IBM WebSphere[®] process integration 6.0.2 – Lab exercise

End to end scenario

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What this exercise is about

The objective of this lab is to provide you with an understanding of how to use the WebSphere Integration Developer V6.0.2 tools to construct an end to end solution using existing components.

Lab requirements

List of system and software required for the student to complete the lab.

- WebSphere Integration Developer V6.0.2 installed
- WebSphere Process Server V6 test environment installed
- Sample code in the directory C:\Labfiles602 (Windows®) or /tmp/LabFiles602 (Linux®)
- WebSphere Business Integration Toolset installed

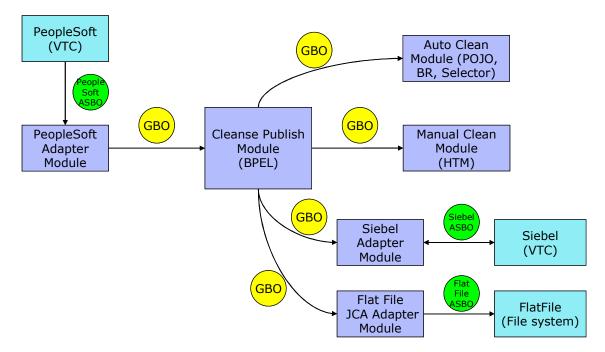
What you should be able to do

At the end of this lab you should be able to:

- Create SCA Imports and Exports
- Define both SCA and JMS Pub/Sub bindings for the imports and exports
- Use the visual test connector to simulate adapter input and output to the process server

Introduction

In this exercise, you will construct an end to end solution for the eXchange scenario. The overall flow of the solution is depicted in the following diagram.



All of the modules represented in the diagram are already implemented. However, the imports and exports required to connect the modules do not exist and you will be lead through creating them. After that, you will test the solution by driving input from the PeopleSoft adapter and then examine the output of the Siebel adapter.

Note: For this lab exercise, the flat file JCA module is not included, but could be easily added to this solution as separate module.

Exercise instructions

Some instructions in this lab might be specific for Windows platforms. If you run the lab on a platform other than Windows, you will need to run the appropriate commands, and use appropriate files (for example .sh in place of .bat) for your operating system. The directory locations are specified in the lab instructions using symbolic references as follows:

Reference Variable	Windows Location	Linux Location
<wid_home></wid_home>	C:\Program Files\IBM\WebSphere\ID\6.0	/opt/IBM/WebSphere/ID/6.0
<wps_home></wps_home>	<wid_home>\runtimes\bi_v6</wid_home>	<wid_home>/runtimes/bi_v6</wid_home>
<lab_files></lab_files>	C:\Labfiles602	/tmp/Labfiles602
<workspace></workspace>	C:\Labfiles602\eXchange\EndToEndNoF FA\workspace	/tmp/Labfiles602/eXchange/EndToEndN oFFA/workspace
<temp></temp>	C:\temp	/tmp
<solution></solution>	C:\Labfiles602\eXchange\EndToEndNoF FA\Solution	/tmp/Labfiles602/eXchange/EndToEndN oFFA/Solution

Windows users' note: When directory locations are passed as parameters to a Java program, such as wsadmin, you must replace the backslashes with forward slashes to follow the Java convention. For example, C:\LabFiles602\ would be replaced by C:/LabFiles602/.

Instructions for using a remote testing environment, such as z/OS[®], AIX[®] or Solaris, can be found at the end of this document, in the section "<u>Task: Adding remote server to WebSphere Integration Developer test</u> <u>environment</u>".

Part 1: Initialize the workspace for this lab exercise

In this section of the lab, you will be importing a project interchange to prepare the environment.

- 1. Start WebSphere Integration Developer V6.0.2 with a workspace location of **<WORKSPACE>**, that is **<LAB_FILES>\eXchange\EndToEndNoFFA\workspace**
 - ____a. From Windows Explorer, navigate to the <WID_HOME> directory and double click on wid.exe
 - ___ b. When prompted for workspace, enter the value provided by the **<WORKSPACE>** variable for this lab and click **OK**

🚯 Workspace Launcher 🛛 🗙
Select a workspace
IBM WebSphere Integration Developer stores your projects in a directory called a workspace. Select the workspace directory to use for this session.
Workspace: C:\Labfiles602\eXchange\EndToEndNoFFA\workspace Browse
OK Cancel

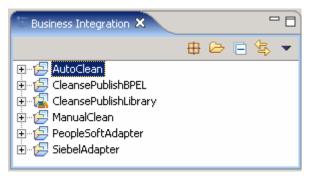
___ c. When WebSphere Integration Developer V6.0.2 opens, click the curved arrow at top right to go to Business Integration perspective

Helcome ×	(1) ← → □ €
WebSphere. Integration Developer	Go to the Business Integration perspective

- ____d. Ensure you are in the **Business Integration** perspective
- 2. Import Project Interchange file, EndToEndStart_PI.zip located at <LAB_FILES>\eXchange\EndToEndNoFFA\import\
 - ____a. Right-click inside **Business Integration view** (top left view in the Business Integration Perspective) and select **Import** from the context menu
 - ____b. Select Project Interchange listed in the import dialog
 - __ c. Click Next
 - ____d. Click the Browse button for "From zip file" and navigate to <LAB_FILES>\eXchange\EndToEndNoFFA\import\EndToEndStart_PI.zip and hit Open

