



IBM Software Group

WebSphere® Message Broker Toolkit V6.0.2

Toolkit scenario part 7: Testing



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Updated May 30, 2007

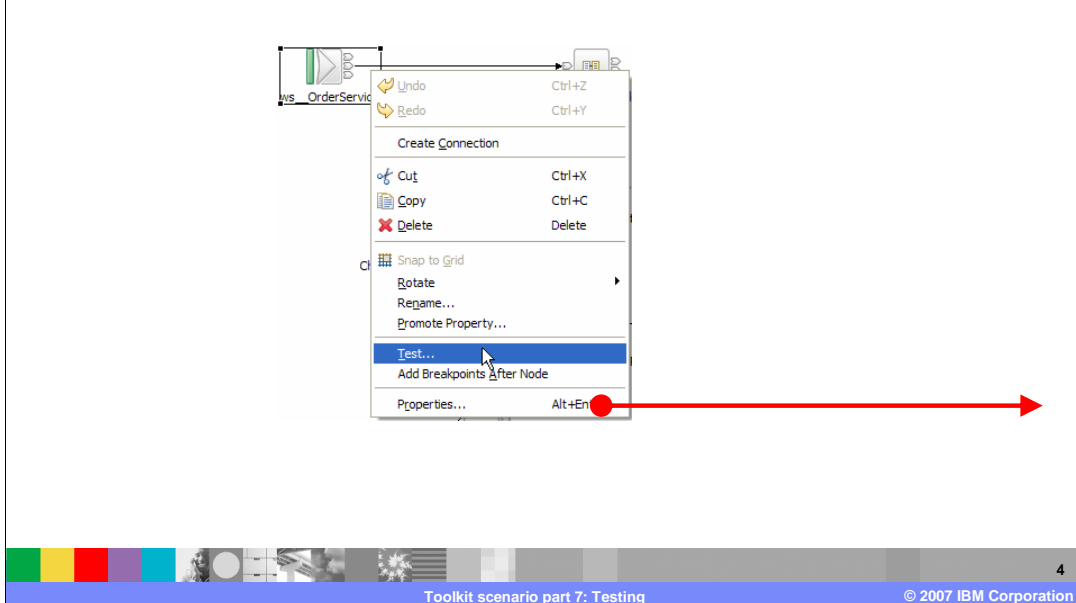
This final module in the WebSphere Message Broker Toolkit V6.0.2 covers testing the flow that was built in the previous modules.

Section

Scenario testing

This section explains how to test the Order Processing application in WebSphere Message Broker V6.0.2.

Testing: Invoke test



Once you have created all the objects needed in your flow, you can test your flow by right clicking on the HTTPInput node. Objects required include a WebSphere Message Broker Configuration Manager and broker, WebSphere MQ queue manager, queues and listener; and the files and databases used in your flow.

Testing: Select test

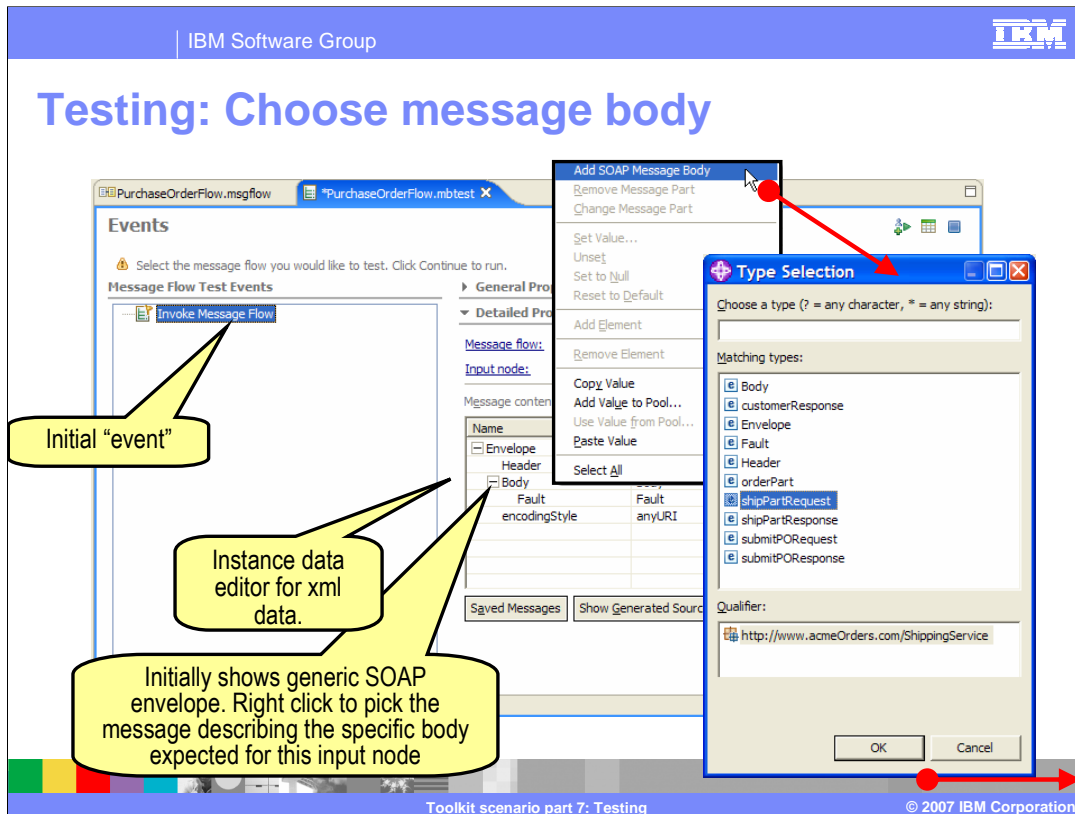
The screenshot displays the 'Events' view of a message flow test configuration. The interface includes a title bar with 'PurchaseOrderFlow.msgflow' and '*PurchaseOrderFlow.mbtest'. Below the title bar, there is a warning icon and the instruction: 'Select the message flow you would like to test. Click Continue to run.' The main area is divided into two panes. The left pane, titled 'Message Flow Test Events', contains a single event labeled 'Invoke Message Flow'. The right pane, titled 'General Properties', shows the following configuration:

