

5 Adding Human Workflow

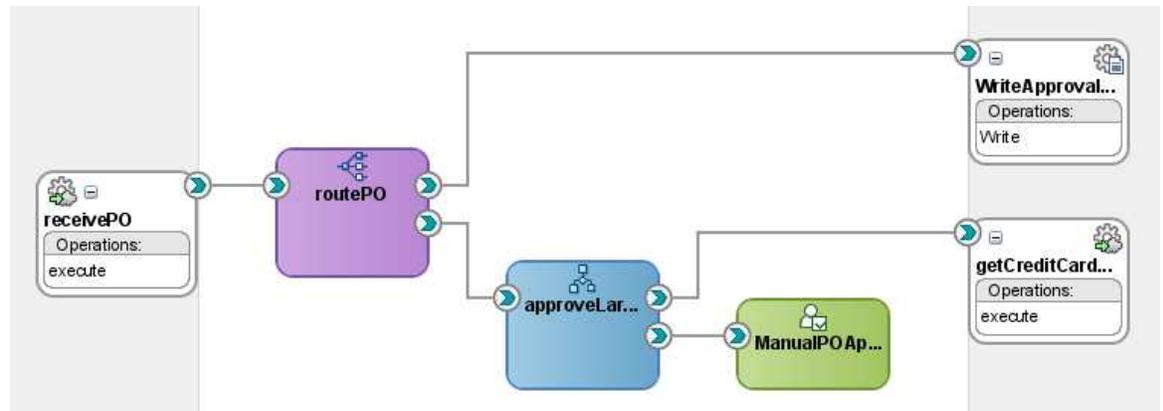
5.1	Introduction.....	1
5.2	Designing the flow	1
5.3	Adding a Human Task to the composite	2
5.4	Calling the Human Task from BPEL	5
5.5	Creating the Task form for task details	10
5.6	Deploying and Testing the application	15
5.7	Operations and naming	17

5.1 Introduction

Note: The solution for this chapter can be found in `c:\po\solutions\ch5`.
To run this solution, you must first complete Chapter 1 to set up the application.

In this next iteration of the application, you will add a Human Task to the composite in order to review large orders manually.

Once completed, your POProcessing composite will look like this:

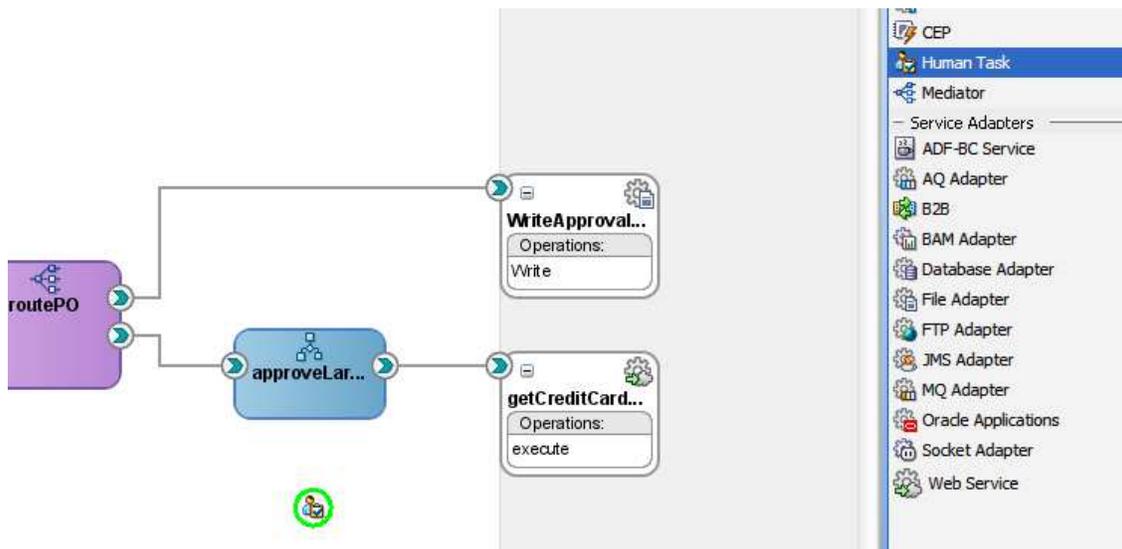


5.2 Designing the flow

To review large orders manually, you add the Human Task to the BPEL process after the credit card has been validated and only for VALID cards. You also create the task form as a separate project in the application (it is jsp based) to be used at runtime with the worklist application.

5.3 Adding a Human Task to the composite

1. In JDeveloper, drag-and-drop a **Human Task** component onto the composite.

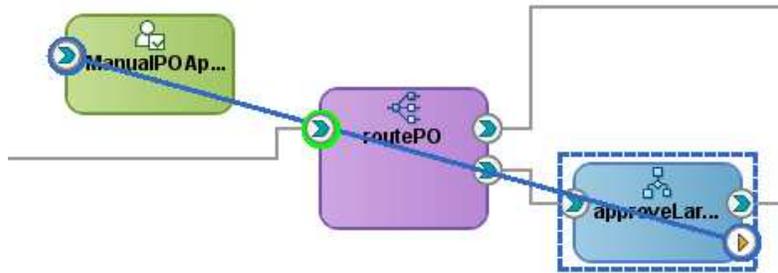


2. Specify the following:
 - **Name:** ManualPOApproval
 - **Namespace:** Leave as default
 - **Create Composite Service with SOAP Bindings:** Unchecked

The 'Create Human Task' dialog box is shown. It has a title bar with the text 'Create Human Task' and a close button. Below the title bar is the section 'Human Task Component' with a description: 'Create a Human Task Component to set up and customize workflow.' There are three input fields: 'Name:' with the value 'ManualPOApproval', 'Namespace:' with the value 'http://xmlns.oracle.com/POProcessing/POProcessing/ManualPOApproval', and a checkbox 'Create Composite Service with SOAP Bindings' which is unchecked. At the bottom are buttons for 'Help', 'OK', and 'Cancel'.

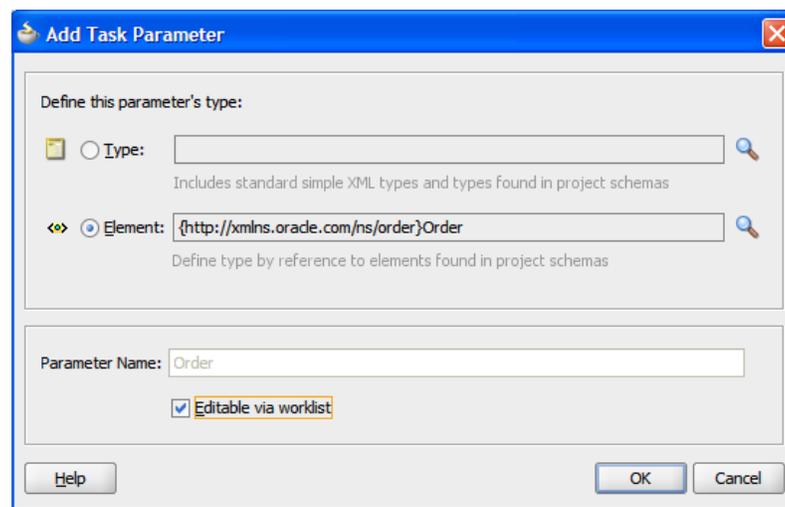
3. Click OK.

