

Tutorial 3

Create executable software from the BPEL model

Overview

This is the concluding tutorial in the three part series.

The automated activities that were created in the business process diagram (Tutorial #1) are represented as partner links in the BPEL model (Tutorial #2). In this tutorial, the partner links are modified to invoke the corresponding PeopleSoft CI service and the appropriate artifacts (Assign, Invoke, etc) are added to create the executable software.

Prerequisites

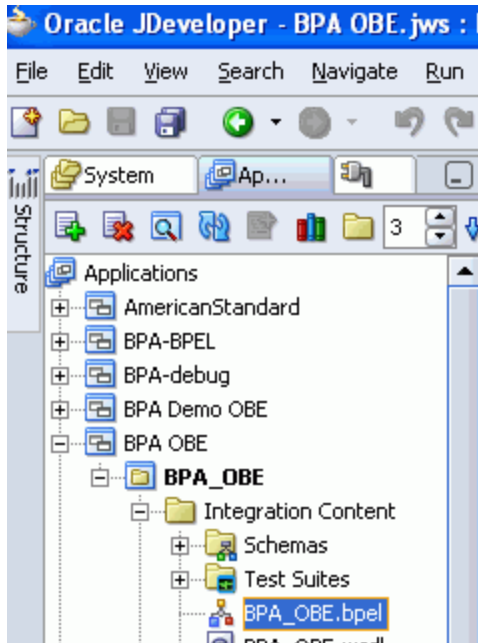
1. Oracle Business Process Analysis Suite 10g, available [here](#).
2. Oracle JDeveloper, available [here](#).
3. PeopleSoft HCM 9.0 with PeopleTools 8.48.

Time to complete: Approximately 2 hours.

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I. Create the INSERT_DEPENDENTS Partner Link

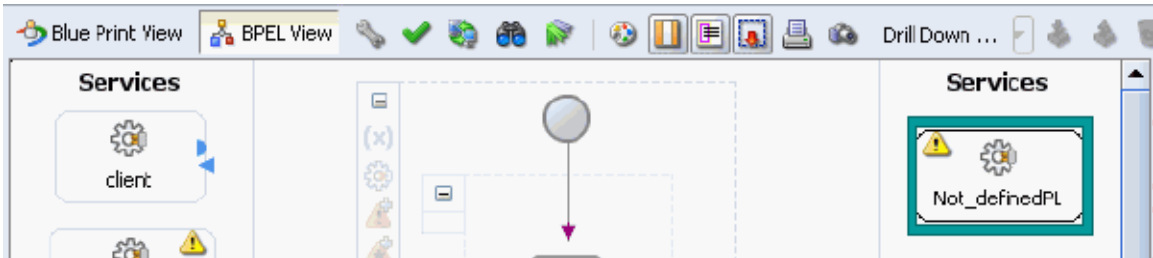
1. In JDeveloper, double click on BPA_OBE.bpel.



2. Navigate to the BPEL View.



3. Double click on a **Not_definedPL** partner link.

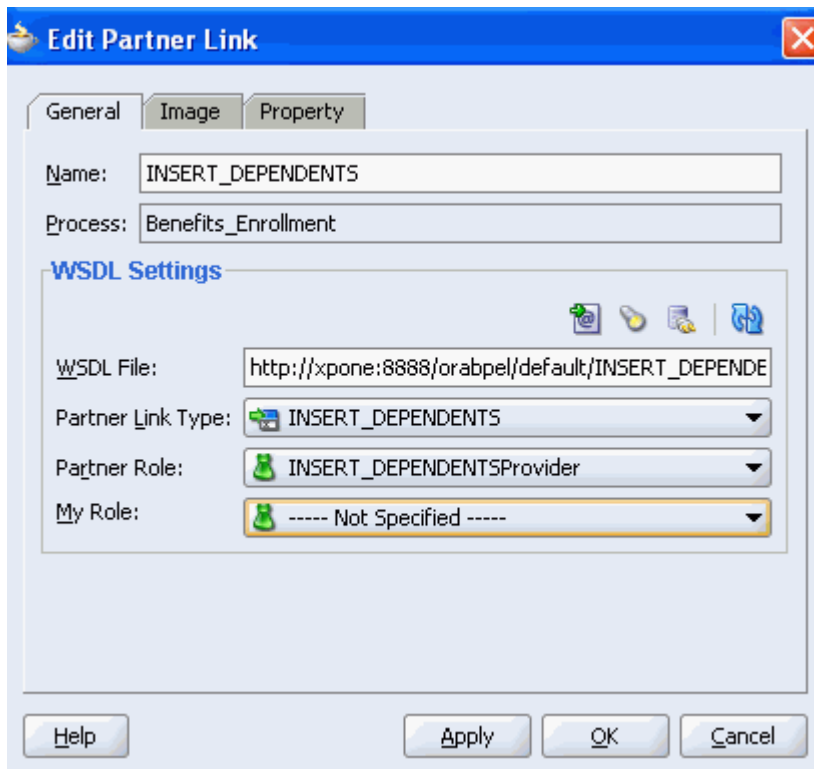


4. In the Edit Partner Link window, enter the PeopleSoft WSDL URL (*that is specific for your PeopleSoft instance*) in the WSDL file field and hit **ENTER**. This will populate the other fields as shown.

PeopleSoft WSDL URL (shown only for illustrative purposes):

http://xpone:8888/orabpel/default/INSERT_DEPENDENTS/INSERT_DEPENDENTS?wsdl

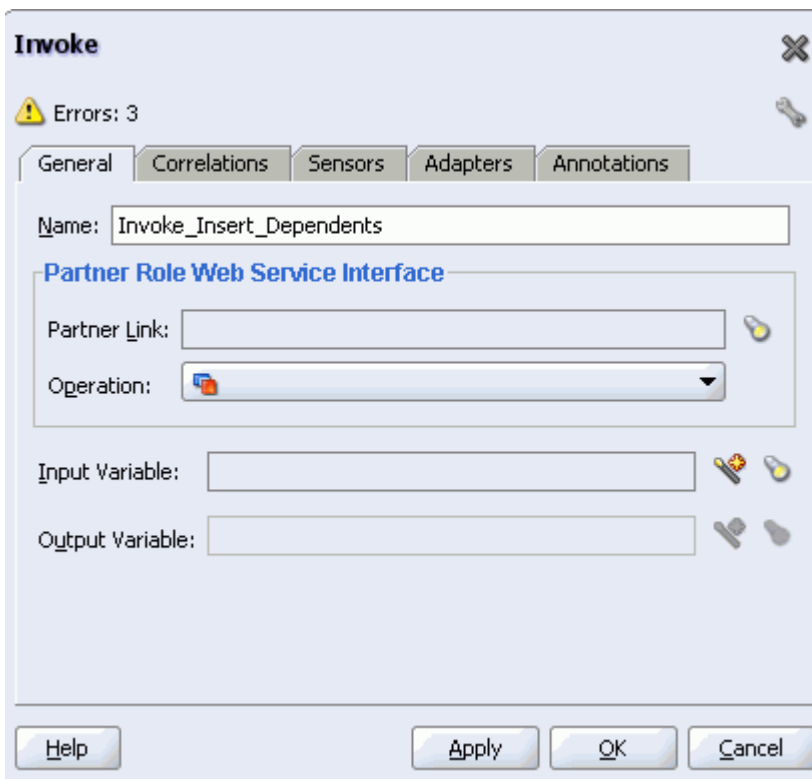
5. Select **Partner Role** as shown. Click **OK**.



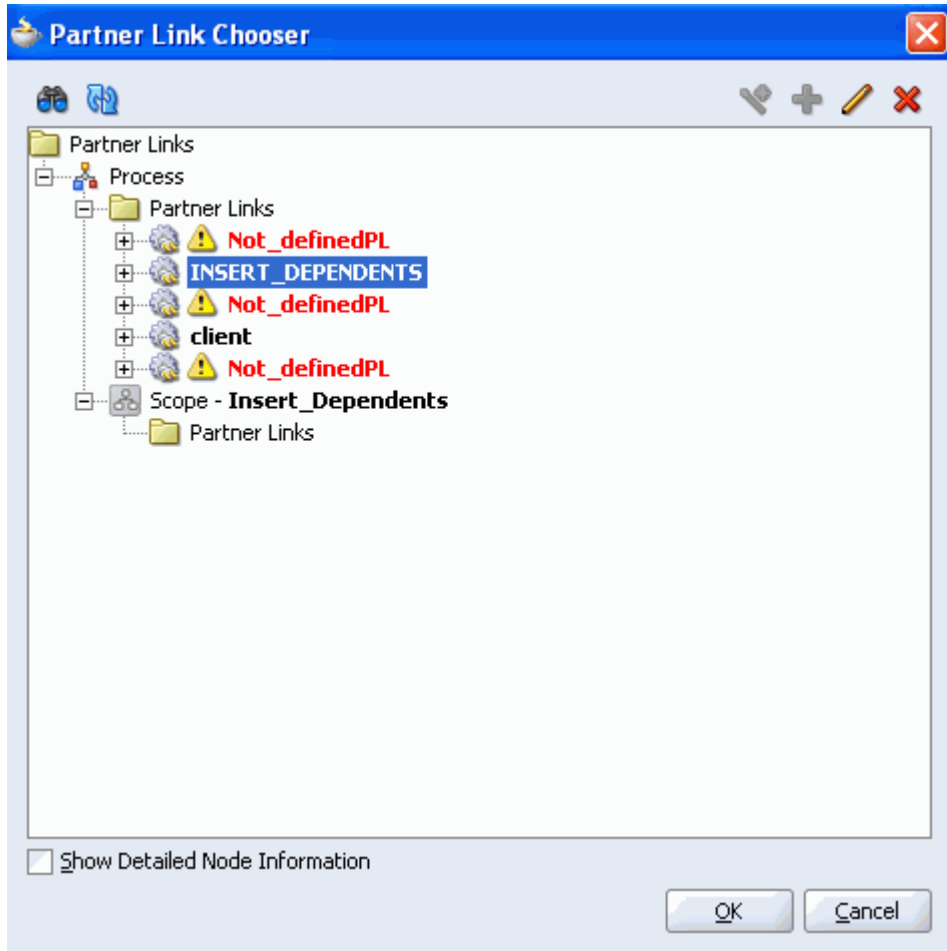
6. Click on the "+" sign next to **Insert_Dependent** scope and double click on the Insert_Dependent invoke activity.