- Message flow:** /PurchaseOrder/PurchaseOrderFlow.msgflow
- Input node:** ws__OrderService
- Message content:** XML Structure

Name	Type	Value
Envelope	Envelope	
Header	Header	<unset>
Body	Body	
Fault	Fault	<unset>
encodingStyle	anyURI	<unset>

At the bottom of the right pane, there are buttons for 'Saved Messages', 'Show Generated Source...', and 'Send Message'. The bottom of the window features a tabbed interface with 'Events' and 'Configuration' tabs. A red arrow points from the 'Events' tab to the 'Invoke Message Flow' event in the left pane.

Selecting 'Test' for the HTTPInput node presents you with the view shown here. The two views available (on the tabs in lower left) are Events (shown here) and Configuration.



Right click on "Body" in message content, and select "Add SOAP Message Body"

Testing: Set input data

The screenshot shows the 'Generated Source' dialog box in the IBM WebSphere Service Registry and Locator. The dialog displays the following XML code:

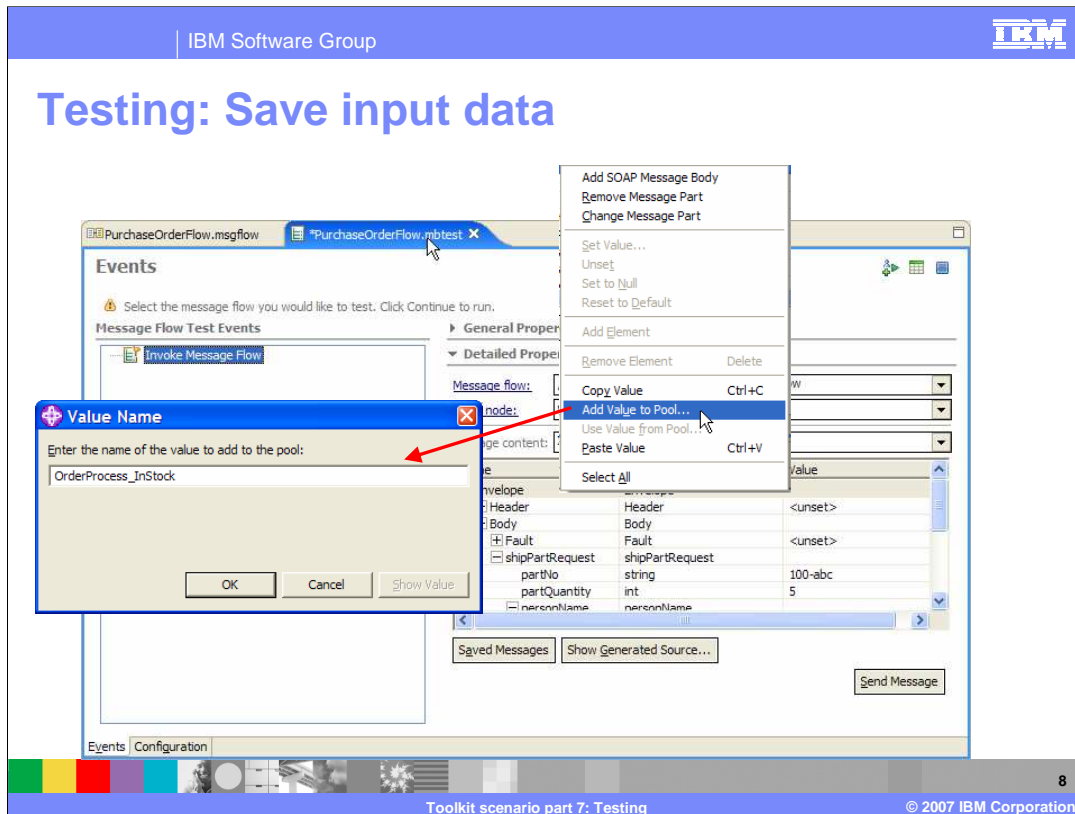
```
<?xml version="1.0" encoding="UTF-8"?>
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/">
  <soapenv:Body>
    <tns:shipPartRequest>
      <partNo>100-abc</partNo>
      <partQuantity>5</partQuantity>
      <personName>
        <firstName>firstName</firstName>
        <lastName>lastName</lastName>
      </personName>
      <address>
        <street>street</street>
        <city>city</city>
        <zipCode>zipCode</zipCode>
      </address>
    </tns:shipPartRequest>
  </soapenv:Body>
</soapenv:Envelope>
```