4. Wire the BPEL process to the Human Task.

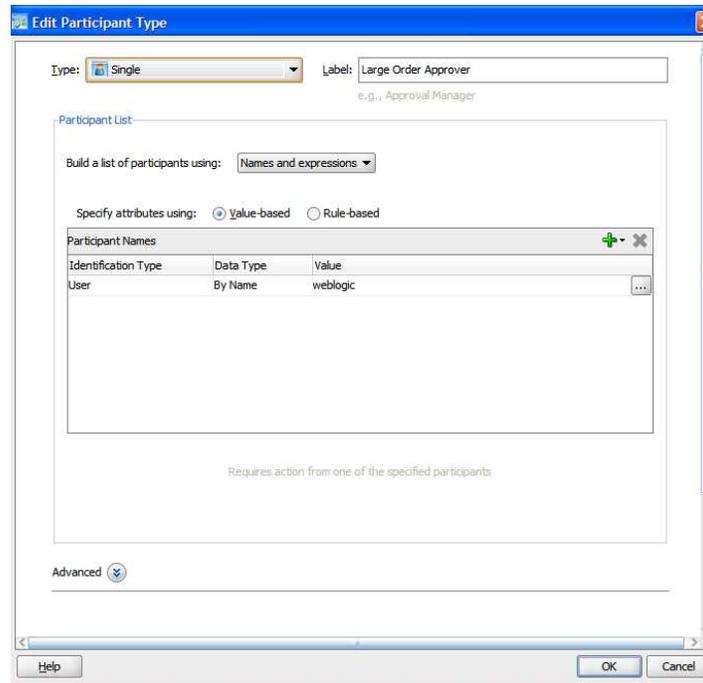


5. Double-click the Human Task to open the Task Definition editor.
6. Specify the following settings:
 - **Title:** using the expression builder button on the right, enter 'Approve Order' and click **OK**. You see <% 'Approve Order' %> entered as the value.
 - **Description:** Manual approval task for large orders
 - **Parameters:** Order

Use the green plus sign to open the **Add Task Parameter** dialog. Select **Element** and then browse for the **Order** element in `internalorder.xsd`.
 - **Editable via worklist:** Checked (this is optional and only so that you can see the functionality as it doesn't really make sense for this application)
 - Click **OK**



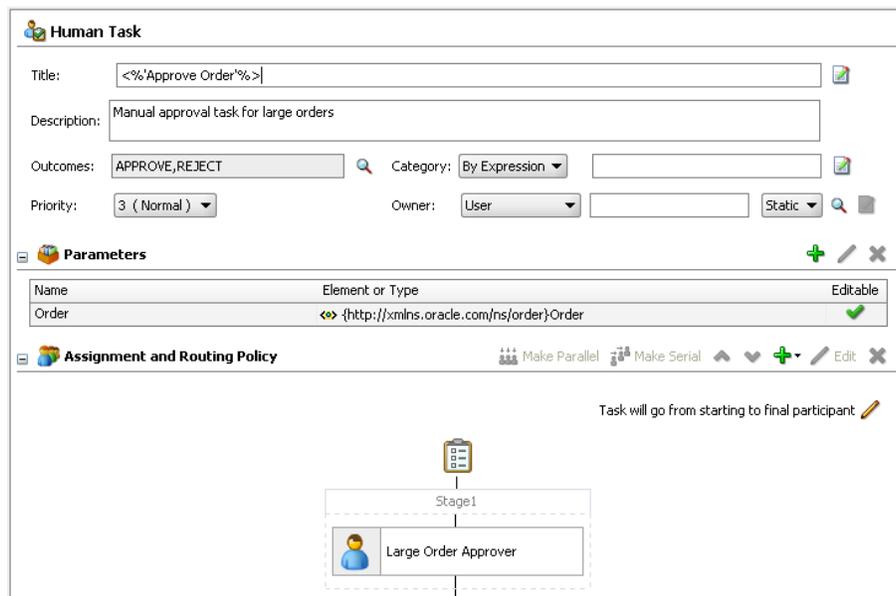
7. In the **Assignment and Routing Policy** section, doubleclick <no participant>-box in the diagram
8. In the **Edit Participant Type** dialog, specify the following:
 - **Type:** Single
 - **Label:** Large Order Approver



9. Use the green plus sign next to **Participant Names** to **Add user**
10. Set the **Identification Type** to *User* (already set)
11. Set **Data Type** *By Name* (already set)
12. In the **Value Field** enter: *weblogic* (no quotes)

Normally you would browse for users set in the server however there have not been users set yet. To browse for users, you must create a server connection to the SOA Managed server (usually at port 8001) and when you test that connection, some protocols will fail. But you will be able to browse for users using it.

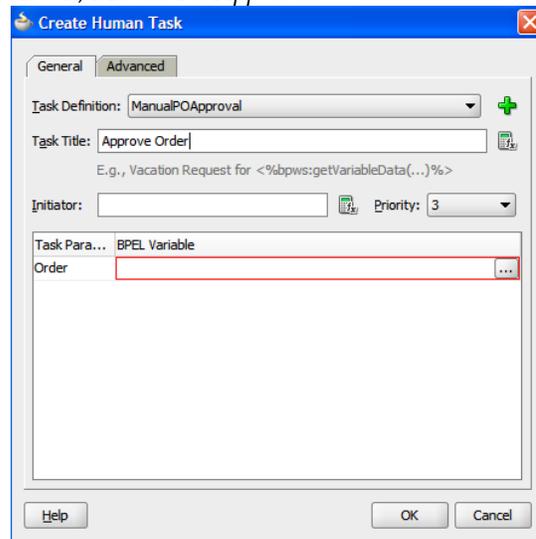
13. Click **OK**



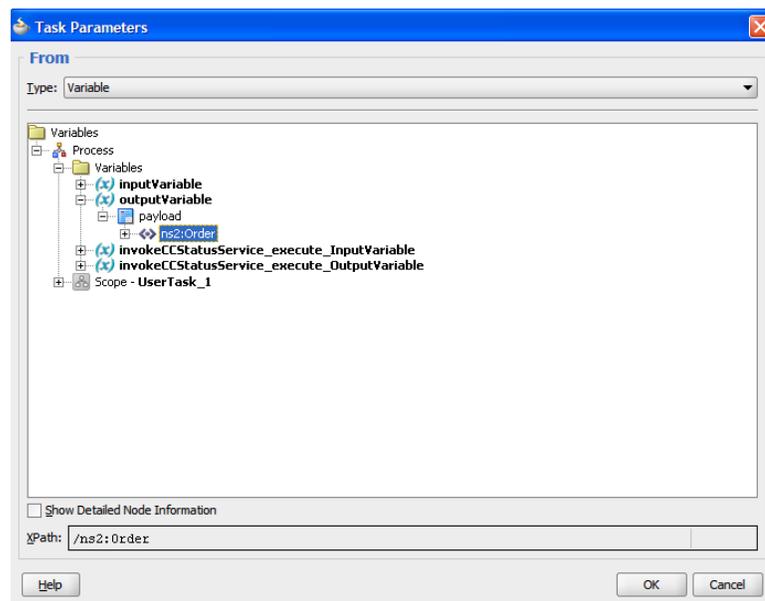
14. Save and close the Task Definition editor and return to the composite.

