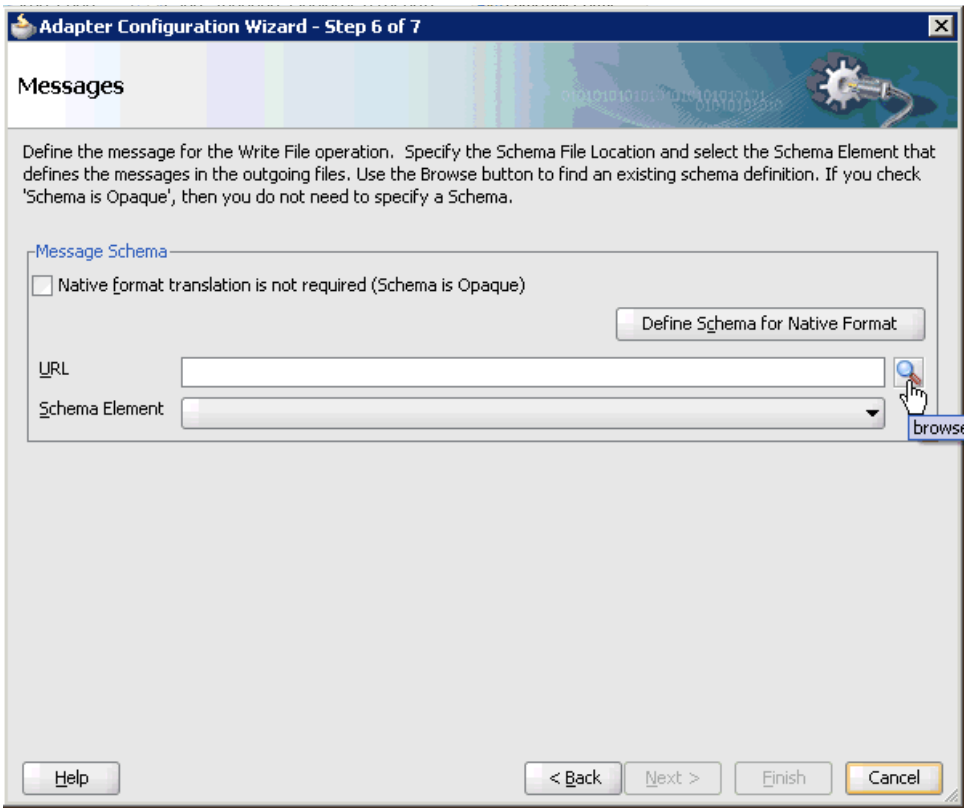
Figure 6–131 File Configuration Page



8. Specify a location on your file system where the output file is written.
9. In the File Naming Convention field, specify a name for the output file.
10. Click **Next**.

    The Messages page is displayed, as shown in Figure 6–132.

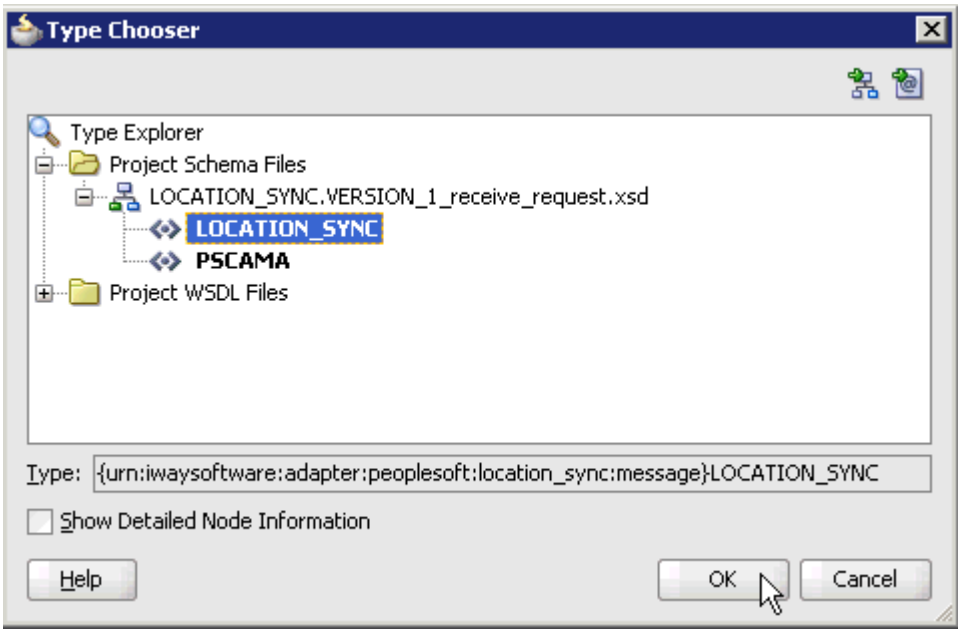
Figure 6–132 Messages Page



11. Click **browse for schema file**, which is located to the right of the URL field.

The Type Chooser dialog is displayed, as shown in Figure 6–133.

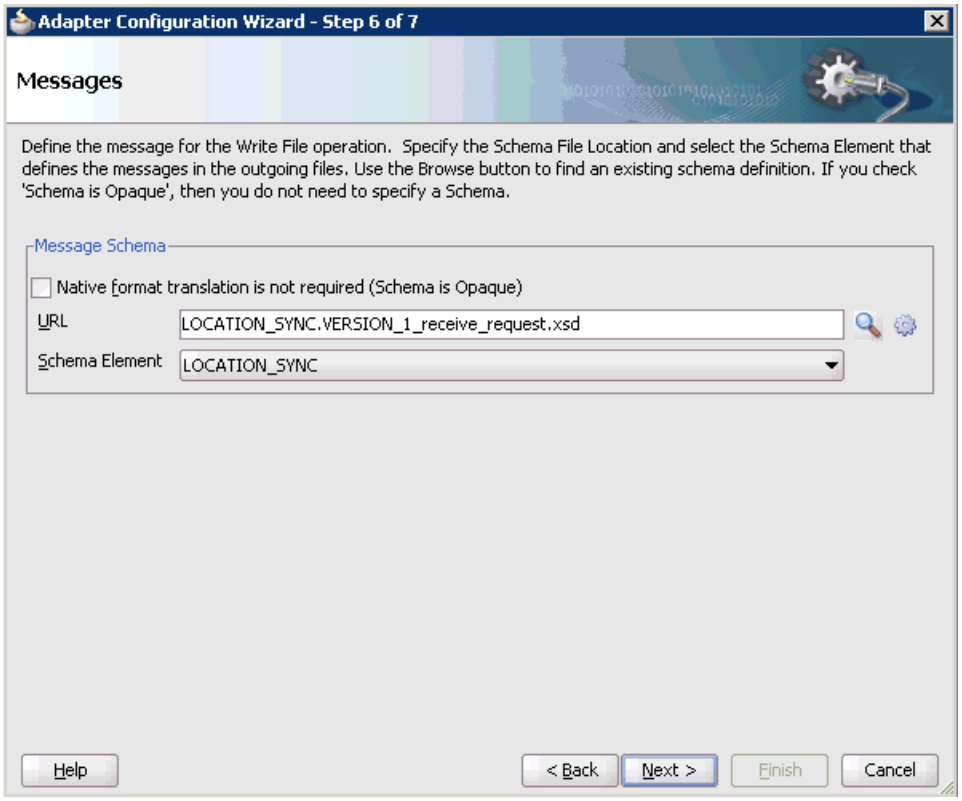
Figure 6–133 Type Chooser Dialog



12. Expand **Project Schema Files** and **LOCATION_SYNC.VERSION_1_receive_request.xsd**.
13. Select the available schema (for example, LOCATION_SYNC).
14. Click **OK**.

    You are returned to the Messages page, as shown in Figure 6–134.

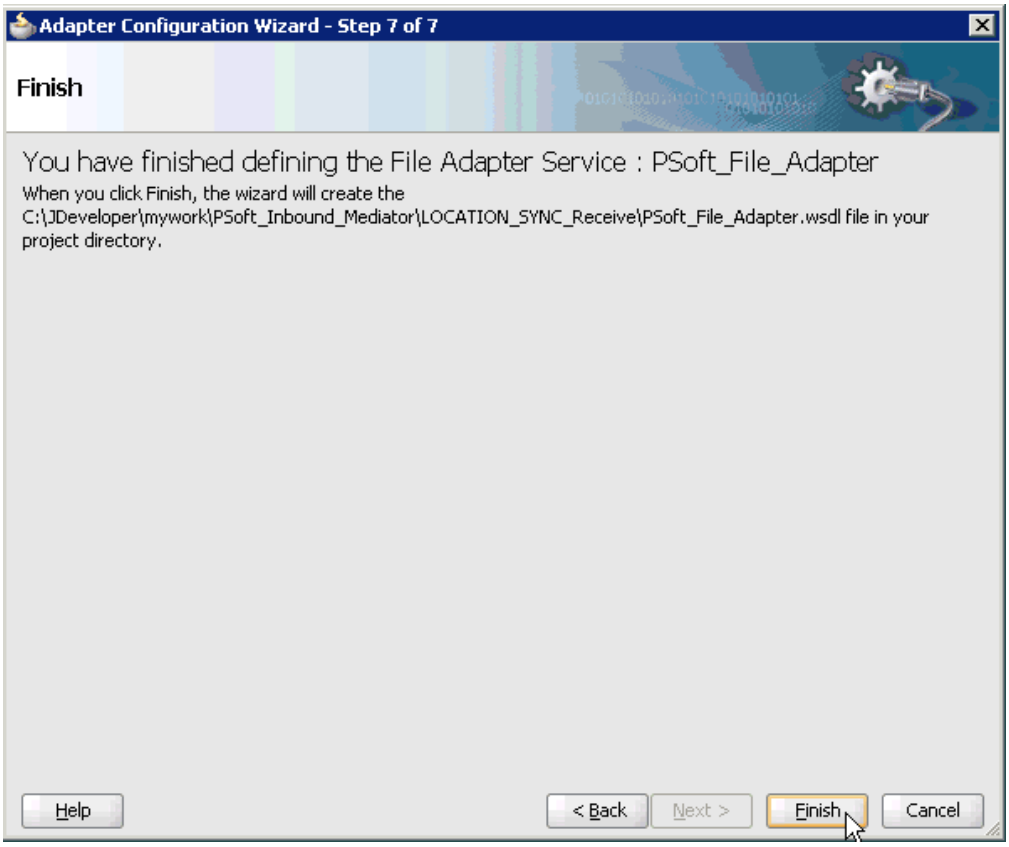
Figure 6–134 Messages Page



15. Click **Next**.

    The Finish page is displayed, as shown in Figure 6–135.

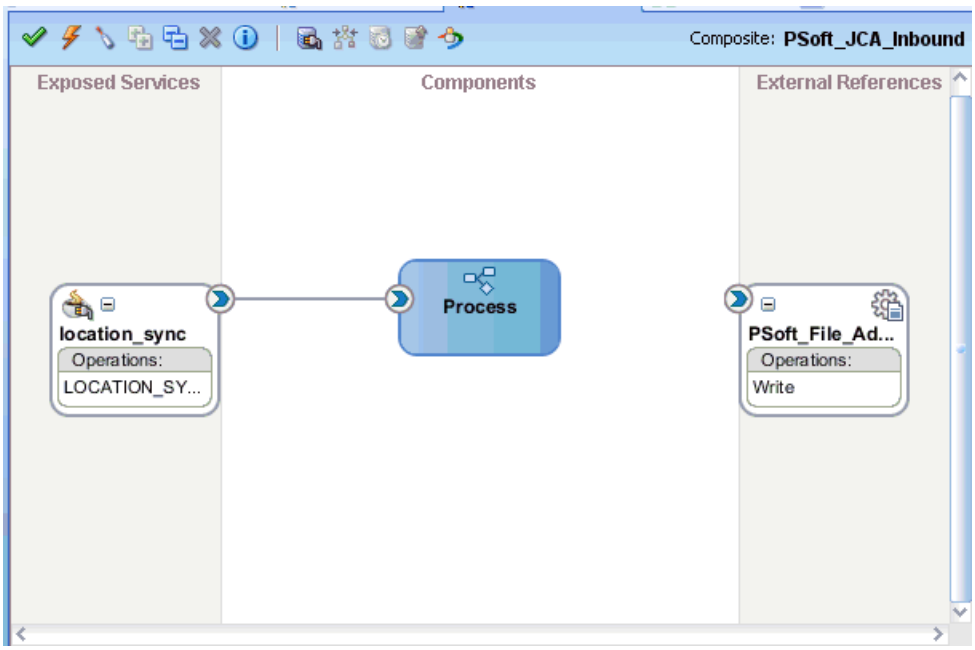
Figure 6–135 Finish Page



16. Click **Finish**.

The File Adapter service is created in the External References pane, as shown in Figure 6–136.

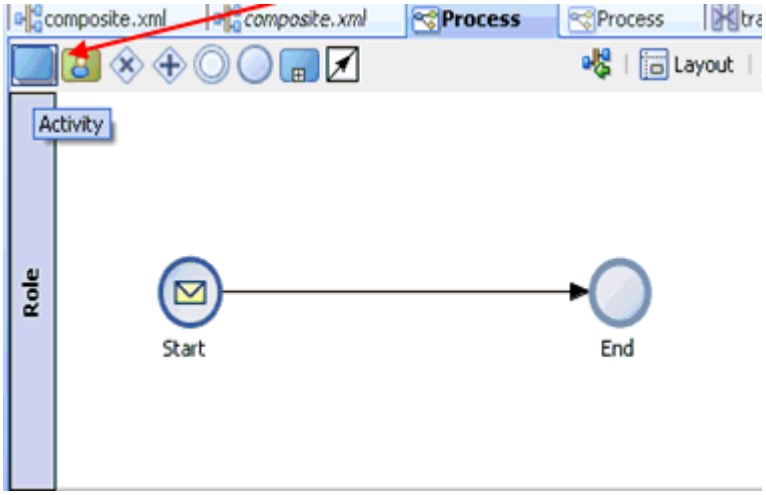
Figure 6–136 File Adapter Service



17. Double-click the BPMN Process component.

    The BPMN process is displayed, as shown in Figure 6–137.

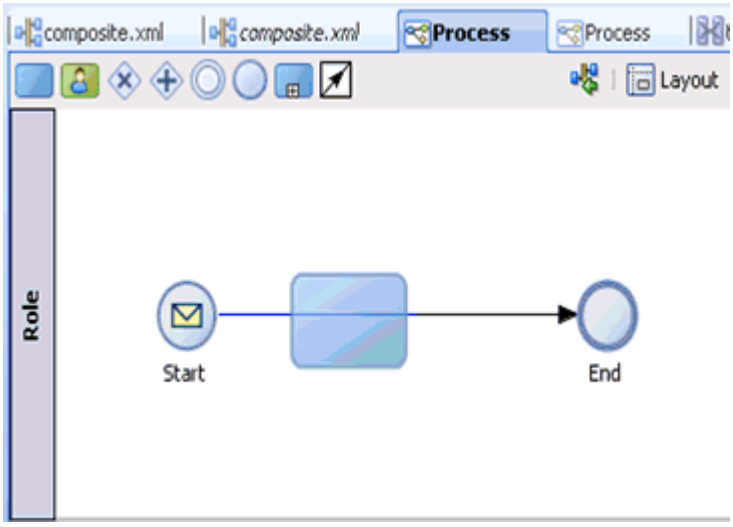
Figure 6–137 BPMN Process



18. Click the **Activity** icon.

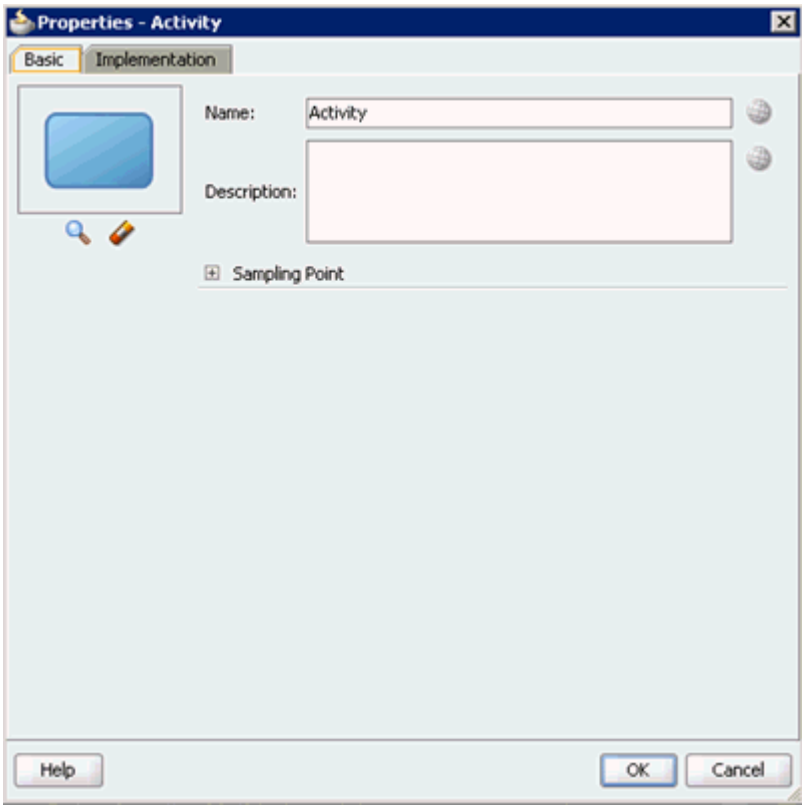
19. Drop the Activity icon on the wire between the Start and End event components, as shown in Figure 6–138.

Figure 6–138 Activity Icon



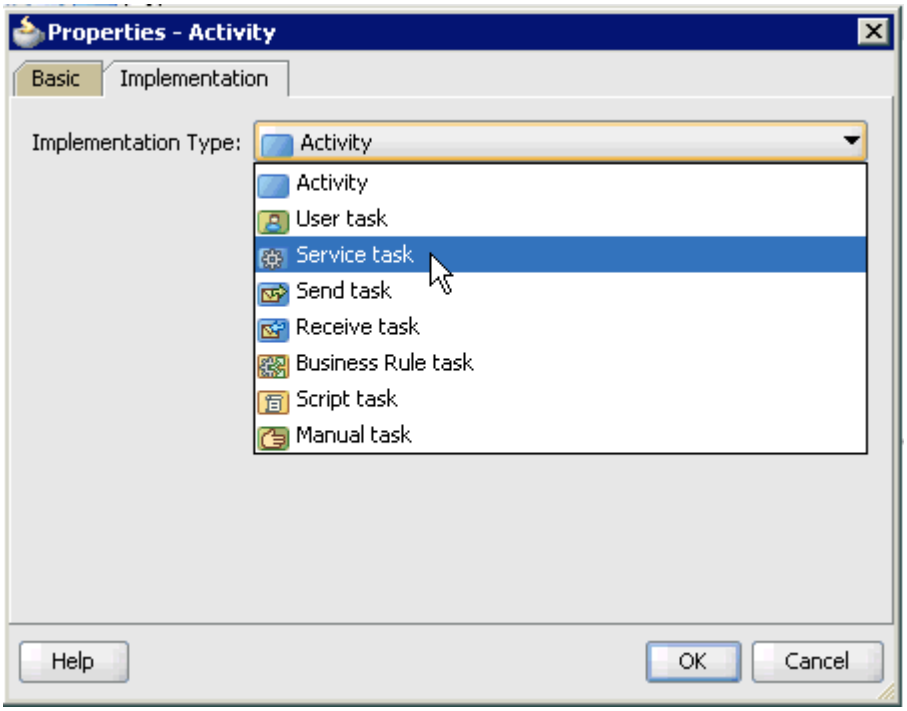
The Properties - Activity dialog is displayed, as shown in Figure 6–139.

Figure 6–139 Properties - Activity Dialog



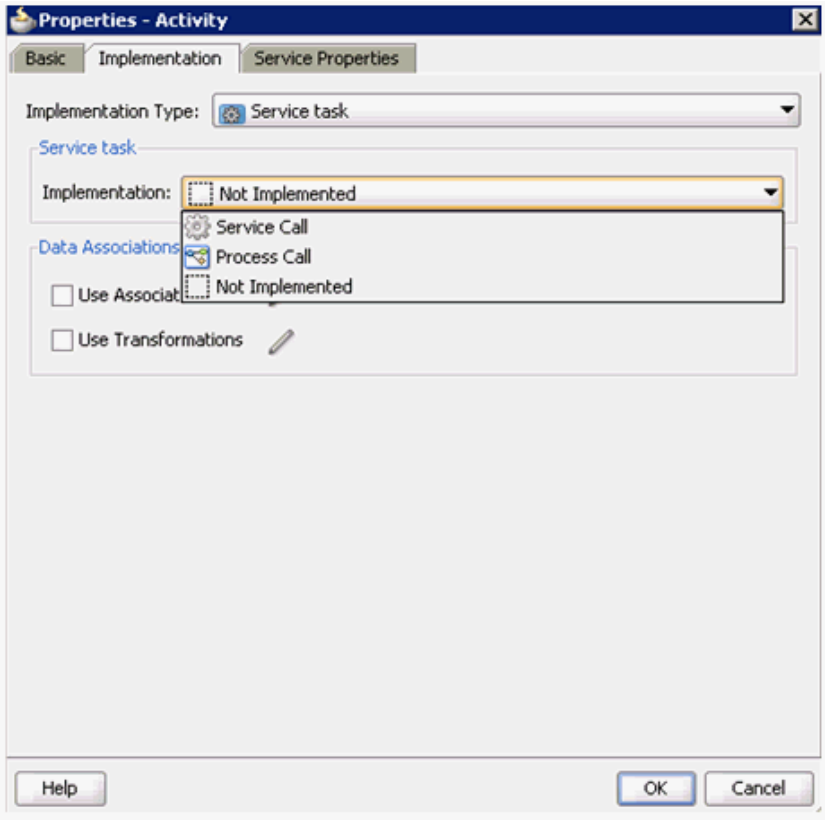
20. Click the **Implementation** tab, as shown in Figure 6–140.

Figure 6–140 Implementation Tab



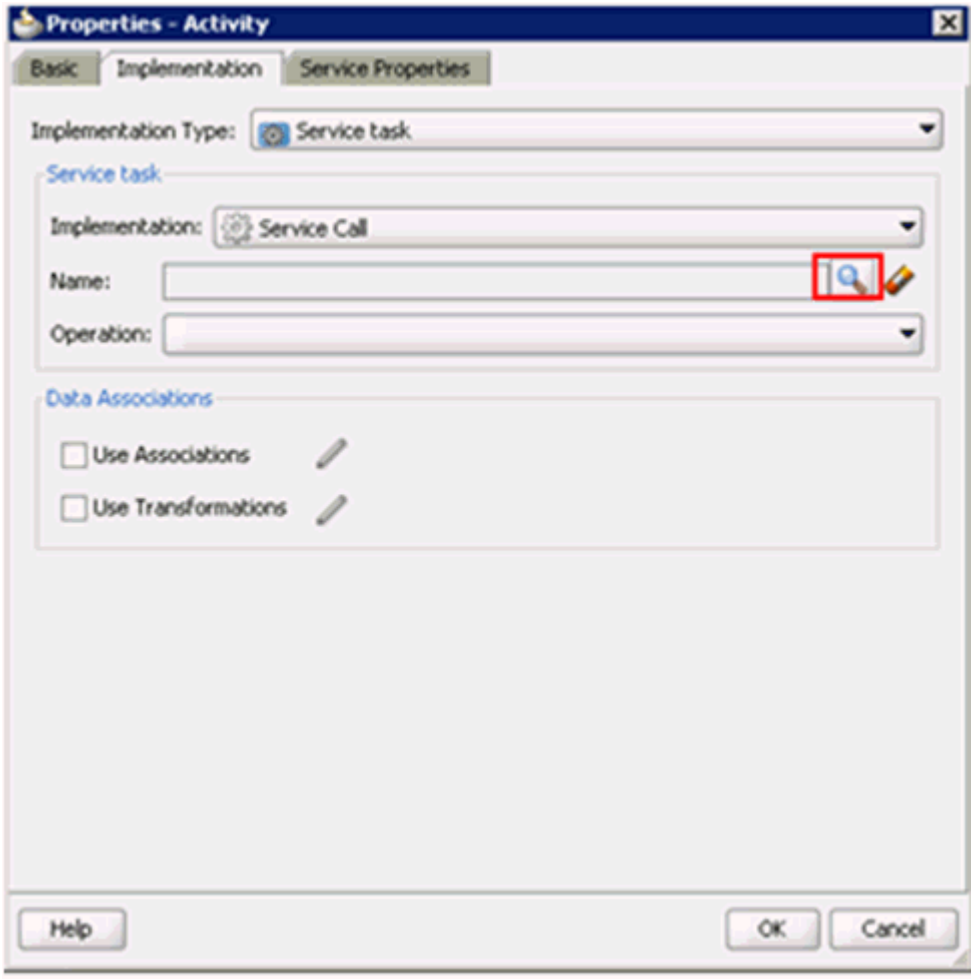
21. Select **Service Task** from the Implementation Type list, as shown in Figure 6–141.

Figure 6–141 Service Task



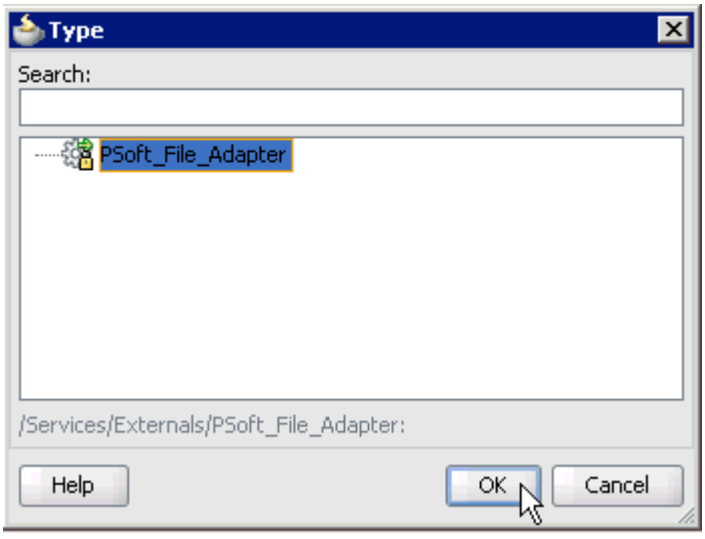
22. Select **Service Call** from the Implementation list.
23. Click the **Browse** icon to the right of the Name field, as shown in Figure 6–142.

Figure 6–142 Browse Icon



The Type dialog is displayed, as shown in Figure 6–143.

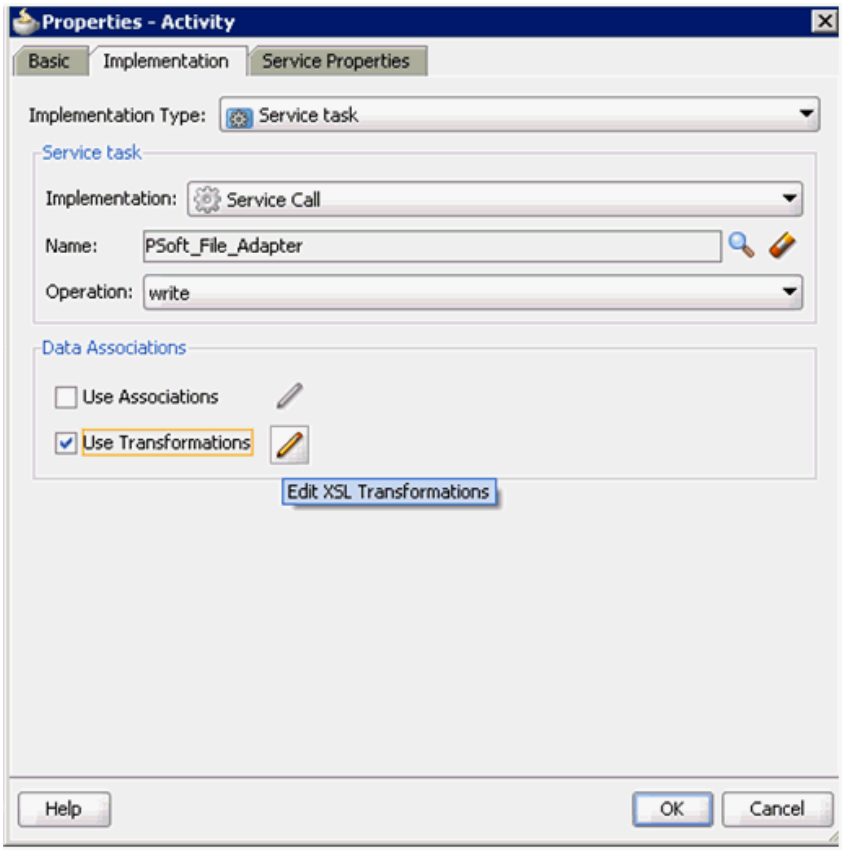
Figure 6–143 Type Dialog



24. Select the service for write operation that has been created (for example, PSoft_File_Adapter) and click **OK**.

    You are returned to the Properties - Activity dialog, as shown in Figure 6–144.

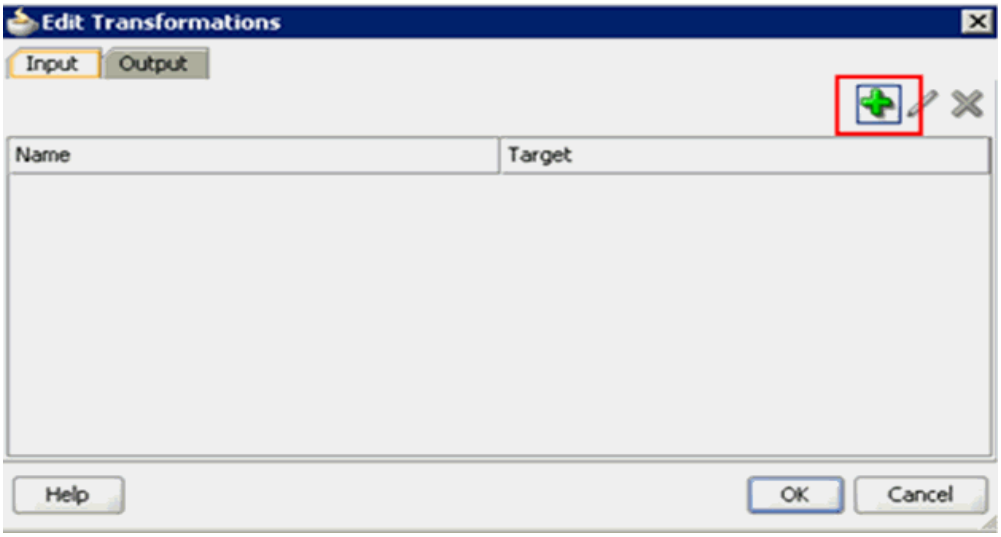
Figure 6–144 Properties - Activity Dialog



25. Select the **Use Transformations** option that is located under Data Associations.
26. Click the **Edit XSL Transformations** icon.

    The Edit Transformations dialog is displayed, as shown in Figure 6–145.

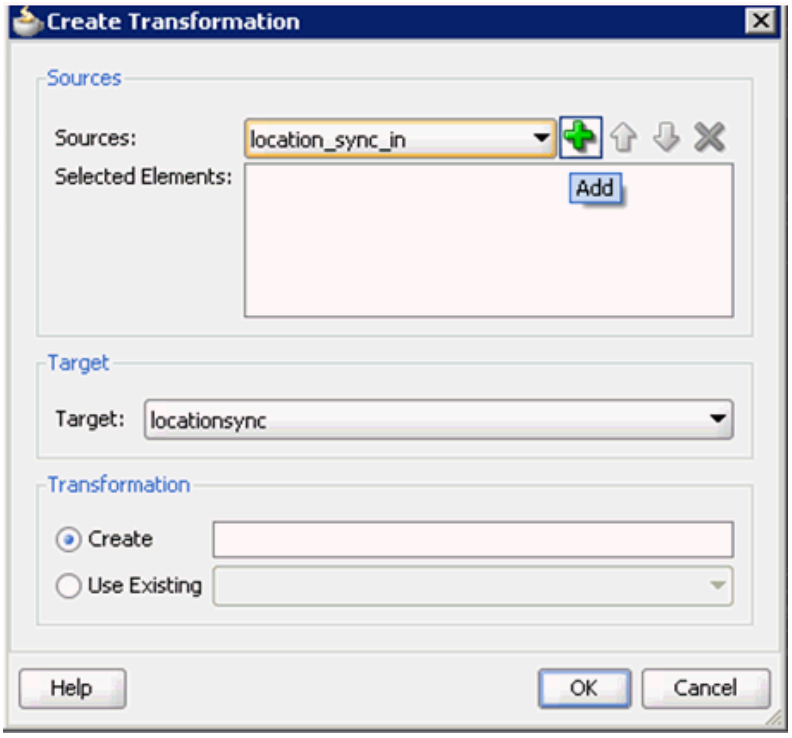
Figure 6–145 Edit Transformations Dialog



27. Click the **Plus** icon.

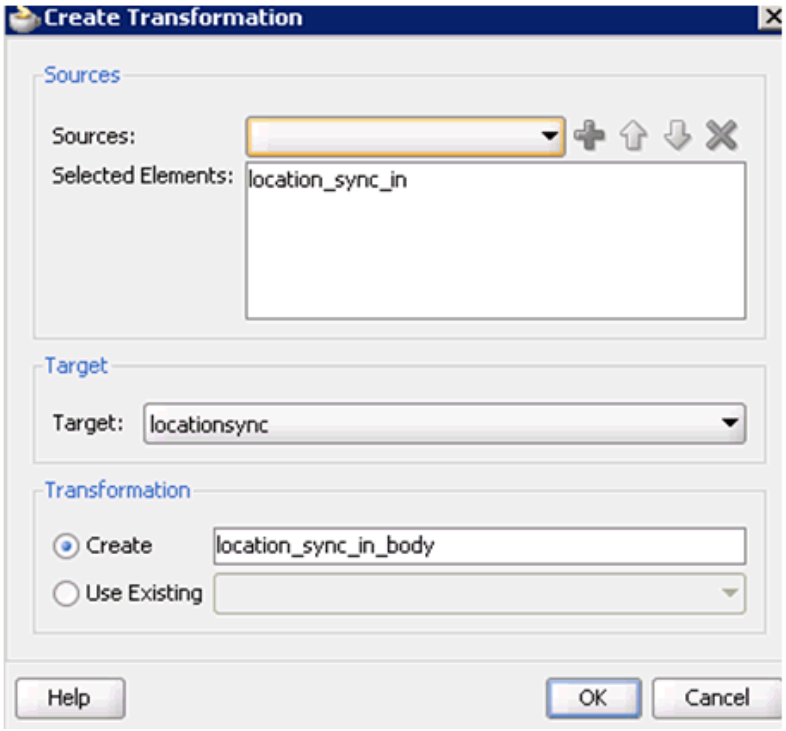
    The Create Transformation dialog is displayed, as shown in Figure 6–146.

Figure 6–146 Create Transformation Dialog



28. Click the **Plus** icon so that the Data Object 'location_sync_in' is added to the Selected Elements area, as shown in Figure 6–147.

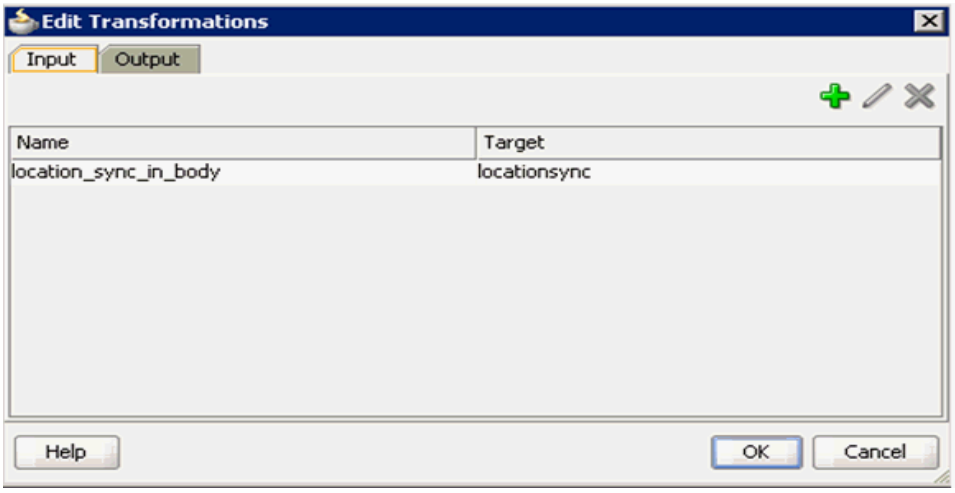
Figure 6–147 Selected Elements Area



29. Accept the default value that is selected in the Target list.
30. Leave the default name displayed in the Create field and click **OK**.

    You are returned to the Edit Transformations dialog, as shown in Figure 6–148.

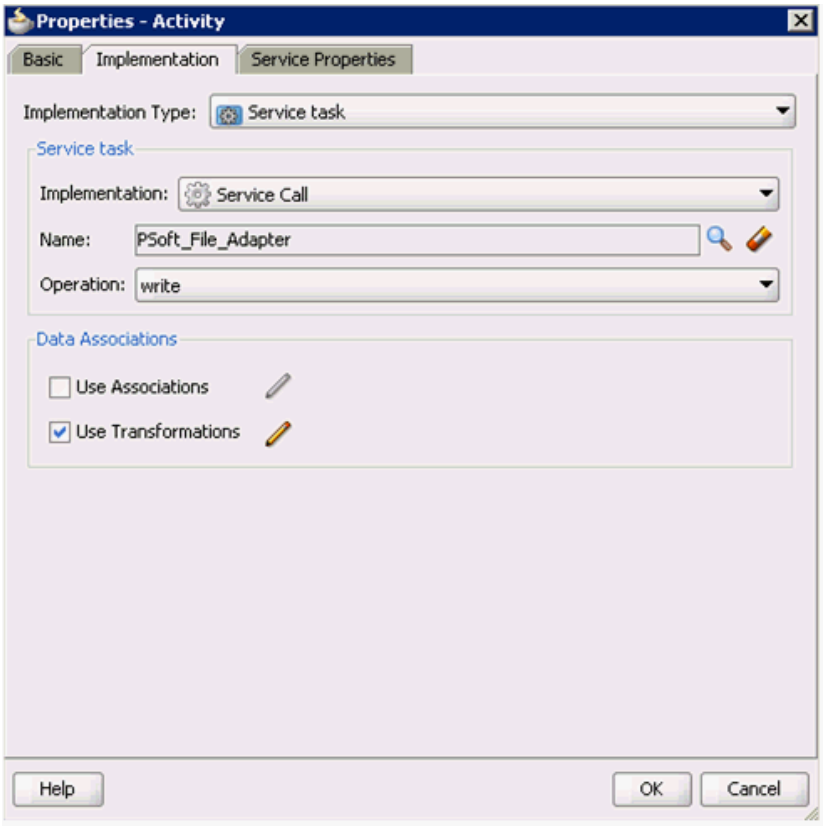
Figure 6–148 Edit Transformations Dialog



31. Click **OK**.

    You are returned to the Properties - Activity dialog, as shown in Figure 6–149.

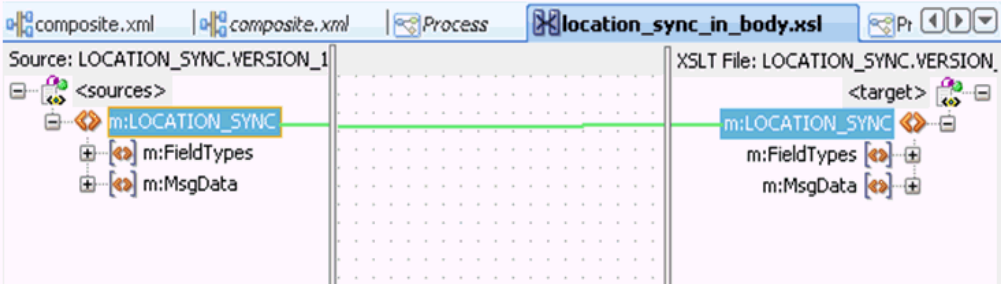
Figure 6–149 Properties - Activity Dialog



32. Click **OK**.

The location_sync_in_body.xsl tab is displayed, as shown in Figure 6–150.

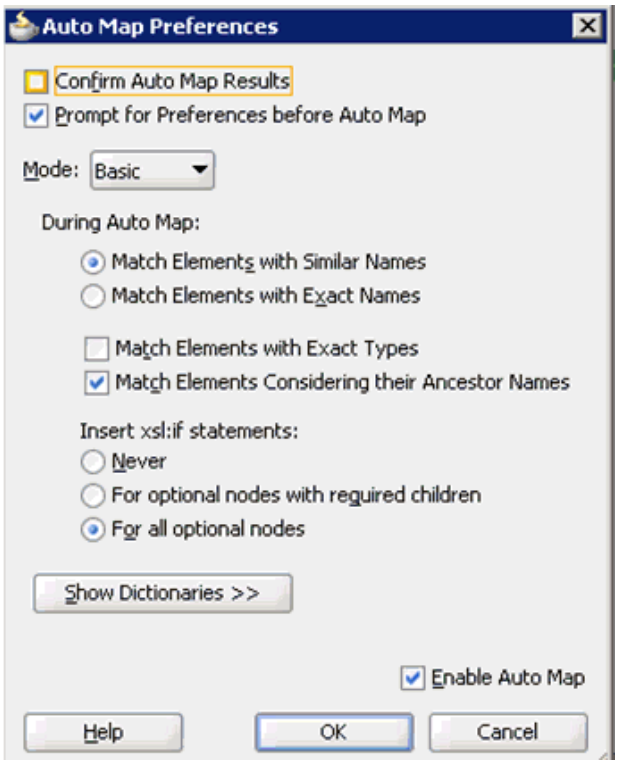
Figure 6–150 location_sync_in_body.xsl Tab



33. Automap the Source and Target elements.

The Auto Map Preferences dialog is displayed, as shown in Figure 6–151.

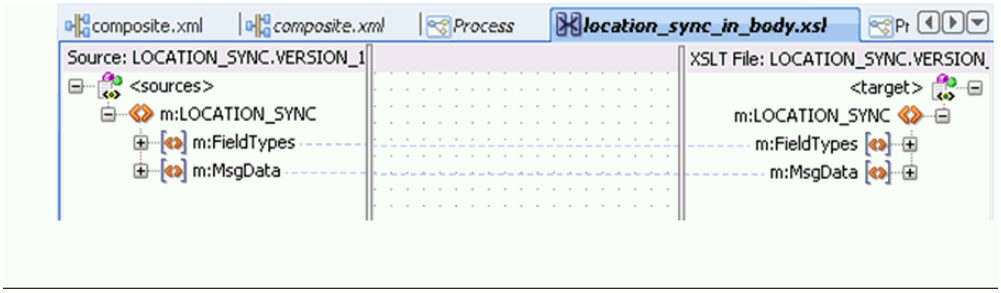
Figure 6–151 Auto Map Preferences Dialog



34. Accept the default values and click **OK**.

The transformation is completed, as shown in Figure 6–152.

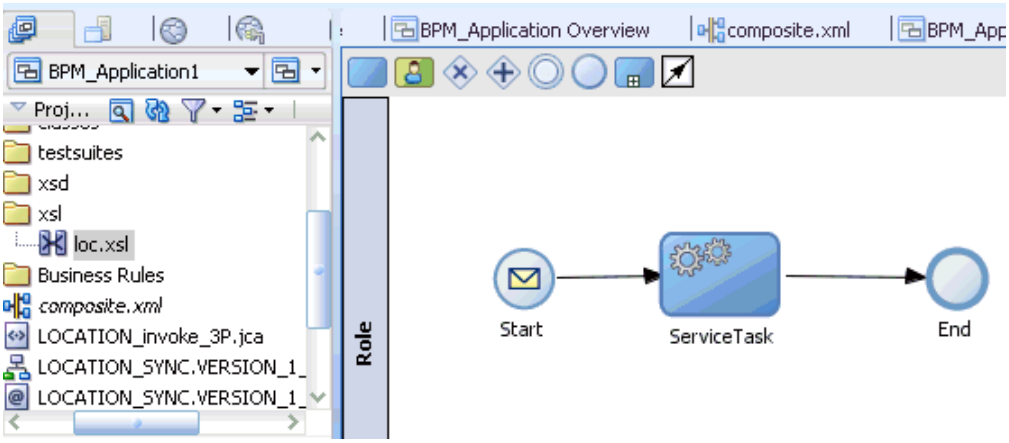
Figure 6–152 Completed Transformation



35. Save the transformation.

36. Return to the Process workspace area, as shown in Figure 6–153.

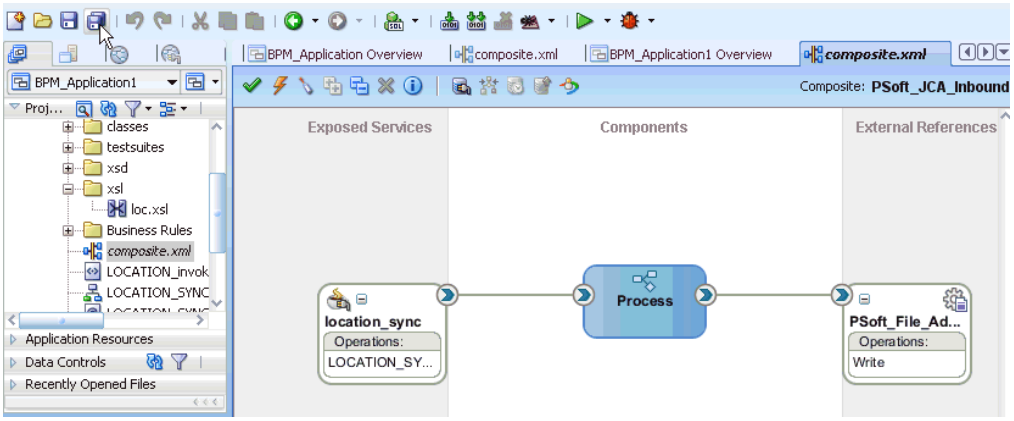
Figure 6–153 Process Workspace Area



The ServiceTask component is created between the Start event component and the End event component.

37. Save the Process and double-click the **composite.xml** file.

Figure 6–154 Save All Icon



38. Click the **Save All** icon in the menu bar to save the new inbound BPM process component that was configured, as shown in Figure 6–154.

You are now ready to deploy the BPM inbound process. You can follow the same procedure that is described in "Deploying the BPEL Inbound Process" on page 4-58. Once event messages are triggered through PeopleSoft, output XML is received in the location that was specified for the File adapter component. For more information on how to trigger events in PeopleSoft, see "Triggering an Event in PeopleSoft" on page 4-62.

7

Configuring Outbound and Inbound Processing Using Oracle Service Bus

Oracle Application Adapter for PeopleSoft integrates seamlessly with Oracle Service Bus (OSB) to facilitate Web service integration. OSB is based on the Service-Oriented Architecture (SOA). It consumes adapter services exposed as Web Service Definition Language (WSDL) documents.

This chapter contains the following topics:

7.1 Overview of Application Adapter Integration with Oracle Service Bus

To integrate with Oracle Service Bus (OSB), Oracle Application Adapter for PeopleSoft must be deployed in the same Oracle WebLogic Server as OSB. The underlying adapter services must be exposed as WSDL files, which are generated during design time in Oracle Adapter Application Explorer (Application Explorer) for both request-response (outbound) and event notification (inbound) services of the adapter.

7.2 Configuring Outbound Processing Using Oracle Service Bus (J2CA Configuration)

This section describes how to configure outbound processing using Oracle Service Bus for J2CA configurations.

Samples have been provided for this use case scenario in the `etc/sample` folder in the Application Adapters installation.

This section includes the following topics:

- Section 7.2.3, "Publishing a WSDL From Application Explorer to Oracle Service Bus"
- Section 7.2.4, "Configuring a WSDL-based Business Service"
- Section 7.2.5, "Configuring a File Type Business Service"
- Section 7.2.6, "Configuring a Proxy Service"
- Section 7.2.7, "Configuring a Pipeline"

7.2.1 Starting Oracle Service Bus and Creating Project Folders

Perform the following steps to start Oracle Service Bus and create project folders:

1. Start the Oracle WebLogic Server for the Oracle WebLogic Server domain that you have configured.
2. Open the Oracle Service Bus Console in a Web browser by entering the following URL:

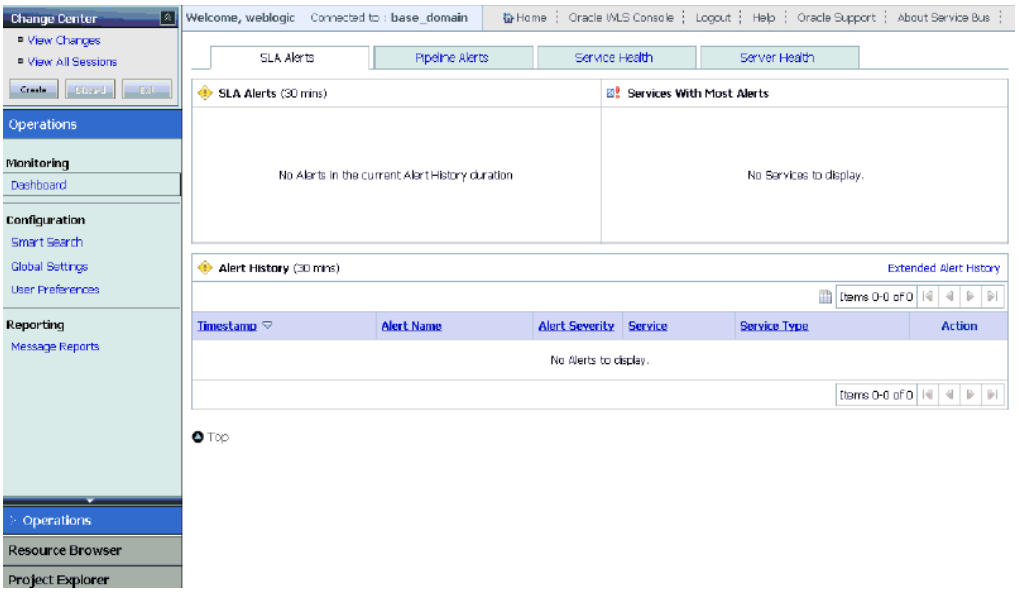
   `http://hostname:port/sbconsole`

   Where *hostname* is the name of the machine where Oracle WebLogic Server is running and *port* is the port for the domain you are using. The port for the default domain is 7001.

   The Oracle Service Bus Console logon page is displayed.
3. Log on to the Oracle Service Bus Console using a valid user name and password.

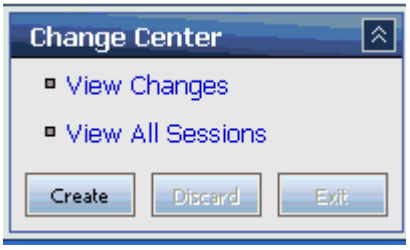
   The Oracle Service Bus Console home page is displayed, as shown in Figure 7–1.

Figure 7–1 Oracle Service Bus Console Home Page



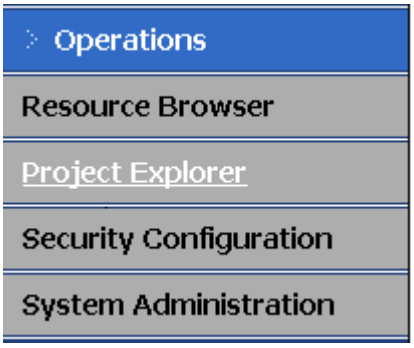
4. Click **Create** in the Change Center area to start a new Oracle Service Bus session, as shown in Figure 7–2.

Figure 7–2 Change Center



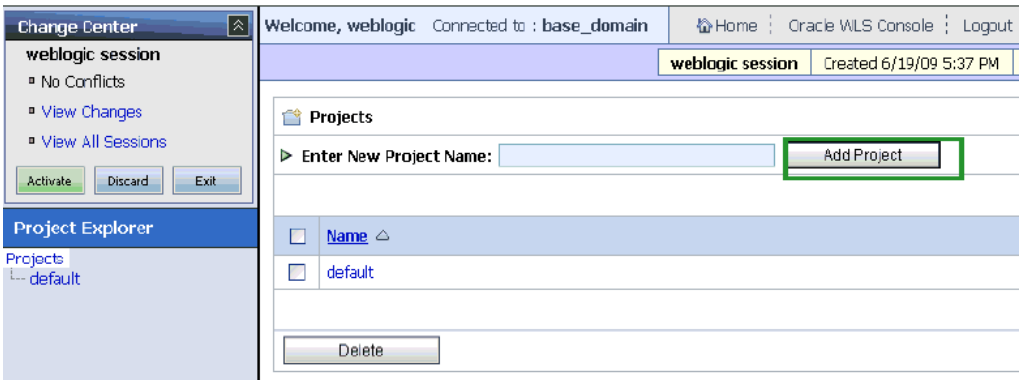
5. Click **Project Explorer** in the left pane, as shown in Figure 7–3.

Figure 7–3 Project Explorer Option



The Project Explorer page is displayed, as shown in Figure 7–4.

Figure 7–4 Project Explorer Page



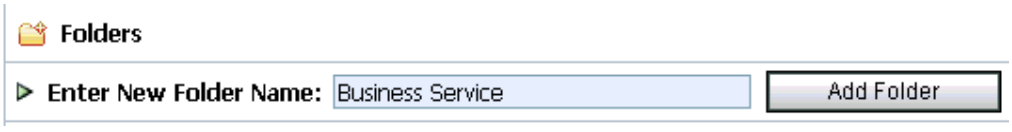
6. Provide a valid name for the new project and click **Add Project**.

   The project is successfully created and listed.

7. Click on the created project.

   The project page is displayed.

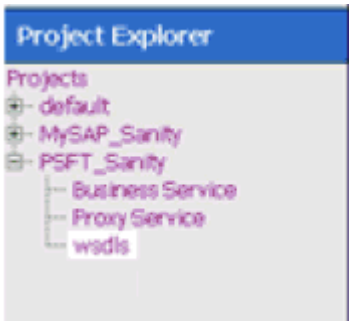
Figure 7–5 Enter New Folder Name Field



8. In the Enter New Folder Name field, type **Business Service** and click **Add Folder**, as shown in Figure 7–5.
9. In the Enter New Folder Name field, type **Proxy Service** and click **Add Folder**.
10. In the Enter New Folder Name field, type **wsdls** and click **Add Folder**.

    The Business Service, Proxy Service, and wsdls folders are listed in the left pane below the project node, as shown in Figure 7–6.

Figure 7–6 Project Node



7.2.2 Setting the Class Path for Application Explorer to Integrate With Oracle Service Bus

Before starting and using Application Explorer to publish a WSDL directly to the Oracle Service Bus (OSB) Console (project/folder), OSB users must perform the following steps:

1. Open the command prompt window.
2. Navigate to the following directory:

   `<OSB_Home>\user_projects\domains\base_domain\bin`

3. Execute **setDomainEnv.cmd** (Windows) or **. ./setDomainEnv.sh** (UNIX/Linux).

   This command sets the class path for Application Explorer to access the Oracle WebLogic Server APIs to publish the WSDLs to the OSB Console.
4. Do not close the command prompt window.
5. Navigate to the following directory:

   `<OSB_Home>\3rdparty\ApplicationAdapters\tools\iwae\bin`

6. Execute **ae.bat** (Windows) or **iwae.sh** (UNIX/Linux) to start Application Explorer.

   You are now ready to publish WSDLs from Application Explorer to the OSB Console.

7.2.3 Publishing a WSDL From Application Explorer to Oracle Service Bus

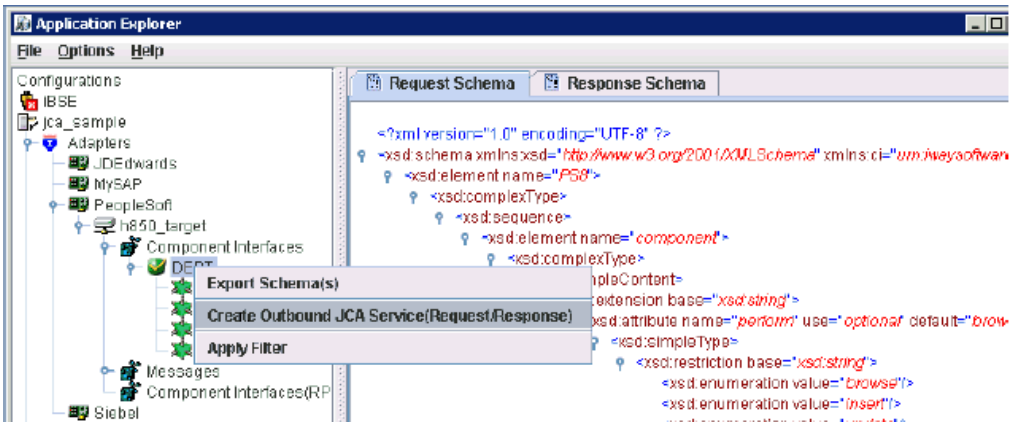
Perform the following steps to publish a WSDL from Application Explorer to Oracle Service Bus:

1. Start Application Explorer, connect to a J2CA configuration, and connect to a PeopleSoft target.

   For more information, see Chapter 2, "Configuring Oracle Application Adapter for PeopleSoft".

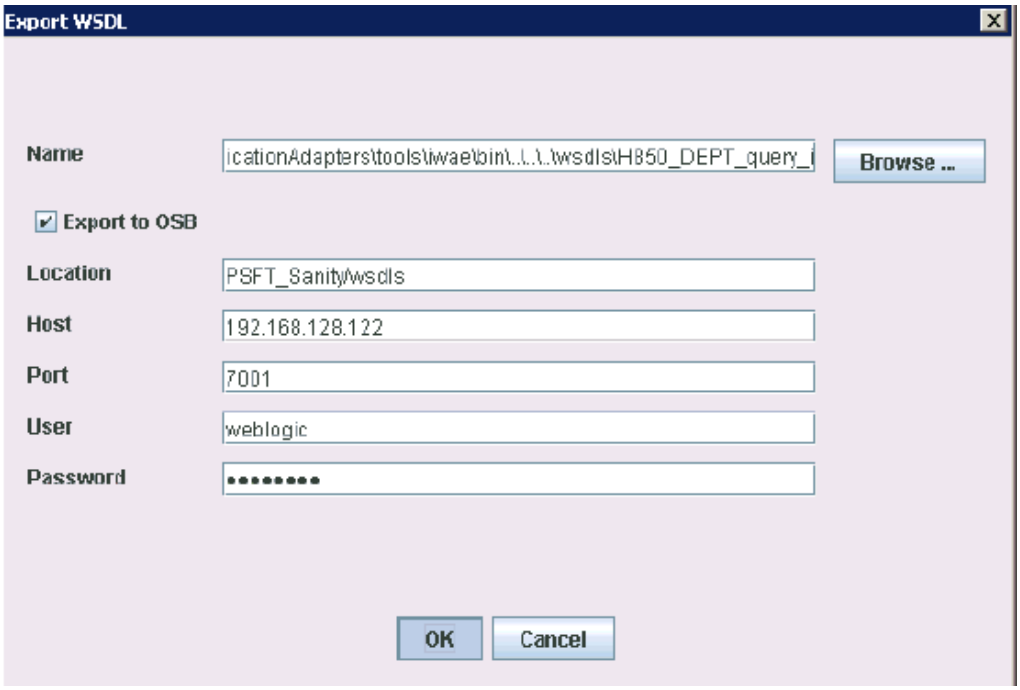
2. Expand **Component Interfaces**.
3. Right-click the **DEPT** business object and select **Create Outbound JCA Service(Request/Response)** from the menu, as shown in Figure 7–7.

Figure 7–7 Create Outbound JCA Service(Request/Response) Option



The Export WSDL dialog is displayed, as shown in Figure 7–8.

Figure 7–8 Export WSDL Dialog



4. In the Name field, a default file name for the WSDL file is provided. You can accept the default or provide your own.
5. Select the **Export to OSB** option.
6. In the Location field, enter the folder name in Oracle Service Bus where you want to publish the WSDL document.

The location is composed of an Oracle Service Bus project name and optionally, one or more folder names. The project name and any folder names must be separated by a forward slash character "/".

7. In the Host field, enter the name of the machine where Oracle Service Bus is installed.
8. In the Port field, enter the port that is being used by Oracle Service Bus.
9. In the User field, enter your username to access Oracle Service Bus.
10. In the Password field, enter your password to access Oracle Service Bus.
11. Click **OK**.

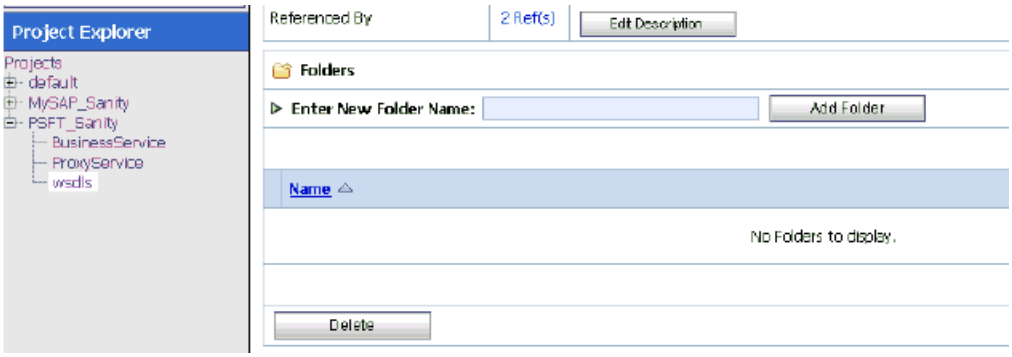
    The WSDL is published to the location specified in the Export WSDL dialog and is now available for use with a Business Service or Proxy Service in Oracle Service Bus.

7.2.4 Configuring a WSDL-based Business Service

Perform the following steps to configure a WSDL-based business service:

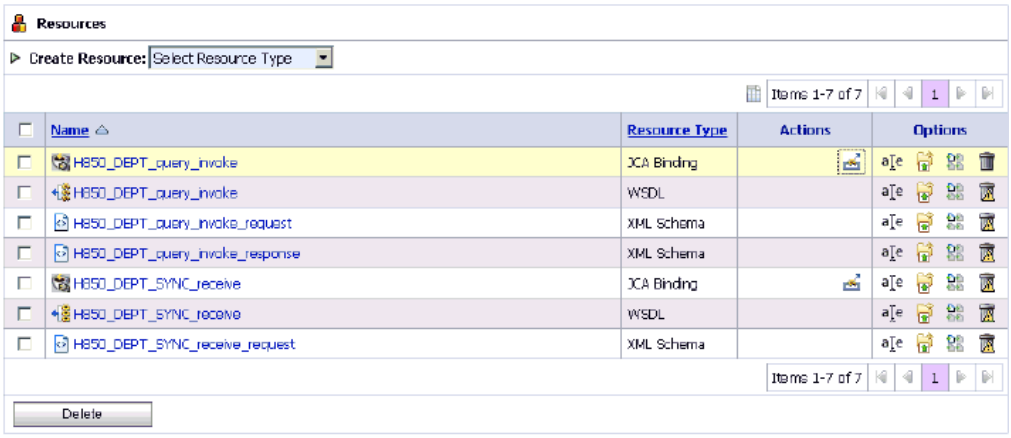
1. Open the Oracle Service Bus Console and select the created WSDL folder in the left pane (for example, wsdls), as shown in Figure 7–9.

Figure 7–9 WSDL Folder



2. Ensure that the exported WSDL is listed, as shown in Figure 7–10.

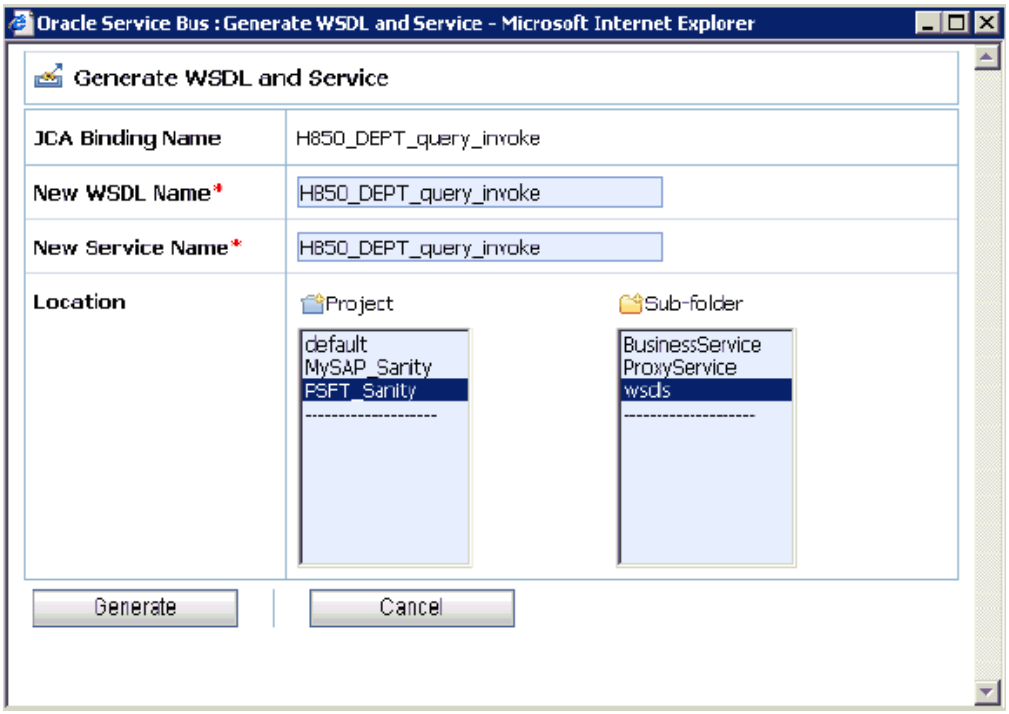
Figure 7–10 Exported WSDL



3. Click the icon that corresponds to the exported WSDL in the Actions column.

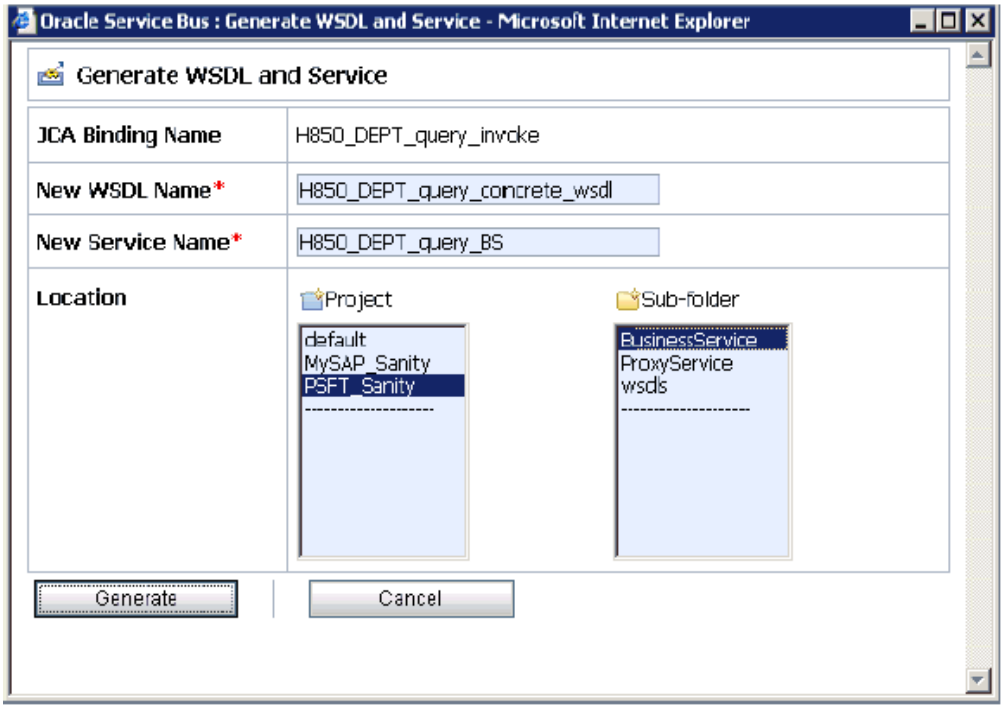
   The Generate WSDL and Service page is displayed, as shown in Figure 7–11.

Figure 7–11 Generate WSDL and Service Page



4. Provide a new WSDL name and a new service name in the corresponding fields, as shown in Figure 7–12.

Figure 7–12 WSDL Name and New Service Name Fields



5. In the Location area, select an available project and the sub-folder that is designated for Business Services.
6. Click **Generate**.

   If the WSDL and Service resources are successfully created, the following message is displayed, as shown in Figure 7–13.

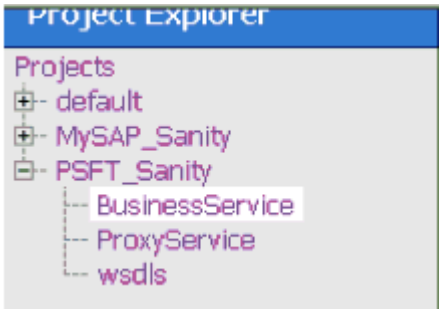
Figure 7–13 Resources Created Successfully Message

7.2.5 Configuring a File Type Business Service

Perform the following steps to configure a File type Business Service:

1. Select the **Business Service** folder you created in the left pane, as shown in Figure 7–14.

Figure 7–14 Business Service Folder

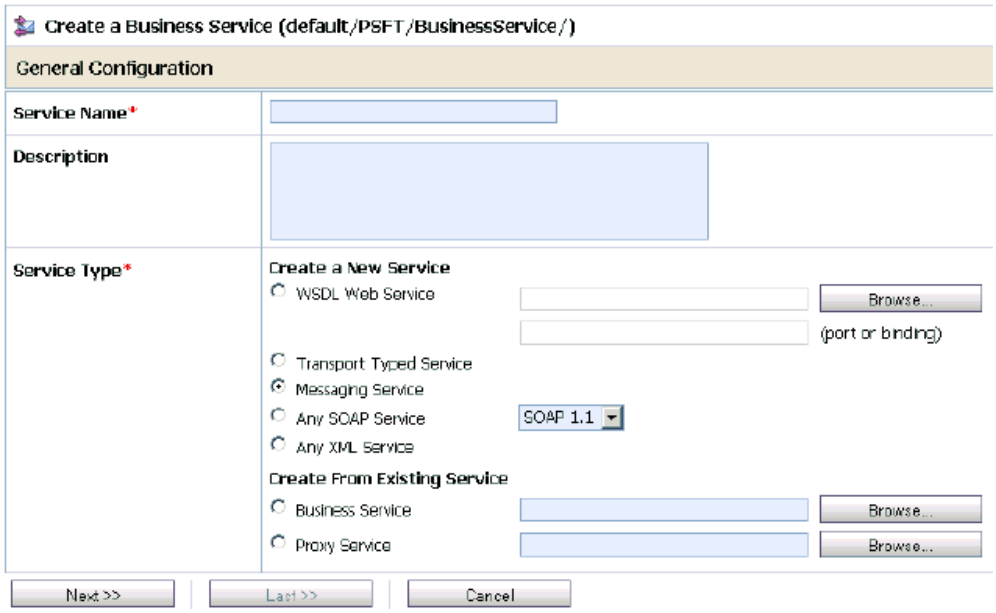


2. In the right pane, select **Business Service** from the Create Resource menu, as shown in Figure 7–15.

Figure 7–15 Business Service

The General Configuration page is displayed, as shown in Figure 7–16.

Figure 7–16 General Configuration Page

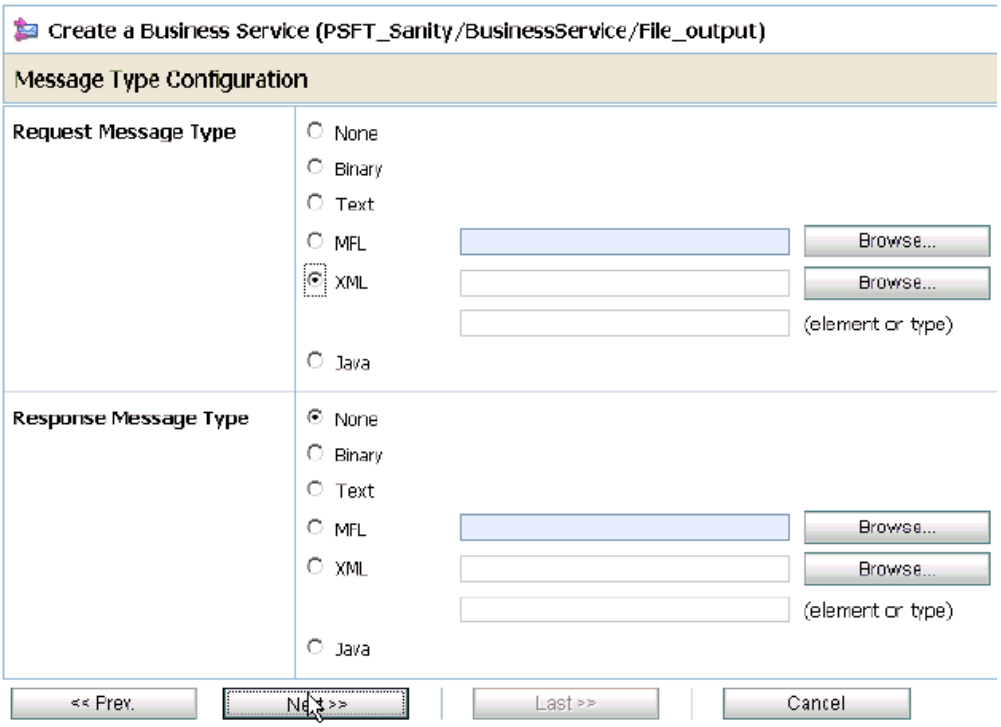


3. Provide a name for the Business Service and from the Service Type area select **Messaging Service**.

4. Click **Next**.

The Message Type Configuration page is displayed, as shown in Figure 7–17.