The dialog also shows a table of properties for the message flow:

Name	Type	Value
shipPartRequest	shipPartRequest	
partNo	string	100-abc
partQuantity	int	5
personName	personName	
firstName	string	firstName
lastName	string	lastName
address	address	
street	string	street

The 'Show Generated Source...' button is circled in red. A red arrow points from the 'partNo' value '100-abc' in the table to the XML code in the dialog.

Set partNo to 100-abc and partQuantity to 5, then click **Show Generated Source...**



By selecting Add Value to Pool, the data will be saved and can be reused.

Notes: Use value from pool

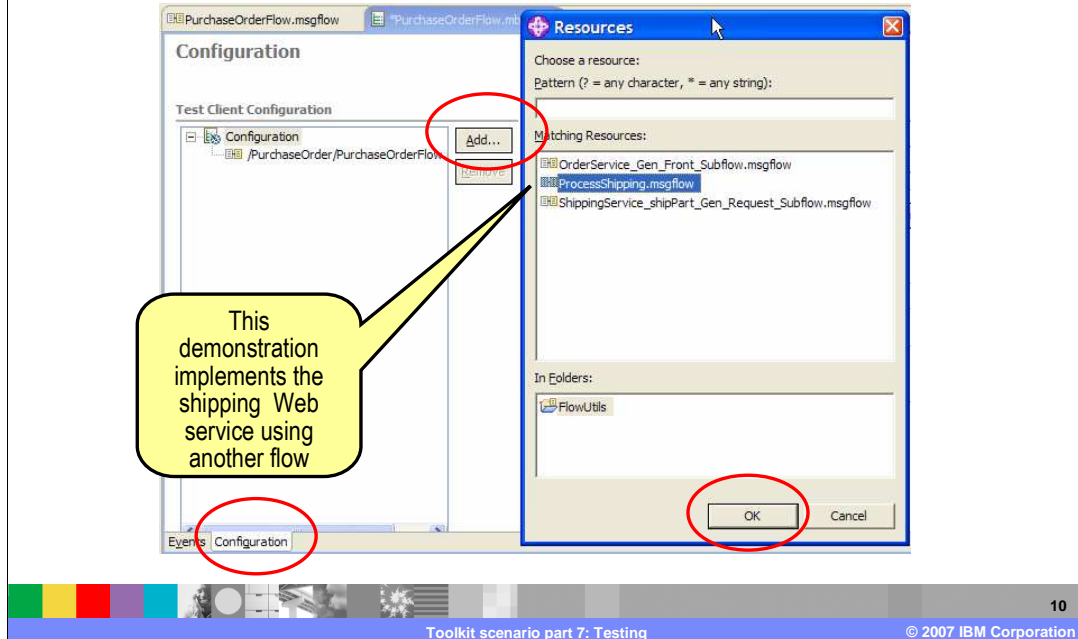
The screenshot shows the 'Integration Test Client Data Pool' dialog box with the following data:

Name	Value
OrderProcess_InStock	
Body	
Fault	<unset>
shipPartRequest	
address	
city	city
street	street
zipCode	zipCode
partNo	100-abc
partQuantity	5
personName	
firstName	firstName

The context menu is open over the 'Use Value from Pool...' option, which is highlighted. Other options include 'Copy Value', 'Paste Value', 'Add Value to Pool...', and 'Remove Element'.