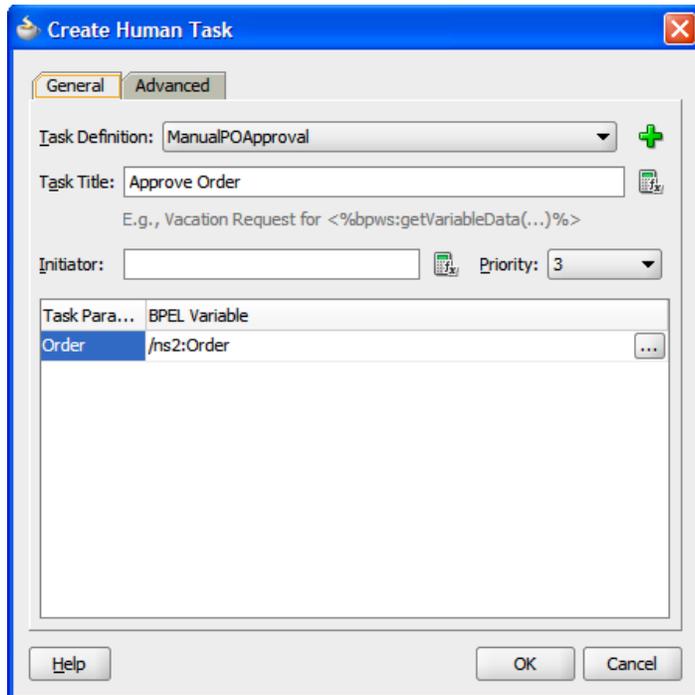
5.4 Calling the Human Task from BPEL

1. Double-click the BPEL component to open the BPEL designer.
2. Drag a Human Task into the <case> branch of the <switch>, underneath the **assignApproval** <assign> activity (you will be moving this assign activity shortly).
3. The **Add a Human Task** dialog opens. Select from the **Task Definition** drop down, *ManualPOApproval*.



4. Select the BPEL variable to pass the input parameter by clicking the [...] button on the right of **Order**.
5. Select **Variables > Process > Variables > outputVariable > payload > Order**. *outputVariable* has all of our information collected so far.

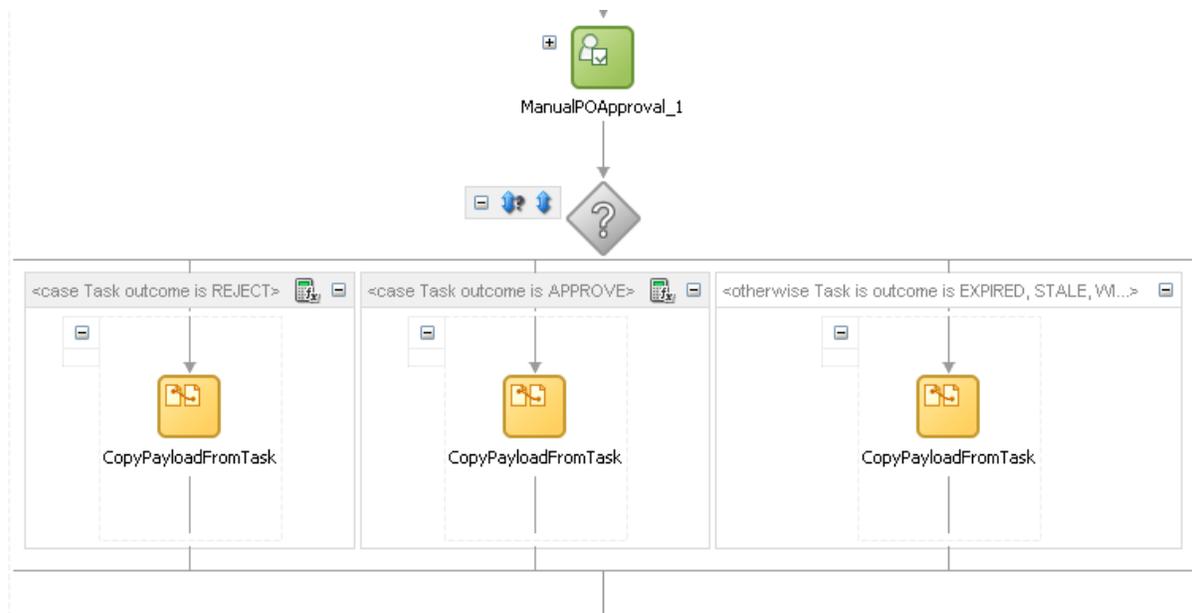


6. Click **OK**.7. Click **OK**.

8. You will have two new activities in your BPEL process: a **Human Task** and a **Switch** activity. The **Human Task** handles getting the approval (or rejection) from users using a work list application. The **Switch** activity can then be used to evaluate the results from the **Human Task**, e.g., what to do if it's approved? What to do if it's rejected?

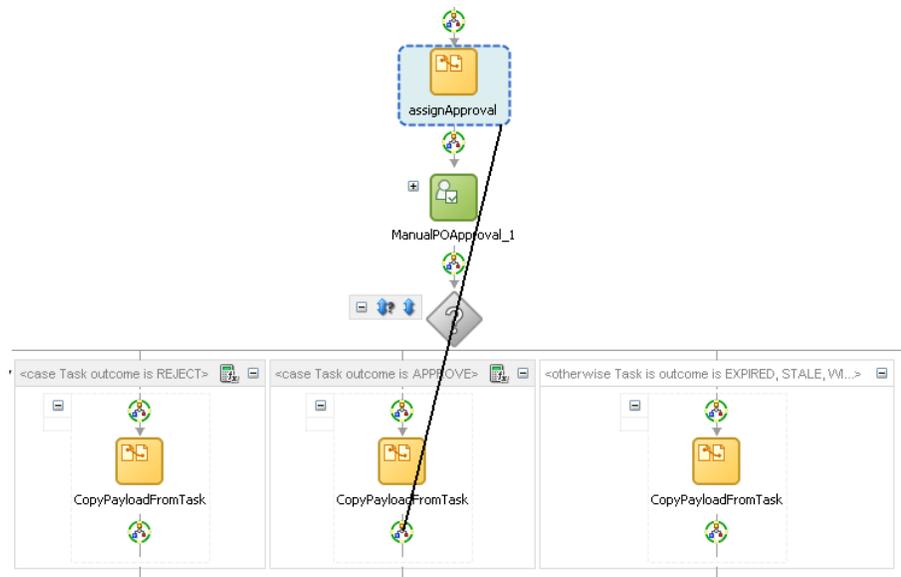
You just configured the **Human Task**, so the next step is to take appropriate actions in the **Switch**.