	×
Import Projects Import Projects from a zip file.	
From zip file: C:\Labfiles602\eXchange\EndToEndNoFFA\import\EndToEndStart_PI.zip Browse Project location root: C:\Labfiles602\eXchange\EndToEndNoFFA\workspaceNew Browse	-
 ✓ AutoClean ✓ CleansePublishBPEL ✓ CleansePublishLibrary ✓ ManualClean ✓ PeopleSoftAdapter ✓ SiebelAdapter ✓ websphere_default_messaging_provider 	
Select All Deselect All Select Referenced < Back	

- ____e. Click the Select All button
- ___ f. Click Finish
- ____ g. Verify you have the following modules listed in the Business Integration view:

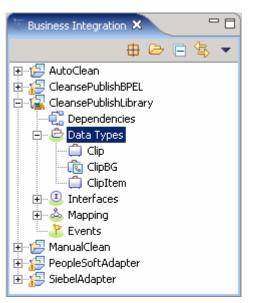


___h. Verify you have WebSphere Process Server V6.0 listed in your Servers view

Part 2: Understanding eXchange components

In this part you will examine the existing components that are part of the eXchange scenario. This will provide you with a basis to understand the solution you will be constructing in subsequent parts.

- 1. The CleansePublishLibrary contains the common WSDL and XSD files used by the various components within the eXchange integration application. These files define the interfaces and data types used by components as they work with the requests received from the PeopleSoft adapter, cleanse the data, and publish it to the Siebel adapter. Examine the library
 - ____a. In the Business Integration view, expand CleansePublishLibrary \rightarrow Data Types



____ b. Open the ClipBG and Clip data types. Notice how ClipBG includes the Clip business object and Clip contains the ClipItem business object

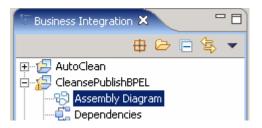
🖃 眞 ClipBG		🗆 📋 d	ip
<u></u>			A
verb string		clipID	string
Clip Clip –		GLN	string
		dip	string
		size	string
		color	string
—			· · /

÷						
ľ	🖃 📋 Clip			-	🗆 📋 ClipItem	
				E	▲	
	clipID	string			itemID	string
	GLN	string			GTIN	string
	clip	string			package	string
	size	string			quantity	string
	color	string			fullDescription	string
	brand	string				
	retailItems	ClipItem []				
L		.				

- ___ c. In the Business Integration view, expand CleansePublishLibrary → Interfaces
- ____d. Open the interfaces listed and notice the operations and the messages. All messages are of the ClipBG type

-	Define Operation(s)		1 🕼 🔊 🙀
D	efine Operations and their cor	responding paramete	ers
		Name	Туре
	✓ deanseClip		
	DI Input(s)	inClipBG	ClipBG
	🕼 Output(s)	outClipBG	ClipBG
	🗙 Fault(s)	cleanseClipFault1	string

- 2. The CleanPublishBPEL module provides the business logic for cleansing the data received from the PeopleSoft adapter before it is sent to the Siebel adapter. Examine the contents of the module
 - _____a. Expand CleansePublishBPEL in the Business Integration view and double click on Assembly Diagram (Assembly Diagram) to open it in an Assembly Diagram editor. The business process has already be created and defined as a component



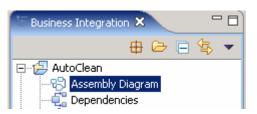
b. The business process has already been created and defined as a component within the module. It has an interface that can be called and 3 references to other service components. Hover the mouse over the interface ("I") icon on the left to view the interface, which defines how the business process is called. You should see that the **CleansePublish** interface has been specified



_____ c. Hover the mouse over the reference icons ("1..1") to view the interfaces that are called. You should notice two references to the 'Clean' interface and one to the Publish interface

(<u>a1-0</u>
🗓 👤 CleansePublishBPEL	<u>A.1</u>
	WSDL Reference
	🗂 Name: AutoClean
	Interface:Clean

- ____ d. Close the assembly editor
- 3. The AutoClean module provides an automated means of cleansing the data within the business logic. The cleansing is done either by a Business Rule or a Java[™] component with a Selector component making the determination. Examine the contents of the module
 - ____a. Expand AutoClean in the Business Integration view and double click on Assembly Diagram (Assembly Diagram) to open it in an Assembly Diagram editor



b. The AutoClean module contains a Selector, Business Rule, and a Java class. All of these have been defined as components. The Selector (SelectClean) is the main component called to determine if the cleansing should be performed by a Business Rule (CleanseRuleGroup) or a Java component (Component1). The Selector is linked to the Business Rule and Java component through dynamic wires, which are not shown in the assembly editor. The Selector handles the incoming requests to the module and determines if the Business Rule or the Java component should be called to perform the auto-cleansing of the incoming data

1 🔁 Component 1	
1 🔄 SelectClean	
1 🔚 CleanseRuleGroup	,

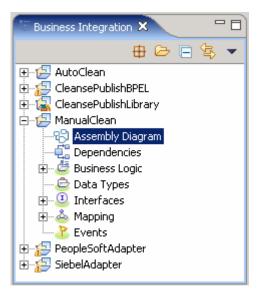
_ c. Hover the mouse over the interface icon for the Selector. Notice the Selector uses the 'Clean' interface.