7. Change the name to **Invoke_Insert_Dependents** as shown.
8. Click on the flashlight icon next to the Partner Link field to bring up the Partner Link Chooser.

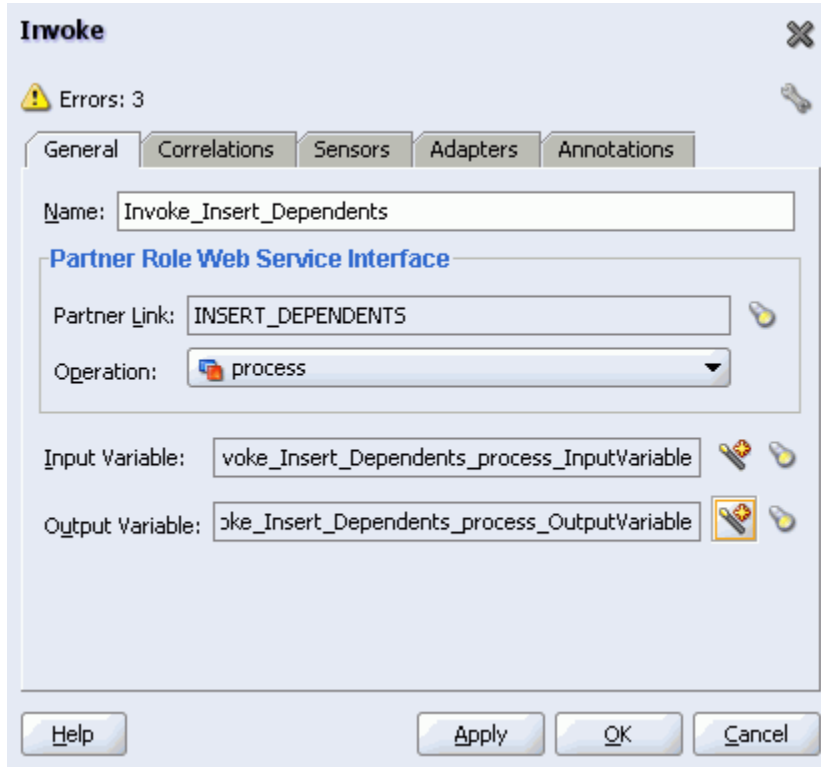


9. Select **INSERT_DEPENDENTS** and click **OK**.



10. Click on the "Auto-create variable" icon next to the **Input Variable** field to create a **Global Variable**. Accept defaults. Click **Apply**, followed by **OK**.
11. Click on the "Auto-create variable" icon next to the **Output Variable** field to create a **Global Variable**. Accept defaults. Click **Apply**, followed by **OK**.

12. Verify that the Invoke window looks as shown below. Click **OK**.



II. Create the INSERT_WITHHOLDING Partner Link

1. Double click on another **Not_definedPL** partner link.

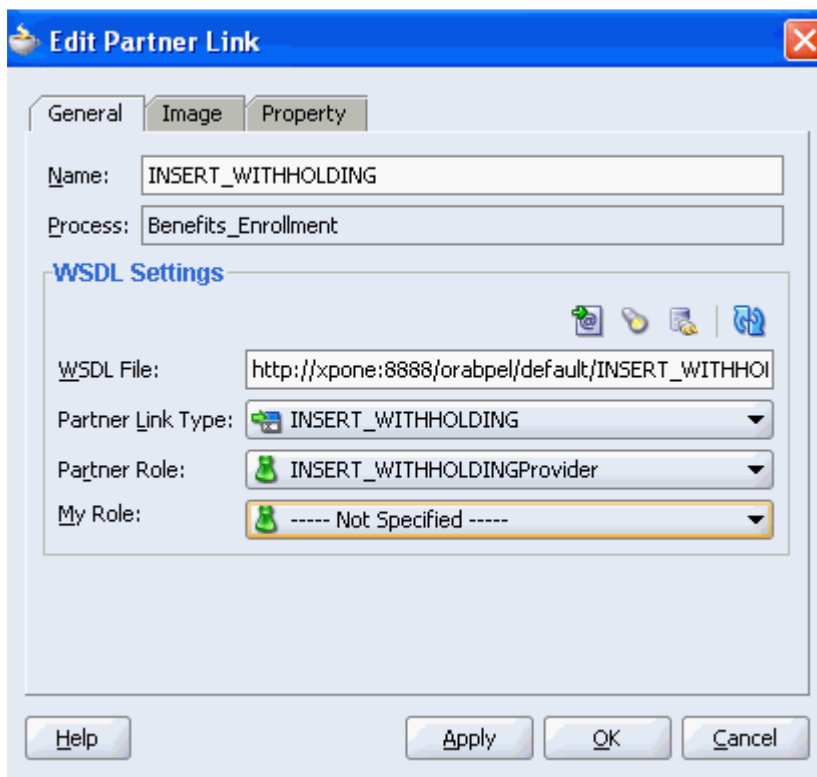


2. In the Edit Partner Link window, enter the PeopleSoft WSDL URL (*that is specific for your PeopleSoft instance*) in the WSDL file field and hit **ENTER**. This will populate the other fields as shown.

PeopleSoft WSDL URL (shown only for illustrative purposes):

http://xpone:8888/orabpel/default/INSERT_WITHHOLDING/INSERT_WITHHOLDING?wsdl

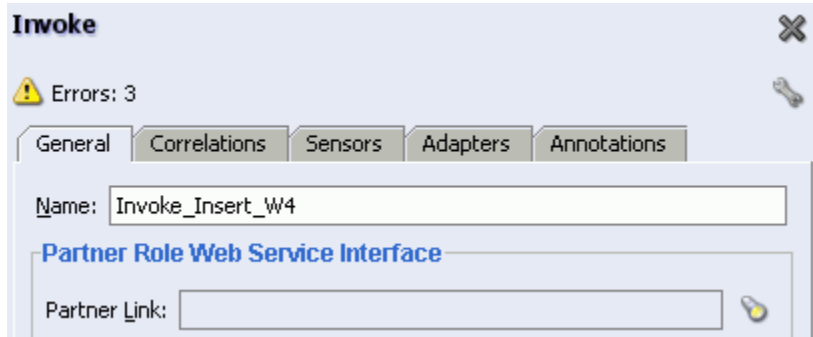
3. Select **Partner Role** as shown. Click **OK**.



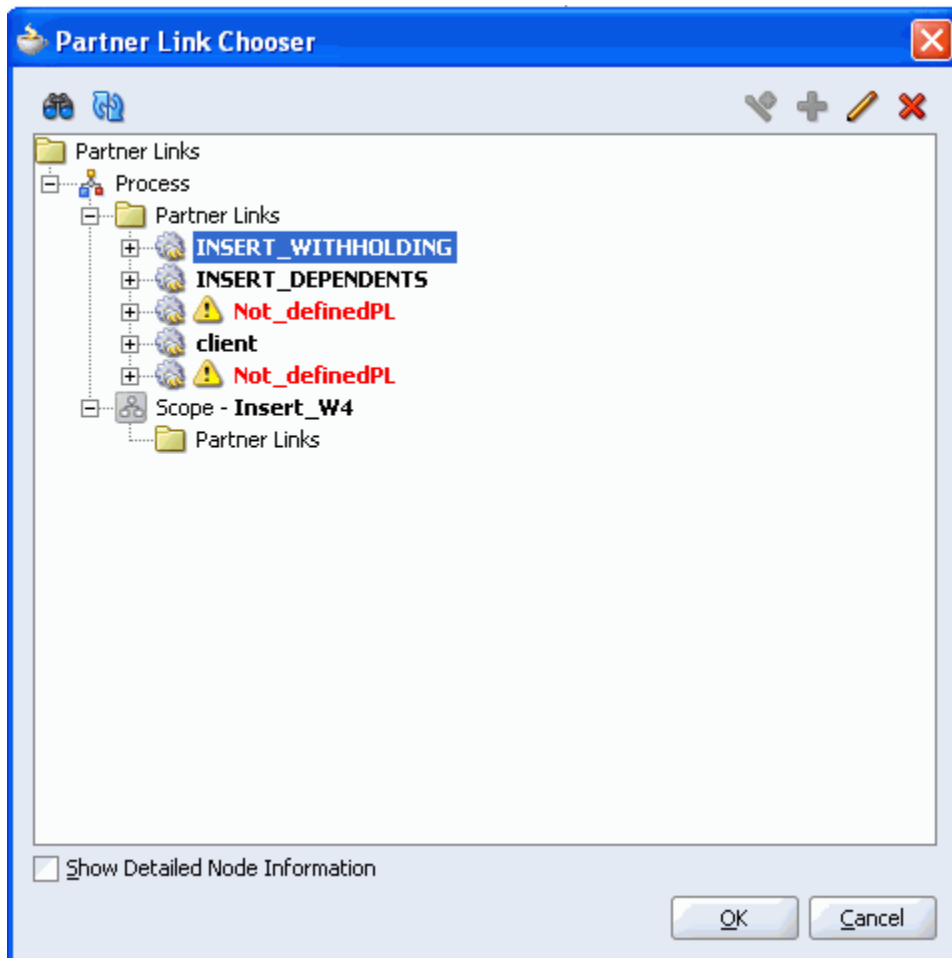
4. Expand the **Insert W4** scope and double click on the **Insert_W4** invoke activity.



5. Change the name to **Invoke_Insert_W4** as shown.
6. Click on the flashlight icon next to the **Partner Link** field to bring up the Partner Link Chooser.



7. Select **INSERT_WITHHOLDING** and click **OK**.



8. Click on the "Auto-create variable" icon next to the **Input Variable** field to create a **Global Variable**. Accept defaults. Click **Apply**, followed by **OK**.
9. Click on the "Auto-create variable" icon next to the **Output Variable** field to create a **Global Variable**. Accept defaults. Click **Apply**, followed by **OK**.
10. Verify that the Invoke window looks as shown below. Click **OK**.