Click the plus icon next to the Switch to expand it.

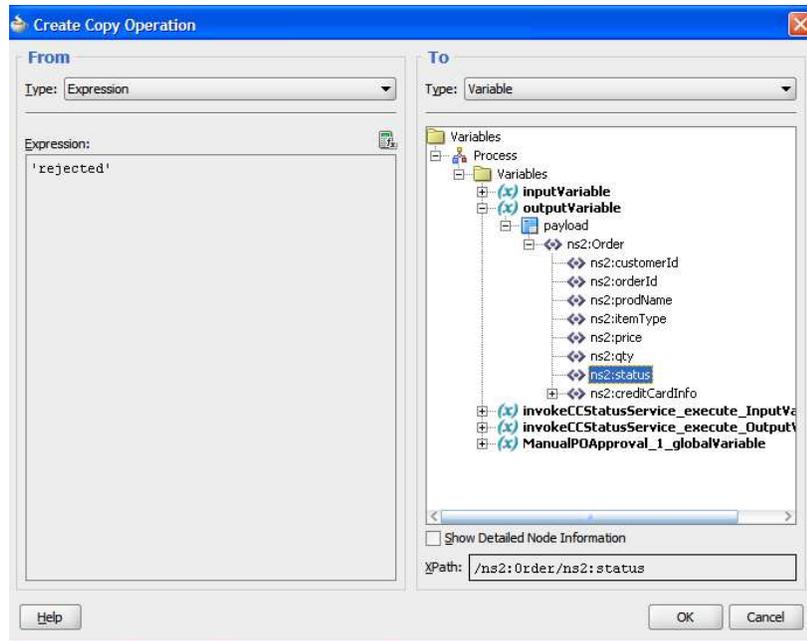


- Notice the three outcomes this Human Task was configured for: APPROVE; REJECT; or EXPIRED, STALE, WITHDRAWN, or ERRORED. You will set the status for each of those cases.

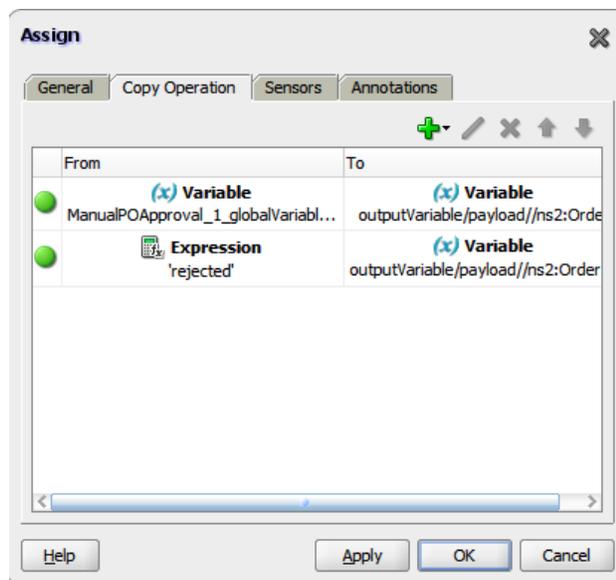
The approved case was already done earlier, so you can reuse that. Drag the **assignApproval Assign** activity underneath the **CopyPayloadFromTask Assign** activity in the APPROVE branch of the <switch>.



- Double-click the **CopyPayloadFromTask Assign** activity in the REJECT branch. Click the green plus icon and add a new copy operation.
- Set the **status** field of the **outputVariable** variable to 'rejected'.



12. Click OK.

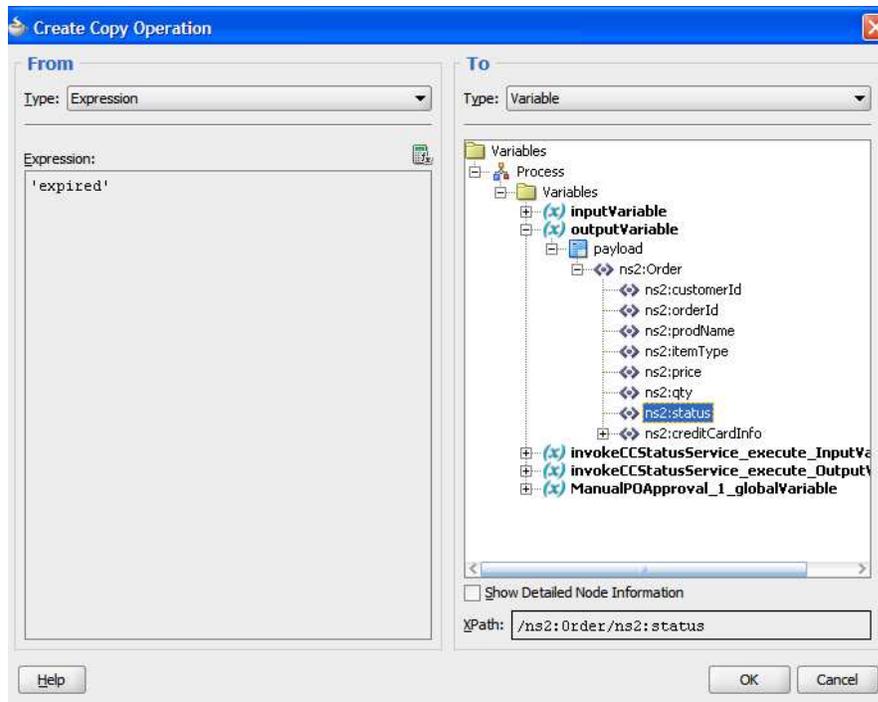


13. Click OK.

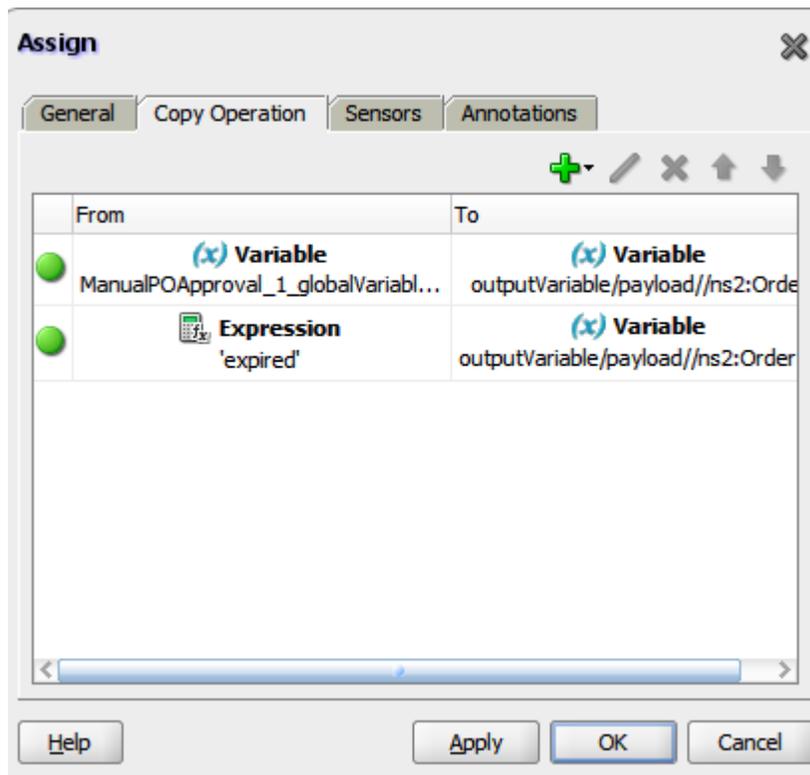
14. Now for the third branch. Double-click the **CopyPayloadFromTask** <assign> activity in the EXPIRED, STALE, WITHDRAWN, or ERRORED branch.