0 🛃 Con	nponent1
🗊 🔄 SelectClean	
1 Interface found: Clean (WSDL Interface)	nseRuleGroup

____d. Hover the mouse over Component1 (Java) and the CleanseRuleGroup components. Notice these also use the '**Clean**' interface. With all components using the same interface, the data can be easily passed from one component to another within the module

🚺 🚰 Component 1
1 Interface found: Clean (WSDL Interface)

- ____e. Close the assembly editor
- 4. The ManualClean module provides the ability for human interaction to be part of the cleansing process. Examine the contents of the module.
 - ____a. Expand ManualClean in the Business Integration view and double click on Assembly Diagram (Assembly Diagram) to open it in an Assembly Diagram editor



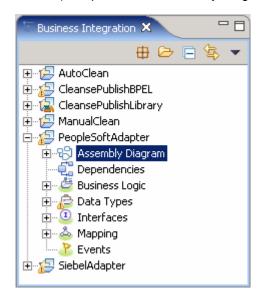
_ b. The ManualClean module contains a human task component. The human task, **ManualClean**, allows for a person to be part of the data cleansing



____ c. Hover the mouse over the interface icon. Notice the **Clean** interface is used to call the human task component

📵 🗐 ManualClean	
1 Interface found: Clean (WSDL Interf	ace)

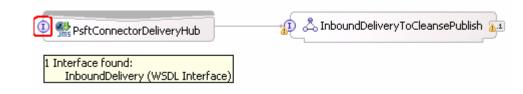
- ____ d. Close the assembly editor
- 5. The PeoplesoftAdapter module provides the capability to accept requests and pass the data on to the business logic. Examine the contents of the module.
 - ____a. Expand **PeopleSoftAdapter** in the Business Integration view and double click on **Assembly Diagram** (Assembly Diagram) to open it in an Assembly Diagram editor



_____b. The PeopleSoftAdapter module is used to accept requests from the PeopleSoft adapter and convert an application specific business object (ASBO) to a generic business object (GBO), which is passed. The transformation is completed using interface and data type maps (InboundDeliveryToCleansePublish). In order to accept the request from the PeopleSoft adapter, an Export, PsftConnectorDeliveryHub, with a JMS binding is used on the maps. The connection between the map and Export is represented by the wire



____ c. Hover the mouse over the interface of the Export. The interface used is named InboundDelivery and is specific to interaction with the PeopleSoft adapter. The interface definition is contained within the PeopleSoftAdapter module as it is specific for this module and is not shared with other modules



_____d. Hover the mouse over the reference on the map. Notice the reference is to the **CleansePublish** interface which is the same as used by the business process

1 M PsftConnectorDeliveryHub	
	WSDL Reference Name:CleansePublish Interface:CleansePublish

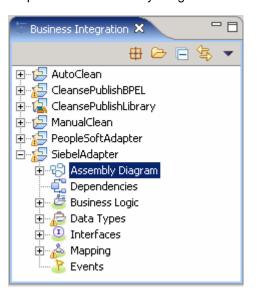
- ____e. Select the Export **PsftConnectorDeliveryHub** and select the Properties Tab
- ______f. Select the **Bindings** → **End-point configuration** tab and then select the **Connection** tab. Notice the JMS binding information specified for the module as it receives requests off a queue

Properties X Problems	Servers	
Description	Sector 2017 Structure (Sector 2018) Structure (Sector	
Details	Connection JMS Destinations	
Binding	Select configuration view option:	
End-point configuration	O Specify JNDI name for pre-configured messaging provider resource	
 Method bindings 	Specify properties for configuring new messaging provider resource	
 Security attributes 		
 Message Configuration 		
 Summary 	 ActivationSpec Properties 	
	ActivationSpec class name: com.ibm.ws.sib.api.jmsra.impl.JmsJcaActivationSpecImpl	
	ActivationSpec Properties	
	Subscription Durability	
	Subscription Durability: NonDurable	
	Subscription Name:	
	Durable Subscription Home:	
	Client ID:	
	Destination Binding	
	Bus Name:	
	Destination Type:	_ _

- g. While you are here, select the **JMS Destinations** tab, and expand the **Receive Destinations Properties**
- ___h. The JNDI name of the queue, **PSFTCONNECTOR/DELIVERYQUEUE**, is set for the Export

Properties × Problem	is Servers 🗸 🖓 🗖	
Description	Section 2017 Structure (Section 2017) Structur	
Details	Connection DMS Destinations	
Binding	Receive Destination Properties	
End-point configuration		
Method bindings	Select configuration view ontion:	
 Security attributes 	Specify JNDI name for pre-configured messaging provider resource	
Message Configuration	O Specify properties for configuring new messaging provider resource	
- Summary		
	JNDI Lookup Name: PSFTCONNECTOR/DELIVERYQUEUE	

