

Exercise 11

Creating a BPEL flow

Prior Knowledge

Understand WSDL and Services

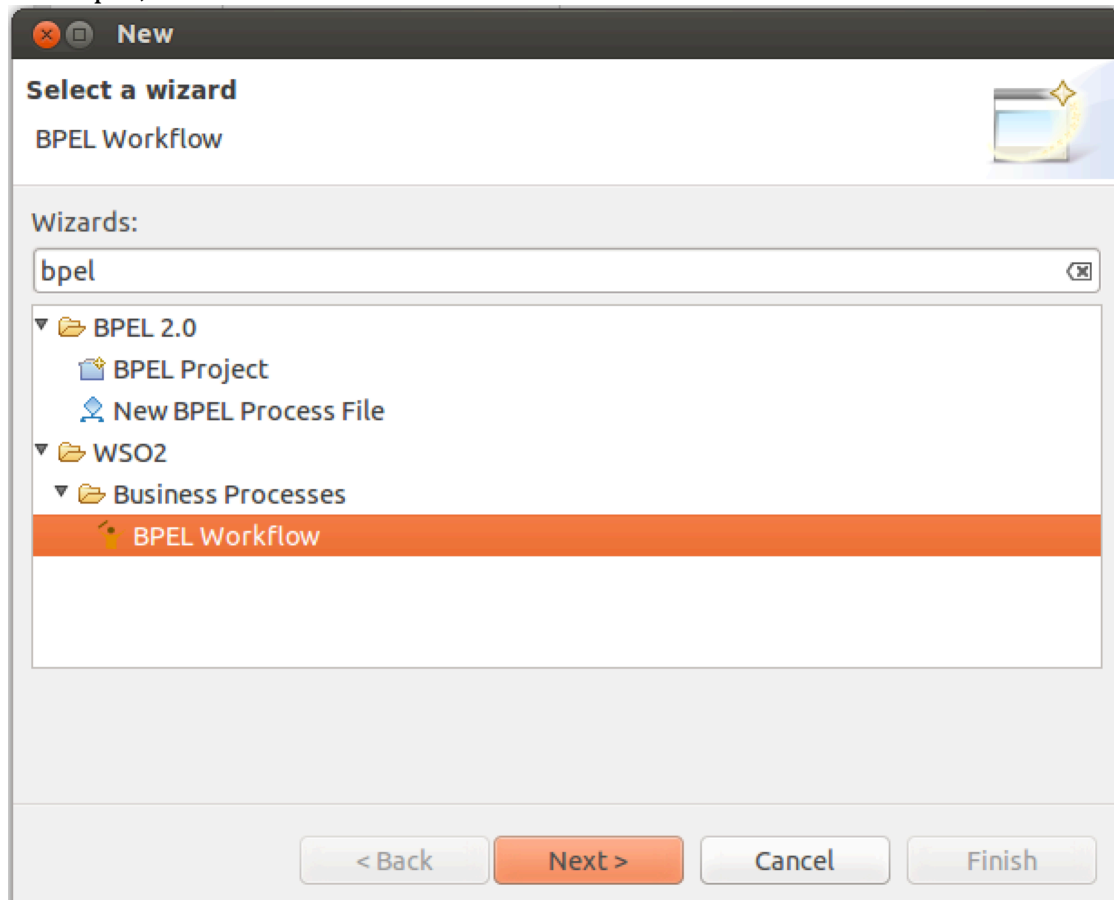
Objectives

Understand the basics of the BPEL specification, and be able to create and execute a business process using the BPEL tooling in Eclipse. Deploy the BPEL into the WS02 BPS and be able to track instances etc.

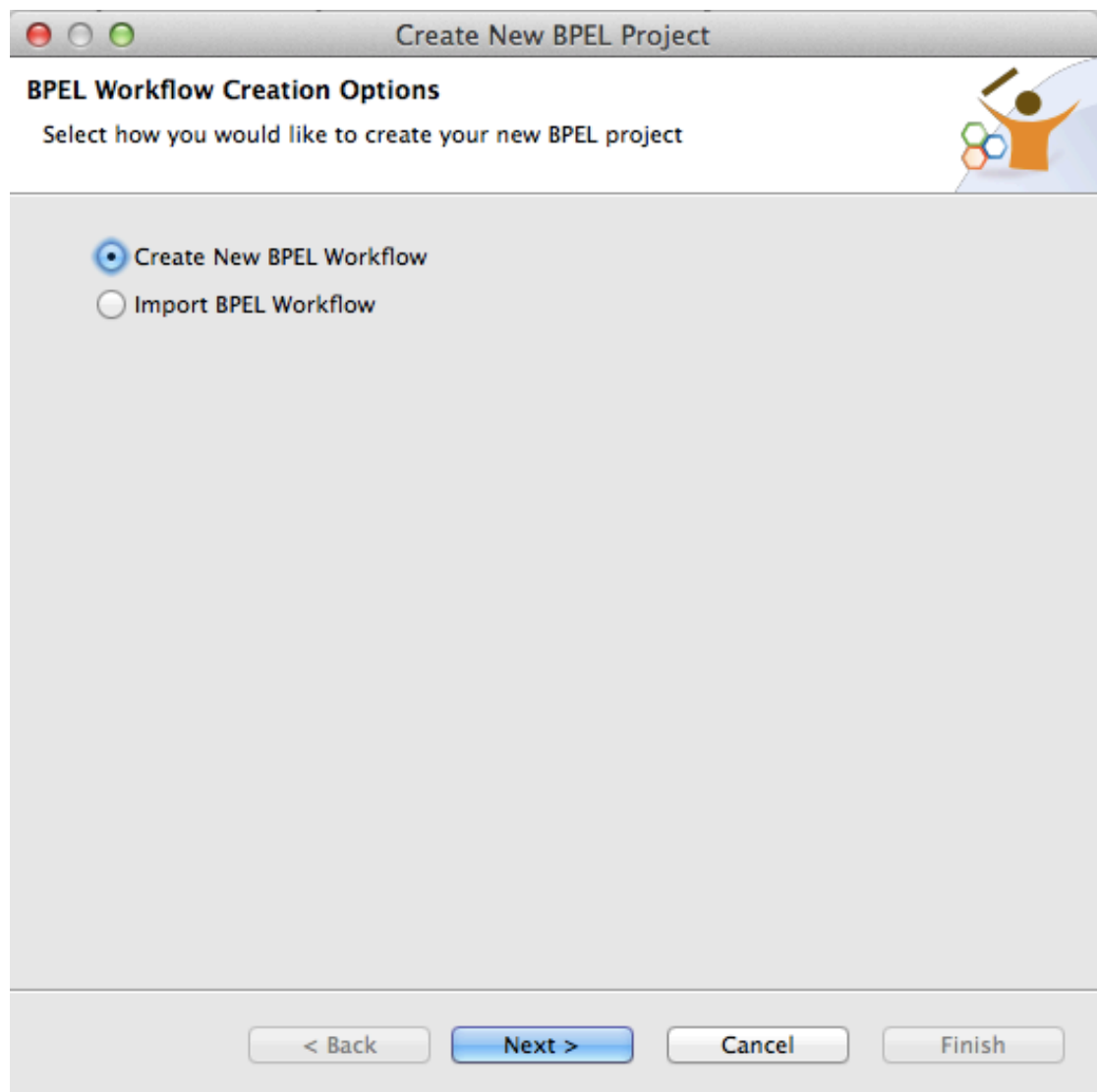
Software Requirements

- Java Development Kit 7
- Eclipse
- WS02 Developer Studio
- WS02 BPS 3.0.0
- WS02 AS 5.0.1 running the Starbucks OMS service from the previous lab