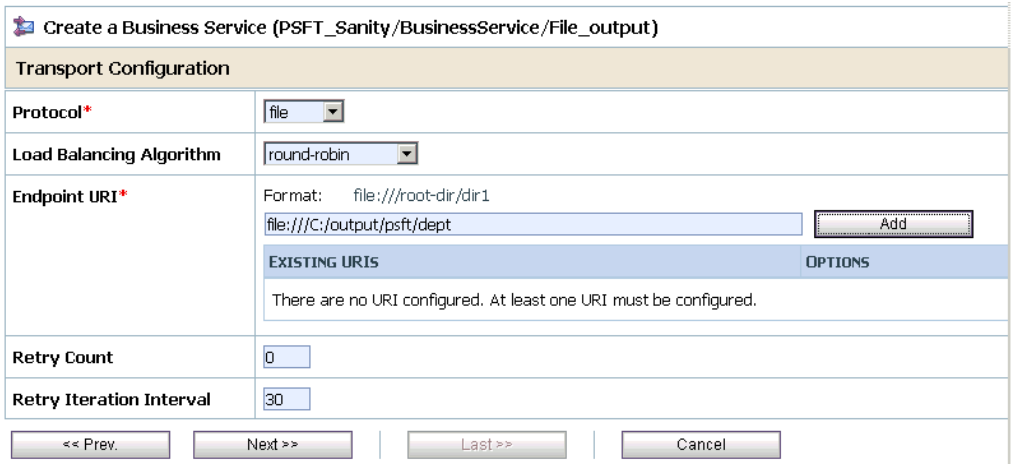
Figure 7–17 Message Type Configuration Page



5. Select **XML** as the Request Message Type and **None** as the Response Message Type.
6. Click **Next**.

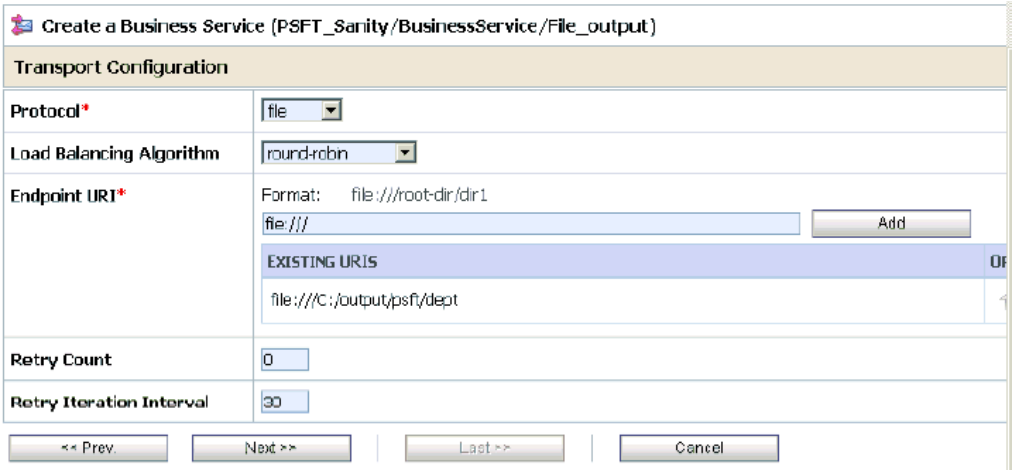
   The Transport Configuration page is displayed, as shown in Figure 7–18.

Figure 7–18 Transport Configuration Page



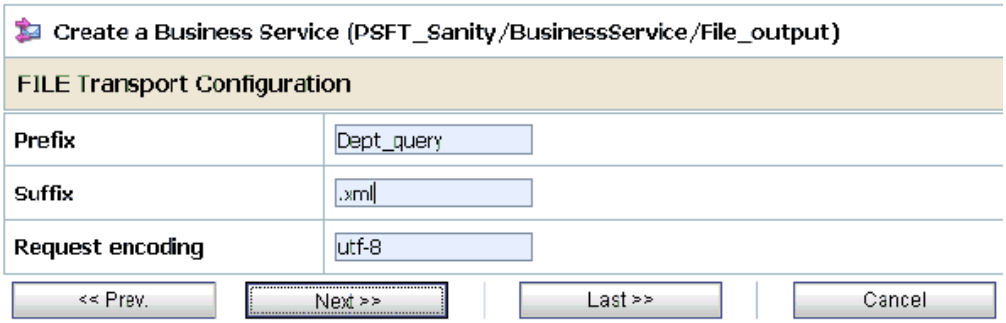
7. Select **file** from the Protocol list.
8. Enter the path to a destination folder on your file system in the Endpoint URI field and click **Add**.
9. Click **Next**, as shown in Figure 7–19.

Figure 7–19 Transport Configuration Page



The FILE Transport Configuration page is displayed, as shown in Figure 7–20.

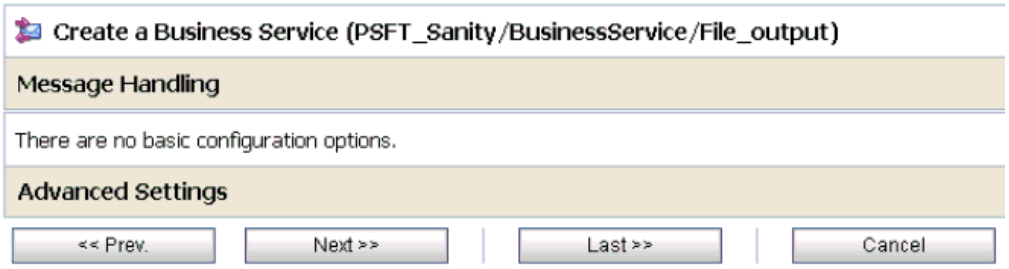
Figure 7–20 FILE Transport Configuration Page



10. Enter the prefix and suffix for the output file to be received and click **Next**.

The Message Handling and Advanced Settings page is displayed, as shown in Figure 7–21.

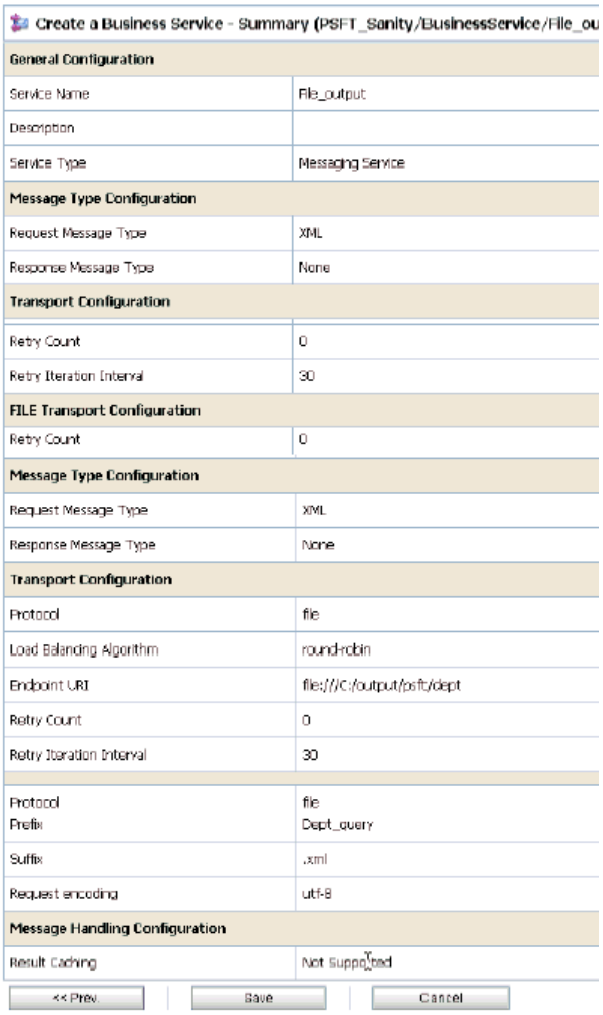
Figure 7–21 Message Handling and Advanced Settings Page



11. Click **Next**.

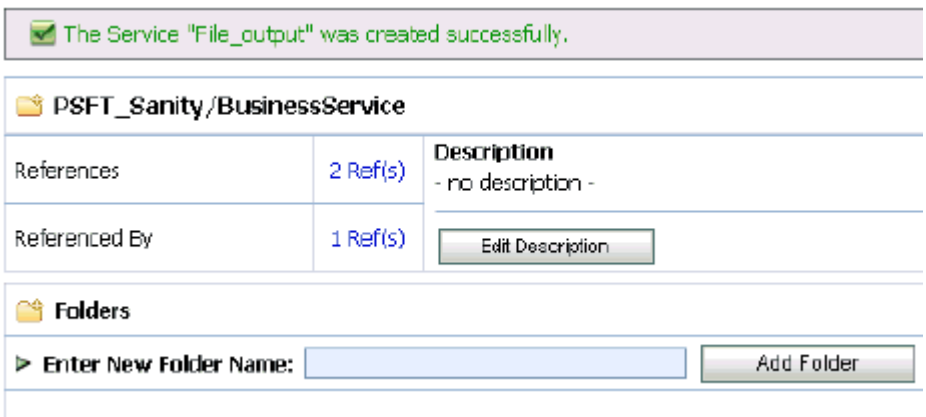
The following Summary page is displayed, as shown in Figure 7–22.

Figure 7–22 Summary Page



12. Review all the information for your Business Service and click **Save**.
13. Check if the success message is displayed once it is saved, as shown in Figure 7–23.

Figure 7–23 Success Message

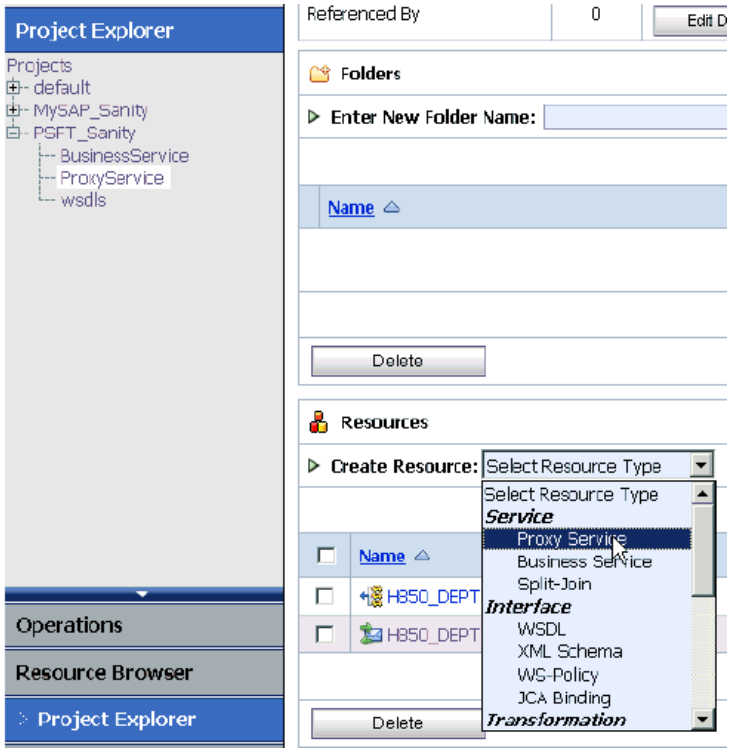


7.2.6 Configuring a Proxy Service

Perform the following steps to configure a Proxy Service:

1. Select the **Proxy Service** folder you created in the left pane, as shown in Figure 7–24.

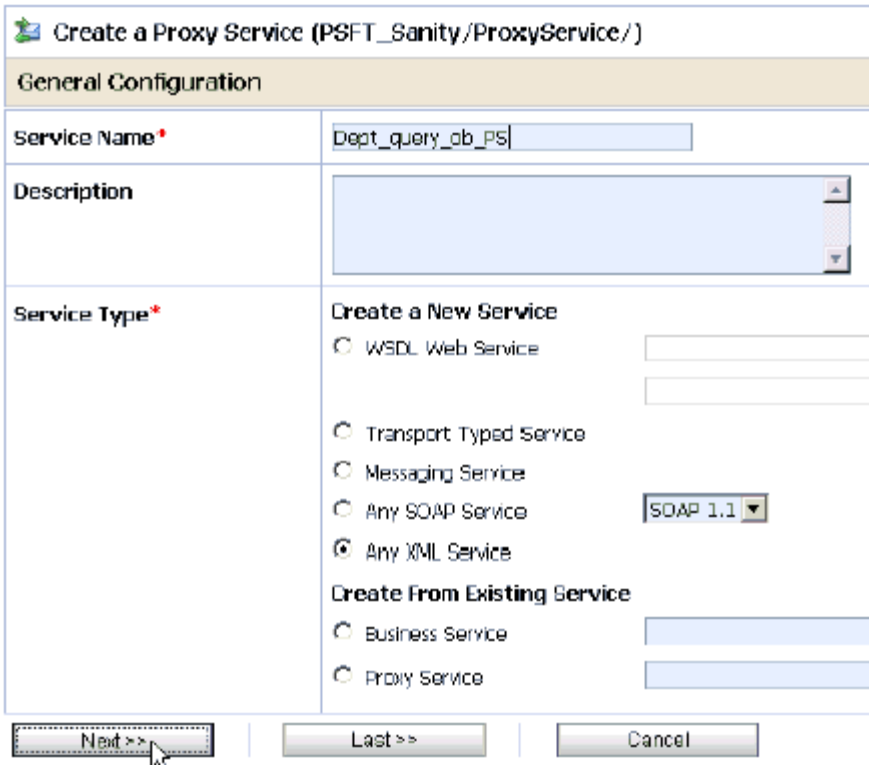
Figure 7–24 Proxy Service



2. In the right pane, select **Proxy Service** from the Create Resource menu.

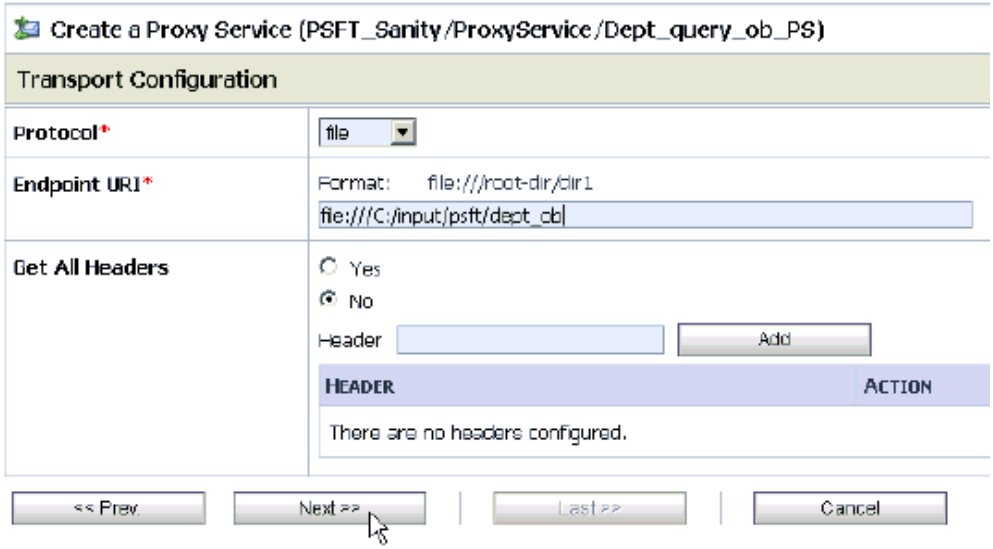
   The General Configuration page is displayed, as shown in Figure 7–25

Figure 7–25 General Configuration Page



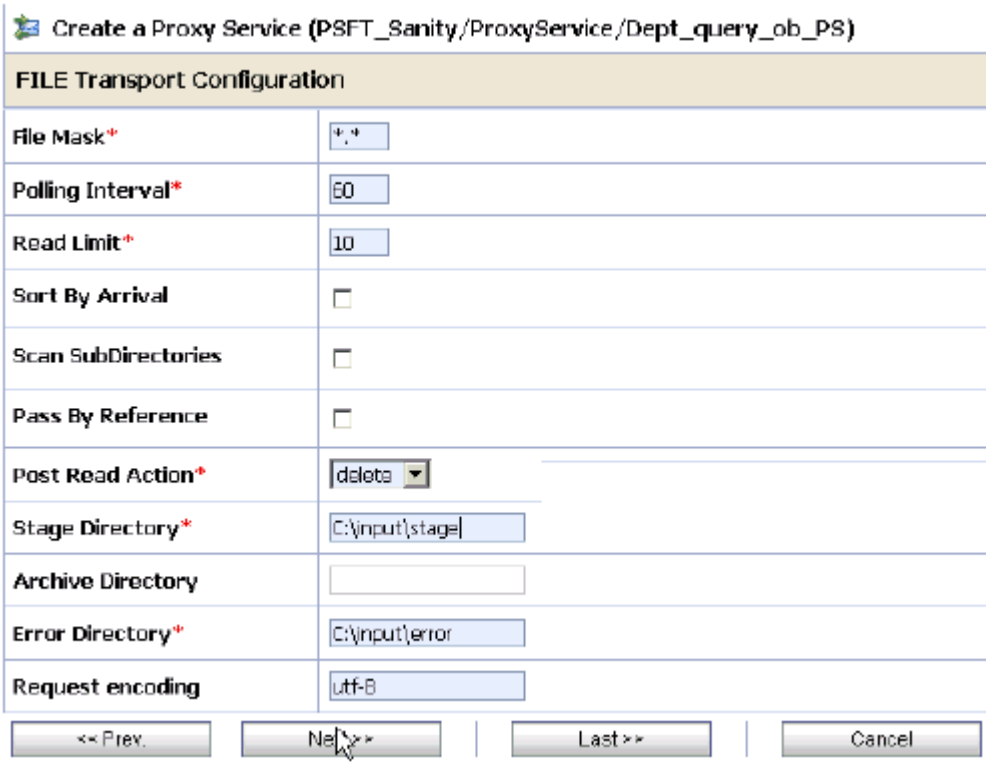
3. Provide a name for the Proxy Service and from the Service Type area select **Any XML Service**.
4. Click **Next**, as shown in Figure 7–26.

Figure 7–26 Transport Configuration Page



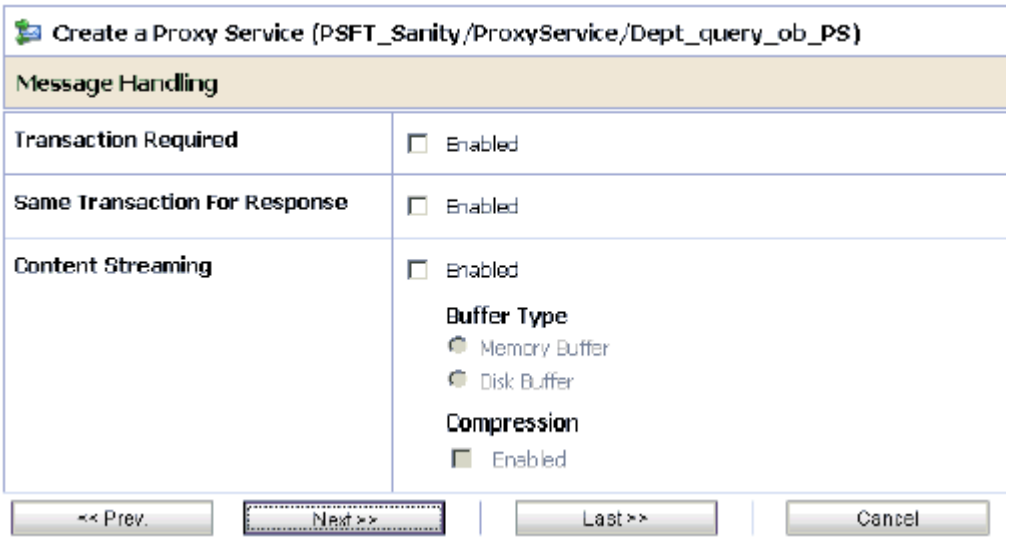
5. Select **file** from the Protocol list.
6. Enter the path to an input folder on your file system in the Endpoint URI field.
7. Click **Next**, as shown in Figure 7–27.

Figure 7–27 FILE Transport Configuration Page



8. Provide any folder locations on your file system for the Stage Directory and Error Directory fields.
9. Click **Next**, as shown in Figure 7–28.

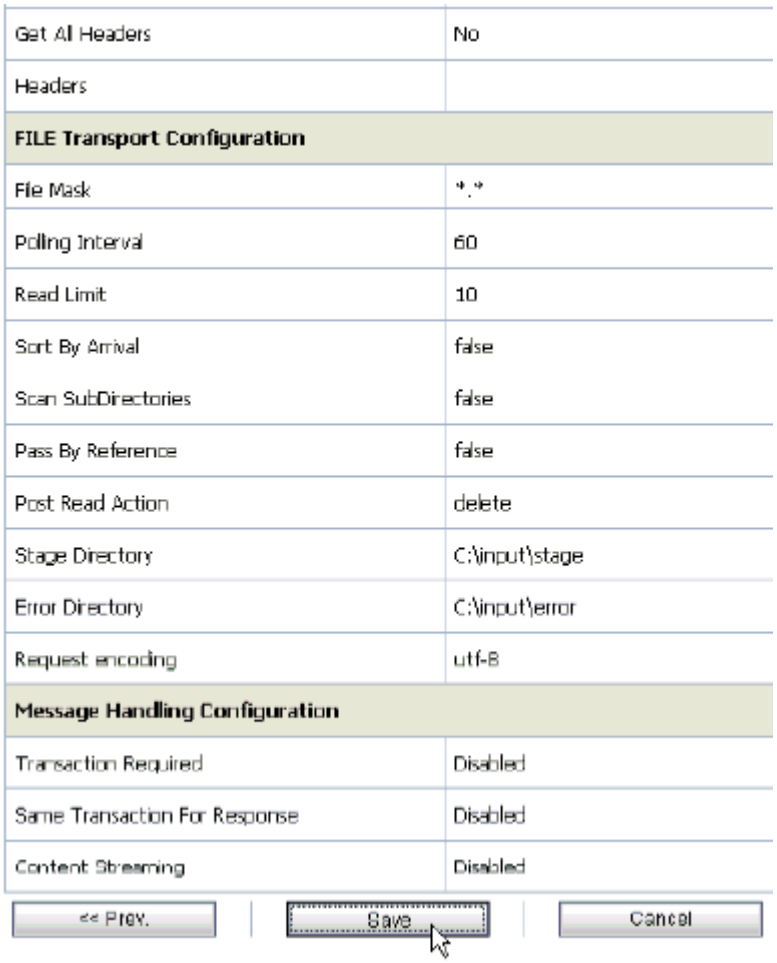
Figure 7–28 Message Handling Page



10. Accept the default values and click **Next**.

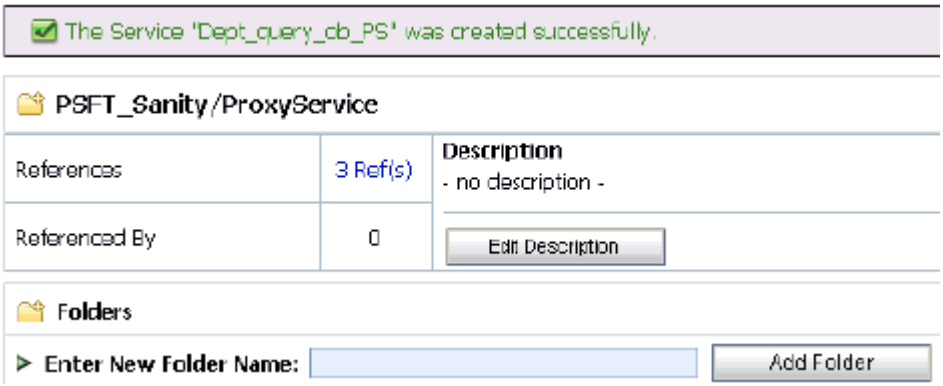
    The following Summary page is displayed, as shown in Figure 7–29.

Figure 7–29 Summary Page



11. Review all the information for your Proxy Service and click **Save**.
12. Check if the success message is displayed, as shown in Figure 7–30.

Figure 7–30 Success Message

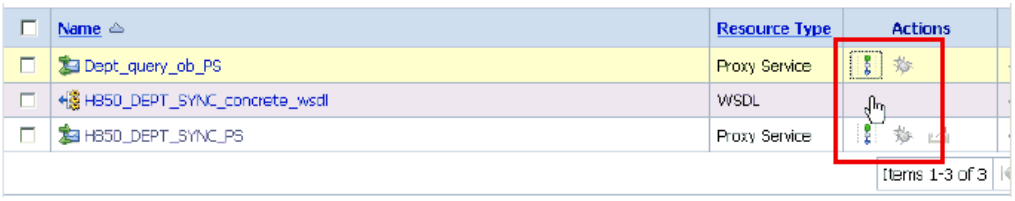


7.2.7 Configuring a Pipeline

Perform the following steps to configure a Pipeline:

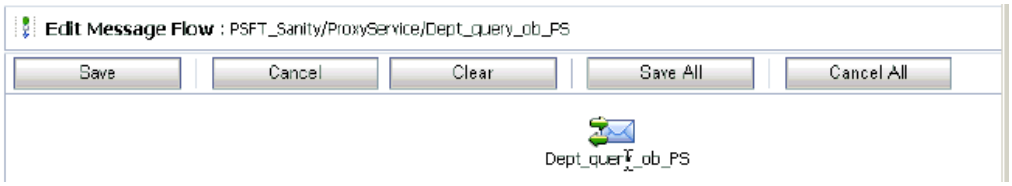
1. Click the **Edit Message Flow** icon in the row of the Proxy Service you created, as shown in Figure 7–31.

Figure 7–31 Edit Message Flow Icon



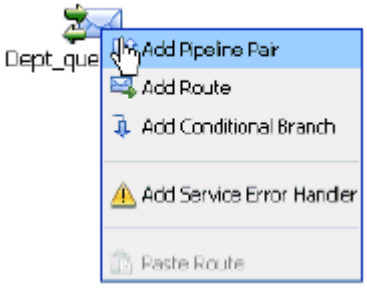
The Edit Message Flow workspace area is displayed, as shown in Figure 7–32.

Figure 7–32 Edit Message Flow Workspace Area



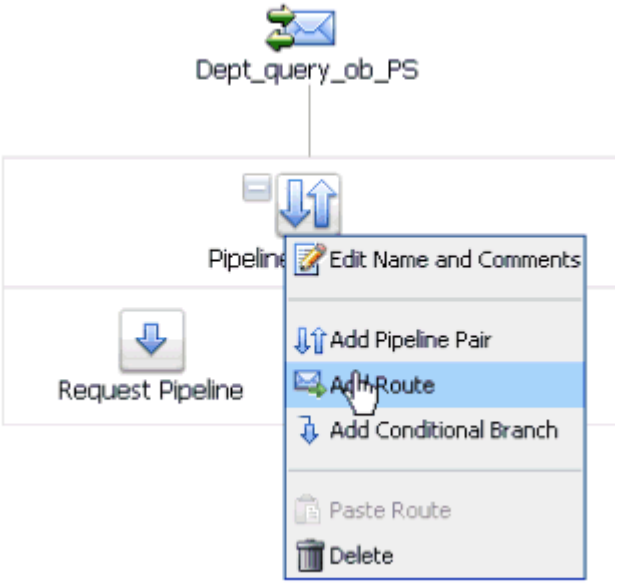
2. Click the **Proxy Service** icon and select **Add Pipeline Pair** from the menu, as shown in Figure 7–33.

Figure 7–33 Add Pipeline Pair



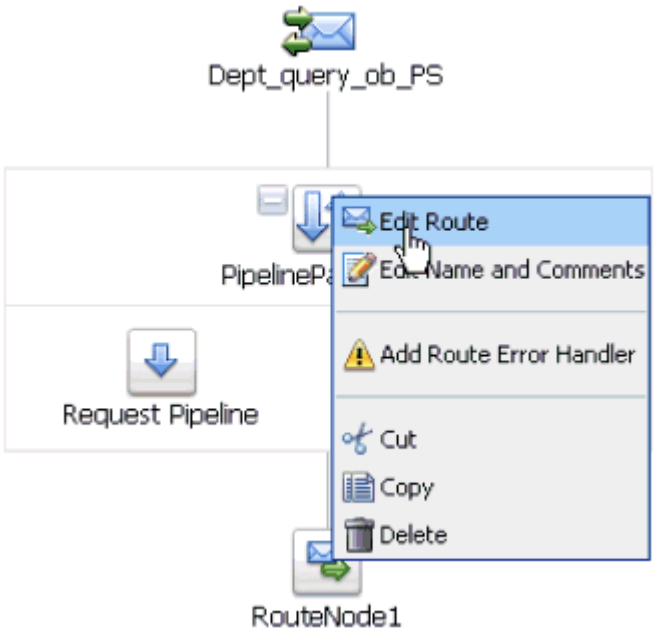
3. Click the **Request Pipeline** icon and select **Add Route** from the menu, as shown in Figure 7–34.

Figure 7–34 Add Route



The RouteNode1 icon is added below the Request Pipeline icon.

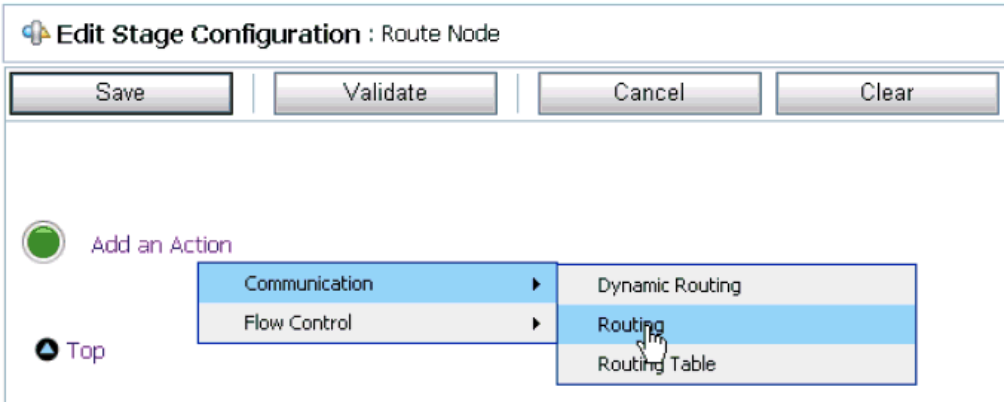
Figure 7–35 Edit Route Option



4. Click the **RouteNode1** icon and select **Edit Route** from the menu, as shown in Figure 7–35.

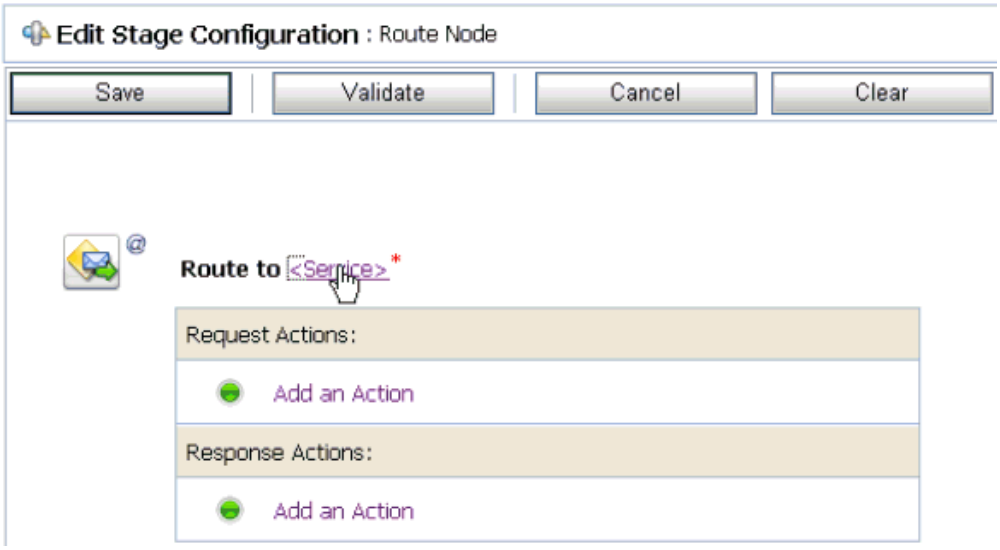
   The Edit Stage Configuration workspace area is displayed, as shown in Figure 7–36.

Figure 7–36 Edit Stage Configuration Workspace Area



5. Click **Add an Action**, select **Communication** from the menu, and click **Routing**.

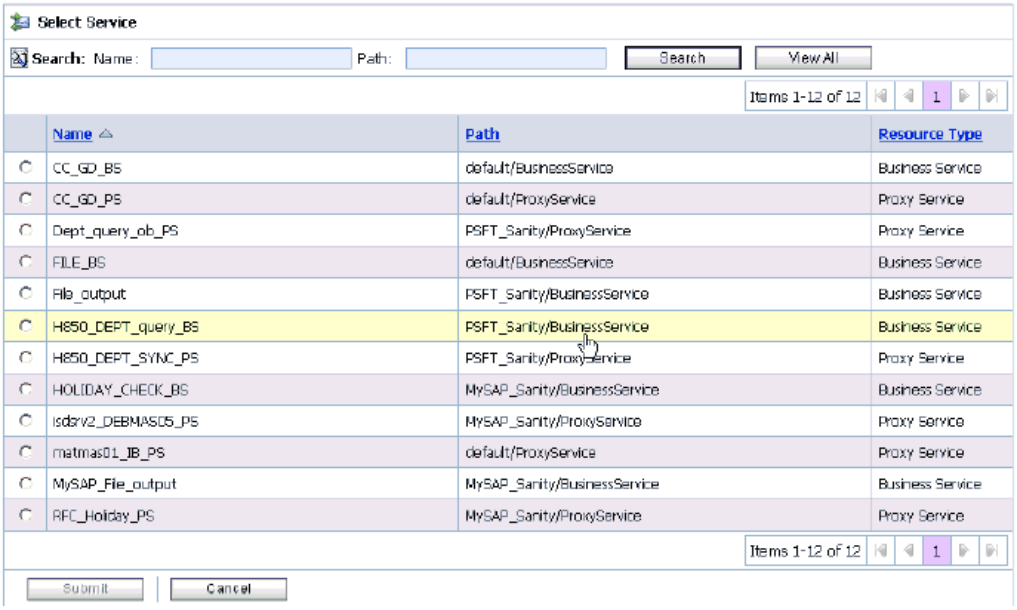
Figure 7–37 Route Destination



6. Click **<Service>**, as shown in Figure 7–37.

   The Select Service dialog is displayed, as shown in Figure 7–38.

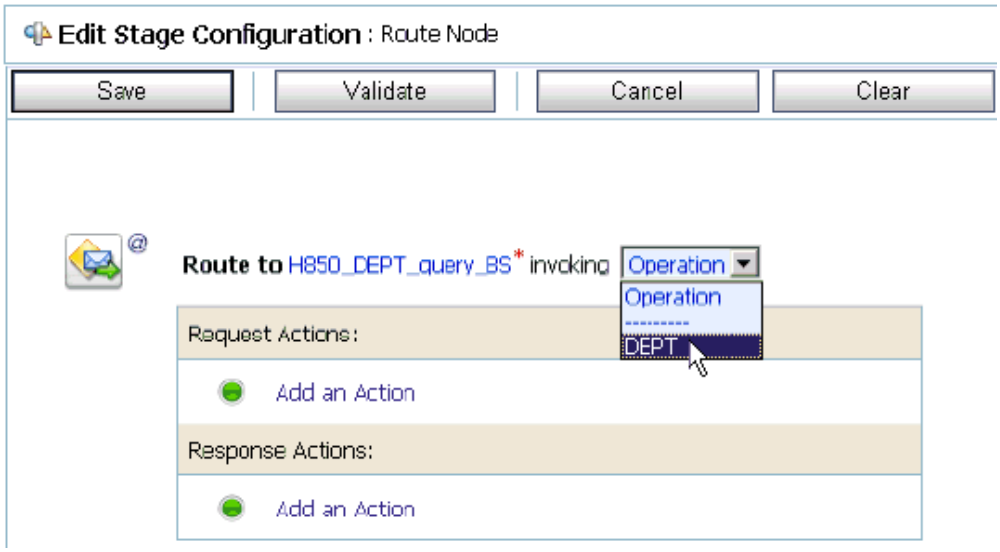
Figure 7–38 Select Service Dialog



7. Select a WSDL type Business Service and click **Submit**.

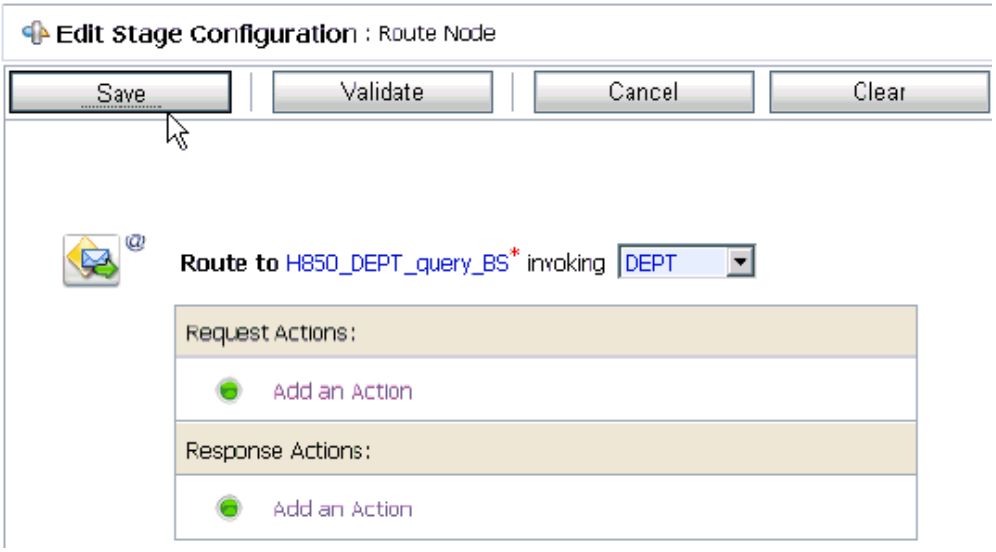
   You are returned to the Edit Stage Configuration workspace area, as shown in Figure 7–39.

Figure 7–39 Edit Stage Configuration Workspace Area



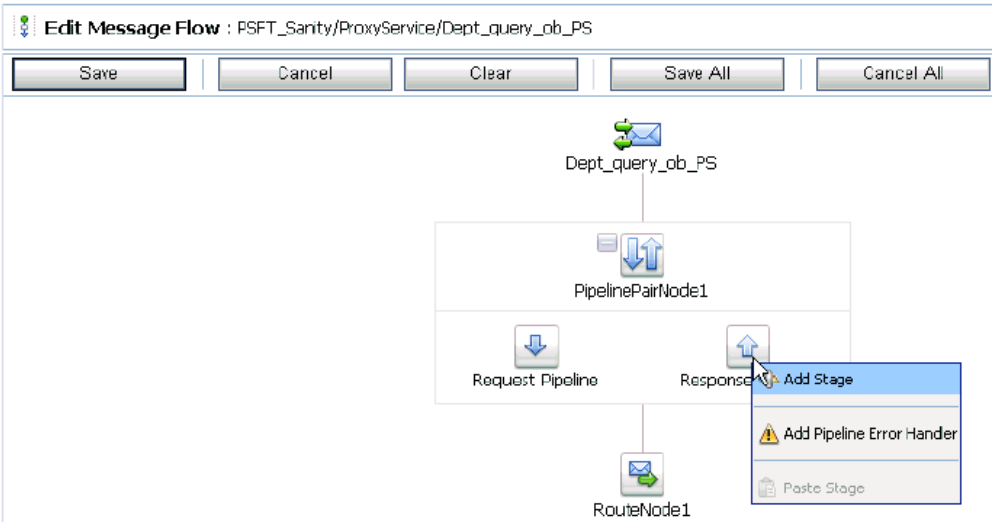
8. Select the name of the PeopleSoft business object (for example, DEPT) as the operational attribute from the list, as shown in Figure 7–40.

Figure 7–40 Operational Attribute



9. Click **Save**.

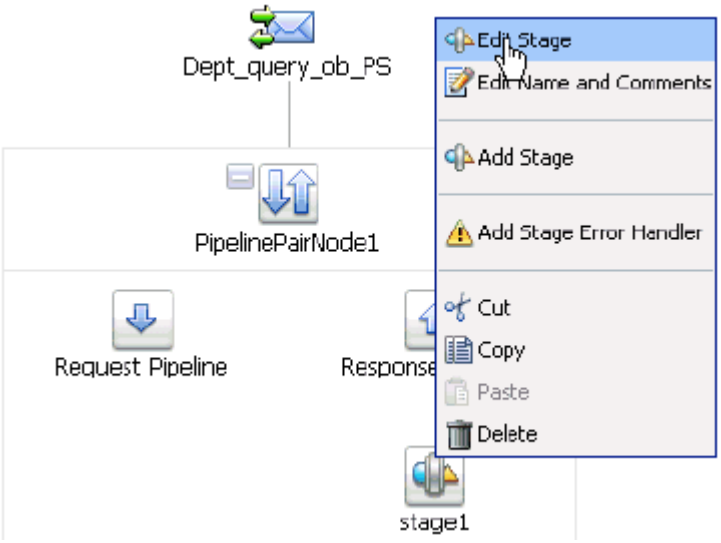
Figure 7–41 Add Stage



10. Click the **Response Pipeline** icon and select **Add Stage** from the menu, as shown in Figure 7–41.

    The Stage1 icon is added below the Response Pipeline icon.

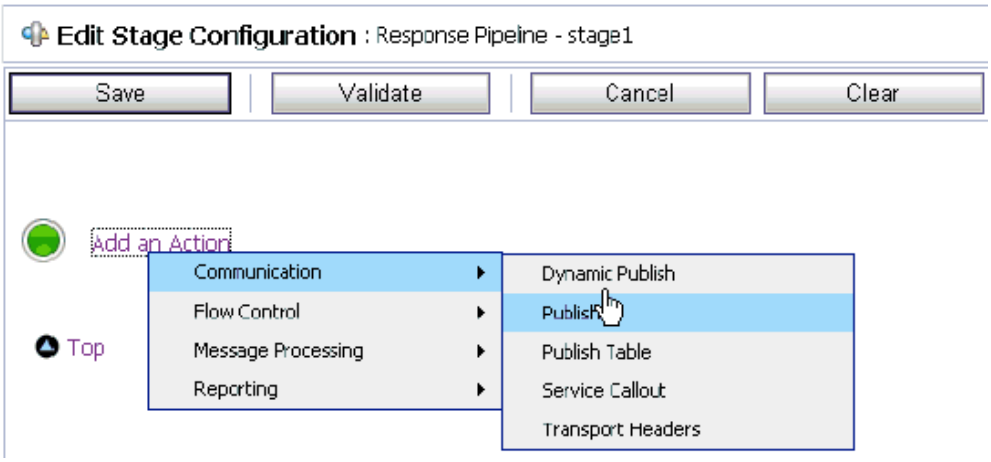
Figure 7–42 Edit Stage Selected



11. Click the **Stage1** icon and select **Edit Stage** from the menu, as shown in Figure 7–42.

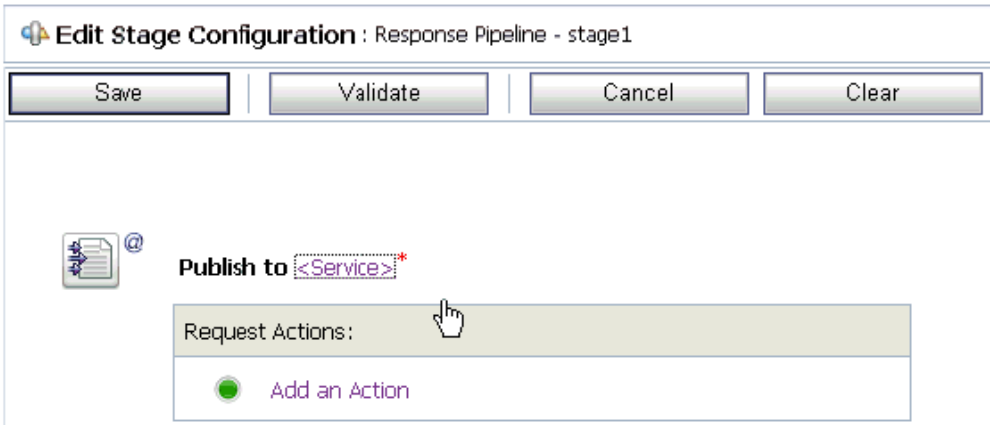
    The Edit Stage Configuration workspace area is displayed, as shown in Figure 7–43.

Figure 7–43 Edit Stage Configuration Workspace Area



12. Click **Add an Action**, select **Communication** from the menu, and click **Publish**.

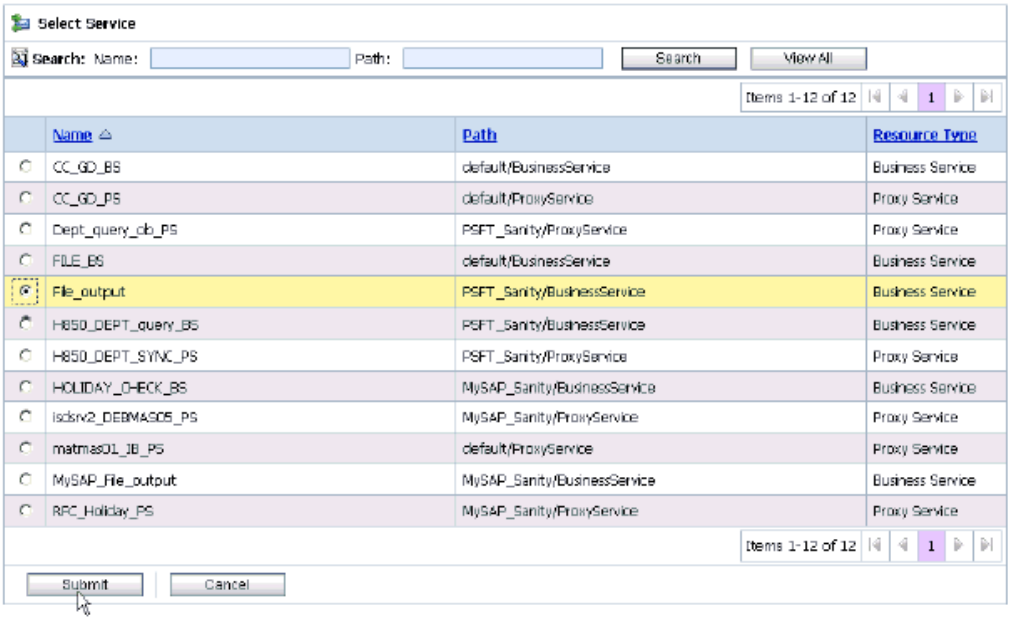
Figure 7–44 Edit Stage Configuration Workspace Area



13. Click **<Service>**, as shown in Figure 7–44.

    The Select Service dialog is displayed, as shown in Figure 7–45.

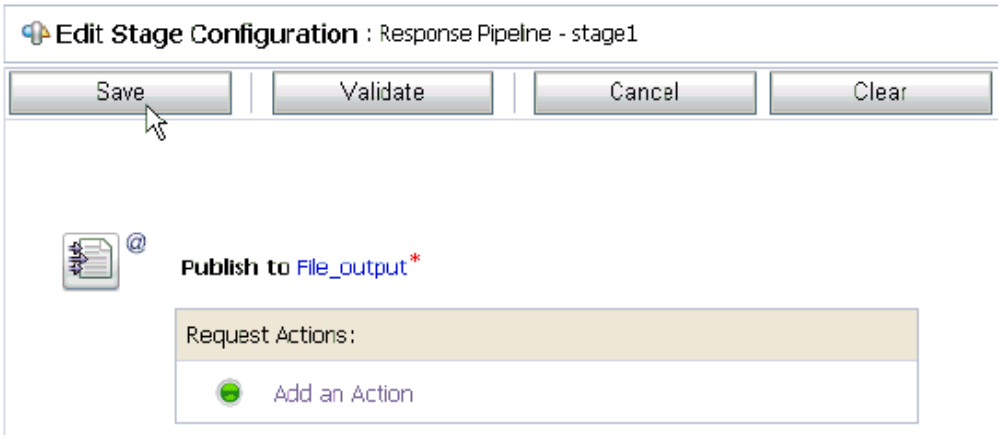
Figure 7–45 Select Service Dialog



14. Select a File type Business Service and click **Submit**.

    You are returned to the Edit Stage Configuration workspace area, as shown in Figure 7–46.

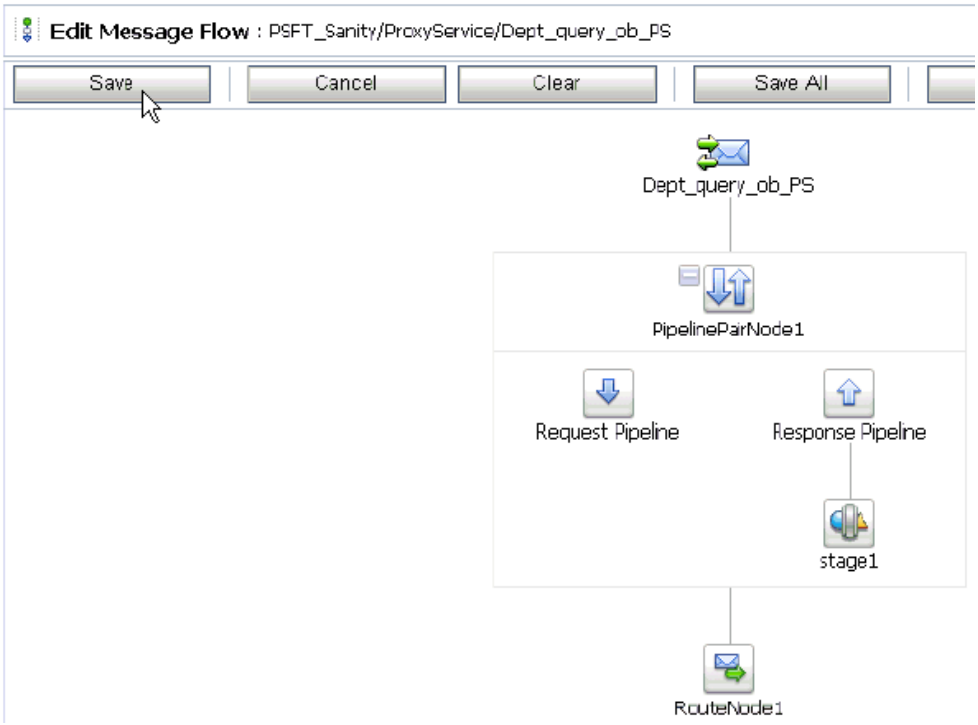
Figure 7–46 Edit Stage Configuration Workspace Area



15. Click **Save**.

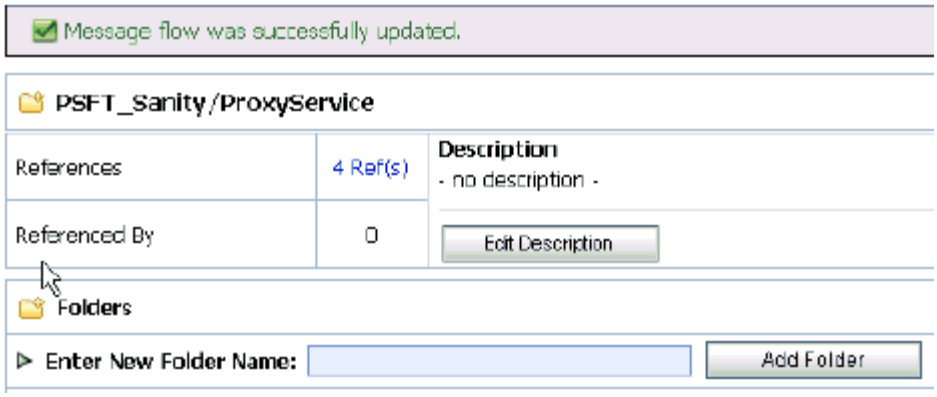
    You are returned to the Edit Message Flow workspace area, as shown in Figure 7–47.

Figure 7–47 Edit Message Flow Workspace Area



16. Click **Save**.

Figure 7–48 Successful Update Message



17. Check if the success message is displayed and click **Activate** in the Change Center, as shown in Figure 7–48.

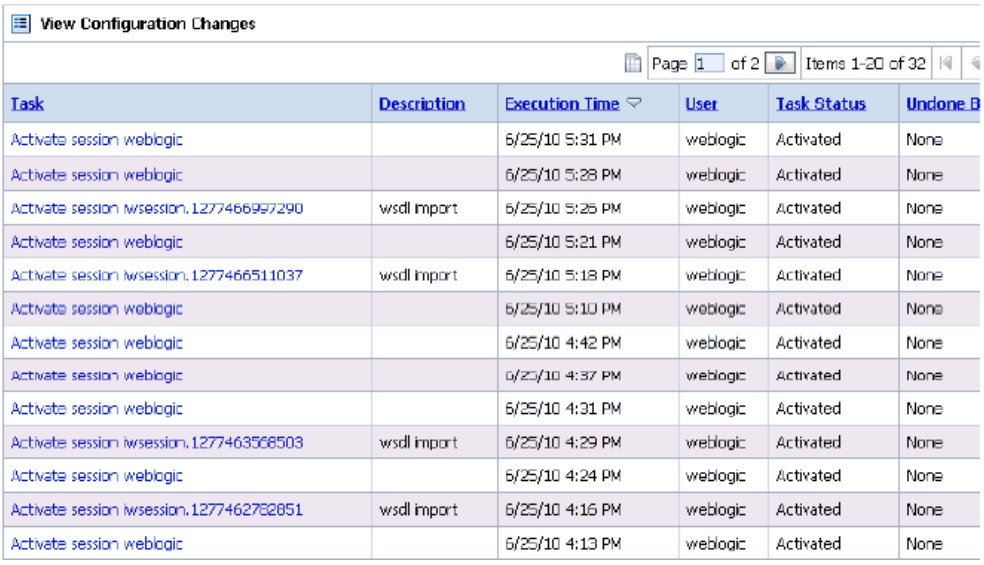
    The Activate Session page is displayed, as shown in Figure 7–49.

Figure 7–49 Activate Session Page

18. Click **Submit**.

19. Check if the View Configuration Changes page is displayed, as shown in Figure 7–50.

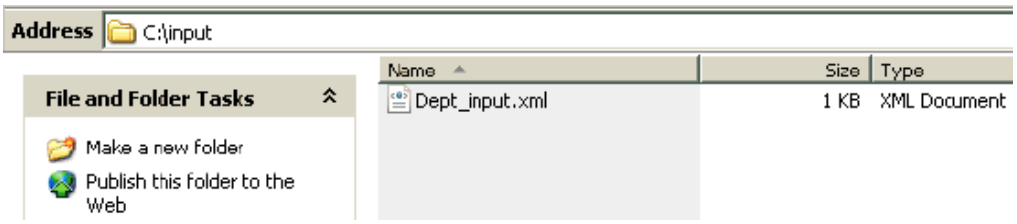
Figure 7–50 View Configuration Changes Page



Task	Description	Execution Time	User	Task Status	Undone B
Activate session weblogic		6/25/10 5:31 PM	weblogic	Activated	None
Activate session weblogic		6/25/10 5:28 PM	weblogic	Activated	None
Activate session iwsession.1277466997290	wsdl import	6/25/10 5:26 PM	weblogic	Activated	None
Activate session weblogic		6/25/10 5:21 PM	weblogic	Activated	None
Activate session iwsession.1277466511037	wsdl import	6/25/10 5:18 PM	weblogic	Activated	None
Activate session weblogic		6/25/10 5:10 PM	weblogic	Activated	None
Activate session weblogic		6/25/10 4:42 PM	weblogic	Activated	None
Activate session weblogic		6/25/10 4:37 PM	weblogic	Activated	None
Activate session weblogic		6/25/10 4:31 PM	weblogic	Activated	None
Activate session iwsession.1277463568503	wsdl import	6/25/10 4:29 PM	weblogic	Activated	None
Activate session weblogic		6/25/10 4:24 PM	weblogic	Activated	None
Activate session iwsession.1277462782851	wsdl import	6/25/10 4:16 PM	weblogic	Activated	None
Activate session weblogic		6/25/10 4:13 PM	weblogic	Activated	None

20. Copy and paste an input XML file in the input folder you have configured, as shown in Figure 7–51.

Figure 7–51 Input XML File



21. Output is received in the configured output location.

7.3 Configuring Inbound Processing Using Oracle Service Bus (J2CA Configuration)

This section describes how to configure inbound processing using Oracle Service Bus for J2CA configurations.

Samples have been provided for this use case scenario under the `etc/sample` folder in the Application Adapters installation.

This section includes the following topics:

- Section 7.3.1, "Starting Oracle Service Bus and Creating Project Folders"
- Section 7.3.2, "Setting the Class Path for Application Explorer to Integrate With Oracle Service Bus"
- Section 7.3.3, "Publishing a WSDL From Application Explorer to Oracle Service Bus"

- Section 7.3.4, "Configuring a WSDL-based Proxy Service"
- Section 7.3.5, "Configuring a File Type Business Service"
- Section 7.3.6, "Configuring a Pipeline"

7.3.1 Starting Oracle Service Bus and Creating Project Folders

Perform the following steps to start Oracle Service Bus and create project folders:

1. Start the Oracle WebLogic Server for the Oracle WebLogic Server domain that you have configured.
2. Open the Oracle Service Bus Console in a Web browser by entering the following URL:

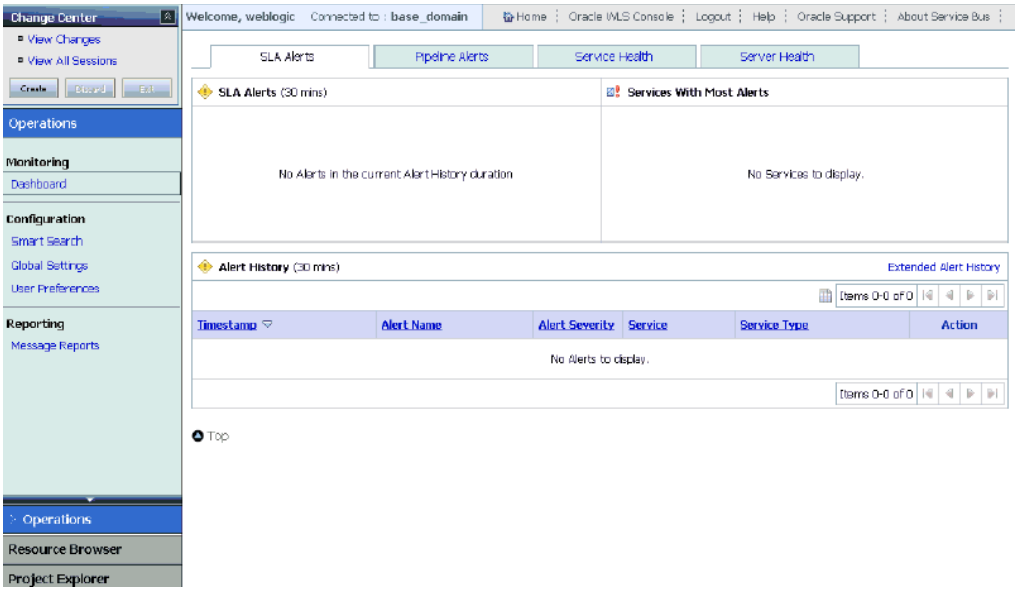
   `http://hostname:port/sbconsole`

   Where *hostname* is the name of the machine where Oracle WebLogic Server is running and *port* is the port for the domain you are using. The port for the default domain is 7001.

   The Oracle Service Bus Console logon page is displayed.
3. Log on to the Oracle Service Bus Console using a valid user name and password.

   The Oracle Service Bus Console home page is displayed, as shown in Figure 7–52.

Figure 7–52 Oracle Service Bus Console Home Page

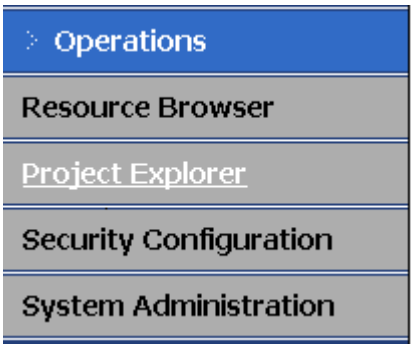


4. Click **Create** in the Change Center area to start a new Oracle Service Bus session, as shown in Figure 7–53.

Figure 7–53 Create Button

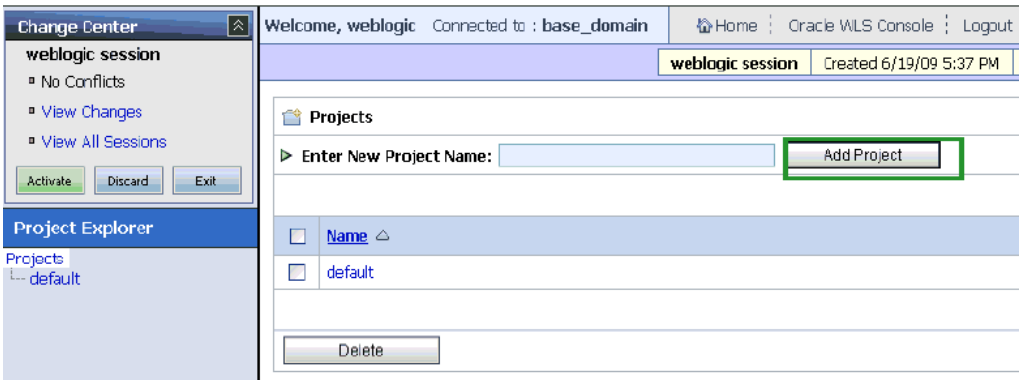
5. Click **Project Explorer** in the left pane, as shown in Figure 7–54.

Figure 7–54 Project Explorer Option



The Project Explorer page is displayed, as shown in Figure 7–55.

Figure 7–55 Project Explorer Page



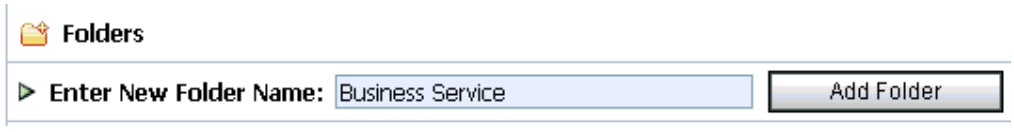
6. Provide a valid name for the new project and click **Add Project**.

   The project is successfully created and listed.

7. Click on the created project.

   The project page is displayed.

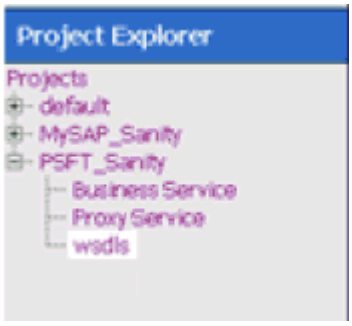
Figure 7–56 Enter New Folder Name Field



8. In the Enter New Folder Name field, type **Business Service** and click **Add Folder**, as shown in Figure 7–56.
9. In the Enter New Folder Name field, type **Proxy Service** and click **Add Folder**.
10. In the Enter New Folder Name field, type **wsdls** and click **Add Folder**.

    The Business Service, Proxy Service, and wsdls folders are listed in the left pane below the project node, as shown in Figure 7–57.

Figure 7–57 Project Node



7.3.2 Setting the Class Path for Application Explorer to Integrate With Oracle Service Bus

Before starting and using Application Explorer to publish a WSDL directly to the Oracle Service Bus (OSB) Console (project/folder), OSB users must perform the following steps:

1. Open the command prompt window.
2. Navigate to the following directory:

   `<OSB_Home>\user_projects\domains\base_domain\bin`

3. Execute **setDomainEnv.cmd** (Windows) or **. ./setDomainEnv.sh** (UNIX/Linux).

   This command sets the class path for Application Explorer to access the Oracle WebLogic Server APIs to publish the WSDLs to the OSB Console.
4. Do not close the command prompt window.
5. Navigate to the following directory:

   `<OSB_Home>\3rdparty\ApplicationAdapters\tools\iwae\bin`

6. Execute **ae.bat** (Windows) or **iwae.sh** (UNIX/Linux) to start Application Explorer.

   You are now ready to publish WSDLs from Application Explorer to the OSB Console.

7.3.3 Publishing a WSDL From Application Explorer to Oracle Service Bus

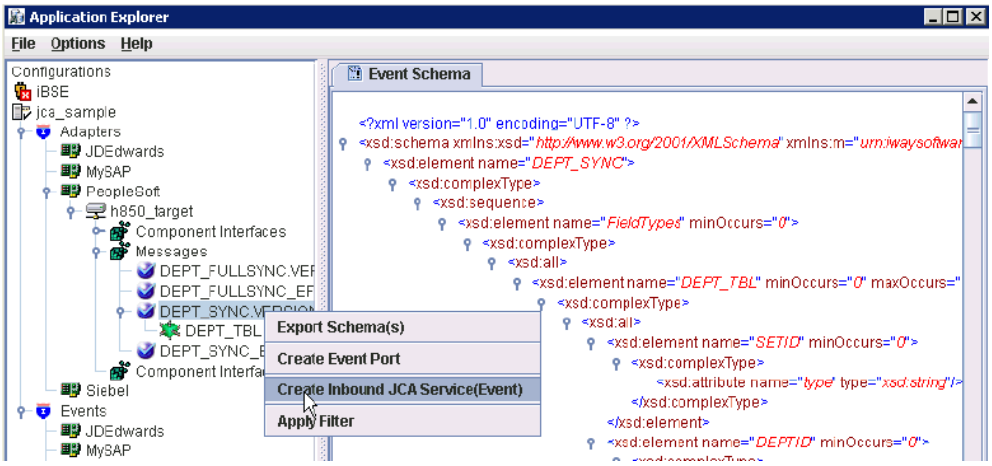
Perform the following steps to publish a WSDL from Application Explorer to Oracle Service Bus:

1. Start Application Explorer, connect to a J2CA configuration, and connect to a PeopleSoft target.

   For more information, see Chapter 2, "Configuring Oracle Application Adapter for PeopleSoft".

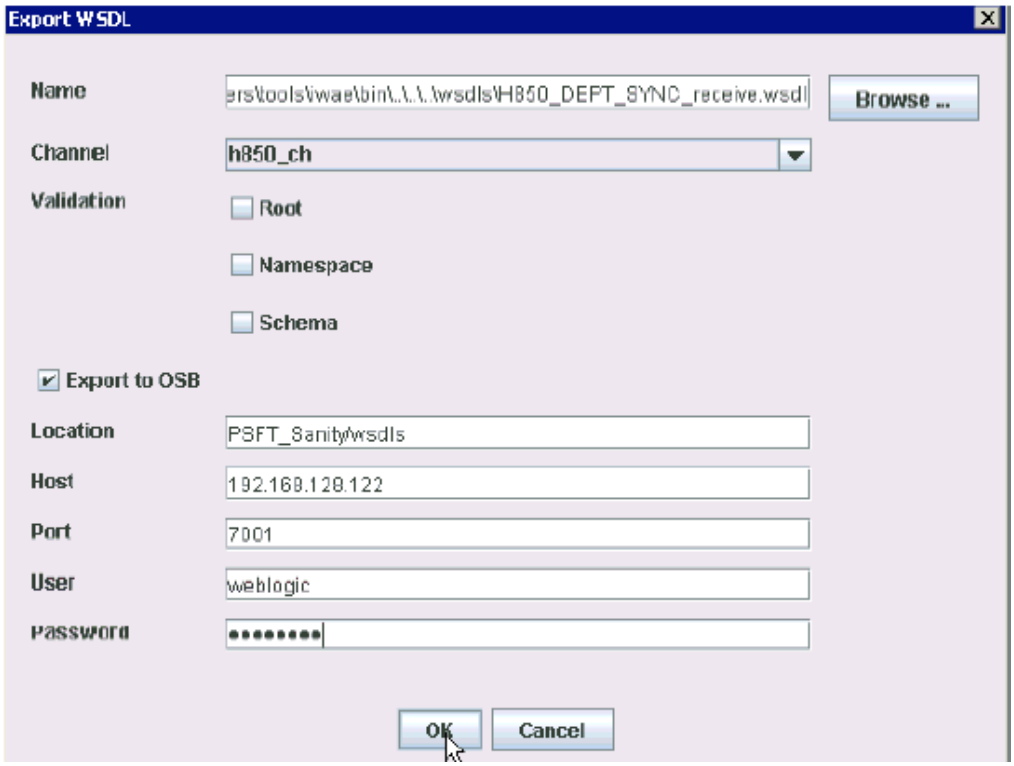
2. Expand **Messages**.
3. Right-click the **DEPT_SYNC.VERSION.1** business object and select **Create Inbound JCA Service(Event)** from the menu, as shown in Figure 7–58.

Figure 7–58 Create Inbound JCA Service(Event) Option



The Export WSDL dialog is displayed, as shown in Figure 7–59.

Figure 7–59 Export WSDL Dialog



4. In the Name field, a default file name for the WSDL file is provided. You can accept the default or provide your own.
5. Select a configured channel from the Channel list.

The Validation options can be used for schema validation scenarios, but are optional.

6. Select the **Export to OSB** option.
7. In the Location field, enter the folder name in Oracle Service Bus where you want to publish the WSDL document.

   The location is composed of an Oracle Service Bus project name and optionally, one or more folder names. The project name and any folder names must be separated by a forward slash character "/".
8. In the Host field, enter the name of the machine where Oracle Service Bus is installed.
9. In the Port field, enter the port that is being used by Oracle Service Bus.
10. In the User field, enter your username to access Oracle Service Bus.
11. In the Password field, enter your password to access Oracle Service Bus.
12. Click **OK**.

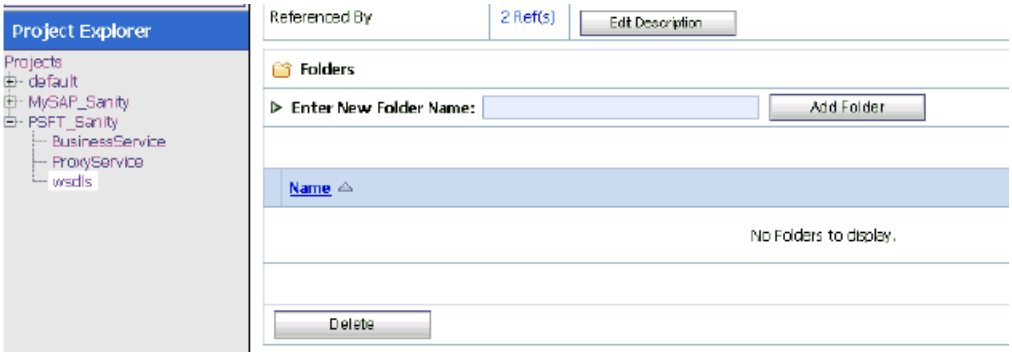
    The WSDL is published to the location specified in the Export WSDL dialog and is now available for use with a Proxy Service in Oracle Service Bus.

7.3.4 Configuring a WSDL-based Proxy Service

Perform the following steps to configure a WSDL-based Proxy Service:

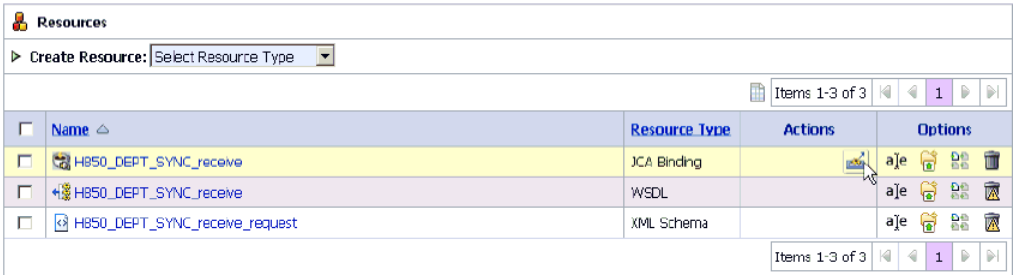
1. Open the Oracle Service Bus Console and select the created WSDL folder in the left pane (for example, wsdls), as shown in Figure 7–60.