- ____ i. Close the assembly editor
- 6. The SiebelAdapter module provides the capability to receive cleansed data passed from the business logic and pass it onto a Siebel adapter. Examine the contents of the module
 - ____a. Expand **SiebelAdapter** in the Business Integration view and double click on **Assembly Diagram** (Assembly Diagram) to open it in an Assembly Diagram editor



b. The SiebelAdapter module is used to accept requests and transform the data from a generic business object (GBO) to an application specific business object (ASBO) before it is passed to the Siebel adapter. The transformation is completed using interface and data type maps (**PublishToOutboundRequest**). In order to send the request to the Siebel adapter, a JMS binding is used on an Import (**SiebelConnectorAgent**). The connection between the map and Import is represented by the wire



_____ c. Hover the mouse over the interface for the Import. The interface (OutboundRequest) is specific to interacting with the Siebel Adapter. The interface definition is contained within the SiebelAdapter module as it is specific for this module and is not shared with other modules



_____d. Hover the mouse over the interface of the map. Notice the **Publish** interface is used.

	-1 🕵 SiebelConnectorAgent
1 Interface found: Publish (WSDL Interface)	

- ____e. Select the Import SiebelConnectorAgent and select the Properties Tab
- _____f. Select the **Bindings** → **End-point configuration** tab and then select the **Connection** tab. Notice the JMS binding information specified for the module, required to send messages to a queue
- ____g. Select the JMS Destinations tab, and expand the Send Destinations Properties
- ___h. The JNDI name of the queue (SIEBELCONNECTOR/REQUESTQUEUE) is set for the Import

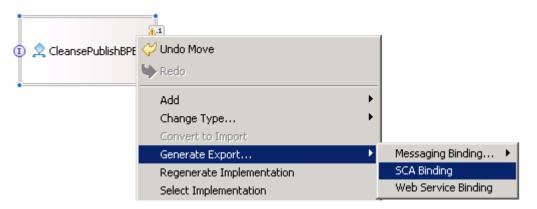
Properties X Problems	Servers	· · · · · · · · · · · · · · · · · · ·	•	
Description	👫 Impo	rt: SiebelConnectorAgent (JMS Binding)		
Details	Connection	JMS Destinations		
Binding	🗑 Send D	estination Properties		
End-point configuration				
Method bindings		iguration view option:		
- Security attributes	🖸 O Spe	cify JNDI name for pre-configured messaging provider resource		
Summary	O Spe	cify properties for configuring new messaging provider resource		
	JNDI Looku		_	

____i. Close the assembly editor

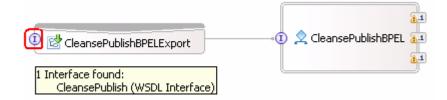
Part 3: Assemble eXchange

SCA components in different modules that support the same interfaces can be associated with each other through the use of Imports, Exports, and their associated binding. In this part you will add the required Imports, Exports and bindings to build an end to end solution from the components you examined in the previous part of this lab exercise.

- 1. The CleansePublishProcess has the most bindings and references that must be resolved. Start the overall assembly with defining the references and bindings for the CleanPublishBPEL module
 - ____a. Expand CleansePublishBPEL in the Business Integration view and double click on Assembly Diagram (Assembly Diagram) to open it in an Assembly Diagram editor
 - ____ b. Right-click on the CleanPublishBPEL and select "Generate Export... →SCA Binding' from the context menu. In order for the business process to be called as an SCA component from the PeopleSoft adapter an SCA binding must be created on an Export



____ c. Hover the mouse over the interface on the Export. Notice how it exposes the CleansePublish interface for SCA invocation



_____d. The references will also use SCA to call the AutoClean, ManualClean, and Publish components. These components are located in other modules and are called using Imports. An easy way to quickly generate Imports is to right-click on the CleansePublishProcess and select **Wire References to New → Imports** from the context menu

	💢 Delete Rename Select All	
Components	Wire References to New 🔹 🕨	
Imports	Wire to Existing	
	Wire (Advanced)	
	Test Component	
	Show in Properties	

_____e. The Imports will be created and will use the reference name for the Import component name.



- _____f. Save and close the editor for now. The SCA bindings must be set for each Import component to call the appropriate module. The SCA binding can not be completed until the AutoClean, ManualClean, and Publish modules are properly exposed as SCA components. You will return to the CleanPublishBPEL assembly editor and set these SCA bindings later
- 2. The AutoClean module only needs a single binding to be generated for calls from the CleansePublishProcess. Assemble the AutoClean module with an SCA binding.
 - _____a. Expand AutoClean in the Business Integration view and double click on Assembly Diagram (Assembly Diagram) to open it in an Assembly Diagram editor
 - ____b. Right-click on **SelectClean** and select '**Generate Export... →SCA Binding**' from the context menu. The Selector is the only component in the module that needs to be exposed as an SCA component

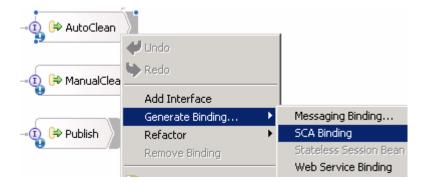
Ed SelectCleanExport	🗊 🔄 SelectClean
	1 🗮 CleanseRuleGroup

- ____ c. Save and close the assembly editor. The Selector, which fronts the calls to the module and determines whether to call the Java component or Business Rule, is fully available to be called as an SCA component
- __3. The ManualClean module also only needs a single binding to be generated for calls from the CleansePublishProcess. Assemble the ManualClean module