15. Click the green plus icon and add a new copy operation.

16. Set the **status** field of the **outputVariable** variable to '**expired**'.

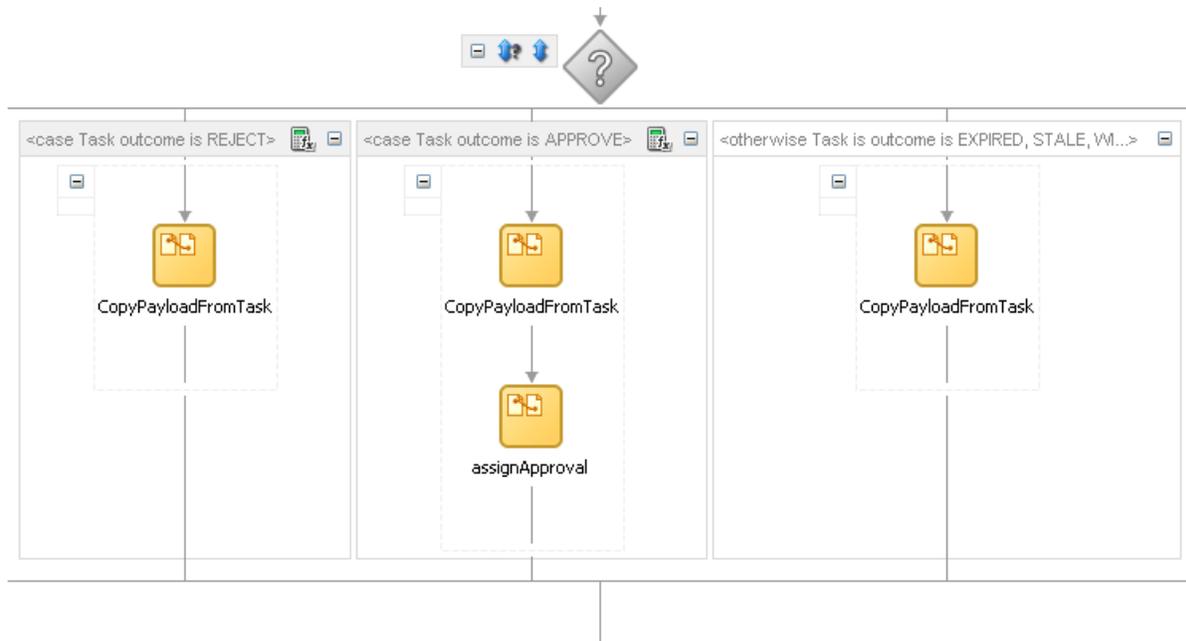


17. Click OK.



18. Click OK.

The <switch> activity now looks like the following figure. Note that the APPROVE branch could have been done the same way as the other two, but in this case there are two separate <assign> activities. The end result is the same.



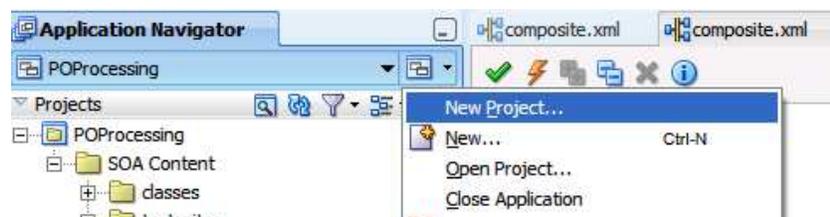
19. Save the BPEL process.

5.5 Creating the Task form for task details

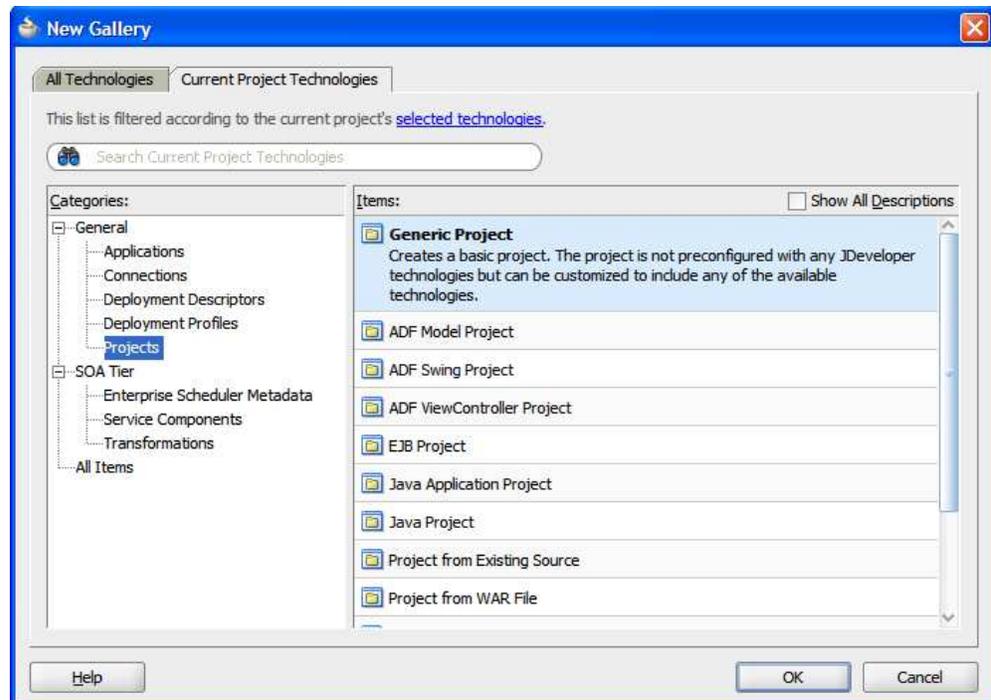
The Task is an ADF form that is created in a separate project. You create a JSF project to manage the task form and point it to the task file you create in your composite.

Creating a form from a Human Task definition is quick and easy; simply accept the defaults for the different steps or customize as desired. A default form layout is created automatically. You have the option to edit this as desired.