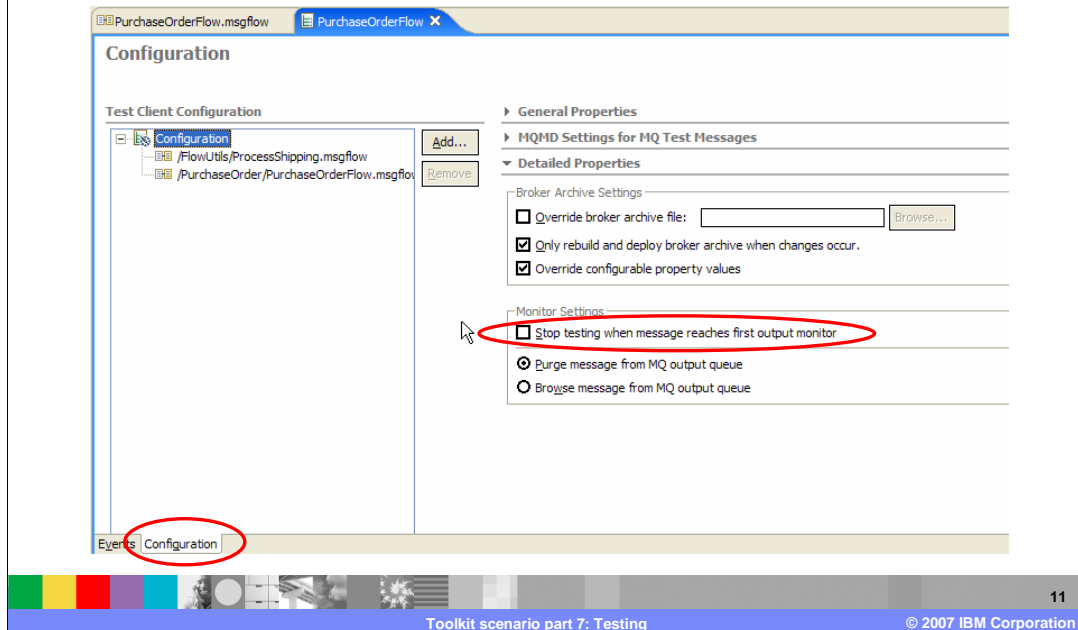
In subsequent runs, you can re-use the pool values.

Testing: Add other flows



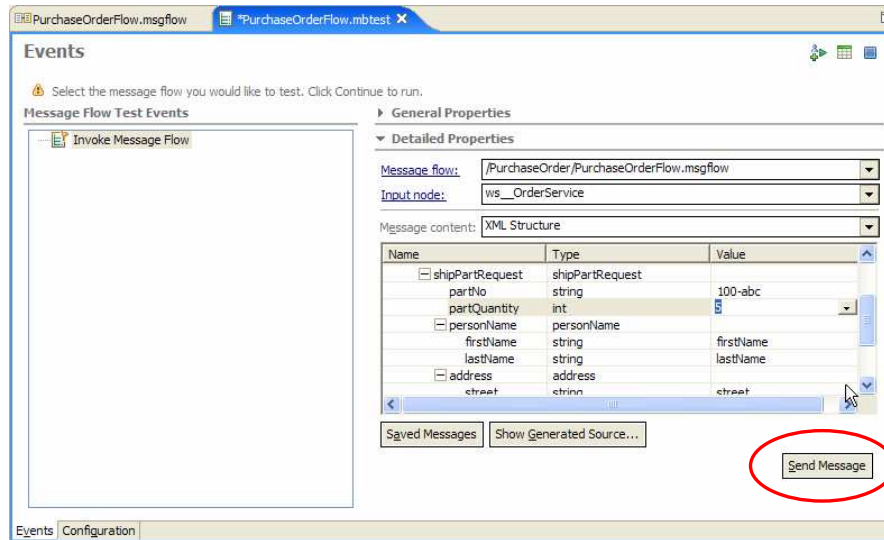
Use the Configuration tab to add flows from other projects that are required by the current project.