- ____a. Expand ManualClean in the Business Integration view and double click on Assembly Diagram (Assembly Diagram) to open it in an Assembly Diagram editor
- ____b. Right-click on **ManualClean** and select '**Generate Export...→SCA Binding**' from the context menu. The human task can be easily exposed as an SCA component as well



- ____ c. Save and close the editor. The human task is complete as an SCA component
- 4. Set the SCA bindings in the business process. With the AutoClean and ManualClean SCA components defined, the SCA bindings can be defined for the references in the business process.
 - ____a. Expand CleansePublishBPEL in the Business Integration view and double click on Assembly Diagram (Assembly Diagram) to open it in an Assembly Diagram editor
 - ____b. Right-click the AutoClean Import component and select Generate Binding... → SCA Binding



- ____ c. With the AutoClean Import component selected, select the Bindings tab in the Properties view
- _____d. Click the **Browse** button. The different SCA components which are available will be listed. Notice that it is only of those modules where the SCA Export has been defined

🔂 SCA Export Selection 📃 🗖 🗙
Choose a SCA export (? = any character, * = any String):
Matches:
CleansePublishBPELExport CleanSePublishBPELExport ManualCleanExport SelectCleanExport
Qualifier:
🖾 AutoClean/SelectCleanExport.export
OK Cancel

____ e. Select SelectCleanExport and click OK. The binding is complete for the business process to call AutoClean

Properties 🗙	Problems Servers	[
Description	🗟 Import: AutoClean (SCA Binding)		1
Details	Module name: AutoClean		j
Binding	Export name: SelectCleanExport	Browse]

- _____f. Right-click on **ManualClean** and select **Generate Binding... → SCA Binding**. A similar set of steps can be used for setting the SCA binding on the ManualClean Import component.
- ____g. Browse to and select **ManualCleanExport** on the Bindings tab in the Properties view. This will complete the SCA binding for ManualClean.

Properties 🗙	Problems Servers	-	- 8
Description	🗟 Import: ManualClean (SCA Binding)		
Details	Module name: ManualClean		
Binding	Export name: ManualCleanExport	Brow	ise

____h. For the binding of the Publish Import Component, JMS will be used instead of SCA. In order to support the publish of data to the Siebel adapter; a JMS Topic will be used. Set the JMS binding by right-clicking on Publish and selecting 'Generate Binding... → Messaging Binding → JMS Binding' from the context menu

✓ Undo Change SCA Impo ▶ Redo		Publish
Add Interface		<u> </u>
Generate Binding	JMS Binding	Messaging Binding 🕨 🕨
Refactor	MQ Binding	SCA Binding
Remove Binding MQ JMS Binding		Stateless Session Bean Binding
		Web Service Binding

_____ i. Select Publish-Subscribe for the Select JMS message domain. Select Business Object XML using JMSTextMessage for the data is serialized between Business Object and JMS Message in the JMS Import Binding attributes selection dialog

🚯 Configure JMS Import Service	×
JMS Import Binding	
The configuration properties represent Service	the minimum set required to deploy and execute JMS Import
Messaging model	
JMS messaging domain:	Publish-Subscribe
End-point configuration • Configure new messaging provid	er resources
O Use pre-configured messaging p	
JNDI name for connection factory:	CleansePublishBPEL/Publish_CF
JNDI name for send destination:	CleansePublishBPEL/Publish_SEND_D
Security configuration	
J2C Authentication Data Entry:	
Data format	
Serialization type:	Business Object XML using JMSTextMessage
Data binding class:	com.ibm.websphere.sca.jms.data.impl.JMSDataBindingImplXML Browse,
Function selector Generate "TargetFunctionName"	message header property for default JMS Function Selector

__ j. Click OK

- ____ k. Select the Bindings → End-point configuration tab and then select the JMS Destinations tab in the Properties view to access the properties for the Publish Import. The specific topic where the message will be published must be specified to complete the binding
- ___ I. Click on Send Destination Properties
- ____m. At the bottom enter **PublishTopic** for the Topic name. This will cause a topic to be dynamically created using the Service Integration Technologies. If a predefined topic exists or is located on a different server, the JNDI name can be specified for the JNDI lookup name

Properties X Problem	s Servers Console	▼ □ 🗋						
 Description	😪 Import: Publish	(JMS Binding)						
Details	Connection JMS Destin	ations						
Binding	Send Destination	Properties						
End-point configuration								
Method bindings	Select configuration vie							
Security attributes	O Specify JNDI na	ame for pre-configured messaging provider resource						
- Summary	 Specify propert 	Specify properties for configuring new messaging provider resource						
	Туре:	javax.jms.Topic						
	Destination Properties							
	Destination							
	Bus Name:							
	Delivery Mode:	Application						
	Time To Live:							
	Priority:	Default						
	Advanced Messagir	ng						
	Read Ahead:	AsConnection						
	Topic							
	Topic Space: *	Default.Topic.Space						
	Topic Name:	PublishTopic						

____n. Save and close the assembly editor. The binding for the Publish Import component is complete and the CleanPublishBPEL component now has bindings for all of its imports and exports



- ____ o. Save and close the Assembly Diagram
- __5. The only binding needed for the PeopleSoftAdapter module is to the CleansePublishProcesss
 - ____a. Expand **PeopleSoftAdapter** in the Business Integration view and double click on **Assembly Diagram** (Assembly Diagram) to open it in an Assembly Diagram editor
 - _ b. Right-click on InboundDeliveryToCleansePublish and select Wire References to New → Imports.