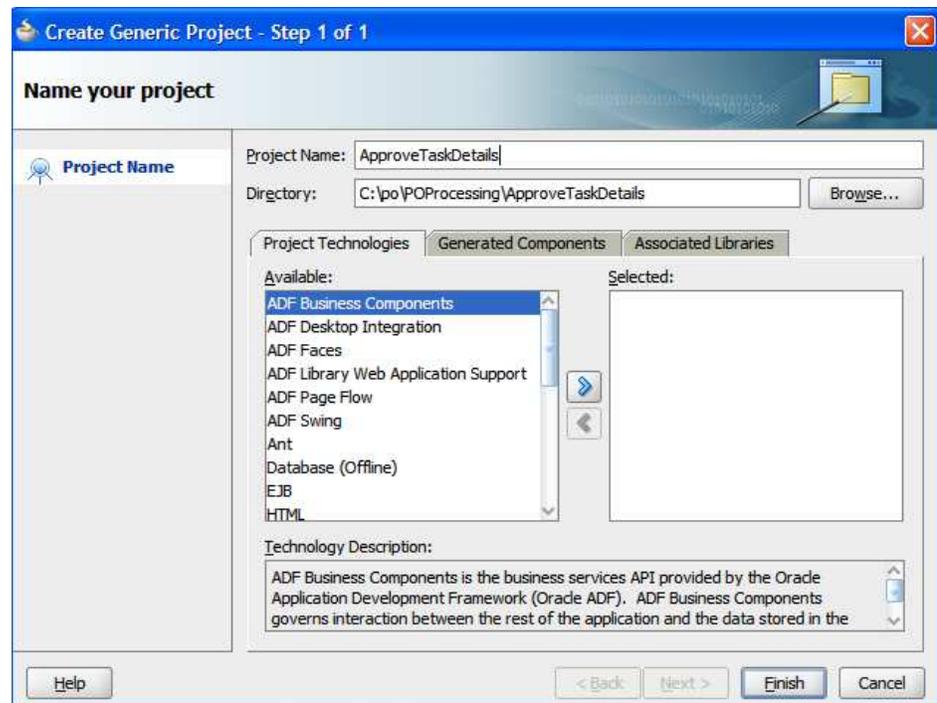
1. From the **Application Menu**, select **New Project**



2. Select **General** in the **Categories** column and **Generic Project** under **Items**.

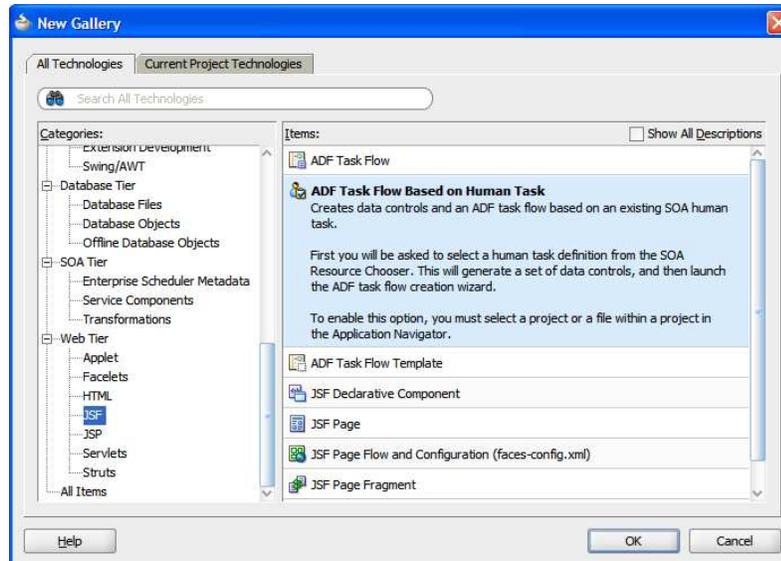


3. Click **OK**
4. Enter the project name, ApproveTaskDetails

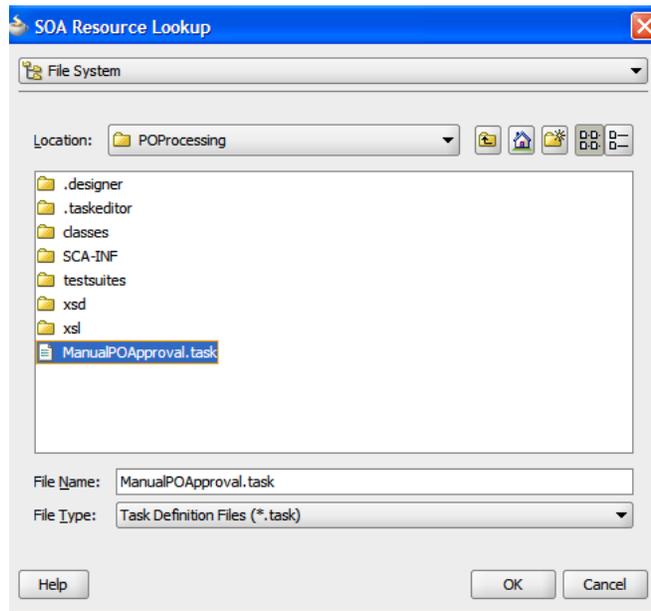


5. Click **Finish**

6. Right-click on the new project and select **New**
7. In the **New Gallery**, scroll to the **Web Tier** category and select **JSF**. Under **Items**, select **ADF Task Flow Based on Human Task** (and click OK)

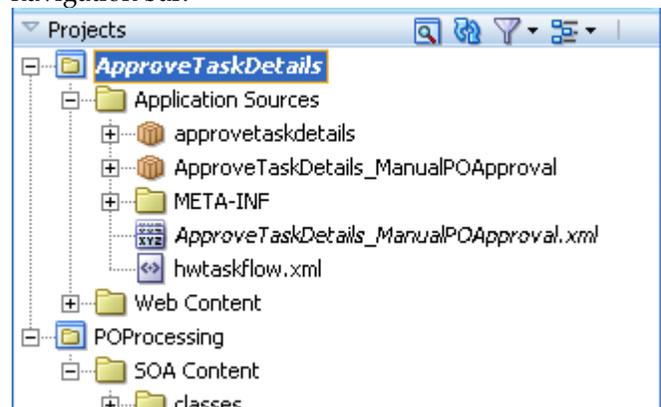


8. In the **SOA Resource Lookup** dialog, browse to the `ManualPOApproval.task` file you created in the `POProcessing` project. This file is in the `POProcessing` folder.



9. Click **OK**.
10. In the **Create Task Flow** dialog, accept all defaults and click **OK**.
11. The task details page is initialized and all of the artifacts needed for the form are added to your new project. Close the folders of the task details project in the

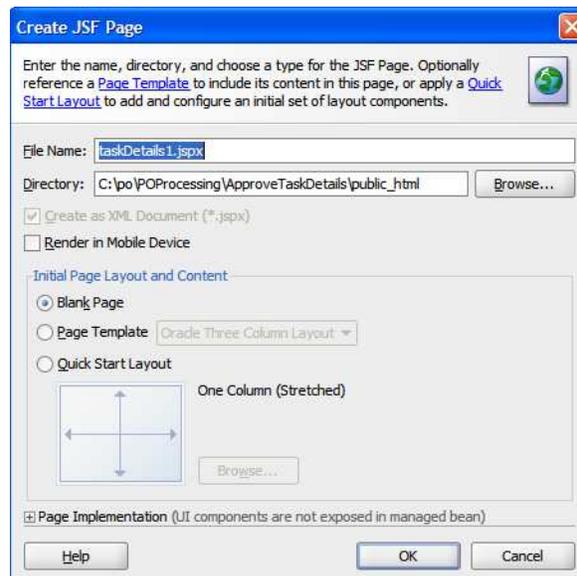
navigation bar.