Invoke

General Correlations Sensors Adapters Annotations

Name: Invoke_Insert_W4

Partner Role Web Service Interface

Partner Link: INSERT_WITHHOLDING

Operation: process

Input Variable: Invoke_Insert_W4_process_InputVariable

Output Variable: Invoke_Insert_W4_process_OutputVariable

Help Apply OK Cancel

III. Create the GET_DEPENDENTS Partner Link

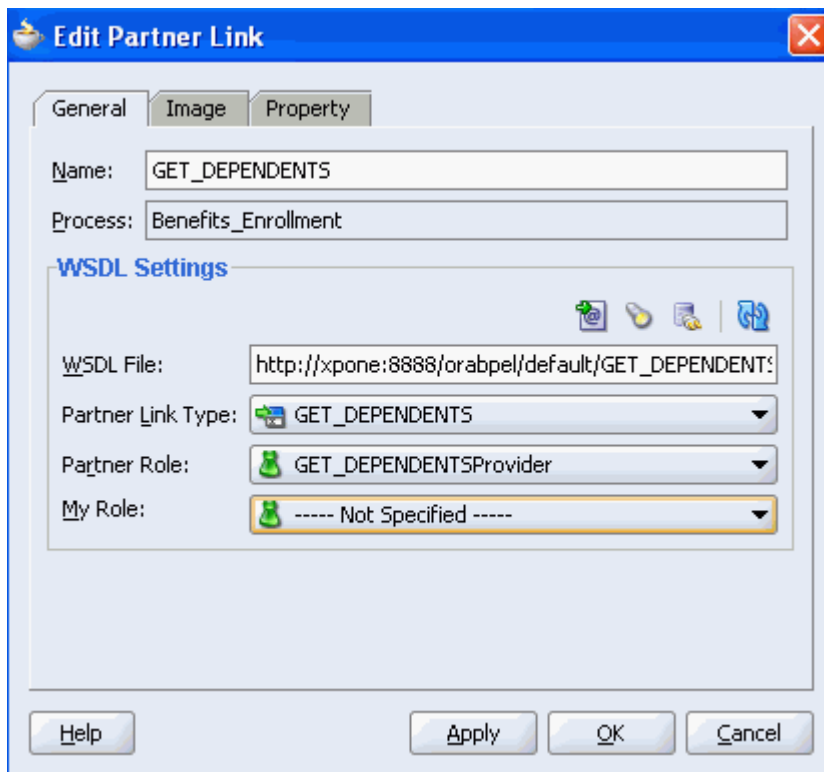
1. Double click on the remaining **Not_definedPL** partner link.



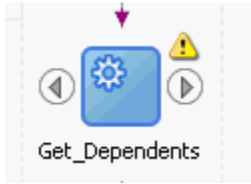
2. In the Edit Partner Link window, enter the PeopleSoft WSDL URL (*that is specific for your PeopleSoft instance*) in the WSDL file field and hit **ENTER**. This will populate the other fields as shown.

PeopleSoft WSDL URL (shown only for illustrative purposes):
http://xpone:8888/orabpel/default/GET_DEPENDENTS/GET_DEPENDENTS?wsdl

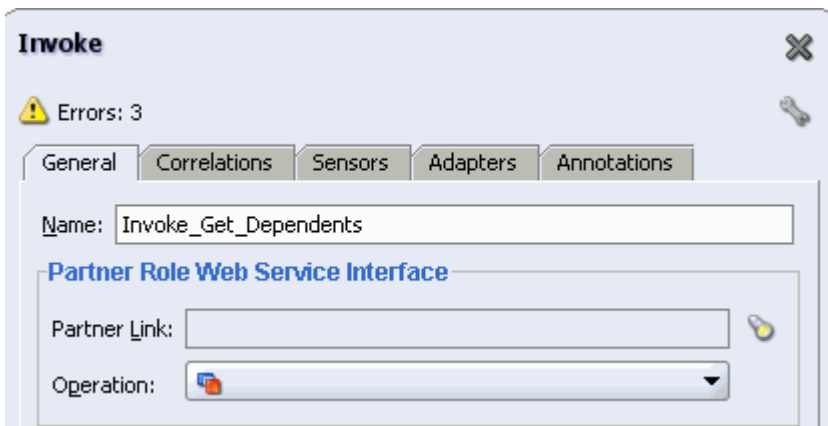
3. Select **Partner Role** as shown. Click **OK**.



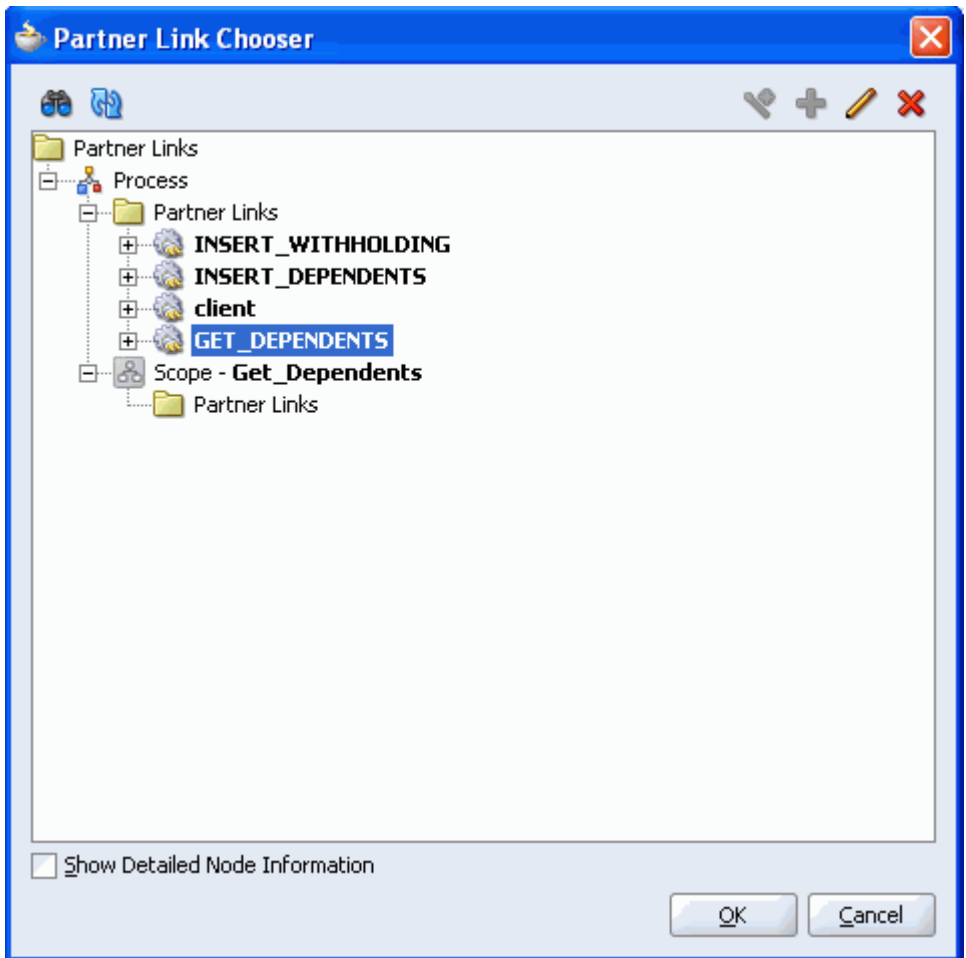
- Expand the **Get_Dependents** scope and double click on the **Get_Dependents** Invoke activity.



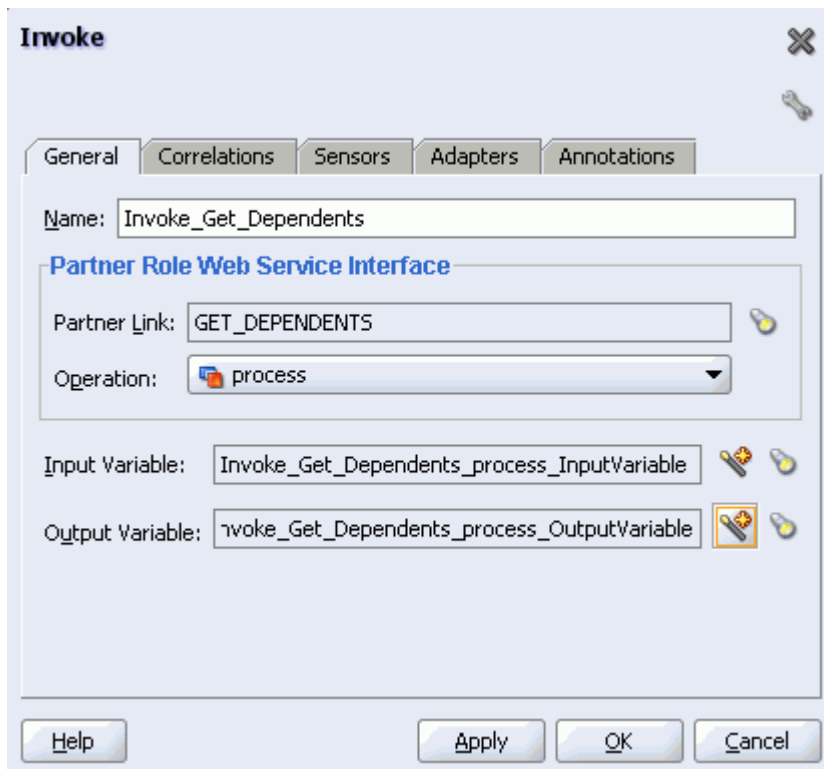
- Change the name to **Invoke_Get_Dependents** as shown.
- Click on the flashlight icon next to the **Partner Link** field to bring up the Partner Link Chooser.



- Select **GET_DEPENDENTS** and click **OK**.

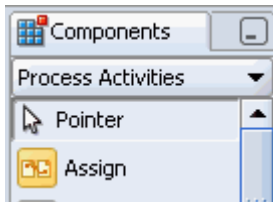


8. Click on the "Auto-create variable" icon next to the **Input Variable** field to create a **Global Variable**. Accept defaults. Click **Apply**, followed by **OK**.
9. Click on the "Auto-create variable" icon next to the **Output Variable** field to create a **Global Variable**. Accept defaults. Click **Apply**, followed by **OK**.
10. Verify that the Invoke window looks as shown below. Click **OK**.