____ c. To create the binding to the CleansePublishProcess SCA component, an Import component must be used from the map. The SCA binding must be used. Right-click on the CleansePublish Import component and select Generate Binding... ->SCA Binding



_____d. Browse to and select **CleansePublishBPELExport** on the Bindings tab in the Properties view. This will complete the SCA binding for PeopleSoftAdapter module

Properties 🗙	Problems Servers Console	3
Description	🗟 Import: CleansePublish (SCA Binding)	٦
Details	Module name: CleansePublishBPEL	j
Binding	Export name: CleansePublishBPELExport Browse	Arrente A

- ____e. Save and close the assembly editor
- 6. The Siebel Adapter must be able to accept the data (ClipBG) published from the CleansePublishProcess to the topic. A JMS binding to the topic must be set. Assemble the SiebelAdapter module to utilize the topic to receive the updated data.
 - ____a. Expand SiebelAdapter in the Business Integration view and double click on Assembly Diagram (Assembly Diagram) to open it in an Assembly Diagram editor
 - ____ b. Right-click on PublishToOutboundRequest and select Generate Export... → Message Binding → JMS Binding. The JMS binding is set on the Export component for the PublishToOutboundRequest map component as the generic business object (GBO) will be converted to the application specific business object (ASBO) for the Siebel adapter
 - _____ c. Select **Publish-Subscribe** for the Select JMS message domain. Select **Business Object XML** using JMSTextMessage for the data is serialized between Business Object and JMS Message, in the JMS Import Binding attributes selection dialog

🚯 Configure JMS Export Service		×
JMS Export Binding The configuration properties represent the	e minimum set required to deploy and execute JMS Export Service	R
		JMS
Messaging model	(1
JMS messaging domain:	Publish-Subscribe	
End-point configuration Configure new messaging provider r	esources	
C Use pre-configured messaging provi	der resources	
JNDI name for activation specification:	SiebelAdapter/PublishToOutboundRequestExport_AS	
JNDI name for receive destination;	SiebelAdapter/PublishToOutboundRequestExport_RECEIVE_D	
Security configuration		
J2C Authentication Data Entry:		
Data format		<u> </u>
Serialization type:	Business Object XML using JMSTextMessage	
Data binding class:	com.ibm.websphere.sca.jms.data.impl.JMSDataBindingImplXML	Browse,
Function selector V Use the default JMS Function Select	or class	
Function selector class:	com.ibm.websphere.sca.jms.selector.impl.JMSFunctionSelectorImpl	Browse
	ОК	Cancel
d. Click OK		
·•		
PublishToOutboundRequestExport	- ① 🖧 PublishToOutboundRequest 🔬 ① 👫 SiebelConn	ectorAgent
e. Select the PublishToOu	tboundRequestExport you just created	

- _____f. Select the **Bindings** → End-point configuration tab and then select the JMS Destinations tab in the **Properties** view. You must set the Export to use the specific topic where the data (ClipBG) will be published
- ____ g. Expand Receive Destinations Properties
- ____h. Enter **PublishTopic** for the Topic Name at the bottom. This is the same name used by the Import Component of the CleansePublishProcess to publish the data

Properties X Problem	s Servers Console	▼ □ 🗋
Description	👫 Export: Publish	ToOutboundRequestExport (JMS Binding)
Details	Connection JMS Destina	itions
Binding	🗑 Receive Destination	on Properties
End-point configuration		
Method bindings	Select configuration view	
 Security attributes 		me for pre-configured messaging provider resource
Message Configuration	O Specify properti	es for configuring new messaging provider resource
 Summary 		
	Туре:	javax.jms.Topic
	Destination Properties -	
	Destination	
	Bus Name:	
	Delivery Mode:	Application
	Time To Live:	
	Priority:	Default
	Advanced Messagin	g
	Read Ahead:	AsConnection
	Торіс	
	Topic Space: *	Default.Topic.Space
	Topic Name:	PublishTopic

_____i. Save and close the assembly editor. The SiebelAdapter assembly is complete.

Part 4: Testing eXchange

In this part you will test the end to end solution. This will be done by using two Visual Test Connectors, one to simulate the PeopleSoft application, which will drive the input and the other to simulate the Siebel application, which will receive the output. Once the flow is initiated from the Visual Test Connector for PeopleSoft, you will need to interact with the Human Task Manager. Once that is done, you should see the output in the Visual Test Connector for Siebel.