12. Double-click on the taskDetails1.jspx icon in the Task Flow view to finish creating the task flow.

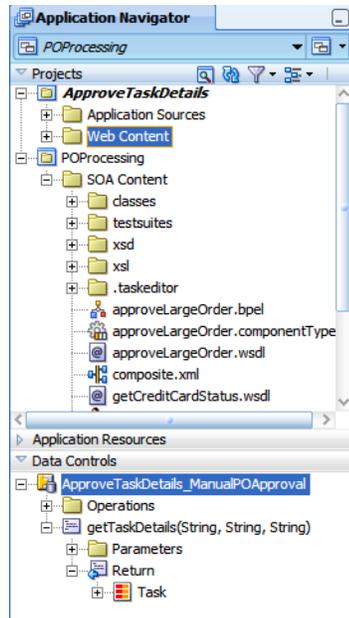


13. In the **Create JSF Page** dialog, accept all defaults and click **OK**.



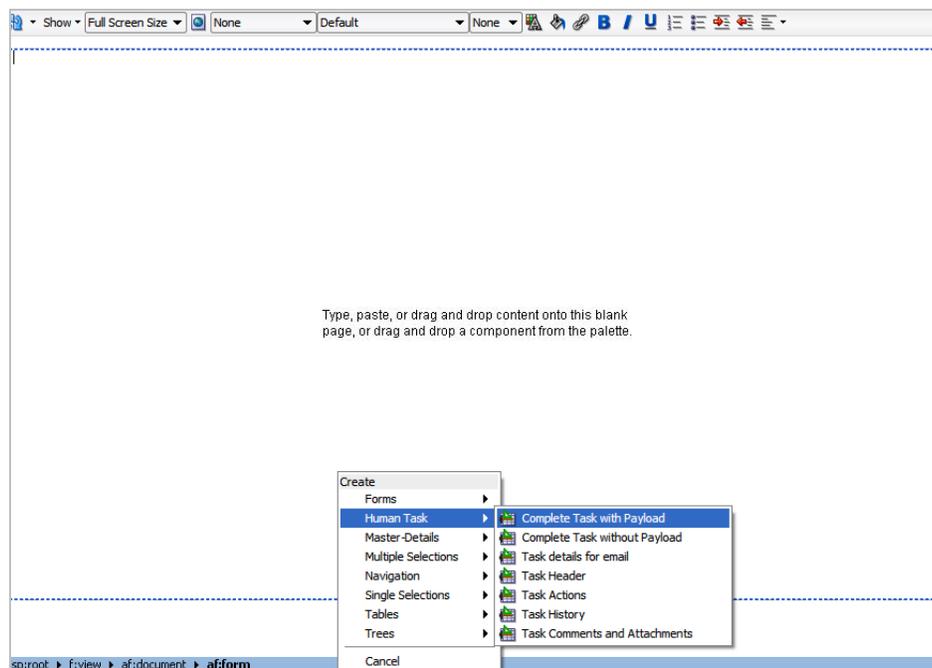
Now the empty task flow page is open. You will drag the task definition to this page to create all of the elements of the Order payload that you specified as the task payload when you created the task in the composite project.

14. Locate the Task definition in the Data Controls section of the Application Navigator as shown in the figure below.



15. Drag the Task to the empty task flow page and drop it anywhere.

16. In the menu that opens, select **Human Task -> Complete Task with Payload**



17. In the dialog, **Edit Action Binding**, accept all defaults and click **OK**. Click **OK** again to finish creating the task form.

18. **Save-All** and close any task windows that are still open

19. In the Application navigation pane, you see lots of files listed in the new task form project. Scroll the pane to the top and left and close the folders for the project to clean up the navigation view and allow you to see your composite project again.

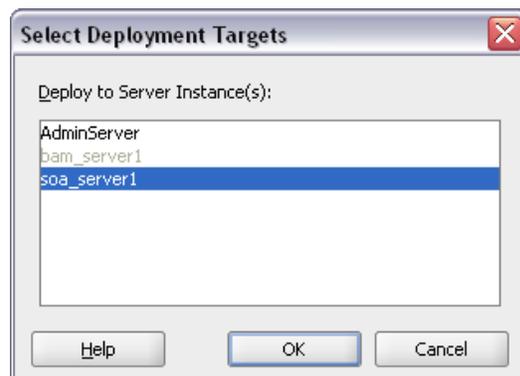
You can also create the default task form with a single one-click action. However, this only works with SOA 11g RC4 or later. Complete the following.

1. In the BPEL process (not the composite), right-click on the Human Task and select **Auto-generate task form**.
2. Enter a project name *ApproveTaskDetails* for your task form and select **OK**.
3. Stand back and watch the magic (it may look like nothing is happening at first but be patient and don't touch anything). You can watch your disk light.
4. The Task Flow diagram will open and then the task form itself. When you see the task form *TaskDetails1.jspx page* open with the payload form elements, the form is created. **Save all** and close the task form and task flow windows.

The step by step method for creating the task form is included here for your information. If you already created your form, skip to step 23.

5.6 Deploying and Testing the application

1. Deploy the POProcessing composite from its project menu. Enter a new version number or select the checkbox to overwrite the existing version. Read **Appendix A** if you need more details about how to deploy and test your composite.
2. Next, deploy the ApproveTaskDetails task form project by selecting **Deploy** from the **Application** menu in the toolbar.
3. STOP – did you select deploy from the project menu or the application menu? Task forms are deployed using the **Application** menu, not the **Project** menu. You can find the **Application** menu in the toolbar or you can right-click on the application name to bring up the menu or you can click the drop down menu icon to the right of the application name to open the application menu. Read **Appendix A** for more details about how to deploy your task form.
4. In the **Deployment Configuration** dialog, set the managed server *soa_server1*.



5. Click **OK**.
If you chose to deploy the task form project from its project menu, you will see an error message and deployment will not complete. You must deploy task forms from the **Application** menu in the toolbar. Go back to step 2.

6. Once deployed, open the EM console to test the application using the input for a large order as you did in the previous chapter. This will create a new order that's over \$1,000. Copy the input data into the **XML View** in the **Test** page from: `C:\po\input\po-large-iPodx30.txt`
7. As usual, the **Response** tab won't show any results as this is a one-way invocation with no reply or callback. Also notice, however, that a new order file was not created in `c:\temp`. That's because the application hasn't completed running yet. To see what's going on, you need to look at the instance audit trail.
8. Click **Launch Message Flow Trace** to see the details of the message flow for this instance of your composite. Alternatively, click the latest instance from the composite page. You'll notice the status for **approveLargeOrder** and **ManualPOApproval** are both still running. They are waiting for the human task to be processed.

Trace

Click a component instance to see its detailed audit trail.