Figure 7–60 WSDL Folder



2. Ensure that the exported WSDL is listed, as shown in Figure 7–61.

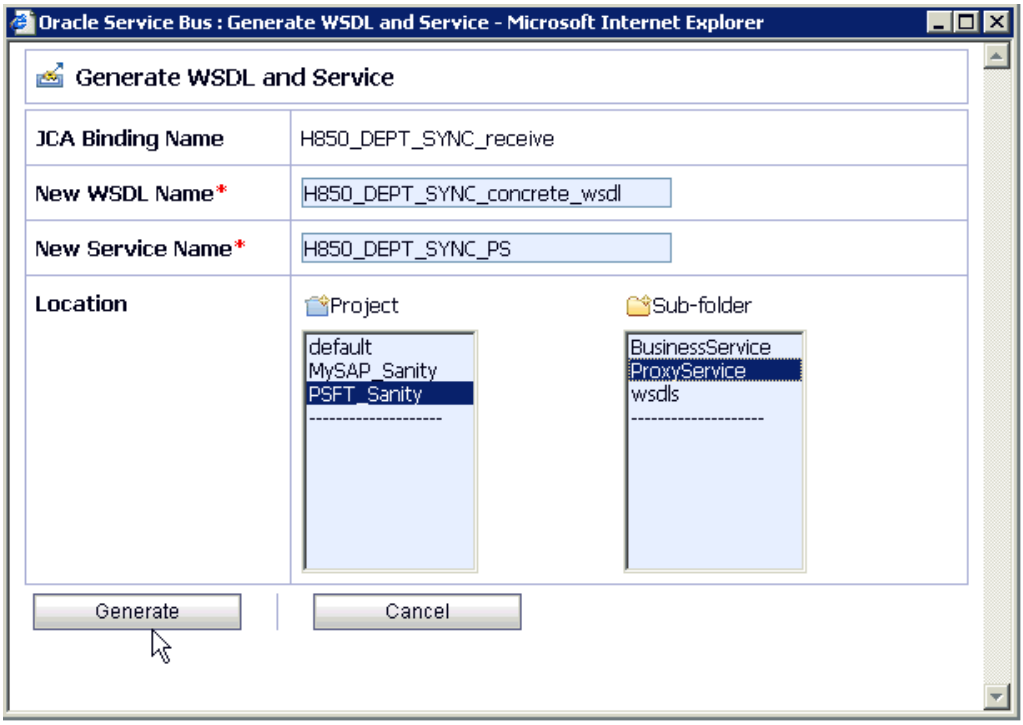
Figure 7–61 Exported WSDL



3. Click the icon that corresponds to the exported WSDL in the Actions column.

   The Generate WSDL and Service page is displayed, as shown in Figure 7–62.

Figure 7–62 Generate WSDL and Service Page



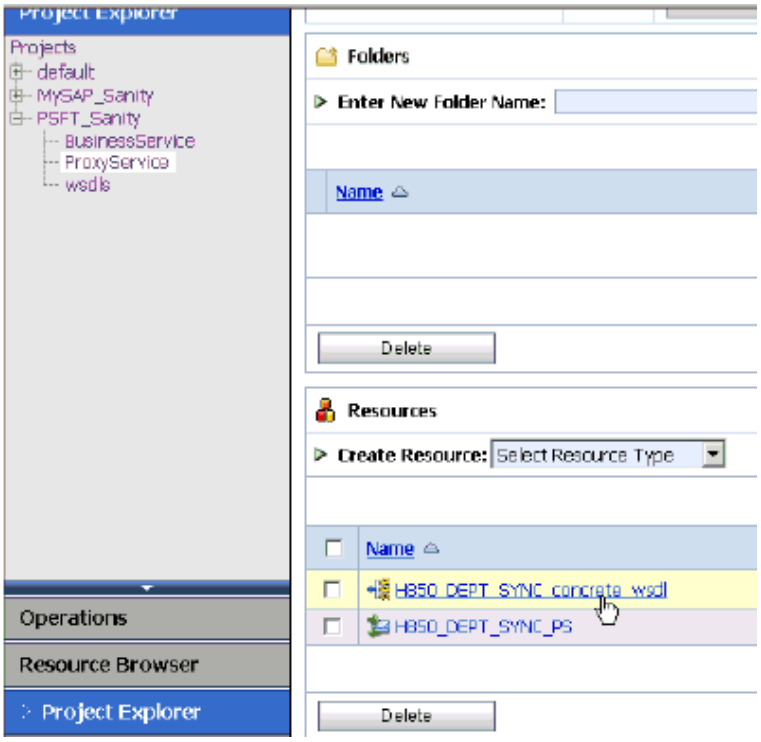
4. Provide a new WSDL name and a new service name in the corresponding fields.
5. In the Location area, select an available project and the sub-folder that is designated for Proxy Services.
6. Click **Generate**.

   If the WSDL and Service resources are successfully created, a message is displayed, as shown in Figure 7–63.

Figure 7–63 Resources Successfully Created Message

7. Click **Proxy Service** under Project Explorer and check if the generated WSDL and Proxy Service are listed, as shown in Figure 7–64.

Figure 7–64 WSDL List

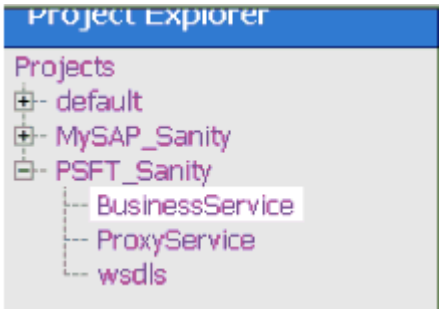


7.3.5 Configuring a File Type Business Service

Perform the following steps to configure a File type Business Service:

1. Select the **Business Service** folder you created in the left pane, as shown in Figure 7–65.

Figure 7–65 Business Service Folder

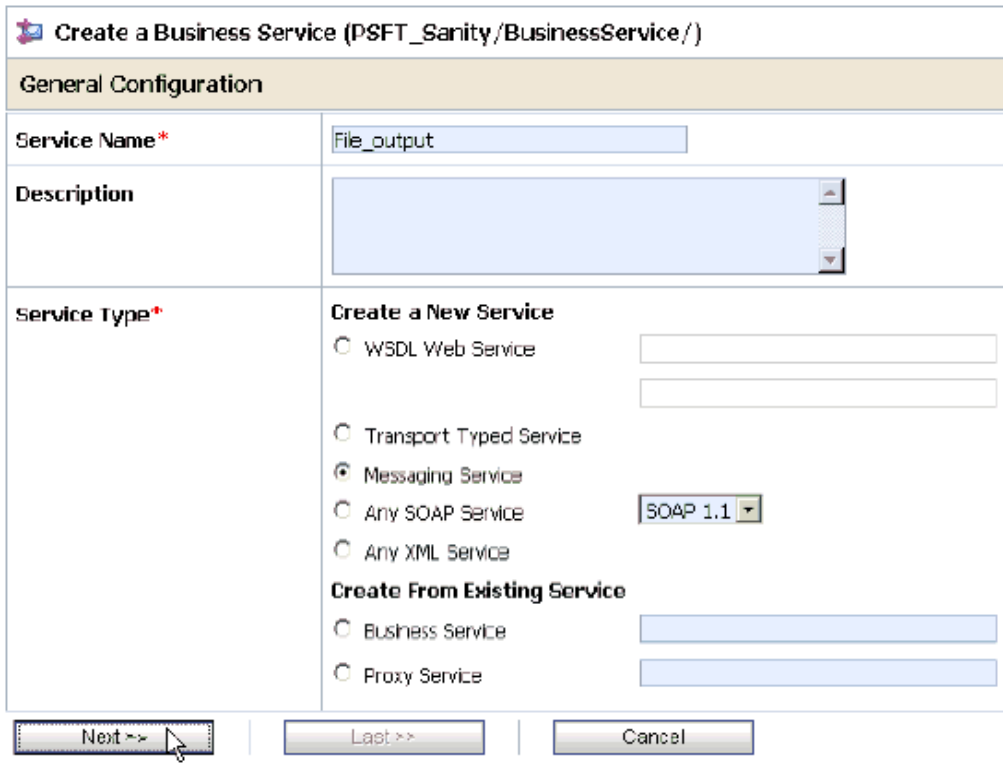


2. In the right pane, select **Business Service** from the Create Resource menu, as shown in Figure 7–66.

Figure 7–66 Business Service

The General Configuration page is displayed, as shown in Figure 7–67.

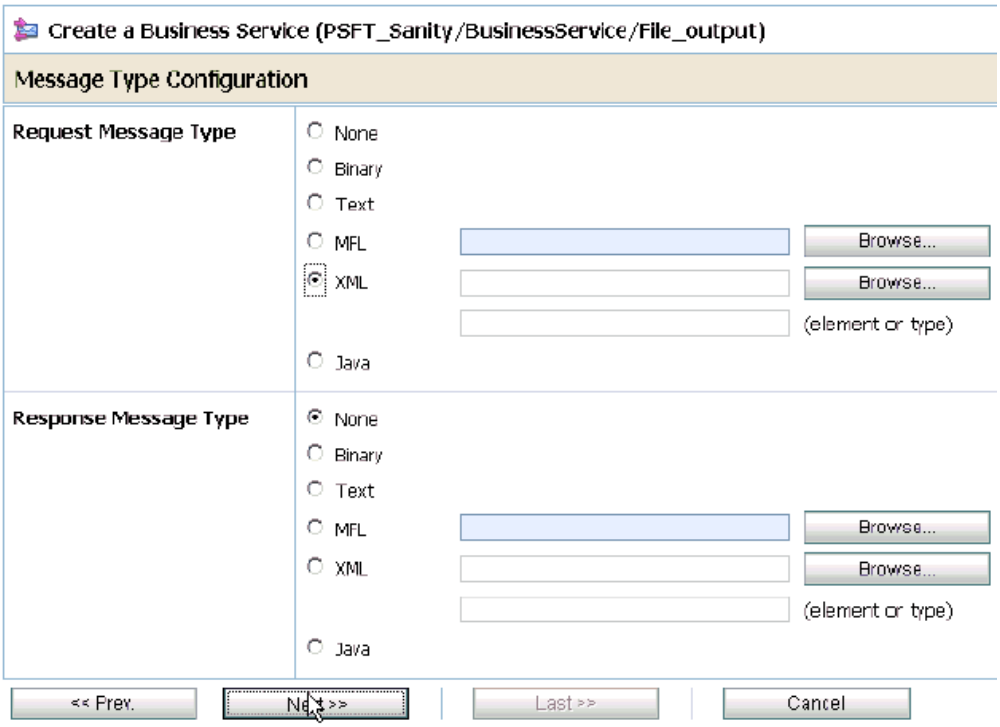
Figure 7–67 General Configuration Page



3. Provide a name for the Business Service and from the Service Type area select **Messaging Service**.
4. Click **Next**.

   The Message Type Configuration page is displayed, as shown in Figure 7–68.

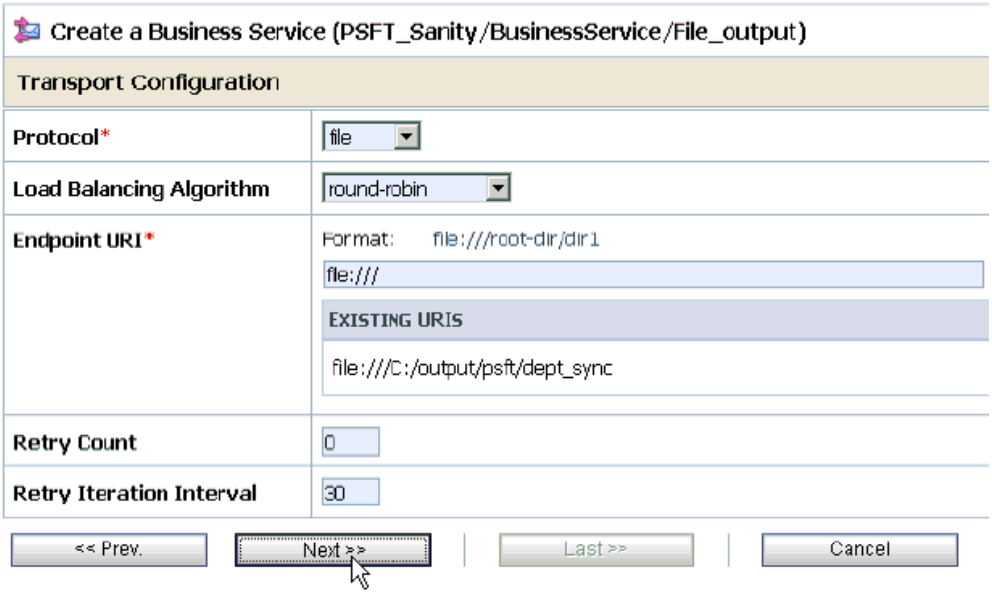
Figure 7–68 Message Type Configuration Page



5. Select **XML** as the Request Message Type and **None** as the Response Message Type.
6. Click **Next**.

   The Transport Configuration page is displayed, as shown in Figure 7–69.

Figure 7–69 Transport Configuration Page

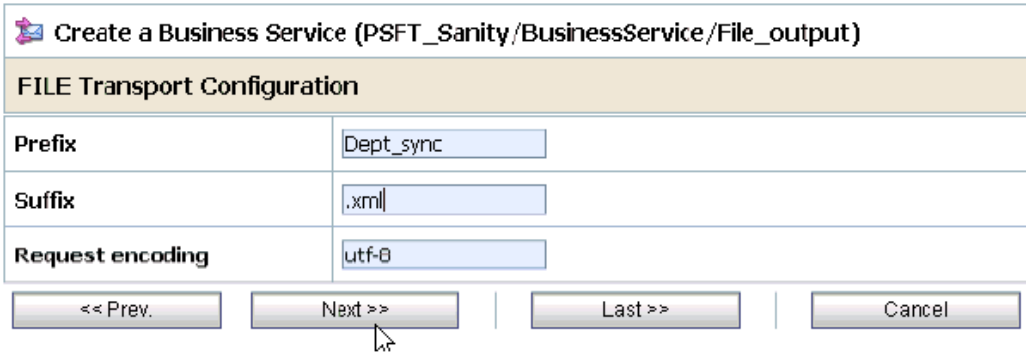


7. Select **file** from the Protocol list.

8. Enter the path to a destination folder on your file system in the Endpoint URI field and click **Add**.
9. Click **Next**.

   The FILE Transport Configuration page is displayed, as shown in Figure 7–70.

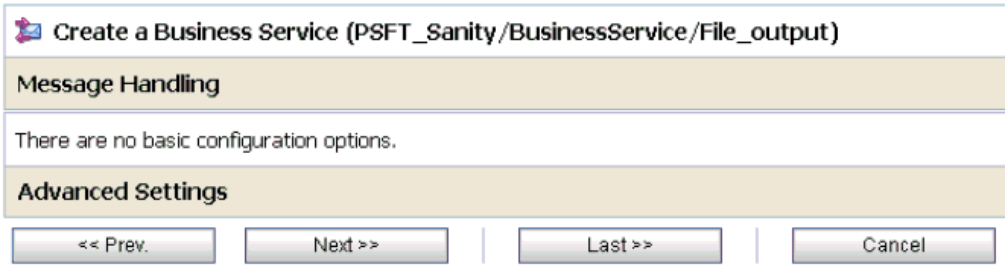
Figure 7–70 FILE Transport Configuration Page



10. Enter the prefix and suffix for the output file to be received and click **Next**.

    The Message Handling and Advanced Settings page is displayed, as shown in Figure 7–71.

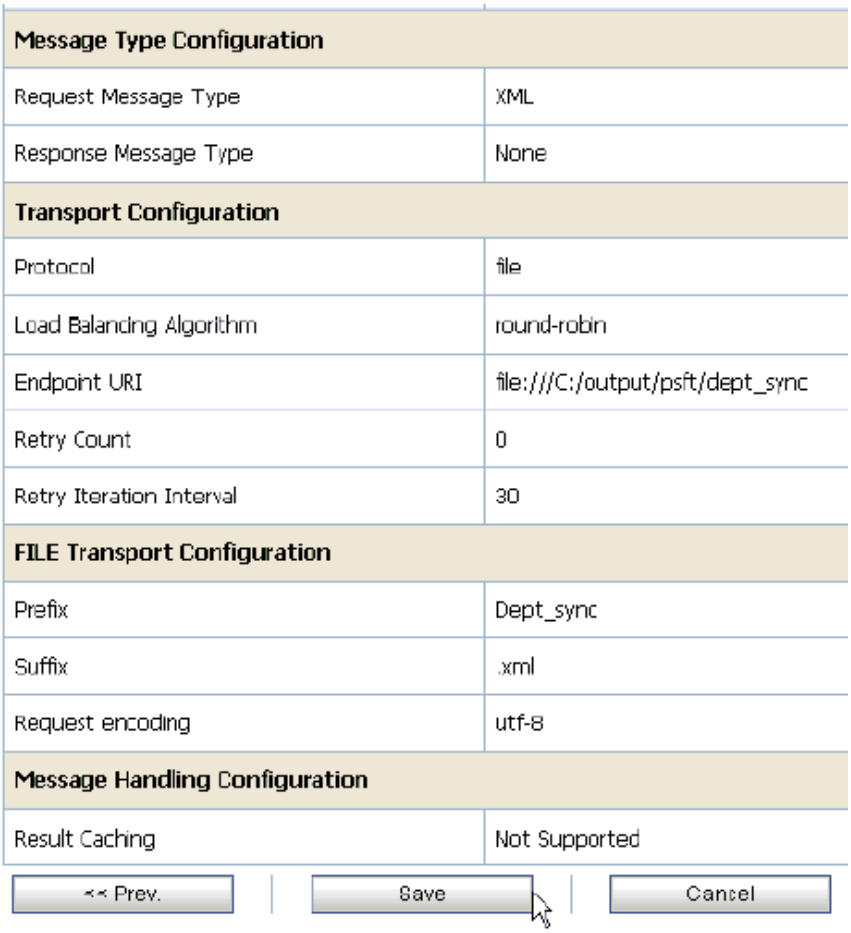
Figure 7–71 Message Handling and Advanced Settings Page



11. Click **Next**.

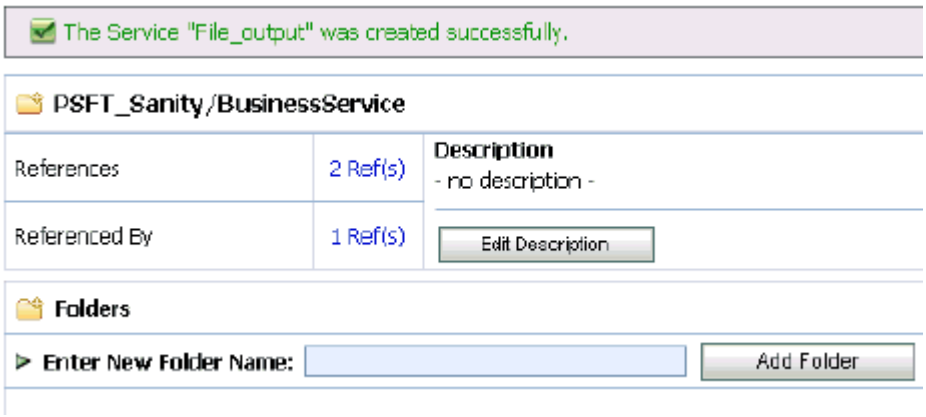
    The following Summary page is displayed, as shown in Figure 7–72.

Figure 7–72 Summary Page



12. Review all the information for your Business Service and click **Save**.
13. Check if the success message is displayed once it is saved, as shown in Figure 7–73.

Figure 7–73 Success Message

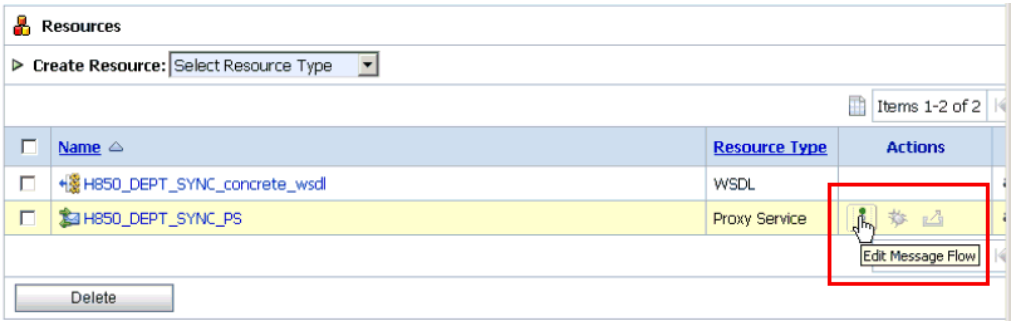


7.3.6 Configuring a Pipeline

Perform the following steps to configure a Pipeline:

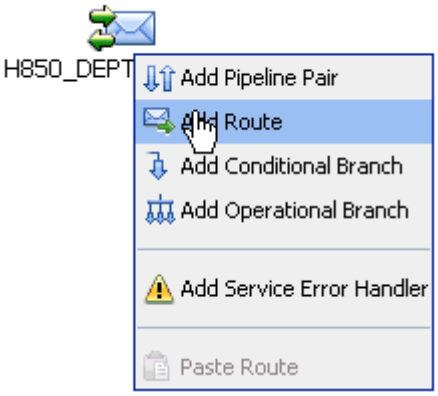
1. Click the **Edit Message Flow** icon in the row of the Proxy Service you created, as shown in Figure 7–74.

Figure 7–74 Edit Message Flow Icon



The Edit Message Flow workspace area is displayed, as shown in Figure 7–75.

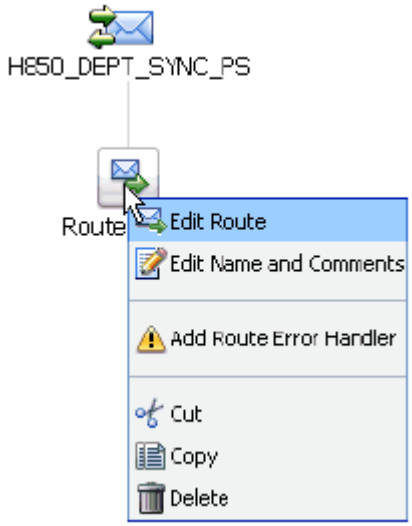
Figure 7–75 Edit Message Flow Workspace Area



2. Right-click the displayed Proxy Service icon and select **Add Route** from the menu.

   The RouteNode1 icon is added below the Request Pipeline icon.

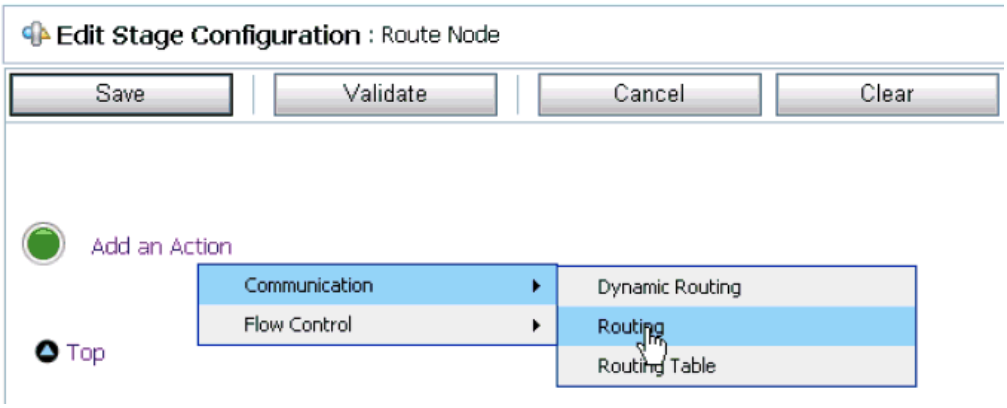
Figure 7–76 Edit Route



3. Click the **RouteNode1** icon and select **Edit Route** from the menu, as shown in Figure 7–76.

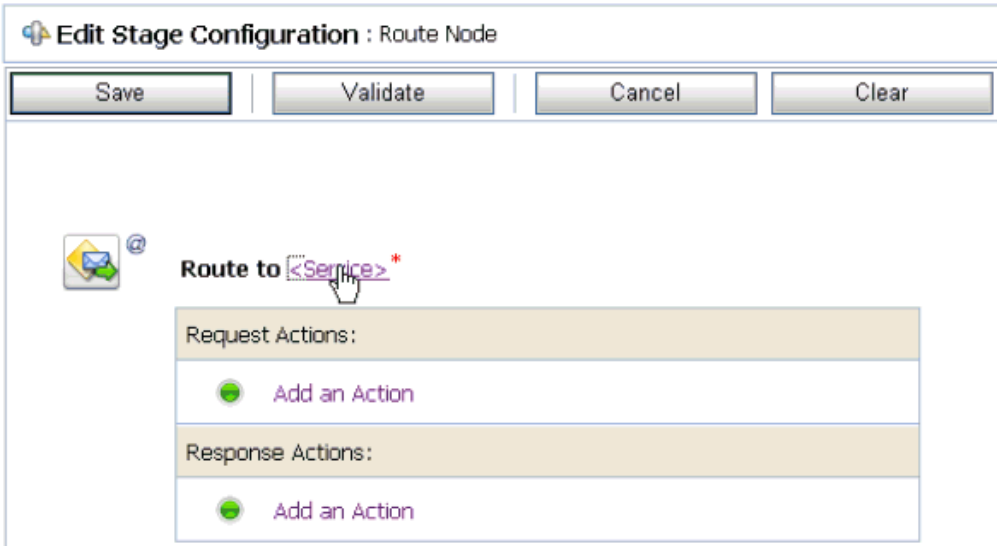
   The Edit Stage Configuration workspace area is displayed, as shown in Figure 7–77.

Figure 7–77 Edit Stage Configuration Workspace Area



4. Click **Add an Action**, select **Communication** from the menu, and click **Routing**.

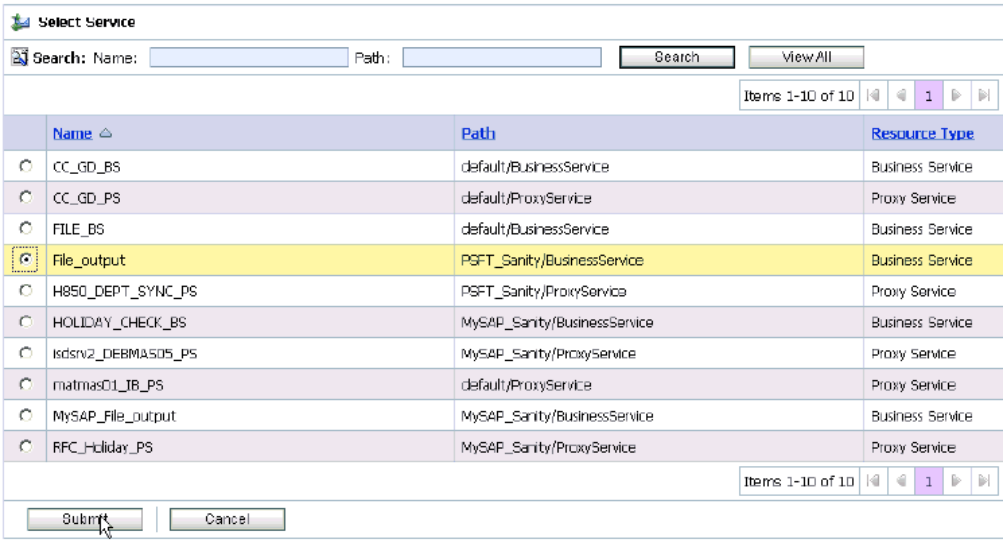
Figure 7–78 Edit Stage Configuration Page



5. Click **<Service>**, as shown in Figure 7–78.

   The Select Service dialog is displayed, as shown in Figure 7–79.

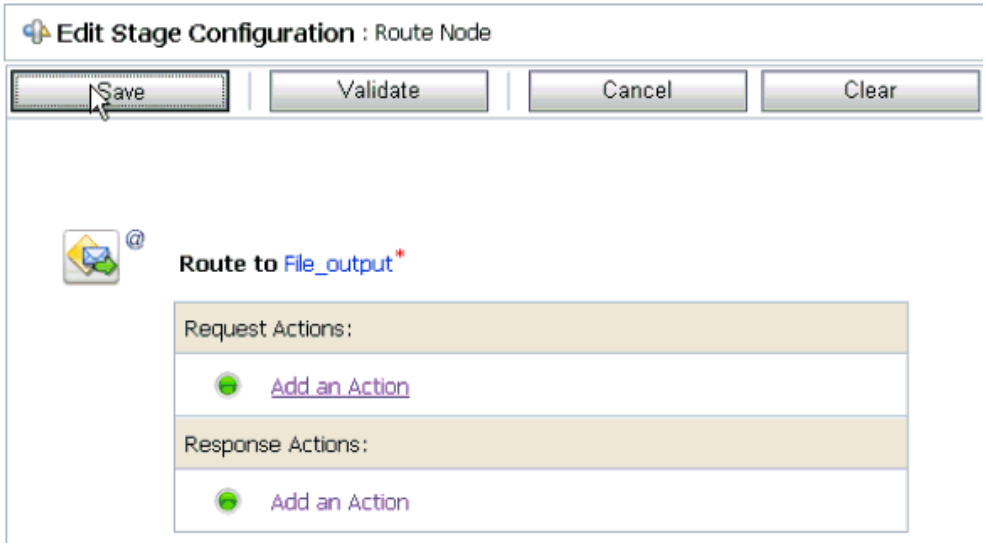
Figure 7–79 Select Service Dialog



6. Select the File type Business Service and click **Submit**.

   You are returned to the Edit Stage Configuration workspace area, as shown in Figure 7–80.

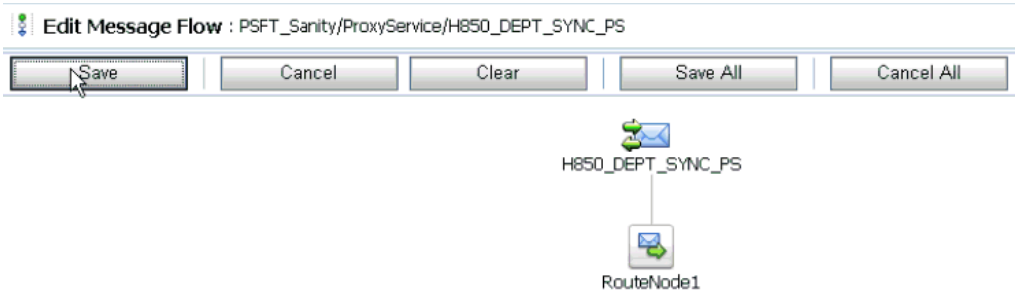
Figure 7–80 Edit Stage Configuration Workspace Area



7. Click **Save**.

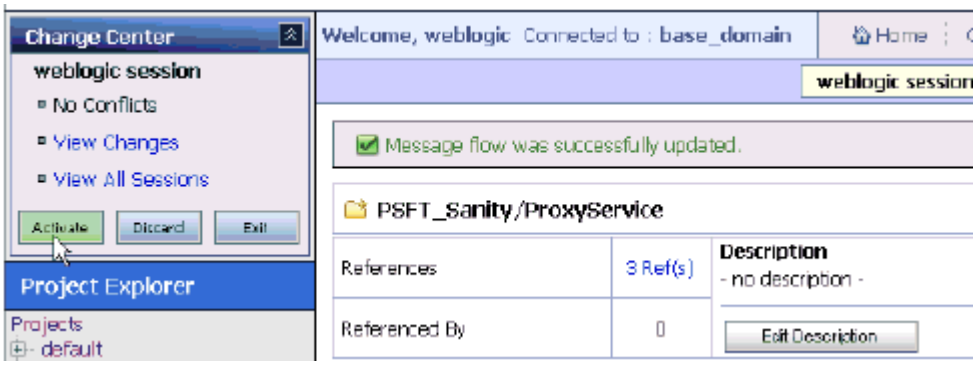
   You are returned to the Edit Message Flow workspace area, as shown in Figure 7–81.

Figure 7–81 Edit Message Flow Workspace Area



8. Click **Save**.

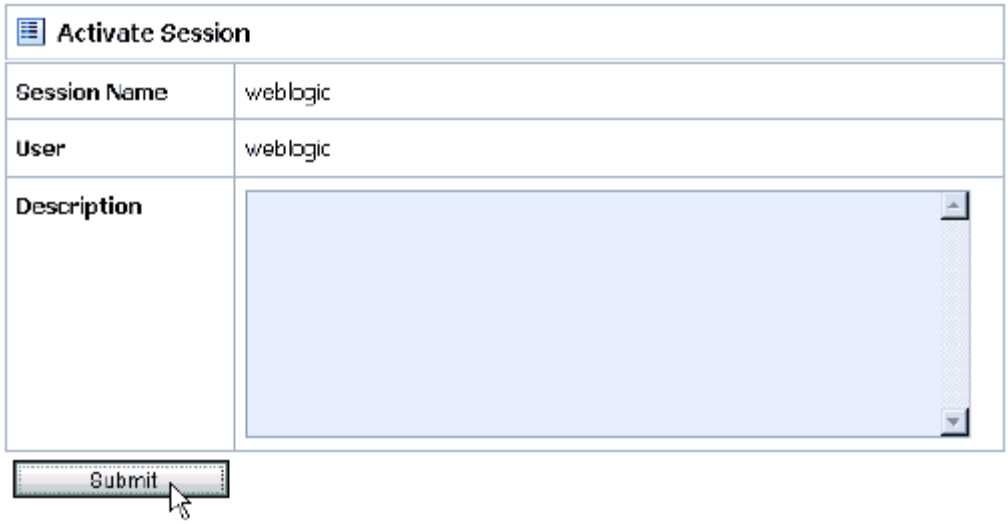
Figure 7–82 Successful Update Message



9. Check if the success message is displayed and click **Activate** in the Change Center, as shown in Figure 7–82.

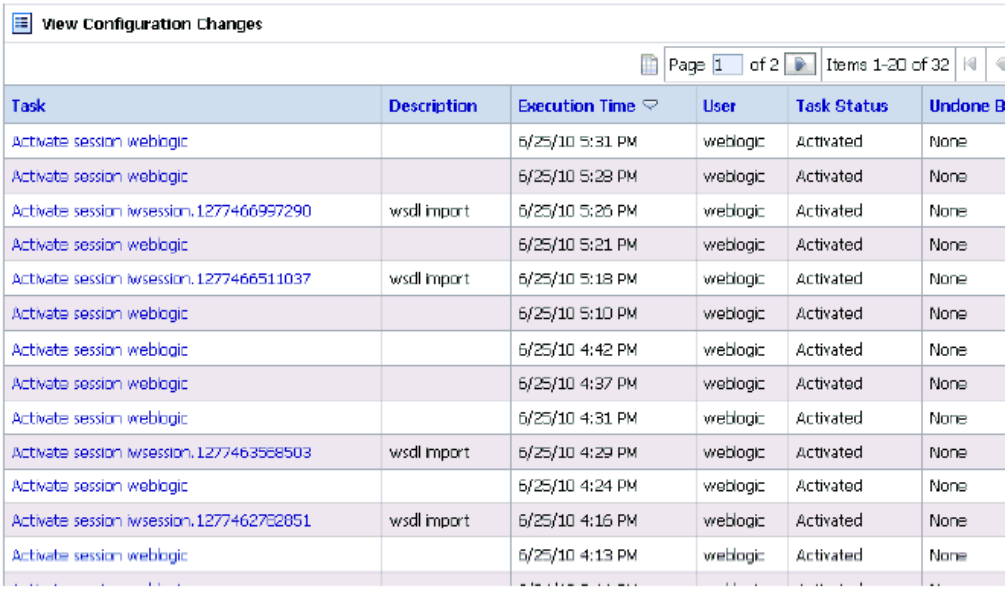
The Activate Session page is displayed, as shown in Figure 7–83.

Figure 7–83 Activate Session Page



10. Click **Submit**.
11. Check if the View Configuration Changes page is displayed, as shown in Figure 7–84.

Figure 7–84 View Configuration Changes Page



12. Trigger an event from the PeopleSoft system and check if the output is received in the configured output location.

7.4 Configuring Outbound Processing Using Oracle Service Bus (BSE Configuration)

This section describes how to configure outbound processing using Oracle Service Bus for BSE configurations.

Samples have been provided for this usecase scenario under the `etc/sample` folder in the Application Adapters installation.

This section includes the following topics:

7.4.1 Starting Oracle Service Bus and Creating Project Folders

Perform the following steps to start Oracle Service Bus and create project folders:

1. Start the Oracle WebLogic Server for the Oracle WebLogic Server domain that you have configured.
2. Open the Oracle Service Bus Console in a Web browser by entering the following URL:

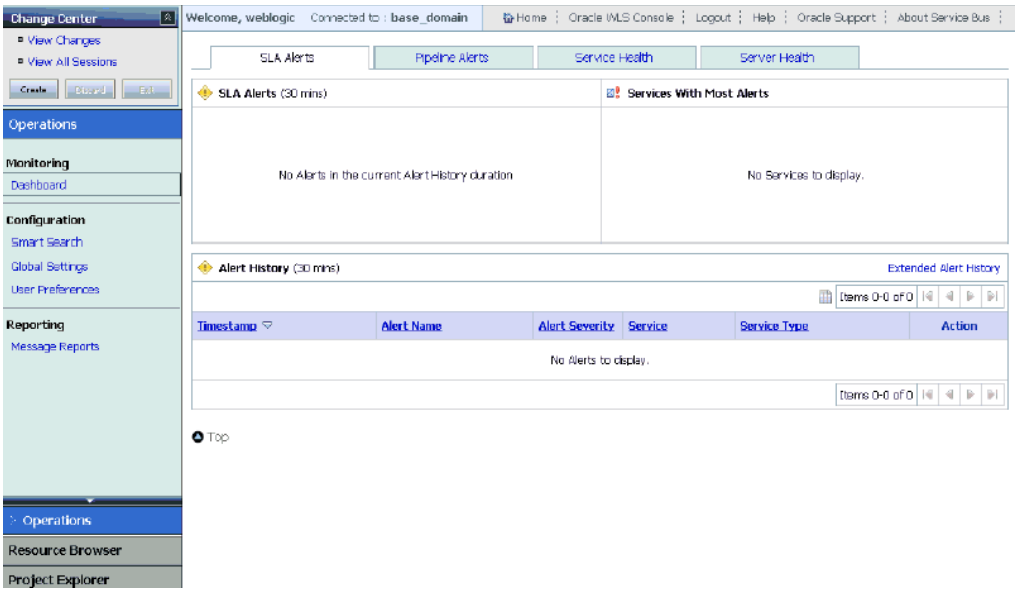
   `http://`*`hostname`*`:`*`port`*`/sbconsole`

   Where *`hostname`* is the name of the machine where Oracle WebLogic Server is running and *`port`* is the port for the domain you are using. The port for the default domain is 7001.

   The Oracle Service Bus Console logon page is displayed.
3. Log on to the Oracle Service Bus Console using a valid user name and password.

   The Oracle Service Bus Console home page is displayed, as shown in Figure 7–1.

Figure 7–85 Oracle Service Bus Console Home Page

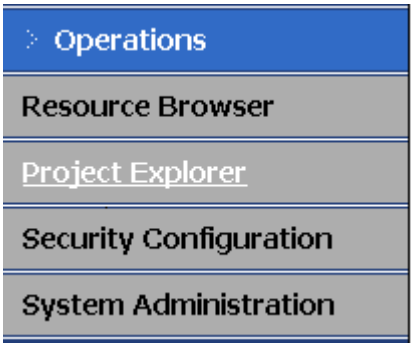


4. Click **Create** in the Change Center area to start a new Oracle Service Bus session, as shown in Figure 7–2.

Figure 7–86 Change Center

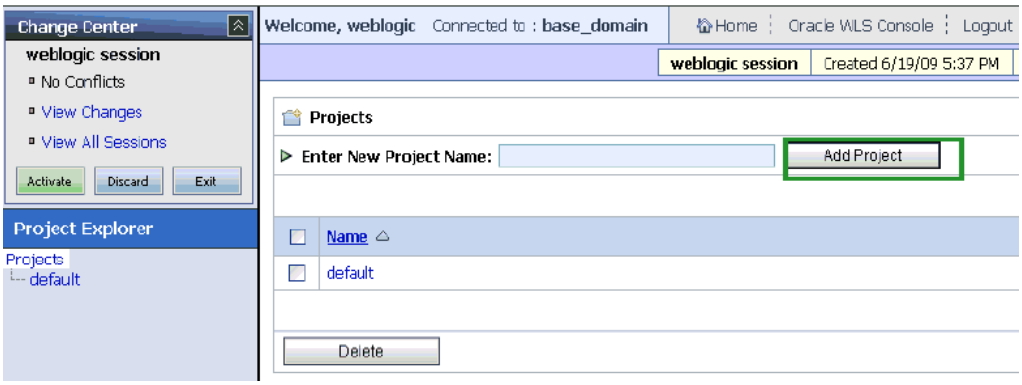
5. Click **Project Explorer** in the left pane, as shown in Figure 7–3.

Figure 7–87 Project Explorer Option



The Project Explorer page is displayed, as shown in Figure 7–4.

Figure 7–88 Project Explorer Page



6. Provide a valid name for the new project and click **Add Project**.

   The project is successfully created and listed.

7. Click on the created project.

   The project page is displayed.

Figure 7–89 Enter New Folder Name Field

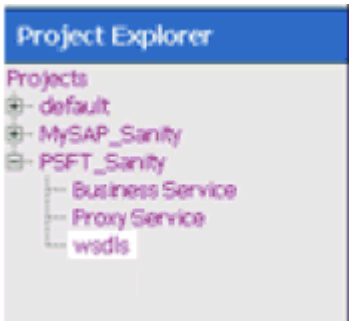
8. In the Enter New Folder Name field, type **Business Service** and click **Add Folder**, as shown in Figure 7–5.

9. In the Enter New Folder Name field, type **Proxy Service** and click **Add Folder**.

10. In the Enter New Folder Name field, type **wsdls** and click **Add Folder**.

    The Business Service, Proxy Service, and wsdls folders are listed in the left pane below the project node, as shown in Figure 7–6.

Figure 7–90 Project Node



7.4.2 Setting the Class Path for Application Explorer to Integrate With Oracle Service Bus

Before starting and using Application Explorer to publish a WSDL directly to the Oracle Service Bus (OSB) Console (project/folder), OSB users must perform the following steps:

1. Open the command prompt window.
2. Navigate to the following directory:

   `<OSB_Home>\user_projects\domains\base_domain\bin`

3. Execute **setDomainEnv.cmd** (Windows) or **. ./setDomainEnv.sh** (UNIX/Linux).

   This command sets the class path for Application Explorer to access the Oracle WebLogic Server APIs to publish the WSDLs to the OSB Console.
4. Do not close the command prompt window.
5. Navigate to the following directory:

   `<OSB_Home>\3rdparty\ApplicationAdapters\tools\iwae\bin`

6. Execute **ae.bat** (Windows) or **iwae.sh** (UNIX/Linux) to start Application Explorer.

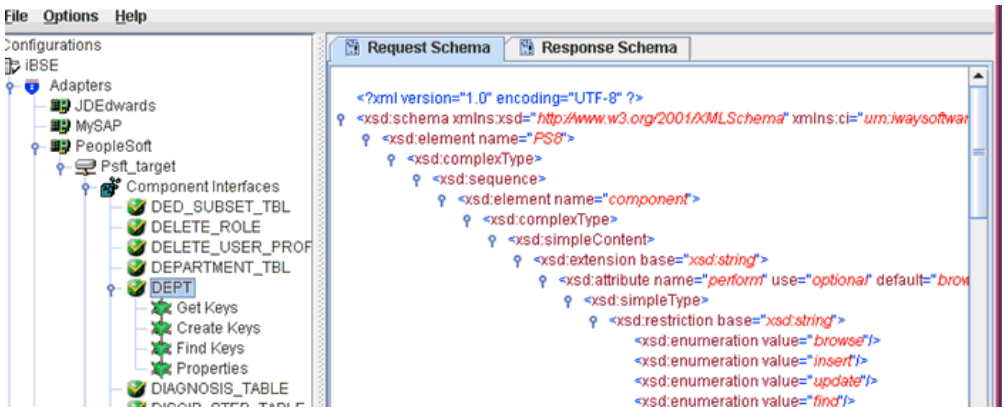
   You are now ready to publish WSDLs from Application Explorer to the OSB Console.

7.4.3 Publishing a WSDL From Application Explorer to Oracle Service Bus

This section describes how to publish a WSDL from Application Explorer (BSE configuration) to Oracle Service Bus.

1. Start Application Explorer, connect to a BSE configuration, and connect to a PeopleSoft target, as shown in Figure 7–91.

Figure 7–91 BSE Configuration



2. Expand the **Component Interfaces** node and select the **DEPT** component interface.
3. Right-click the **DEPT** component interface and select **Create Web Service** from the menu.

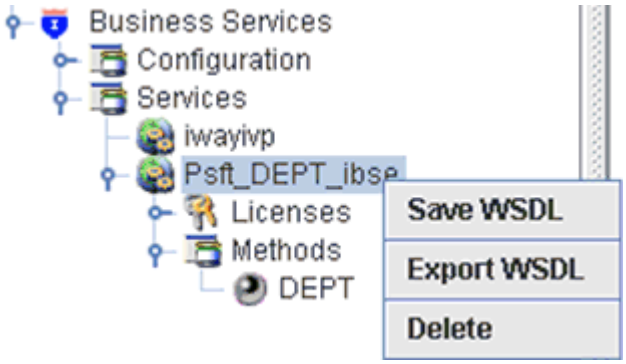
   The Create Web Service dialog is displayed, as shown in Figure 7–92.

Figure 7–92 Create Web Service Dialog

4. Enter a service name and click **Next**.
5. Click **OK** on the next dialog that is displayed.

   Application Explorer switches the view to the Business Services node, and the new Web service appears in the left pane, as shown in Figure 7–93.

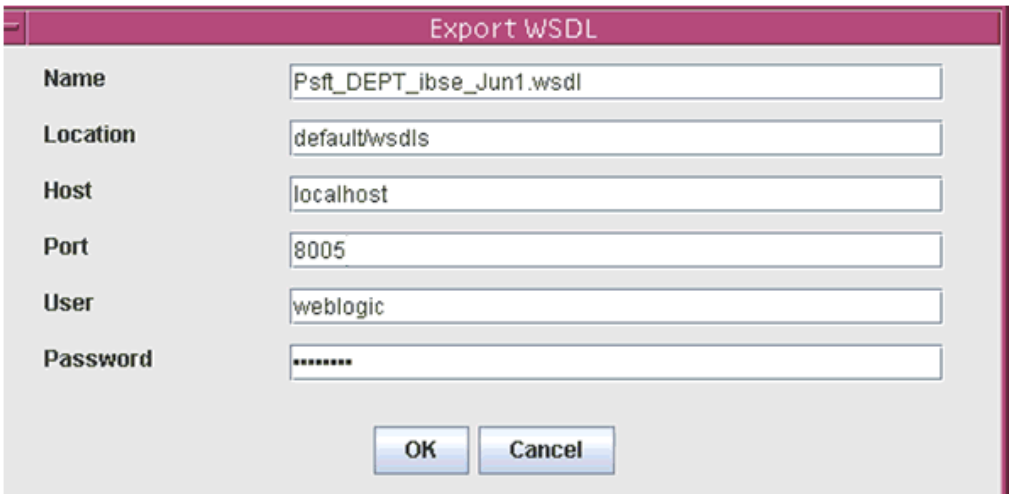
Figure 7–93 Business Services Node



6. Right-click the new Web service and select **Export WSDL** from the menu.

   The Export WSDL dialog is displayed, as shown in Figure 7–94.

Figure 7–94 Export WSDL Dialog



7. In the Name field, a default file name for the WSDL file is provided. You can accept the default or provide your own.
8. In the Location field, enter the location where you want to publish the WSDL document.

   The location is composed of an Oracle Service Bus project name and optionally, one or more folder names. The project name and any folder names must be separated by a forward slash character "/".
9. In the Host field, enter the name of the machine where Oracle WebLogic Server is running.
10. In the Port field, enter the port for the domain you are using.
11. In the User field, enter your username to access Oracle Service Bus.
12. In the Password field, enter your password to access Oracle Service Bus.
13. Click **OK**.

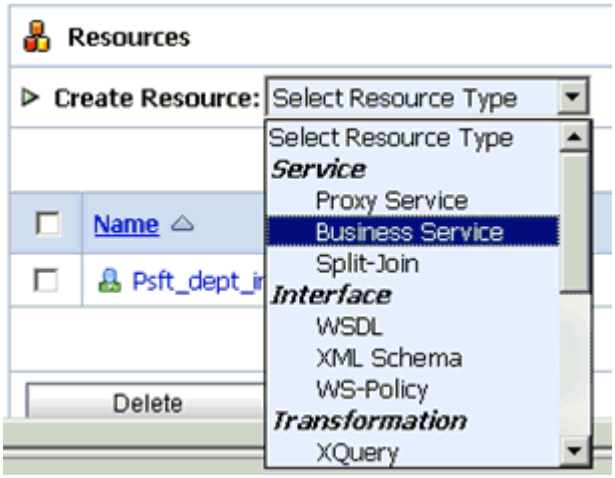
    The WSDL is published to the location specified in the Export WSDL dialog and is now available for use with a Business Service or Proxy Service in Oracle Service Bus.

7.4.4 Configuring a File Type Business Service

This section describes how to configure a File type Business Service using the Oracle Service Bus Console.

1. Select the **Business Service** folder you created in the left pane, as shown in Figure 7–95.

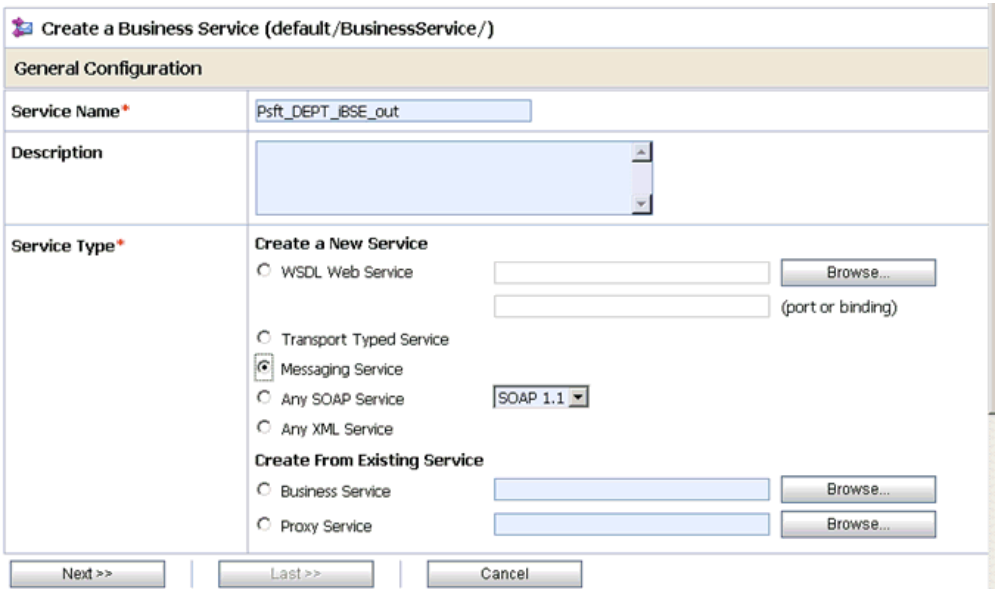
Figure 7–95 Business Service



2. In the right pane, select **Business Service** from the Create Resource menu.

   The General Configuration page is displayed, as shown in Figure 7–96.

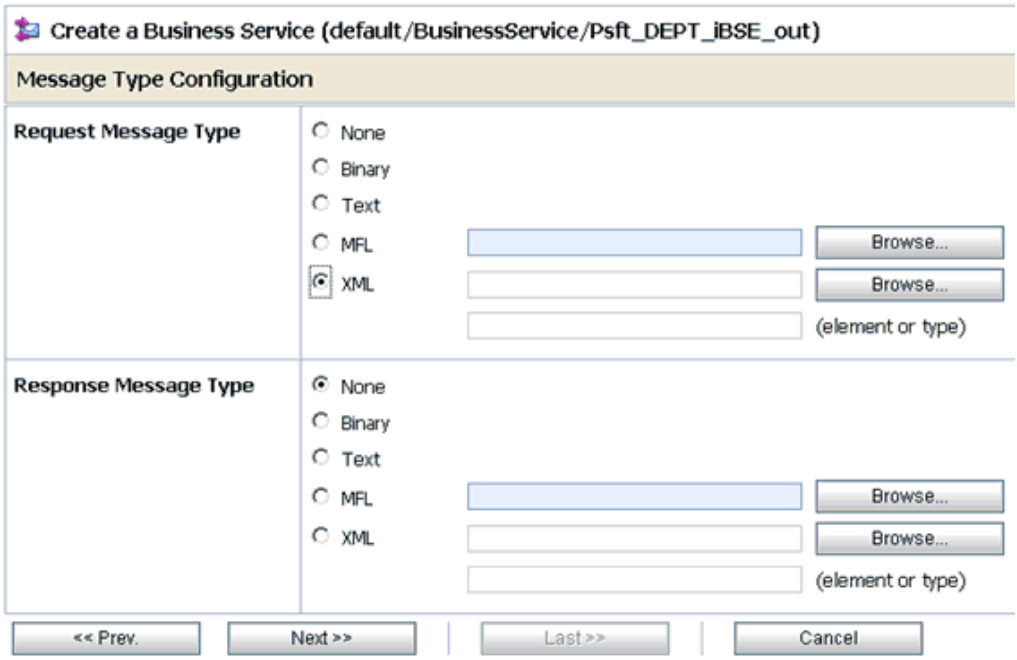
Figure 7–96 General Configuration Page



3. Provide a name for the Business Service and from the Service Type area select **Messaging Service**.
4. Click **Next**.

   The Message Type Configuration page is displayed, as shown in Figure 7–97.

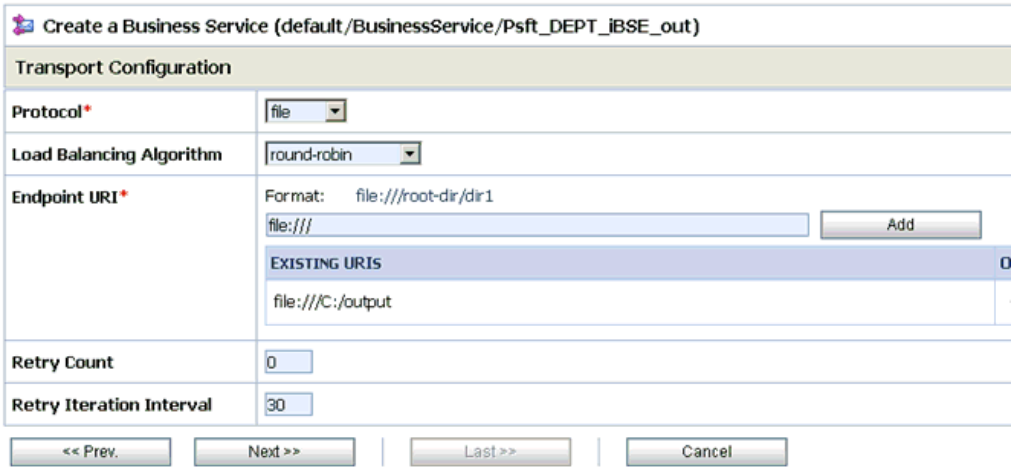
Figure 7–97 Message Type Configuration Page



5. Select **XML** as the Request Message Type and **None** as the Response Message Type.
6. Click **Next**.

   The Transport Configuration page is displayed, as shown in Figure 7–98.

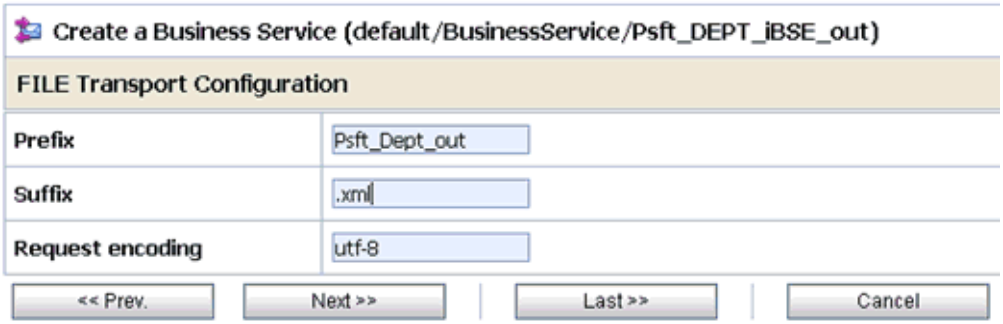
Figure 7–98 Transport Configuration Page



7. Select **file** from the Protocol list.
8. Enter the path to a destination folder on your file system in the Endpoint URI field and click **Add**.
9. Click **Next**.

   The FILE Transport Configuration page is displayed, as shown in Figure 7–99.

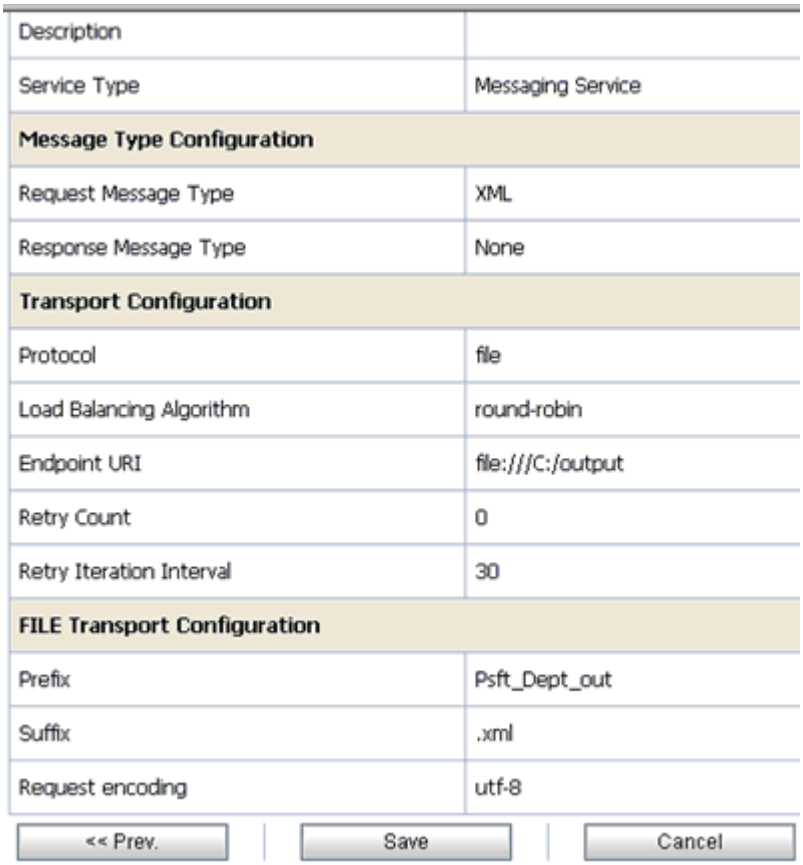
Figure 7–99 FILE Transport Configuration Page



10. Enter the prefix and suffix for the output file to be received and click **Next**.

    The Summary page is displayed, as shown in Figure 7–100.

Figure 7–100 Summary Page



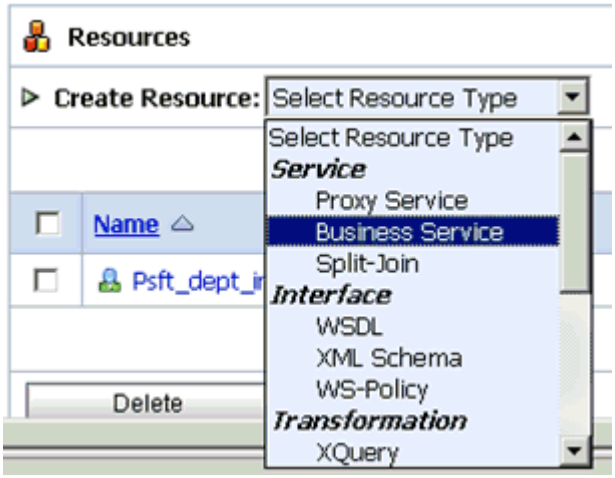
11. Review all the information for your Business Service and click **Save**.

7.4.5 Configuring a WSDL Type Business Service

This section describes how to configure a WSDL type Business Service using the Oracle Service Bus Console.

1. Select the **Business Service** folder you created in the left pane, as shown in Figure 7–101.

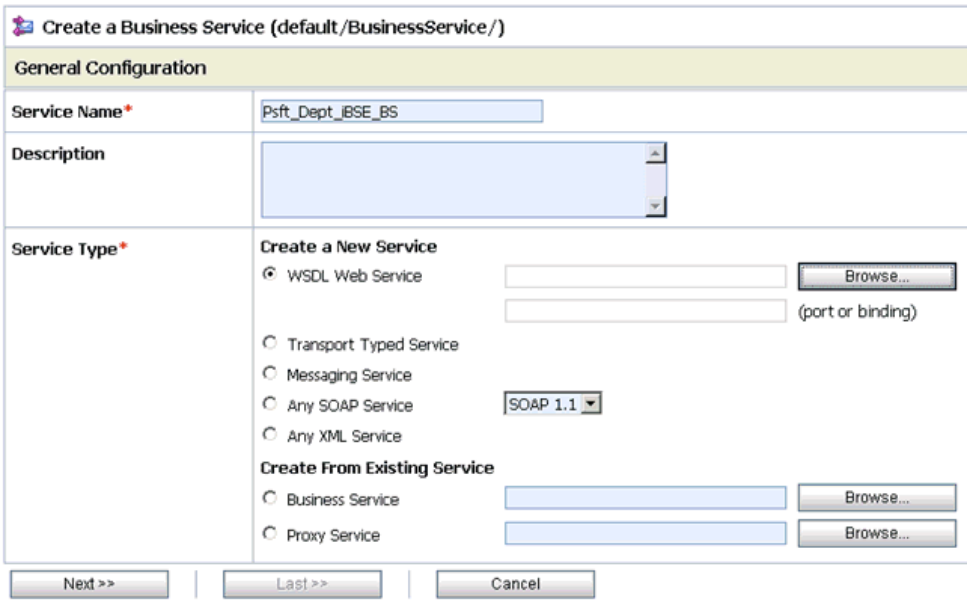
Figure 7–101 Business Service



2. In the right pane, select **Business Service** from the Create Resource menu.

   The General Configuration page is displayed, as shown in Figure 7–102.

Figure 7–102 General Configuration Page



3. Provide a name for the Business Service and from the Service Type area select **WSDL Web Service**.

4. Click **Browse**.

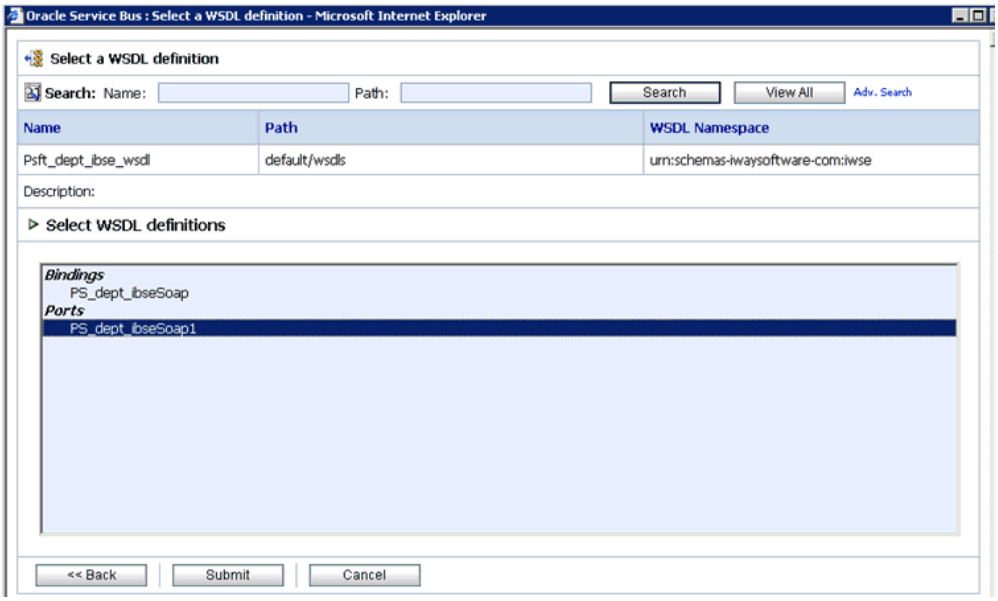
   The Select a WSDL dialog is displayed, as shown in Figure 7–103.

Figure 7–103 Select a WSDL Dialog

5. Select a BSE WSDL that you published for Oracle Application Adapter for PeopleSoft using Application Explorer and click **Submit**.

   The Select a WSDL Definition dialog is displayed, as shown in Figure 7–104.

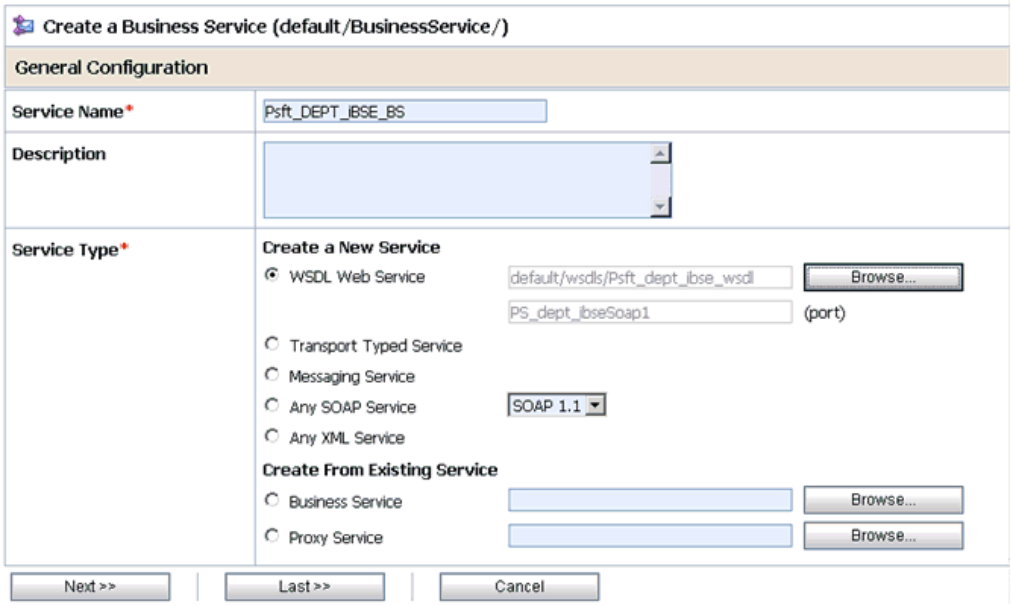
Figure 7–104 Select a WSDL Definition Dialog



6. Select the WSDL definition under the Ports section and click **Submit**.

   You are returned to the General Configuration page where the WSDL you selected is now available, as shown in Figure 7–105.

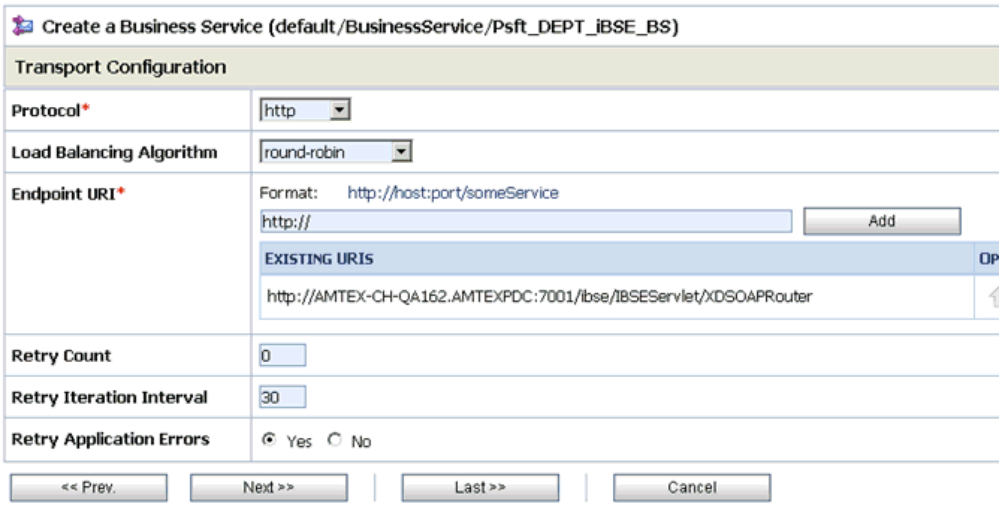
Figure 7–105 General Configuration Page



7. Leave the default values and click **Next**.

   The Transport Configuration page is displayed, as shown in Figure 7–106.

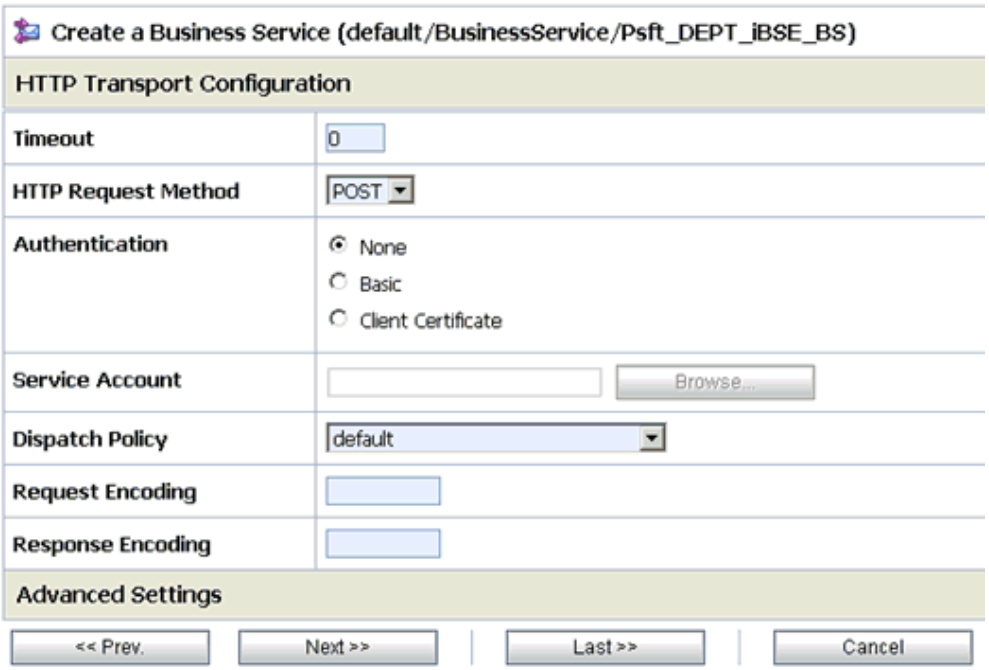
Figure 7–106 Transport Configuration Page



8. Leave the default values and click **Next**.

   The HTTP Transport Configuration page is displayed, as shown in Figure 7–107.

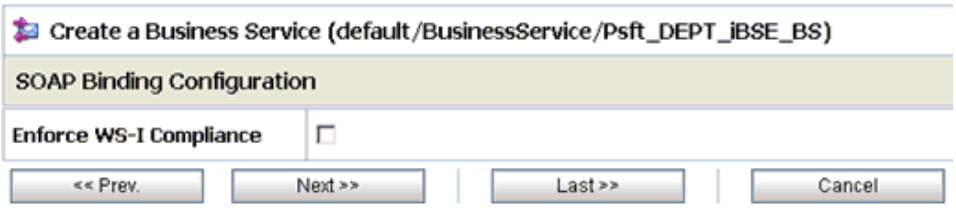
Figure 7–107 HTTP Transport Configuration Page



9. Leave the default values and click **Next**.

The SOAP Binding Configuration page is displayed, as shown in Figure 7–108.

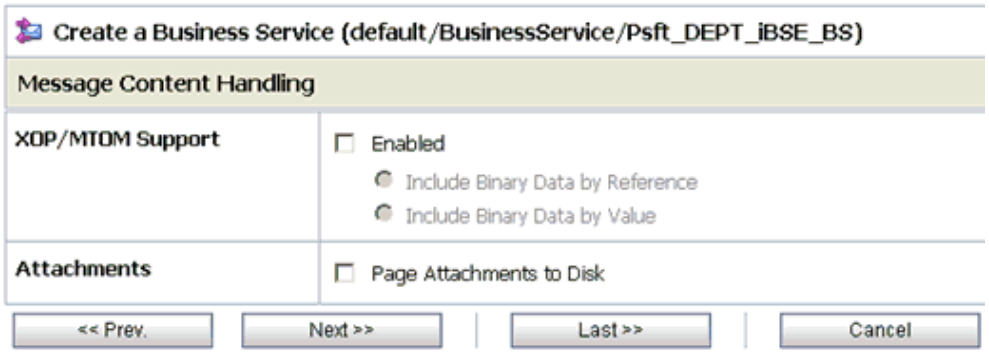
Figure 7–108 SOAP Binding Configuration



10. Click Next.

The Message Content Handling page is displayed, as shown in Figure 7–109.

Figure 7–109 Message Content Handling Page



11. Click **Next**.

    The Summary page is displayed, as shown in Figure 7–110.