- 1. If using a remote testing environment, follow directions provided in <u>Task: Adding remote server to</u> <u>WebSphere Integration Developer test environment</u> at the end of this document to add a server to the WebSphere Integration Developer test environment and start it. This is especially true for z/OS, AIX, Solaris remote test environment, where the WebSphere Integration Developer will be remote to the test environment
 - ____a. Click on the Servers tab and verify that the server status shows as Started

Properties Problems 🕂 Servers 🗙		\$ O \$	* 🤣 🔳 🕺 🔁 🗖
Server	Host name	Status	State
🚮 WebSphere Process Server v6.0	localhost	Ъ Started	Synchronized
I			

- 2. Publish all of the projects to the se
 - ____a. Right click on WebSphere Process Server V6 in the Servers view and select Add and remove projects... from the context menu
 - ____b. Click the Add All>> button

🍪 Add and Remove Projects		×
Add and Remove Projects Modify the projects that are configu	ired on the server	
Move projects to the right to configur	e them on the server	
Available projects:		Configured projects:
	Add > < Remove Add All >> << Remove All	PeopleSoftAdapterApp SiebelAdapterApp CleansePublishBPELApp ManualCleanApp AutoCleanApp
<	: Back Next >	Finish Cancel

___ c. Click Finish

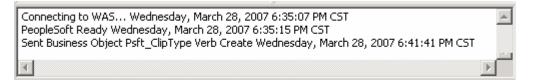
- ____d. Wait for publishing of the projects to complete (no more messages in the lower right corner). This can take several minutes to complete
- 3. Once the server is running with the entire solution deployed, you are ready to test it. To do that, start the Visual Test Connectors that will be used to simulate the PeopleSoft and Siebel applications
 - ____ a. Follow the instructions found in the <u>Task: Connecting with the Visual Test Connector</u>, using the configuration data found at
 <LAB_FILES>\eXchange\PeopleSoft\ASBOs\PsftConnectorWPS.cfg
 - ____ b. Open a second visual test connector by following the instructions found in the <u>Task: Connecting</u> with the Visual Test Connector at the end of this document, using the configuration data found at <LAB_FILES>\eXchange\Siebel\ASBOs\SiebelConnectorWPS.cfg
- _____4. Load a predefined business object into the Visual Test Connector for the PeopleSoft and examine its values
 - ____a. In the VTC window for PeopleSoft, select Edit → Load Business Object
 - ___ b. Navigate to <LAB_FILES>\eXchange\PeopleSoft\ASBOInstances in the Open dialog, and select PsftASBO1.bo
 - ___ c. Click Open
 - ____ d. Enter a name to be assigned to this instance, such as Psft1

New Instance	×
Enter Name P	sft1
ОК	Cancel

- ___e. Click **OK**
- ____f. Look at the values assigned to the Psft_ClipType fields

Business Object Type	Psft_ClipType	
Business Object Instance	Psft1	▼ Create
-Business Object Editor		
Verb: Create	Business Object Local	e: en 🔻
Name	Туре	Value
ClipID	String	CID12345
Clip	String	clasp
Size	String	small
Color	String	black
🖃 RetailUnits[n]	Psft_RetailItem	
⊡[0]	Psft_RetailItem	
ItemCode	String	98765
Package	String	box
Quantity	String	40
Price	String	2.59
Available	String	2005-03-01
Withdraw	String	2010-06-30
OwningC	String	Jones,Sam
ObjectEv	String	
ObjectEventId	String	

- ____g. Click the + in front of RetailUnits[n] to expand the Psft_RetailItem array
- ___h. Click the + in front of [0] to see an instance of Psft_RetailItem
- 5. Initiate the test by sending the business object from the PeopleSoft VTC to the WebSphere Process Server
 - ____ a. From the main menu, select **Request** \rightarrow **Send**
 - ____b. You should see a message in the VTC indicating that the message was sent



- 6. Part of the application scenario includes a Human Task. This is the opportunity for a human to review the contents of the business object and make any necessary changes to it. Start by opening the BPC Explorer to handle the Human Task activity
 - ____ a. Right-click on WebSphere Process Server V6.0 in the Servers view and select Launch → Business Process Choreographer Explorer from the context menu. If you are using a remote server, you can instead open a Web browser and navigate to <u>http://<HOSTNAME>:9080/bpc</u>. The My Tasks view will be shown with the task ready to be completed

😵 Business Process Choreographer Explorer 🗙	
Welcome: (English) Help	
🖃 Process Templates 📑	My Tasks
My Process Templates	
 Process Instances 	Use this page to work on tasks that are assigned to you. $ar{f l}$
Started By Me Administered By Me	Available Actions
Critical Processes	Start Work on Release Transfer Refresh
Terminated Processes Failed Compensations	
	Task Name \Diamond State \Diamond Kind \Diamond Owner \Diamond Originator \Diamond
🖃 Task Templates 📑	ManualClean Ready Participating UNAUTHENTICATED
My Task Templates	Items found: 1 Items selected: 1 << Page 1 of 1

- _____7. Complete the task so that the flow of the scenario can continue
 - ____a. Select the check box next to **ManualClean** and then click the "**Work on**" button. This will claim the task on behalf of the current user

Task Messag	9										
Use this pag	a ta pravid	la tha	data required	d to complete t	ha task. [i	1					
ose this pag	e to provid	e the	uata requiret	a to complete t	ne taski ta	_					
Available A	tions										
Available A	tions										
Complete	Save	Ca	ncel								
	ManualCle	an									
Instance Name											
Task Input	inClipBG										
Message	пспрво	Clip	clipID	CID12345							
			GLN	123456789012	2						
			clip	clasp							
			size	small							
			color	black							
			brand	Clips and Tack	_						
				Clips and Tack	.5						
			retailItems	itemID GTIN	package	quantity	fullDescription	price	startDate	endDate	contactFirstName
				98765	box	40	box 40	2.59	2005-	2010-	Sam
							50X 10	2.00	03-01	06-30	