1. In Eclipse, File -> New -> Other -> WS02 -> New BPEL Workflow



2. Select Create New BPEL Workflow



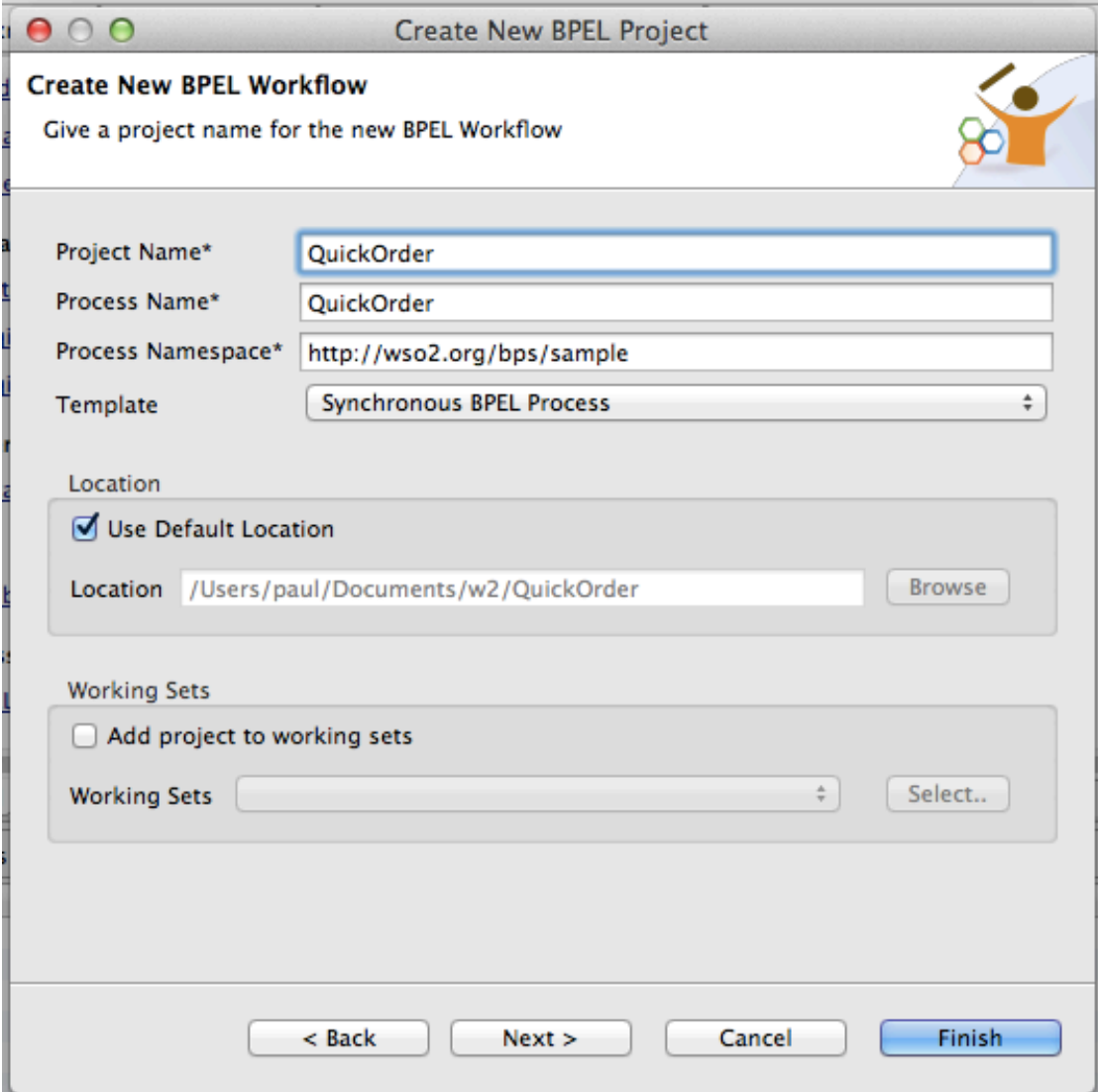
3. Use:

Project Name: QuickOrder

Process Name: QuickOrder

Template: **Synchronous BPEL Process** [note this is NOT the default!]





The image shows a 'Create New BPEL Project' dialog box. The title bar says 'Create New BPEL Project'. The main heading is 'Create New BPEL Workflow'. Below it, it says 'Give a project name for the new BPEL Workflow'. There is a small icon of a person with arms raised and a pencil. The form has several fields: 'Project Name*' with 'QuickOrder', 'Process Name*' with 'QuickOrder', 'Process Namespace*' with 'http://wso2.org/bps/sample', and a 'Template' dropdown set to 'Synchronous BPEL Process'. Below these is a 'Location' section with a checked 'Use Default Location' checkbox and a text field containing '/Users/paul/Documents/w2/QuickOrder' with a 'Browse' button. Then a 'Working Sets' section with an unchecked 'Add project to working sets' checkbox, a 'Working Sets' dropdown, and a 'Select..' button. At the bottom are four buttons: '< Back', 'Next >', 'Cancel', and 'Finish'.

Create New BPEL Project

Create New BPEL Workflow

Give a project name for the new BPEL Workflow

Project Name* QuickOrder

Process Name* QuickOrder

Process Namespace* http://wso2.org/bps/sample

Template Synchronous BPEL Process

Location

☒ Use Default Location

Location /Users/paul/Documents/w2/QuickOrder Browse

Working Sets

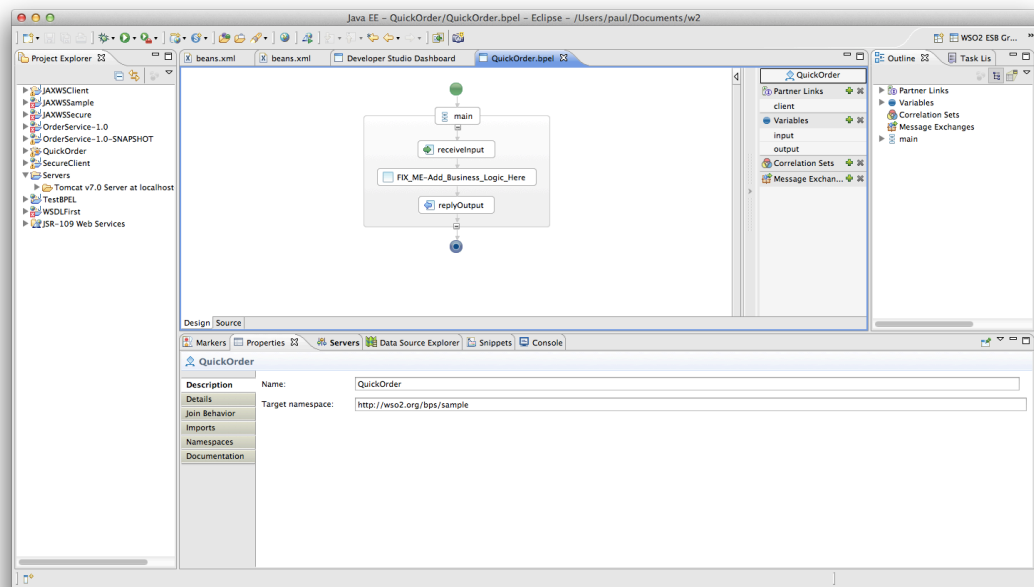
☐ Add project to working sets

Working Sets Select..

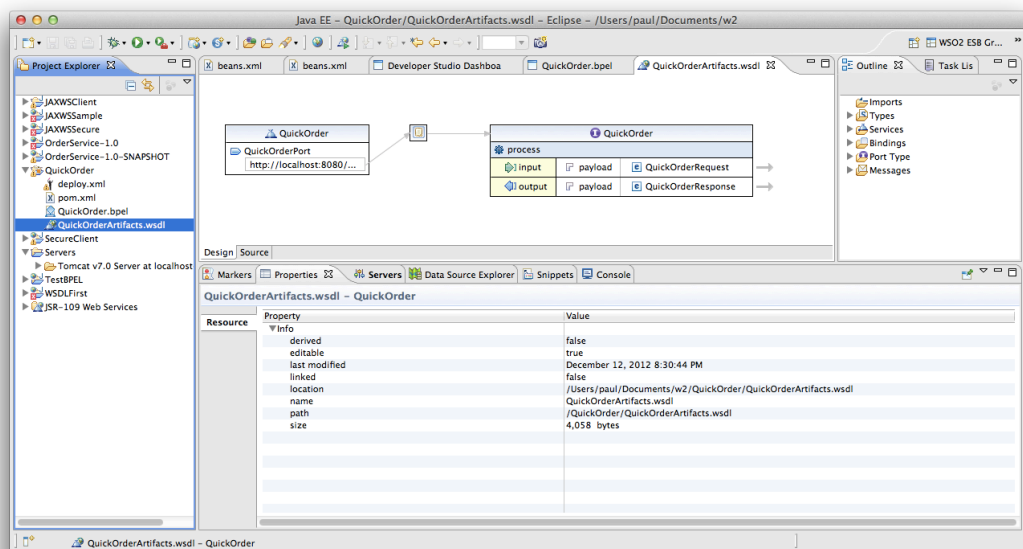
< Back Next > Cancel Finish

4. Click Finish

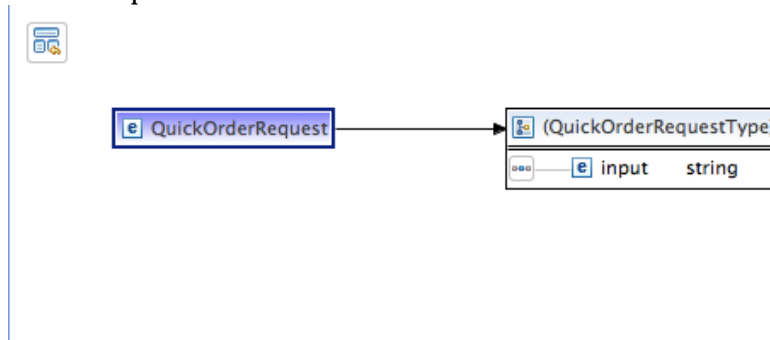
5. Your screen should look similar to this:



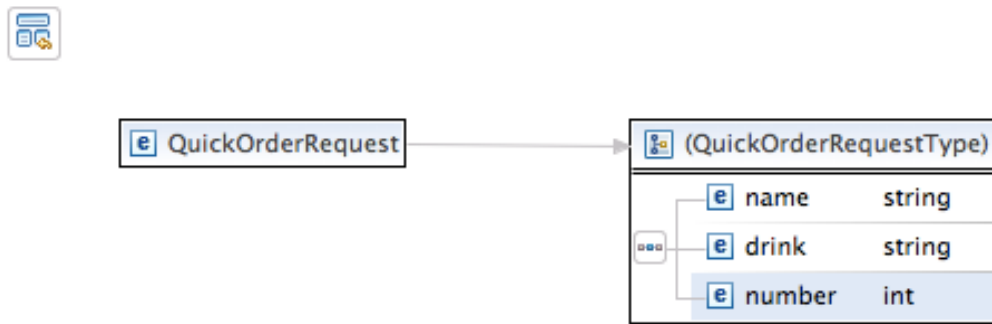
6. For the moment ignore the beautiful flow diagram. Instead, edit the QuickOrderArtefacts.wsdl



- Click on the arrow next to QuickOrderRequest. This will edit the schema for this operation.



- Click on the word "input" and rename it to "name"
- Now Right Click and Insert Element->After
- Change the name of the NewElement to drink
- Add another new element after. Make it an int and call it number
- Now it should look like this:

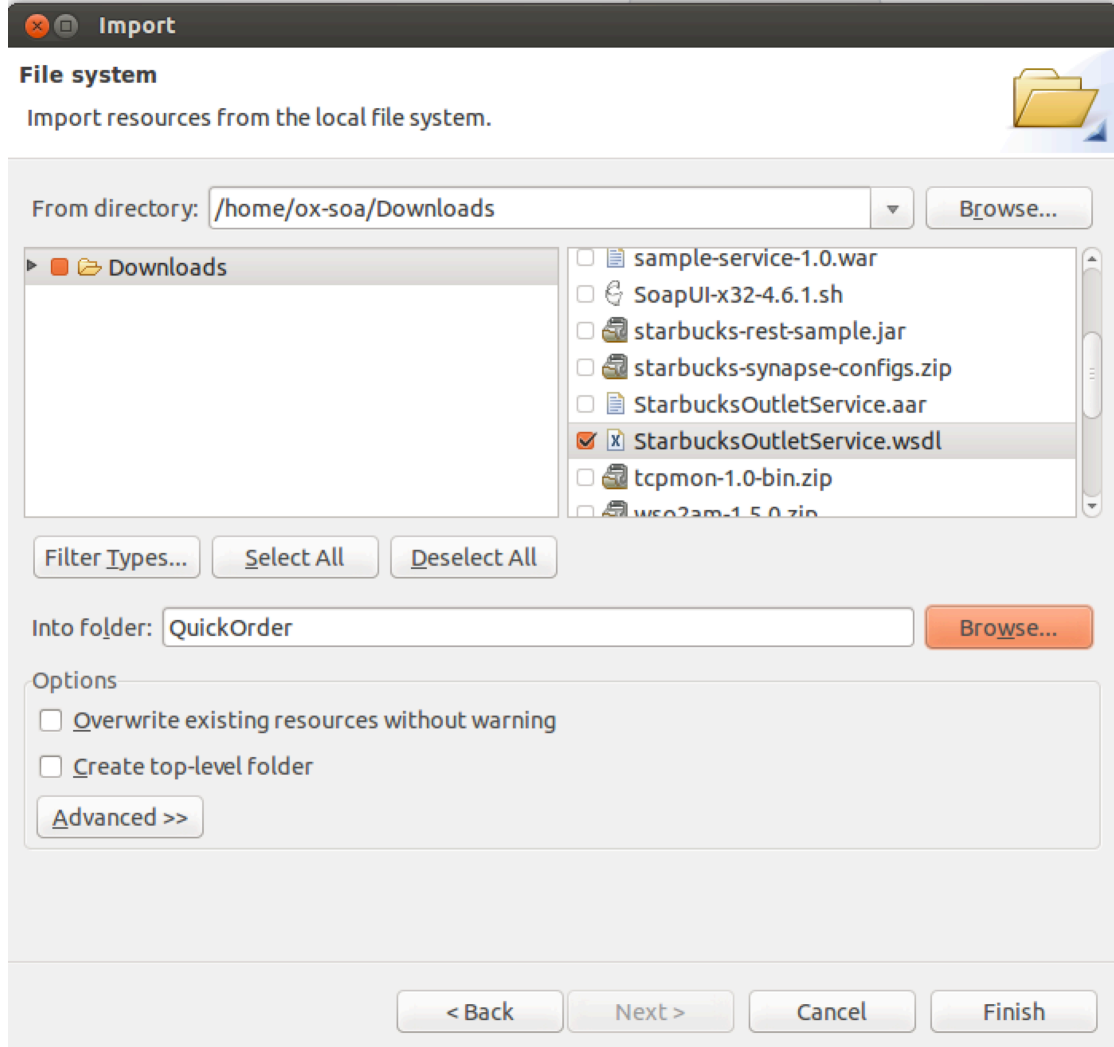


- Hit Command-S/Ctrl-S to save.
- Close the Inline Schema tab and the WSDL tab
- Go back to the Flow Diagram / BPEL page.
- We are now going to import the Starbucks WSDL.
- Make sure the AppServer is running and the Starbucks WSDL is available using the AppServer console on <https://localhost:9443>
- Browse the WSDL, and download it to your local file system. Make sure its called .wsdl (not .xml)



19. Now import it into the QuickOrder project using
File->Import->General->File System

The Eclipse file imported window is a bit weird and pretty hard to describe, but here at least is a picture of what you are aiming for!