Figure 7–110 Summary Page

Endpoint URI	http://AMTEX-CH-QA162.AMTEXPDC:7001/ibse/IBSEServlet/XDSOAPRouter
Retry Count	0
Retry Iteration Interval	30
Retry Application Errors	Yes
HTTP Transport Configuration	
Timeout	0
HTTP Request Method	POST
Authentication	None
Proxy Server	
Follow HTTP redirects	DISABLED
Use Chunked Streaming Mode	ENABLED
SOAP Binding Configuration	
Enforce WS-I Compliance	No
Message Content Handling Configuration	
XOP/MTOM Support	Disabled
Page Attachments to Disk	No

<< Prev. | Save | Cancel

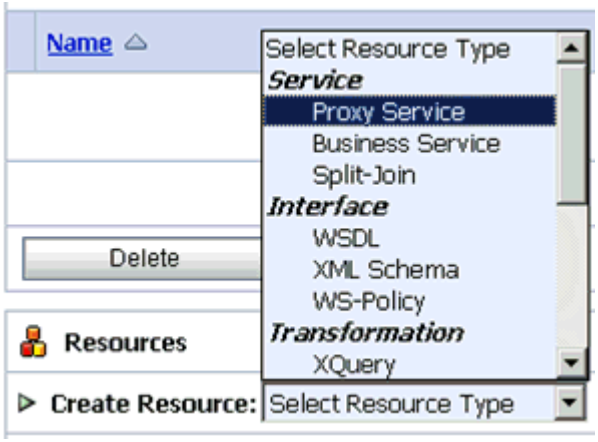
12. Review all the information for your Business Service and click **Save**.

7.4.6 Configuring a Proxy Service

This section describes how to configure a Proxy Service using the Oracle Service Bus Console.

1. Select the **Proxy Service** folder you created in the left pane, as shown in Figure 7–111.

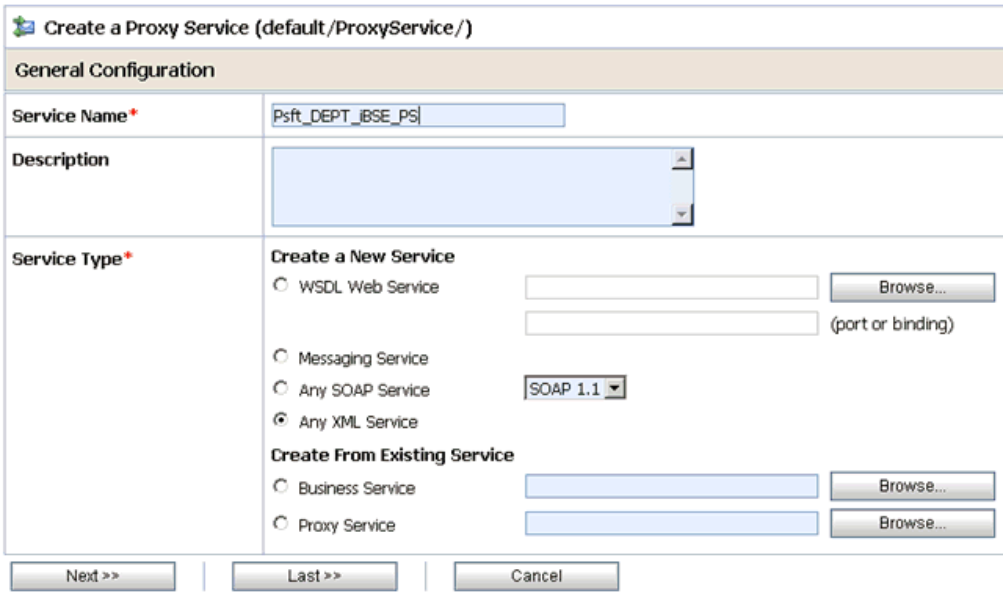
Figure 7–111 Proxy Service



2. In the right pane, select **Proxy Service** from the Create Resource menu.

   The General Configuration page is displayed, as shown in Figure 7–112.

Figure 7–112 General Configuration Page

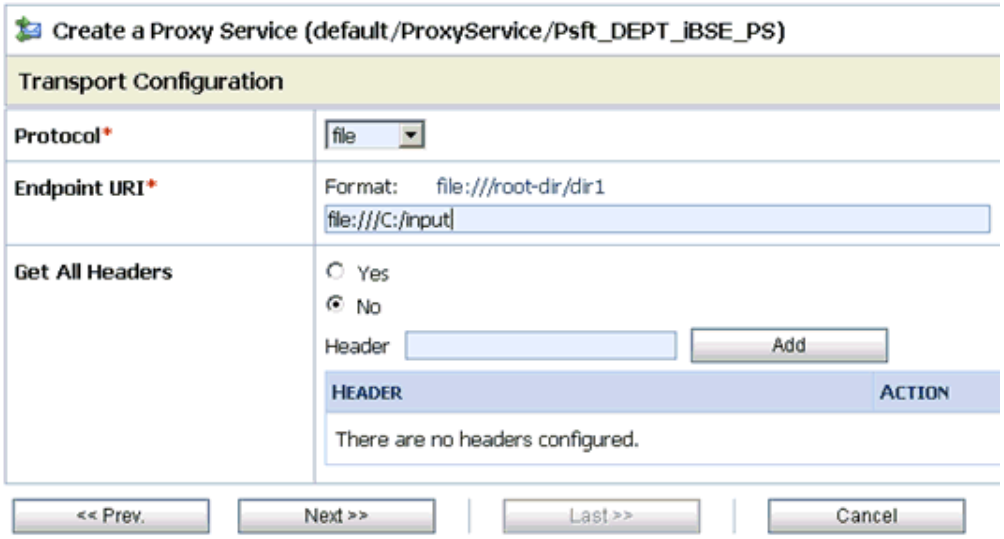


3. Provide a name for the Proxy Service and from the Service Type area select **Any XML Service**.

4. Click **Next**.

   The Transport Configuration page is displayed, as shown in Figure 7–113.

Figure 7–113 Transport Configuration Page



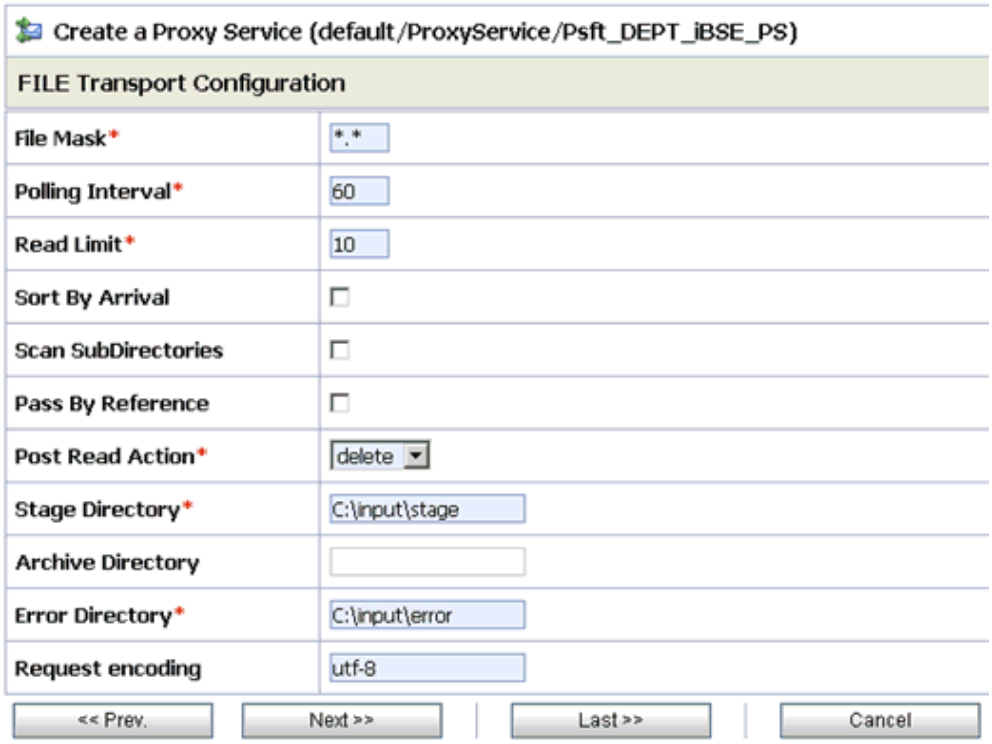
5. Select **file** from the Protocol list.

6. Enter the path to an input folder on your file system in the Endpoint URI field.

7. Click **Next**.

The FILE Transport Configuration page is displayed, as shown in Figure 7–114.

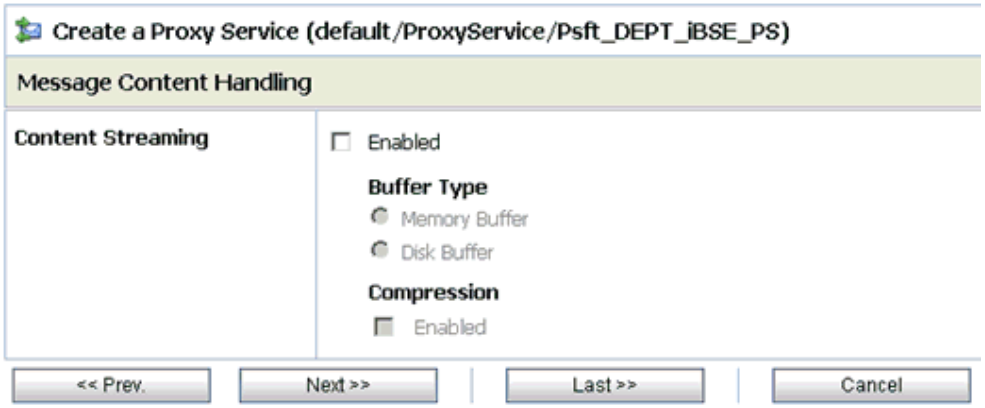
Figure 7–114 FILE Transport Configuration Page



8. Provide any folder locations on your file system for the Stage Directory and Error Directory fields.
9. Click **Next**.

   The Message Content Handling page is displayed, as shown in Figure 7–115.

Figure 7–115 Message Content Handling Page



10. Click **Next**.

    The Summary page is displayed, as shown in Figure 7–116.

Figure 7–116 Summary Page

Protocol	file
Endpoint URI	file:///C:/input
Get All Headers	No
Headers	
FILE Transport Configuration	
File Mask	*.*
Polling Interval	60
Read Limit	10
Sort By Arrival	false
Scan SubDirectories	false
Pass By Reference	false
Post Read Action	delete
Stage Directory	C:\input\stage
Error Directory	C:\input\error
Request encoding	utf-8
Message Content Handling Configuration	
Content Streaming	Disabled

<< Prev. | Save | Cancel

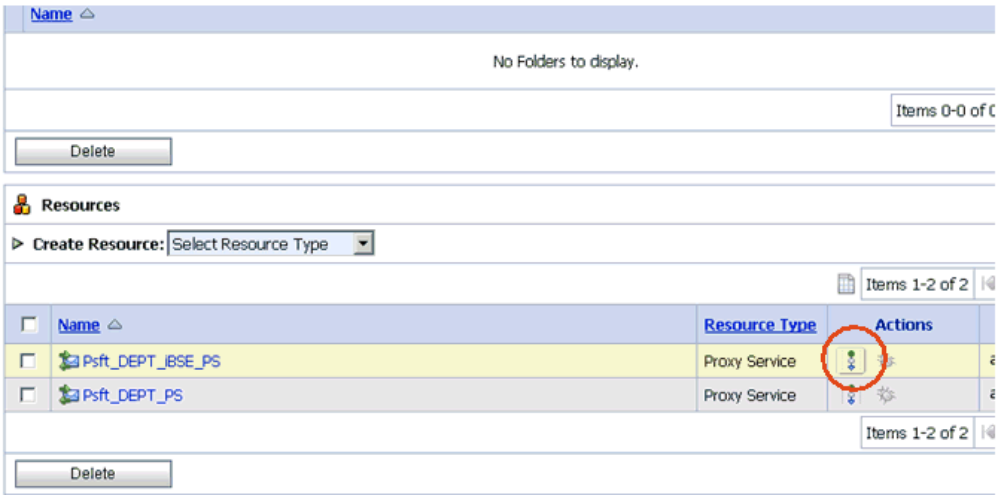
11. Review all the information for your Proxy Service and click **Save**.

7.4.7 Configuring a Pipeline

This section describes how to configure a Pipeline using the Oracle Service Bus Console.

1. Click the **Edit Message Flow** icon in the row of the Proxy Service you created, as shown in Figure 7–117.

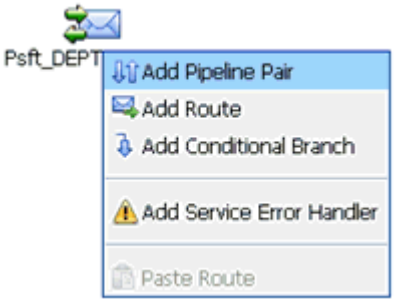
Figure 7–117 Edit Message Flow Icon



The Edit Message Flow workspace area is displayed.

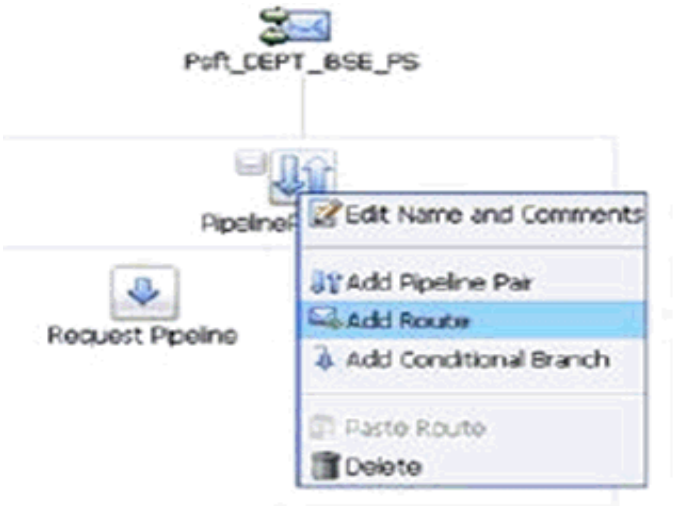
2. Click the **Proxy Service** icon and select **Add Pipeline Pair** from the menu, as shown in Figure 7–118.

Figure 7–118 Add Pipeline Pair Option



3. Click the **PipelinePairNode1** icon and select **Add Route** from the menu, as shown in Figure 7–119.

Figure 7–119 Add Route Option

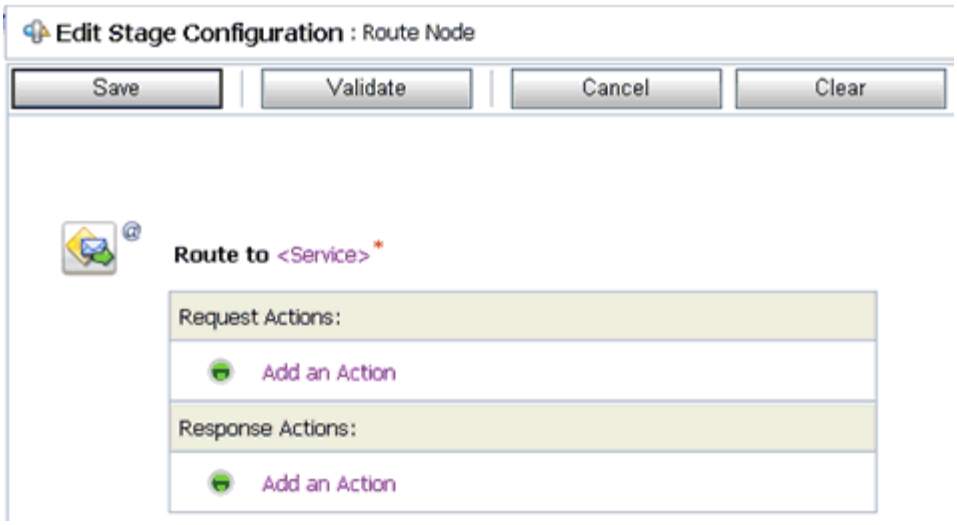


4. Click the **RouteNode1** icon and select **Edit Route** from the menu, as shown in Figure 7–120.

Figure 7–120 Edit Route

5. Click **Add an Action**, select **Communication** from the menu, and click **Routing**. The Route Node configuration page is displayed, as shown in Figure 7–121.

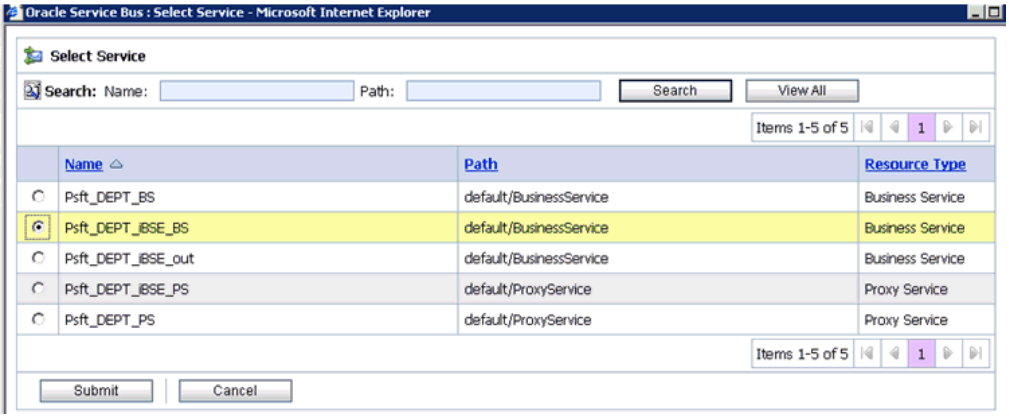
Figure 7–121 Route Node Configuration Page



6. Click **<Service>**.

   The Select Service dialog is displayed, as shown in Figure 7–122.

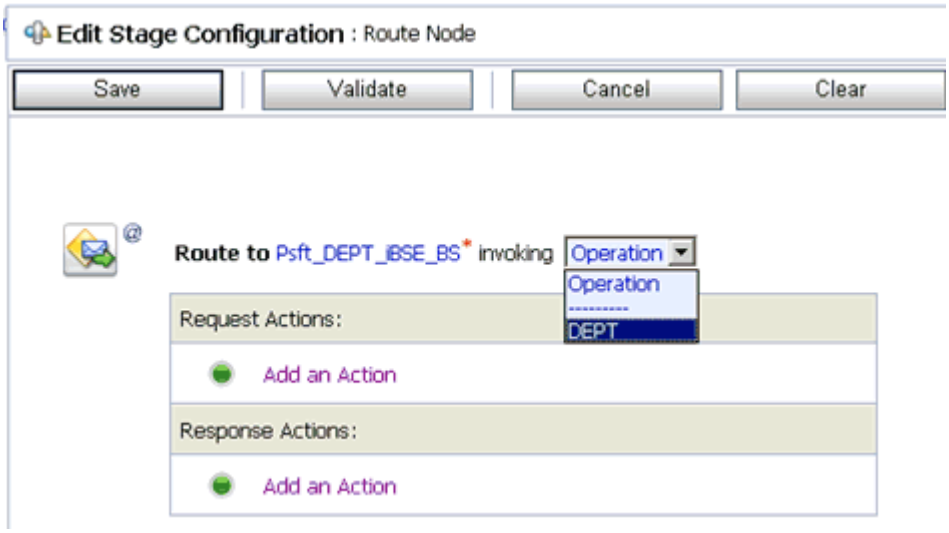
Figure 7–122 Select Service Dialog



7. Select a WSDL type Business Service and click **Submit**.

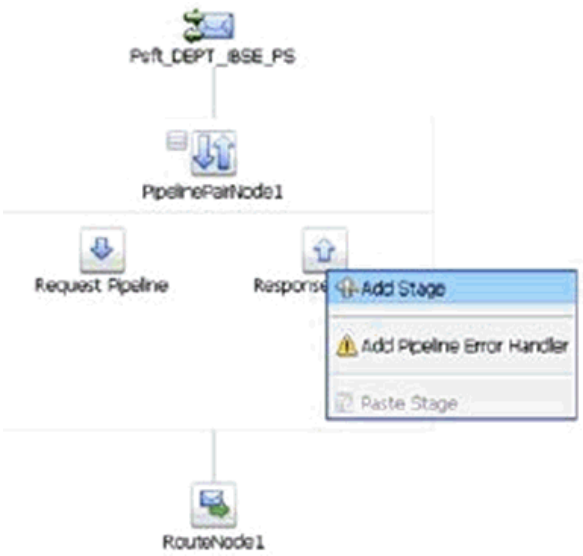
   You are returned to the Edit Stage Configuration workspace area, as shown in Figure 7–123.

Figure 7–123 Edit Stage Configuration Workspace Area



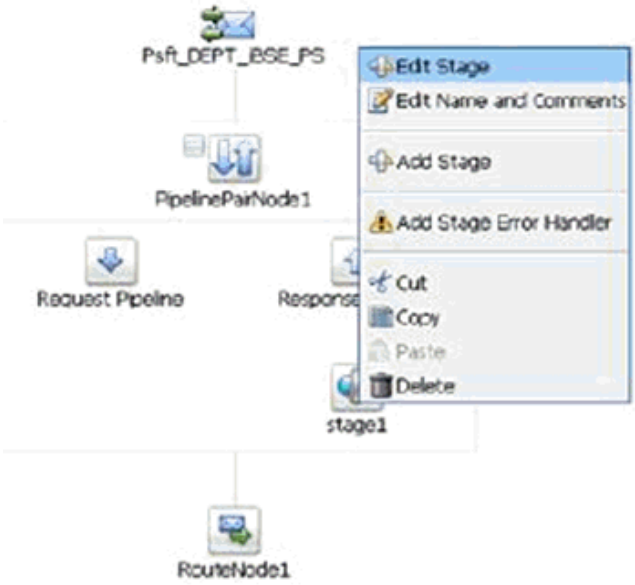
8. Select **DEPT** as the operational attribute from the list.
9. Click **Validate** and then **Save**.
10. Click the **Response Pipeline** icon and select **Add Stage** from the menu, as shown in Figure 7–124.

Figure 7–124 Add Stage



The Stage1 icon is added below the Response Pipeline icon, as shown in Figure 7–125.

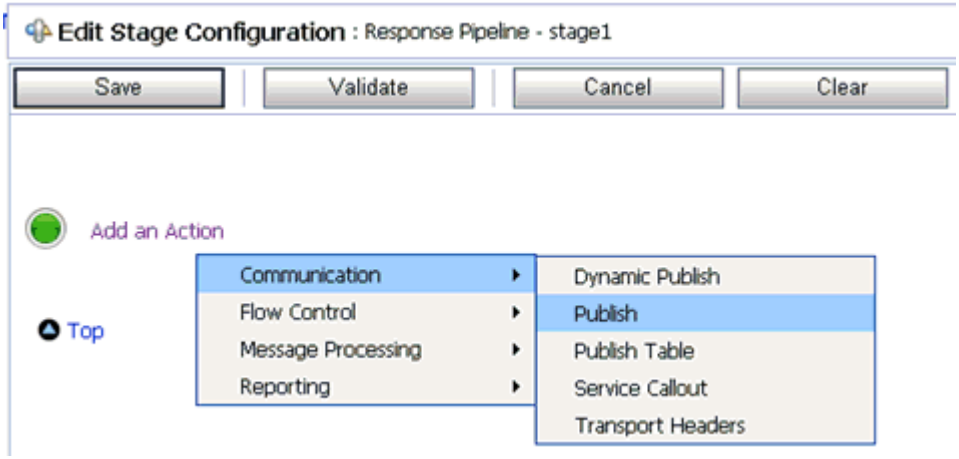
Figure 7–125 Stage 1 Icon



11. Click the **Stage1** icon and select **Edit Stage** from the menu.

    The Edit Stage Configuration workspace area is displayed, as shown in Figure 7–126.

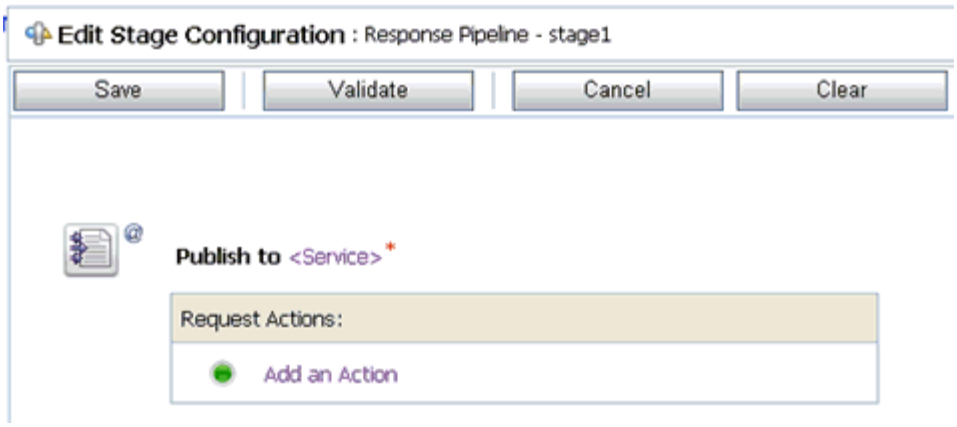
Figure 7–126 Edit Stage Configuration Workspace Area



12. Click **Add an Action**, select **Communication** from the menu, and click **Publish**.

    The Publish configuration page is displayed, as shown in Figure 7–127.

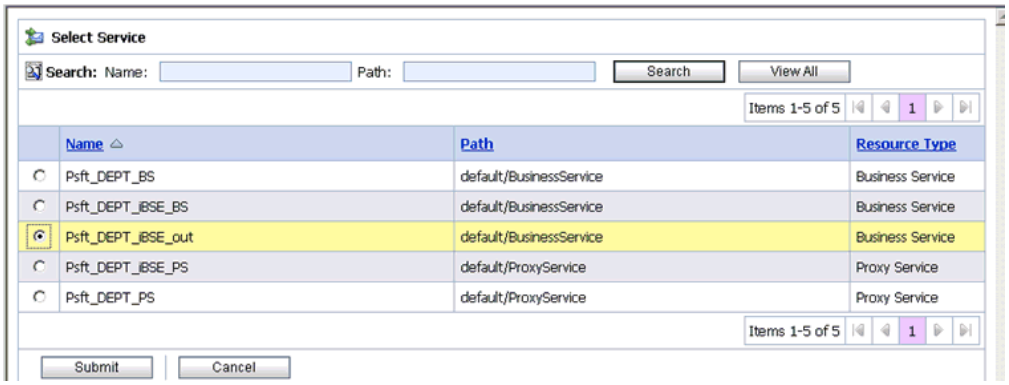
Figure 7–127 Publish Configuration Page



13. Click **<Service>**.

    The Select Service dialog is displayed, as shown in Figure 7–128.

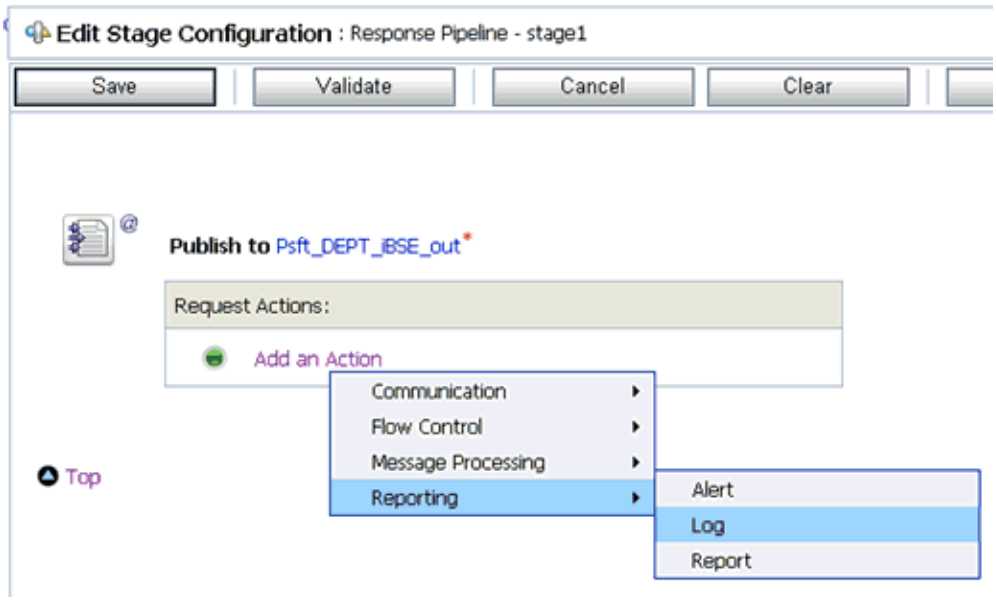
Figure 7–128 Select Service Dialog



14. Select a File type Business Service and click **Submit**.

    You are returned to the Edit Stage Configuration workspace area, as shown in Figure 7–129.

Figure 7–129 Edit Stage Configuration Workspace Area



15. Click **Validate** and then **Save**.

    The pipeline configuration is now completed, as shown in Figure 7–130.

Figure 7–130 Completed Pipeline Configuration

16. Click Save.

17. Click **Activate** in the Change Center area to activate your changes in the Oracle Service Bus session, as shown in Figure 7–131.

Figure 7–131 Change Center Area

18. Copy and paste an input XML file in the input folder you have configured to receive an output XML file in the destination folder.

8

New Features

11*g* Release 1 (11.1.1.4.0) provides new features for the Oracle Application Adapter for PeopleSoft, which are described in this chapter. This chapter contains the following topics:

8.1 Exception Filter

This section describes how to configure exception filter functionality for the Oracle Application Adapter for PeopleSoft and includes a sample testing scenario.

The exception filter is supported only for outbound processes that use J2CA configurations. This feature is not supported for BSE configurations and inbound processes that use J2CA configurations.

The exception filter uses the `com.ibi.afjca.oracle.AdapterExceptionFilter` class to filter the generated exceptions. This class filters the exceptions and categorizes them into the following categories:

- PCRetriableResourceException
- PCResourceException

The following exceptions are represented in the fault policies file:

- PCRetriableResourceException - A remote fault.
- PCResourceException - A binding fault.

8.1.1 Prerequisites

This section lists the prerequisites for the exception filter.

- Oracle PS3 SOA Suite must be installed.
- Oracle JDeveloper for PS3 must be installed with the updated SOA composite editor.
- Oracle Application Adapter for PeopleSoft for 11*g* Release 1 (11.1.1.4.0) must be installed.

For more information, see the *Oracle Fusion Middleware Application Adapters Installation Guide for Oracle WebLogic Server*.

8.1.2 Configuring the Exception Filter

Exception filter configuration consists of the following steps:

1. Generate a WSDL file.
2. Create a BPEL process with exception filter functionality.
3. Create fault policies and fault binding files.
4. Deploy and test the BPEL process with exception filter functionality.

8.1.2.1 Generating a WSDL File

To generate the WSDL file:

1. Open Application Explorer and create a J2CA configuration.

   For more information, see "Creating a Configuration for J2CA" on page 2-4.

2. Create a target for the PeopleSoft adapter and then connect to the target.

   For more information, see "Establishing a Connection (Target) for PeopleSoft" on page 2-6.

3. Generate a WSDL for the appropriate object.

   For more information, see "Generating a WSDL (J2CA Configurations Only)" on page 2-11.

8.1.2.2 Creating a BPEL process With Exception Filter Functionality

To create a BPEL process with exception filter functionality:

1. Open JDeveloper and create a new SOA application.

   For more information, see "Creating a New SOA Application for the Outbound BPEL Process" on page 4-9.

2. Create a new SOA project (for example, PSoft_Exception_Filter).
3. Create a third party adapter service component.

   For more information, see "Configuring a Third Party Adapter Service Component" on page 4-13.

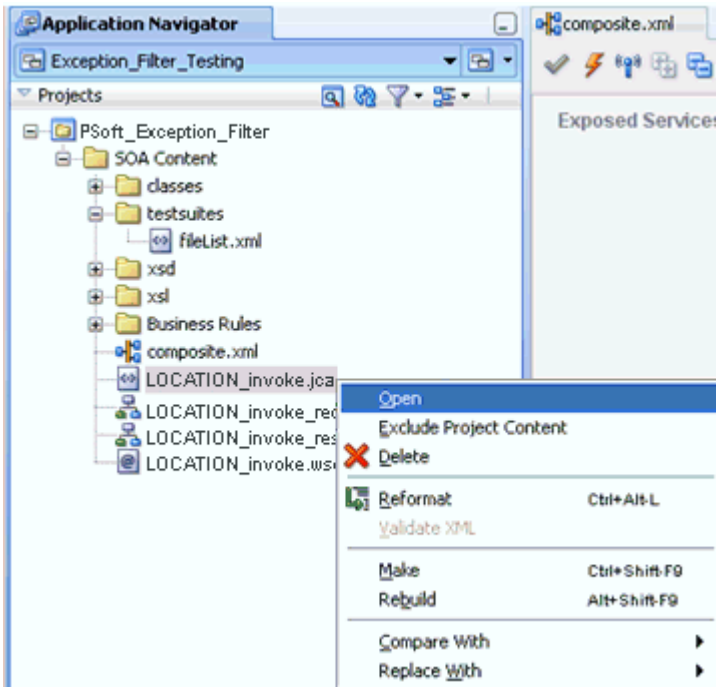
   Once the third party adapter service component is created, the WSDL file (with corresponding schemas and JCA file) is imported to the JDeveloper project.

   For more information, see "Defining a BPEL Outbound Process" on page 4-48.

4. Modify the imported JCA file.

   a. Right-click the imported JCA file and select **Open** from the menu, as shown in Figure 8–1.

Figure 8–1 Application Navigator Tab



b. In the `<interaction-spec>` element, add the `ExceptionFilter` property. For example:

```
<interaction-spec className="com.ibi.afjca.cci.IWAFInteractionSpec">
<property name="FunctionName" value="PROCESS"/><property
name="ExceptionFilter"
value="com.ibi.afjca.oracle.AdapterExceptionFilter"/></interaction-spec>
```

c. Save the modified JCA file.

5. Once the third party adapter service component is created and the JCA file is modified, continue with the remainder of the BPEL process creation.

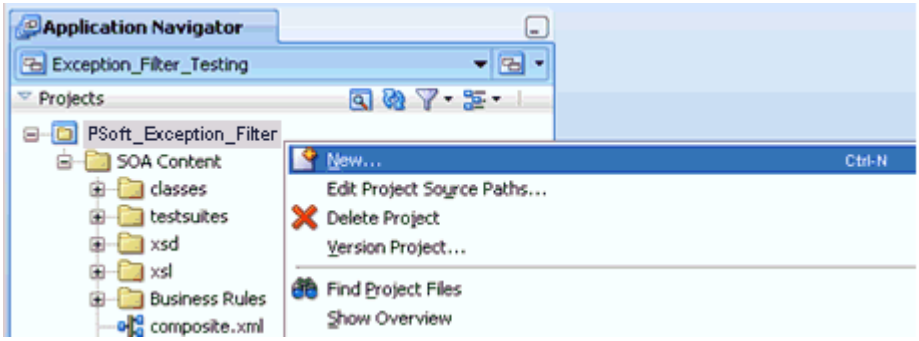
For more information, see "Defining a BPEL Outbound Process" on page 4-48.

8.1.2.3 Creating Fault Policies and Fault Binding Files

To create fault policies and fault binding files:

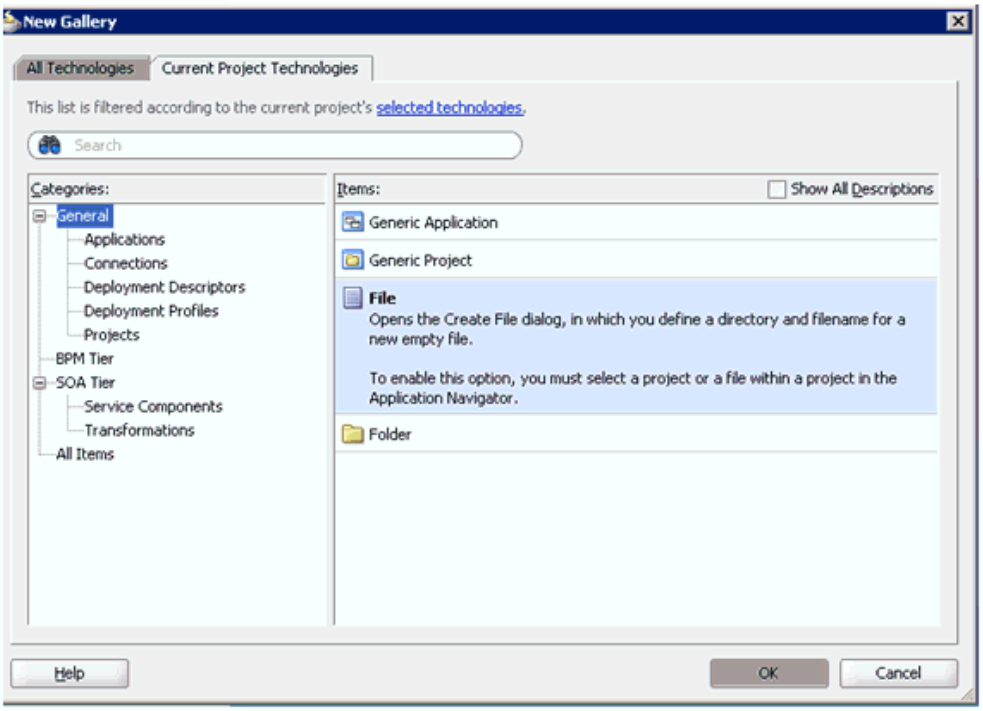
1. Right-click the created SOA project (for example, PSoft_Exception_Filter) and select **New** from the menu, as shown in Figure 8–2.

Figure 8–2 Application Navigator Tab



The New Gallery dialog is displayed, as shown in Figure 8–3.

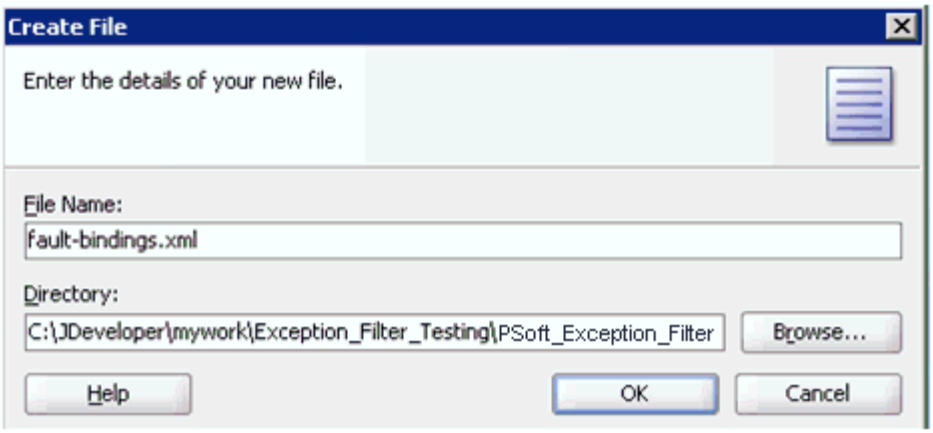
Figure 8–3 New Gallery Dialog



2. Select **File** and click **OK**.

   The Create File dialog is displayed, as shown in Figure 8–4.

Figure 8–4 Create File Dialog



3. In the File Name field, type **fault-bindings.xml** and click **OK**.
4. Add the appropriate fault binding functions in the **fault-bindings.xml** file.

   To view a sample **fault-bindings.xml** file, see "Sample Fault-Bindings.xml File" on page 8-5.

   Note: The parameter in the `<name>` element is the name of the created BPEL process.

5. Save the **fault-bindings.xml** file.
6. Repeat steps 1 to 5 for the **fault-policies.xml** file, but ensure to add the appropriate fault policies functions.

   To view a sample **fault-policies.xml** file, see "Sample Fault-Policies.xml File" on page 8-6.

   Note: The parameter ID in the `<fault policy>` element is obtained from the **fault-bindings.xml** file, which can be found in the `<Component>` element of the **fault-bindings.xml** file. This ID can have any name as long as it is identical in the **fault-policies.xml** and **fault-bindings.xml** files.

   Tip: The **fault-bindings.xml** and **fault-policies.xml** files can also be created externally and manually copied to the JDeveloper project.

Sample Fault-Bindings.xml File

```
<?xml version="1.0" encoding="UTF-8" ?>
<faultPolicyBindings version="2.0.1"
xmlns="http://schemas.oracle.com/bpel/faultpolicy"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<component faultPolicy="bpelFaultHandling">
<name>BPELProcess1</name>
</component>

</faultPolicyBindings>
```

Sample Fault-Policies.xml File

```
<?xml version="1.0" encoding="UTF-8"?>

<faultPolicies xmlns="http://schemas.oracle.com/bpel/faultpolicy">

 <faultPolicy version="2.0.1" id="bpelFaultHandling"
xmlns:env="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:xs="http://www.w3.org/2001/XMLSchema"
xmlns="http://schemas.oracle.com/bpel/faultpolicy"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<Conditions>

<faultName xmlns:bpelx="http://schemas.oracle.com/bpel/extension"
name="bpelx:remoteFault">
 <condition>
 <action ref="ora-retry-3"/>

</condition>

 </faultName>

 <faultName xmlns:bpelx="http://schemas.oracle.com/bpel/extension"
name="bpelx:bindingFault">
 <condition>
 <action ref="ora-retry-5"/>
 </condition>
 </faultName>
 </Conditions>
 <Actions>
 <Action id="ora-retry-3">
 <retry>
 <retryCount>3</retryCount>
 <retryInterval>2</retryInterval>
 <retryFailureAction ref="ora-terminate"/>
 <exponentialBackoff/>
 </retry>
 </Action>
  <Action id="ora-retry-5">
 <retry>
 <retryCount>5</retryCount>
 <retryInterval>2</retryInterval>
 <retryFailureAction ref="ora-terminate"/>
 <exponentialBackoff/>
 </retry>
 </Action>
 <Action id="ora-terminate">
 <abort/>
 </Action>
 </Actions>
 </faultPolicy>
 </faultPolicies>
```

8.1.2.4 Deploying and Testing the BPEL Process With Exception Filter Functionality

To deploy and test the BPEL process with exception filter functionality:

1. Deploy the created BPEL process.

For more information, see "Deploying the BPEL Outbound Process" on page 4-33.

2. Simulate a communication error by disconnecting the system (where the servers are running) from the network.
3. Invoke the deployed BPEL process with a valid input.

   For more information, see "Invoking the Input XML Document in the Oracle Enterprise Manager Console" on page 4-37.
4. Select the process ID.

   You can observe the BPEL process being retried or aborted based on the configuration of the **fault-policies.xml** file.

8.2 Credential Mapping for Oracle SOA Suite (BPEL, Mediator, or BPM)

This section describes how to configure credential mapping functionality for the Oracle Application Adapter for PeopleSoft in a configuration that uses Oracle SOA Suite (BPEL, Mediator, or BPM). A sample testing scenario is also included. This section contains the following topics:

Credential mapping is supported only for outbound processes that use J2CA configurations. This feature is not supported for BSE configurations and inbound processes that use J2CA configurations.

> **Note:** The J2CA connector is common to all four application adapters (SAP R/3, PeopleSoft, Siebel, and J.D. Edwards OneWorld). If credential mapping is required, then ensure that only one application adapter is used in a particular instance. For example, in one adapter instance only the PeopleSoft application adapter can be used. Credential mapping cannot be configured at the individual adapter level. If you require the use of credential mapping for two adapters, then both adapters must be running in two independent adapter instances.

To pass user credentials to the iWay J2CA resource adapter, create a credential map from the Oracle WebLogic Server user credentials to the EIS user credentials (PeopleSoft adapter). Then associate a credential policy with a BPEL, Mediator, or BPM Web service and invoke the Web service using Oracle WebLogic Server user credentials. These credentials are mapped to the EIS user credentials and then passed to the iWay J2CA container, which uses them to connect with the EIS adapter (PeopleSoft).

8.2.1 Prerequisites

This section lists the prerequisites for credential mapping.

- Oracle PS3 SOA Suite with an extended BPM domain must be installed.
- Oracle JDeveloper for PS3 must be installed with the updated SOA/BPM composite editor.
- Oracle Application Adapter for PeopleSoft for 11*g* Release 1 (11.1.1.4.0) must be installed.

For more information, see the *Oracle Fusion Middleware Application Adapters Installation Guide for Oracle WebLogic Server*.

8.2.2 Configuring Credential Mapping

Configuring credential mapping consists of the following steps:

1. Deploy the adapter.

   For more information, see Chapter 3, "Oracle WebLogic Server Deployment and Integration".

2. Associate Oracle WebLogic Server credentials with EIS credentials.

   For more information, see "Associating Oracle WebLogic Server Credentials With EIS Credentials" on page 8-8.

3. Generate a WSDL file.

   For more information, see "Generating a WSDL File" on page 8-11.

4. Create an outbound process.

   For more information, see "Creating an Outbound Process" on page 8-11.

5. Attach a security policy to an outbound process.

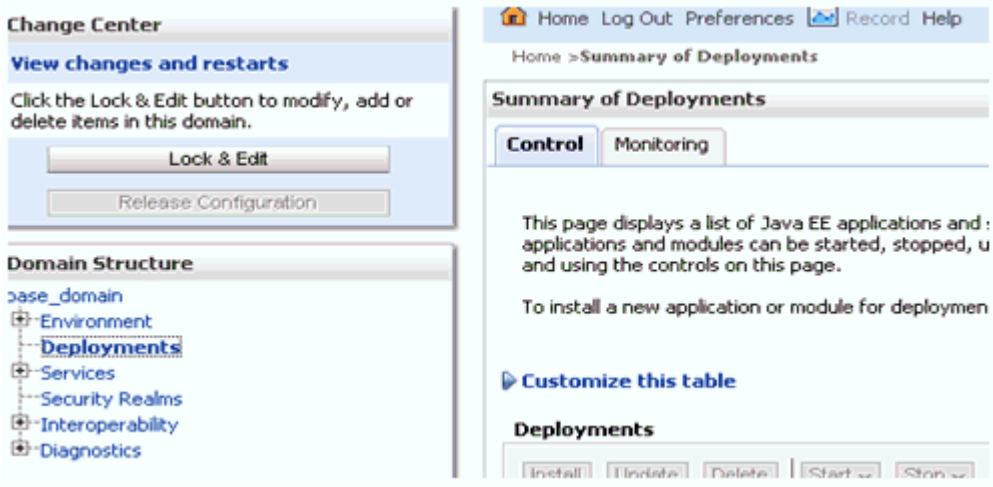
   For more information, see "Attaching a Security Policy to an Outbound Process Using the Oracle Enterprise Manager Console" on page 8-12.

8.2.2.1 Associating Oracle WebLogic Server Credentials With EIS Credentials

To associate Oracle WebLogic Server credentials with EIS credentials:

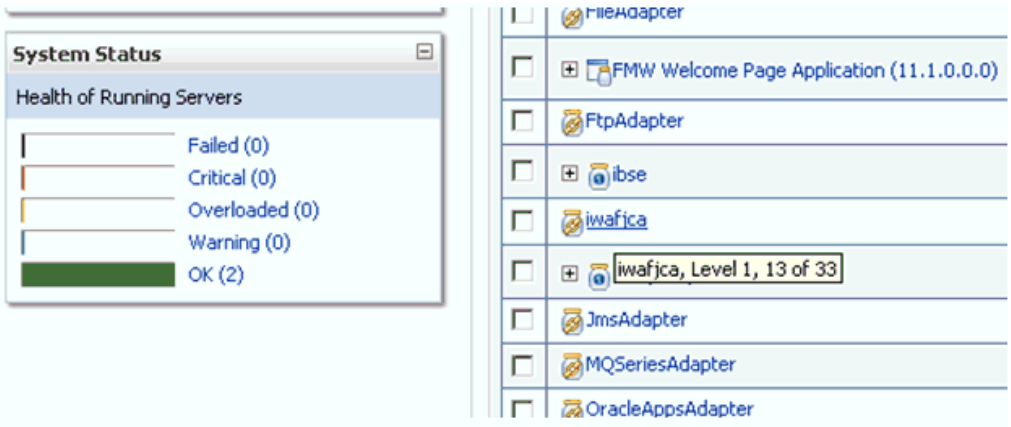
1. Log in to the Oracle WebLogic Server Administration Console.
2. In the Domain Structure section in the left pane, click **Deployments**, as shown in Figure 8–5.

Figure 8–5 Domain Structure Section



The Deployments page is displayed, as shown in Figure 8–6.

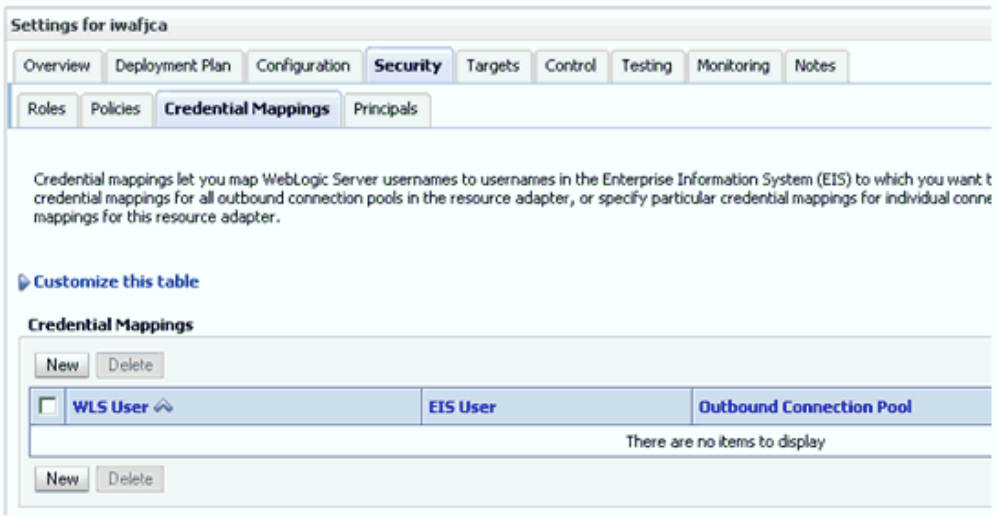
Figure 8–6 Deployments Page



3. Click the **iwafjca** resource adapter.

   The Settings for iwafjca page is displayed, as shown in Figure 8–7.

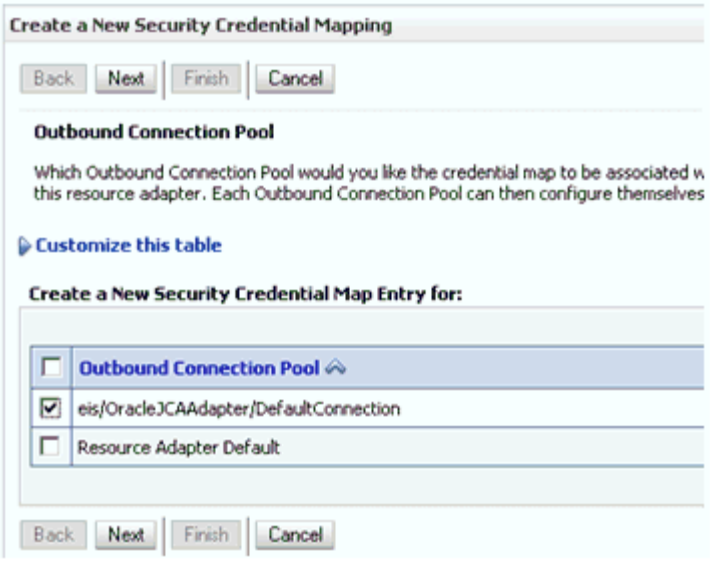
Figure 8–7 Settings for iwafjca Page



4. Click the **Credential Mappings** tab under the Security tab, and then click **New**.

   The Create a New Security Credential Mapping page is displayed, as shown in Figure 8–8.

Figure 8–8 Create a New Security Credential Mapping Page



5. Select the outbound connection pool.

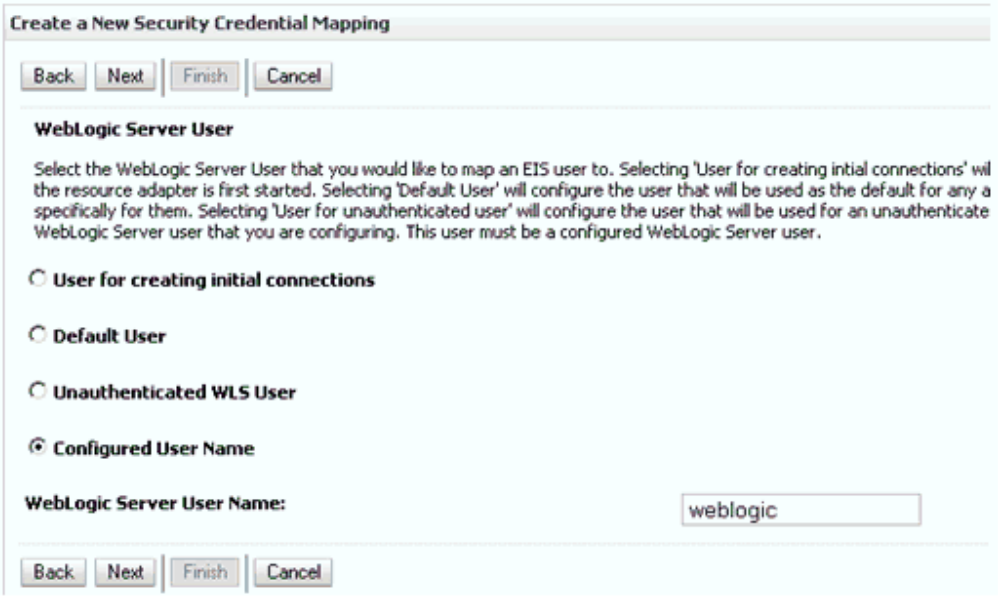
   For example:

   ```
   eis/OracleJCAAdapter/DefaultConnection
   ```

6. Click **Next**.

   The WebLogic Server User page is displayed, as shown in Figure 8–9.

Figure 8–9 WebLogic Server User Page



7. Select Configured User Name, enter a valid Oracle WebLogic Server user name, and then click **Next**.

   The EIS User Name and Password page is displayed, as shown in Figure 8–10.

Figure 8–10 EIS User Name and Password Page

8. Enter the user name and password for the EIS and click **Finish**.

   The credentials for an Oracle WebLogic Server user are now mapped with an EIS user (PeopleSoft). The mapping is invoked automatically before invoking the J2CA service.

8.2.2.2 Generating a WSDL File

To generate a WSDL file:

1. Open Application Explorer and create a J2CA configuration.

   For more information, see "Creating a Configuration for J2CA" on page 2-4.

2. Create a target for the PeopleSoft adapter and then connect to the target.

   For more information, see "Establishing a Connection (Target) for PeopleSoft" on page 2-6.

3. Generate a WSDL for the appropriate object.

   For more information, see "Generating a WSDL (J2CA Configurations Only)" on page 2-11.

8.2.2.3 Creating an Outbound Process

This section describes how to configure an outbound process. For demonstration purposes, specific references to the BPEL outbound process are made. However, the same steps apply to Mediator and BPM outbound processes.

For more information about creating a Mediator outbound process, see Chapter 5, "Integration With Mediator Service Components in the Oracle SOA Suite".

For more information about creating a BPM outbound process, see Chapter 6, "Integration With BPM Service Components in the Oracle SOA Suite".

To create a BPEL outbound process:

1. Open JDeveloper and create a new SOA application.

For more information, see "Creating a New SOA Application for the Outbound BPEL Process" on page 4-9.

2. Create a new SOA project (for example, Credential_Mappings).
3. Deploy the BPEL outbound process.

   For more information, see "Deploying the BPEL Outbound Process" on page 4-33.

8.2.2.4 Attaching a Security Policy to an Outbound Process Using the Oracle Enterprise Manager Console

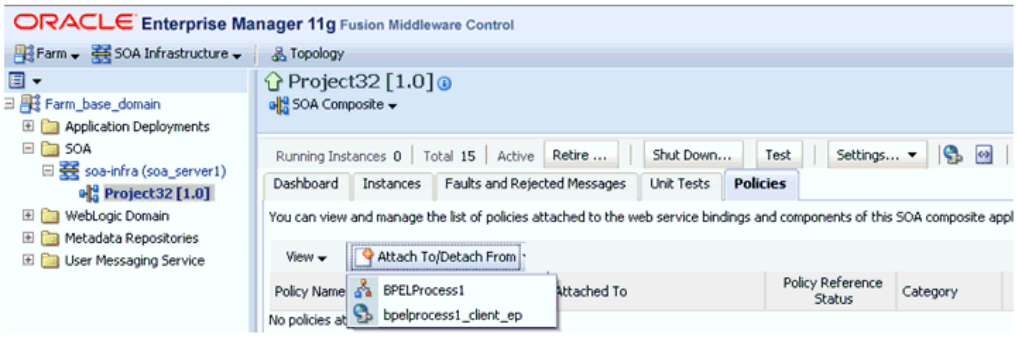
To attach a security policy to an outbound process using the Oracle Enterprise Manager console:

1. Log in to the Oracle Enterprise Manager console and navigate to the deployed composite.
2. Click the **Policies** tab.

   From the Attach To/Detach From list, select the BPEL, Mediator, or BPM outbound process.

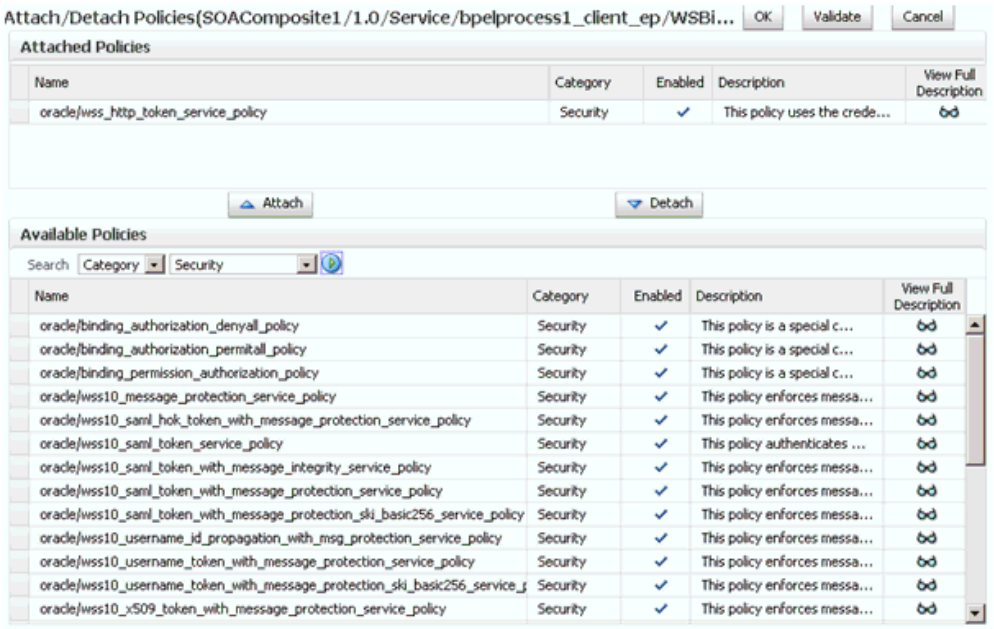
   BPEL or Mediator outbound processes have `_client` appended to the process name. BPM outbound processes use the `Process.service` naming convention.

Figure 8–11 Policies Tab



The Attached Policies page is displayed, as shown in Figure 8–12.

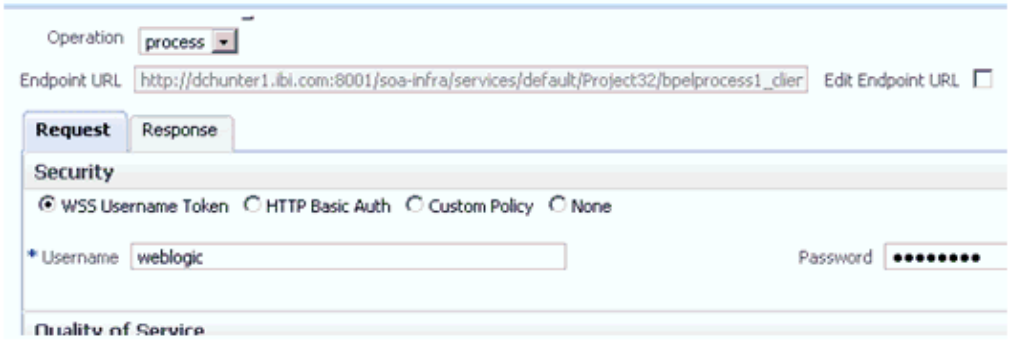
Figure 8–12 Attached Policies Page



3. Select the **Security** category and click **Search**.
4. Scroll through the list and select **oracle/wss_http_token_service_policy**.
5. Click **Attach** and then **OK**.

   The selected policy is now displayed in the Policies tab.
6. Click the **Test** tab and select **WSS Username Token** in the Security section of the Request tab. Enter a valid Oracle WebLogic Server user name and password, as shown in Figure 8–13

Figure 8–13 Test Tab



7. Invoke the deployed BPEL outbound process with a valid input.

   For more information, see "Invoking the Input XML Document in the Oracle Enterprise Manager Console" on page 4-37.
8. Check the J2CA log files and locate the encrypted password, which shows that the user credentials have been passed to the EIS through Oracle WebLogic Server.

   For example:

```
FINEST IWAFManagedConnectionFactory com.ibi.afjca.Util
```

```
getPasswordCredential(78) InLoop:
User-iwayqa:Password-ENCR(3109311731831131382333215315332323192322731773172)
FINEST IWAFManagedConnectionFactory com.ibi.afjca.Util
getPasswordCredential(90) Use the system PasswordCredential:
User-iwayqa:Password-ENCR(3109311731831131382333215315332323192322731773172)
```

8.3 Credential Mapping for Oracle Service Bus (OSB)

This section describes how to configure credential mapping functionality for the Oracle Application Adapter for PeopleSoft in a configuration that uses Oracle Service Bus (OSB). A sample testing scenario is also included. This section contains the following topics:

- Section 8.3.1, "Prerequisites"
- Section 8.3.2, "Configuring Credential Mapping"

Credential mapping is supported only for outbound processes that use J2CA configurations. This feature is not supported for BSE configurations and inbound processes that use J2CA configurations.

> **Note:** The J2CA connector is common to all four application adapters (SAP R/3, PeopleSoft, Siebel, and J.D. Edwards OneWorld). If credential mapping is required, then ensure that only one application adapter is used in a particular instance. For example, in one adapter instance only the PeopleSoft application adapter can be used. Credential mapping cannot be configured at the individual adapter level. If you require the use of credential mapping for two adapters, then both adapters must be running in two independent adapter instances.

To pass user credentials to the iWay J2CA resource adapter, create a credential map from the Oracle WebLogic Server user credentials to the EIS user credentials (PeopleSoft adapter). Then associate a credential policy with a Web service and invoke the Web service using Oracle WebLogic Server user credentials. These credentials are mapped to the EIS user credentials and then passed to the iWay J2CA container, which uses them to connect with the EIS adapter (PeopleSoft).

8.3.1 Prerequisites

This section lists the prerequisites for credential mapping.

- Oracle Service Bus (OSB) for PS3 must be installed.
- Oracle Application Adapter for PeopleSoft for 11*g* Release 1 (11.1.1.4.0) must be installed.

For more information, see the *Oracle Fusion Middleware Application Adapters Installation Guide for Oracle WebLogic Server*.

8.3.2 Configuring Credential Mapping

Configuring credential mapping consists of the following steps:

1. Deploy the adapter.

For more information, see Chapter 3, "Oracle WebLogic Server Deployment and Integration".

2. Associate Oracle WebLogic Server credentials with EIS credentials.

   For more information, see "Associating Oracle WebLogic Server Credentials With EIS Credentials" on page 8-15.

3. Generate a WSDL file.

   For more information, see "Generating a WSDL File" on page 8-18.

4. Create an Oracle Service Bus (OSB) outbound process.

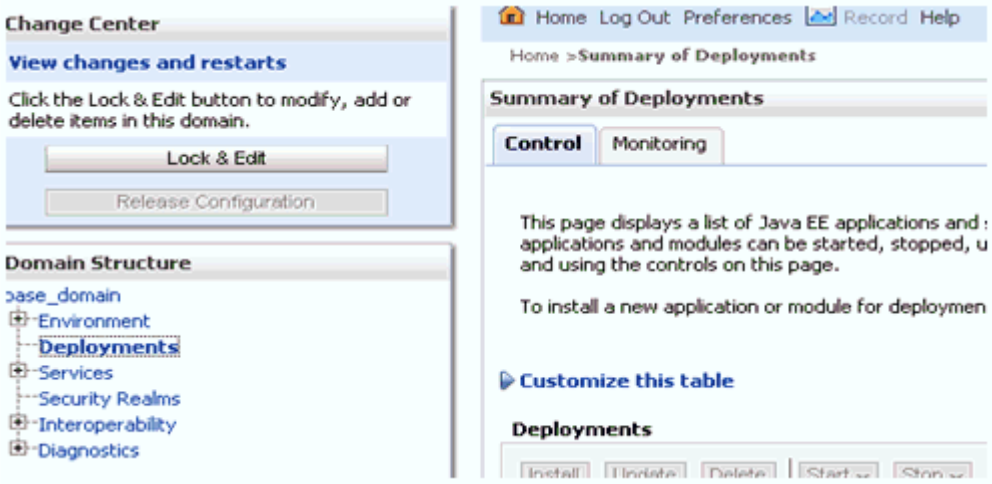
   For more information, see "Creating an Oracle Service Bus (OSB) Outbound Process" on page 8-18.

8.3.2.1 Associating Oracle WebLogic Server Credentials With EIS Credentials

To associate Oracle WebLogic Server credentials with EIS credentials:

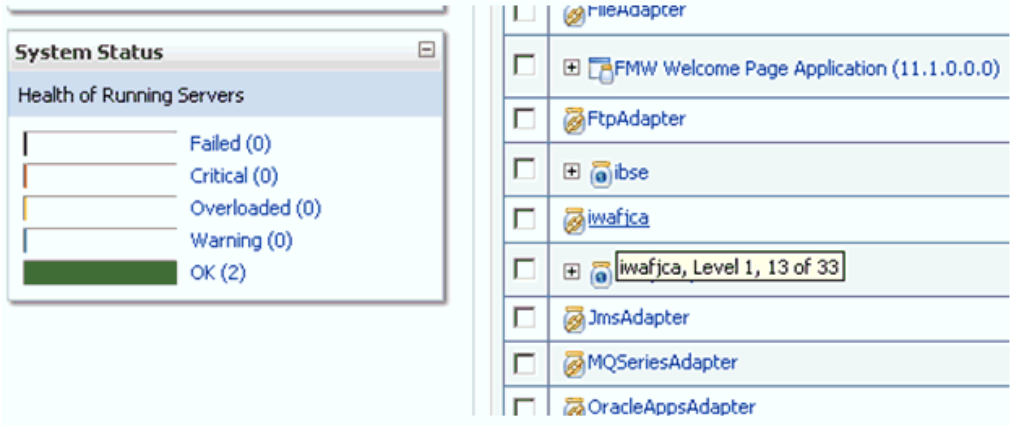
1. Log in to the Oracle WebLogic Server Administration Console.
2. In the Domain Structure section in the left pane, click **Deployments**, as shown in Figure 8–14.

Figure 8–14 Domain Structure Section



The Deployments page is displayed, as shown in Figure 8–15.

Figure 8–15 Deployments Page



3. Click the **iwafjca** resource adapter.

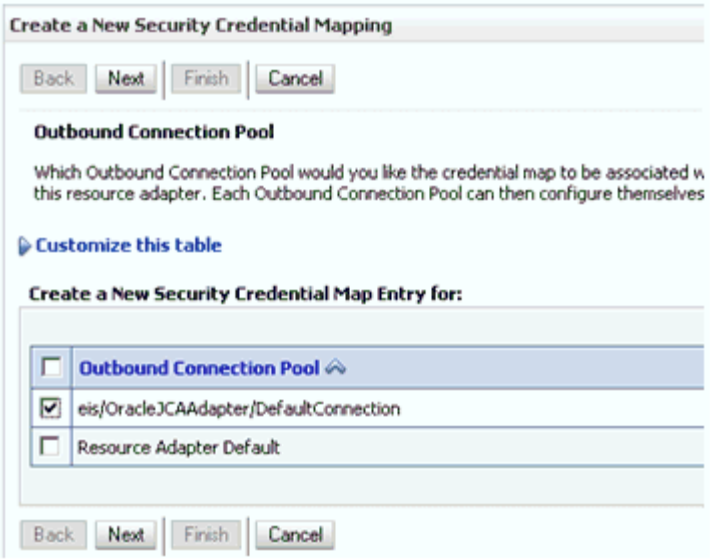
   The Settings for iwafjca page is displayed, as shown in Figure 8–16.

Figure 8–16 Settings for iwafjca Page

4. Click the **Credential Mappings** tab under the Security tab, and then click **New**.

   The Create a New Security Credential Mapping page is displayed, as shown in Figure 8–17.

Figure 8–17 Create a New Security Credential Mapping Page



5. Select the outbound connection pool.

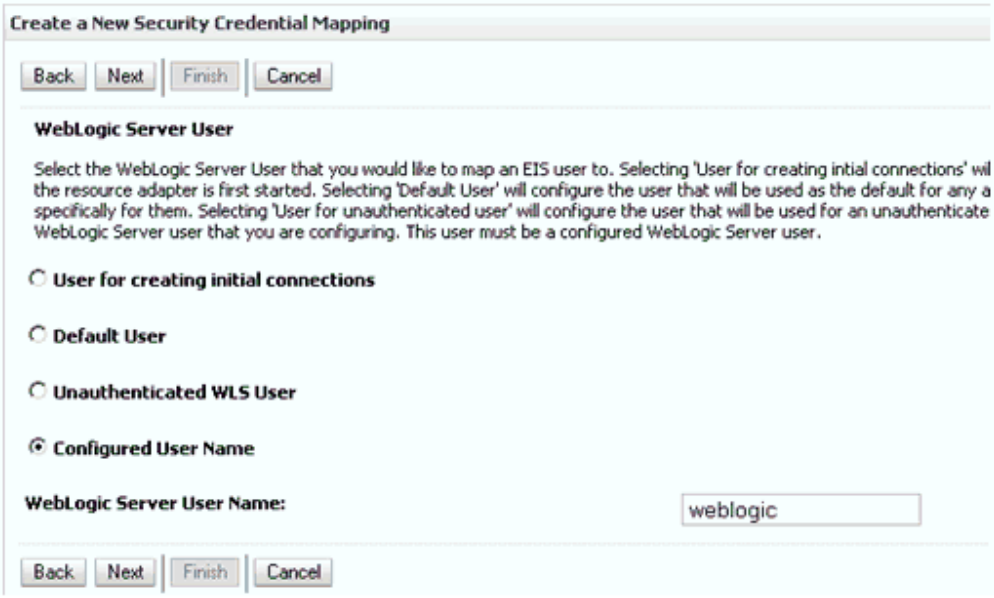
   For example:

   ```
   eis/OracleJCAAdapter/DefaultConnection
   ```

6. Click **Next**.

   The WebLogic Server User page is displayed, as shown in Figure 8–18.

Figure 8–18 WebLogic Server User Page



7. Select Configured User Name, enter a valid Oracle WebLogic Server user name, and then click **Next**.

   The EIS User Name and Password page is displayed, as shown in Figure 8–19.

Figure 8–19 EIS User Name and Password Page

8. Enter the user name and password for the EIS and click **Finish**.

   The credentials for an Oracle WebLogic Server user are now mapped with an EIS user (PeopleSoft). The mapping is invoked automatically before invoking the J2CA service.

8.3.2.2 Generating a WSDL File

To generate a WSDL file:

1. Set the class path for Application Explorer to integrate with Oracle Service Bus (OSB).

   For more information, see "Setting the Class Path for Application Explorer to Integrate With Oracle Service Bus" on page 7-4.

2. Open Application Explorer and create a J2CA configuration.

   For more information, see "Creating a Configuration for J2CA" on page 2-4.

3. Create a target for the PeopleSoft adapter and then connect to the target.

   For more information, see "Establishing a Connection (Target) for PeopleSoft" on page 2-6.

4. Publish a WSDL to OSB for the appropriate object.

   For more information, see "Publishing a WSDL From Application Explorer to Oracle Service Bus" on page 7-4.

8.3.2.3 Creating an Oracle Service Bus (OSB) Outbound Process

To create an Oracle Service Bus (OSB) outbound process with credential mapping functionality:

1. Start Oracle Service Bus and create project folders.

   For more information, see "Starting Oracle Service Bus and Creating Project Folders" on page 7-2.

2. Configure a File type Business Service.

   For more information, see "Configuring a File Type Business Service" on page 7-8.

3. Configure a Business Service.

   For more information, see "Configuring a WSDL-based Business Service" on page 7-6.

4. Configure a Proxy Service.

   For more information, see "Configuring a Proxy Service" on page 7-13.