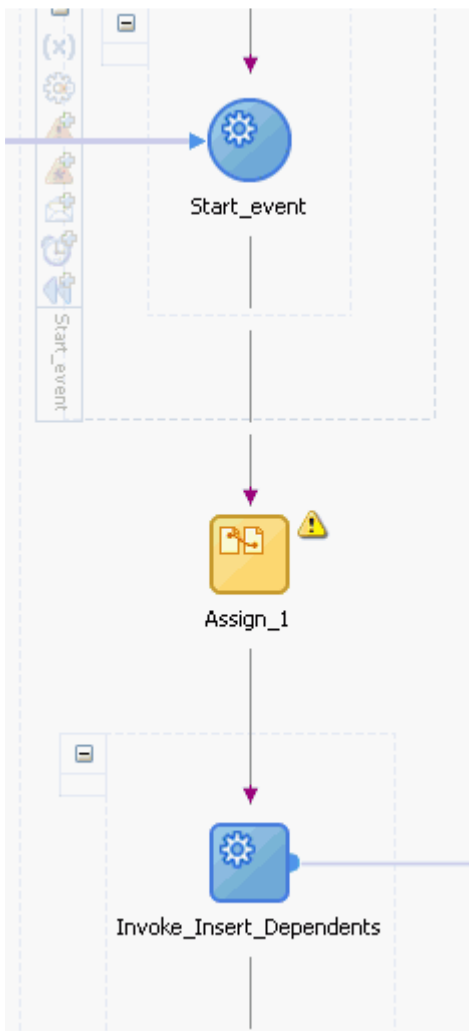


IV. Create the BPEL artifacts

1. Drag an **Assign** activity from the Component Palette section.

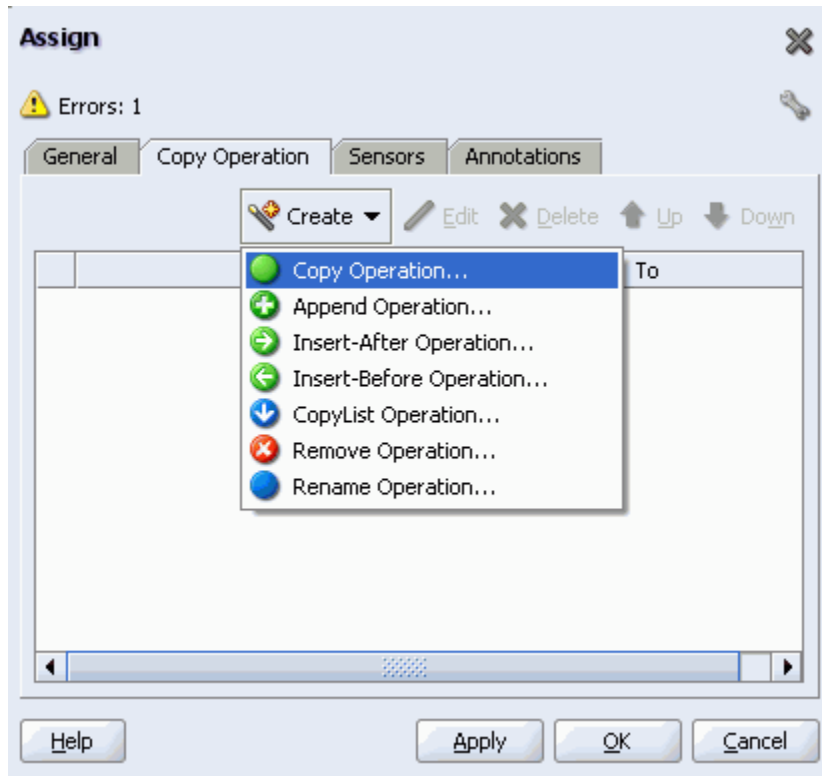


2. Drop the Assign activity between **Start_event** and **Invoke_Insert_Dependents** as shown.

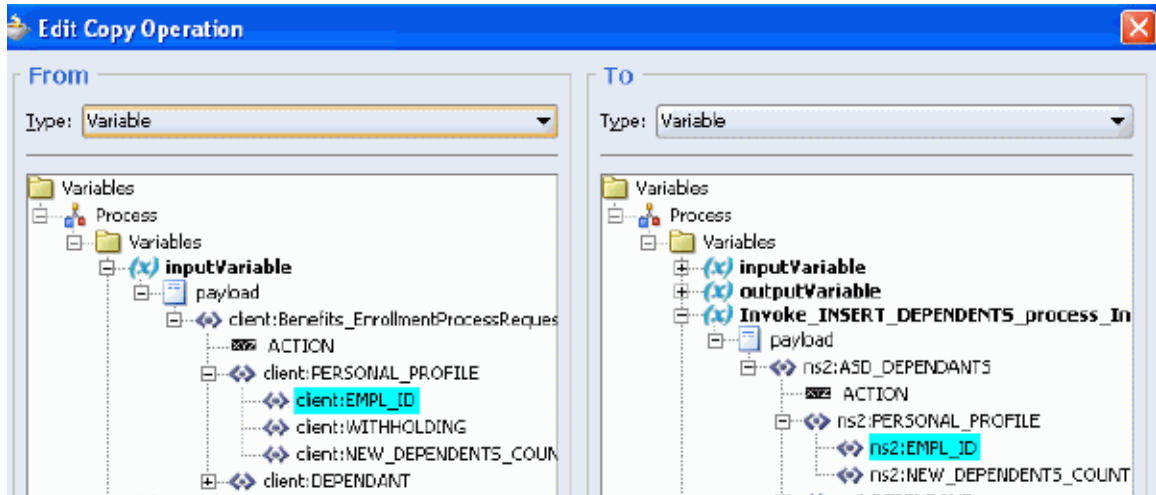


3. Double click on the recently added **Assign** icon.
4. Click on the **General** tab and enter **Copy_Input** in the Name field

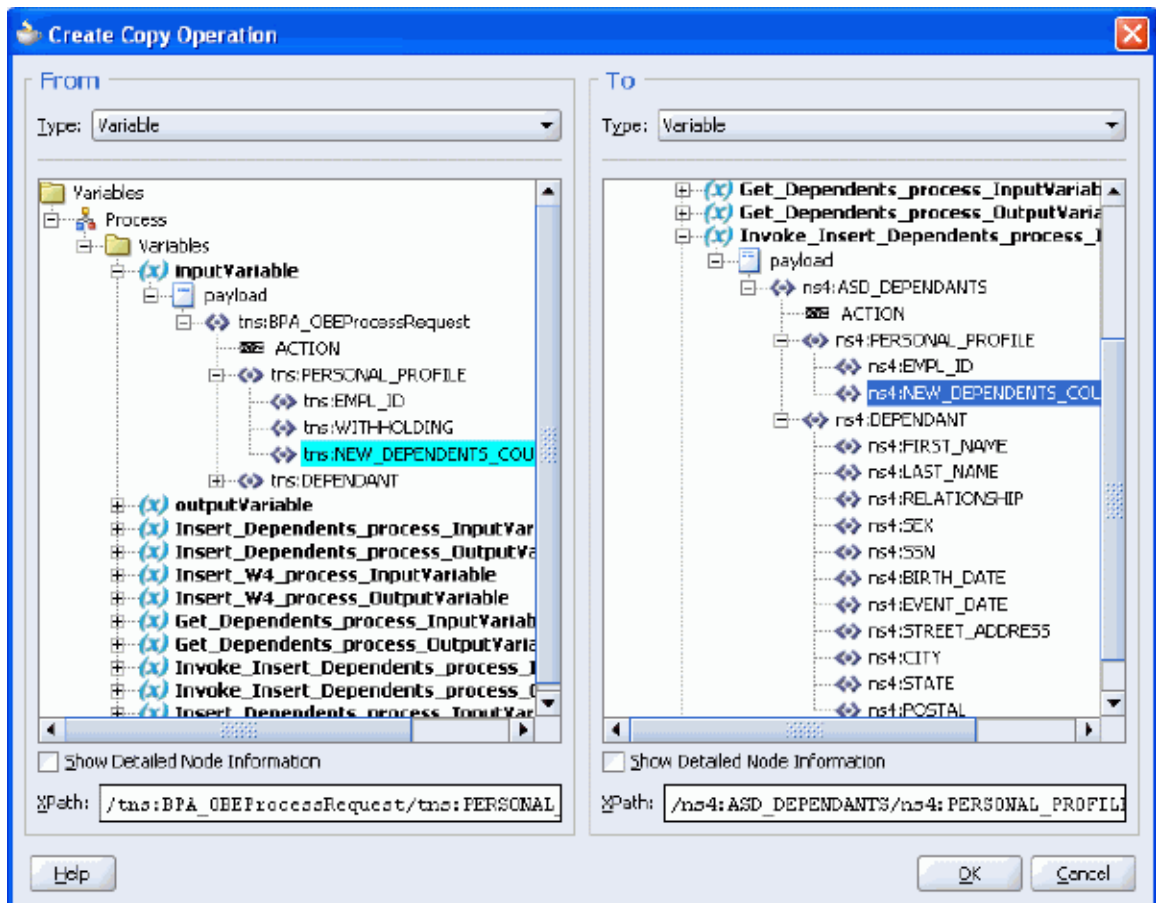
5. Click **Apply**.
6. Click on the **Copy Operation** tab.
7. Click **Create** and select **Copy Operation** from the drop down list.