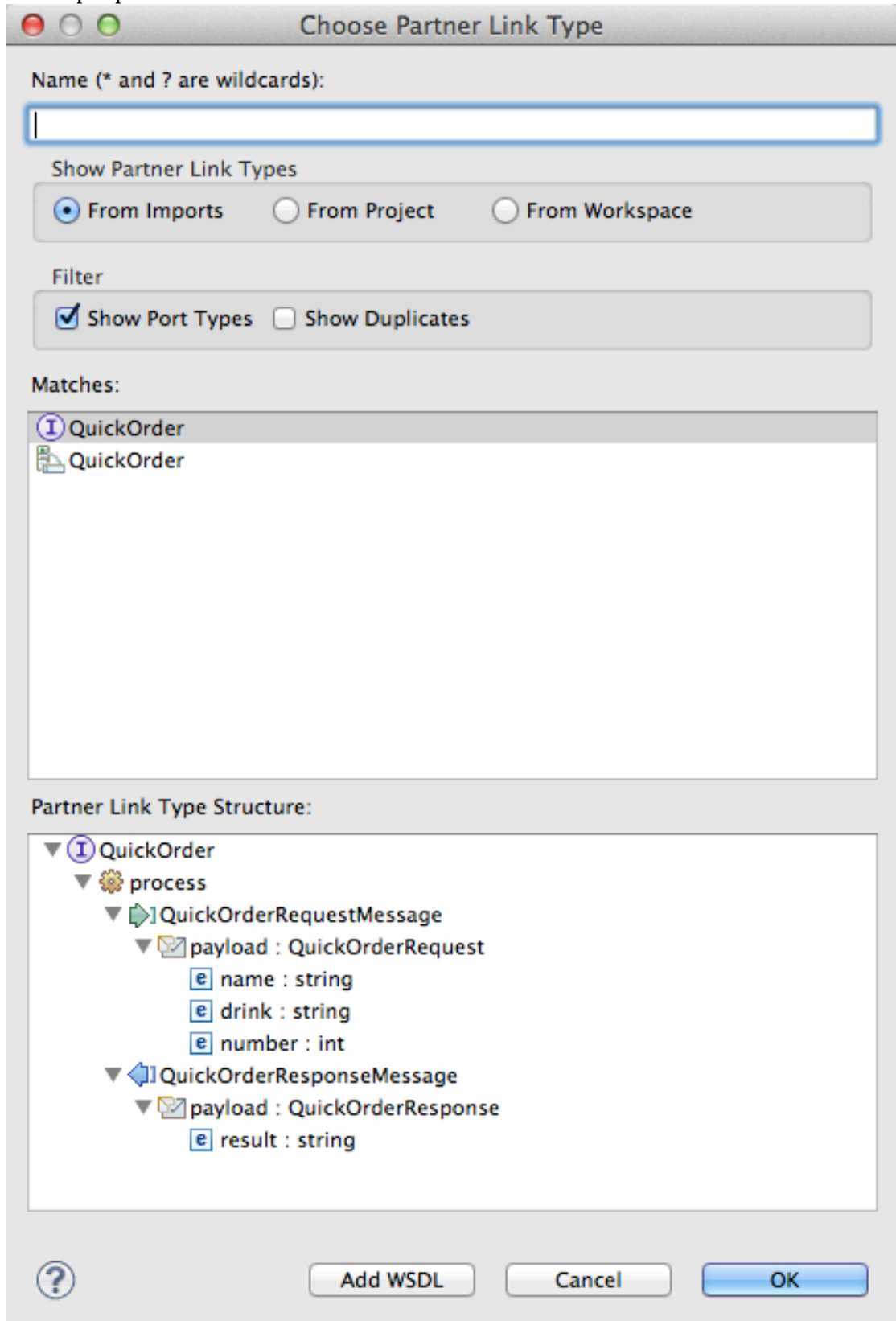


20. Click on the + next to Partner Links also on the right hand side.

21. Change the name of the Partner Link to CoffeeProvider



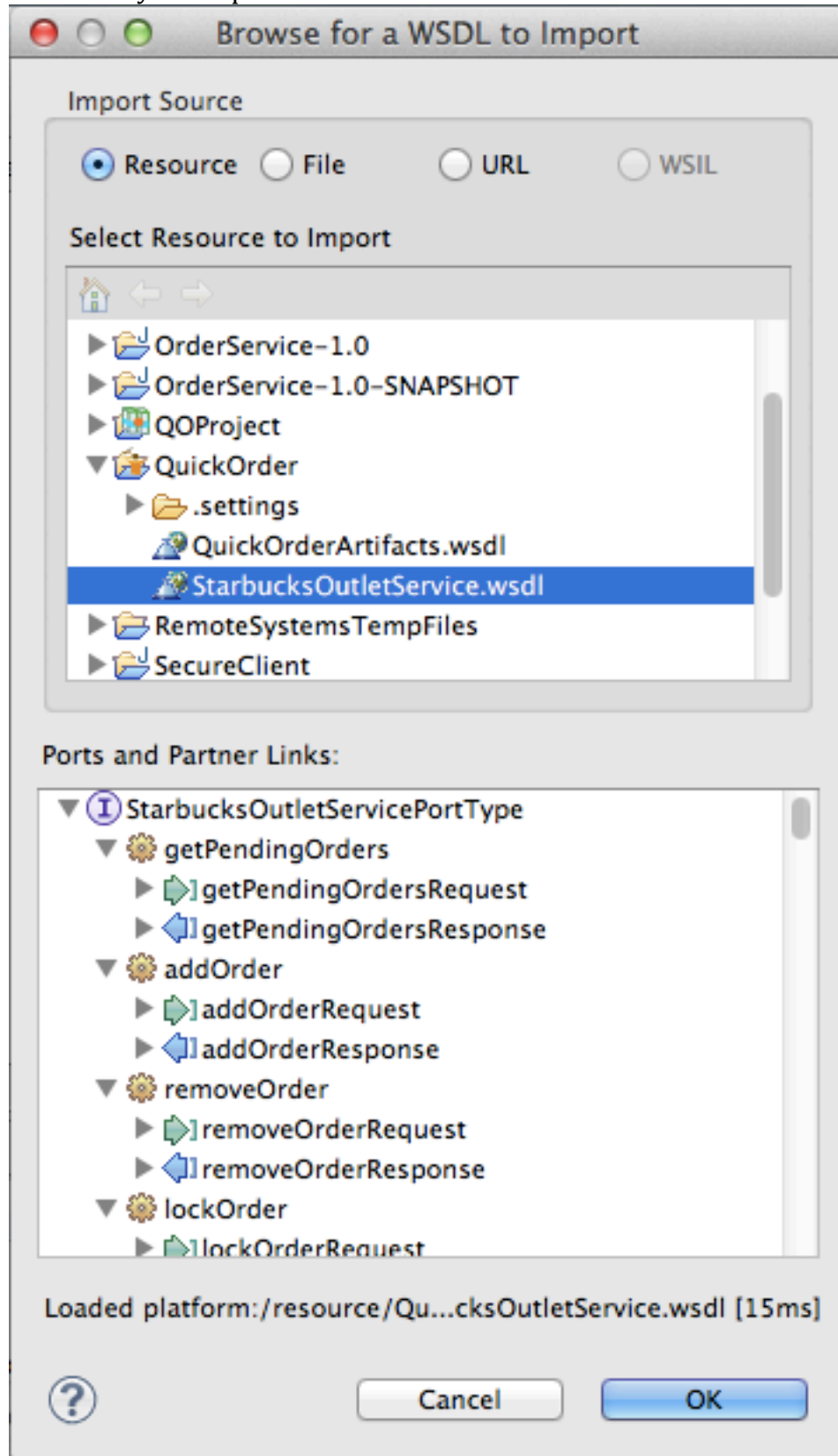
22. In the properties tab below select Browse:



Click Add WSDL



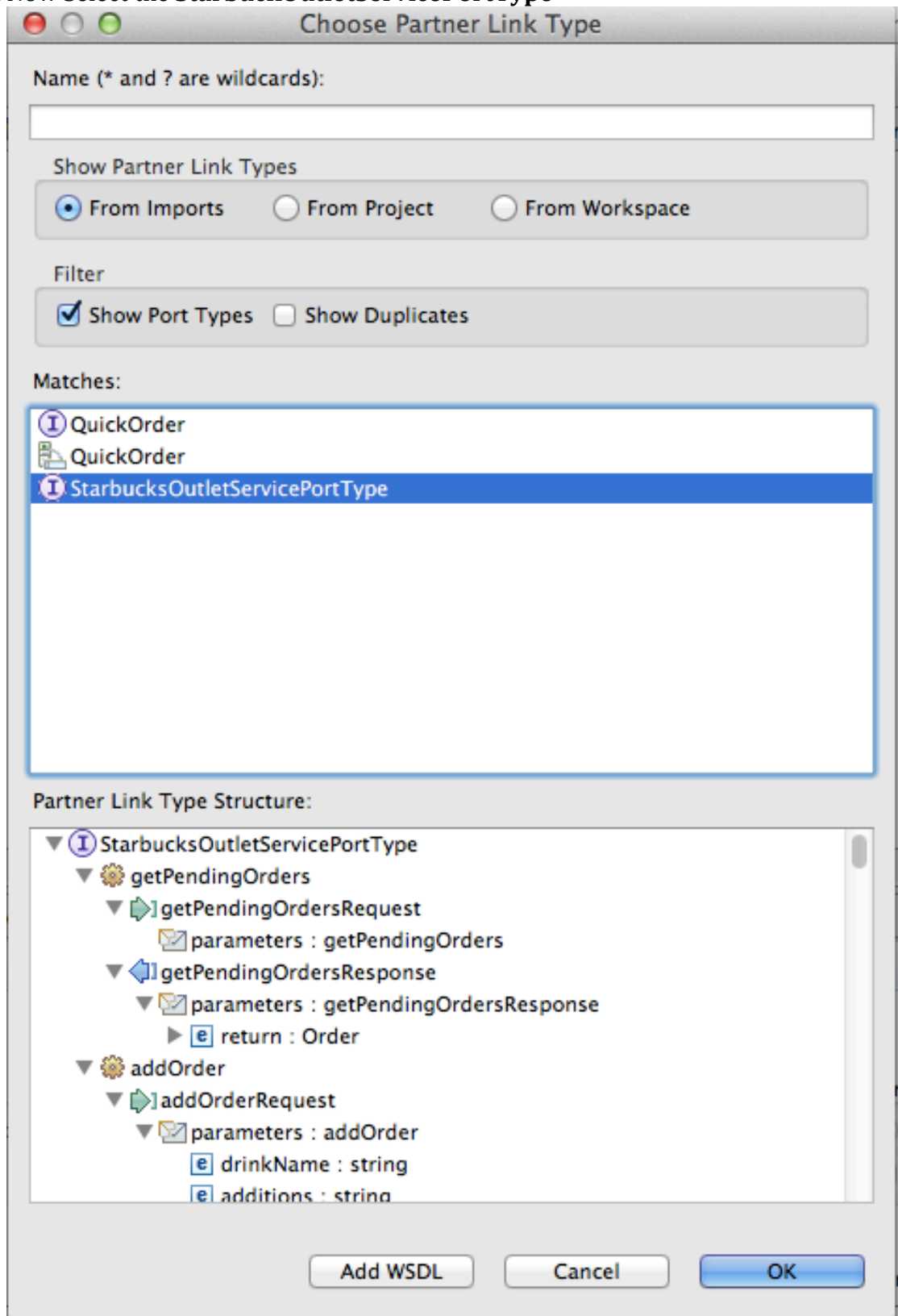
23. Browse to your imported WSDL:



Click OK

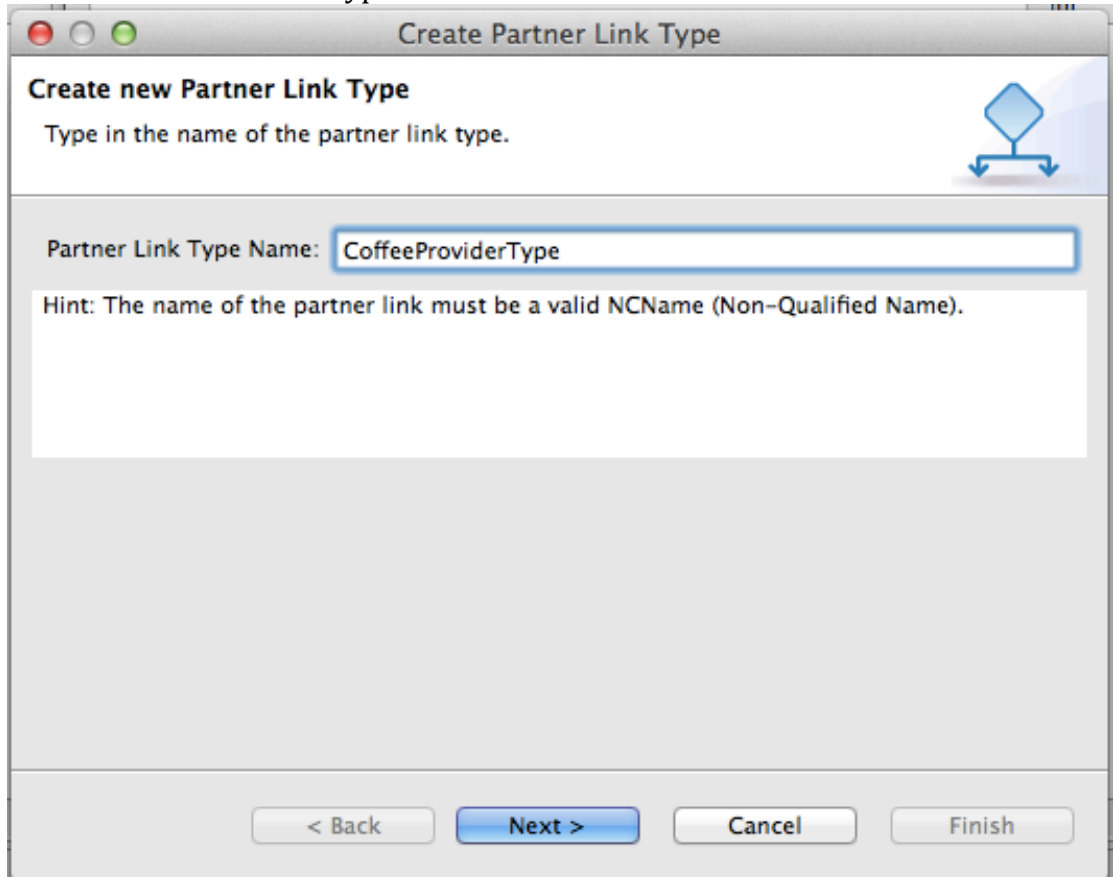


24. Now Select the **StarbucksOutletServicePortType**



25. Click OK

26. Name it CoffeeProviderType



Create Partner Link Type

Create new Partner Link Type

Type in the name of the partner link type.

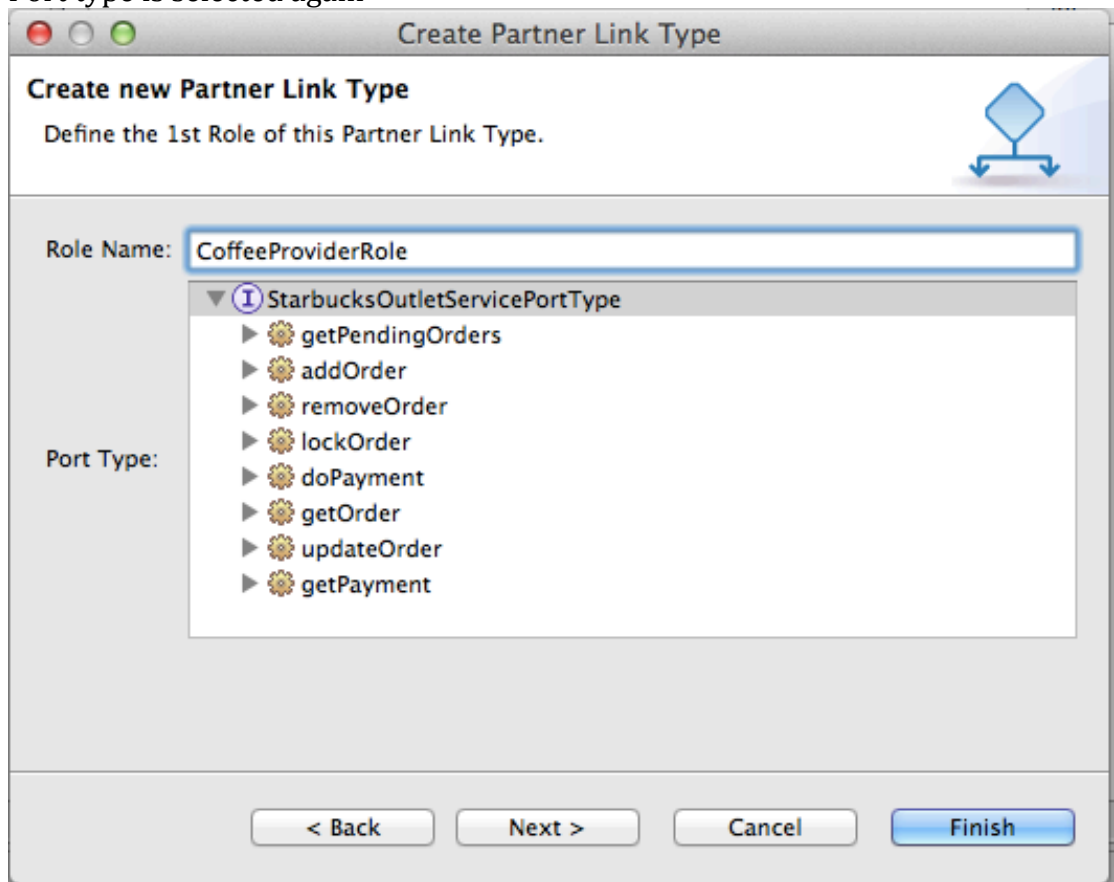
Partner Link Type Name:

Hint: The name of the partner link must be a valid NCName (Non-Qualified Name).