Testing: Configuration

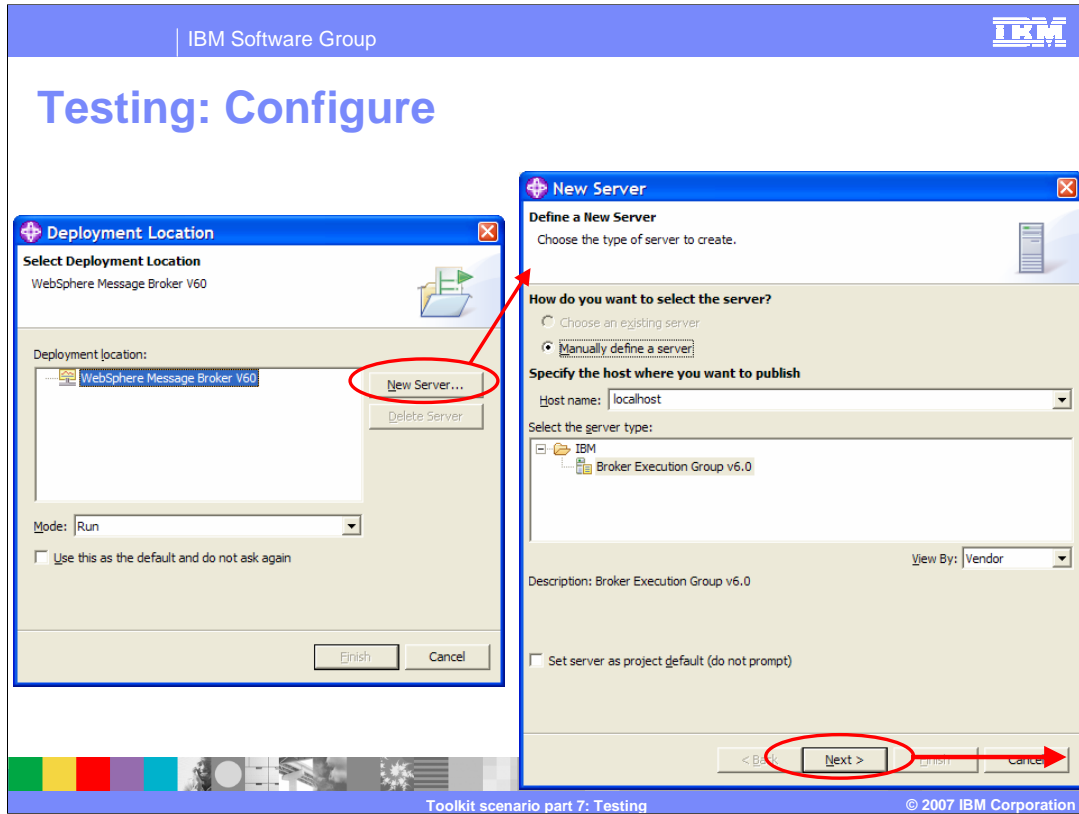


This scenario contains MQOutput nodes. Clear the 'Stop testing when message reaches the output monitor' check box so that the test will continue to run after messages are put on a queue.