8. Create the first copy operation as shown. Click **OK**.



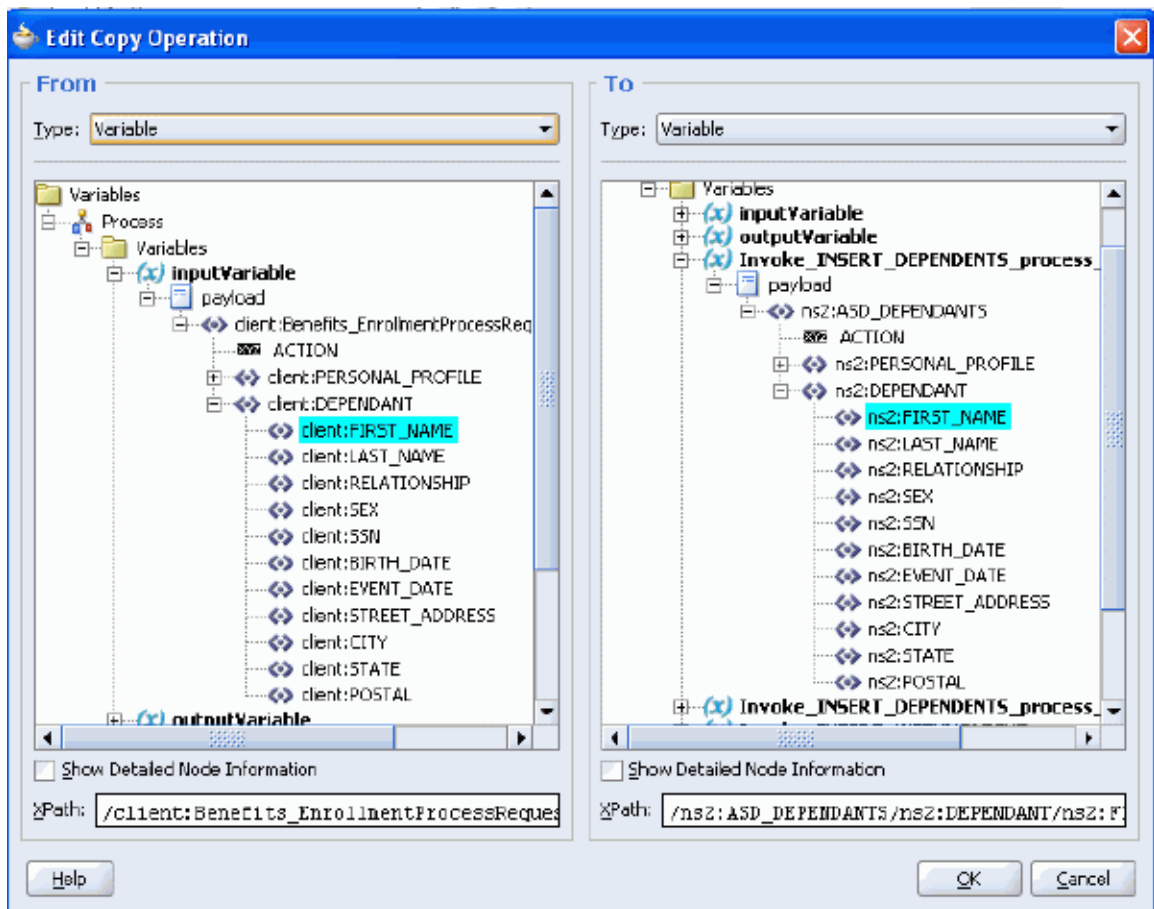
9. Create another copy operation as shown. Click **OK**.



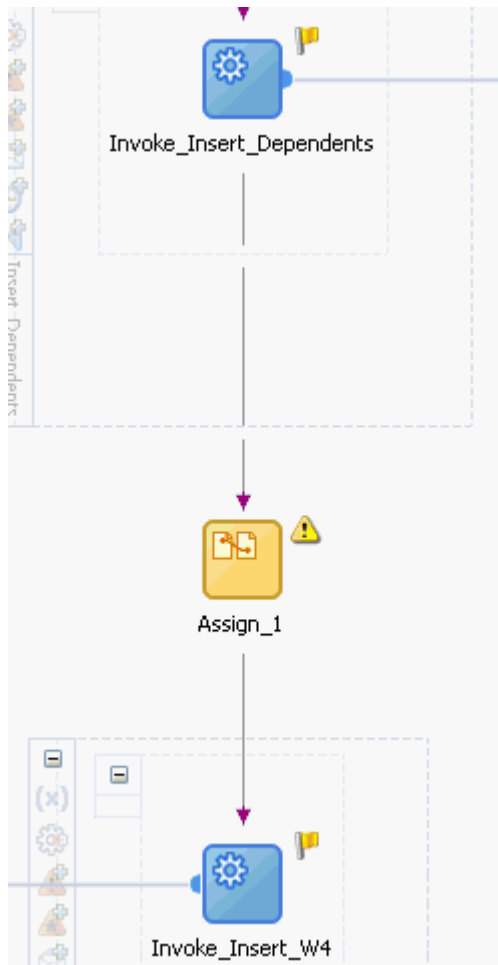
10. Create a series of copy operations starting with **FIRST_NAME** (as shown) and ending with **POSTAL**. Click **OK** at the end of each operation.

Ensure that copy operations have been created for all the following (11) variables.

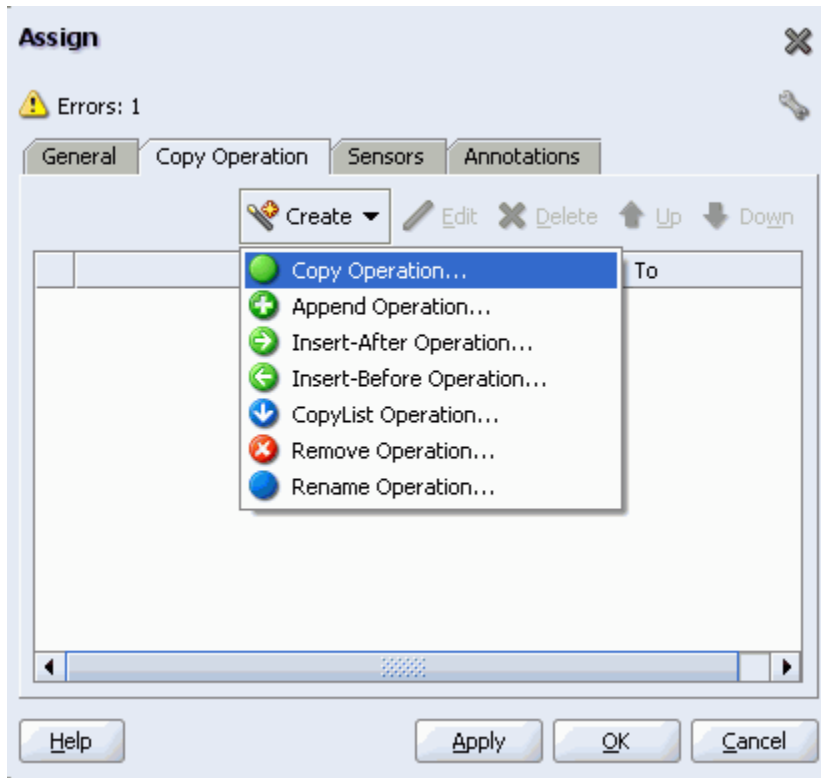
- a. FIRST_NAME
- b. LAST_NAME
- c. RELATIONSHIP
- d. SEX
- e. SSN
- f. BIRTH_DATE
- g. EVENT_DATE
- h. STREET_ADDRESS
- i. CITY
- j. STATE
- k. POSTAL



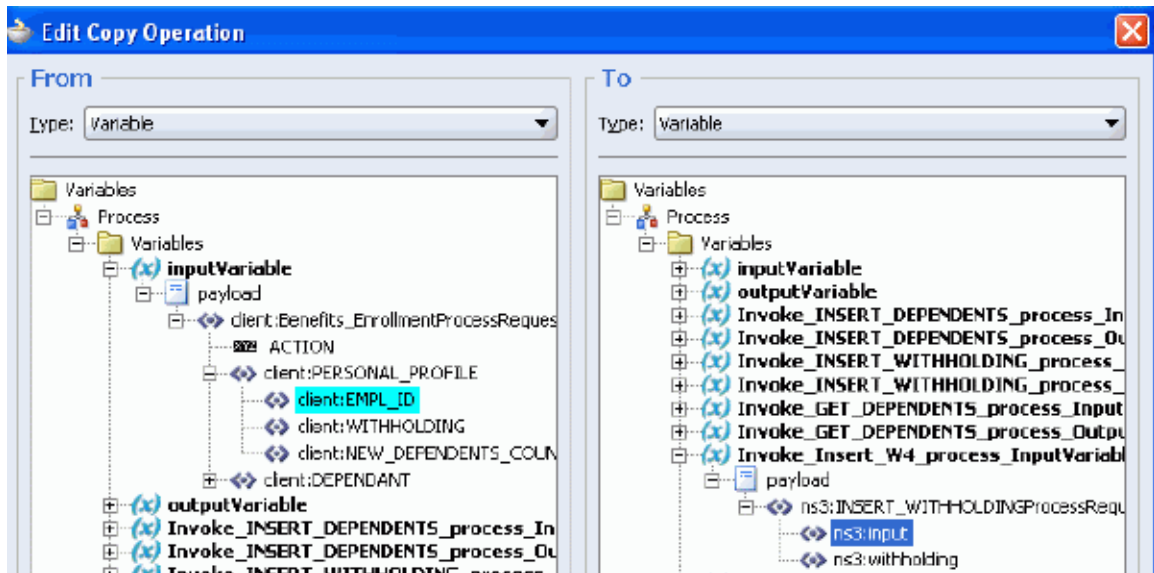
11. Drag and drop an **Assign** activity from the Component Palette section to in between **Invoke_Insert_Dependents** and **Invoke_Insert_W4** as shown.



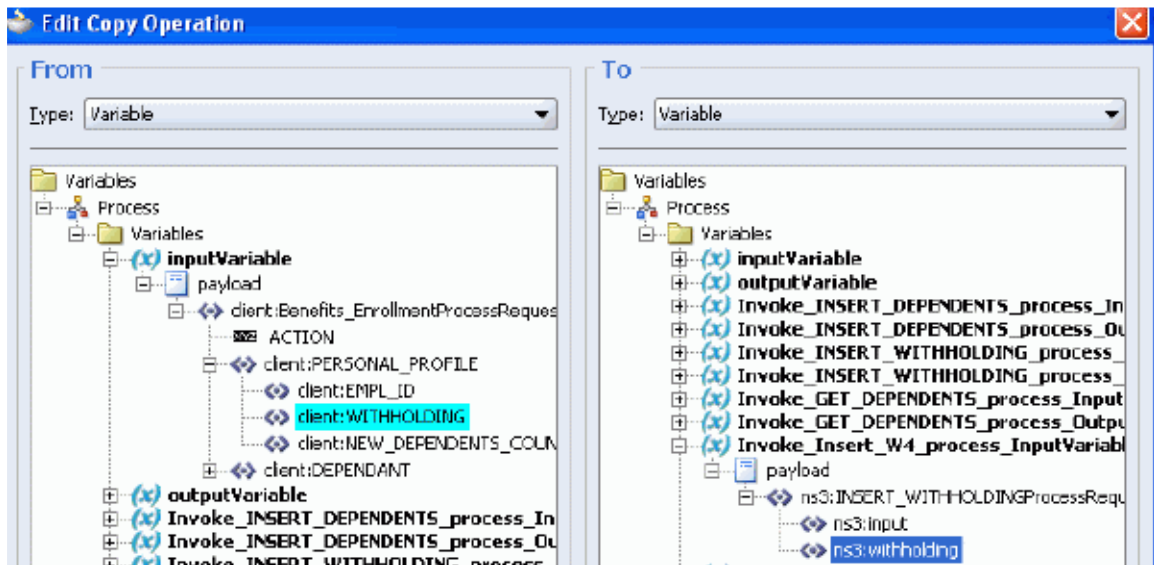
12. Double-click the recently added **Assign** icon.
13. Click on the **General** tab and enter **Copy_W4_Input** in the Name field.
14. Click **Apply**.
15. Click on the **Copy Operation** tab.
16. Click **Create** and select **Copy Operation** from the drop down list.