< Back Next > Cancel Finish

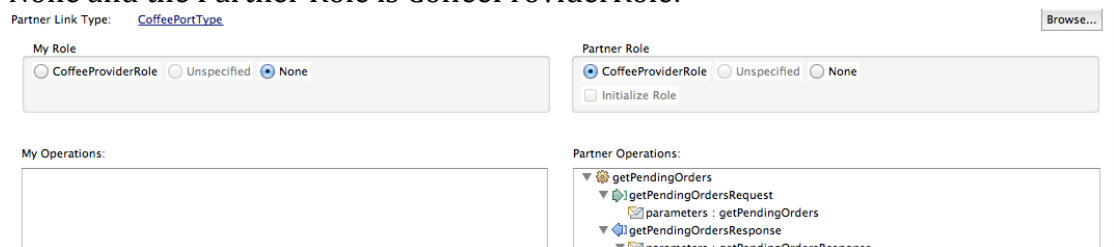


27. Give the role a name (CoffeeProviderRole) and make sure the Starbucks Port type is selected again

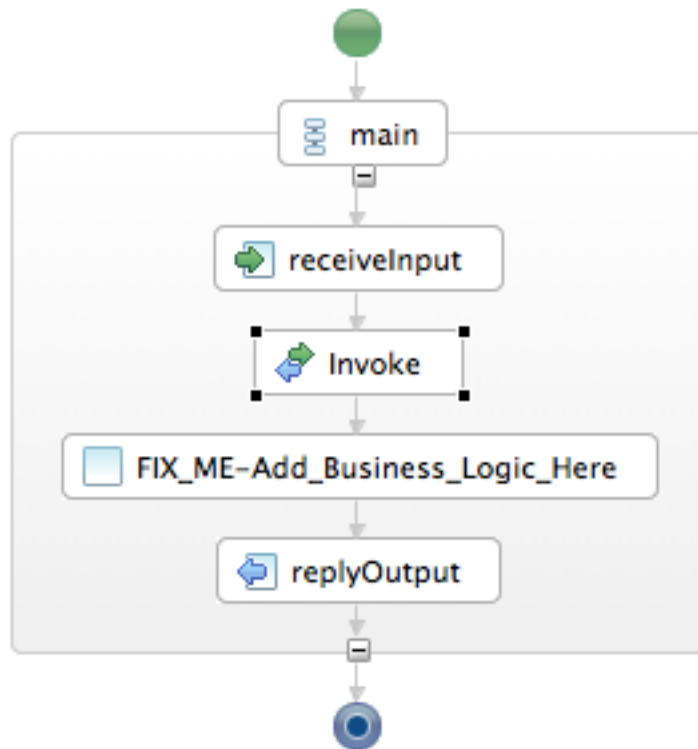


28. Click Finish

29. Back in the Properties pane for the PartnerLink make sure My Role is None and the Partner Role is CoffeeProviderRole:



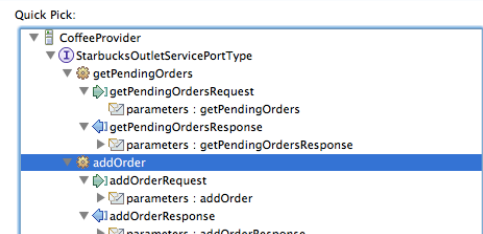
30. Insert an **Invoke** before FIX_ME:



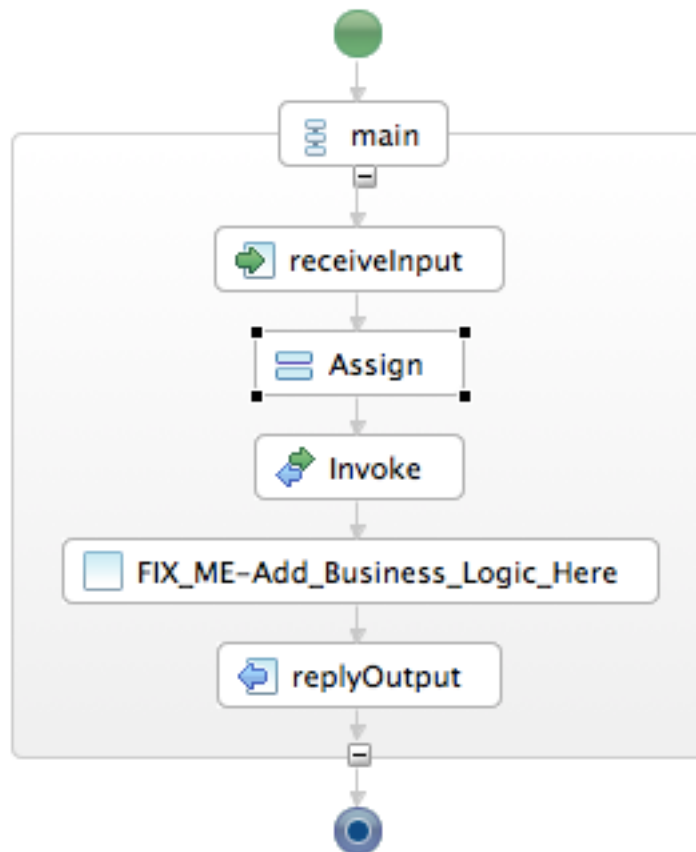
31. Select the invoke. In the properties pane choose the CoffeeProvider partner link and the addOrder operation.

Partner Link:

Operation:



32. Now insert an Assign before Invoke:

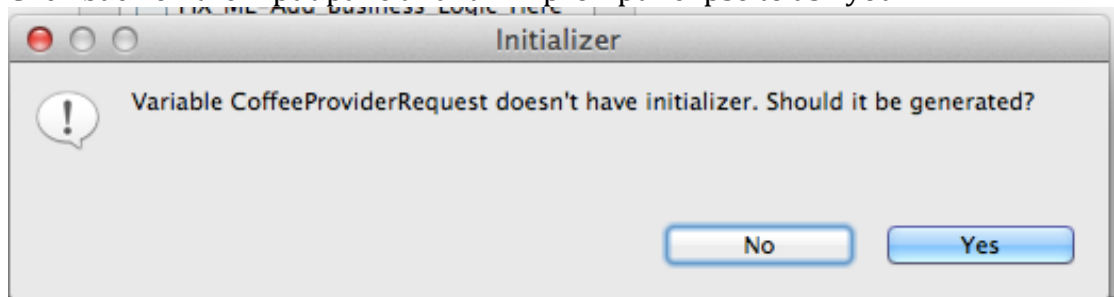


33. In the Properties pane below, click New

34. Choose Variable to Variable

35. Choose the drink from the input/payload and map it to the drinkName in the CoffeeProviderRequest

36. Click back on the input pane and it will prompt Eclipse to ask you



Click Yes

37. This will auto generate a second “copy” operation which is required by the BPEL spec to initialize the XML message for the call out to Starbucks. Your properties should now look like:



☐ Validate

Fixed Value to Variable	From:	To:
Variable to Variable	Fixed Value	Variable

New Delete

Move Up Move Down

```
<ns:addOrder xmlns:ns="http://ws.starbucks.com" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="http://ws.starbucks.com http://ws.starbucks.com/schema/Starbucks.xsd">
  <ns:drinkName>ns:drinkName</ns:drinkName>
  <ns:additions>ns:additions</ns:additions>
</ns:addOrder>
```

Query:

☐ Ignore Missing Source Data ☐ Keep Source Element Name

▼ CoffeeProviderRequest : addOrderRequest

parameters : addOrder

drinkName : string

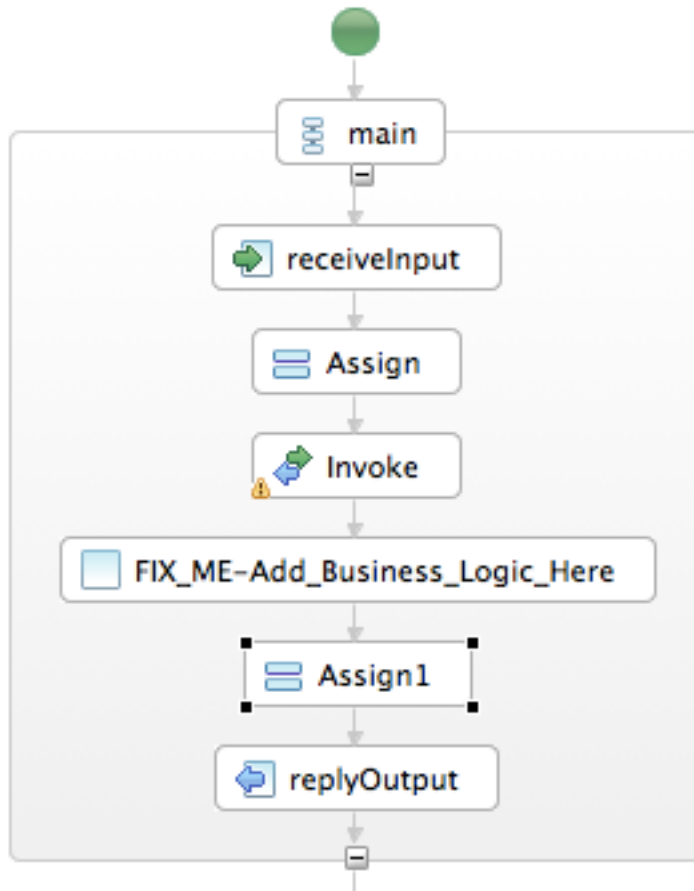
additions : string

input : QuickOrderRequestMessage

output : QuickOrderResponseMessage

Remove the contents of the additions element, so it reads <ns:additions/>

38. Create before replyOutput



39. Get it to copy from **CoffeeProviderResponse/payload/orderId** into **output/payload/response**

40. Go to the deploy.xml

41. Choose the right inbound port type for the client partnerlink:
QuickOrderPort.

42. Choose the StarbucksOutletServiceHttpSoap11Endpoint for the
CoffeeProvider partnerlink.

Our process isn't finished, but we should be able to run it.



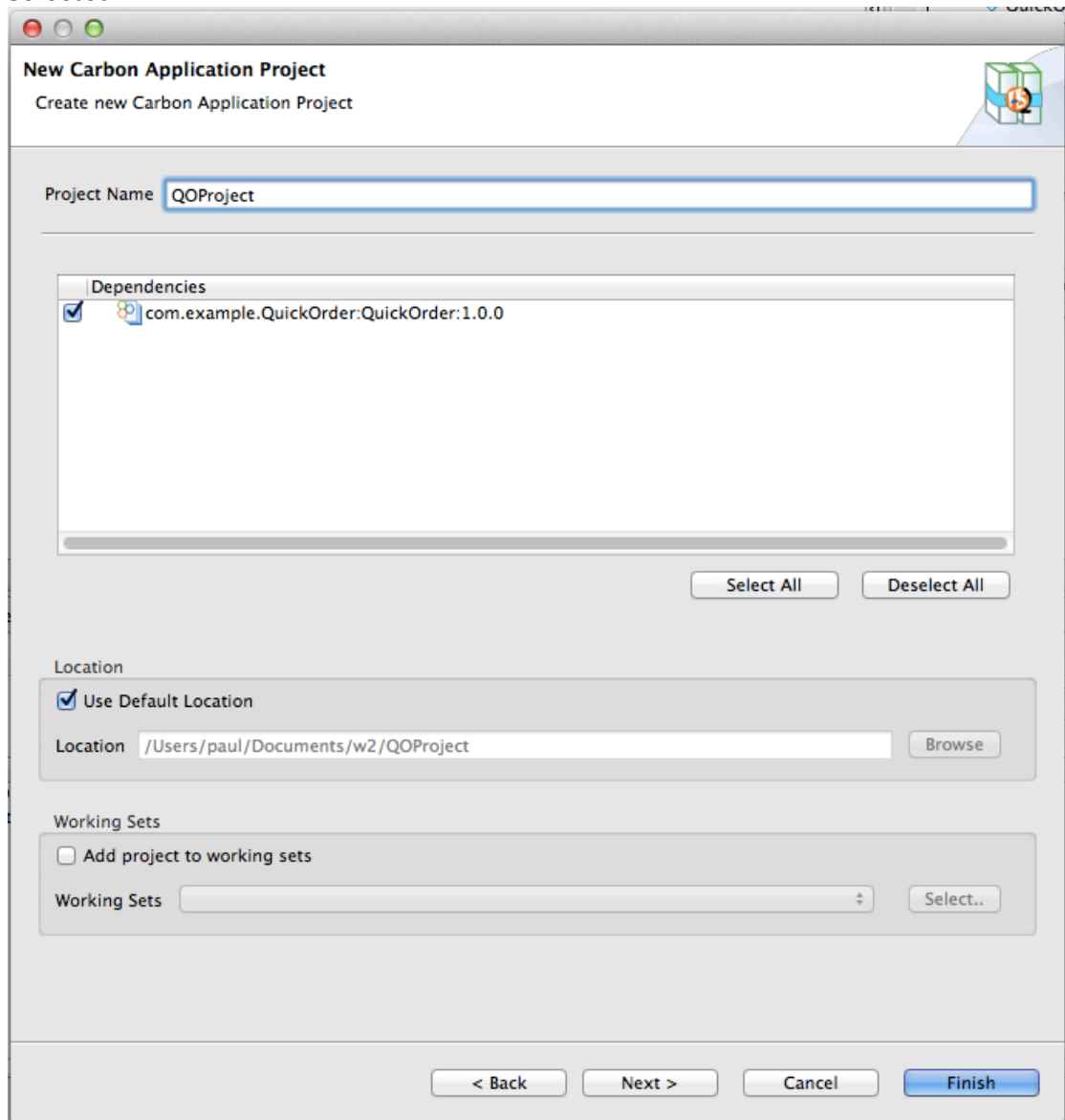
43. Make sure your Business Process Server is running

```
cd ~/servers/wso2bps-3.0.0  
bin/wso2server.sh
```

44. Hit Command-N/Ctrl-N to pull up the New dialog.

45. Choose Carbon Application Project

Give it a Name QOProject and ensure that your QuickOrder process is selected:



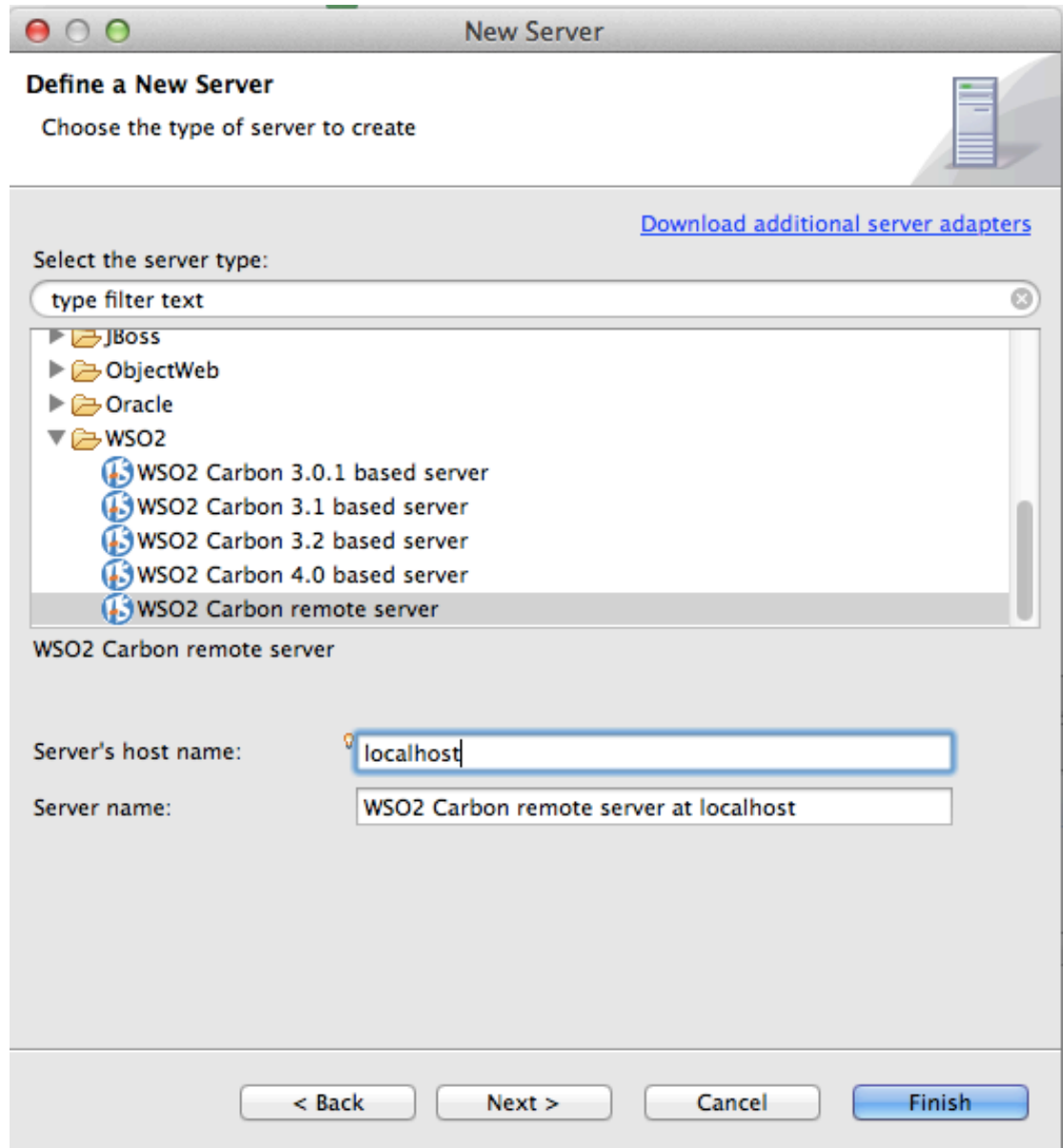
46. Click Finish

47. Hit Command-N/Ctrl-N to pull up the New dialog.

48. Create a new Server



49. Choose WSO2 -> WSO2 Carbon Remote Server



50. Click Next

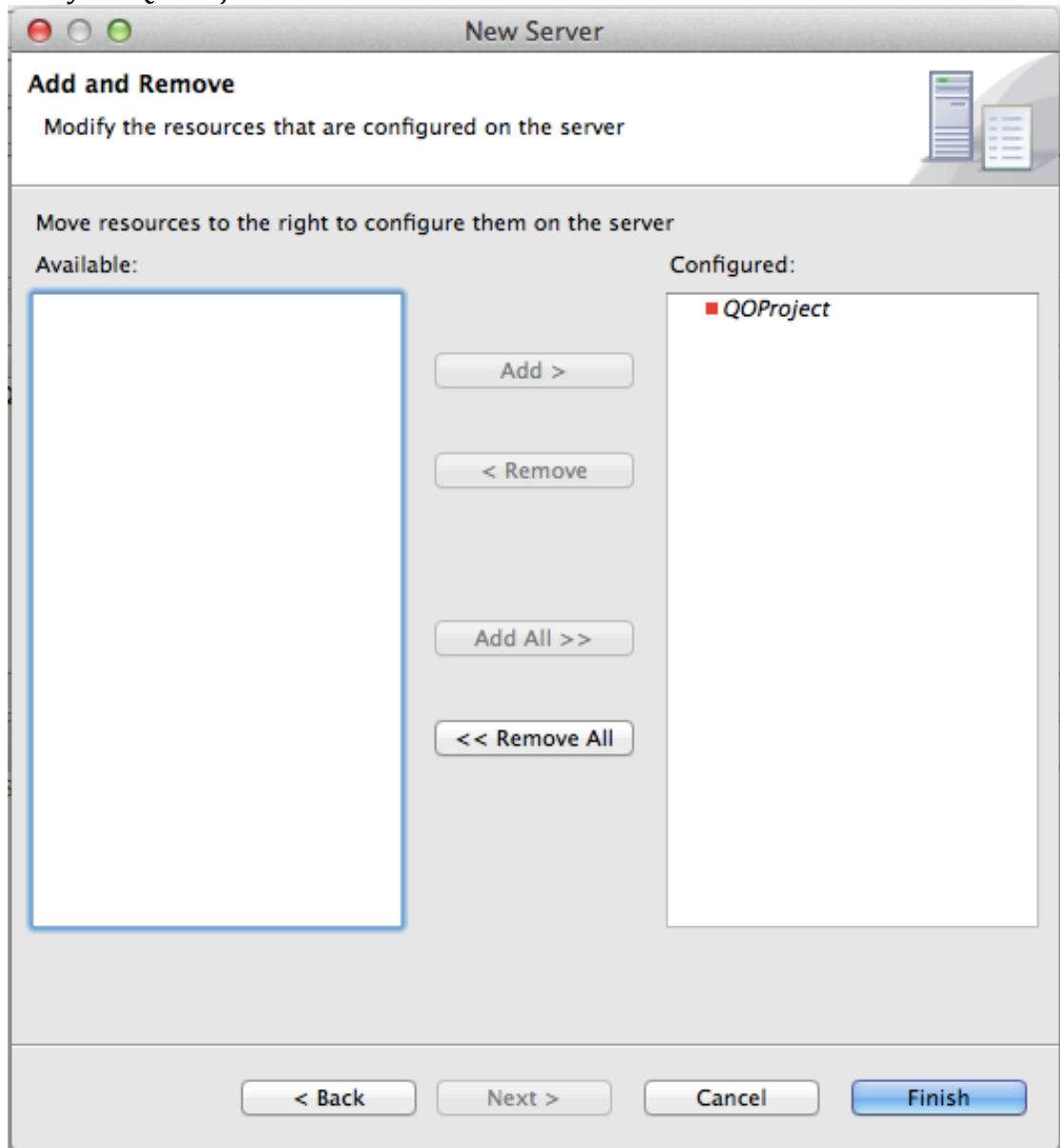


51. Choose the URL of your BPS server (e.g. <https://localhost:9446/>)
Test it connects successfully. Then Validate the Credentials:

The screenshot shows a 'New Server' wizard window. The 'Remote Carbon Server' section is active, showing 'Carbon remote server details'. Under 'Server Details', the 'Server URL' field contains 'https://localhost:9446/'. Below it, an example URL is shown: 'Eg: https://localhost:9443/<context-root>'. A 'Test connection' button is present. The 'Credentials' section is also visible. A modal dialog box titled 'Carbon Server URL' is overlaid on the wizard, displaying a warning icon and the message 'Server exists'. An 'OK' button is at the bottom right of the dialog. At the bottom of the wizard, there are four buttons: '< Back', 'Next >', 'Cancel', and 'Finish'.

52. Click Next

53. Add your QOProject to the Server:



54. Click Finish

55. Go to the QOProject. Right-Click and Run As -> Run on Server



56. Go to your BPS console and wait a bit. Your process should be deployed.

Home > Manage > Processes > List

Deployed Processes Help

Package Name	Process ID	Version	Status	Deployed Date	Manage
QuickOrder-1.0.0-10	{http://wso2.org/bps/sample}QuickOrder-10	10	ACTIVE	Wed Dec 12 22:34:23 GMT 2012	Retire

57. Click on the QuickOrder-1.0.0-x Process Id. Click Try It.

58. Fill in some plausible data (*make sure your int is an int!*)

process

Send Horizontal Vertical

Request

```

1 <body>
2   <p:QuickOrderRequest xmlns:p="http://wso2.org/bps/sample">
3     <i--Exactly 1 occurrence-->
4     <name xmlns="http://wso2.org/bps/sample">Paul</name>
5     <i--Exactly 1 occurrence-->
6     <drink xmlns="http://wso2.org/bps/sample">Cappuccino</drink>
7     <i--Exactly 1 occurrence-->
8     <number xmlns="http://wso2.org/bps/sample">4</number>
9   </p:QuickOrderRequest>
10 </body>
11

```

Position: Ln 8, Ch 51 Total: Ln 10, Ch 381

Response

```

1 <QuickOrderResponse xmlns="http://wso2.org/bps/sample">
2   <tns:result xmlns:tns="http://wso2.org/bps/sample">6606c377-f42c-4533-a89d-
3 </QuickOrderResponse>

```

Position: Ln 1, Ch 1 Total: Ln 3, Ch 179

Send

59. Hopefully you have created an Order!

60. Ideally you will now do more. The idea is to automate the Ordering and Payment, using a fixed credit card. See if you can get the Process to Order and Pay for a Drink.

61. If you really want to stretch, now get it to Order and pay for n drinks!