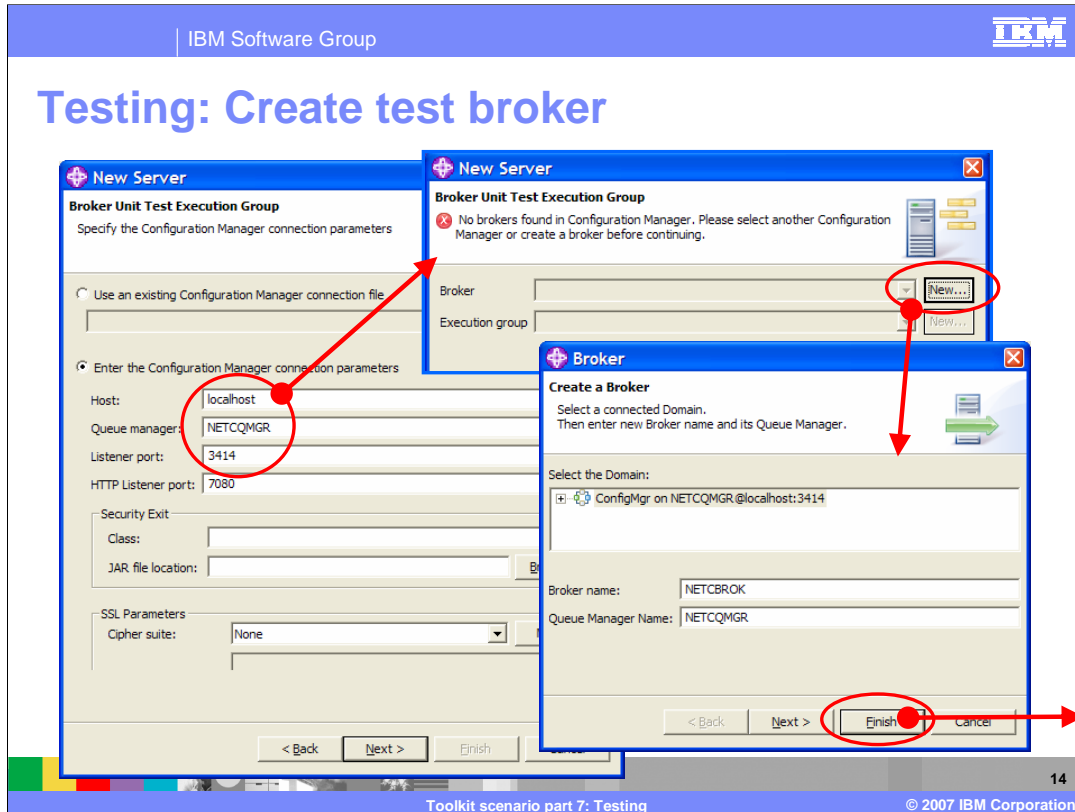
Testing: Launch test



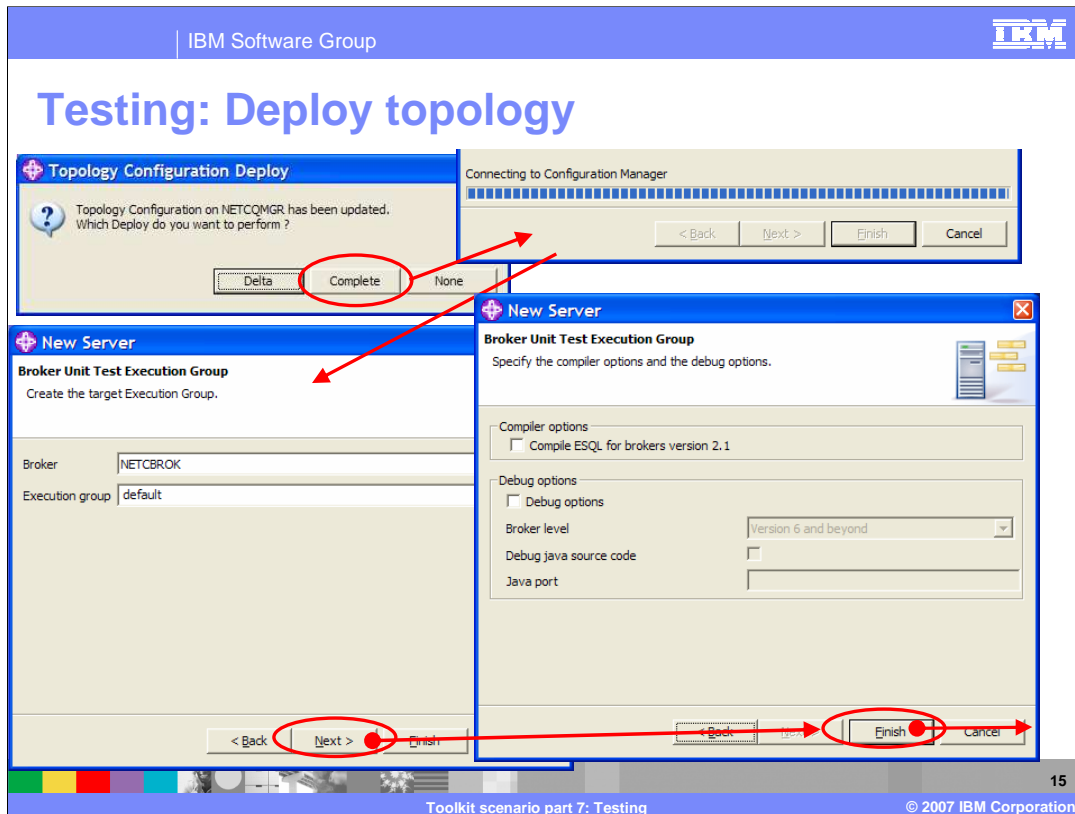
To launch the test, click **Send Message**....



The first time you test, you must configure the runtime environment.

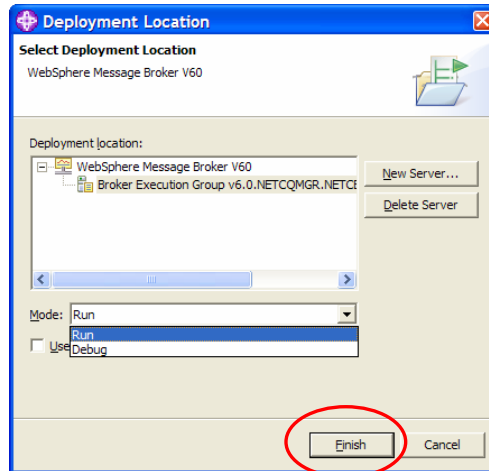


This scenario is using an existing Configuration Manager and a new broker, which will utilize the Configuration Manager queue manager.