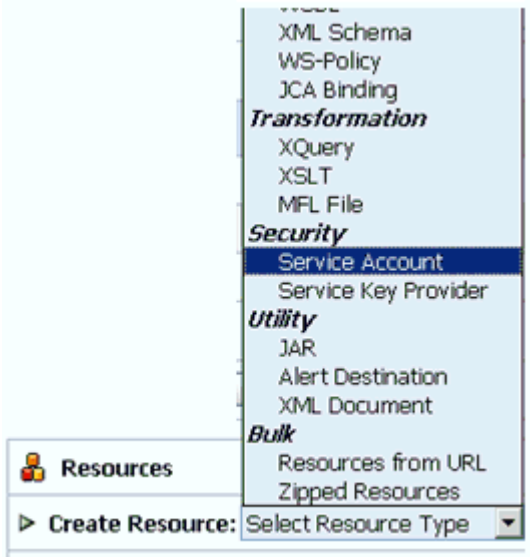
5. Configure a Pipeline.

   For more information, see "Configuring a Pipeline" on page 7-16.

6. Configure a Service account by selecting the created folder in the left pane.

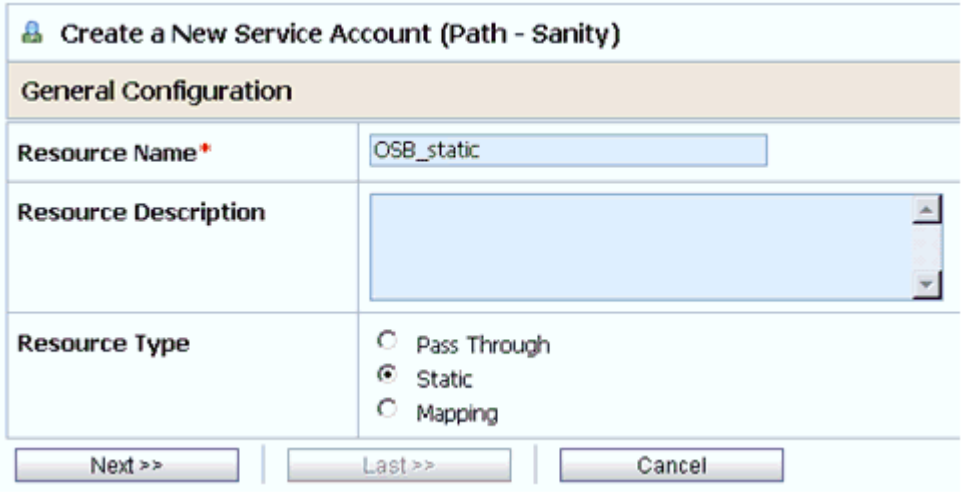
   In the right pane, select **Service Account** from the Create Resource list, as shown in Figure 8–20.

Figure 8–20 Select Service Account Option



The Create a New Service Account page is displayed, as shown in Figure 8–21.

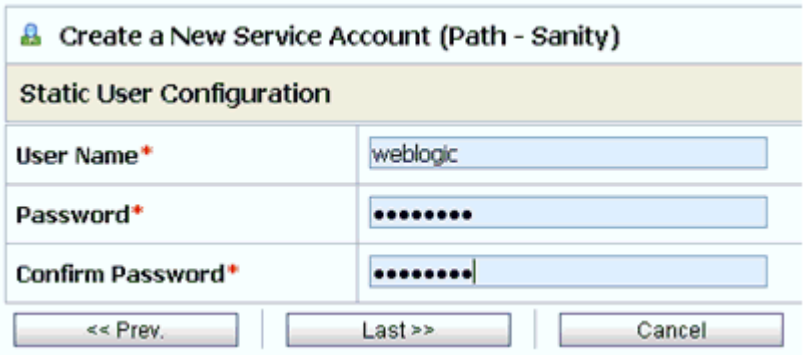
Figure 8–21 General Configuration Page



7. Provide a name for the resource and select **Static** as the resource type.
8. Click **Next**.

   The Static User Configuration page is displayed, as shown in Figure 8–22.

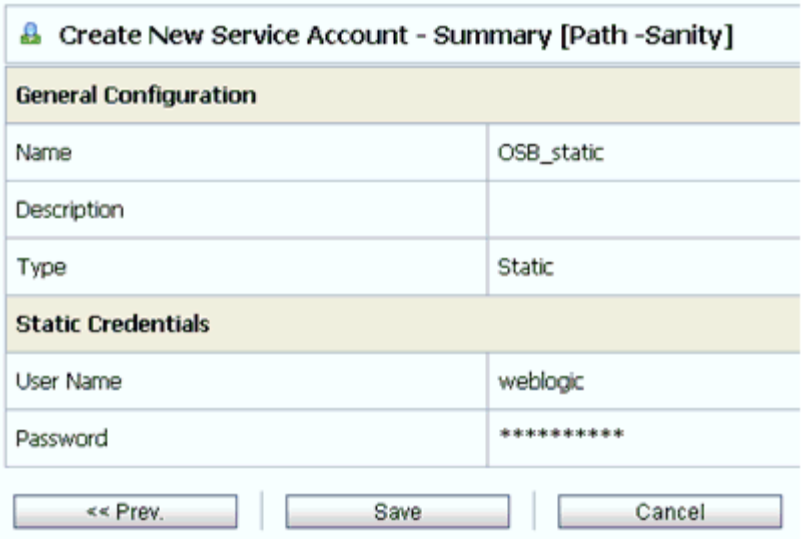
Figure 8–22 Static User Configuration Page



9. Provide a valid user name and password for Oracle WebLogic Server, and then click **Last**.

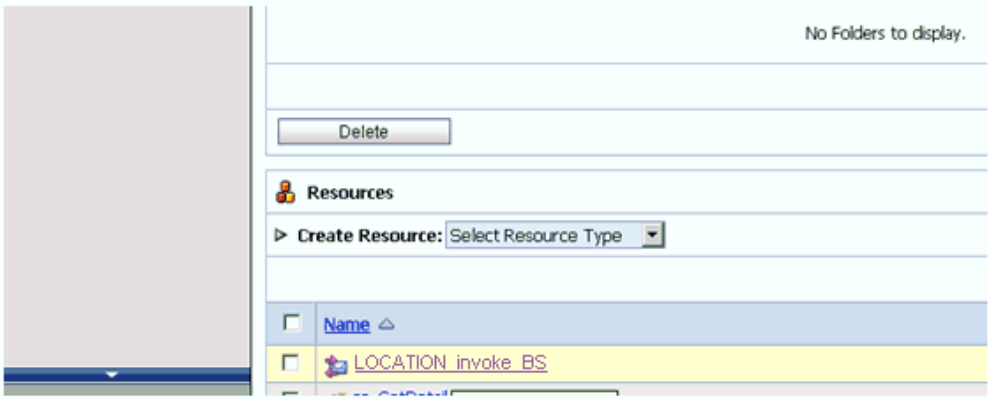
   The Summary page is displayed, as shown in Figure 8–23.

Figure 8–23 Summary Page



10. Review the information and click **Save**.
11. In the left pane, select the Business Service that was created while publishing the WSDL, as shown in Figure 8–24.

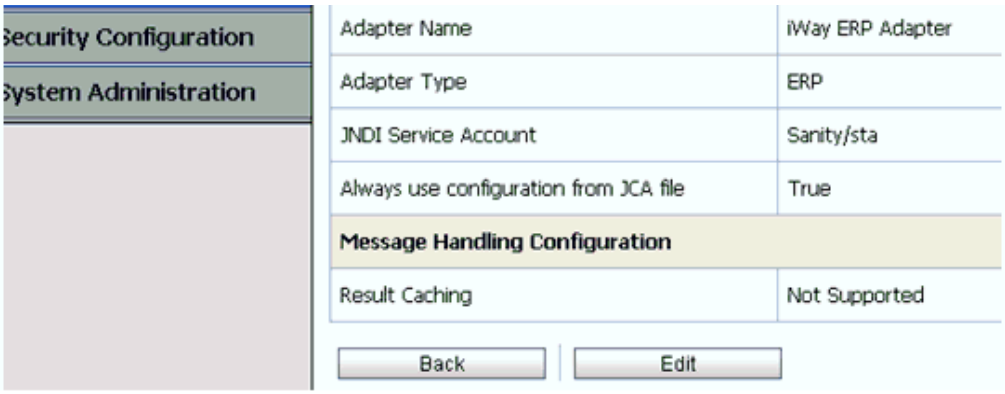
Figure 8–24 Select the Business Service



For more information, see "Configuring a WSDL-based Business Service" on page 7-6.

12. Click **Edit** to edit the process, as shown in Figure 8–25.

Figure 8–25 Edit Option

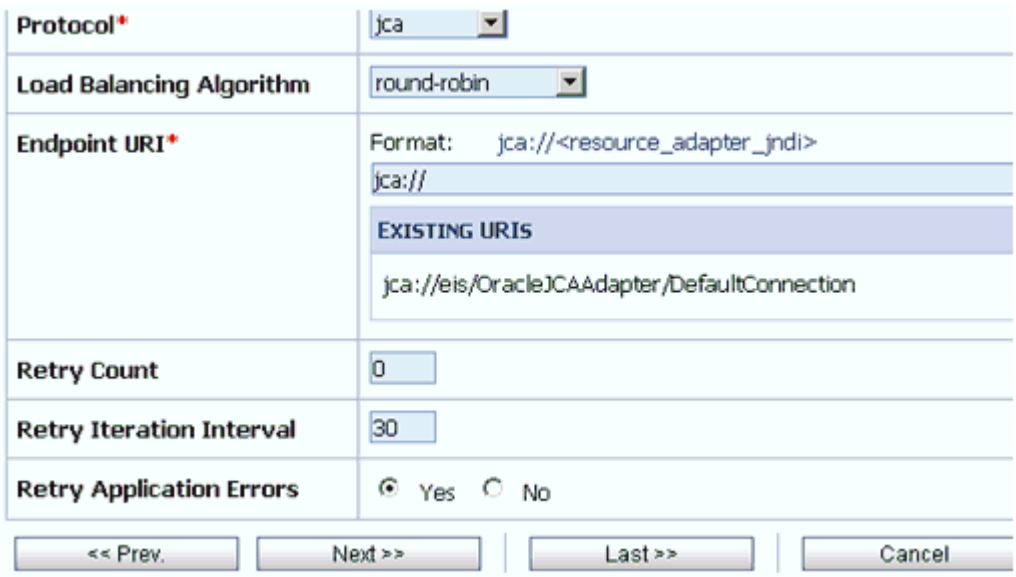


The General Configuration page is displayed.

13. Click **Next**.

    The Transport Configuration page is displayed, as shown in Figure 8–26.

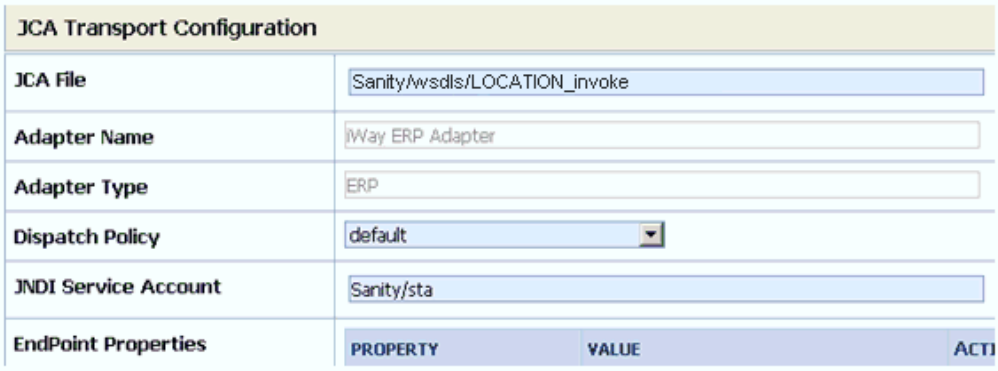
Figure 8–26 Transport Configuration Page



14. Click **Next**.

    The JCA Transport Configuration page is displayed, as shown in Figure 8–27.

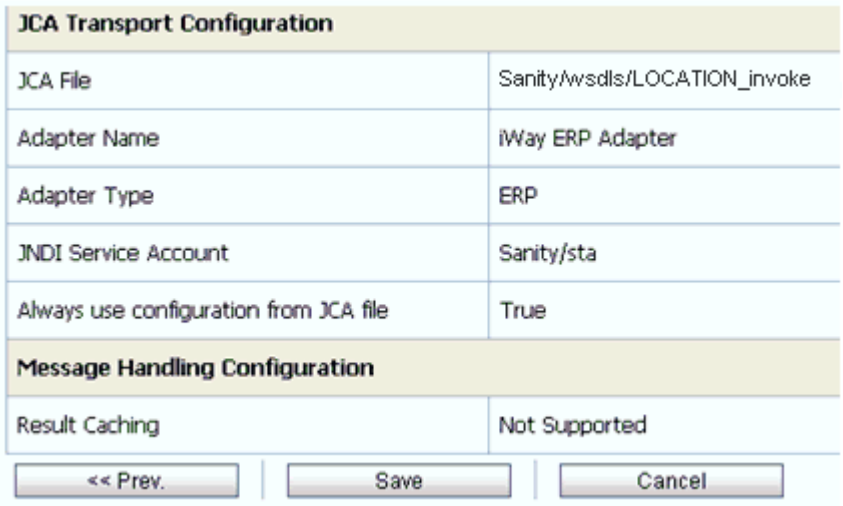
Figure 8–27 JCA Transport Configuration Page



15. Browse the JNDI service account that was created and click **Last**.

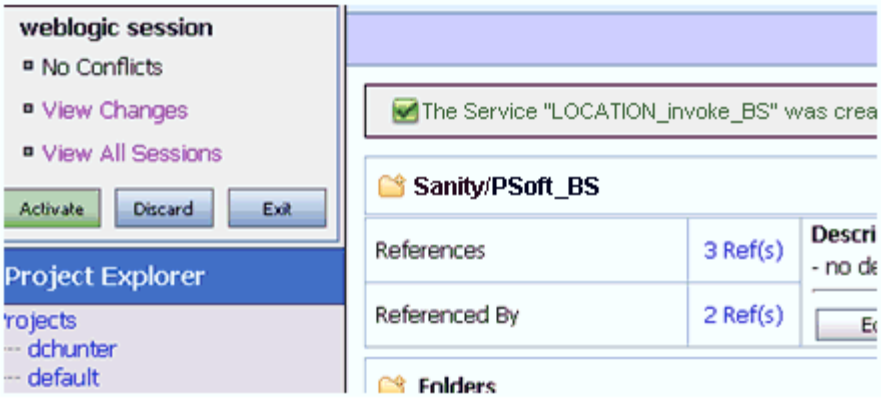
    The Summary page is displayed, as shown in Figure 8–28.

Figure 8–28 Summary Page



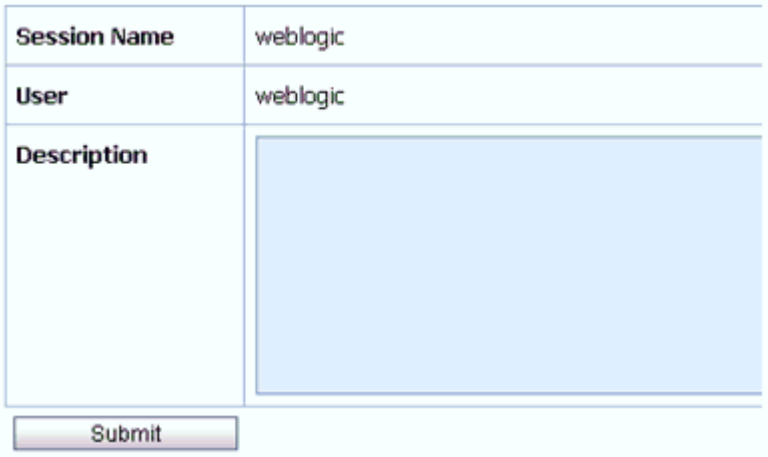
16. Review the information and click **Save**.
17. Check if the success message is displayed and click **Activate** in the Change Center, as shown in Figure 8–29.

Figure 8–29 Success Message



The Activate Session page is displayed, as shown in Figure 8–30.

Figure 8–30 Activate Session Page



18. Click **Submit**.
19. Copy and paste a valid input XML file in the input folder you configured and check to see that the output is received in the configured output location.
20. Check the J2CA log files and locate the encrypted password, which shows that the user credentials have been passed to the EIS through Oracle WebLogic Server.

    For example:

```
FINEST IWAFManagedConnectionFactory com.ibi.afjca.Util
getPasswordCredential(78) InLoop:
User-iwayqa:Password-ENCR(3189321331831132502333215312132323192322731773156)
Tue FINEST IWAFManagedConnectionFactory com.ibi.afjca.Util
getPasswordCredential(90) Use the system PasswordCredential:
User-iwayqa:Password-ENCR(3189321331831132502333215312132323192322731773156)
```

9

Troubleshooting and Error Messages

This chapter explains the limitations and workarounds when connecting to PeopleSoft. It contains the following topics:

- Section 9.1, "Troubleshooting"
- Section 9.2, "BSE Error Messages"

The adapter-specific errors listed in this chapter can arise whether using the adapter with an Oracle Adapter J2CA or with an Oracle Adapter Business Services Engine (BSE) configuration.

9.1 Troubleshooting

This topic provides troubleshooting information for PeopleSoft, separated into four categories:

- Application Explorer
- PeopleSoft
- Oracle Adapter J2CA
- Oracle Adapter Business Services Engine (BSE)

Log file information that can be relevant in troubleshooting can be found in the following locations based on your adapter installation:

- The Oracle Adapter J2CA trace information can be found under the following directory:

  For Oracle SOA Suite:

  `<ORACLE_HOME>\soa\thirdparty\ApplicationAdapters\config\configuration_name\log`

  For OSB:

  `<OSB_HOME>\Oracle_OSB1\3rdparty\ApplicationAdapters\config\configuration_name\log`

- BSE trace information can be found under the following directory:

  `<ADAPTER_HOME>\user_projects\domains\base_domain\servers\soa_server1\stage\ibse\ibse.war\ibselogs`

- The log file for Application Explorer can be found under the following directory:

  For Oracle SOA Suite:

  `<ORACLE_HOME>\soa\thirdparty\ApplicationAdapters\tools\iwae\bin`

For OSB:

`<OSB_HOME>\Oracle_OSB1\3rdparty\ApplicationAdapters\tools\iwae\bin`

Application Explorer

This topic discusses the different types of errors that can occur when using Application Explorer.

Error	Solution
Cannot connect to Oracle Application Adapter for PeopleSoft from Application Explorer. The following error message appears: `Problem activating adapter`	Ensure that: ■ PeopleSoft is running. ■ The PeopleSoft user ID and password are correct. ■ The port number is correct. ■ The custom component interface is properly installed.
The following error message appears: java.lang.IllegalStateException: java.lang.Exception: Error Logon to PeopleSoft System	You have provided invalid connection information for PeopleSoft or the wrong `psjoa.jar` is in the lib directory. The `psjoa.jar` file version is specific to the PeopleTools release.
PeopleSoft does not appear in the Application Explorer Adapter node list.	Ensure that the PeopleSoft JAR files, `iwpsci84.jar` (or iwpsci81.jar) and `psjoa.jar,` are added to the `lib` directory.
Logon failure error at run-time.	If the password for connecting to your PeopleSoft system is not specified when creating a target or with the Edit option in Application Explorer, you will be unable to connect to PeopleSoft. The connection password is not saved in `repository.xml`. Update the password using the Edit option in Application Explorer, then restart the application server.
The following error message appears: Jolt Session Pool cannot provide a connection to the appserver. This appears to be because there is no available application server domain. [Fri Aug 27 13:06:27 EDT 2004] bea.jolt.ServiceException: Invalid Session	The host name or port number for PeopleSoft is incorrect.
Properties are not displayed for a component interface.	You are using the wrong `iwpsci8x.jar` file.
Cannot generate schemas.	If the error message “Index: -1, Size:0” appears, or if you can log on to Application Explorer but you cannot see any Component Interfaces or Messages, then you may have both the `iwpsci81.jar` and `iwpsci84.jar` files in your `lib` directory. Stop your server, remove the unrequired jar file, and restart the server.

Error	Solution
The following exception occurs when you start Application Explorer by activating `ae.bat` (not `iaexplorer.exe`): `java.lang.ClassNotFoundException: org.bouncycastle.jce.provider.BouncyCastleProvider`	This is a benign exception. It does not affect adapter functionality. Download BouncyCastle files from: `ftp://ftp.bouncycastle.org/pub`
Unable to start Application Explorer in a Solaris environment. The following exception is thrown in the console: `javax.resource.ResourceException: IWAFManagedConnectionFactory: License violation.at com.ibi.afjca.spi.IWAFManagedConnectionFactory.createConnectionFactory(IWAFManagedConnectionFactory.java:98)at com.iwaysoftware.iwae.common.JCATransport.getConnectionFactory(JCATransport.java:133) at com.iwaysoftware.iwae.common.JCATransport.initJCA(JCATransport.java:69)at com.iwaysoftware.iwae.common.JCATransport.<init>(JCATransport.java:62)at com.iwaysoftware.iwae.common.AdapterClient.<init>(AdapterClient.java:85)at com.ibi.bse.ConfigWorker.run(ConfigWorker.java:41)at java.lang.Thread.run(Thread.java:534)` `Could not create the connection factory.`	`JAVACMD` is not set on the user system. Before starting Application Explorer, export `JAVACMD` as follows: `JAVACMD=/<jdk_home>/bin/java`, where `<jdk_home>` is the directory where JDK is installed on your system.

PeopleSoft

Error	Solution
Services are not working properly when using the PeopleSoft Component Interface testing tool in three-tier mode.	To test properly using the Component Interface testing tool: **1.** Open Application Designer. **2.** Select the Component Interface. **3.** Use the test tool. If service works in test tool, then review the XML and check for redundant fields in XML.
The following error message appears: `Jolt Session Pool cannot provide a connection to the appserver. This appears to be because there is no available application server domain. [Fri Aug 27 13:06:27 EDT 2004] bea.jolt.ServiceException: Invalid Session`	The host name or port number for PeopleSoft is incorrect.
Component Interfaces and Messages do not appear in the adapter tree.	The project is not installed properly on the PeopleSoft system.

Error	Solution

Return error code `-1` is received from PeopleSoft at run-time, for example:
`<LOCATIONProcessResponse xmlns="http://xmlns.oracle.com/LOCATION">`
`<error xmlns="">-1</error>`
`</LOCATIONProcessResponse>`
	You are either using the incorrect version of `psjoa.jar`, or have both the `iwpsci81.jar` and `iwpsci84.jar` files in your `lib` directory. In the second case, you must delete the unused JAR file, and then restart the server.
	The `psjoa.jar` file version is specific to the PeopleTools release.

Pstools.properties file has not been initialized.	This file is required for PeopleSoft 8.1. If you are using PeopleSoft 8.1, you should add this file. If you are not using PeopleSoft 8.1 and this error message still appears, ignore the message.
The following error message appears: `Cannot find Component Interface {CI name}`	The reason may be either of the following: ■ The Java API for the selected component interface is not found in the API JAR file. Please check the Java API for the class file for the CI. If not found, please add the class file for the CI. ■ The component interface name is mentioned incorrectly in the request document.
The following error message appears: `Not Authorized (90,6) Failed to execute PSSession request`	The component interface does not have the necessary access to perform the operation. Change the permission settings in the PeopleSoft > Security > Permission list for the component interface.
The following error message appears: `Must also provide values for keys {keyname}`	The reason may be any of the following: ■ The request XML document does not have the element for the mandatory key. Please include the keyname and the value in the request document. ■ The Key field name is mentioned incorrectly in the request document. ■ The Perform operation is mentioned incorrectly in the request XML document.

Oracle Adapter J2CA

Error	Solution
In Application Explorer, the following error message appears when you attempt to connect to an Oracle Adapter J2CA configuration: `Could not initialize JCA`	In the Details tab in the right pane, ensure that the directory specified in the Home field points to the correct directory, for example: *<ADAPTER_HOME>*`\soa\thirdparty\ApplicationAdapters\tools\iwae\bin\..\..\..\`

9.2 BSE Error Messages

This topic discusses the different types of errors that can occur when processing Web services through Oracle WebLogic Server Adapter Business Services Engine (BSE).

9.2.1 General Error Handling in BSE

BSE serves as both a SOAP gateway into the adapter framework and as the engine for some of the adapters. In both design time and run-time, various conditions can cause errors in BSE when Web services that use adapters run. Some of these conditions and resulting errors are exposed the same way, regardless of the specific adapter; others are exposed differently, based on the adapter being used. This topic explains what you can expect when you encounter some of the more common error conditions on an adapter-specific basis.

Usually, the SOAP gateway (**agent**) inside BSE passes a SOAP request message to the adapter required for the Web service. If an error occurs, how it is exposed depends on the adapter and the API or interfaces that the adapter uses. The APIs are generated from PeopleTools and are specific to the PeopleTools release. A few scenarios cause the SOAP gateway to generate a SOAP fault. In general, anytime the SOAP agent inside BSE receives an invalid SOAP request, a SOAP fault element is generated in the SOAP response. The SOAP fault element contains fault string and fault code elements. The fault code contains a description of the SOAP agent error.

The following SOAP response document results when BSE receives an invalid SOAP request:

```
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/">

 <SOAP-ENV:Body>
      <SOAP-ENV:Fault>
         <faultcode>SOAP-ENV:Client</faultcode>
         <faultstring>Parameter node is missing</faultstring>
      </SOAP-ENV:Fault>
   </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

In this example, BSE did not receive an element in the SOAP request message that is mandatory for the WSDL for this Web service.

9.2.2 Adapter-Specific Error Handling

When an adapter raises an exception during run-time, the SOAP agent in BSE produces a SOAP fault element in the generated SOAP response. The SOAP fault element contains fault code and fault string elements. The fault string contains the native error description from the adapter target system. Since adapters use the target system interfaces and APIs, whether an exception is raised depends on how the target systems interface or API treats the error condition. If a SOAP request message is passed to an adapter by the SOAP agent in BSE, and that request is invalid based on the WSDL for that service, the adapter may raise an exception yielding a SOAP fault.

While it is almost impossible to anticipate every error condition that an adapter may encounter, the following is a description of how adapters handle common error conditions and how they are then exposed to the Web services consumer application.

Oracle Application Adapter for PeopleSoft Invalid SOAP Request

If the PeopleSoft agent receives a SOAP request message that does not conform to the WSDL for the Web service being executed, then the following SOAP response is generated.

```
<SOAP-ENV:Envelope xmlns:xsi="http://www.w3.org/1999/XMLSchema-instance"
xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:xsd="http://www.w3.org/1999/XMLSchema">
  <SOAP-ENV:Body>
```

```
   <m:CARRIERResponse xmlns:m="urn:schemas-iwaysoftware-com:iwse"
   xmlns="urn:schemas-iwaysoftware-com:iwse"
   cid="2A3CB42703EB20203F91951B89F3C5AF">
   <PS8>
      <error>Cannot find Component Interface {VARRIER}    (91,2)Initialization
    failed (90,7)Not Authorized (90,6)Failed to execute PSSession request Cannot
find Component Interface {VARRIER} (91,2)</error>
       </PS8>
      </m:CARRIERResponse>
   </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

Empty Result From PeopleSoft Request

If Oracle Application Adapter for PeopleSoft executes a component interface as a Web service using input parameters passed in the SOAP request that do not match records in PeopleSoft, then the following SOAP response is generated.

```
<SOAP-ENV:Enve
lope xmlns:xsi="http://www.w3.org/1999/XMLSchema-instance"
xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:xsd="http://www.w3.org/1999/XMLSchema">
 <SOAP-ENV:Body>
  <m:CARRIERResponse xmlns:m="urn:schemas-iwaysoftware-com:iwse"
xmlns="urn:schemas-iwaysoftware-com:iwse" cid="2A3CB42703EB20203F91951B89F3C5AF">
    <PS8>
        <error>No rows exist for the specified keys. {CARRIER} (91,50)Failed to
execute PSBusComp request</error>
    </PS8>
  </m:CARRIERResponse>
 </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

Failure to Connect to PeopleSoft

If Oracle Application Adapter for PeopleSoft cannot connect to PeopleSoft, then the following SOAP response is generated.

```
<?xml version="1.0" enco
ding="ISO-8859-1" ?>
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/">
<SOAP-ENV:Body>
  <SOAP-ENV:Fault>
   <faultcode>SOAP-ENV:Server</faultcode>
  <faultstring>java.lang.Exception: Error Logon to PeopleSoft
   System<faultstring>
 </SOAP-ENV:Fault>
</SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

Invalid SOAP Request

If Oracle WebLogic Server Application Adapter receives a SOAP request message that does not conform to the WSDL for the Web services being executed, then the following SOAP response is generated.

```
<?xml version="1.0" encoding="ISO-8859-1"
 ?>
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/">
<SOAP-ENV:Body>
 <SOAP-ENV:Fault>
  <faultcode>SOAP-ENV:Server</faultcode>
```

```
  <faultstring>RPC server connection failed: Connection refused:
connect</faultstring>
 </SOAP-ENV:Fault>
</SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

Empty Result From Oracle WebLogic Server Application Adapter Request

If the adapter executes a SOAP request using input parameters passed that do not match records in the target system, then the following SOAP response is generated.

> **Note:** The condition for this adapter does not yield a SOAP fault.

```
<SOAP-ENV:Envelope xmlns:xsi="http://www.w3.org/1999/XMLSchema-instance"
xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:xsd="http://www.w3.org/1999/XMLSchema">
   <SOAP-ENV:Body>
      <m:RunDBQueryResponse xmlns:m="urn:schemas-iwaysoftware-com:iwse"
        xmlns="urn:schemas-iwaysoftware-com:iwse"
        cid="2A3CB42703EB20203F91951B89F3C5AF">
        <RunDBQueryResult run="1" />
     </m:RunDBQueryResponse>
  </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

10

Advanced User Tools

This chapter describes advanced user tools. It contains the following topics:

- Section 10.1, "Web Services Policy-Based Security"
- Section 10.2, "Migrating Repositories"

10.1 Web Services Policy-Based Security

Oracle Adapter Application Explorer (Application Explorer) provides a security model called Web services policy-based security. The following topics describe how the feature works and how to configure it.

Web services provide a layer of abstraction between the back-end business logic and the user or application running the Web service. Easy application integration is enabled. However, the issue of controlling the use and implementation of critical and sensitive business logic that is run as a Web service is raised.

Application Explorer controls the use of Web services that use adapters, using a feature called policy-based security. This feature enables an administrator to apply policies to business services (Web services) to deny or permit their execution.

A policy is a set of privileges dealing with the execution of a business service that can be applied to an existing or new business service. When you set specific rights or privileges inside a policy, you do not have to re-create privileges for every business service that has security concerns in common with other business services. Instead, you reuse a policy on multiple business services.

The goal of the feature is to secure requests at both the transport and the SOAP request level transmitted on the wire. Some of the policies do not deal with security issues directly, but do affect the run-time behavior of the Web services to which they have been applied.

The BSE administrator creates an "instance" of a policy type, names it, associates individual users or groups (a collection of users), and then applies that policy to one or more business services.

You can assign a policy to a business service, or to a method within a business service. If a policy is only applied to a method, other methods in that business service will not be governed by it. However, if a policy is applied to the business service, all methods are governed by it. At run-time, the user ID and password that are sent to BSE in the SOAP request message are checked against the list of users for all policies applied to that specific business service. The policy type that is supported is Resource Execution, which dictates who can or cannot execute the business service.

When a policy is not applied, the default value for a business service is to "grant all". For example, anybody can execute the business service, until the Resource Execution

policy is associated to the business service. At that time, only those granted execution permissions, or users not part of the group that has been denied execution permissions, have access to the business service.

10.1.1 Configuring Web Services Policy-Based Security

The following procedures describe how to configure Web services policy-based security.

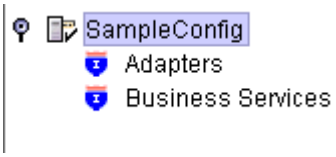
Creating and Associating a User with a Policy

Before you create instances of policies, you must have a minimum of one user or one group to associate to an instance. You can create users and groups using Application Explorer.

1. Start Application Explorer.
2. Right-click the configuration to which you want to connect, for example, `SampleConfig`. For more information on how to create a new configuration, see Chapter 2, "Configuring Oracle Application Adapter for PeopleSoft".
3. Select **Connect**.

   Nodes appear for Adapters and Business Services (also known as Web services), as shown in Figure 10–1.

Figure 10–1 Sample Configuration Node



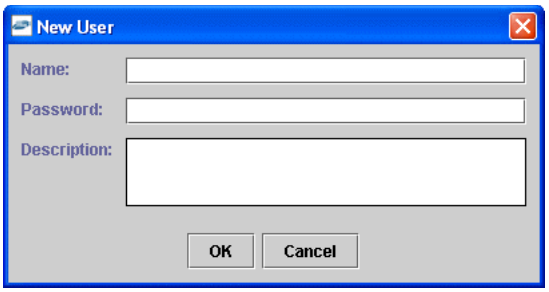
   a. Expand the **Business Services** node.
   b. Expand the **Configuration** node.
   c. Expand the **Security** node.
   d. Expand the **Users and Groups** node, as shown in Figure 10–2.

Figure 10–2 New User Option

4. Right-click **Users** and click **New User**.

   The New User dialog is displayed, as shown in Figure 10–3.

Figure 10–3 New User Dialog



a. In the **Name** field, enter a user ID.

b. In the **Password** field, enter the password associated with the user ID.

c. In the **Description** field, enter a description of the user (optional).

5. Click **OK**.

Figure 10–4 Users Node

The new user is added under the Users node, as shown in Figure 10–4.

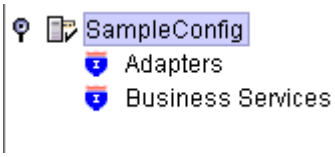
Creating a Group to Use With a Policy

To create a group to use with a policy:

1. Start Application Explorer.
2. Right-click the configuration to which you want to connect, for example, SampleConfig. For more information on how to create a new configuration, see Chapter 2, "Configuring Oracle Application Adapter for PeopleSoft".
3. Select **Connect**.

   Nodes appear for Adapters and Business Services (also known as Web services), as shown in Figure 10–5.

Figure 10–5 Web Services



a. Expand the **Business Services** node.

b. Expand the **Configuration** node.

c. Expand the **Security** node.

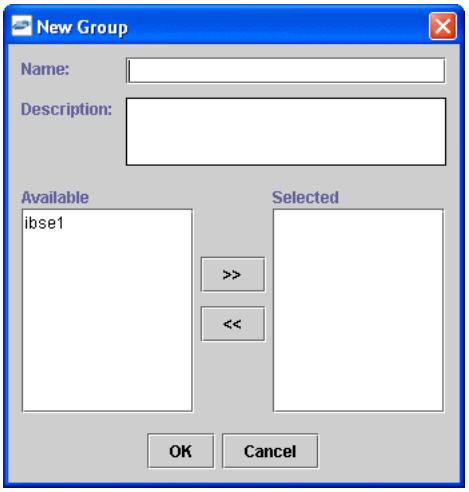
d. Expand the **Users and Groups** node.

Figure 10–6 Groups Node

4. Right-click **Groups** and select **New Group**, as shown in Figure 10–6.

   The New Group dialog is displayed, as shown in Figure 10–7.

Figure 10–7 New Group Dialog



   a. In the **Name** field, enter a name for the group.

   b. In the **Description** field, enter a description for the group (optional).

   c. From the available list of users in the left pane, select one or more users and add them to the **Selected** list by clicking the double right-facing arrow.

5. When you have selected at least one user, click **OK**.

   The following shows the new group added under the **Groups** node, as shown in Figure 10–8.

Figure 10–8 New Group

Creating an Execution Policy

An execution policy governs who can execute the business services to which the policy is applied.

To create an execution policy:

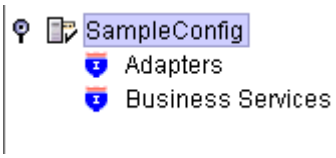
1. Start Application Explorer.

2. Right-click the configuration to which you want to connect, for example, SampleConfig. For more information on how to create a new configuration, see Chapter 2, "Configuring Oracle Application Adapter for PeopleSoft".

3. Select **Connect**.

   Nodes appear for Adapters and Business Services (also known as Web services), as shown in Figure 10–9.

Figure 10–9 Web Services



   a. Expand the **Business Services** node.

   b. Expand the **Configuration** node.

   c. Expand the **Security** node.

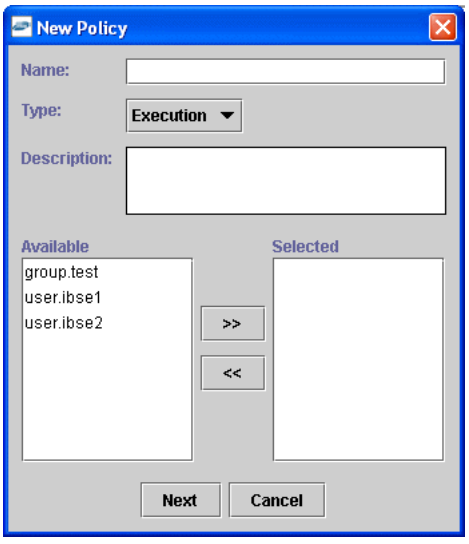
   d. Expand the **Policies**.

Figure 10–10 Policies Node

4. Right-click **Policies** and select **New Policy**, as shown in Figure 10–10.

   The New policy dialog is displayed, as shown in Figure 10–11.

Figure 10–11 New Policy Dialog



   Provide the following information:

   a. In the **Name** field, enter a name for the policy.

   b. From the Type list, select **Execution**.

   c. In the **Description** field, enter a description for the policy (optional).

d. From the available list of users in the left pane, select one or more users and add them to the **Selected** list by clicking the double right-facing arrow.

Note: This user ID is checked against the value in the user ID element of the SOAP header sent to BSE in a SOAP request.

---

5. When you have selected at least one user, click **OK**.
6. Click **Next**.

   The New Policy permissions dialog is displayed, as shown in Figure 10–12.

Figure 10–12 New Policy Permissions Dialog

7. To grant permission to a user or group to execute a business service, select the user or group and move them into the **Execution Granted** list by selecting the double left-facing arrow.
8. To deny permission to a user or group to execute a business service, select the user or group and move them into the Execution Denied list by selecting the double right-facing arrow.
9. Click **OK**.

   The following pane summarizes your configuration, as shown in Figure 10–13.

Figure 10–13 Policy Permissions Summary

- **Name** test
- **Type** Execution
- **Description**
- **User and Group Restrictions**
  - group.test Execution Granted

Using the IP and Domain Restrictions Policy Type

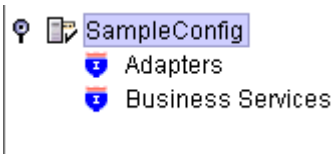
You configure the IP and Domain Restriction policy type slightly differently from other policy types. The IP and Domain Restriction policy type controls connection access to BSE and therefore need not be applied to individual Web services. You need not create a policy; however, you must enable the Security Policy option in Application Explorer.

1. Start Application Explorer.

2. Right-click the configuration to which you want to connect, for example, SampleConfig. For more information on how to create a new configuration, see Chapter 2, "Configuring Oracle Application Adapter for PeopleSoft".
3. Select **Connect**.

   Nodes appear for Adapters and Business Services (also known as Web services), as shown in Figure 10–14.

Figure 10–14 Web Services

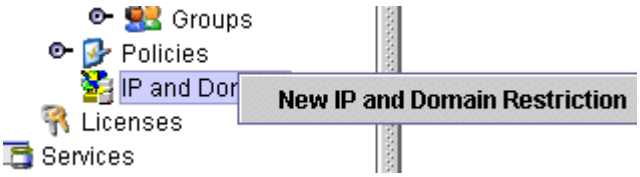


Perform the following steps:

a. Expand the **Business Services** node.
b. Expand the **Configuration** node.
c. Expand the **Security** node.

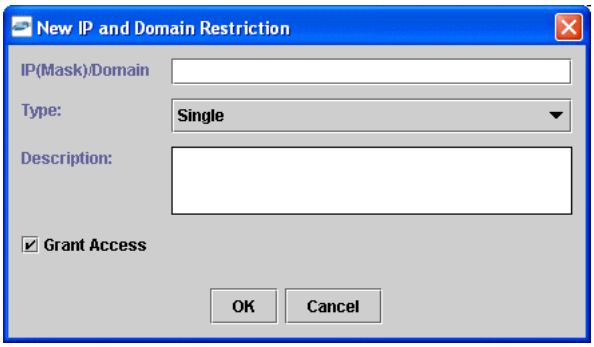
4. Right-click **IP and Domain** and select **New IP and Domain Restriction**, as shown in Figure 10–15.

Figure 10–15 IP and Domain Node



The New IP and Domain Restriction dialog is displayed, as shown in Figure 10–16.

Figure 10–16 New IP and Domain Restriction Dialog



Perform the following steps:

a. In the **IP(Mask)/Domain** field, enter the IP or domain name using the following guidelines.

   If you select **Single** (Computer) from the **Type** list, you must provide the IP address for that computer. If you only know the DNS name for the computer, click **DNS Lookup** to obtain the IP Address based on the DNS name.

If you select **Group** (of Computers), you must provide the IP address and subnet mask for the computer group.

If you select **Domain**, you must provide the domain name.

b. From the **Type** list, select the type of restriction.

c. In the **Description** field, enter a description (optional).

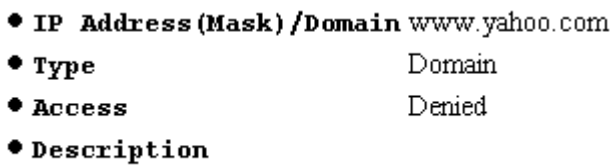
d. To grant access, select the **Grant Access** check box.

5. Click **OK**.

The new domain is added under the IP and Domain node.

The following pane summarizes your configuration, as shown in Figure 10–17.

Figure 10–17 IP and Domain Permissions Configuration



10.2 Migrating Repositories

During design time, the Oracle repository is used to store metadata created when using Application Explorer to configure adapter connections, browse EIS objects, configure services, and configure listeners to listen for EIS events. The information in the repository is also referenced at run-time. For management purposes, you can migrate BSE and J2CA repositories that are configured for Oracle to new destinations without affecting your existing configuration. For example, you may want to migrate a repository from a test environment to a production environment.

Migrating a BSE Repository

To migrate a BSE repository:

1. Copy the BSE control service URL, for example:

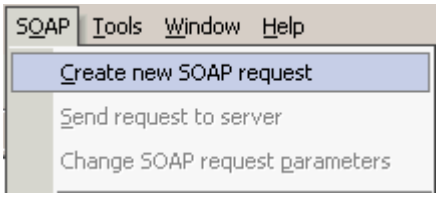
```
http://localhost:8001/ibse/IBSEServlet/admin/iwcontrol.ibs
```

2. Open a third party XML editor, for example, XMLSPY.

3. From the menu bar, click **SOAP**.

A list of options appears, as shown in Figure 10–18.

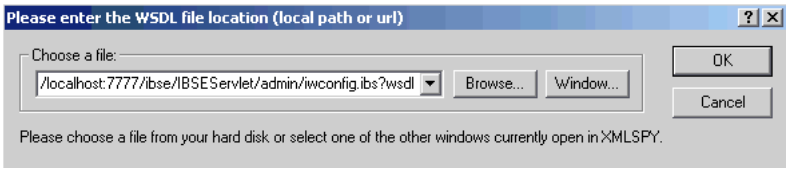
Figure 10–18 Expanded SOAP Menu



4. Select **Create new SOAP request**.

The WSDL file location dialog is displayed, as shown in Figure 10–19.

Figure 10–19 WSDL File Location Dialog



Perform the following steps:

a. In the **Choose a file** field, paste the BSE control service URL.

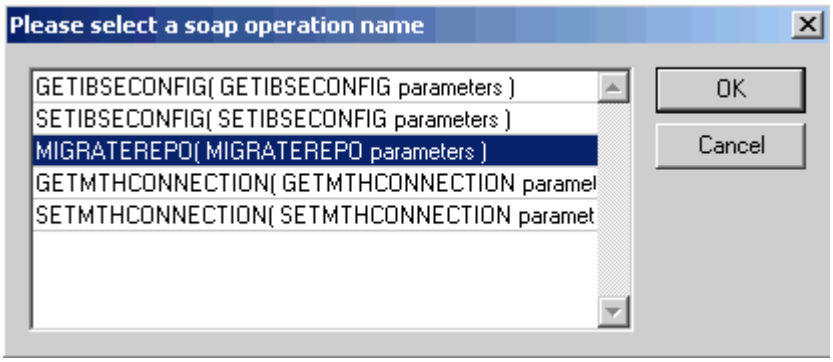
b. Append **?wsdl** to the URL, for example:

```
http://localhost:8001/ibse/IBSEServlet/admin/iwcontrol.ibs?wsdl
```

5. Click **OK**.

The soap operation name dialog is displayed, listing the available control methods, as shown in Figure 10–20.

Figure 10–20 Soap Operation Name Dialog

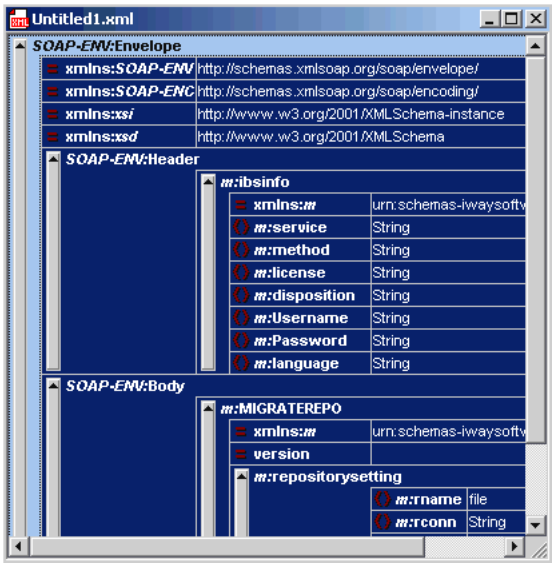


6. Select the **MIGRATEREPO(MIGRATEREPO parameters)** control method and click **OK**.

> **Note:** The **MIGRATEREPO(MIGRATEREPO parameters)** control method is available from the BSE administration console. This control method migrates all Web services to the new (empty) repository. You can choose to migrate select Web services only.

The following window is displayed. It shows the structure of the SOAP envelope, as shown in Figure 10–21.

Figure 10–21 SOAP Envelope Structure



7. Locate the **Text view** icon in the toolbar, as shown in Figure 10–22.

Figure 10–22 Text View Icon

8. To display the structure of the SOAP envelope as text, click the **Text view** icon.

   The <SOAP-ENV:Header> tag is not required and can be deleted from the SOAP envelope.

9. Locate the following section:

```
<m:MIGRATEREPO xmlns:m="urn:schemas-iwaysoftware-com:jul2003:ibse:config"
version="">
<m:repositorysetting>
<m:rname>oracle</m:rname>
<m:rconn>String</m:rconn>
<m:rdriver>String</m:rdriver>
<m:ruser>String</m:ruser>
<m:rpwd>String</m:rpwd>
</m:repositorysetting>
<m:servicename>String</m:servicename>
</m:MIGRATEREPO>
```

   Perform the following steps:

   a. For the **<m:rconn>** tag, replace the String placeholder with a repository URL where you want to migrate your existing BSE repository.

      The Oracle repository URL has the following format:

      ```
      jdbc:oracle:thin:@[host]:[port]:[sid]
      ```

   b. For the **<m:rdriver>** tag, replace the String placeholder with the location of your Oracle driver.

c. For the **<m:ruser>** tag, replace the String placeholder with a valid user name to access the Oracle repository.

d. For the **<m:rpwd>** tag, replace the String placeholder with a valid password to access the Oracle repository.

10. Perform one of the following migration options.

- If you want to migrate a single Web service from the current BSE repository, enter the Web service name in the `<m:servicename>` tag, for example:

```
<m:servicename>PeopleSoftService1</m:servicename>
```

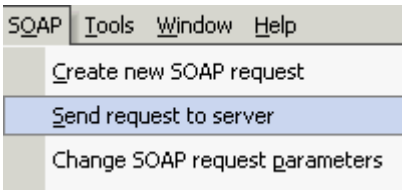
- If you want to migrate multiple Web services from the current BSE repository, duplicate the `<m:servicename>` tag for each Web service, for example:

```
<m:servicename>PeopleSoftService1</m:servicename>
<m:servicename>PeopleSoftService2</m:servicename>
```

- If you want to migrate all Web services from the current BSE repository, remove the `<m:servicename>` tag.

11. From the menu bar, click **SOAP** and select **Send request to server**, as shown in Figure 10–23.

Figure 10–23 SOAP Menu



Your BSE repository and any Web services you specified are now migrated to the new Oracle repository URL you specified.

Migrating a J2CA Repository

To migrate a J2CA repository:

1. Navigate to the location of your J2CA configuration directory where the repository schemas and other information is stored, for example:

```
<ADAPTER_HOME>\soa\thirdparty\ApplicationAdapters\config\JCA_CONFIG
```

Where *JCA_CONFIG* is the name of your J2CA configuration.

2. Locate and copy the `repository.xml` file.

3. Place this file in a new J2CA configuration directory to migrate the existing repository.

Your J2CA repository is migrated to the new J2CA configuration directory.

A

Generating Component Interface APIs

This appendix describes how to generate component interface APIs to use with Oracle Application Adapter for PeopleSoft. It contains the following topics:

- Section A.1, "Building the PeopleSoft API Java Programs"
- Section A.2, "Compiling the PeopleSoft API Java Programs"

A.1 Building the PeopleSoft API Java Programs

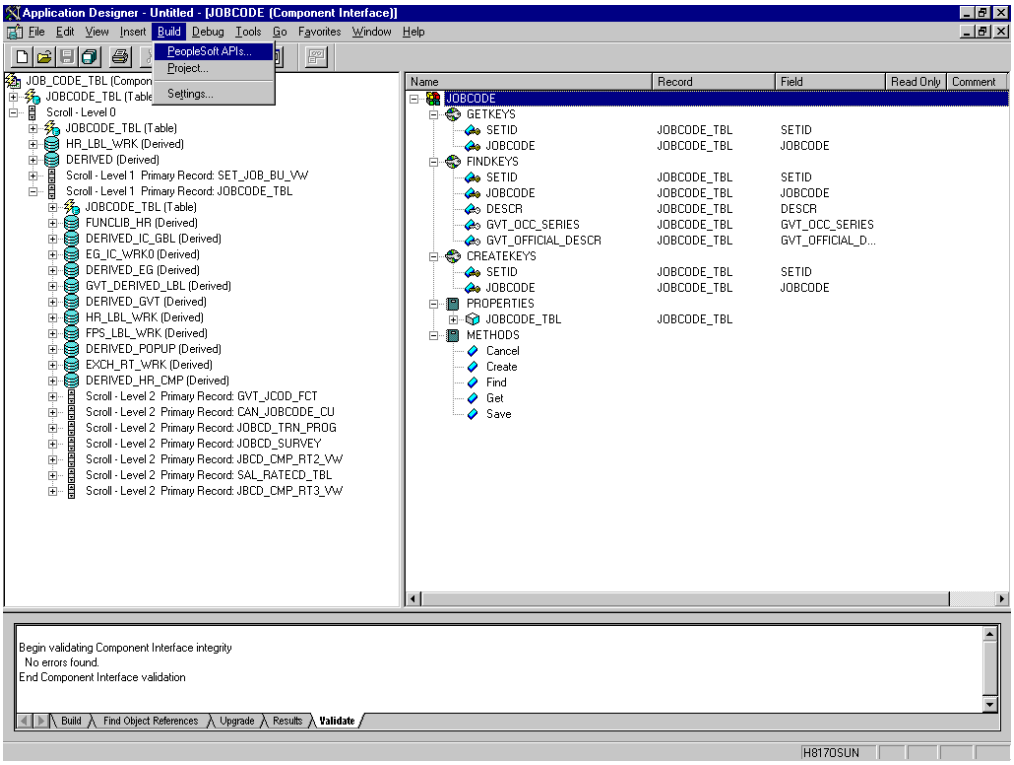
Whether you are using an Enterprise Integration Point (EIP) supplied by PeopleSoft or a customized component interface, you must create a PeopleSoft API to enable communications with the PeopleSoft application. The API is a collection of Java class files that reside on the client system and mediate between the client application layer and PeopleSoft.

Before using your component interface, you must apply security to it and test it.

To build a PeopleSoft API Java program:

1. Open the PeopleSoft Application Designer, as shown in Figure A–1.

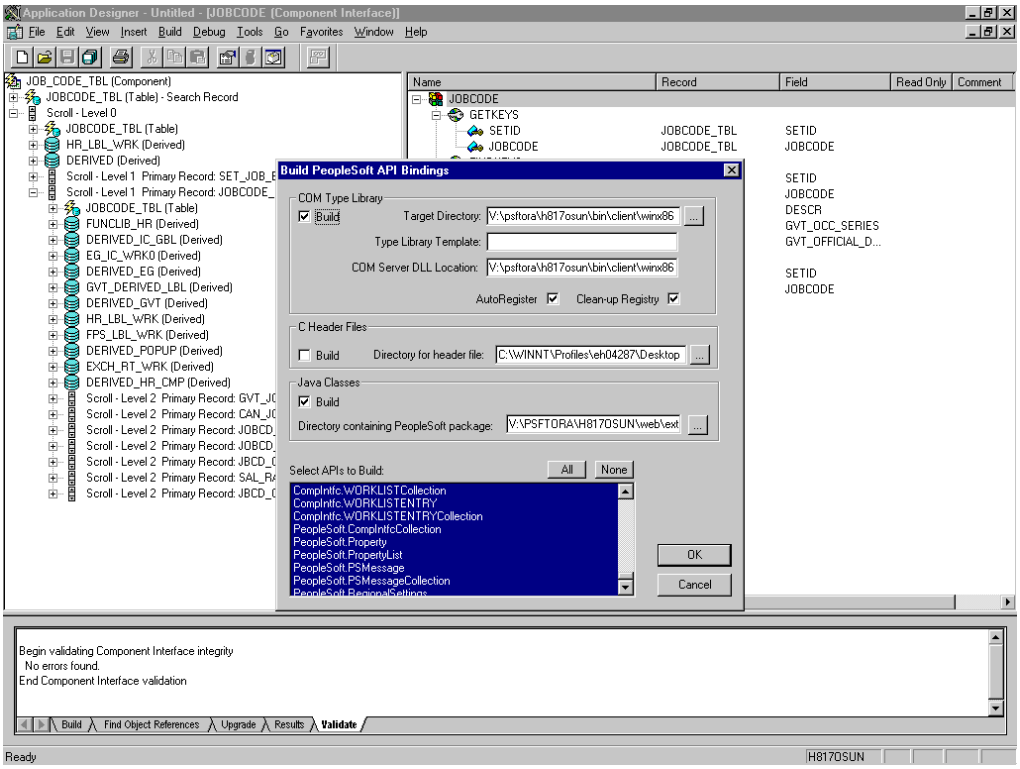
Figure A–1 PeopleSoft Application Designer Component Interface



2. From the PeopleSoft Application Designer, open a component interface.
3. Click the right pane and select **PeopleSoft APIs** from the **Build** menu.

   The Build PeopleSoft API Bindings dialog prompts you for the types of bindings to create, as shown in Figure A–2.

Figure A–2 Build PeopleSoft API Bindings Dialog



4. Because you are creating Java files, ensure you deselect **COM Type Library Build**.

5. Ensure that **Java Classes Build** is selected, and then select a directory on your local system where the Java files are to be placed, for example, `c:\psoft8_components`.

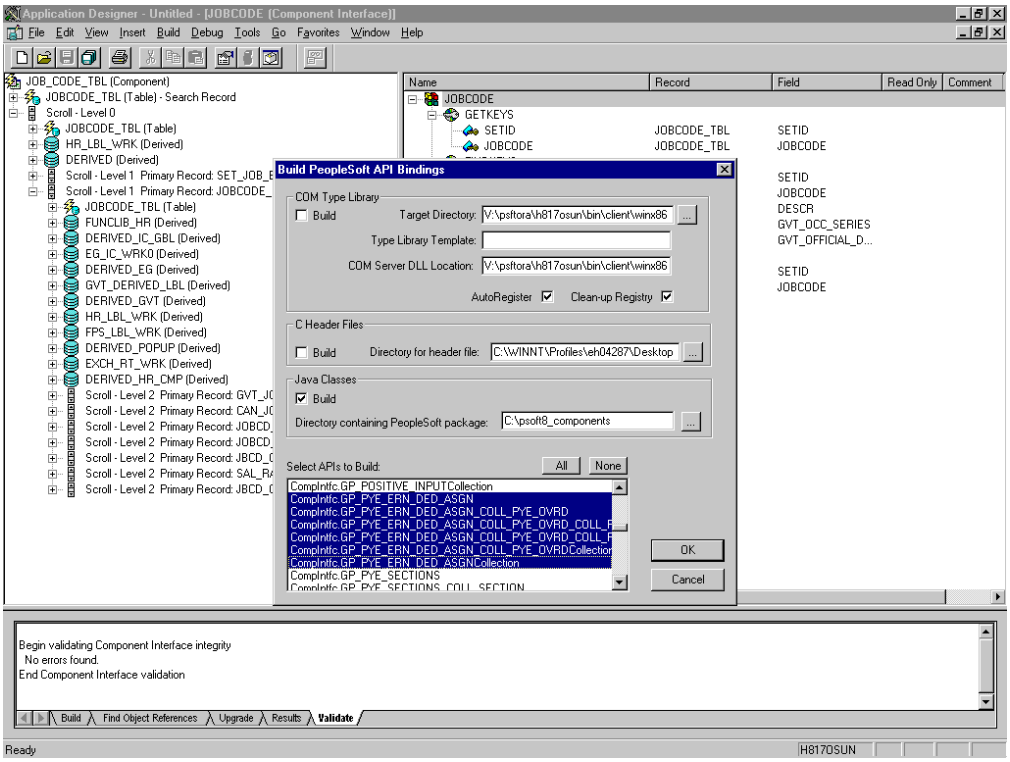
   - To build all API files, select the default, **All** (potentially a large number), and click **OK**.

     PeopleSoft generates the files. This takes a few minutes. After the process is complete, a message appears in the output window.

     You are now ready to compile the Java files. For more information, see "Compiling the PeopleSoft API Java Programs" on page A-5.

     The following pane illustrates the `GP_PYE_ERN_DED_ASGN` component interface from the HR 8.1 application, as shown in Figure A–3.

Figure A–3 GP_PYE_ERN_DED_ASGN Component Interface

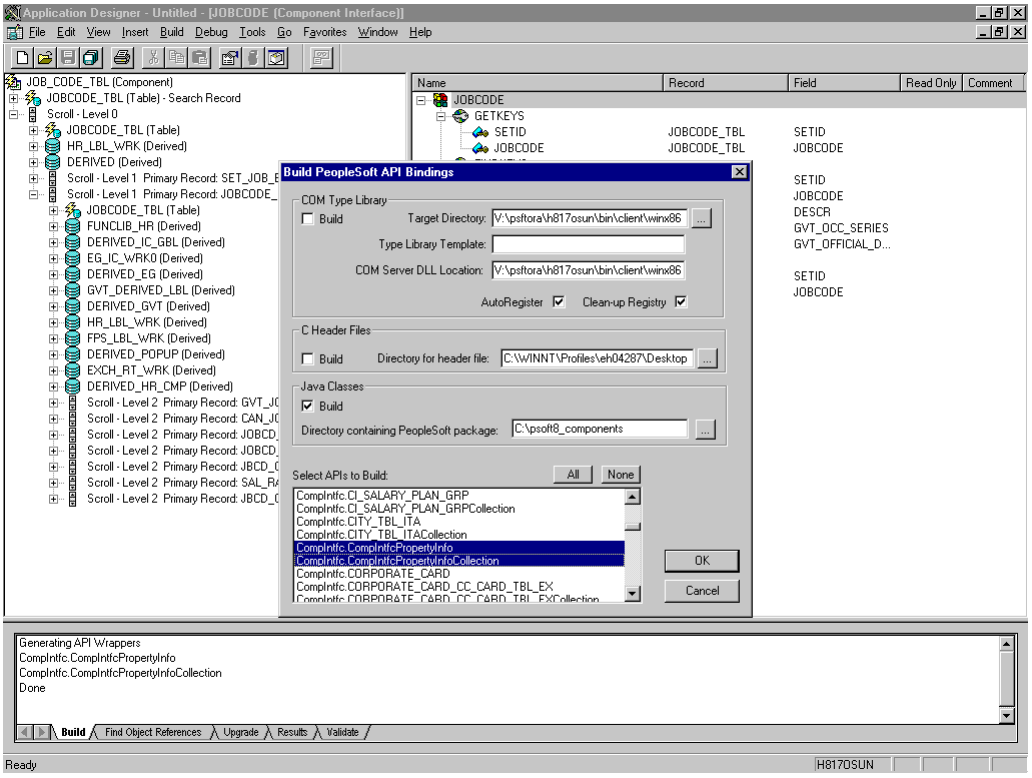


- To create APIs for a specific component interface or interfaces, click **None**.

  This clears the selected APIs, so you can select the appropriate APIs for your component interface. These APIs begin with the name of your component interface. There may be fewer than five, or more than 50 APIs, for a particular component interface.

  The following dialog displays the following APIs, including generic component interface properties, as shown in Figure A–4.

Figure A–4 Generic Component Interface Properties



a. In addition to the APIs for the selected component interface, you also must generate the API files for the following generic component interface properties:

`CompIntfcPropertyInfo`

`CompIntfcPropertyInfoCollection`

You may select these items in the same step as the component interface build, or you may select them separately.

b. Click **OK**.

PeopleSoft generates the files. This takes a few minutes. After the process is complete, a message appears in the output window. You are now ready to compile the Java files. For more information, see "Compiling the PeopleSoft API Java Programs" on page A-5.

A.2 Compiling the PeopleSoft API Java Programs

PeopleSoft places the Java programs to compile in the directory called *psoft8_components*\PeopleSoft\Generated\CompIntfc.

Where psoft8_components is the directory specified during the build process.

If you chose to generate all APIs, the systems creates a second directory, *psoft8_components*\PeopleSoft\Generated\PeopleSoft. You are not required to access it.

The process for compiling the PeopleSoft API Java programs depends on whether you are compiling on the system where you installed Application Explorer or on another system.

Note: There are two Java programs for every API file that you selected when you built the Java programs. For more information, see "Building the PeopleSoft API Java Programs" on page A-1.

Before you compile the Java programs, you require the PeopleSoft Java Object Adapter, the `psjoa.jar` file that resides on your PeopleSoft Application Server under the *PS_HOME*`\Web\psjoa` directory. This is the file that you placed in the adapter lib directory during installation.

If you are compiling on the same system where you installed Application Explorer

Point to the `psjoa.jar` file or copy it to the directory where you placed the Java API files, for example, `c:\psoft8_components`.

If you are compiling on a system other than the one where you installed Application Explorer

Perform the following steps:

1. Obtain a copy of the `psjoa.jar` file from the PeopleSoft Application Server. Ensure that the `psjoa.jar` file is in the Java class path before you compile the programs.
2. Compile the Java programs and ensure that you include the \PeopleSoft\Generated\CompIntfc path.

   The path is case-sensitive.

   The following Windows batch file, run from the `psoft8_components` directory, properly compiles the Java APIs. The code assumes that `psjoa.jar` was placed in `psoft8_components`.

   ```
   @echo off
   set JAVA_HOME=<my-java-home>
   set PATH=%JAVA_HOME%\bin;%PATH%
   set CLASSPATH=%JAVA_HOME%\lib\tools.jar;psjoa.jar;%CLASSPATH%
   javac -classpath %CLASSPATH% .\PeopleSoft\Generated\CompIntfc\*.java
   ```

   Where `<my-java-home>` is the fully qualified path name of your Java home directory.

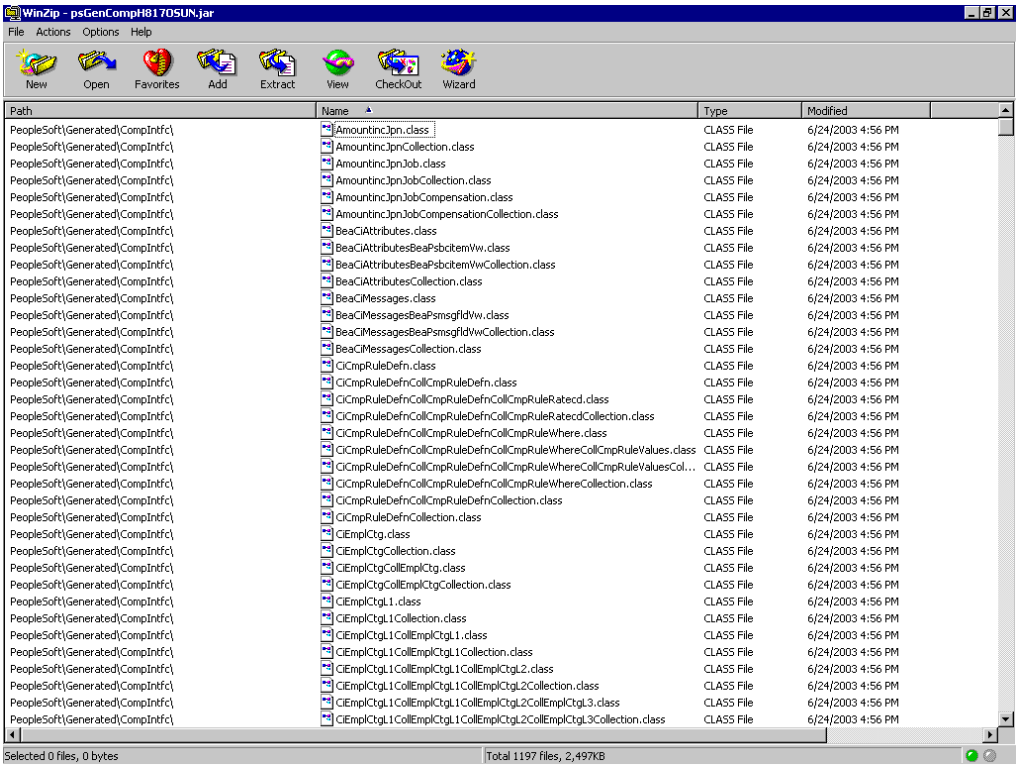
   This code places the class files in the same directory with the Java files, but you can choose a different location depending on your site requirements.
3. Compress the class files into a JAR file.

   The following Windows batch file, if run from the `psoft8_components` directory, creates a correct JAR file:

   ```
   @echo off
   set JAVA_HOME= my-java-home
   set PATH=%JAVA_HOME%\bin;%PATH%
   set CLASSPATH=%JAVA_HOME%\lib\tools.jar;%CLASSPATH%
   jar cvf my-jar-file.jar .\PeopleSoft\Generated\CompIntfc\*.class
   ```

   Where appropriate, substitutions are made for `my-java-home` and `my-jar-file`.
4. To verify that your JAR file is correct, open it with the WinZip application, as shown in Figure A–5.

Figure A–5 PeopleSoft Jar Files



If the JAR file does not use the case-sensitive `PeopleSoft\Generated\CompIntfc\` path, you must go back and correct it.

5. Place the JAR file in the adapters common lib directory, which enables the Oracle Application Adapter for PeopleSoft to communicate with the PeopleSoft component interface.

   `<ADAPTER_HOME>\soa\thirdparty\ApplicationAdapters\lib`

Note: If you run on UNIX, perform the compile and JAR steps on Windows and then move the file to your UNIX system. The JAR file is binary. If you use an FTP-based tool to move your JAR file from Windows to UNIX, the file format must be set to binary.

B

Configuring the PeopleSoft Message Router

This appendix describes how to configure and test a TCP/IP or HTTP target connector and a TCP/IP handler for PeopleSoft. It contains the following topics:

- Section B.1, "Configuring the TCP/IP or HTTP Target Connector for PeopleSoft 8.4"
- Section B.2, "Configuring the TCP/IP Target Connector"
- Section B.3, "Configuring the Node for the TCP/IP 8.4 Connector"
- Section B.4, "Configuring the TCP/IP Handler for PeopleSoft 8.1"
- Section B.5, "Testing Your PeopleSoft Configuration"

The information in this appendix assumes that you are familiar with PeopleSoft Integration Broker (in release 8.4) or Application Messaging (in release 8.1). For more information, see Appendix D, "Using PeopleSoft Integration Broker". For a complete description *before* you work with Oracle Application Adapter for PeopleSoft, see your PeopleSoft documentation.

Note: In PeopleSoft release 8.1, the messaging architecture is called Application Messaging and includes Application Messaging Gateway. In release 8.4, the messaging architecture is called Integration Broker, which includes Integration Gateway. When discussing release-independent issues, this section uses release 8.4 terminology. When discussing release-specific issues, it uses release-specific terminology.

B.1 Configuring the TCP/IP or HTTP Target Connector for PeopleSoft 8.4

The procedures in this topic assume that your Integration Broker environment is configured and tested. For more information, see Appendix D, "Using PeopleSoft Integration Broker".

1. Configure the gateway for the TCP/IP Target Connector or HTTP Target Connector. For more information, see "Configuring the TCP/IP Target Connector" on page B-2.

Note: This step is optional when configuring the HTTP Connector. The HTTP Target Connector is supplied with your PeopleSoft application, and no special configuration steps are required. If you choose, you may configure default connection values on the Gateway. You can override these values when you configure the node.

---

2. Configure the node. For more information, see "Configuring the Node for the TCP/IP 8.4 Connector" on page B-3.

Note: Starting with release 8.4, the Integration Broker is delivered with an HTTP Outbound Connector. For more information, see "Configuring the HTTP Connector" on page B-8.

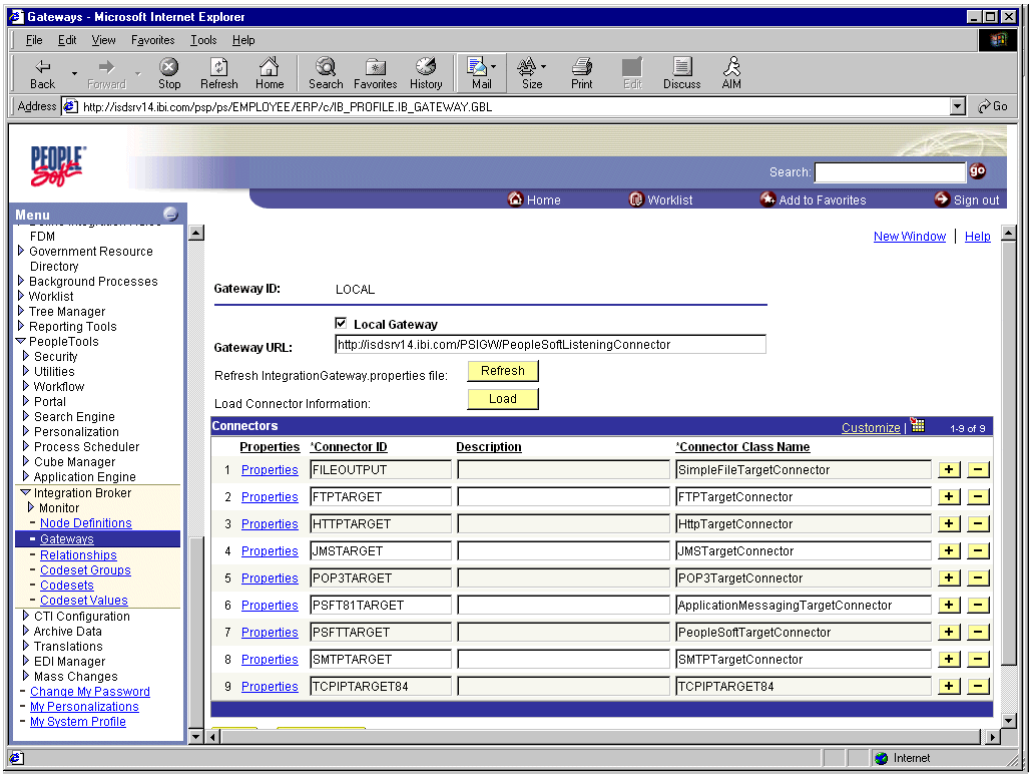
B.2 Configuring the TCP/IP Target Connector

To configure the gateway for the TCP/IP Target Connector:

1. In a Web browser, open your PeopleSoft release 8.4 application.
2. In the menu pane, expand **PeopleTools**, then expand **Integration Broker**, and click **Gateways**.
3. Open the **LOCAL Gateway ID**.

   A pane similar to the following Gateway ID pane is displayed, as shown in Figure B–1.