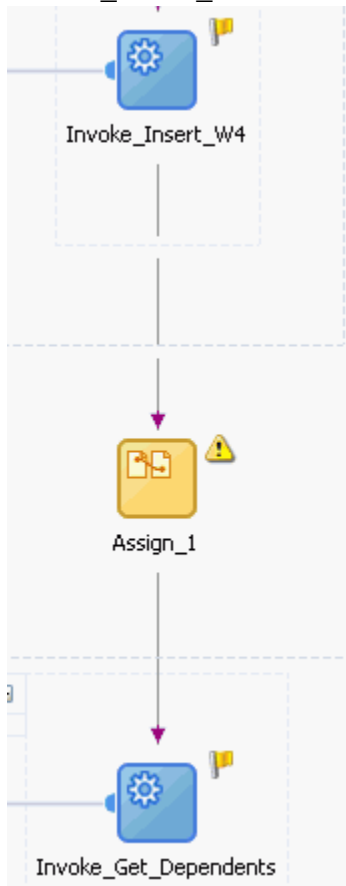
17. Create the first copy operation as follows. Click **OK**



18. Create the second copy operation as shown. Click **OK** to close the Create Copy Operation and click **OK** again to close the Assign window.

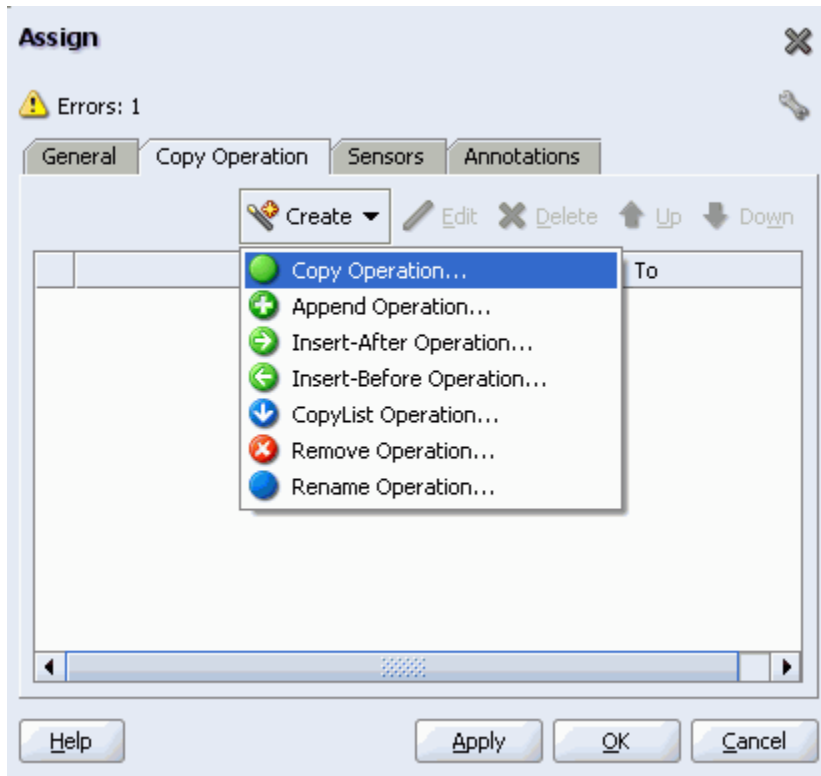


19. Drag and drop an Assign activity from the Component Palette section to in between **Invoke_Insert_W4** and **Invoke_Get_Dependents** as shown.

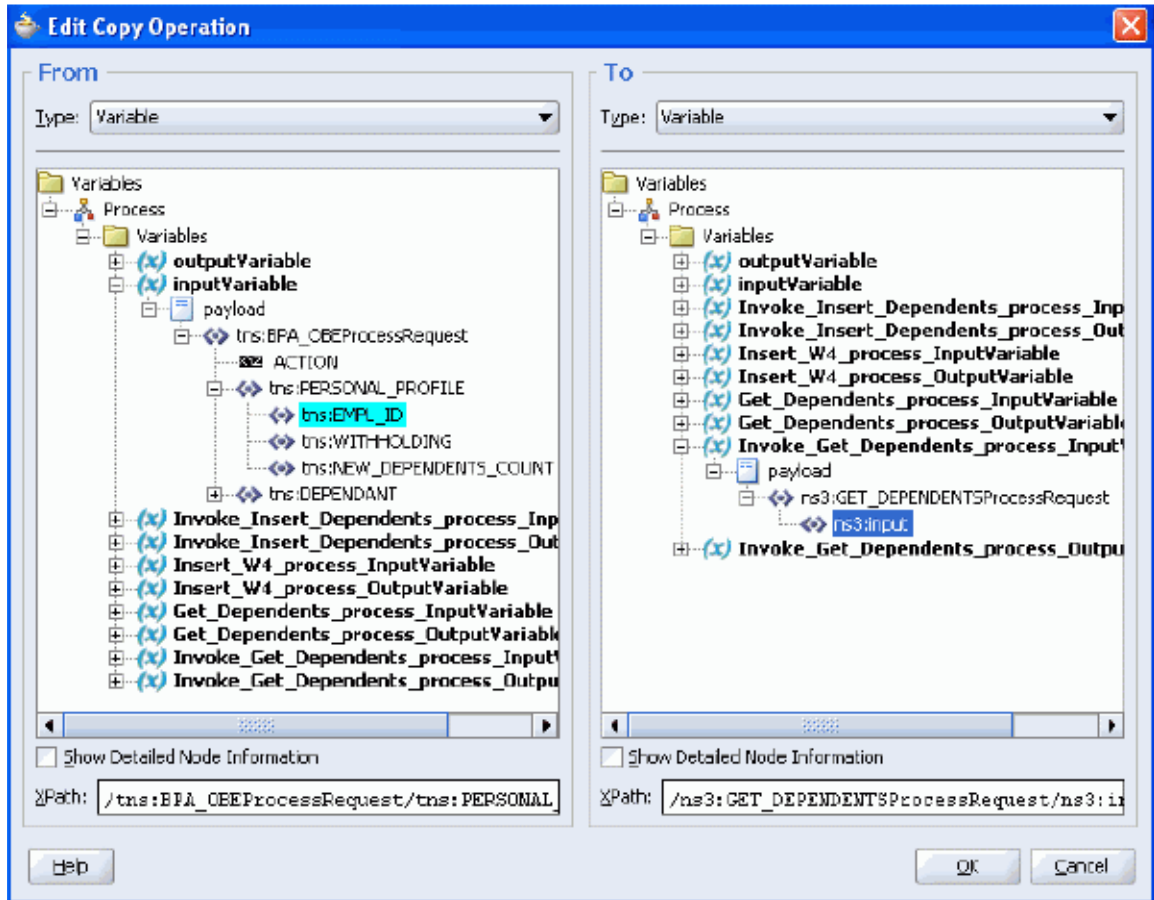


20. Double-click the recently added **Assign** icon.

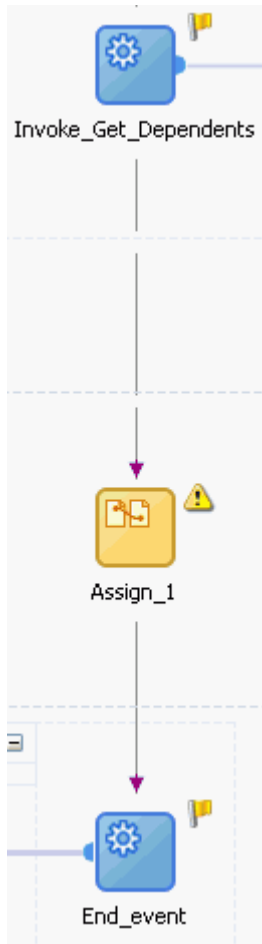
21. Click on the **General** tab and enter **Copy_Get_Dependents_Input** in the Name field.
22. Click **Apply**.
23. Click on the **Copy Operation** tab.
24. Click **Create** and select **Copy Operation** from the drop down list.



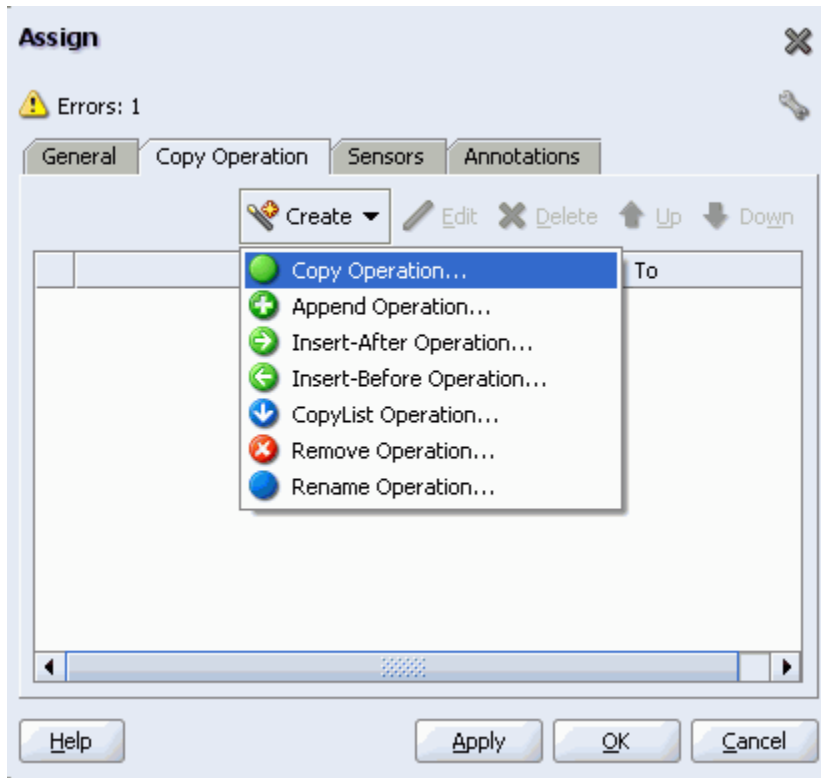
25. Create the copy operation as shown. Click **OK** to close the Create Copy Operation and click **OK** again to close the Assign window.