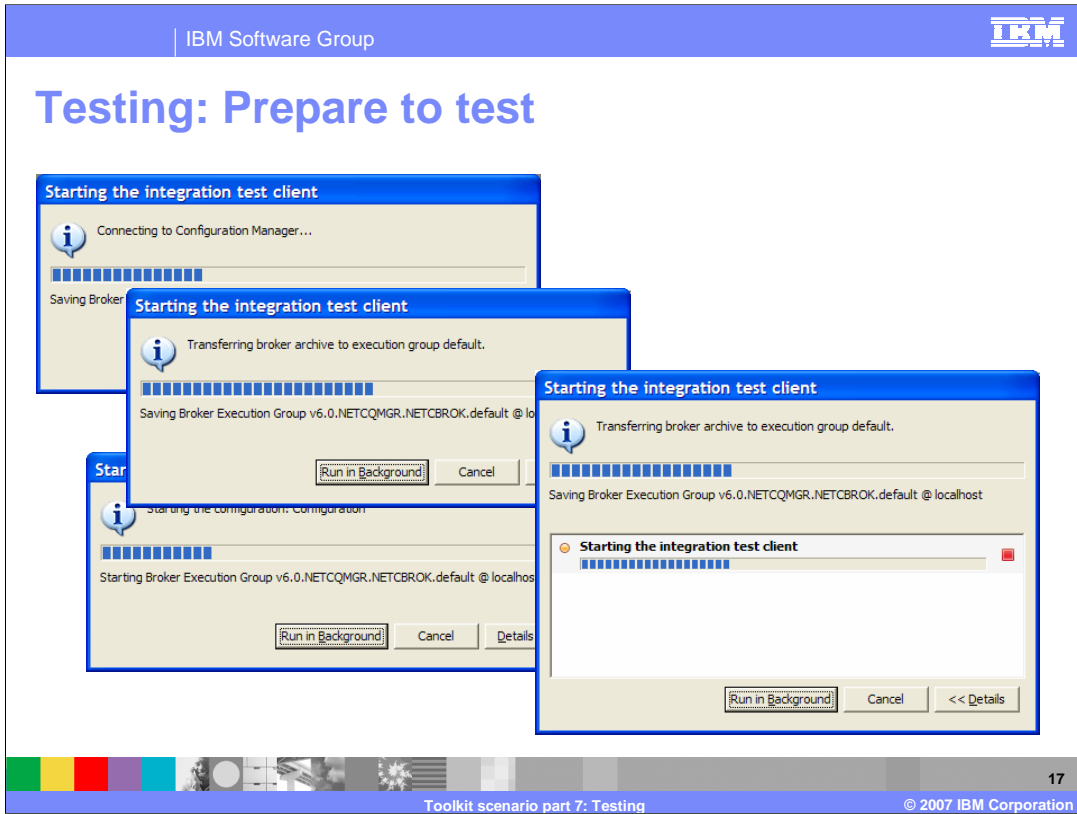


The new broker topology is deployed to the Configuration Manager.

Testing: Run mode



Select Run mode and click finish.



The BAR file is created, deployed, and the test client is started.

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Testing: Test running

Press to stop flow after "Received HTTP Reply" event

Events. Select to see details on right

Reply message. Note "shipped" status

Name	Value
soapenv:Envelope	
xmlns:xsi	http://www.w3.org/2001/XMLSchema-instance
xmlns:tns	http://www.acmeOrders.com/OrderService
xmlns:soapenv	http://schemas.xmlsoap.org/soap/envelope/
soapenv:Body	
tns:submitPOResponse	
orderStatus	shipped
orderAmt	50
partNo	100-abc
partQuantity	5

Events Configuration

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As the flow runs, you see the events on the left as they occur. Stop the flow at any time to view the details of an event. Selecting an event on the left shows details on the right.

Testing: Events

Event Type	What you can see
Starting	All queue monitors
Sending message to HTTP Input node	Request message in a read only source editor
Sending message to MQ Input node queue	The queue, queue manager, host, port of the WebSphere MQ queue that the message came from The message in a read only source editor.
Receiving message from HTTP Reply node	Response message in a read only source editor.
Receiving message at MQOutput node queue	The queue, queue manager, host, port of the WebSphere MQ queue that is being listened to. The reply message in a read only source editor
Stopping	

The information you see after selecting each event listed on the left is explained on the right.

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Testing: Re-invoke

Message Flow Test Events

- Invoke Message Flow
 - Starting
 - Sending Message to HTTP Input "ws__OrderService"
 - Received HTTP Reply message for "ws__OrderService"
 - Stopped
 - Invoke Message Flow
 - Invoke
 - Reinvoke
 - Remove
 - Remove All

Events

Select the message flow you would like to test. Click Continue to run.

Message Flow Test Events

- Invoke Message Flow
 - Starting
 - Sending Message to HTTP Input "ws__OrderService"
 - Received HTTP Reply message for "ws__OrderService"
 - Stopped
 - Invoke Message Flow

General Properties

Detailed Properties

Message flow: /PurchaseOrder/PurchaseOrderFlow.msgflow

Input node: ws__OrderService

Message content: XML Structure

Name	Type	Value
Envelope	Envelope	
Header	Header	<unset>
Body	Body	
Fault	Fault	<unset>
submitPORRequest	submitPORRequest	
partNo	string	100-abc
partQuantity	int	555
personName	personName	
firstName	string	firstName
lastName	string	lastName
address	address	

Send Message

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Data can be changed and the test re-invoked for additional testing.

Testing: Changing data

Event for message arriving at the MQOutput node's queue

Keep re-invoking as needed. If a flow or message set changes between invokes, they will be automatically re-deployed. But only if they change.