Figure B–1 Gateway ID Pane



4. If you do not see the TCPIPTARGET84 Connector ID, click **Load** and scroll to locate **TCPIPTARGET84** in the list.

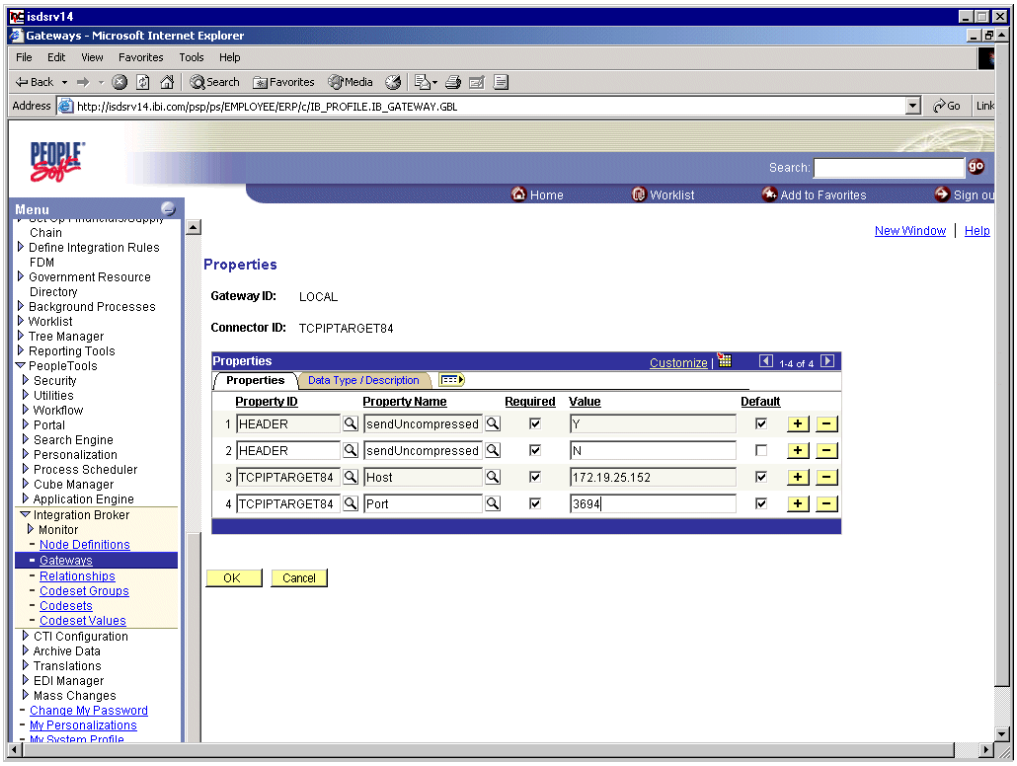
   If TCPIPTARGET84 still does not appear, the connector class file was not installed in the Integration Gateway.

   Perform the following steps:

   a. Click the **Properties** URL for TCPIPTARGET84.

The Properties pane for TCPIPTARGET84 is displayed, as shown in Figure B–2. Default values appear for the host and the port. For complex business situations, you can override this setting on the individual node.

Figure B–2 Properties Pane



b. Enter the values for the host and the port for the system on which your PeopleSoft XML listener is listening for incoming messages.

5. Click **OK**.

   The Gateway window is displayed.

6. Scroll to the bottom of the window and click **Save**.

You have finished configuring the gateway for the TCP/IP Target Connector.

B.3 Configuring the Node for the TCP/IP 8.4 Connector

To configure the node for the TCP/IP 8.4 Connector:

1. In the Menu pane, select **PeopleTools**, **Integration Broker**, and then click **Node Definitions**.
2. Select the node that you want to configure.

> **Note:** This procedure uses a node called EXTERNAL. For more information about creating and using nodes, see Appendix D, "Using PeopleSoft Integration Broker" or your PeopleSoft documentation.

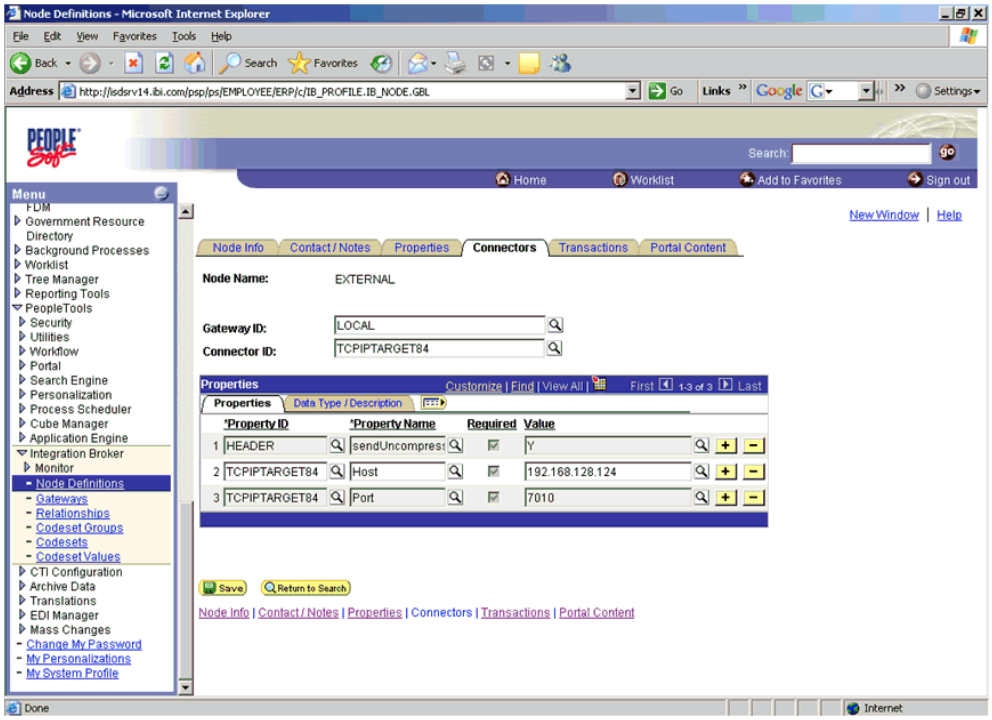
Perform the following steps:

a. Select **External** from the **Node Type** list.

b. Select **Implicit** from the **Routing Type** list.

3. Select the **Connectors** tab, as shown in Figure B–3.

Figure B–3 Connectors Tab



Perform the following steps:

a. Select **TCPIPTARGET84** as the Connector ID.

Default values appear for the host and the port.

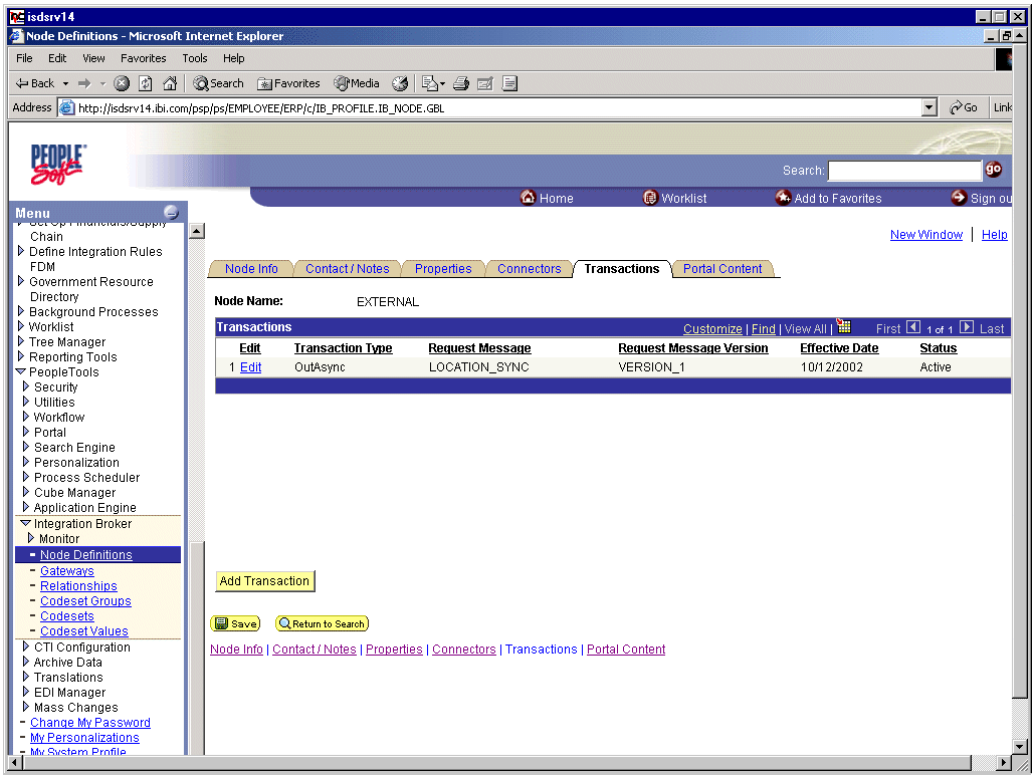
b. Enter the values for the host and the port for the system and port that route XML to Oracle WebLogic Server. You can accept or override the default values for individual nodes.

c. Click **Save**.

4. If you are warned that you are changing the connector, click **OK**.

5. Select the **Transactions** tab, as shown in Figure B–4.

Figure B–4 Transactions Tab



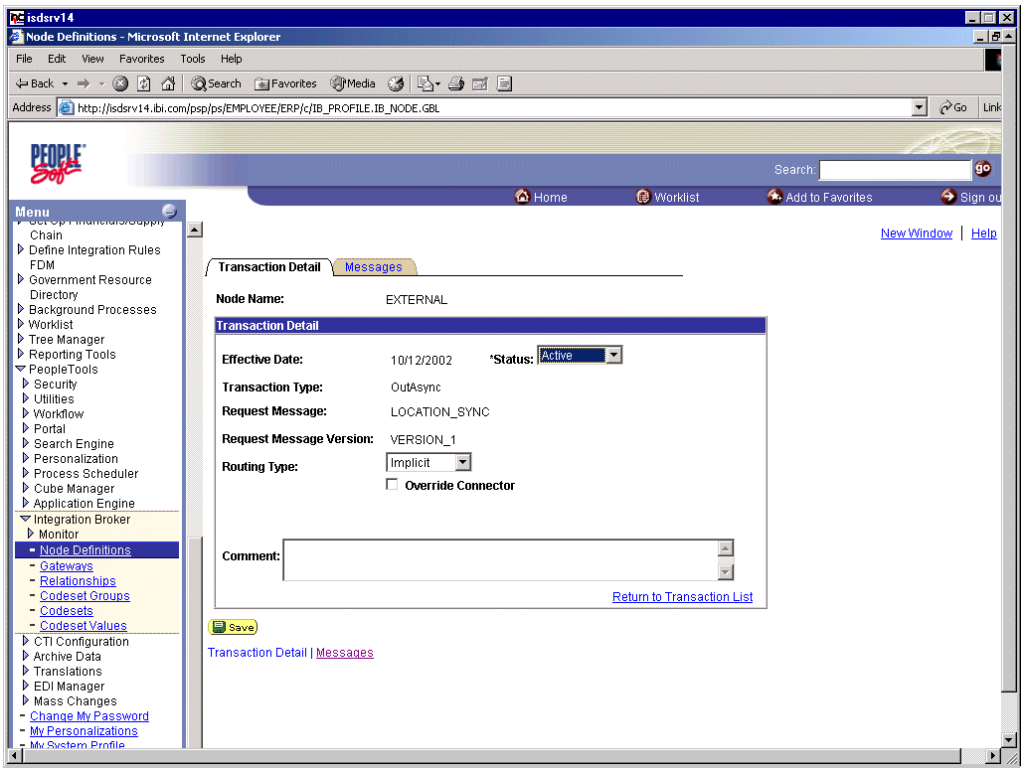
Perform the following steps:

a. If there are no transactions, click **Add Transaction** to add the message with which you are working. In this procedure, the node is already configured with the LOCATION_SYNC message.

b. To view transaction details for the LOCATION_SYNC message, click **Edit**.

The Transaction Detail tab appears, as shown in Figure B–5.

Figure B–5 Transaction Detail Tab



c. Add the message with which you are working.

d. Verify that the **Routing Type** is **Implicit**.

6. Click **Save**.

7. Return to the **Transactions** tab.

   Perform the following steps:

   a. Edit additional transactions by clicking **Edit** and navigating to the **Transaction Detail** tab.

   b. In the **Transaction Detail** tab, select **Inactive** from the **Status** list.

   Inactive status is for initial testing only. After you test your configuration, you may change the status to Active and have as many nodes and transactions as required to satisfy your business requirements.

8. Click **Save**.

You can now send XML messages to your PeopleSoft XML listener.

B.3.1 Configuring the HTTP Target Connector

The HTTP Target Connector is supplied with your PeopleSoft application, and no special configuration steps are required. If you choose, you may configure default connection values on the Gateway. You can override these values when you configure the node. To configure the gateway for the HTTP Target Connector:

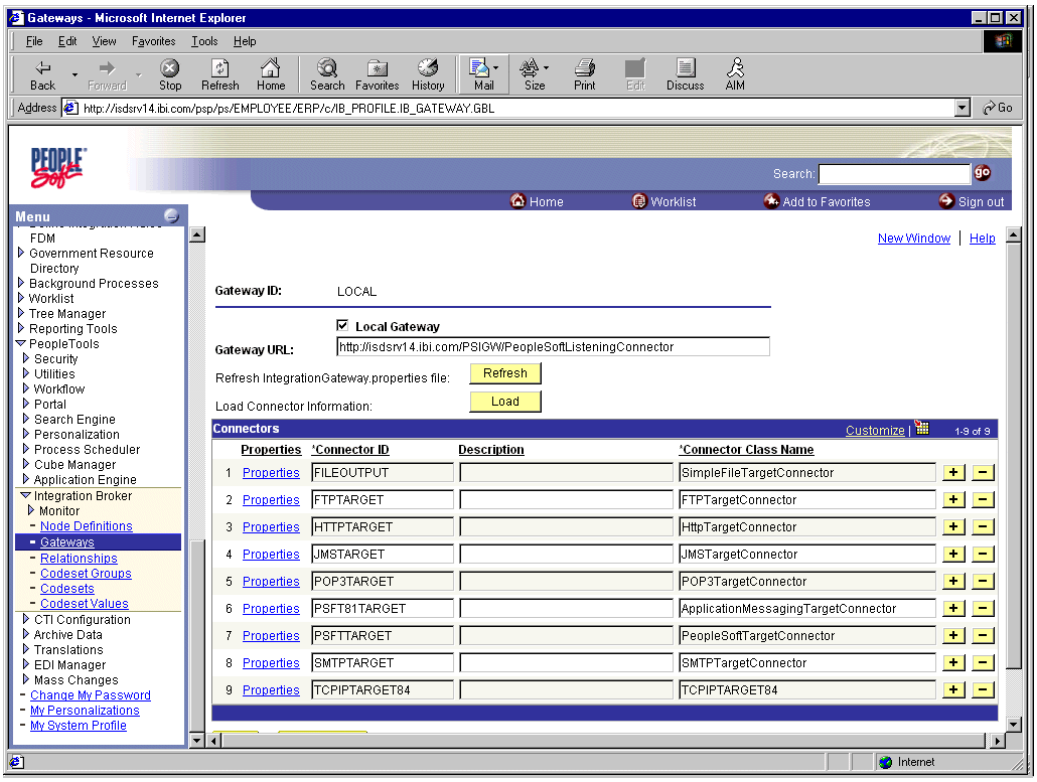
1. In a Web browser, open your PeopleSoft 8.4 application.

2. In the Menu pane, expand **PeopleTools**, then expand **Integration Broker**, and click **Gateways**.

3. Open the **LOCAL Gateway ID**.

   A pane similar to the following Gateway ID pane is displayed, as shown in Figure B–6.

Figure B–6 HTTP Target Connector Gateway ID Pane



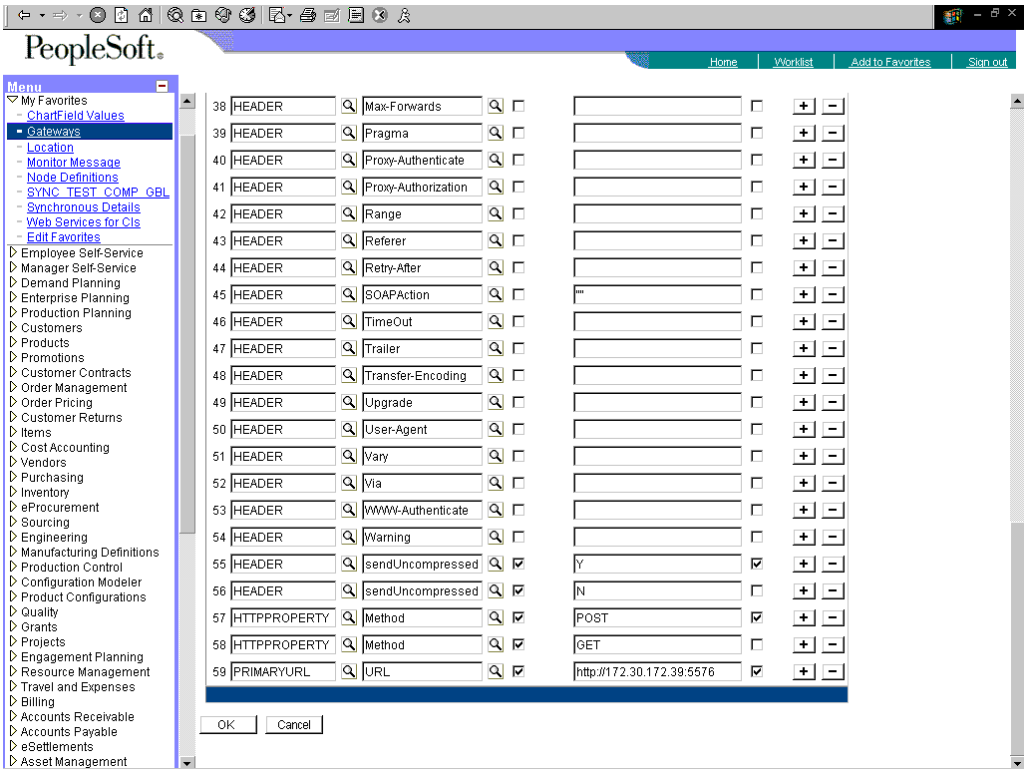
4. If you do not see the **HTTPTARGET Connector ID**, click **Load**.

   If it does not appear, your Gateway was not installed properly. Check with your PeopleSoft system administrator.

5. Click the **Properties** URL for HTTPTARGET.

   The Properties pane for HTTPTARGET displays default values, as shown in Figure B–7.

Figure B–7 HTTPTARGET Properties Pane



6. Scroll to the bottom and enter a value for the **PRIMARYURL**.

   This is the default HTTP address (system and port) on which your PeopleSoft XML listener is listening for incoming messages.

   Note: For complex business situations, you can override this setting on the individual node.

7. Click **OK**.

   The Gateway window is displayed.

8. Scroll to the bottom of the window and click **Save**.

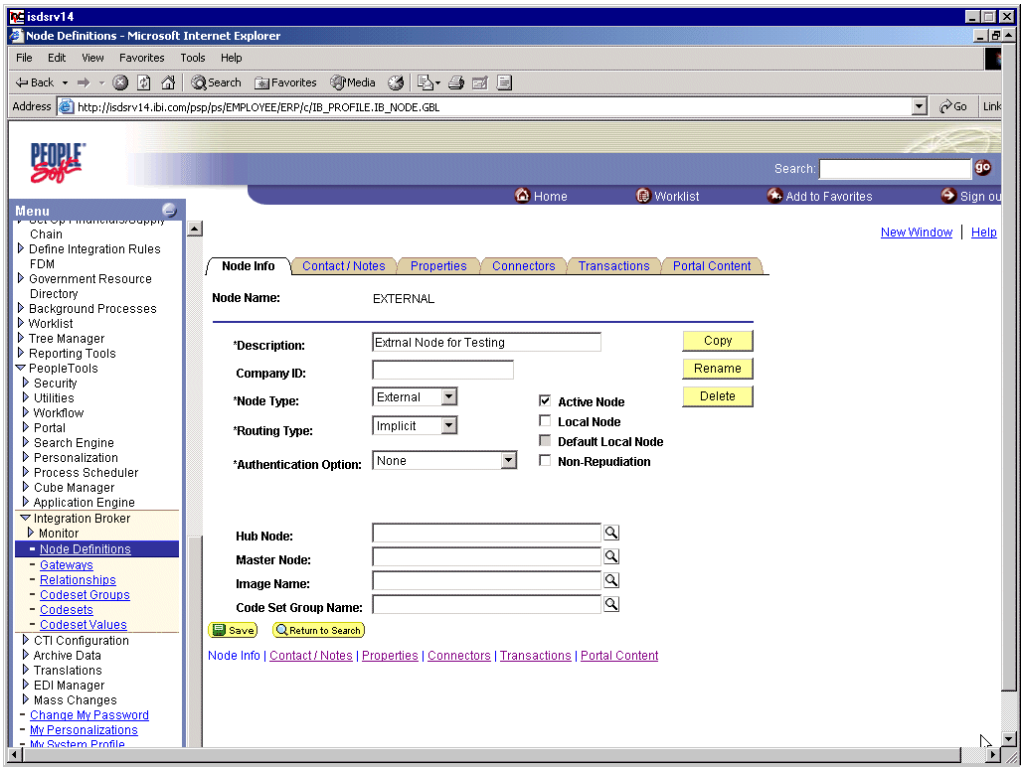
You have finished configuring the gateway for the HTTP Target Connector.

B.3.2 Configuring the HTTP Connector

Starting with release 8.4, the Integration Broker is delivered with an HTTP Outbound Connector. This connector can be used in place of the TCP/IP 8.4 connector for sending messages to Oracle WebLogic Server.

To configure the node to use the HTTP Connector:

Figure B–8 Connector Configuration Pane



1. In the Menu pane, expand **PeopleTools**, **Integration Broker**, and then click **Node Definitions**, as shown in Figure B–8.
2. Select the node that you want to configure.

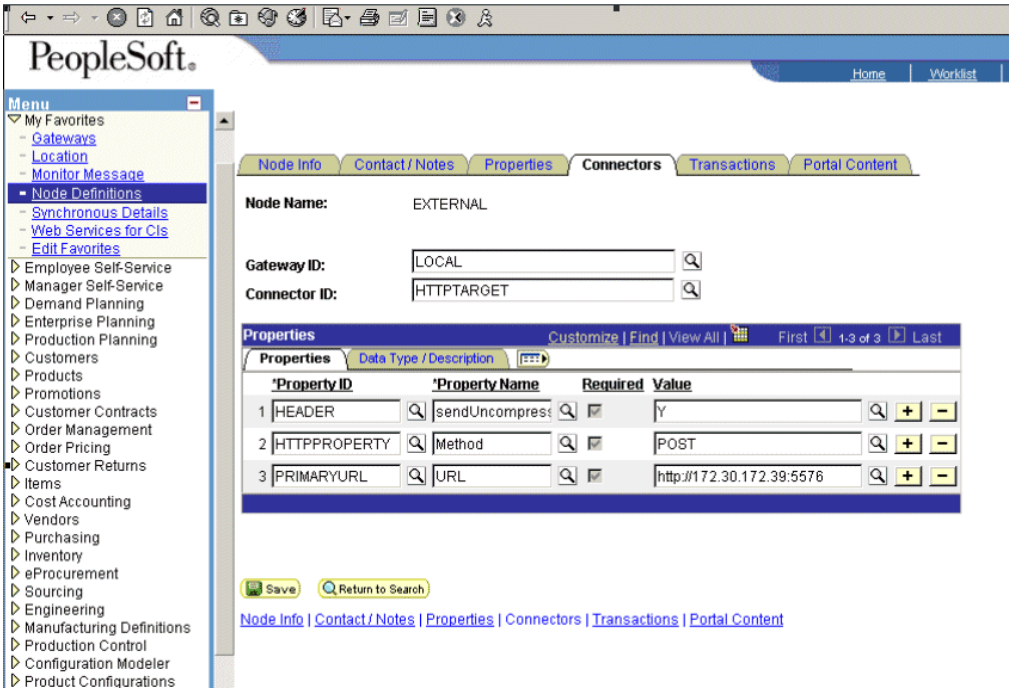
> **Note:** This procedure uses a node called EXTERNAL. For more information about creating and using nodes, see Appendix D, "Using PeopleSoft Integration Broker" or your PeopleSoft documentation.

Perform the following steps:

a. From the **Node Type** list, select **External**.

b. From the **Routing Type** list, select **Implicit**.

Figure B–9 PeopleSoft Integration Broker Connectors Tab



3. Select the **Connectors** tab, as shown in Figure B–9.

   Perform the following steps:

   a. Change the Connector ID to **HTTPTARGET**.

   b. Enter a value for each property based on the following:

Property ID	Property Name	Value
HEADER	sendUncompressed	Y
HTTPPROPERTY	Method	POST
PRIMARYURL	URL	URL and the port of the HTTP listener

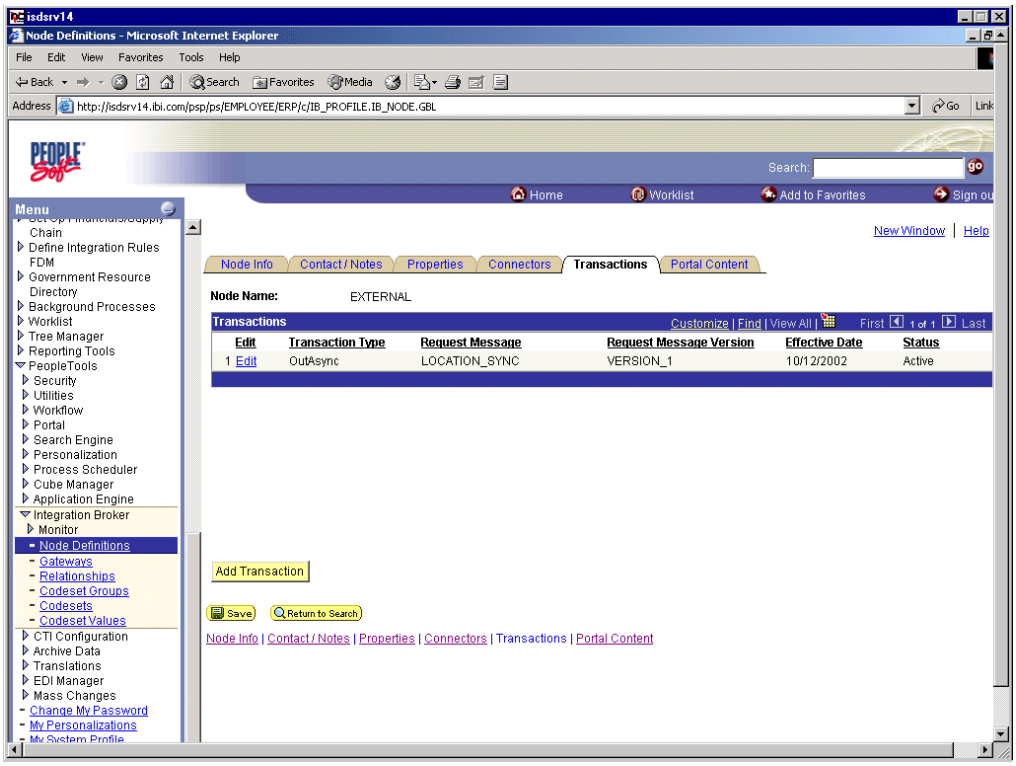
> **Note:** For complex business situations you can configure multiple nodes and multiple listeners.

4. Click **Save**.

5. If you are warned that you are changing the Connector, click **OK**.

6. Select the **Transactions** tab, as shown in Figure B–10.

Figure B–10 PeopleSoft Integration Broker Transactions Tab

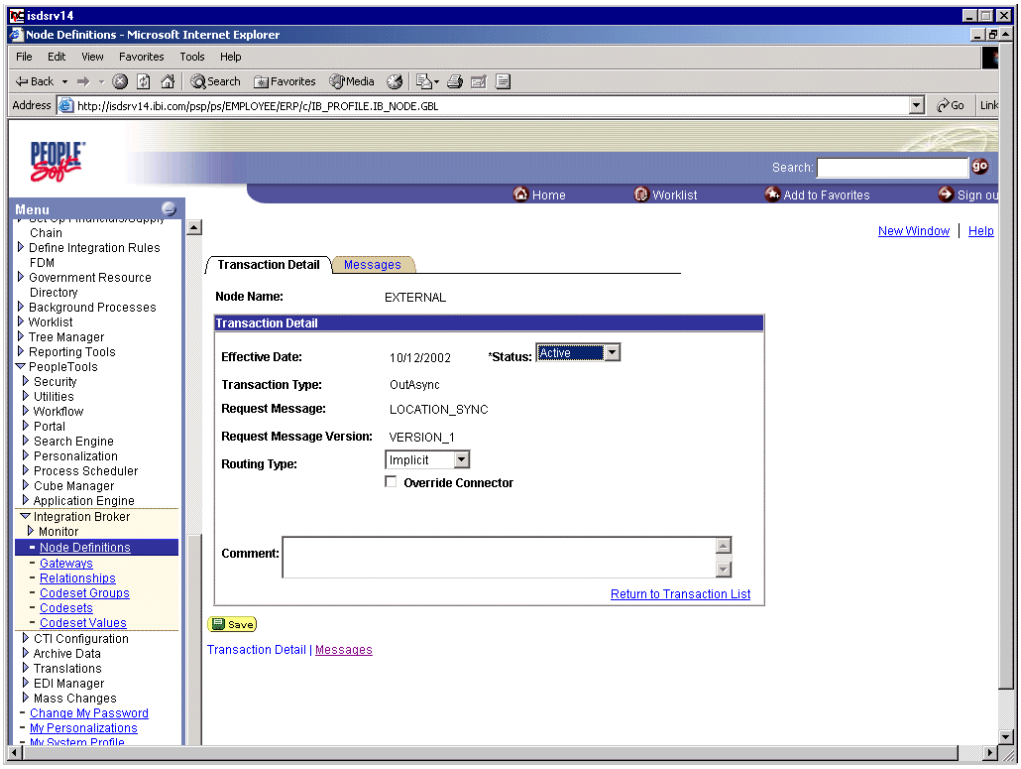


7. If there are no transactions, click **Add Transaction**.

In this procedure, the node is already configured with the `LOCATION_SYNC` message.

The Transaction Detail tab appears, as shown in Figure B–11.

Figure B–11 Transaction Detail Tab



You can add the message with which you are working.

a. Verify that the **Routing Type** is **Implicit**.

b. Click **Save**.

8. Return to the Transaction List. Perform the following steps:

   a. If there are other transactions, edit them.

   b. Set the status to **Inactive**.

      Inactive status is for initial testing only. After you test your configuration, you may change the status to Active and have as many nodes and transactions as required to satisfy your business requirements.

9. Click **Save** on the Transaction List.

You can now send XML messages to your PeopleSoft XML listener.

B.4 Configuring the TCP/IP Handler for PeopleSoft 8.1

The following procedure assumes that your Application Messaging environment is properly configured and tested. For more information, see Appendix D, "Using PeopleSoft Integration Broker".

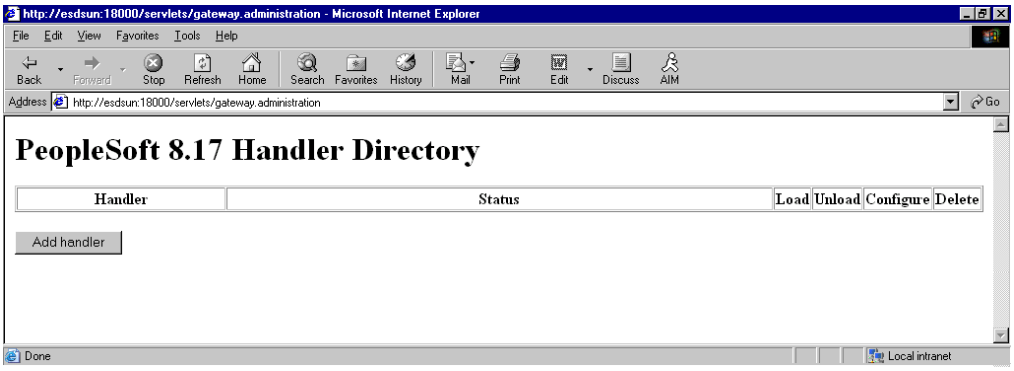
To configure the TCP/IP Handler for PeopleSoft 8.1 to send messages to Oracle WebLogic Server:

1. In a Web browser, launch the **PeopleSoft 8.1 Gateway Configuration** servlet interface.

2. If the Simple File Handler is currently loaded, unload and delete it before proceeding.

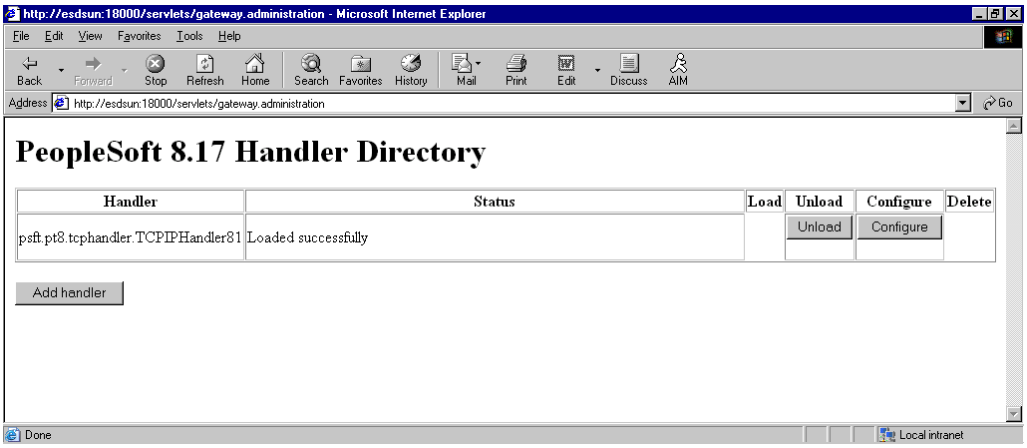
You must see an empty Handler directory, as shown in Figure B–12.

Figure B–12 Empty Handler Directory



3. Click **Add handler**, as shown in Figure B–13.

Figure B–13 Loaded Add Handler Directory



Perform the following steps:

a. Enter the full path of TCPIPHandler81 (case-sensitive):

```
psft.pt8.tcphandler.TCPIPHandler81
```

b. Click **Save**.

4. Click **Load**.

   The PeopleSoft Handler Directory window is displayed.

5. Click **Configure**.

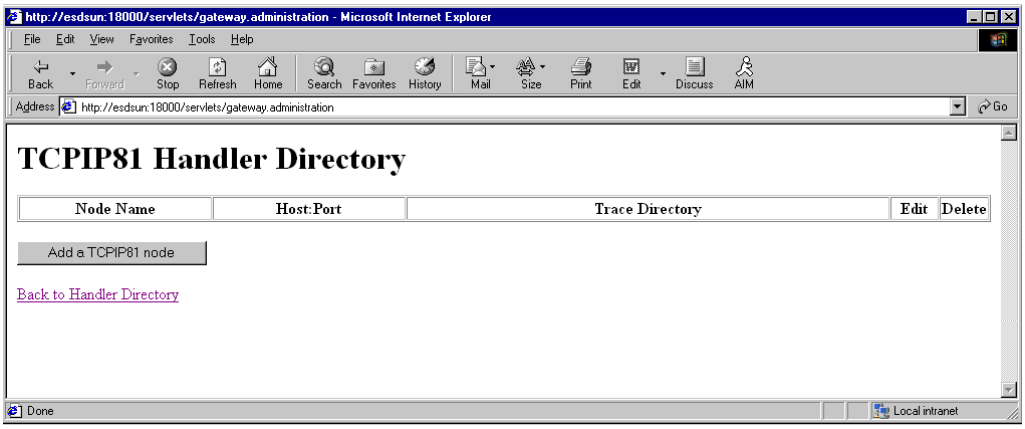
   The TCPIP81 Handler Directory window is displayed.

6. Click **Add a TCPIP81 node**.

Note: The screens illustrating this procedure show a node named EXTERNAL. For more information about creating and using nodes, see Appendix D, "Using PeopleSoft Integration Broker" or your PeopleSoft documentation.

The Add TCPIP81 Handler window is displayed, as shown in Figure B–14.

Figure B–14 Add TCPIP81 Handler Window



7. Enter the requested values based on the information in the following table.

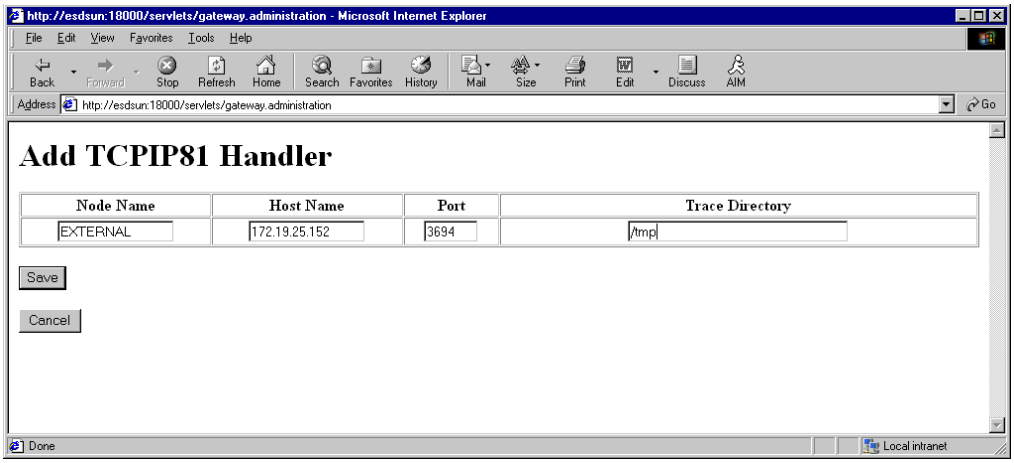
Field	Value Example	Description
Node Name	EXTERNAL	The name of the TCP/IP node.
Host Name	172.19.25.152	The system on which your PeopleSoft XML listener is listening for incoming messages.
Port	3694	The port on which your PeopleSoft XML listener is listening for incoming messages.
Trace Directory	/tmp	The directory where a trace file is created when errors occur in message delivery.

The system does not validate your entries.

8. Click **Save**.

The TCPIP81 Handler Directory window is displayed, as shown in Figure B–15.

Figure B–15 TCPIP81 Handler Directory Window



9. For your changes to take effect, click **Back to Handler Directory** to return to the PeopleSoft 8.1 Handler Directory window.
10. Click **Unload and re-Load TCPIPHandler81**.

You can now send messages from PeopleSoft to Oracle Application Adapter for PeopleSoft.

B.5 Testing Your PeopleSoft Configuration

PeopleSoft 8.1 and 8.4 provide a ping node mechanism for testing your configuration. The mechanism functions identically in both versions.

Test your configuration to ensure that:

- Oracle WebLogic Server is up and running.
- The server name and port number for PeopleSoft and Oracle WebLogic Server match.
- The default page for HTTP exists.

To test a PeopleSoft configuration:

1. In a Web browser, open your PeopleSoft application.
2. Navigate to the message monitoring menu.

   For PeopleSoft 8.4:

   a. In the menu pane, expand **PeopleTools**, **Integration Broker**, and **Monitor**.

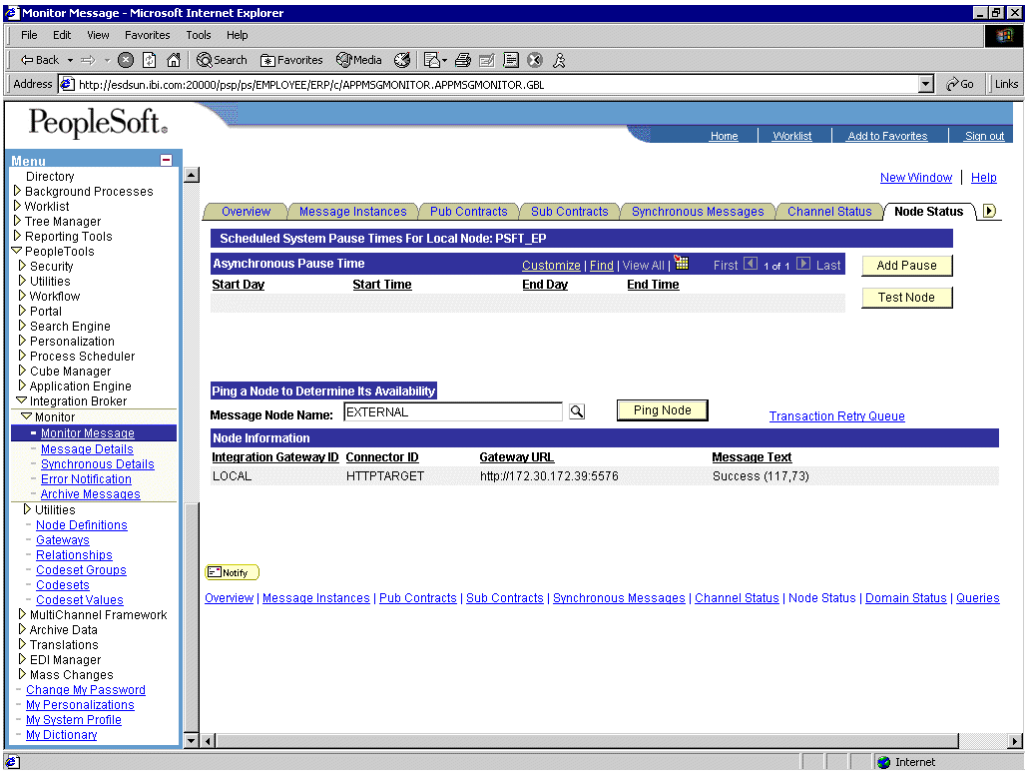
   b. Select **Monitor Message**.

   For PeopleSoft 8.1:

   a. In the menu pane, expand **Home**, **PeopleTools**, **Application Message Monitor**, and **Use**.

   b. Select **Application Message Monitor**.
3. Click the **Node Status** tab, as shown in Figure B–16.

Figure B–16 Node Status Tab



Perform the following steps:

a. From the Message Node Name list, select your node.

b. Click **Ping Node**.

If you properly configured both PeopleSoft and Oracle WebLogic Server, you receive a Success message.

An error indicates a configuration problem. For more information, see the Integration Broker error log.

C

Using Component Interfaces

This appendix describes how to create new and modify existing component interfaces for use with Oracle Application Adapter for PeopleSoft. It also describes how to apply security to those component interfaces and how to test them.

You can:

- Use component interfaces supplied by PeopleSoft with your application.
- Component interfaces also are known as Enterprise Integration Points (EIP).
- Modify an existing component interface.
- Create a new component interface.

Before using your component interface you must apply security to it and test it.

After securing and testing a component interface, you must generate its API. For more information, see Appendix A, "Generating Component Interface APIs".

> **Note:** This section is intended as a helpful supplement; it is not a substitute for PeopleSoft documentation. For complete and up-to-date information about PeopleSoft component interfaces, see the PeopleSoft Online Library for your PeopleSoft system.

This appendix contains the following topics:

C.1 Working With Properties

You create component interfaces using the PeopleSoft Application Designer. For more information about Application Designer, see your PeopleSoft documentation.

You can add properties from the records in the component view. You can delete a property in the component interface that you do not want to expose. You can rename properties by clicking the property and then clicking again until you can enter a new name. If you rename a property, it can be referenced in the component interface only by the new name, not by the underlying component name.

Properties may have various icons adjacent to them. For example, EMPLID has an icon indicating that it is a key field from the underlying record. NAME has an icon

indicating that it is an alternate key field from the underlying record. For a complete list of property icons, see the PeopleBooks documentation.

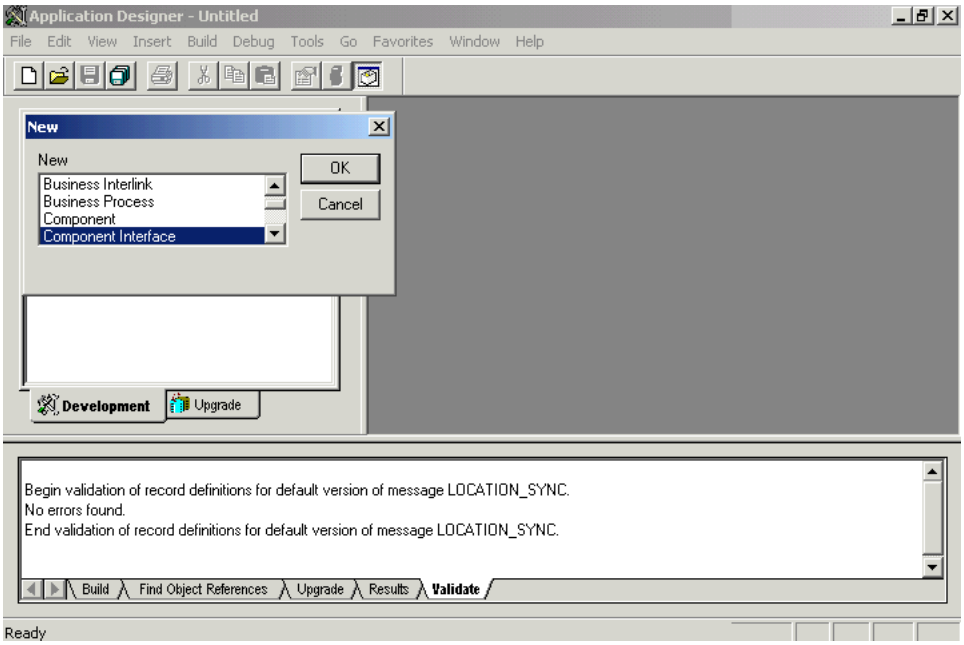
C.1.1 Creating a New Component Interface

To create a component interface:

1. Open the PeopleSoft Application Designer.
2. Select **New** from the **File** menu.

   The New dialog is displayed, as shown in Figure C–1.

Figure C–1 New Dialog



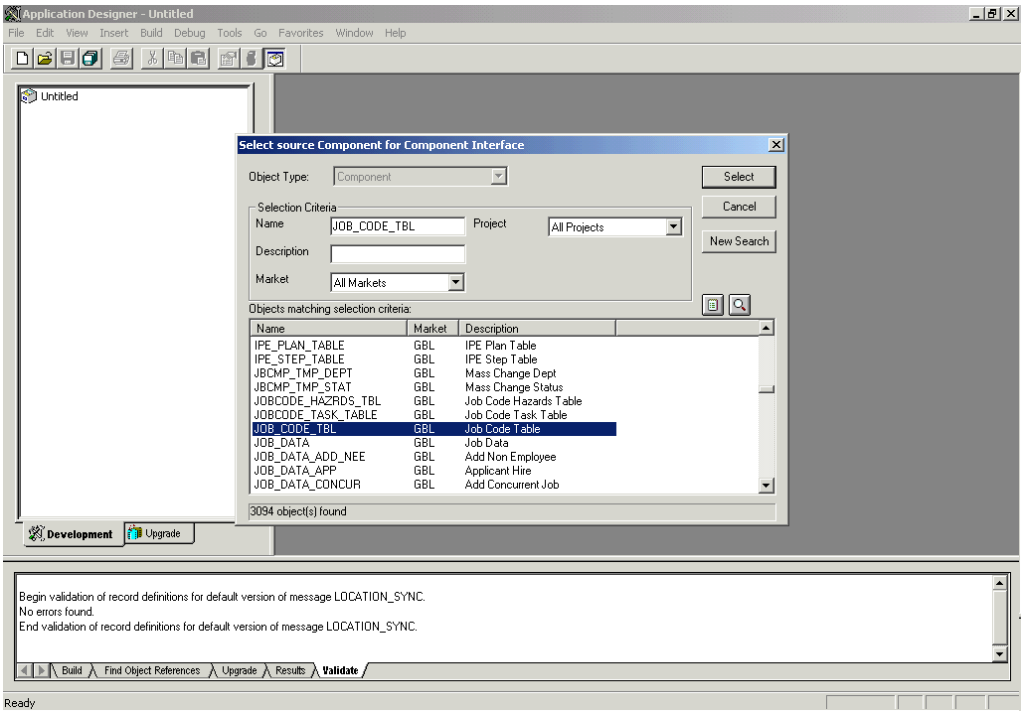
Perform the following steps:

a. Select **Component Interface**.

b. Click **OK**.

   The Select Source Component for Component Interface dialog is displayed, as shown in Figure C–2.

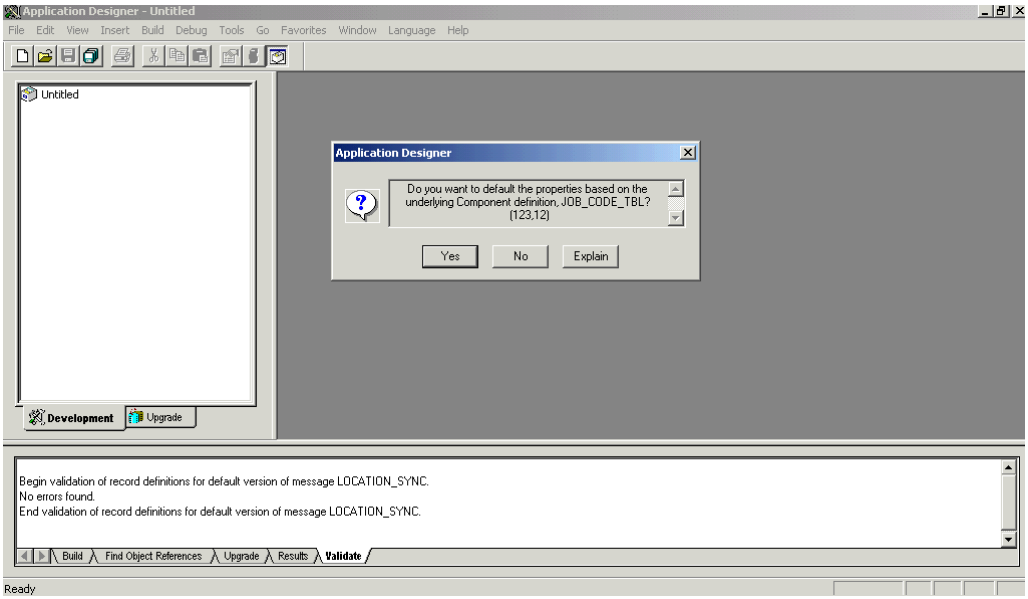
Figure C–2 Select Source Component for Component Interface Dialog



3. Highlight the component to use as a basis for the component interface and click **Select**.

The Application Designer dialog is displayed, as shown in Figure C–3.

Figure C–3 Application Designer Dialog



Note: If the component interface is large, expose the component properties manually.

4. To create the component interface without displaying properties and to expose component properties manually, click **No**.

   Perform the following steps:

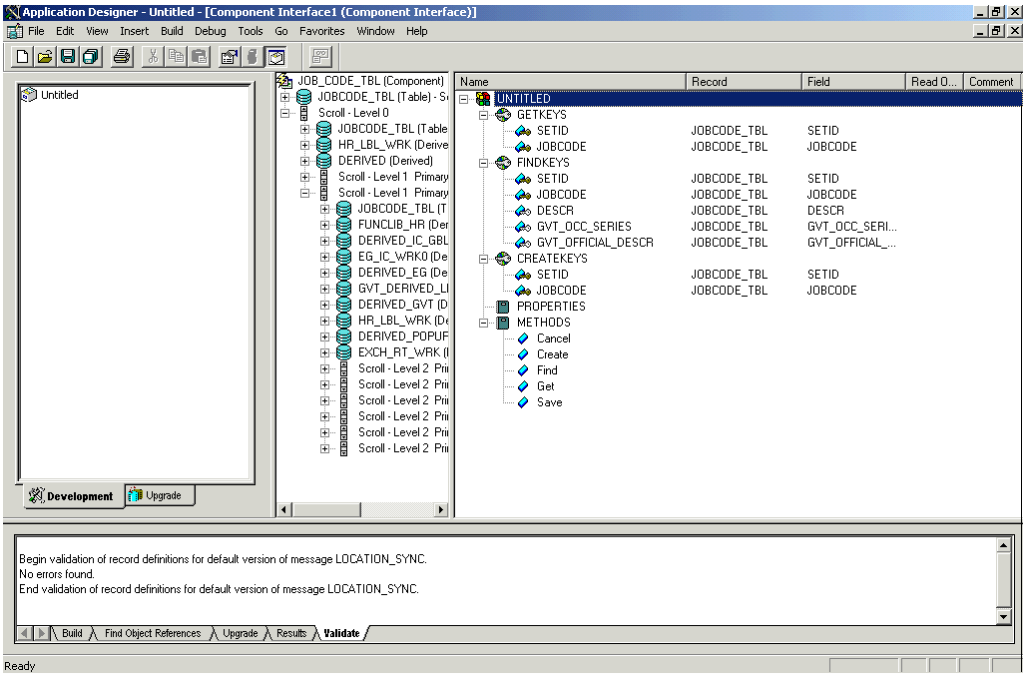
   a. Drag the relevant fields from the left pane to the right pane.

   b. To select various functions to perform, right-click either the right or left pane, depending on which pane is active, as shown in Figure C–4.

      For a complete list of functions, see the PeopleBooks documentation.

5. To create the component interface and display the properties of the underlying component interface, click **Yes**.

Figure C–4 Application Designer Component Interface



Standard Methods

The standard methods for the component interface are:

- Create
- Find
- Get
- Save

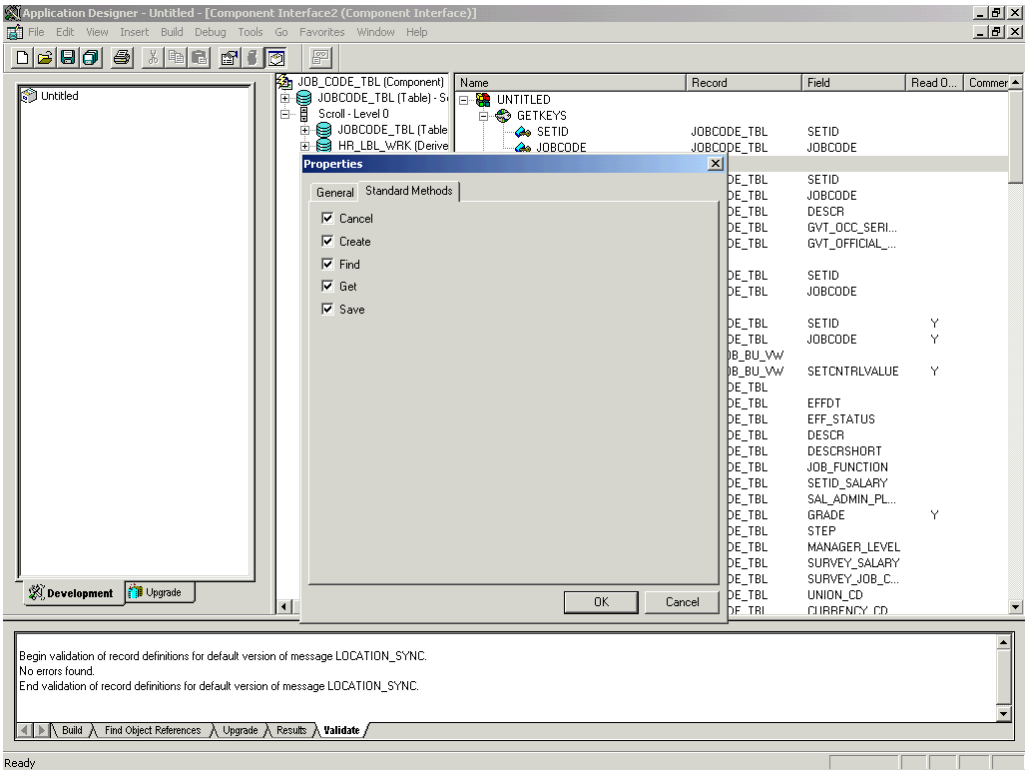
Only those methods in the underlying component are available. For example, if the underlying component does not contain Add capabilities, Create is not available.

C.1.2 Viewing or Changing Available Methods

To view or change available methods:

1. Display the Component Interface Properties dialog, as shown in Figure C–5.

Figure C–5 Component Interface Properties Dialog



2. Click the **Standard Methods** tab.
3. Select the desired methods.

C.2 Securing a Component Interface

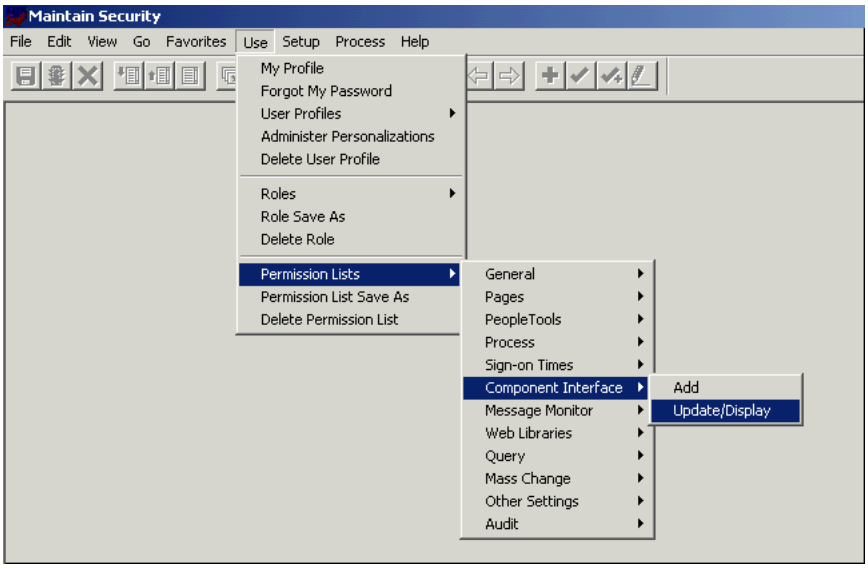
You must set up security for the component interface before you can begin testing.

C.2.1 Configuring Component Interface Security for PeopleSoft Version 8.1x

The following procedure describes how to configure component interface security for PeopleSoft Version 8.1 in 2- and 3-tier mode.

To configure component interface security:

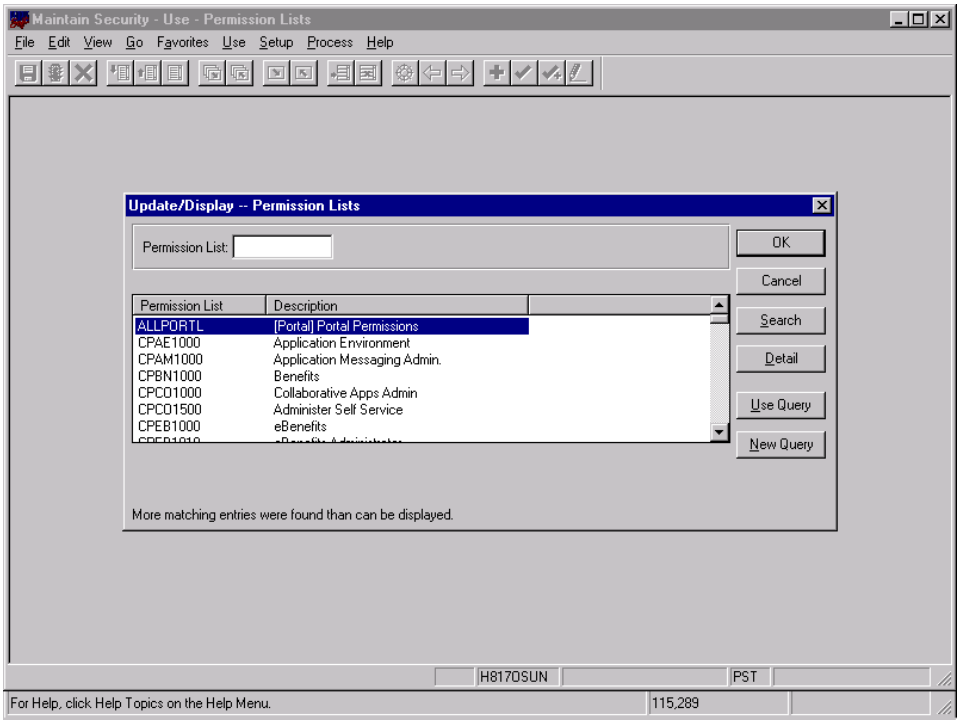
Figure C–6 Component Interface Security Options



1. From the **Use** menu, select **Permission Lists**, **Component Interface**, and then click **Update/Display**, as shown in Figure C–6.

   The Permission Lists dialog is displayed, as shown in Figure C–7.

Figure C–7 Permission Lists Dialog



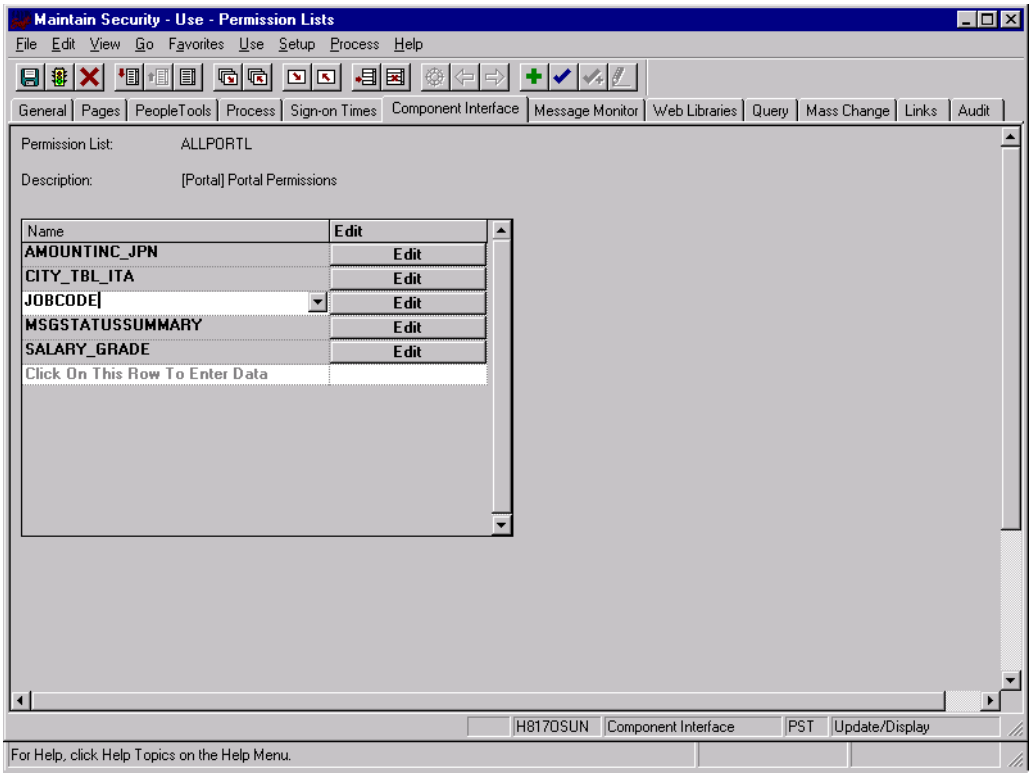
   Before Security can be set, you must identify the permission lists.

2. Select the relevant permission list and click **OK**.

   For more information on permission lists, see the PeopleBooks documentation.

   The Permissions Lists pane is displayed, as shown in Figure C–8.

Figure C–8 Peremission Lists Pane

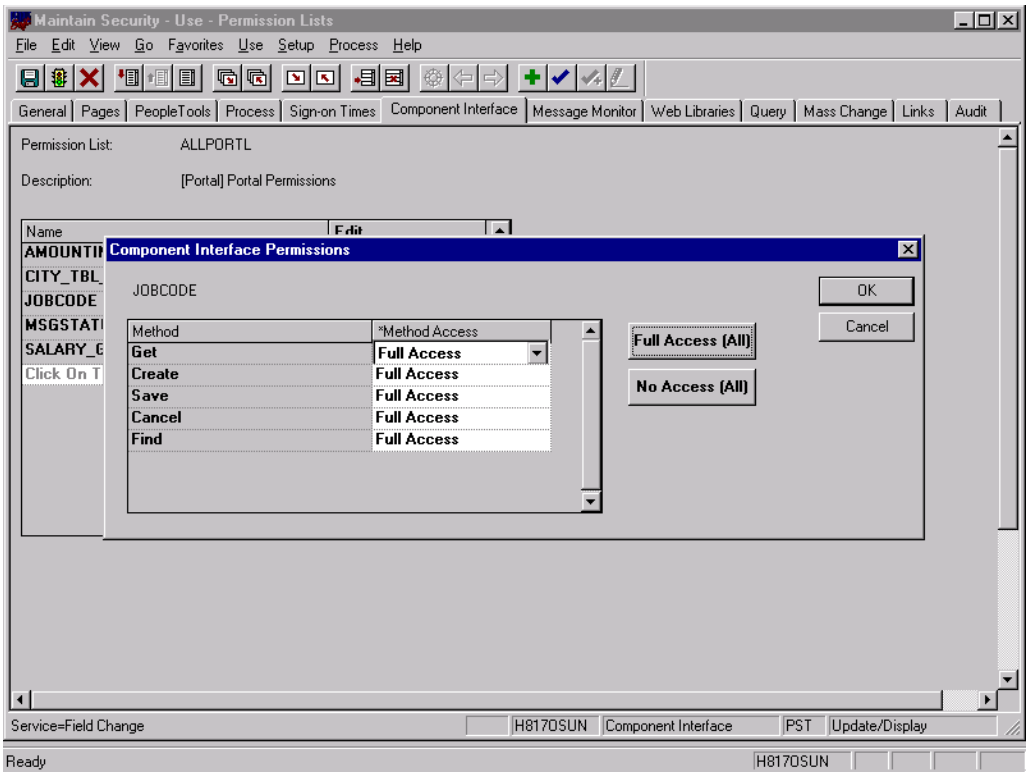


3. Insert the new component interface that you created.
4. Click **Edit**.

   When you select the component interface, all available methods appear, including user-defined methods. You can specify whether this particular Permission List must have full or partial access.

   The ALLPORTL Permission List has full access to all methods, as shown in Figure C–9.

Figure C–9 ALLPORTL Permission List



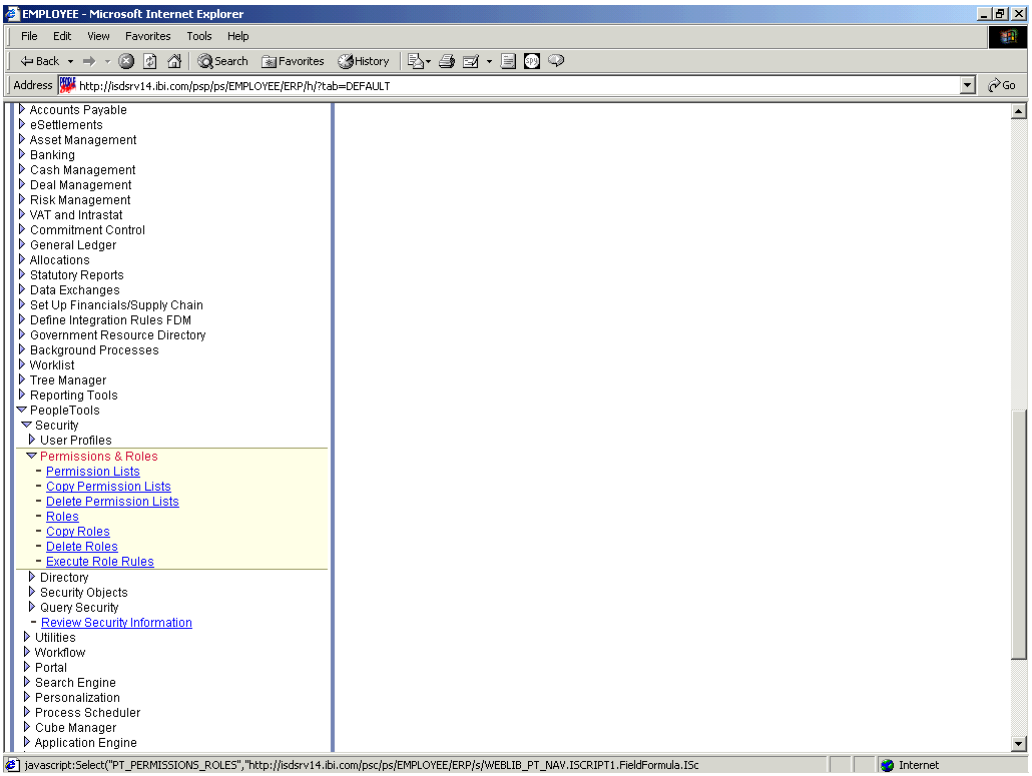
5. Select the desired level of access.
6. Click **OK**.

C.2.2 Configuring Component Interface Security for PeopleSoft Version 8.4 or Higher

The following procedure describes how to configure component interface security for PeopleSoft Version 8.4 or higher.

To configure interface security:

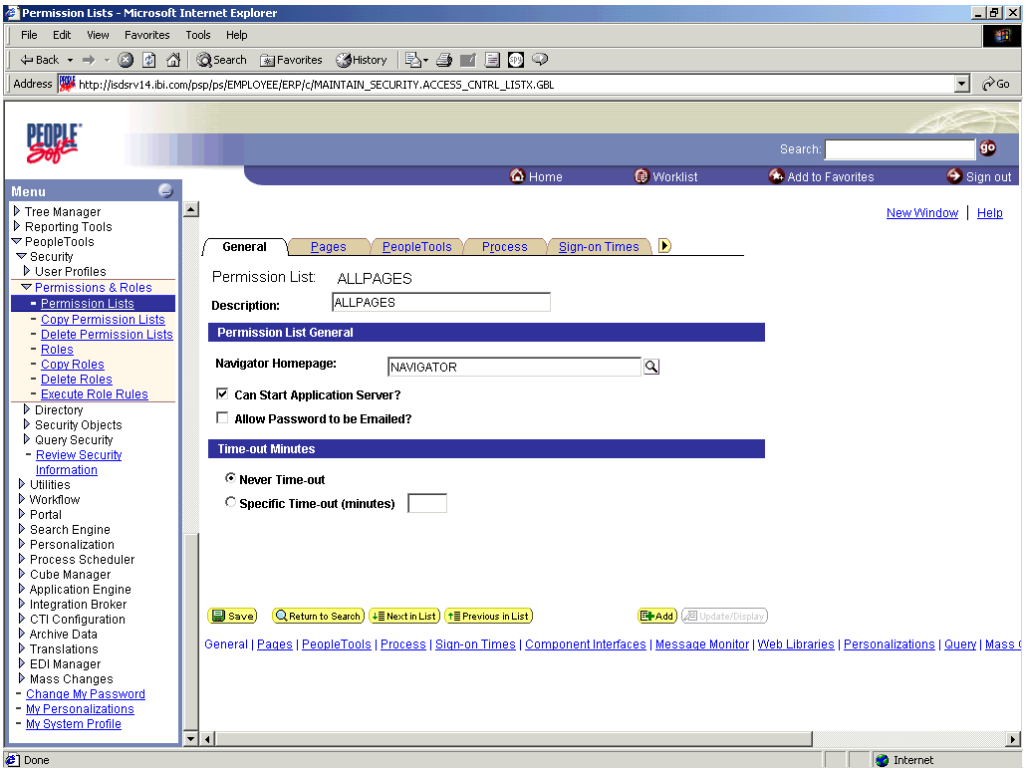
Figure C–10 Configure Component Interface Security



1. Expand **PeopleTools**, **Security**, **User Profiles**, and **Permissions & Roles** and then click **Permission Lists**, as shown in Figure C–10.
2. Click **Search**.

   The Permission Lists Search pane is displayed.
3. Select the relevant permission list, as shown in Figure C–11.

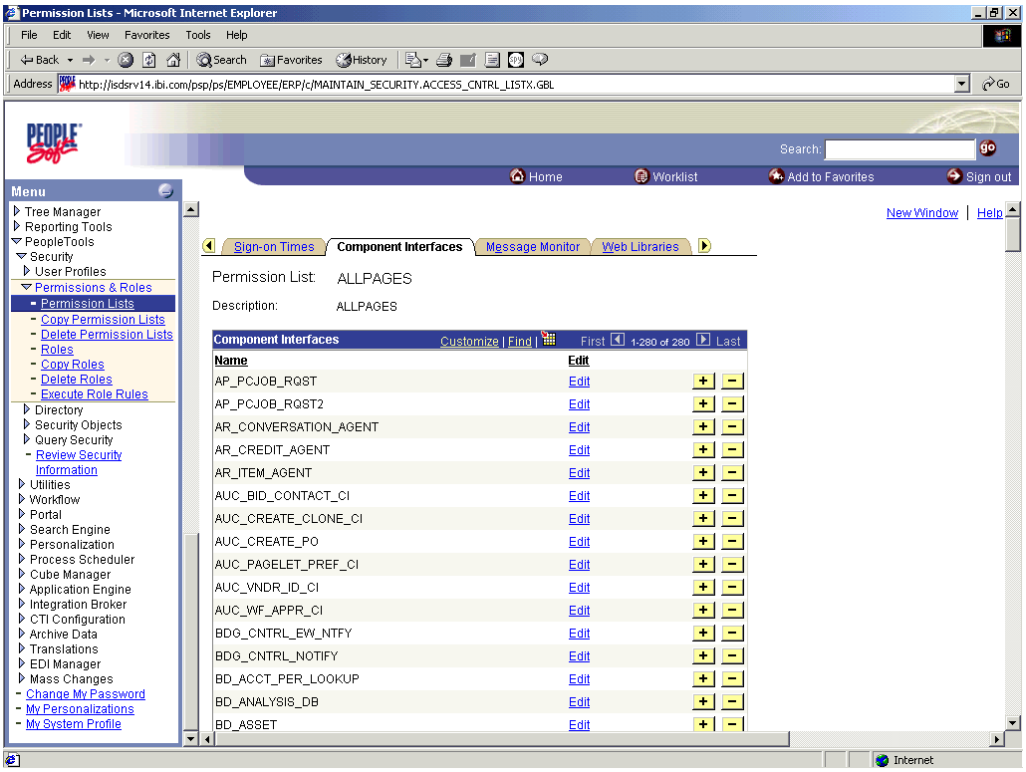
Figure C–11 Permission List Pane



4. Click the right arrow next to the **Sign-on Times** tab.

   The **Component Interfaces** tab appears, as shown in Figure C–12.