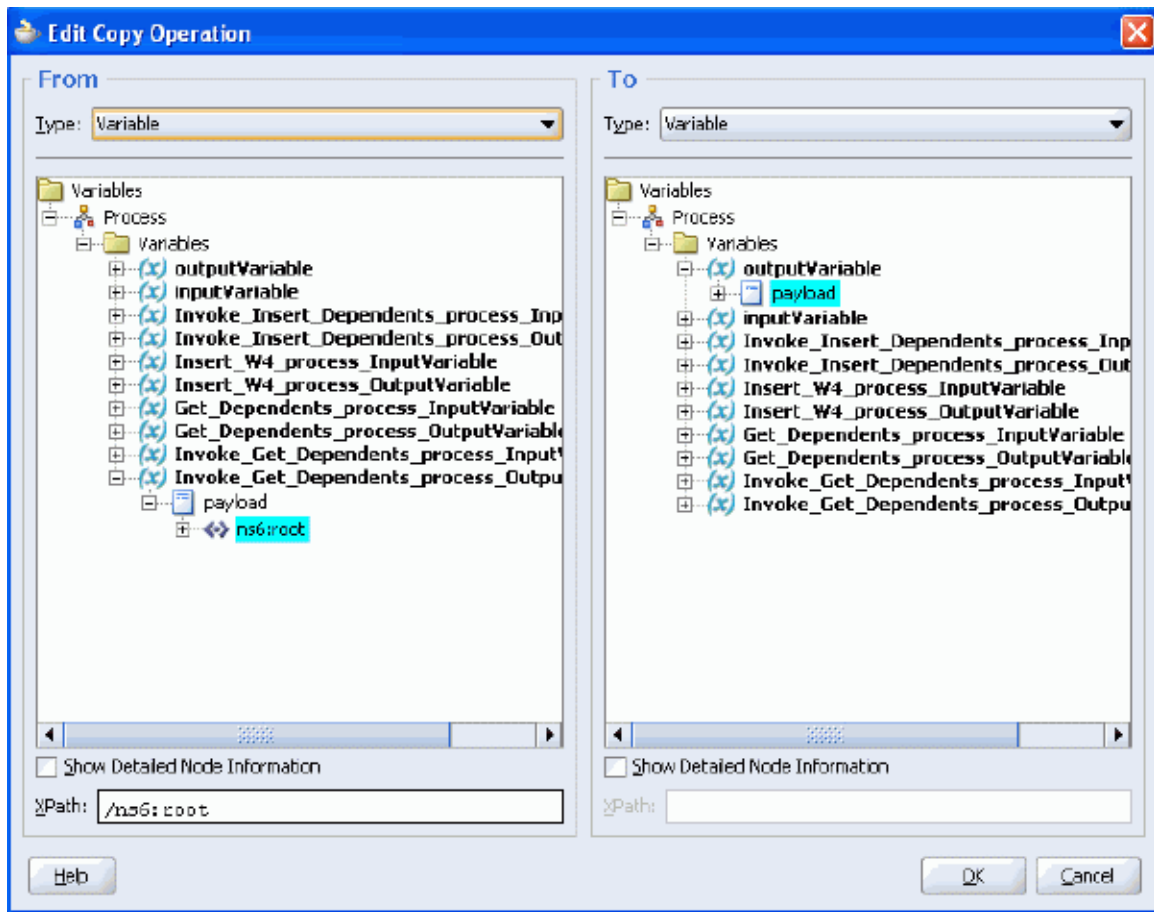
26. Drag and drop an **Assign** activity from the Component Palette section to in between **Invoke_Get_Dependents** and **End_event** as shown.



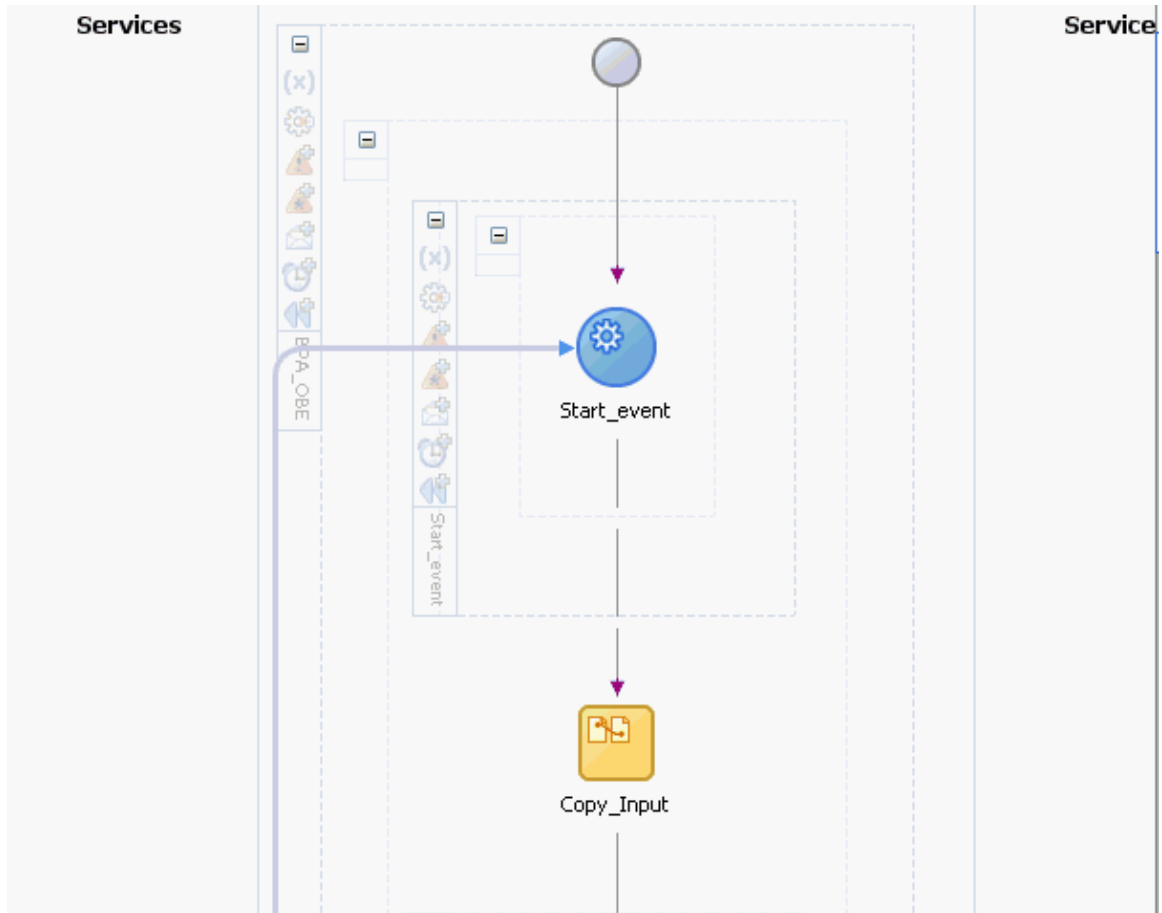
27. Double-click the recently added **Assign** icon.
28. Click on the **General** tab and enter **Copy_Get_Dependents_Output** in the Name field.
29. Click **Apply**.
30. Click on the **Copy Operation** tab.
31. Click **Create** and select **Copy Operation** from the drop down list.