Name	Value
NS1:orderPart	
xmlns:NS1	http://www.acmeOrders.com/PartsInfo
partNo	100-abc
opartQuantity	555
orderDate	2006-10-26
orderTime	16:37:23.049098

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Change data and re-invoke as often as needed to test the flow. If a flow or a message set changes between tests, they are automatically re-deployed.

Notes: Test client

The screenshot shows the 'Configuration' window of the Test Client. The window title is 'PurchaseOrderFlow.msgflow' and 'PurchaseOrderFlow.mbtest'. The main area is titled 'Configuration' and contains several sections:

- Test Client Configuration:** A tree view showing a folder 'Configuration' containing a sub-folder '/PurchaseOrder/PurchaseOrderF'. There are 'Add...' and 'Remove' buttons next to it.
- General Properties:** A section for general settings.
- HQMD Settings for MQ Test Messages:** A section for MQ settings.
- Detailed Properties:**
 - Broker Archive Settings:** Includes a field for 'Override broker archive file:' and a 'Browse...' button.
 - Monitor Settings:**
 - Stop testing when message reaches first output monitor
 - Purge message from MQ output queue
 - Browse message from MQ output queue

Three callouts provide additional information:

- Callout 1:** 'Lists the message flows part of this test. Can add and remove flows' (points to the Test Client Configuration tree).
- Callout 2:** 'Can specify your own BAR file rather than letting client generate one' (points to the 'Override broker archive file:' field).
- Callout 3:** 'What to do when you get an event that a message has arrived on a monitored queue' (points to the Monitor Settings section).

The 'Events' tab at the bottom is circled in red, and the 'Configuration' sub-tab is selected. The footer shows 'Toolkit scenario part 7: Testing' and '© 2007 IBM Corporation'.

The Configuration view of the Test Client is for configuring your test session and there are several options available. You can add and remove flows and, in the detailed properties, you can specify a BAR file rather than having the Test Client generate one. When a message arrives on a monitored queue, you can elect to purge the message or browse the message.

Notes: Test client

The screenshot shows the 'Test Client Configuration' window. The 'General Properties' section includes fields for 'Name' (set to 'Configuration') and 'Description'. The 'MQMD Settings for MQ Test Messages' section contains various input fields for message properties.

MQMD Setting	Value
Application origin data	
Application id data	
Backout count	0
Character set	0
Encoding	273
Expiry	-1
Feedback	0
Format	
Message flags	0
Message type	8
Message sequence number	1
Offset	0
Original length	-1
Persistence	2
Priority	-1
Put application name	
Put application type	0
Put date/time	
Report	0
Reply to queue manager name	
Reply to queue name	
User id	

Callout 1: Name and description of this test session (points to Name and Description fields).

Callout 2: Specify values for MQMD when flow starts with an MQInput node (points to the MQMD Settings section).

In the General Properties, you can specify the name and description of the test session. In MQMD Settings, you can specify values when the flow starts with an MQInput node.

Notes: Test client

The screenshot displays the IBM Business Process Manager interface. The top-left pane shows a project tree with 'PurchaseOrder' selected. A context menu is open over 'PurchaseOrderFlow.msgflow', with 'Test Client' highlighted. The main workspace shows the 'Events' view for the selected message flow. The 'Message Flow Test Events' tree on the left shows a sequence of events: 'Starting', 'Sending Message to HTTP Input "ws__OrderService"', 'Received HTTP Reply message for "ws__OrderService"', and 'Stopped'. The 'Detailed Properties' pane on the right shows the configuration for the selected event, including 'Message flow' (PurchaseOrder/PurchaseOrderFlow.msgflow) and 'Input node' (ws__OrderService). A table below shows the message content structure.

Name	Type	Value
Envelope	Envelope	
Header	Header	<unset>
Body	Body	
Fault	Fault	<unset>
submitPORquest	submitPORquest	

A saved test configuration can be opened and reused.

Section

Summary

This section provides a summary of all parts of this Scenario.

Summary

- New features of the WebSphere Message Broker Toolkit V6.0.2 have been illustrated in this scenario
 - ▶ Creating message sets from WSDL and XSD files
 - ▶ Configuring and using HTTP nodes
 - ▶ Dealing with SOAP messages
 - ▶ Dealing with mixed protocols
 - ▶ Finding and choosing appropriate nodes to use for each task
 - ▶ Exploring mapping capabilities
 - ▶ Testing

New features of the WebSphere Message Broker Toolkit V6.0.2 have been illustrated in this scenario. Screen captures showed the changes in formats in this version of the toolkit. The scenario also showed how to use the new features including:

- * Creating message sets from WSDL and XSD files
 - * Configuring and using HTTP nodes
 - * Dealing with SOAP messages and mixed protocols
 - * Finding and choosing the appropriate nodes to use for each task
 - * Exploring mapping capabilities
- and
- * Testing

This concludes the WebSphere Message Broker V6.0.2 Toolkit scenario.

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