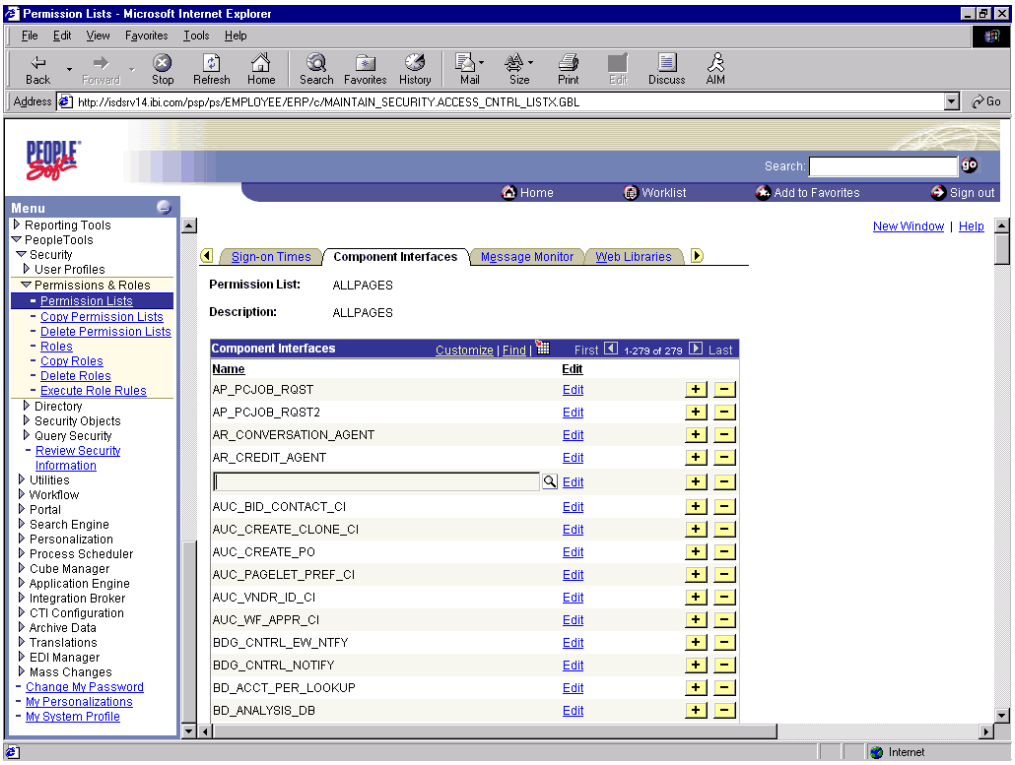
Figure C–12 Component Interfaces Tab



5. Click the **Component Interfaces** tab.
6. Click **+** to add a new row to the Component Interfaces list.

   A field appears where you can enter the component interface name, as shown in Figure C–13.

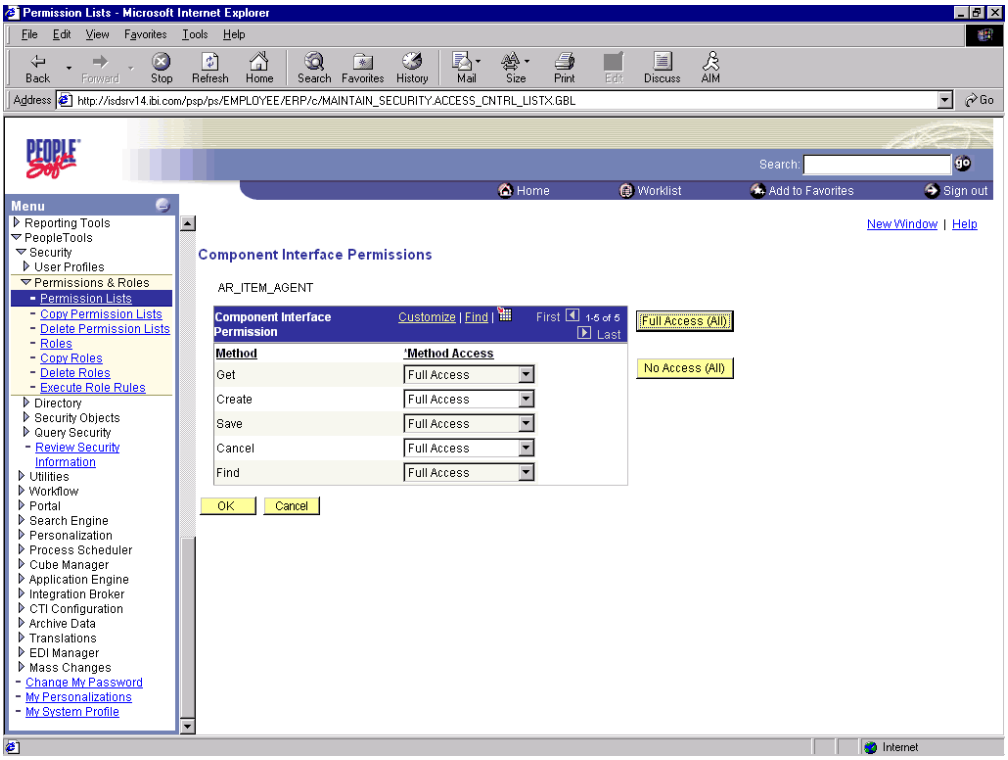
Figure C–13 Component Interface Name Field



7. Enter the component interface name and click **Edit**.

   This example uses the component interface AR_ITEM_AGENT, as shown in Figure C–14.

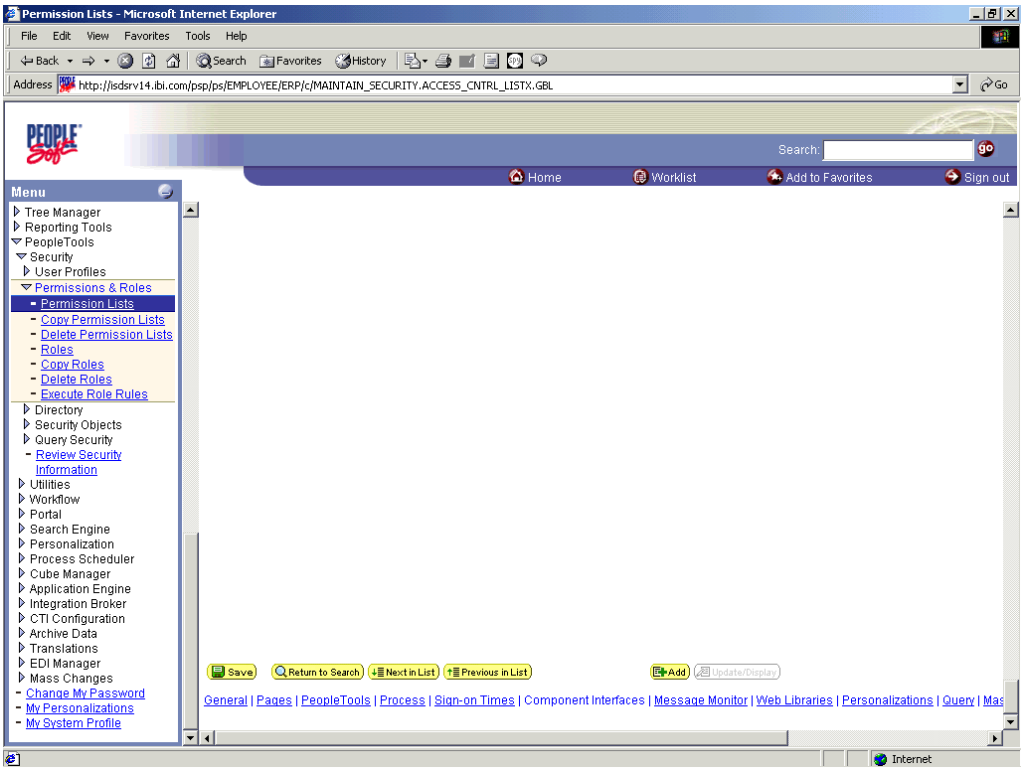
Figure C–14 Component Interface Permissions Window



8. From the lists, select the desired access level for each method.
9. Click **OK**.

   The Permissions list window is displayed, as shown in Figure C–15.

Figure C–15 Permissions List Window



10. Scroll down in the right pane and click **Save**.

C.3 Testing a Component Interface

Oracle Application Adapter for PeopleSoft uses PeopleSoft metadata and component interfaces; therefore, it can accommodate new or modified component interfaces. The adapter makes no assumptions about component interfaces except that they are logical and valid. Each component interface must be tested before being used as a source for the adapter.

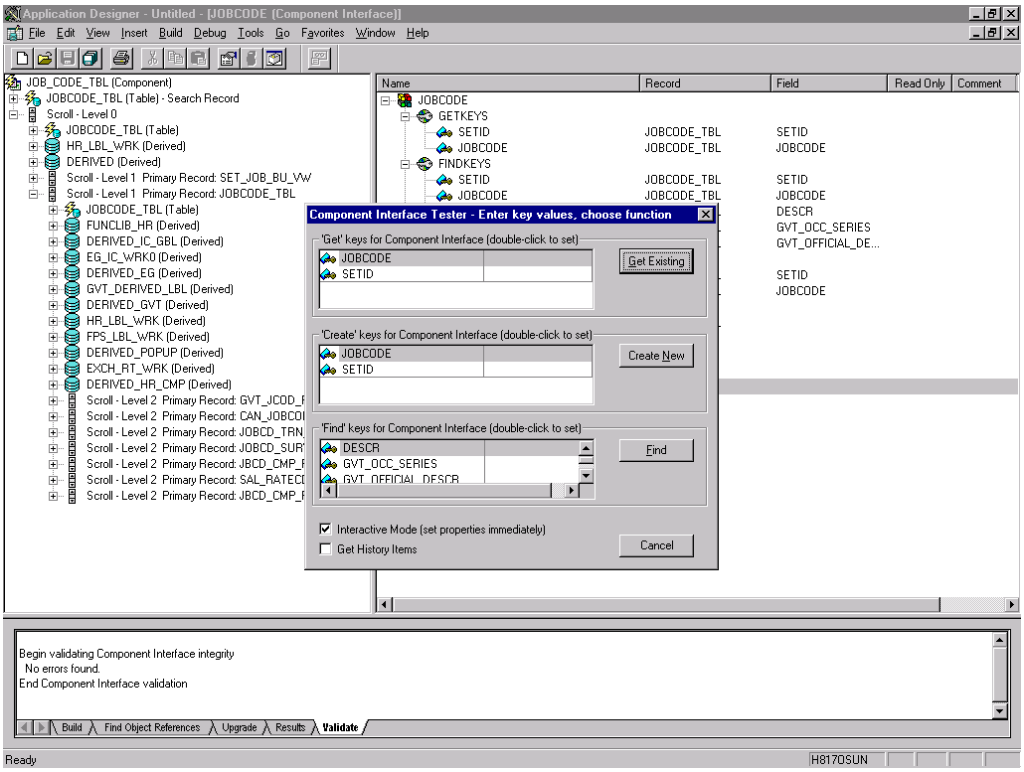
If changes are made to the underlying application by the user or by a PeopleSoft upgrade and the changes invalidate a component interface, the user must repair the invalid component interface before the adapter uses it.

To test a component interface:

1. In Application Designer, select **Test Component Interface** from the **Tools** menu.

The Component Interface Tester dialog is displayed, as shown in Figure C–16.

Figure C–16 Component Interface Tester Dialog



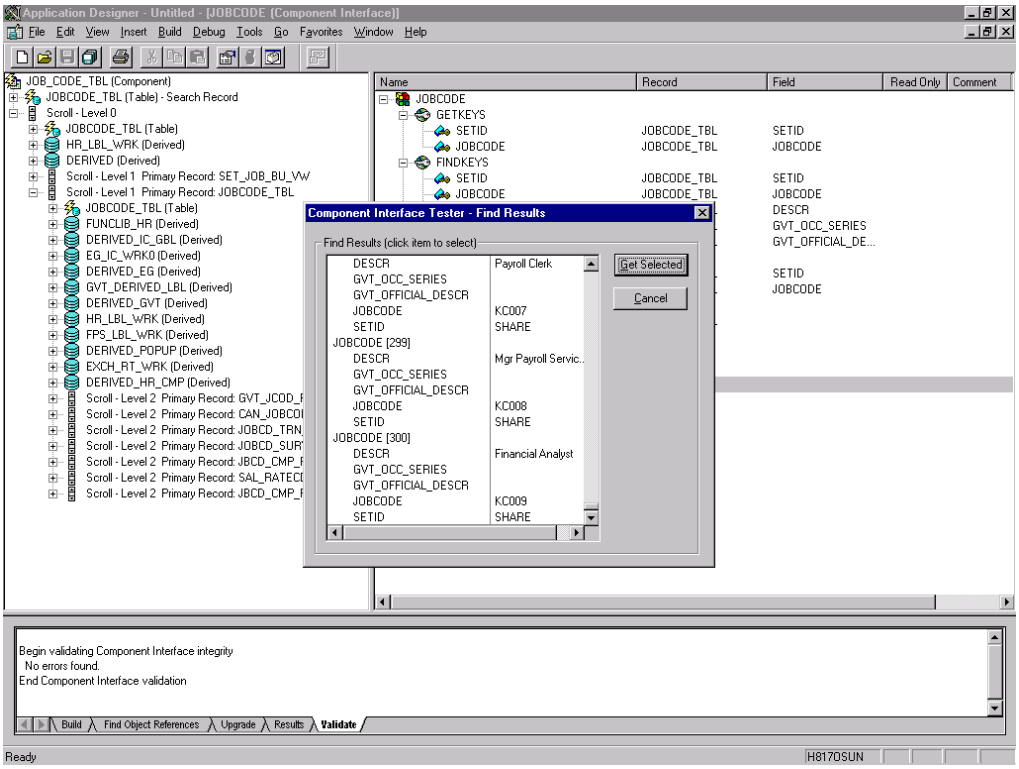
2. If required, click the Component Interface Tester dialog to bring it to the foreground.

3. To test the component interface, use one the following methods.

   - To test the component interface using the Find method, click **Find**.

     The Component Interface Tester - Find Results dialog displays all of the possible entries for the underlying component, as shown in Figure C–17. If there are more than 300 entries, a message appears.

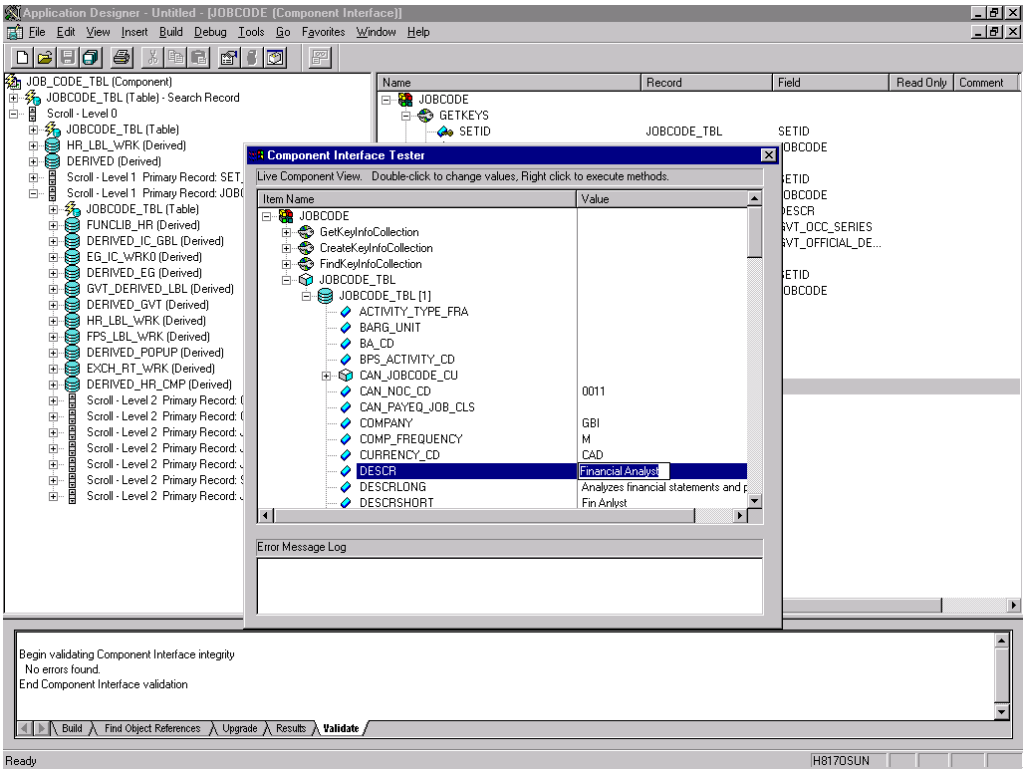
Figure C–17 Component Interface Tester - Find Results Dialog



- In the left pane of the Find Results dialog, select a field.
- To display the relevant data for that particular field, click **Get Selected**.

  The Find Results dialog is displayed, as shown in Figure C–18.

Figure C–18 Find Results Dialog



- If the security settings permit, you can change the values in the individual fields.

4. To test the component interface using the Get method, perform the following steps:

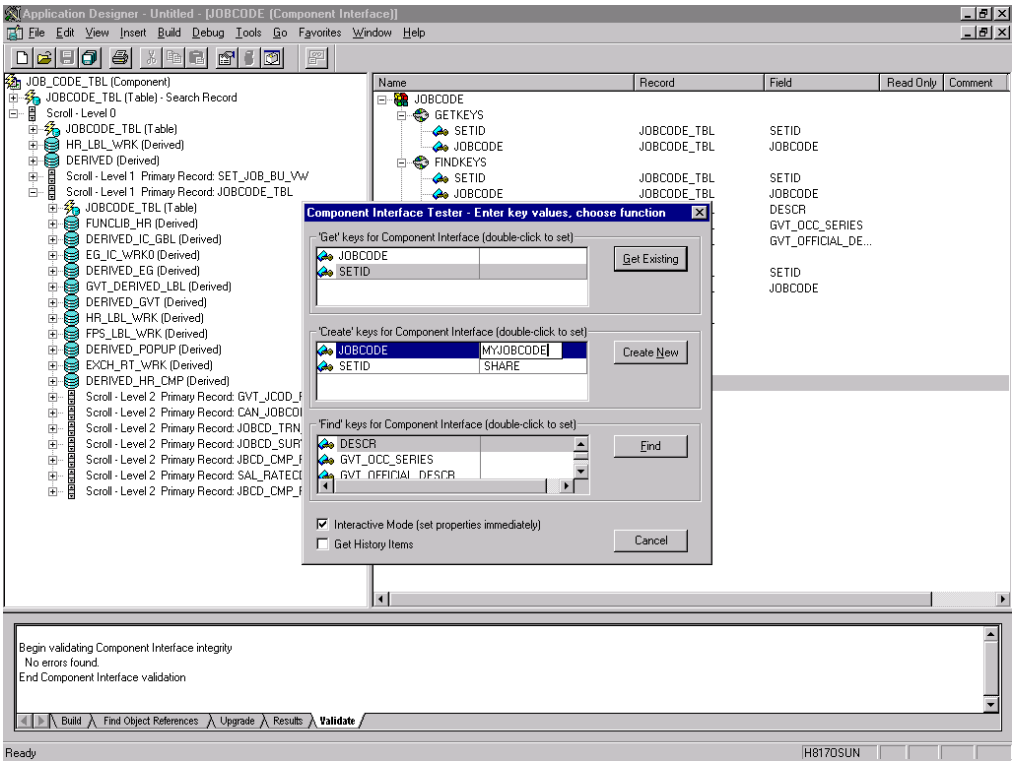
   a. Enter the existing key(s).

   b. Click **Get Existing**.

      This returns the exposed properties for the key that you entered. You can change values if Update access was specified.

   Alternatively, you can test using the Create method, as shown in Figure C–19.

Figure C–19 Component Interface Tester Dialog



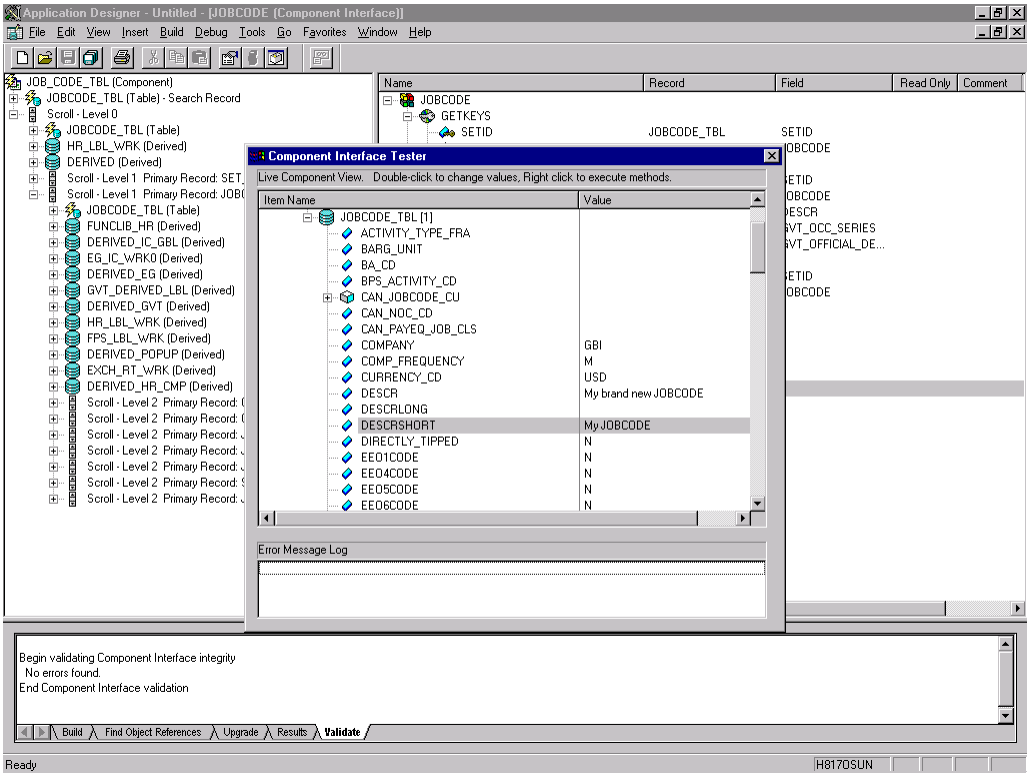
Perform the following steps:

a. Enter all required key values.

b. Click **Create New**.

When you enter valid values in Create keys, a pane showing the JOBCODE data is displayed after the Table name is expanded with default data in place, as shown in Figure C–20.

Figure C–20 JOBCODE Data



You can change fields at this point. Changes are validated against the component's underlying business logic.

c. After you finish making changes, right-click the top item in the pane.

5. To save your changes, click **Save**.

The keys used to create the record can be used with the Get method for viewing data. The data that was added can be viewed in the PeopleSoft Component as shown in the following example. The Effective Date is one of the default values.

You have finished testing the component interface. Before using the component interface, you must generate its API. For more information, see Appendix A, "Generating Component Interface APIs".

D

Using PeopleSoft Integration Broker

This appendix describes how to configure and test PeopleSoft Integration Broker (release 8.4) and PeopleSoft Application Messaging (release 8.1) using a PeopleSoft-supplied File Output interface. In PeopleSoft release 8.1, the messaging architecture is called Application Messaging and includes Application Messaging Gateway. In release 8.4, the messaging architecture is called Integration Broker, which includes Integration Gateway. When discussing release-generic issues, this section uses release 8.4 terminology. When discussing release-specific issues, it uses release-specific terminology.

> **Note:** This section is not a substitute for PeopleSoft documentation. For more complete and up-to-date information on PeopleSoft Messaging and Integration Broker, see the *PeopleSoft Online Library* for your PeopleSoft system.

This appendix contains the following topics:

D.1 PeopleSoft Integration Broker

PeopleSoft Integration Broker provides a mechanism for communicating with the outside world using XML files. Communication can take place between different PeopleSoft applications or between PeopleSoft and third-party systems.

To subscribe to data, third-party applications can accept and process XML messages posted by PeopleSoft using the available PeopleSoft connectors or by adding a custom built connector to the Integration Gateway. This topic primarily covers publishing outbound asynchronous messages from a PeopleSoft system to a third-party application using the delivered File Output connector. For information on outbound synchronous messages, see "Using Outbound Synchronous Messages" on page D-24.

To send a message, you must properly configure various internal structures and processes. The following descriptions are generally release-generic. Detailed differences between releases 8.1 and 8.4 are discussed in other topics.

- Message

  A Message is a container for the data that goes into the XML. It contains basic structural information, such as records and fields. The Message must be in an Active status to send the XML file

- Message Channel

  The Message Channel is a mechanism for structuring records into logical groupings. Each Message can belong to only one Message Channel. The Message Channel must be in an Active (Run) status for the Message to be delivered.

  In release 8.1, the Message Channel also provides preliminary routing instructions; you can specify which Message Nodes handle the message. Each Message Channel can route messages to multiple Message Nodes

- Message Node

  Message node functionality changed from 8.1 to 8.4:

  In release 8.1, the primary function of the Message Node is to specify which Gateway receives the messages.

  In release 8.4, much of the "intelligence" that was built into the Message Channel moved to the Message Node. This provides additional flexibility over release 8.1. You can specify which messages the Message Node can handle. In addition, the Gateway Connector is bound to the Message Node. Each Message Node can route messages to only one Connector.

- Integration Gateway

  The Integration Gateway is a program that runs on the PeopleSoft Web Server. It is the physical hub between PeopleSoft and the third-party system.

- Target Connector/Handler

  Connectors are Java programs that run under the control of the Integration Gateway and control the final output destination of the XML file. PeopleSoft release 8.4 comes with several connectors including `HTTP`, `FTP`, `SMTP`, `JMS`, `POP3`, and a `Simple File` connector that places the file in a directory on the Web Server. This section discusses the Simple File connector.

- PeopleCode

  PeopleCode is the programming tool provided with PeopleTools that enables you to create complex application functionality. A message can only be initiated using specific PeopleCode instructions. This code is typically triggered by an application event, such as creating a new database entry through an online panel or through a batch job.

Most of the examples in this section use the `LOCATION_SYNC` message, which is a PeopleSoft Enterprise Integration Point (EIP) and is supplied with most PeopleSoft applications. If `LOCATION_SYNC` is not part of your package, you may use any supplied message.

D.1.1 Configuring Integration Broker in PeopleSoft 8.4

You can configure PeopleSoft 8.4 to send an asynchronous outbound message to the File Output connector.

To configure application messaging in PeopleSoft 8.4:

1. Ensure that the message is active and is routed to the proper Message Channel.

2. Configure the Message Channel.
3. Configure the IntegrationGateway.properties file to communicate with your PeopleSoft 8.4 application.
4. Configure the Integration Gateway and File Output connector.
5. Create and configure a new Gateway node.

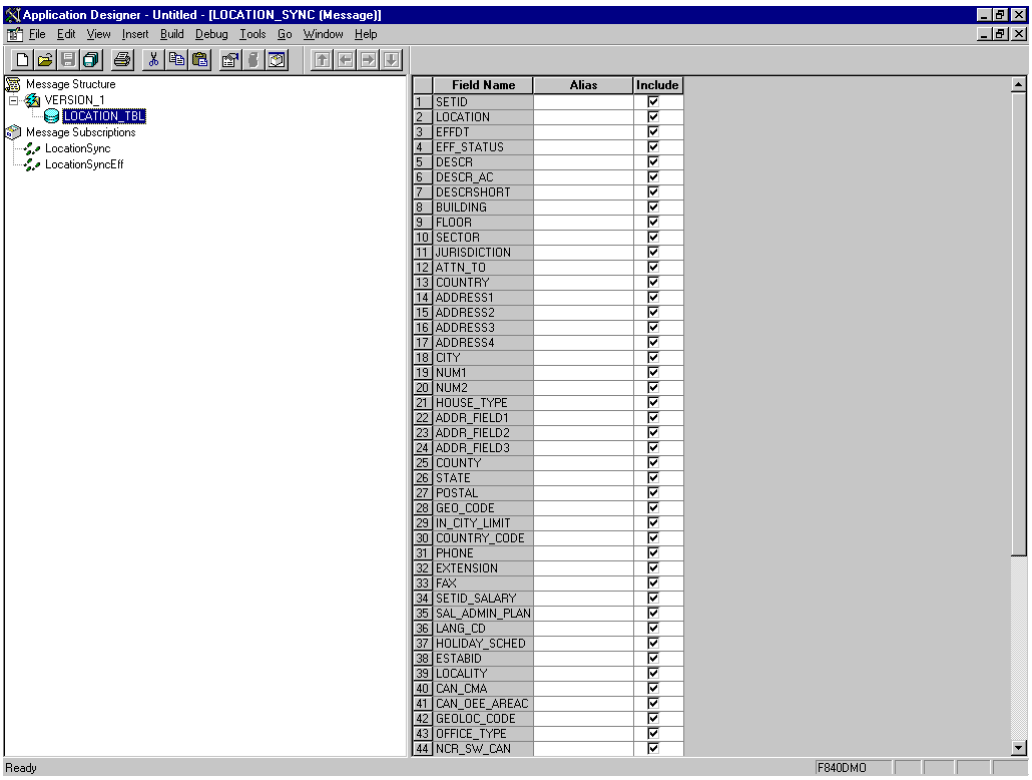
   These tasks are described in detail in the following procedures.

Ensuring the Message Is Active and Is Routed Correctly

To ensure that the message is active and is routed to the proper Message Channel:

1. Open Application Designer.
2. On the **File** menu, point to **Open**, click **Message**, and then open the **LOCATION_SYNC** message, as shown in Figure D–1.

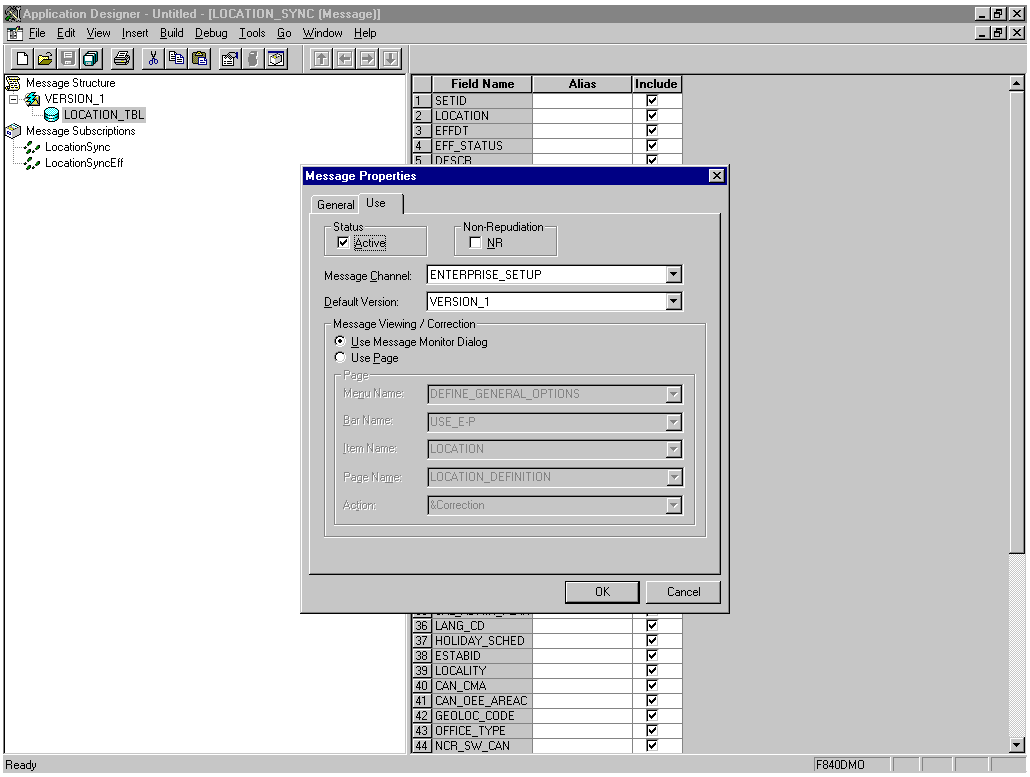
Figure D–1 LOCATION_SYNC Message



3. To view the fields that are included in the Message, highlight **LOCATION_TBL**.
4. Right-click **LOCATION_TBL** and select **Properties**.

   The Message Properties dialog is displayed, as shown in Figure D–2.

Figure D–2 Message Properties Dialog



5. Select the **Use** tab.
6. Ensure the **Active** check box is selected.

   The message is routed to the Message Channel, `ENTERPRISE_SETUP`, and the default message version is VERSION_1 (messages can have multiple versions).
7. Click **OK** and then save the message.

   You have finished ensuring that the message is active and is routed correctly.

Configuring the IntegrationGateway.properties File

To configure the `IntegrationGateway.properties` file:

1. Open the `IntegrationGateway.properties` file using the editor of your choice.
2. Find the section of the file that specifies the JOLT connect string setting for the default application server. This is usually near line 75, and looks similar to the following:

```
## JOLT connect string setting for optional Default Application Server. Do NOT
specify a NODENAME.
#
# Example:
#ig.isc.serverURL=//MYSERVER:9000
#ig.isc.userid=MYUSERID
#ig.isc.password=MYPASSWORD
#ig.isc.toolsRel=8.40
```

3. Uncomment (or copy and uncomment) the four lines that specify the connection.
4. Enter the appropriate information.

In the following example, the tools release is 8.40.09:

```
ig.isc.serverURL=//isdsrv14:9000
ig.isc.userid=VP1
ig.isc.password=VP1
ig.isc.toolsRel=8.40.09
```

The PeopleSoft tools release must be precise to the last decimal.

Note: With release 8.42, the password must be stored in an encrypted format. PeopleSoft provides a script called `PSCipher.bat` (`PSCipher.sh` on UNIX) to accomplish encryption. Typically, this script is located in the path of the `IntegrationGateway.properties` file. Follow the instructions supplied by PeopleSoft to run this script.

You have finished configuring the `IntegrationGateway.properties` file.

Configuring the Integration Gateway and the File Output Connector

To configure the Integration Gateway and the File Output Connector:

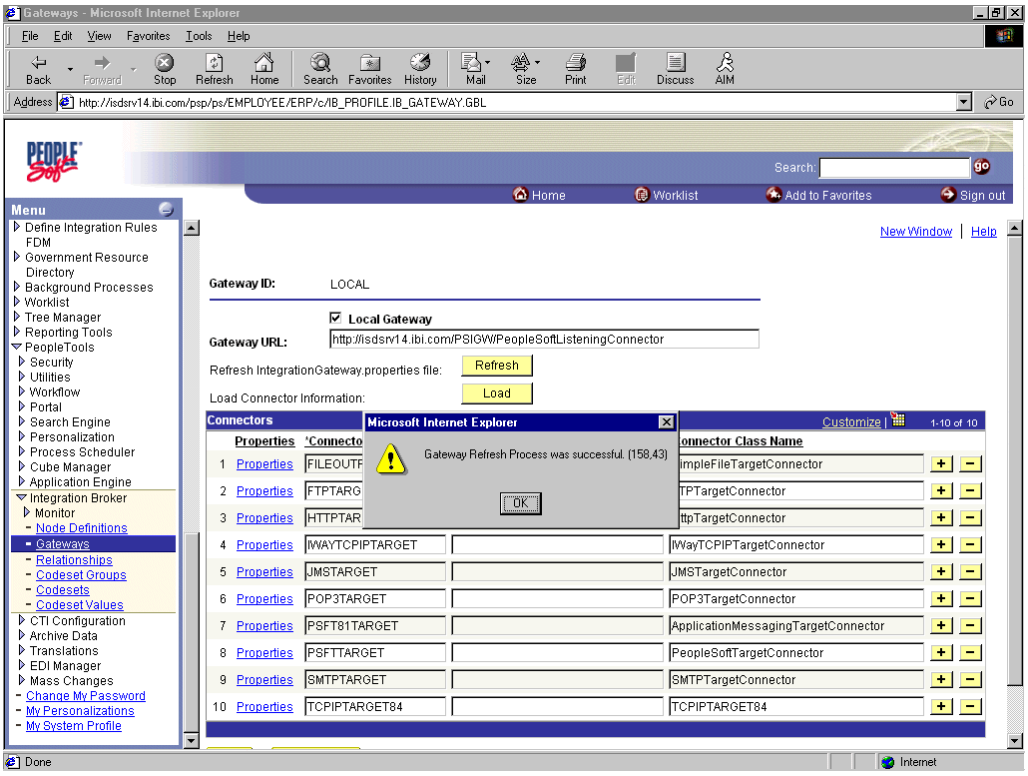
1. In a Web browser, open your PeopleSoft 8.4 application in 4-tier mode.
2. In the Menu pane, expand **PeopleTools**, **Integration Broker**, and then click **Gateways**.
3. Open the LOCAL Gateway ID and enter the following Gateway URL:

   host name`/PSIGW/PeopleSoftListeningConnector`

   Where `host name` is the name of your PeopleSoft Web Server.
4. Click **Refresh**.

   A message appears stating the outcome of the refresh process, as shown in Figure D–3.

Figure D–3 Refresh Process Outcome Message



5. Click **OK** and scroll down to click **Save**.

   You must click Save before continuing.

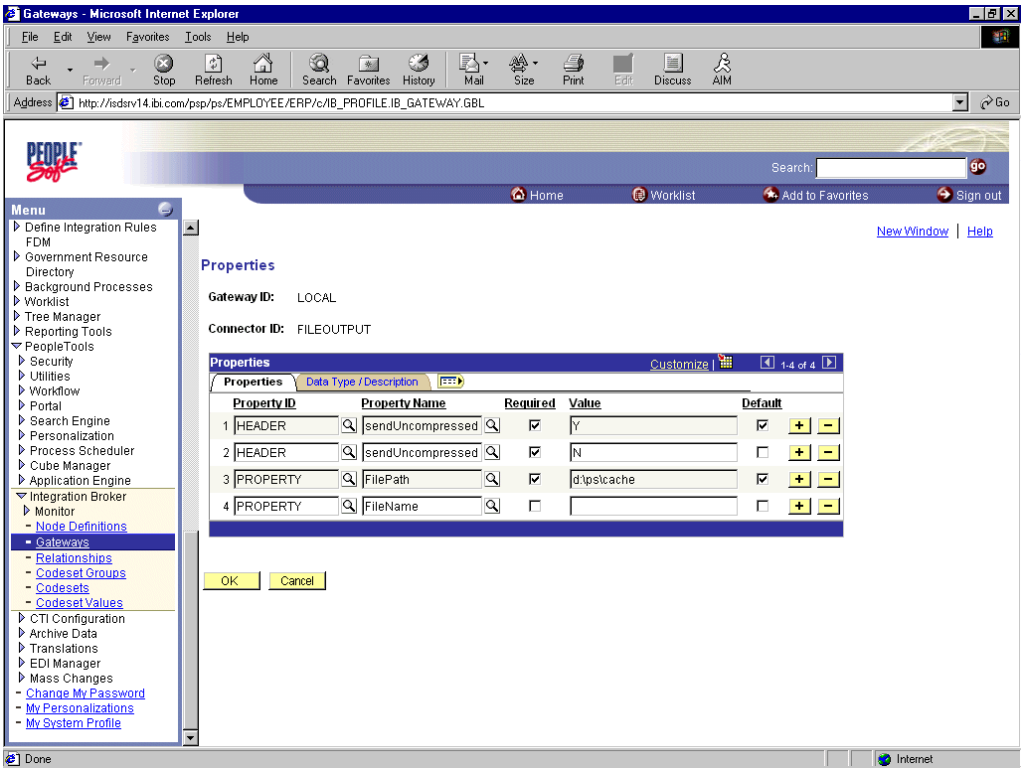
6. Click the **Properties** link for the FILEOUTPUT Connector ID.

   The Properties window for the FILEOUTPUT Connector is displayed.

7. Accept or overwrite the default values.

   The FilePath PROPERTY from the `c:\temp default` was changed to `d:\ps\cache`, as shown in Figure D–4.

Figure D–4 Gateway ID Property Pane



8. To return to the Gateway window, click **OK**.
9. Scroll down and click **Save**.

   You have finished configuring the Integration Gateway and the File Output Connector.

Creating and Configuring a New Gateway Node

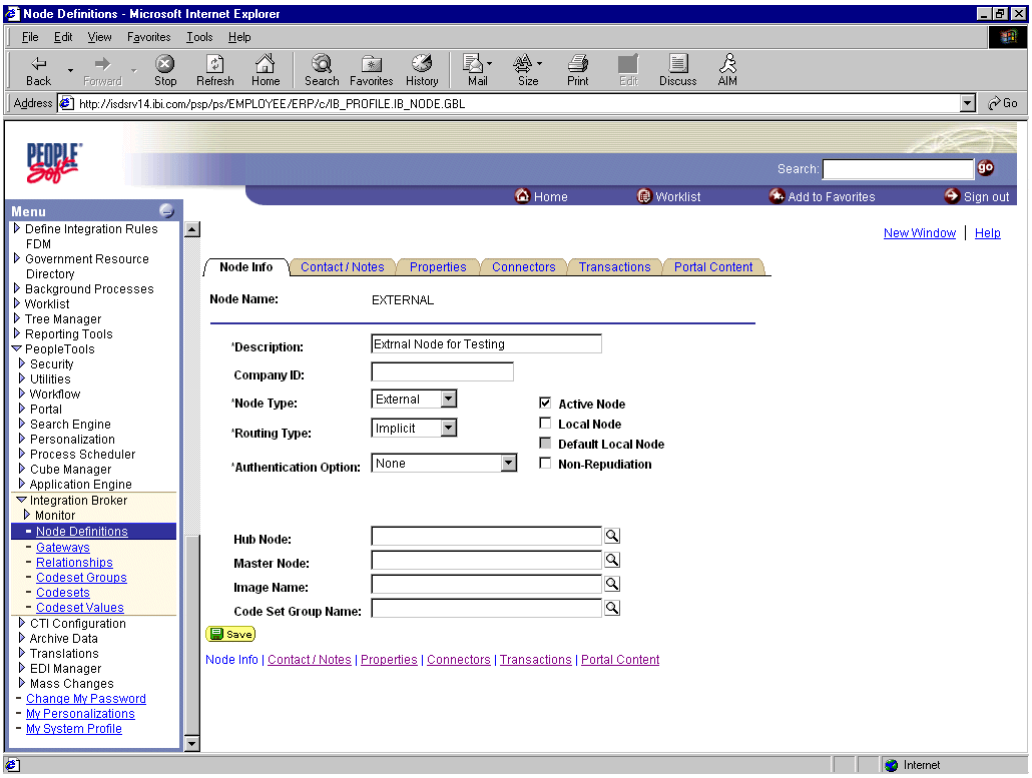
To create and configure a new Gateway Node:

1. In the Menu pane, expand **PeopleTools**, **Integration Broker**, and then, click **Node Definitions**.
2. Select the **Add a New Value** tab.
3. In the **Node Name** field, enter a node name.

   It is recommended that you name your first (trial) message node EXTERNAL. After successfully configuring and sending messages using this node, you can create additional message nodes with names appropriate for your application.
4. Click **Add**.

   The Node Info tab becomes available, as shown in Figure D–5.

Figure D–5 Node Info Tab



Perform the following steps:

a. In the **Description** field, enter an appropriate description.

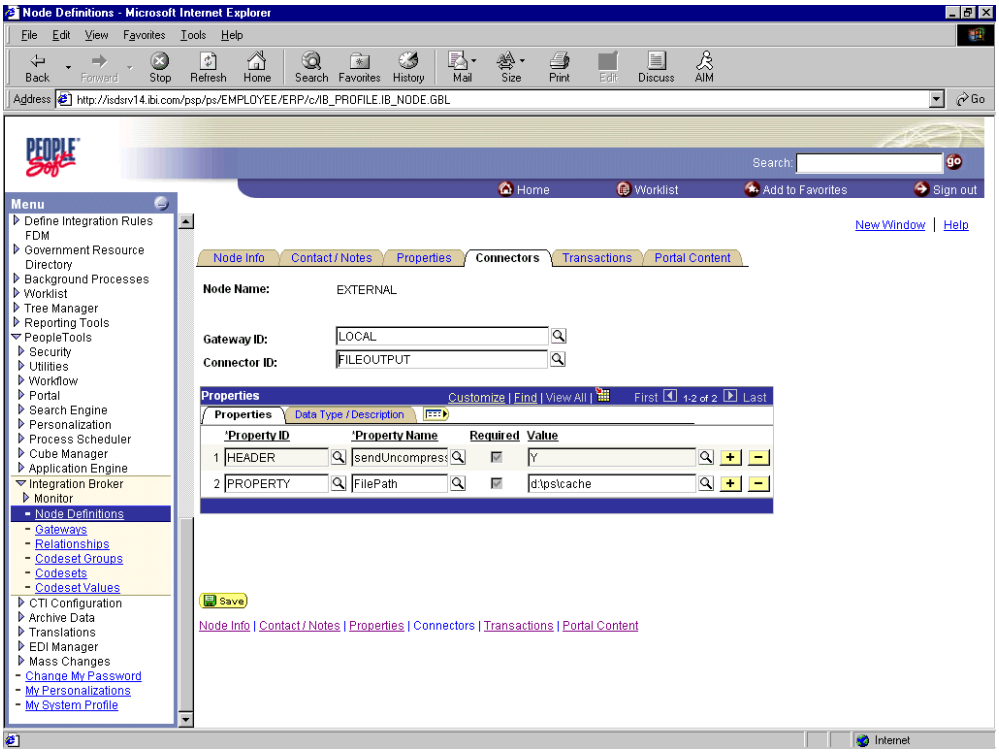
b. From the **Node Type** list, select **EXTERNAL**.

c. From the **Routing Type** list, select **Implicit**.

5. Select the **Connectors** tab.

The Connectors tab becomes available, as shown in Figure D–6.

Figure D–6 Connectors Tab



Perform the following steps:

a. Specify **LOCAL** for the **Gateway ID**.

b. Specify **FILEOUTPUT** for the **Connector ID**.

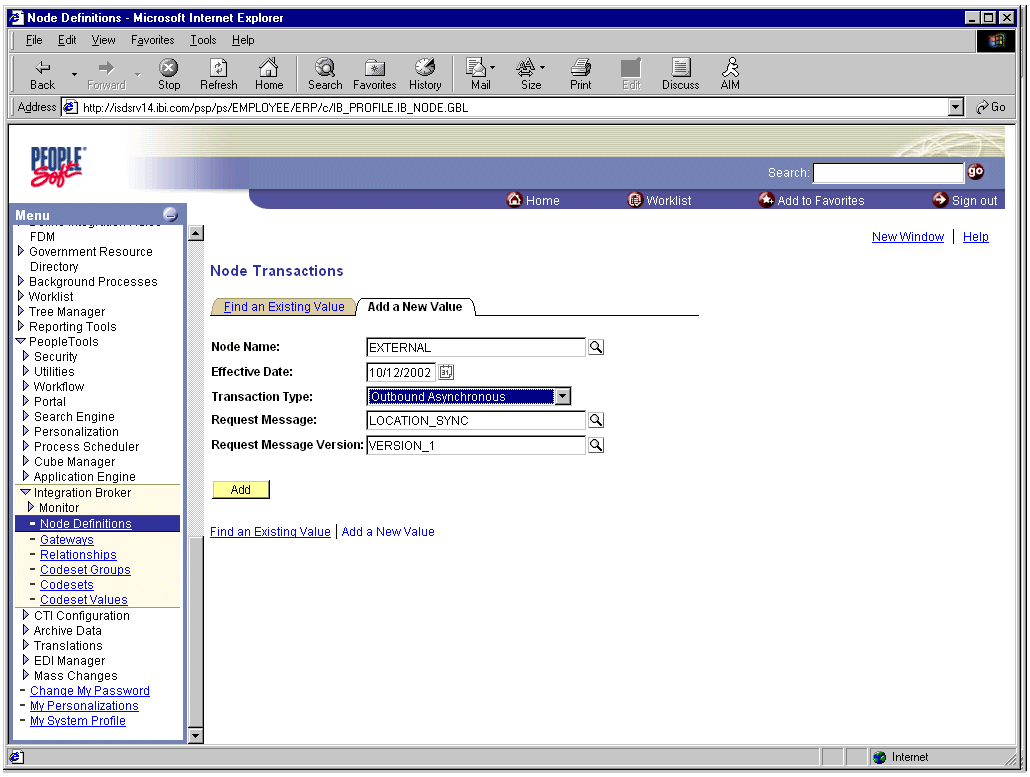
c. Accept or overwrite the default Gateway property values.

6. Click **Save**.

7. To specify the transactions to route messages to your node, select the **Transactions** tab and click **Add Transaction**.

The Node Transactions pane is displayed, as shown in Figure D–7.

Figure D–7 Node Transactions Pane



Perform the following steps:

a. From the **Transaction Type** list, select **Outbound Asynchronous**.

b. In the **Request Message** field, specify **LOCATION_SYNC**.

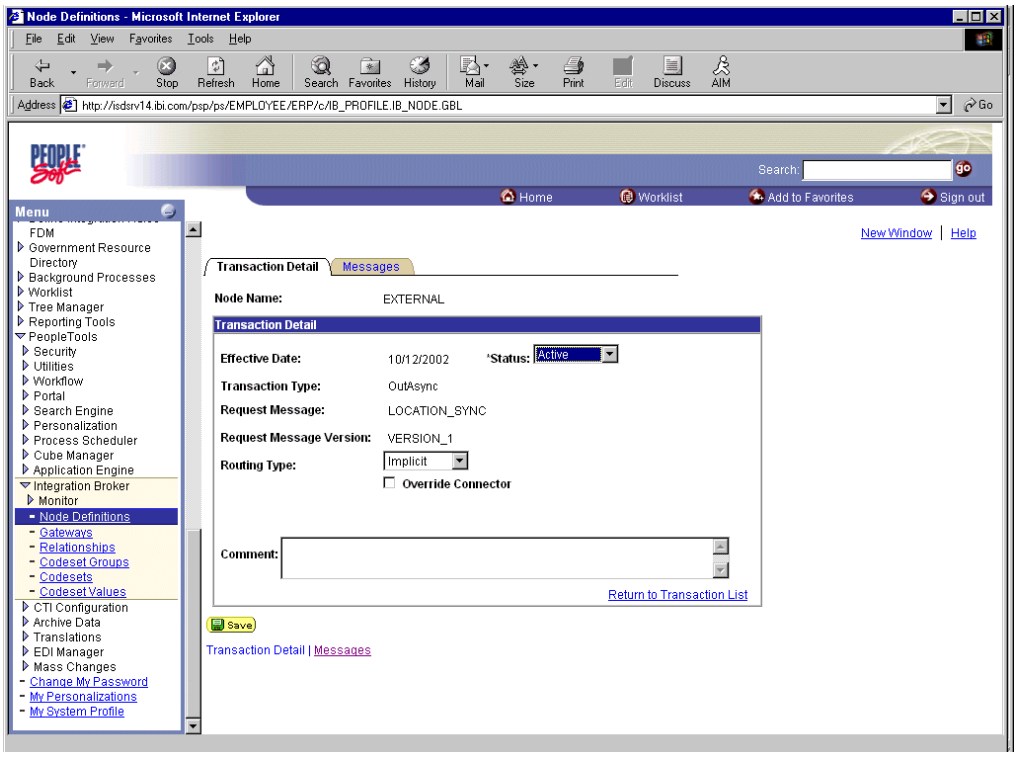
c. In the **Request Message Version** field, specify **VERSION_1**.

In the **Request Message Version** field, specify **VERSION_1**.

8. Click **Add**.

The Transaction Detail pane is displayed, as shown in Figure D–8.

Figure D–8 Transaction Detail Pane



Perform the following steps:

a. Verify that the **Routing Type** is **Implicit**.

b. Click **Save**, then click the **Return to Transaction List** link.

c. To ensure that your data entry is not lost, click **Save** again.

You have finished creating and configuring the new Gateway Node.

For more information, see "Viewing the PeopleCode for a Message" on page D-26.

D.2 Configuring Application Messaging in PeopleSoft Release 8.1

You can configure PeopleSoft 8.1 to send an asynchronous outbound message to the Simple File Handler.

To configure application messaging in PeopleSoft 8.1:

1. Create and configure a new Message Node.
2. Ensure the message is active and is routed to the proper Message Channel.
3. Configure the Message Channel.
4. Configure the Simple File Handler in the Gateway.

   These tasks are described in detail in the following procedures.

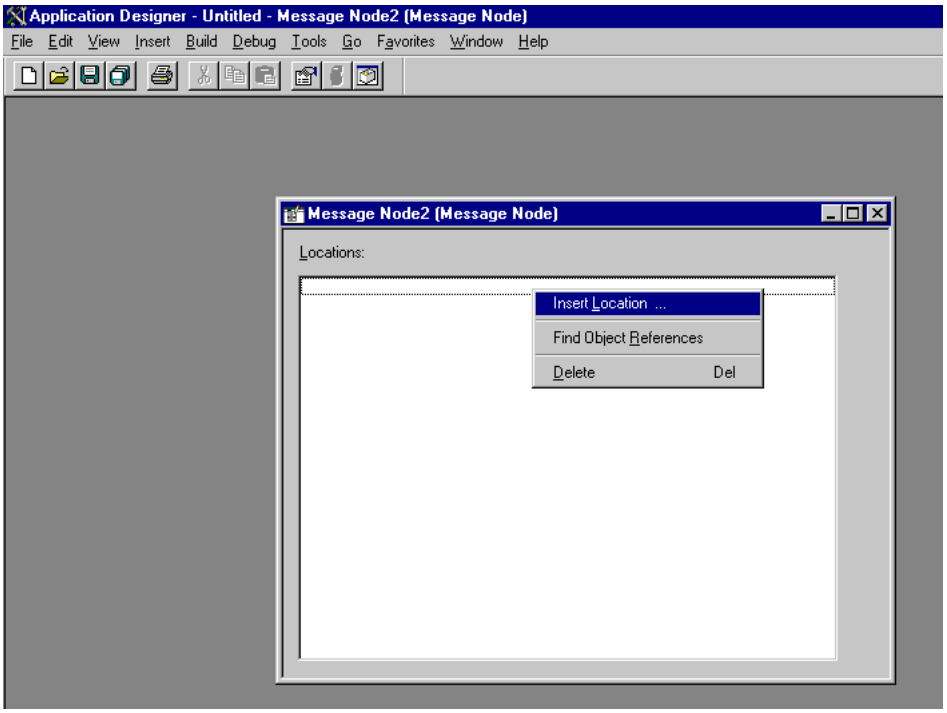
Creating and Configuring a New Message Node

To create and configure a new message node:

1. Select **New** from the File menu and click **Message Node**.

   A Message Node window is displayed, as shown in Figure D–9.

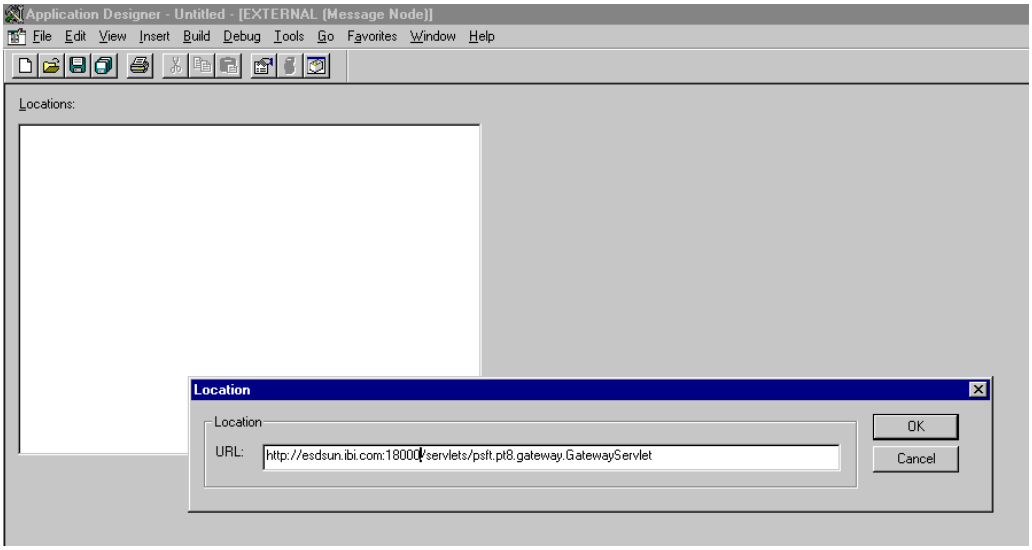
Figure D–9 Message Node Window



2. Right-click anywhere inside the white space and select **Insert Location**.

   The Location URL box is displayed, as shown in Figure D–10.

Figure D–10 Location URL Box



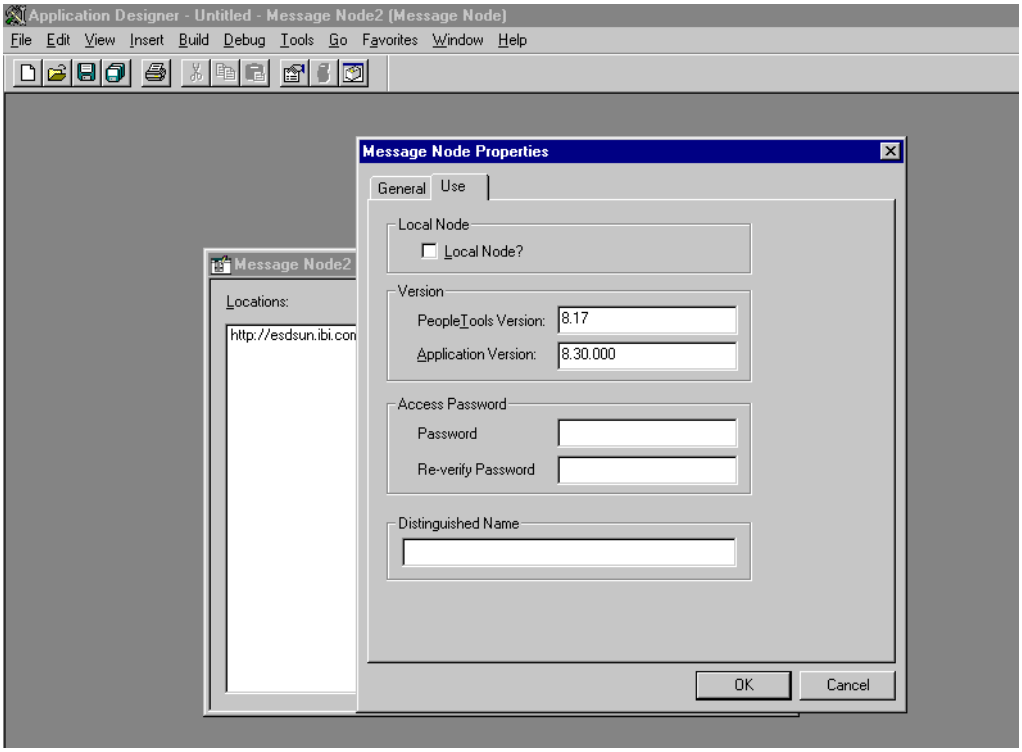
3. Enter the following URL for the PeopleSoft Application Gateway (handler directory):

   host name:*port*/servlets/psft.pt8.gateway.GatewayServlet

Where `host name` is the host name of your PeopleSoft Web server and `port` is the socket on which the server is listening. The characters you enter after `host name` are case-sensitive.

4. Click **OK**.
5. Display the Message Node Properties dialog, as shown in Figure D–11.

Figure D–11 Message Node Properties Dialog

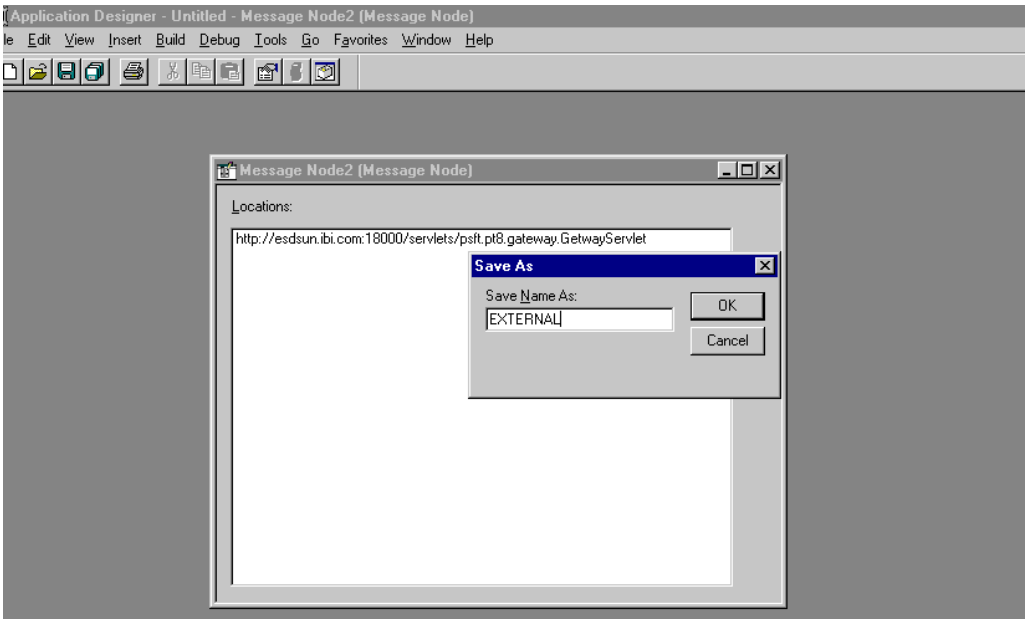


Perform the following steps:

a. Select the **Use** tab.
b. In the text boxes, enter the PeopleTools and Application Version numbers.
c. Click **OK**.

6. Display the Save As dialog, as shown in Figure D–12.

Figure D–12 Save As Dialog



7. To save the Message Node, click **OK**.

   It is recommended that you name your first (trial) message node EXTERNAL. After successfully configuring and sending messages using this node, you can create additional message nodes with names appropriate for your application.

   If you intend to migrate this message node to a different PeopleSoft environment (for example, from Test to QA), you can create a PeopleSoft project and insert the Message Node into the project.

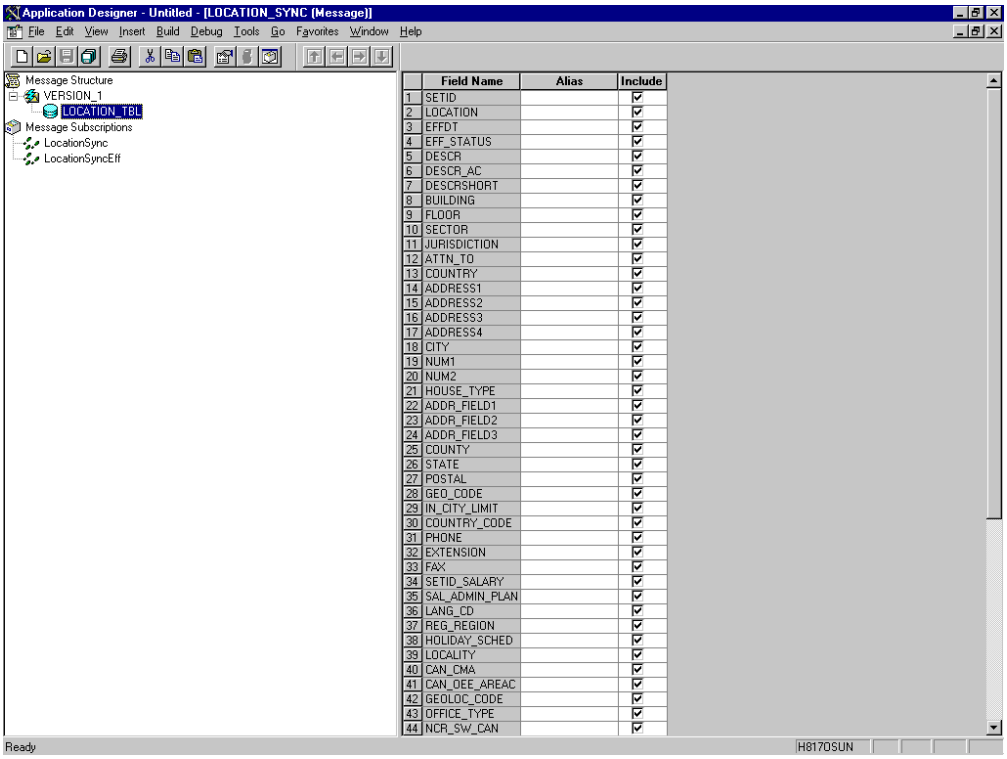
   You have finished creating and configuring the message node.

Ensuring the Message Is Active and Is Routed Correctly

To ensure that the message is active and is routed to the proper message channel:

1. Open Application Designer.
2. On the **File** menu, point to **Open**, click **Message**, and open the **LOCATION_SYNC** message, as shown in Figure D–13.

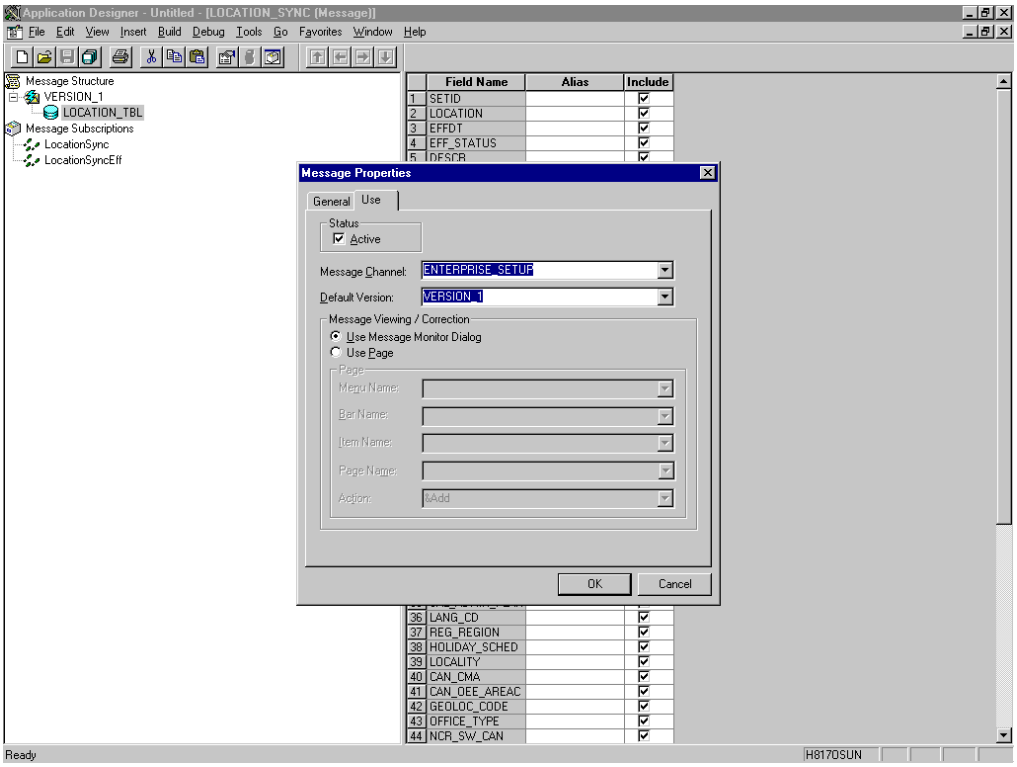
Figure D–13 LOCATION_SYNC Message



3. To view the fields that are included in the message, highlight **LOCATION_TBL**.
4. Right-click **LOCATION_TBL** and select **Properties**.

   The Message Properties dialog is displayed, as shown in Figure D–14.

Figure D–14 Message Properties Dialog



Perform the following steps:

a. Select the **Use** tab.

b. Ensure the **Status** check box is selected, which indicates that the message is active.

c. From the Message Channel list, select **ENTERPRISE_SETUP**.

d. From the Default Version list, select **VERSION_1** (messages can have multiple versions).

5. Click **OK**.
6. Save the message.

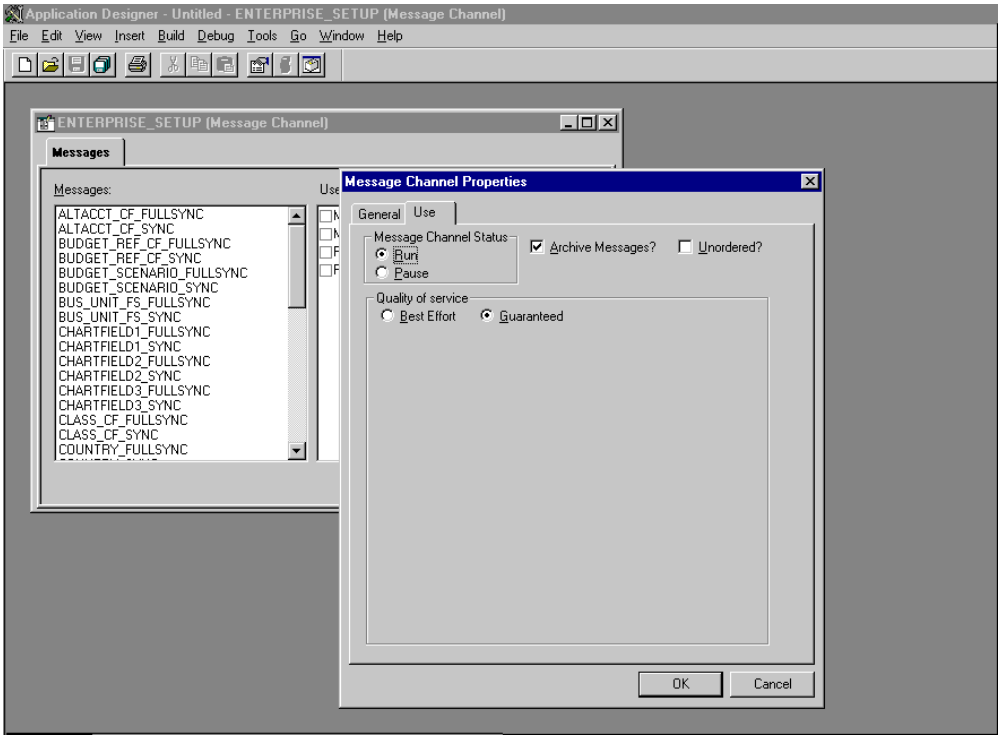
Configuring the Message Channel

To configure the message channel:

1. From the **File** menu, choose **Open** and click **Message Channel**.
2. To open the **ENTERPRISE_SETUP Message Channel**, select **ENTERPRISE_SETUP**.
3. Right-click **ENTERPRISE_SETUP** and select **Properties**.

   The Message Channel Properties dialog is displayed, as shown in Figure D–15.

Figure D–15 Message Channel Properties Dialog



Perform the following steps:

a. Select the **Use** tab.

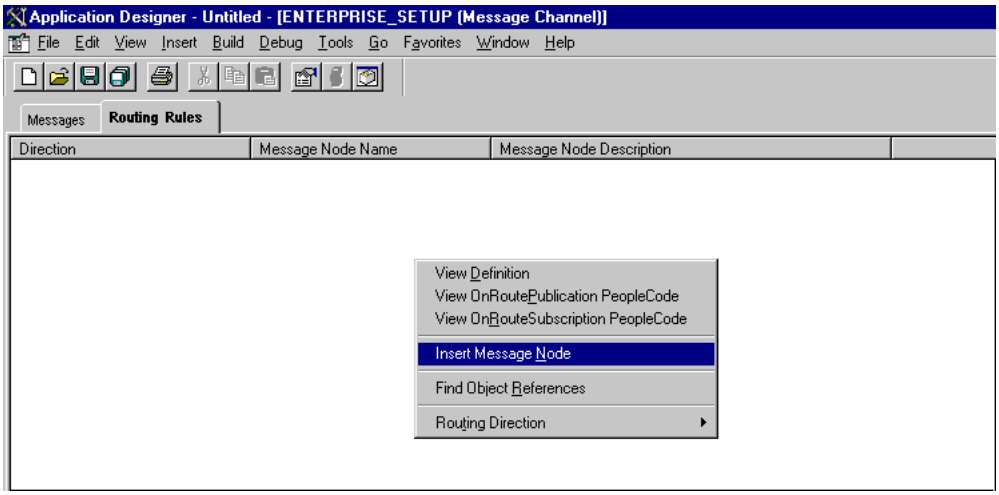
b. Ensure that the Message Channel status is set to **Run**.

c. Click **OK**.

4. From the left pane, select the **Routing Rules** tab.

The pane is blank, as shown in Figure D–16.