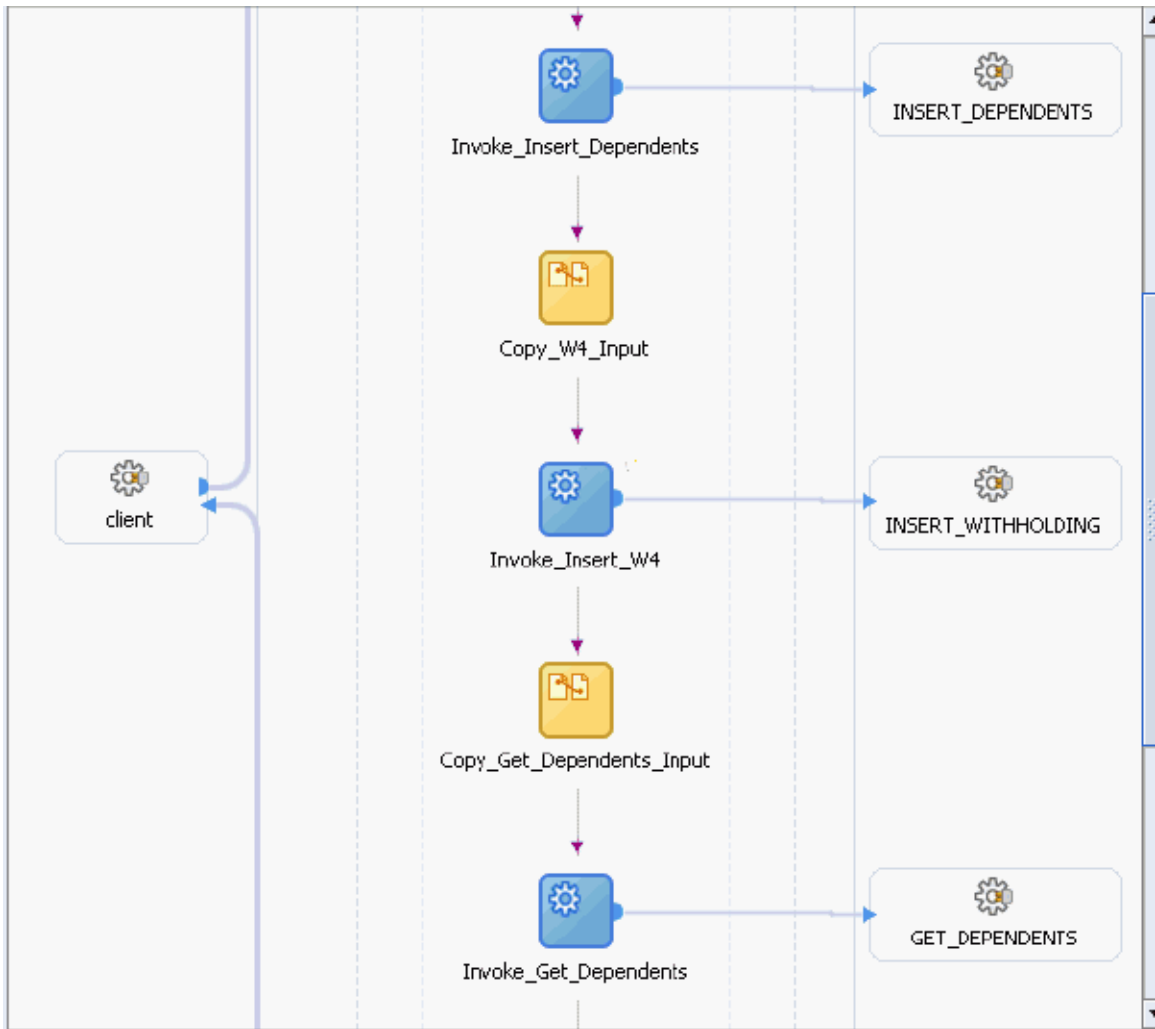


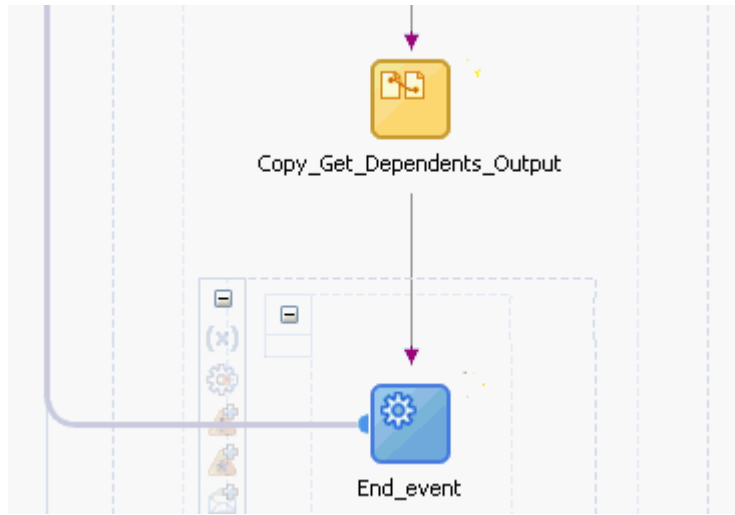
32. Create the copy operation as shown. Click **OK** to close the Create Copy Operation and click **OK** again to close the Assign window.



33. Select **File > Save All**. The completed BPEL process should resemble the following three figures (shown in scrolling sequence, from top to bottom).





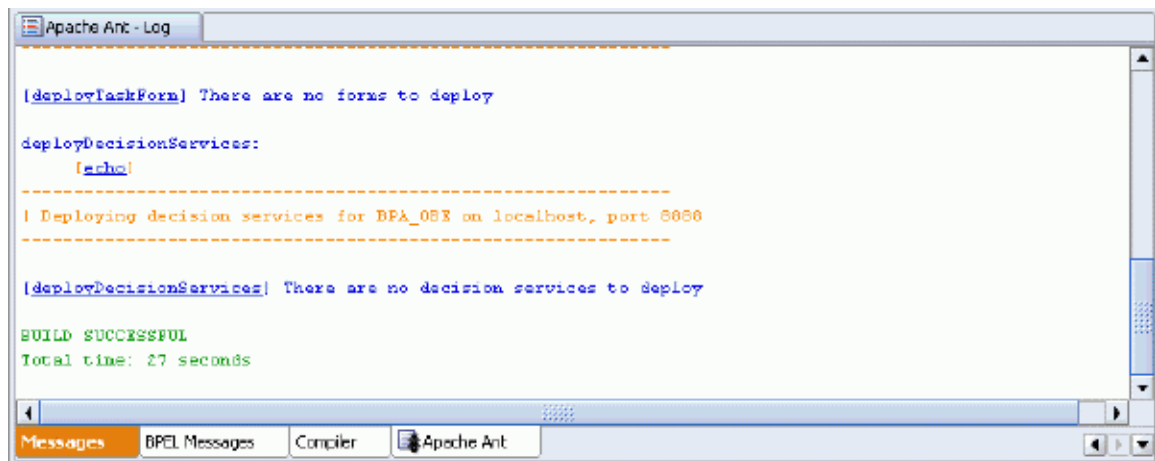


V. Compile and deploy the BPEL process

1. Right click on the BPA_OBE BPEL project.
2. Select **Deploy > LocalInt > Deploy to default domain.**

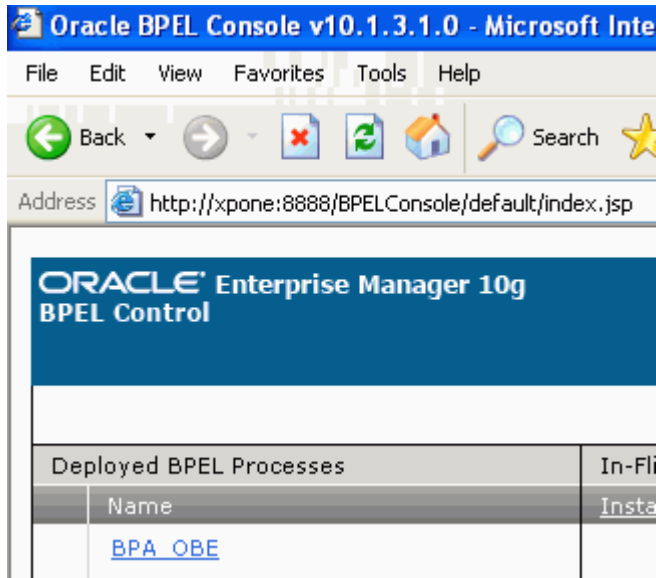


3. This will compile and deploy the BPEL process to the local application server.



VI. Test the deployed BPEL process

1. Login to the BPEL Console and click on the deployed **BPA_OBE** process.



2. This brings up an HTML form to initiate a test instance of the BPEL process. Enter the data as shown and click on **Post XML Message**.

PERSONAL_PROFILE

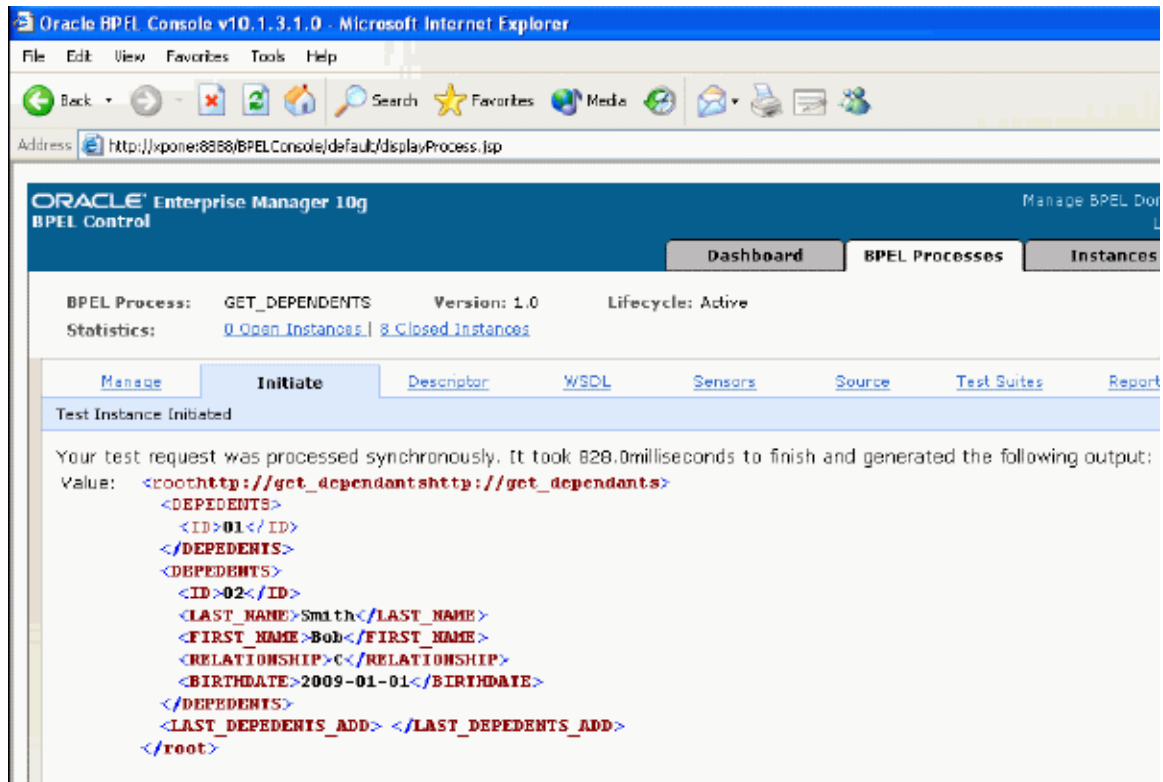
EMPL_ID PA018 xsd:string
WITHHOLDING 2 xsd:string
NEW_DEPENDENTS_COUNT 1 xsd:string

DEPENDANT



FIRST_NAME Bob xsd:string
LAST_NAME Smith xsd:string
RELATIONSHIP C xsd:string
SEX M xsd:string
SSN 123-45-6789 xsd:string
BIRTH_DATE 2009-01-01 xsd:string
EVENT_DATE 2009-01-01 xsd:string
STREET_ADDRESS 1 Main St xsd:string
CITY San Francisco xsd:string
STATE CA xsd:string
POSTAL 94111 xsd:string

- The following page is displayed, indicating that the above update was successful.



VII. Summary

Oracle JDeveloper provides an integrated development environment to design and deploy BPEL processes. As this tutorial illustrates, BPEL processes can be designed by dragging and dropping elements (known as BPEL activities) and editing their respective properties. In addition, partner links provide a simple and elegant approach to represent the interaction between a BPEL process and the external web services.