Show Instance IDs

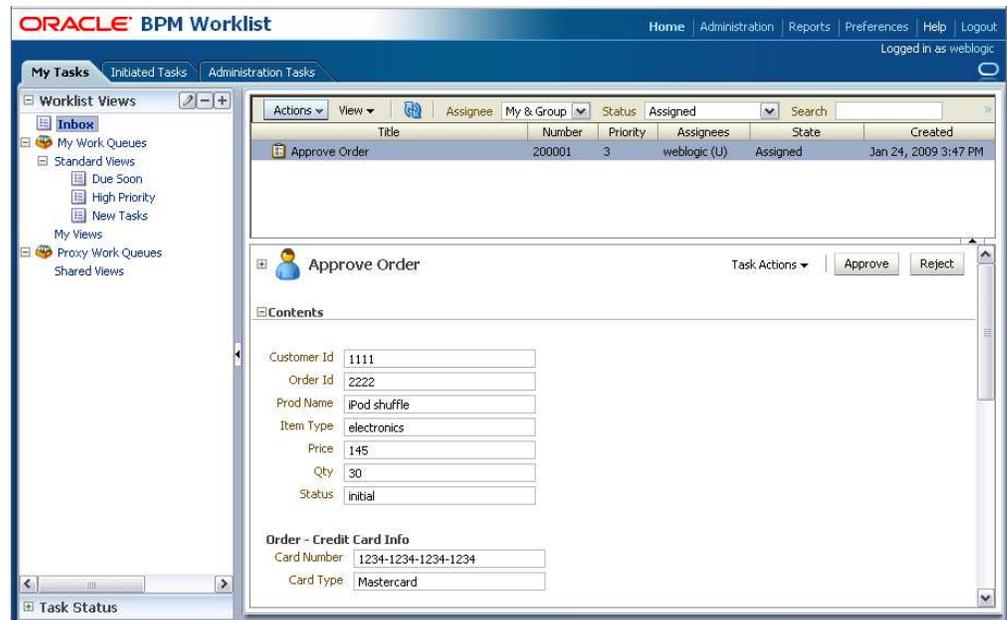
Instance	Type	State	Time	Composite Instance
receivePO	Service	Completed	Mar 3, 2009 6:48:01 PM	POProcessing of 10001
routePO	Mediator Component	Running	Mar 3, 2009 6:48:02 PM	POProcessing of 10001
approveLargeOrder	BPEL Component	Running	Mar 3, 2009 6:48:18 PM	POProcessing of 10001
getCreditCardStatus	Reference	Completed	Mar 3, 2009 6:48:03 PM	POProcessing of 10001
getStatusByCC	Service	Completed	Mar 3, 2009 6:48:03 PM	validationForCC of 10002
RouteRequest	Mediator Component	Completed	Mar 3, 2009 6:48:07 PM	validationForCC of 10002
getCreditValidation	Reference	Completed	Mar 3, 2009 6:48:07 PM	validationForCC of 10002
ManualPOApproval	Human Workflow Comp	Running	Mar 3, 2009 6:48:12 PM	POProcessing of 10001

9. Now it is time to "change hats" and log on to the worklist application as a customer service representative to approve the task. Using a browser, open <http://localhost:8001/integration/worklistapp> (use the correct port for your installation)
10. Logon using the following credentials:
 - **Username:** *weblogic*
 - **Password:** *welcome1* (or appropriate for your machine)

The worklist application is an out-of-the-box application where users can view and manage their tasks.

11. Click on the most recent task to highlight it.

Selecting the task opens it in the lower frame of the work list application. The first time the task is opened there will be a delay of a minute or so while the pieces of the form are compiled and loaded.



12. When the form opens, you can see the task details and the different options. Select **Reject** or **Approve** as desired. This will submit the task and notify the BPEL process it can continue. If you have edited the task data, using the buttons will also save the data before submitting. If you use the **Actions** menu to submit the task, you must save manually first.
13. Return to the task flow in the EM console. If you still have it open you can just refresh the page. Notice that it is now complete.

Trace

Click a component instance to see its detailed audit trail.

Show Instance IDs

Instance	Type	State	Time	Composite Instance
receivePO	Service	Completed	Mar 3, 2009 6:48:01 PM	POProcessing of 10001
routePO	Mediator Component	Completed	Mar 3, 2009 7:02:11 PM	POProcessing of 10001
WriteApprovalResults	Reference	Completed	Mar 3, 2009 7:02:11 PM	POProcessing of 10001
approveLargeOrder	BPEL Component	Completed	Mar 3, 2009 7:02:11 PM	POProcessing of 10001
getCreditCardStatus	Reference	Completed	Mar 3, 2009 6:48:03 PM	POProcessing of 10001
getCreditCardStatus	Service	Completed	Mar 3, 2009 6:48:03 PM	validationForCC of 10002
RouteRequest	Mediator Component	Completed	Mar 3, 2009 6:48:07 PM	validationForCC of 10002
getCreditValidation	Reference	Completed	Mar 3, 2009 6:48:07 PM	validationForCC of 10002
ManualPOApproval	Human Workflow Comp	Completed	Mar 3, 2009 7:02:09 PM	POProcessing of 10001

14. You will also have a new order file in `c:\temp`.

5.7 Operations and naming

This section gives you all of the operations and names for objects created in this chapter. Experienced users can use this for creating the objects in this chapter quickly. Any questions on details for a particular operation listed here can be found in the preceding sections. The information is divided by the sections in this document.

Adding a Human Task to the composite

- **Name:** ManualPOApproval
- **Namespace:** Leave as default

- **Expose as Composite Service:** Unchecked
- **Wire:** BPEL to task
- **Title:** <% 'Approve Order' %>
(enter 'Approve Order' using the expression builder)
- **Description:** Manual approval task for large orders
- **Parameters:** internalorder.xsd > Order
- **Editable via worklist:** Checked
- **Participant Type dialog, specify the following:**
 - **Type:** Single , **Label:** Large Order Approver, **User:** weblogic

Calling the Human Task from BPEL

- **In case statement, after assignApproval, Human Task:** ManualPOApproval
- **Task Parameter:** Variables > Process > Variables > outputVariable > payload > Order
- Move **assignApproved** to APPROVE branch after **CopyPayloadFromTask**
- **CopyPayloadFromTask Assign REJECT** branch
 - **Copy from:** 'rejected'
 - **To:** outputVariable > payload > Order > status
- **CopyPayloadFromTask Assign Otherwise** branch
 - **Copy from:** 'expired'
 - **To:** outputVariable > payload > Order > status

Creating the Task form for task details

- Right-click human task, select **Auto-generate task form**
- **Project Name:** ApproveTaskDetails
- OR
- **Application** menu > **New Project**, generic project
- **Project Name:** ApproveTaskDetails
- **Project** menu > **New**
- **JSF > ADF Task Flow Based on Human Task**
 - **POProcessing> POProcessing> ManualPOApproval.task**
- Double-click **taskDetails1.jspx** icon in Task Flow view, click **OK**
- Open **Data Controls > getTaskDetails > Return > Task**
 - **drag Task to the open task details page**
 - **select Human Task -> Complete Task with Payload**

- Click **OK** on remaining dialogs, accepting defaults.

The application is completed. Continue with Section 5.6 above to deploy and test your application.