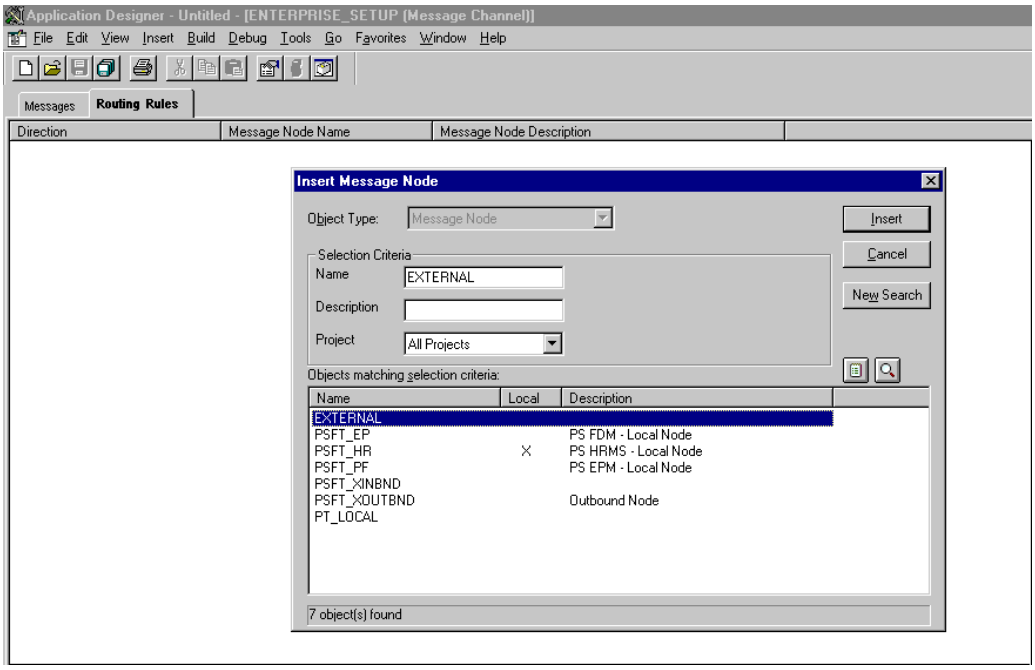
Figure D–16 Routing Rules Pane



5. Right-click the pane and select **Insert Message Node**.

The Insert Message Node dialog is displayed, as shown in Figure D–17.

Figure D–17 Insert Message Node Dialog



Perform the following steps:

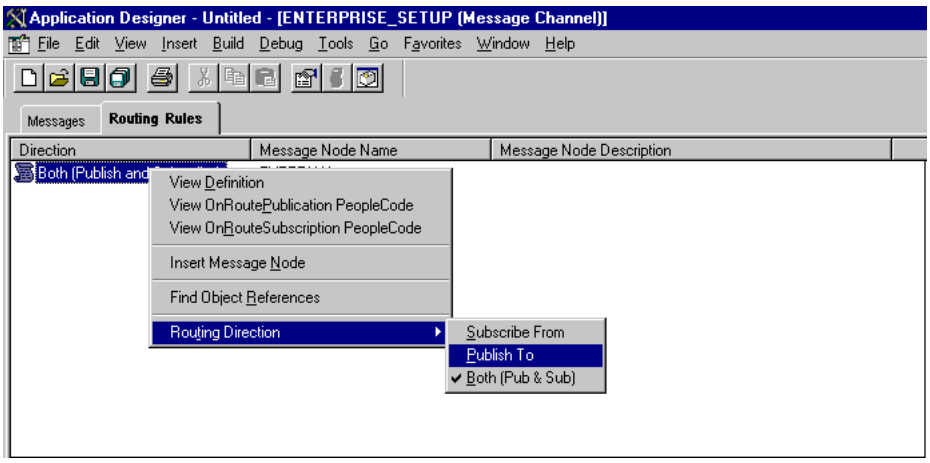
a. Select the message node that you created in "Creating and Configuring a New Message Node" on page D-11, for example, EXTERNAL.

b. Click **Insert**.

6. Click **Cancel**.

Information appears on the Routing Rules tab, as shown in Figure D–18.

Figure D–18 Routing Rules Tab



Perform the following steps:

a. Right-click the message node and point to **Routing Direction**.

b. From the **Routing Direction** menus, select **Publish To**.

7. Save the Message Channel, and if you require it, place it in your project.

   You have finished configuring the Message Channel.

Configuring the Simple File Handler in the Gateway

To configure the Simple File Handler in the Gateway:

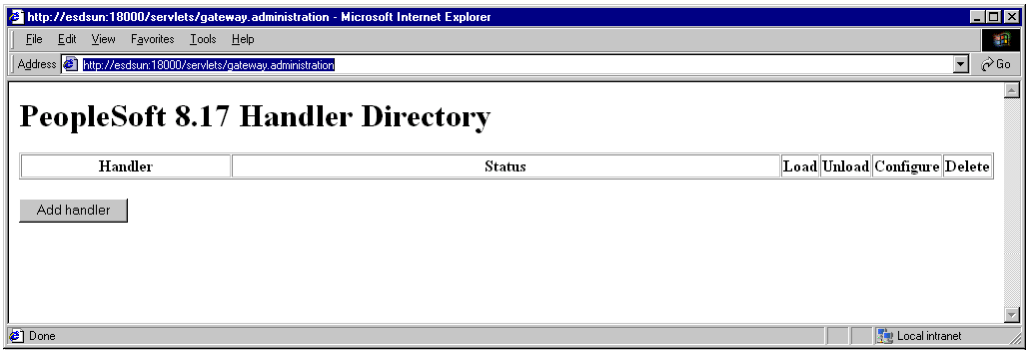
1. In a Web browser, launch the PeopleSoft 8.1 configuration servlet interface (also known as the server gateway) by entering the following URL:

   host name:*port*/servlets/gateway.administration

   Where `host name` is the name of the application server that hosts PeopleSoft and `port` is the port number on which the application server is listening.

   The Handler Directory window is displayed, as shown in Figure D–19.

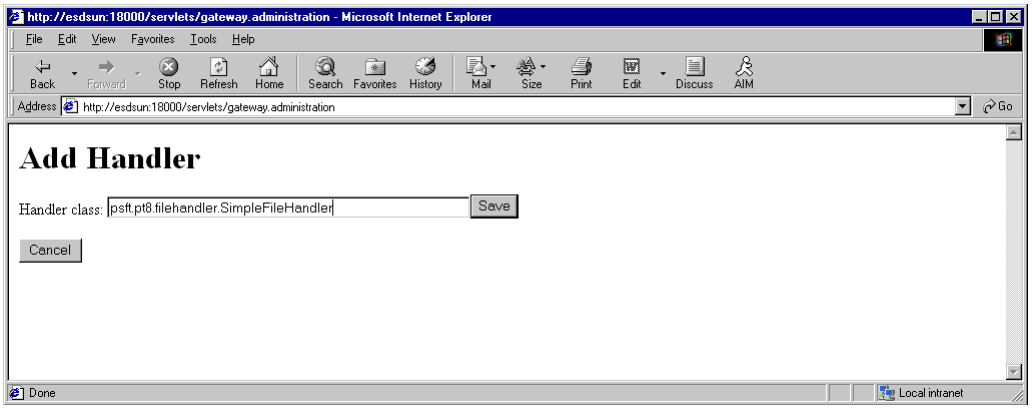
Figure D–19 Handler Directory Window



2. Click **Add Handler**.

   The Add Handler window is displayed, as shown in Figure D–20.

Figure D–20 Add Handler Window



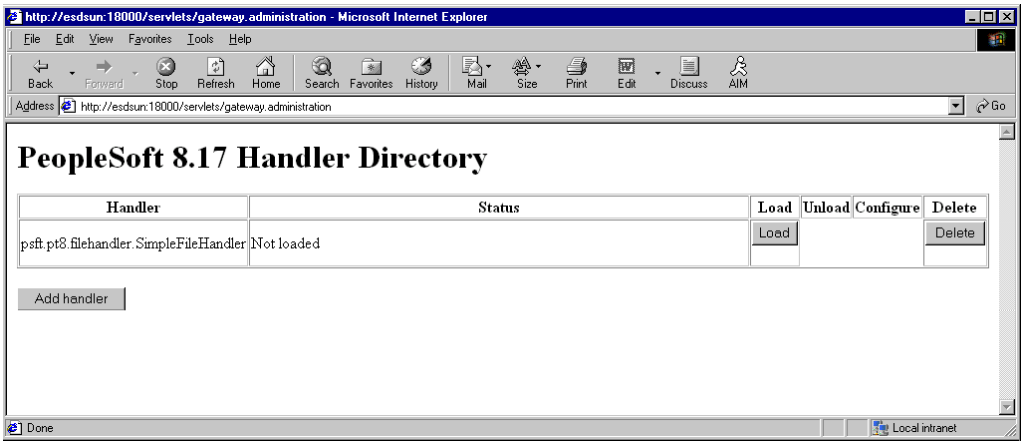
3. Enter the full name of the Simple File Handler class, `psft.pt8.filehandler.SimpleFileHandler`.

Note: The name is case-sensitive.

4. Click **Save**.

   The Handler Directory window is displayed, as shown in Figure D–21.

Figure D–21 Handler Directory Window



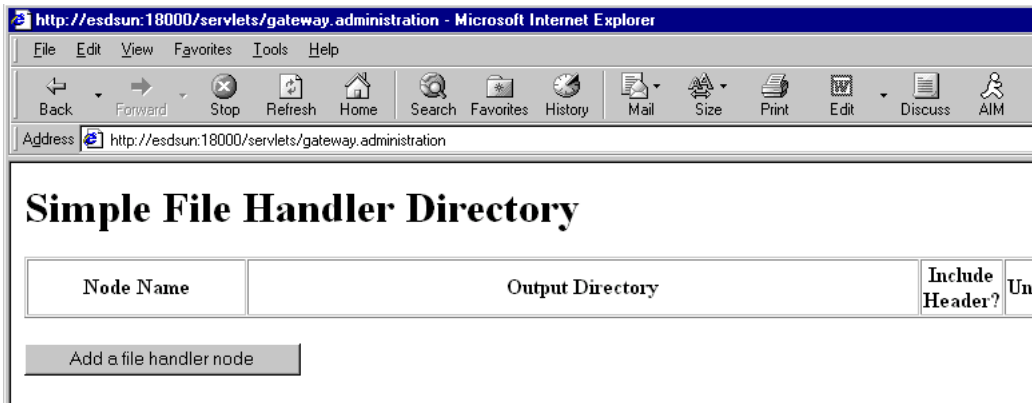
5. To load the handler, click **Load**.

   After the handler loads, "Loaded successfully" appears in the Status column.

6. Click **Configure**.

   The Simple File Handler Directory window is displayed, as shown in Figure D–22.

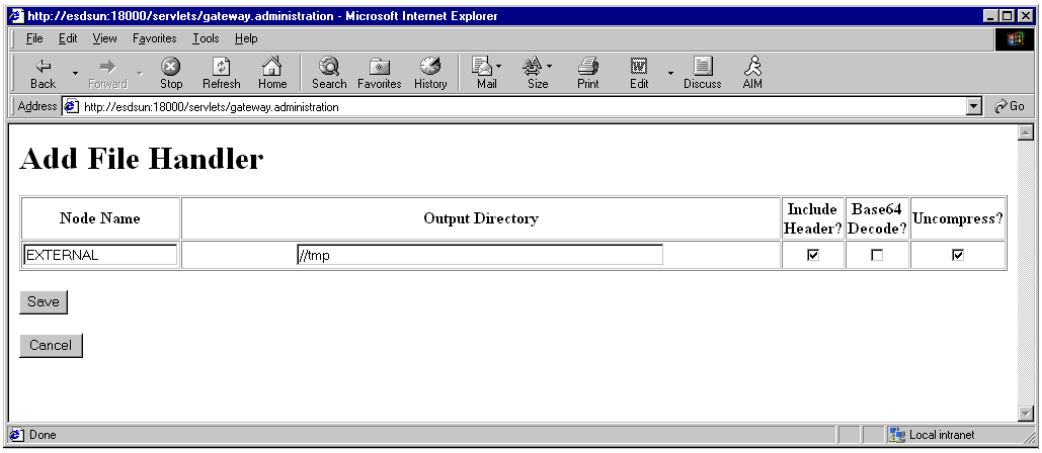
Figure D–22 Simple File Handler Directory Window



7. Click **Add a file handler node**.

   The Add File Handler window is displayed, as shown in Figure D–23.

Figure D–23 Add File Handler Window



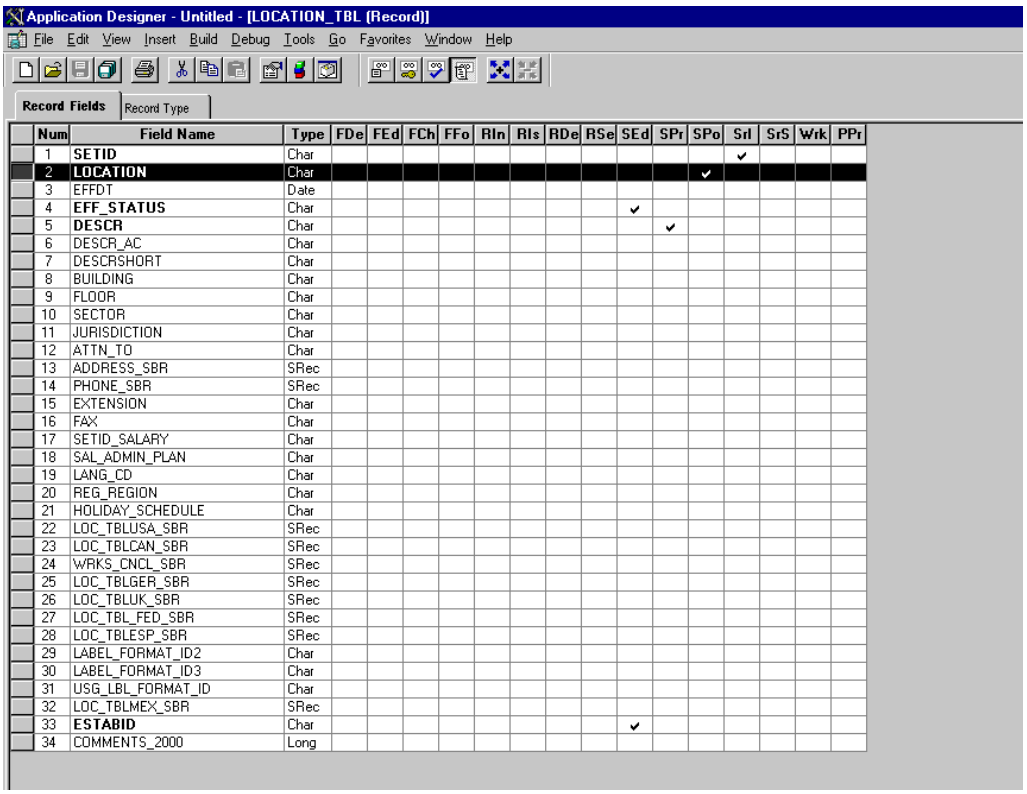
8. In the Node Name field, enter the name of the message node that you created in "Creating and Configuring a New Message Node" on page D-11, for example, EXTERNAL.

D.3 Viewing the PeopleCode for a Message

Messages are initiated by the PeopleCode that is attached to a record. Usually, this record is one of the records associated with the message itself.

1. Open Application Designer, as shown in Figure D–24.

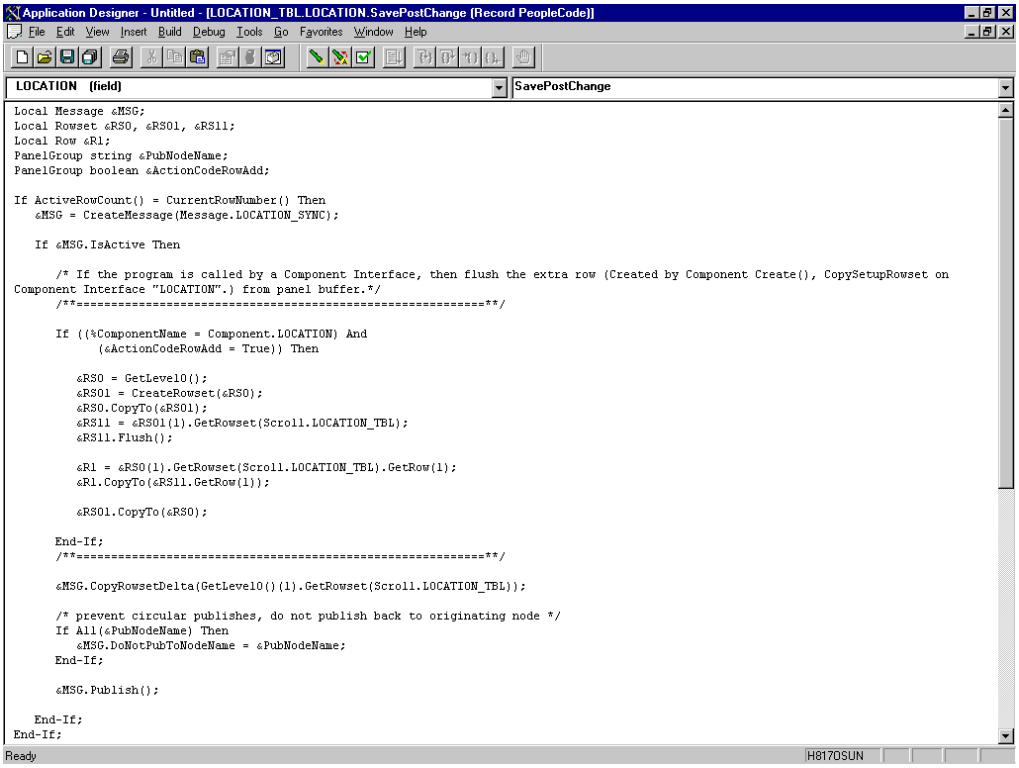
Figure D–24 Application Designer



2. On the **Record Fields** tab, select the **LOCATION_TBL** record.
3. Select the PeopleCode display option.
4. Select the **Save Post Change (SPo)** box for the **LOCATION** field.

The following window displays the PeopleCode that initiates a LOCATION_SYNC message, as shown in Figure D–25.

Figure D–25 PeopleCode



For more information about PeopleCode, consult your PeopleSoft Online Library.

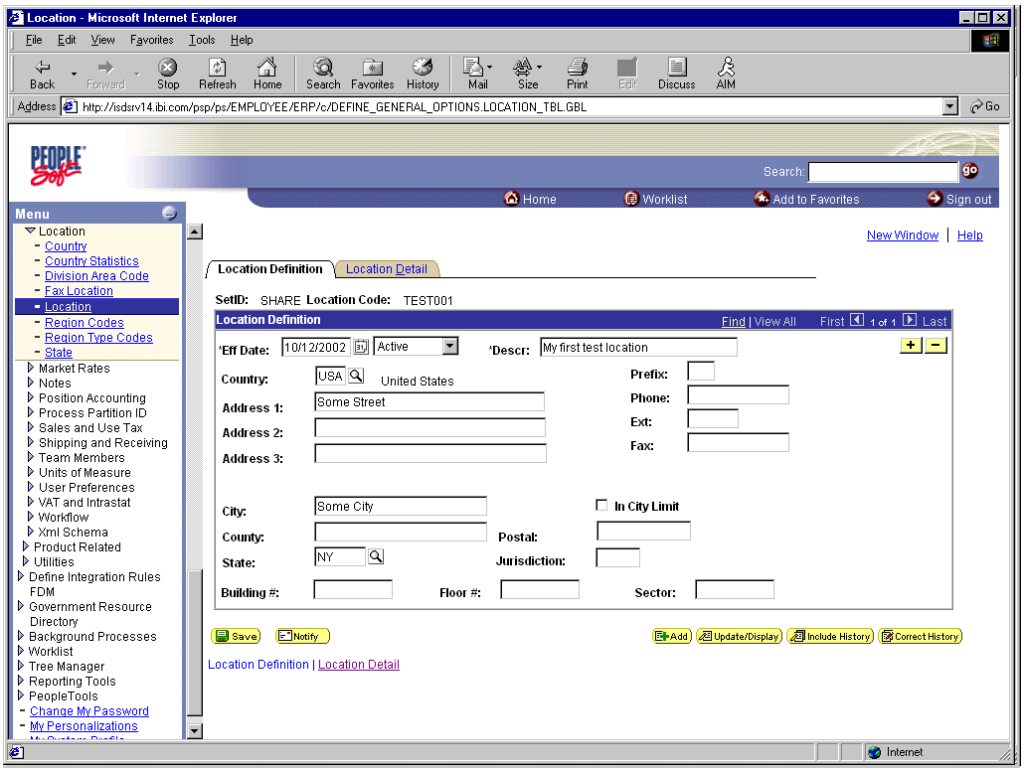
You have finished viewing the PeopleCode for a message. You can now test Integration Broker (in PeopleSoft 8.4) or Application Messaging (in PeopleSoft 8.1).

D.4 Testing the Integration Broker

To test the Integration Broker by generating a message, you can navigate to the Location Transaction window and add, update, or delete a location entry in your application. Depending on your application, the way you navigate varies.

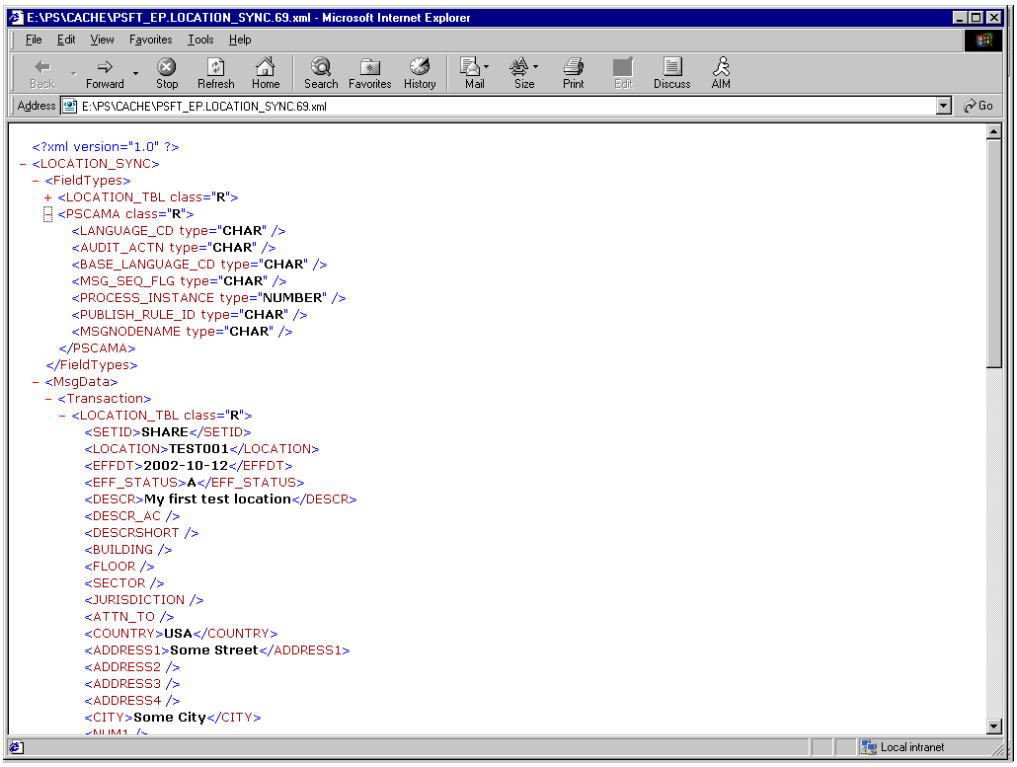
An example that illustrates a Financials 8.4 application where a new location with a SetID of SHARE and a Location Code of TEST001 was added, as shown in Figure D–26.

Figure D–26 Financials 8.4 Application



A portion of the XML output is shown in Figure D–27.

Figure D–27 XML Output



Note: The name of the file is `PSFT_EP.LOCATION_SYNC.69.xml`, which is the concatenation of `PSFT_EP` (the local Publishing Node), the name of the message, and the number of the Publication ID.

If you cannot send a message successfully, PeopleSoft provides a set of tools for monitoring the progress of your messages. In release 8.1, you use a tool called the Application Messaging Monitor. In release 8.4, you use the Monitor Menu in the Integration Broker.

For a complete description on how to isolate and resolve problems with your messaging environment, consult your PeopleSoft Online Library. If you are still unable to send your XML file, the PeopleSoft Customer Connection can help solve your problem.

D.5 Using Outbound Synchronous Messages

Starting with PeopleTools 8.4, you can send outbound synchronous messages. From a high-level point of view, the primary difference between outbound synchronous and asynchronous is that with outbound asynchronous, the transaction is completed whether the message is actually sent or received.

For synchronous outbound messages:

- The transaction must wait for a response from the external system before continuing.
- The transaction must process the response message.
- The external system must ensure that the response message is correctly formatted.

Oracle Application Adapter for PeopleSoft can work with PeopleSoft outbound synchronous messages. Outbound synchronous messages involve additional configuration steps, both within PeopleSoft and in Oracle WebLogic Server. This topic briefly describes the configuration requirements within PeopleSoft.

Note: The instructions in this topic build upon the instructions for outbound asynchronous messages. It is strongly recommended that you familiarize yourself with outbound asynchronous messaging before attempting outbound synchronous. For more information on outbound asynchronous messages, see "Configuring Integration Broker in PeopleSoft 8.4" on page D-2.

Ensure that both outbound and inbound messages are created and active. PeopleSoft provides template examples called IB_INST_VER_SYNC_MSG and IB_INST_VER_RESP_MSG. For information on examining these messages, see "Ensuring the Message Is Active and Is Routed Correctly" on page D-3.

D.5.1 Configuring Outbound Synchronous Messages

You can use an existing node, or you can create a new node to configure outbound synchronous messages. For more information on creating and configuring a node, see "Creating and Configuring a New Gateway Node" on page D-7. In either case, you must set up your outbound synchronous transaction.

The following example uses a node and transaction delivered by PeopleSoft. However, this example is for illustrative purposes only and does not actually work as delivered

without additional steps. As of Financials release 8.42, there are no preconfigured outbound synchronous transactions that you can use for testing purposes.

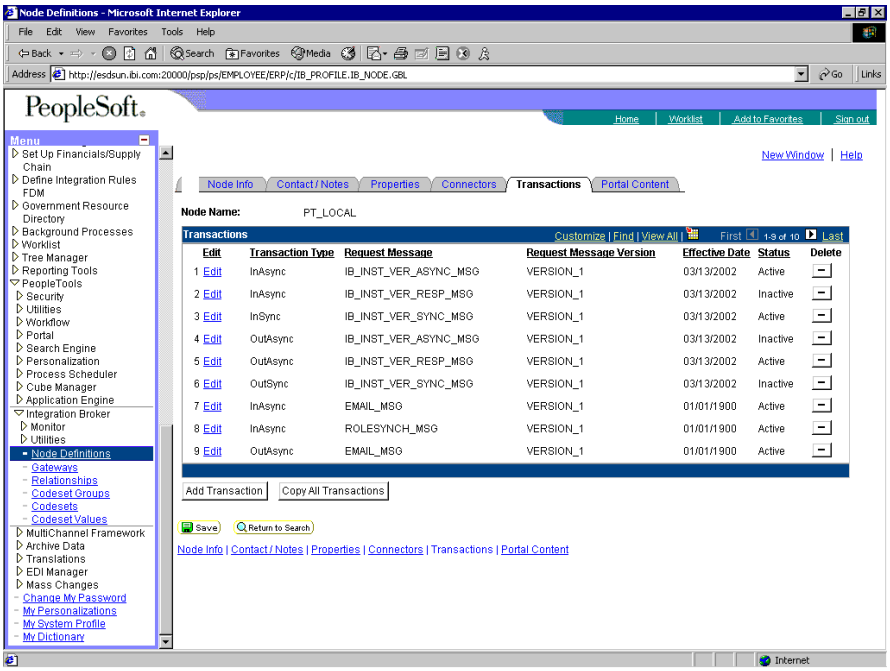
Configuring an Outbound Synchronous Message

To configure an outbound synchronous message:

1. Navigate to the **Node Definitions** page and open the **PT_LOCAL** node.
2. Click the **Transactions** tab.

   The Transactions pane is displayed, as shown in Figure D–28.

Figure D–28 Transactions Pane

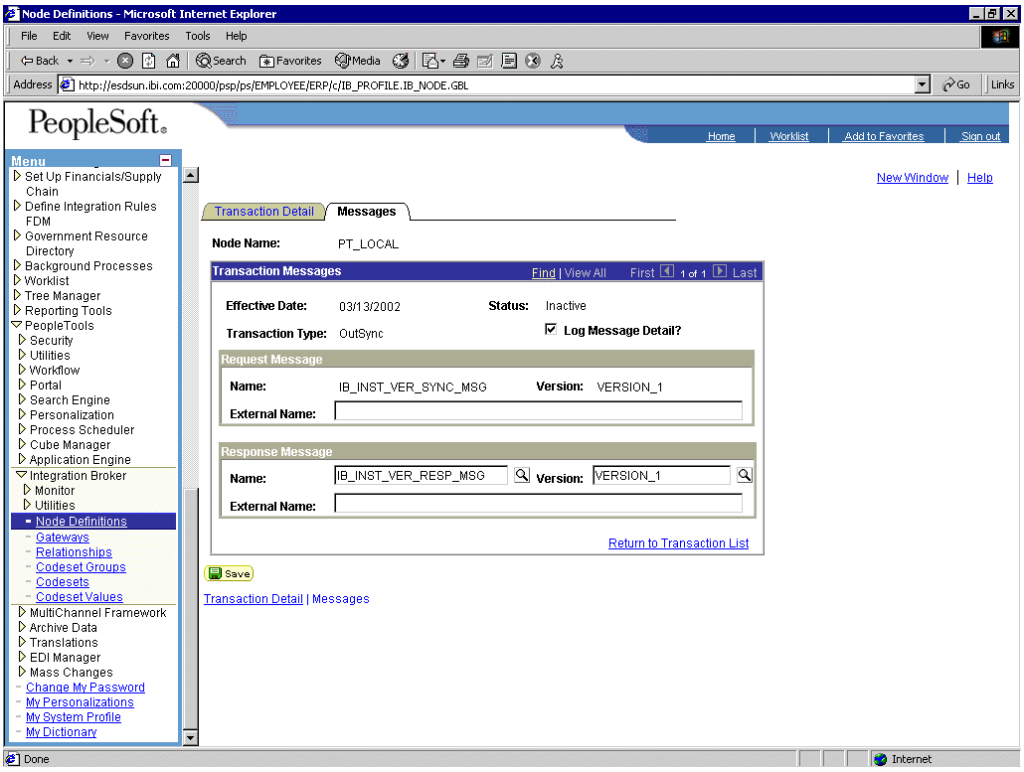


   One outbound synchronous message, `IB_INST_VER_SYNC_MSG`, appears in the Transaction Type list.

3. Click the **Edit** link in the `IB_INST_VER_SYNC_MSG` row.

   The following pane is displayed, as shown in Figure D–29.

Figure D–29 Message Tab



4. Click the **Messages** tab.

Both request and response messages appear. The target system must ensure that the response message follows the format of the request message. As the target system is your Oracle WebLogic Server, you must transform the XML that is sent and returned from your final destination.

> **Note:** You must use the PeopleSoft-supplied HTTP target connector when you are working with synchronous outbound messages. You cannot use the TCPIP84TARGET connector for outbound synchronous messages.

D.5.2 Viewing the PeopleCode for a Synchronous Message

The sample PeopleCode in the following example is for a synchronous outbound message. It differs from asynchronous outbound in that it must handle a response message.

Viewing the PeopleCode for a Financials Synchronous Outbound Message

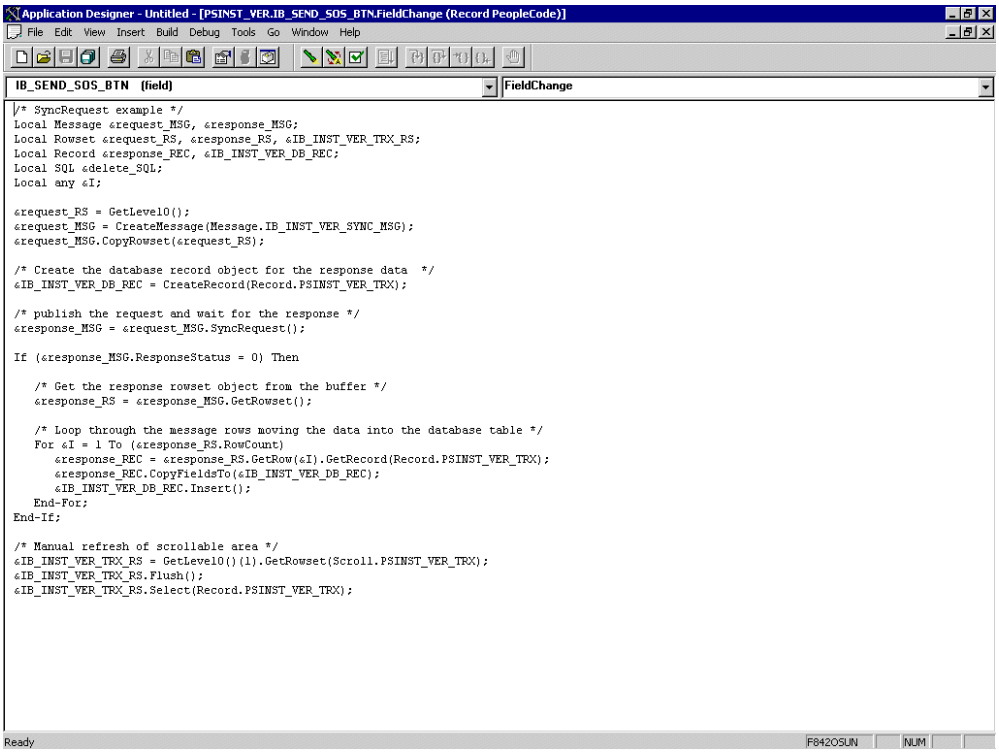
The following sample code is supplied with the Financials application and is associated with the two messages IB_INST_VER_SYNC_MSG and IB_INST_VER_RESP_MSG.

To view the code, perform the following steps:

1. From Application Designer, open the **PSINST_VER** record.
2. Select the **PeopleCode** display option.
3. Select the **Field Change (FCh)** box for the **IB_SEND_SOS_BTN** field.

The following window is displayed, as shown in Figure D–30.

Figure D–30 Field Change Box



D.6 Generating Events Using PeopleTools Tutorial

This section provides a tutorial that walks you through the PeopleSoft event generation process using PeopleTools version 8.48 and 8.49. The tutorial uses the PeopleTools version 8.48.02 and 8.90 Financial / SCM application. As a result, if you are using a different platform, then correlate the terms and commands specific to that operating system. For more information, refer to the appropriate user guide for each specific component.

D.6.1 Configuring PeopleSoft Services

This section describes how to configure PeopleSoft services.

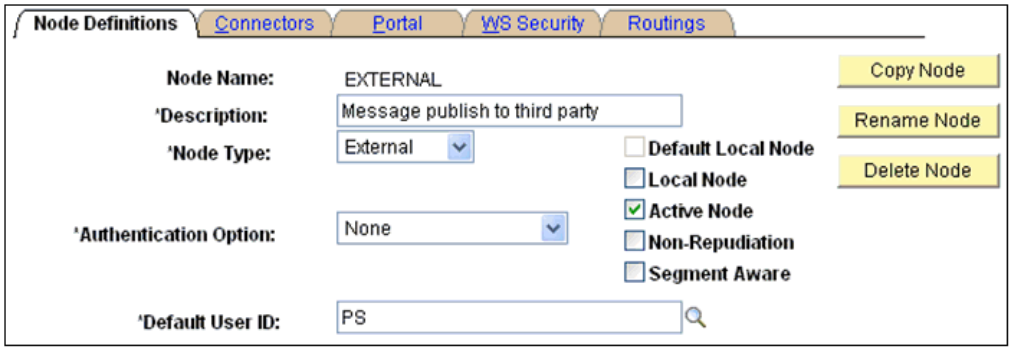
Adding a Remote Node

To add a remote node:

1. Logon to PeopleSoft using the browser-based GUI (Pure Internet Architecture).
2. Select **PeopleTools**, **Integration Broker**, **Integration Setup**, followed by **Nodes**.

   The Node Definitions tab is displayed, as shown in Figure D–31.

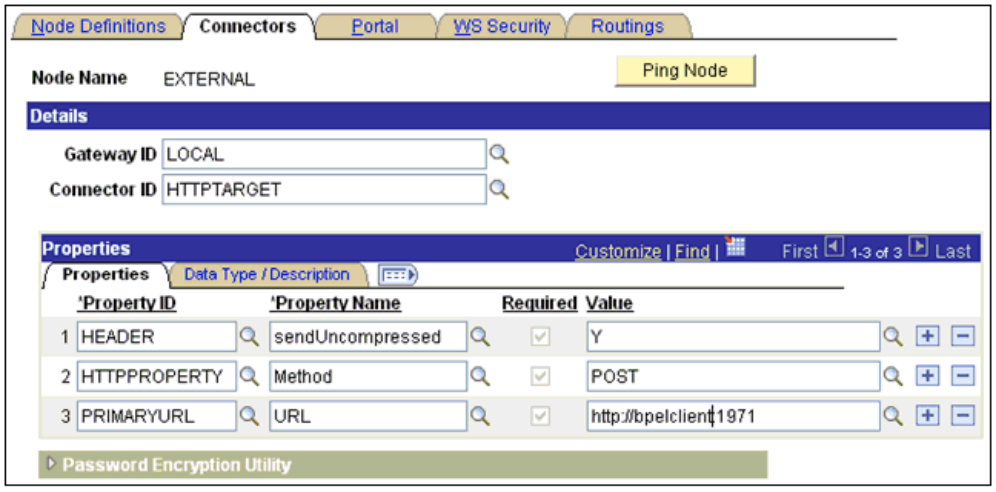
Figure D–31 Node Definitions Tab



3. Perform the following steps:
   a. In the Node Name field, type a name for the new node definition, for example, **EXTERNAL**.
   b. In the Description field, type a brief description for the new node definition.
   c. From the Node Type drop-down list, select **External**.
   d. From the Authentication Option drop-down list, ensure that the default option, **none**, is selected.
   e. In the Default User ID field, type the user ID that is being used by the PeopleSoft system, for example, **PS**.
   f. Select the **Active Node** check box.
4. Click the **Connectors** tab.

   The Connectors tab is displayed, as shown in Figure D–32.

Figure D–32 Connectors Tab



5. Perform the following steps:
   a. In the Gateway ID field, type **LOCAL**.
   b. In the Connector ID field, type **HTTPTARGET**.
   c. For the PRIMARYURL value, enter the host and port number of the PeopleSoft adapter instance that is used to listen for events.

d. Leave the default values for the remaining properties.

6. Save your changes.

Selecting a Service

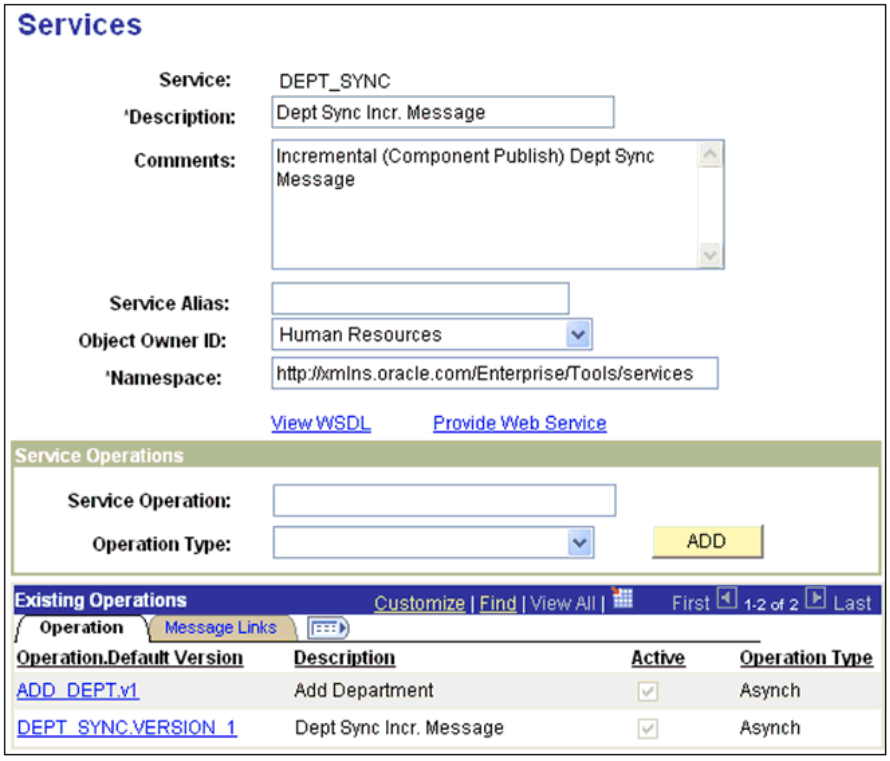
To select a service:

1. Select **PeopleTools**, **Integration Broker**, **Integration Setup**, followed by **Services**.

2. Search for the DEPT_SYNC service and select it.

The DEPT_SYNC Services pane is displayed, as shown in Figure D–33.

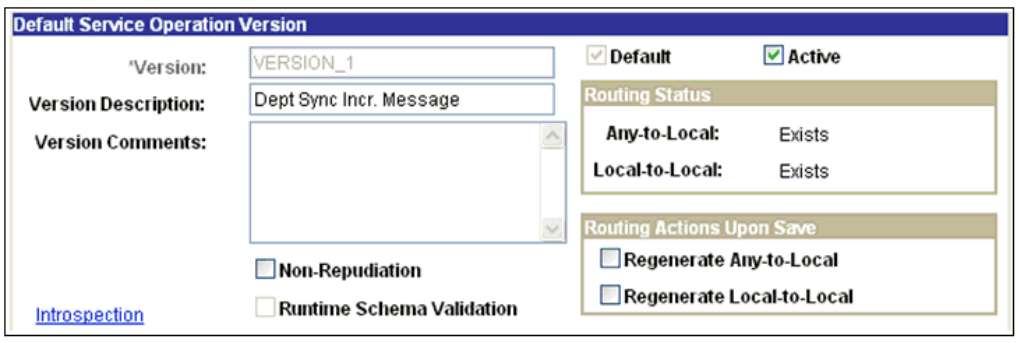
Figure D–33 DEPT_SYNC Services Pane



3. From the Existing Operations section on the lower-left, click the **DEPT_SYNC.VERSION_1** service operation.

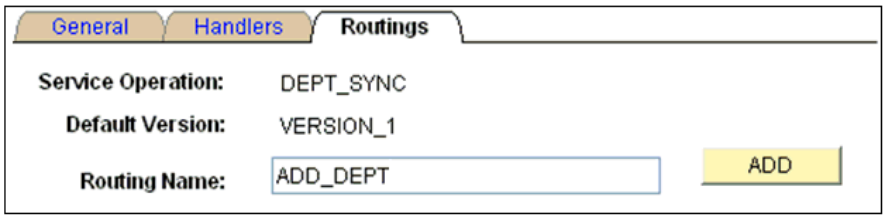
The Service Operation - General pane is displayed, as shown in Figure D–34.

Figure D–34 Service Operation - General Pane



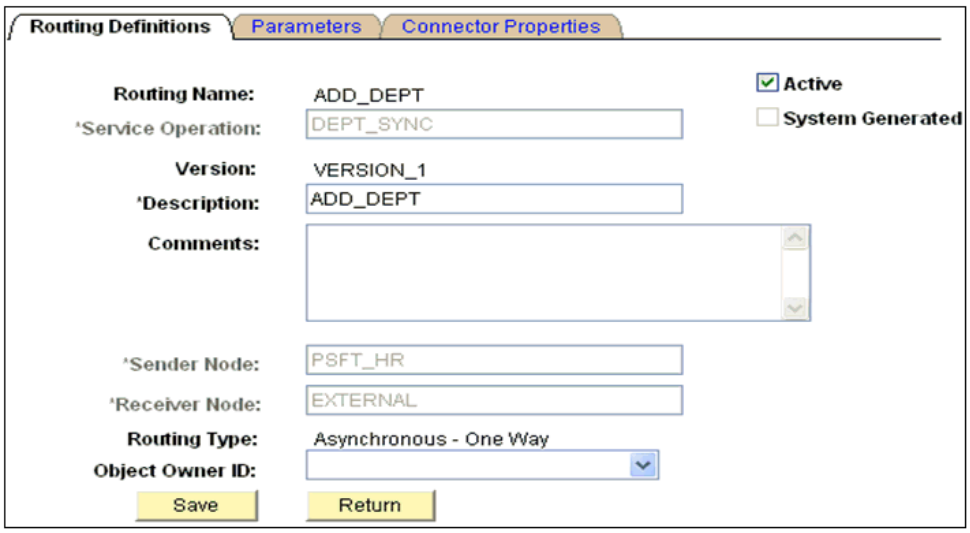
4. Click the **Active** check box.
5. Click the **Routings** tab to add a new routing, as shown in Figure D–35.

Figure D–35 Routings Tab



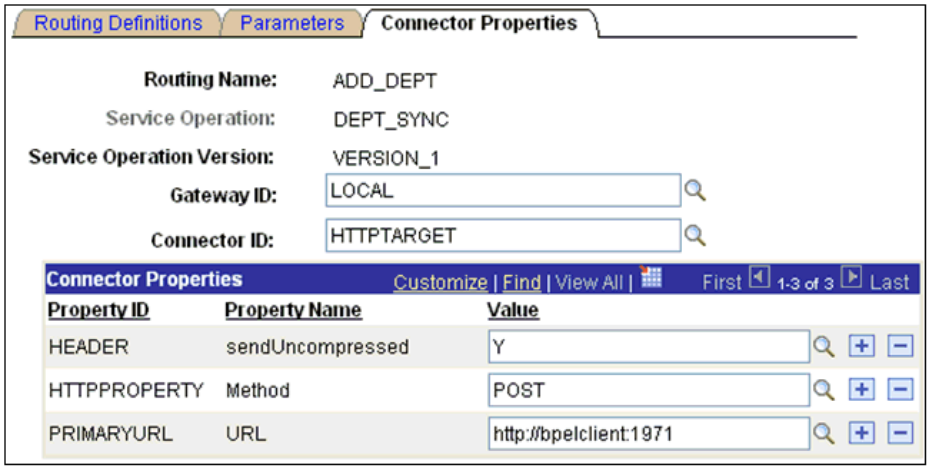
6. In the Routing Name field, type a name for the new routing, for example, **ADD_DEPT**.
7. Click **Add**.
8. Click the **Routing Definitions** tab to add a new routing definition, as shown in Figure D–36.

Figure D–36 Routing Definitions Tab



9. Perform the following steps:
   a. In the Sender Node field, type **PSFT_HR**, which is the default PeopleSoft node that publishes the message.
   b. In the Receiver Node field, type **EXTERNAL**, which is the new node that has been created to subscribe the message published by PeopleSoft.
10. Click the **Connector Properties** tab, as shown in Figure D–37.

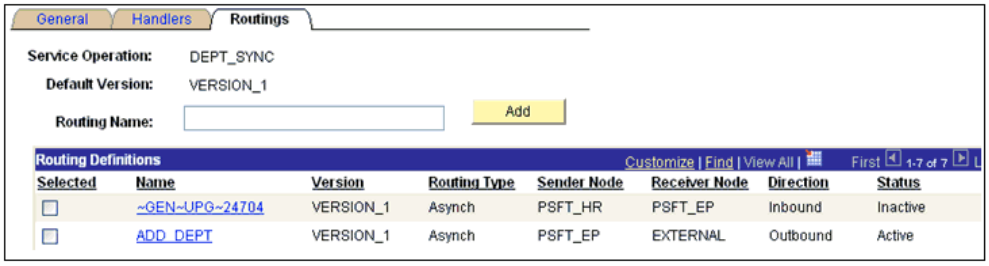
Figure D–37 Connector Properties Tab



11. Perform the following steps:
    a. In the Gateway ID field, type **LOCAL**.
    b. In the Connector ID field, type **HTTPTARGET**.
    c. For the PRIMARYURL value, enter the host and port number of the PeopleSoft adapter instance that is used to listen for events.
12. Click **Save** and then click **Return**.

    You are returned to the Routing Definitions pane. Notice that the new routing definition (ADD_DEPT) is now added to the list, as shown in Figure D–38.

Figure D–38 Routing Definitions Pane



13. Click **Save** to save the details of the Service Operation.
14. Click the **Return to Service** link to return to the Services pane.
15. Click **Save** on the Services pane.

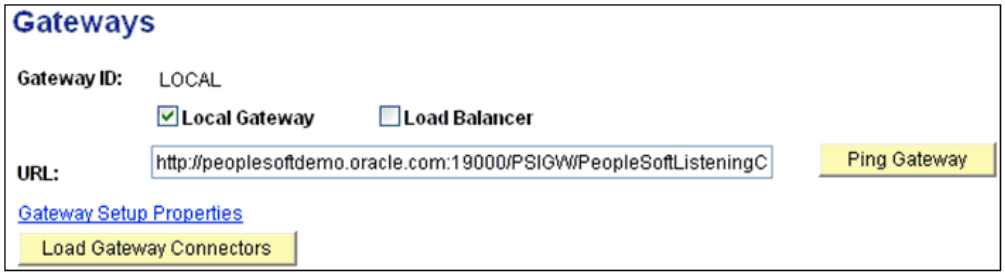
Activating the Gateway

To activate the gateway:

1. Select **PeopleTools**, **Integration Broker**, **Configuration**, followed by **Gateways**.
2. Search for the Integration Gateway ID, for example, **Local** and select it.

   The Gateways pane is displayed, as shown in Figure D–39.

Figure D–39 Gateways Pane



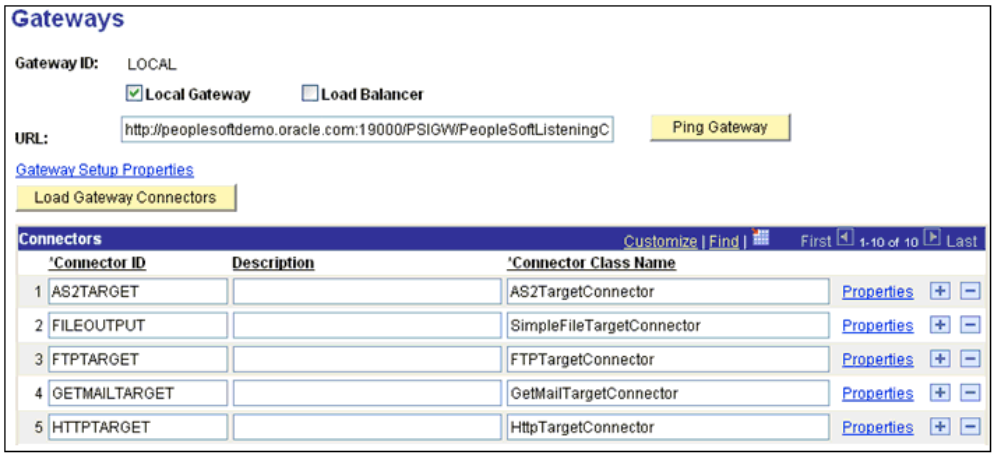
3. Click **Ping Gateway**.

   A new browser window is displayed, which shows that the gateway is active, as shown in Figure D–40.

Figure D–40 New Browser Window

4. Close the new browser window to return to the Gateways pane, as shown in Figure D–41.

Figure D–41 Gateways Pane



5. Ensure that **HTTPTARGET** is listed in the Connectors section. If it is not listed, click **Load Gateway Connectors** to refresh the available connectors.

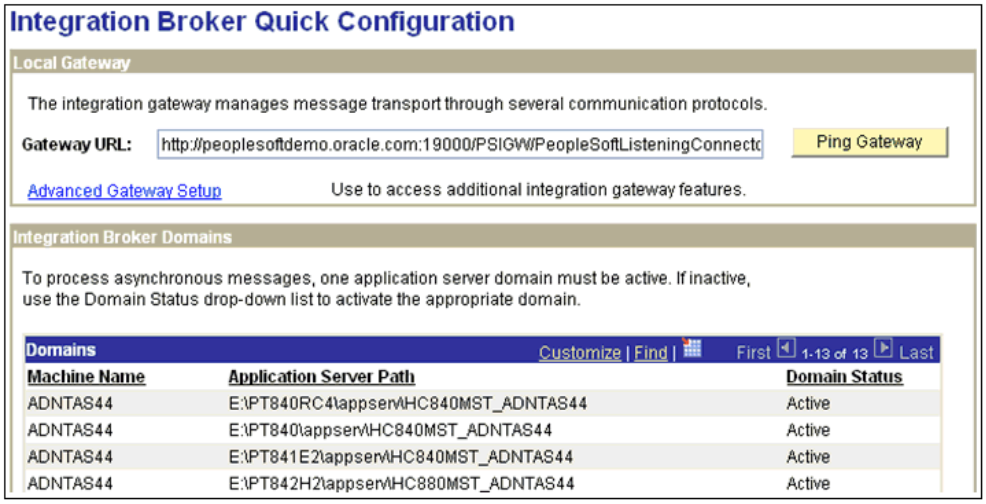
Activating the Domain

To activate the domain:

1. Select **PeopleTools**, **Integration Broker**, **Configuration**, followed by **Quick Configuration**.

   The Quick Configuration pane is displayed, as shown in Figure D–42.

Figure D–42 Quick Configuration Pane



2. Ensure that the domain is active.

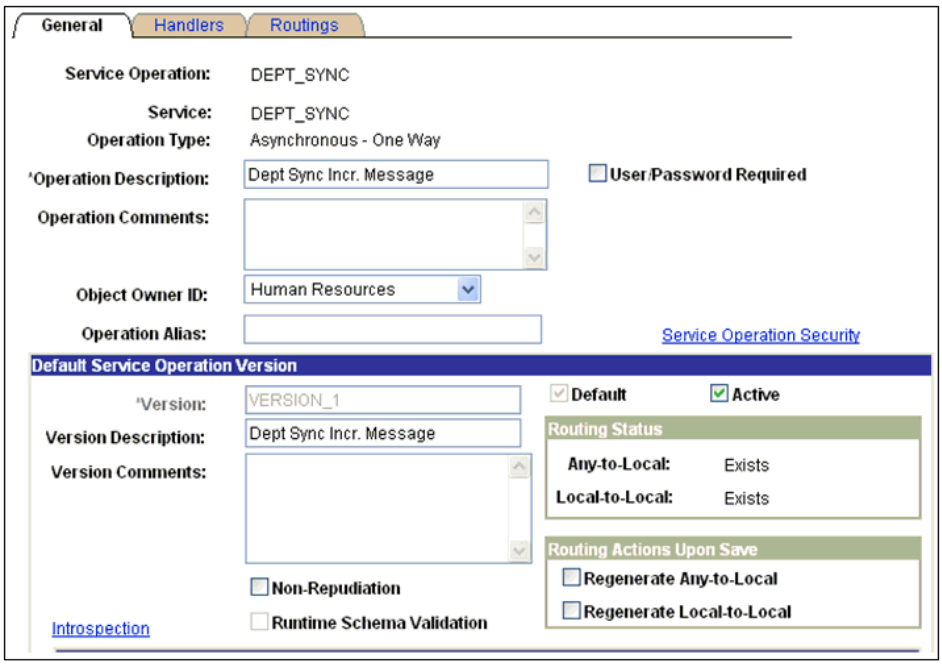
Activating the Service

To activate the service:

1. Select **PeopleTools**, **Integration Broker**, **Integration Setup**, followed by **Services**.

   The Services pane is displayed, as shown in Figure D–43.

Figure D–43 Services Pane



2. Ensure that the service is active.

Activating the Service Operation (Queue and Message Node)

To activate the service operation:

1. Select **PeopleTools**, **Integration Broker**, **Configuration**, **Integration Setup**, followed by **Services**.

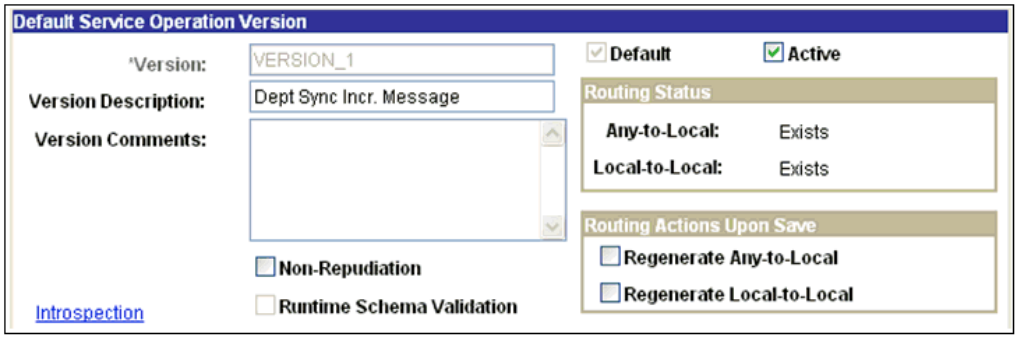
   The Services pane is displayed, as shown in Figure D–44.

Figure D–44 Services Pane

2. From the Existing Operations section on the lower-left, click the **DEPT_SYNC.VERSION_1** service operation.

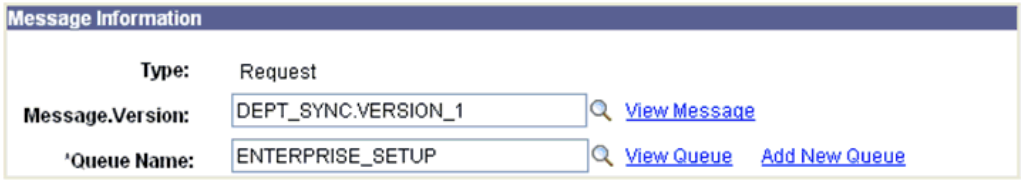
   The Service Operation - General pane is displayed, as shown in Figure D–45.

Figure D–45 Service Operation - General Pane



3. In the message information section on the bottom of the page, note the value in the Queue Name field of the service operation, as shown in Figure D–46.

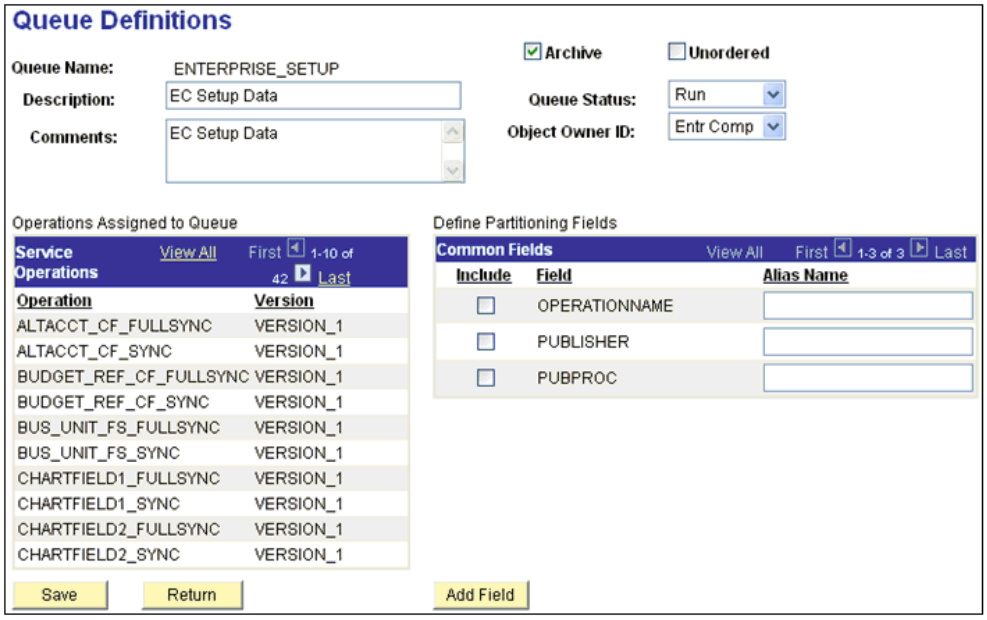
Figure D–46 Message Information Section



4. Click the **View Queue** link.

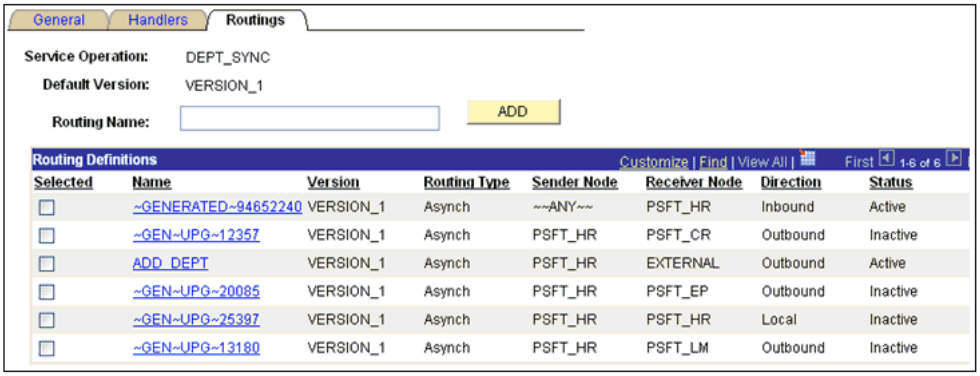
   The Queue Definitions pane is displayed, as shown in Figure D–47.

Figure D–47 Queue Definitions Pane



5. Ensure that the Queue Status drop-down list has **Run** selected.
6. Click **Return** to return to the Service operation pane.
7. Click the **Routings** tab, as shown in Figure D–48.

Figure D–48 Routings Tab



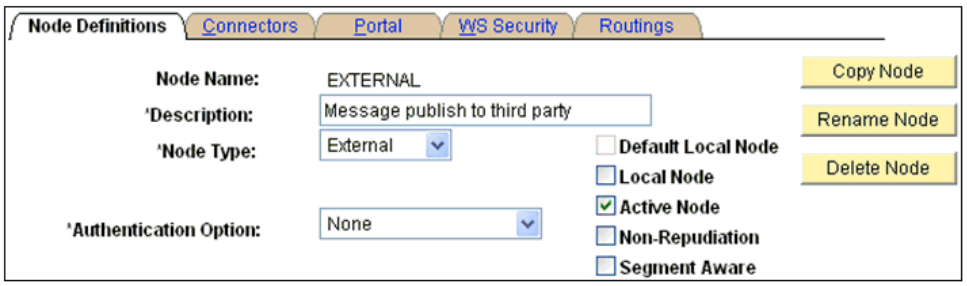
8. Ensure that the routings are active.
9. Click the **Return to Service** link on the bottom of the pane to return to the Services pane.
10. Click **Return to Search** to go to the Services search pane.

    In the above steps, if the status has been activated in any of the panes for any of the components, then make sure to save the status at the appropriate pane and the respective components.

11. Select **PeopleTools**, **Integration Broker**, **Configuration**, **Integration Setup**, **Services**, followed by **Nodes**.

    The Node Definitions pane is displayed, as shown in Figure D–49.

Figure D–49 Node Definitions Pane



12. Ensure that the status of the External node is active.

    This completes the configuration on the PeopleSoft side.

D.6.2 Triggering the Event in PeopleSoft

This section describes how to trigger the event in PeopleSoft.

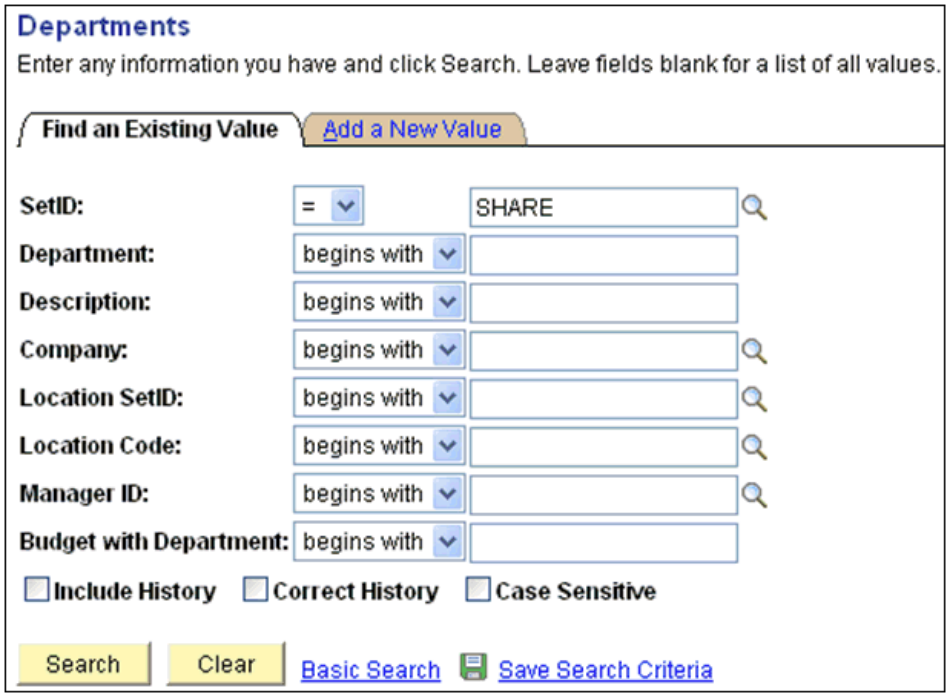
Triggering the Event

To trigger the event:

1. Logon to PeopleSoft using the browser-based GUI (Pure Internet Architecture).
2. Navigate to **Main Menu**, **Set up HRMS**, **Foundation Tables**, followed by **Departments**.

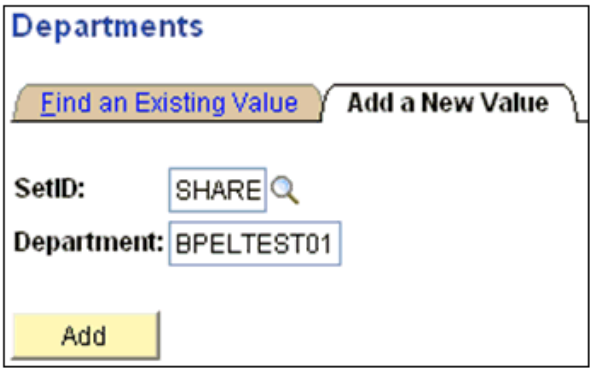
   The Departments pane is displayed, as shown in Figure D–50.

Figure D–50 Departments Pane



3. Click the **Add a New Value** tab, as shown in Figure D–51.

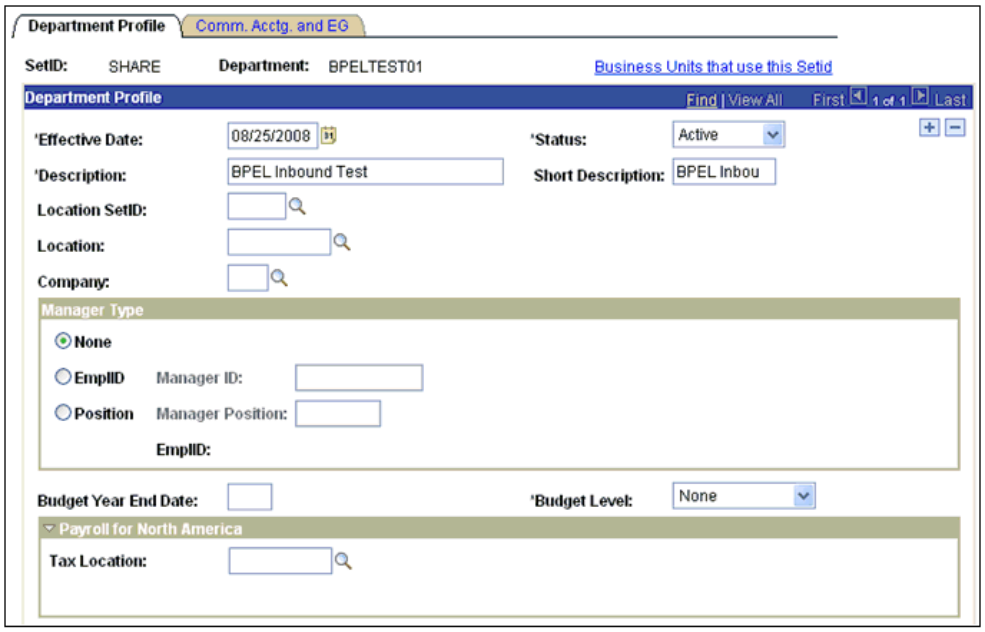
Figure D–51 Add a New Value Tab



4. Enter the appropriate value in the SetID and Department fields
5. Click **Add**.

   The Department Profile tab is displayed, as shown in Figure D–52.

Figure D–52 Department Profile Tab



6. Provide the necessary information according to your requirements to create a new Department record.
7. Click **Save** at the bottom of the pane when you are finished.

D.6.3 Verifying the Event Results

This section describes how to verify the event results.

Verifying the Results

To verify the results:

1. Logon to PeopleSoft using the browser-based GUI (Pure Internet Architecture).

2. Navigate to **Main Menu**, **PeopleTools**, **Integration Broker**, **Service Operation Monitor**, followed by **Asynchronous Services**.

   The Monitor Overview tab is displayed, as shown in Figure D–53.

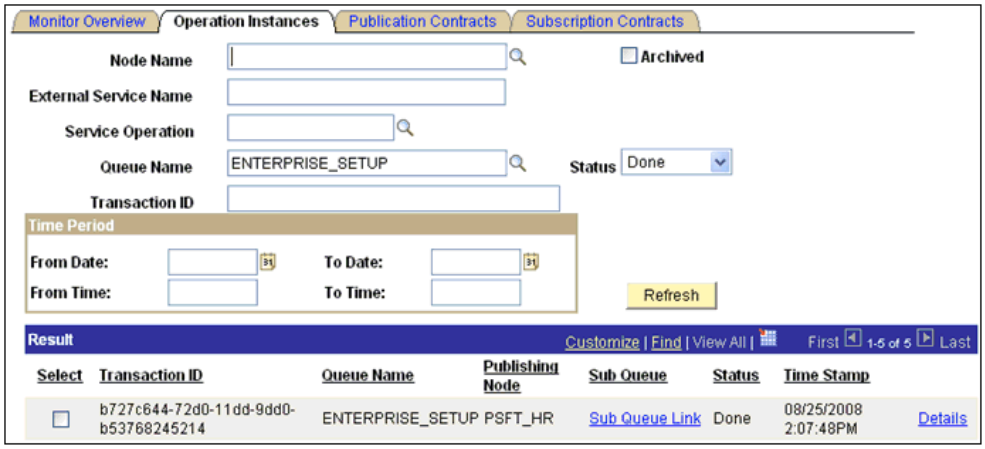
Figure D–53 Monitor Overview Tab

Here you can view the results of the events at the queue level.

3. Click the number link (**5**) queue (Enterprise_Setup) in the Result section.

   The Operation Instances tab is displayed, as shown in Figure D–54.

Figure D–54 Operation Instances Tab

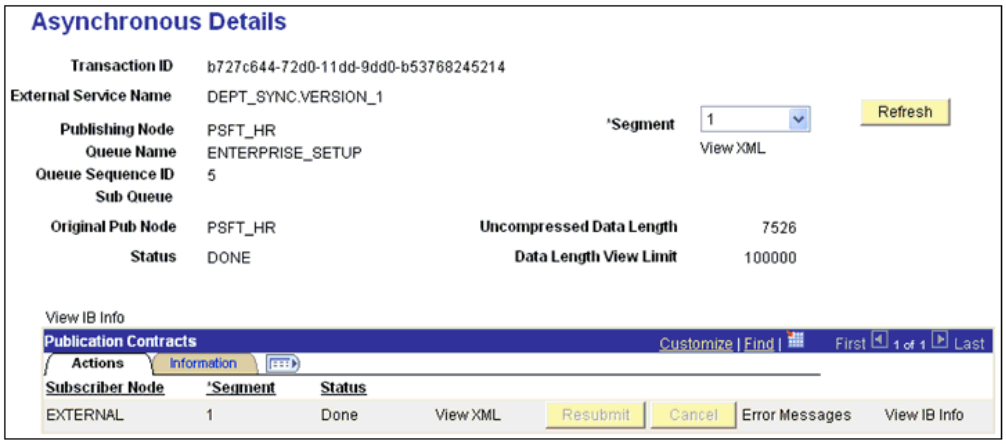


Notice that a new record for the event (department) is available.

4. Click the **Details** link on the lower-right.

   A new browser window (Asynchronous Details) is displayed, as shown in Figure D–55.

Figure D–55 Asynchronous Details



Notice that the status of the transaction is **DONE** for the Publishing and Subscriber nodes.

Glossary

adapter

Provides universal connectivity by enabling an electronic interface to be accommodated (without loss of function) to another electronic interface.

agent

Supports service protocols in listeners and documents.

business service

Also known as a Web service. A Web service is a self-contained, modularized function that can be published and accessed across a network using open standards. It is the implementation of an interface by a component and is an executable entity.

channel

Represents configured connections to particular instances of back-end systems. A channel binds one or more event ports to a particular listener managed by an adapter.

listener

A component that accepts requests from client applications.

port

Associates a particular business object exposed by the adapter with a particular disposition. A disposition is a URL that defines the protocol and location of the event data. The port defines the end point of the event consumption.

Index

A

B

C

D

E

F

G

H

I

J

L

M

N

O

P

R

S

T

U

V

W

X