_____b. Fill in the values for fields in the task output message based on the values in the input message. Since this step in the business process allows a human to review and make updates to the business object, you will make a slight modification. Fill in all the output message fields with the same values from the input message, except change the color from black to charcoal as shown in the image. You will need to click the **+** in **retailItems** to fill in the data values for an instance

Task Output	outClipBG	Clip	clipID						
Message			CIPID	CID12345					
			GLN	1234567890123					
			clip	clasp					
			size	small					
			color	charcol					
			brand	Clips and Tacks					
			retailItems	itemID	GTIN	package	quantity	fullDescription	price
				98765		box	40	box 40	2.59
				+					

- ____ c. Click the **Complete** button
- 8. Verify the data that has been sent to Siebel
 - ____a. Look at the Visual Test Connector window for Siebel and verify that it has received a business object

🐙 Test Connector -[WAS] - [Seibel] 📃 📃	
File Edit Request Help	
Business Object Type Business	
Business Object Instance Create	
Business Object Editor	
Verb: Business Object Locale: en	
Name Type Value	
Connecting to WAS Wednesday, March 28, 2007 7:46:02 PM CST Seibel Ready Wednesday, March 28, 2007 7:46:05 PM CST Received Business Object Siebel_ProductType Wednesday, March 28, 2007 7:47:27 PM CST	
<u> </u>	
Seibel Ready	

____b. Double click on **Siebel_ProductType.create** to open a window with the received BO

____ c. Examine the data in the Response Business Object window as shown below:

🔲 Response Busi	ness Object	×
🧇 🖉 🗠 🔛		
Business Object Typ	e Siebel_ProductT	уре
Verb:	Create 💌 E	Business Object Locale:
Name	Туре	Value
Key	String	
Description	String	clasp small Charcoal
ProductPack	Siebel_Produc	
⊡[0]	Siebel_Produc	
GlobalI	String	12345678998765
Packa	String	box 40
Price	String	2.59
Availa	String	2007-03-28
Availa	String	2010-06-30
Contact	String	Sam Jones
Object	String	siebeladapter.ClipIt
ObjectEventId	String	siebeladapter.ClipT
	OK Car	icel

_____d. Enter a value for the Key field, such as A1234, as shown below:

🔲 Response Busi	ness Object	×		
🧇 🖉 🐟 🔛				
Business Object Typ	e Siebel_Product1	уре		
Verb:		Business Object Locale:		
Name	Туре	Value		
Key	String	A1234		
Description	String	clasp small Charcoal		
ProductPack	Siebel_Produc			
□ [0]	Siebel_Produc			
GlobalI	String	12345678998765		
Packa	String	box 40		
Price	String	2.59		
Availa	String	2007-03-28		
Availa	String	2010-06-30		
Contact	String	Sam Jones		
Object	String	siebeladapter.ClipIt		
ObjectEventId	String	siebeladapter.ClipT		
OK Cancel				

- ___e. Click OK
- 9. Send a response back to the server indicating the request was received and providing the Key value
 - ____a. Ensure that Siebel_ProductType.create is selected
 - ____b. Select Request → Reply → Success from the menu
 - ____ c. Review the message window for a successful reply as shown below:

Connecting to WAS Wednesday, March 28, 2007 7:55:41 PM CST	-
Seibel Ready Wednesday, March 28, 2007 7:55:45 PM CST	
Received Business Object Siebel_ProductType Wednesday, March 28, 2007 7:58:01 PM CST	
Replied succeed-Siebel ProductType.Create Wednesday, March 28, 2007 8:00:02 PM CST	
4	▶

- 10. Now that testing is complete, clean the environment
 - ____a. Right click on the server in the Servers view and select Add and remove projects... from the context menu
 - ____b. Use the <<Remove All button to remove the projects from the server
 - ___ c. Click Finish
 - ____d. Stop the Server
 - ____ 11. Close both Visual Test Connector windows

What you did in this exercise

In this chapter you examined existing components that can be used in the eXchange scenario. You then defined the Imports, Exports and bindings needed to create an end to end solution. Finally, you tested that solution by driving input from a Visual Test Connector and examining the resulting output.

Solution instructions

_____1. Follow the directions in the task <u>Initialize the Workspace for a Lab Exercise</u>, using the following values:

<WORKSPACE>

C:\Labfiles602\eXchange\EndToEndNoFFA\workspace

<PROJECT_INTERCHANGE>

C:\Labfiles602\eXchange\EndToEndNoFFA\Solution\EndToEnd_PI.zip

<MODULE>

n/a

<DEPENDENT_LIBRARIES>

n/a

2. Continue with **Part 4: Testing eXchange.**

Task: Adding remote server to WebSphere Integration Developer test environment

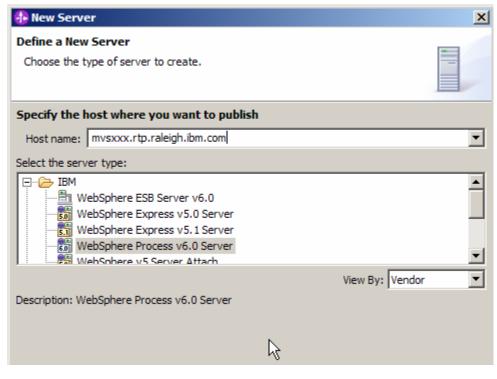
This task describes how to add a remote server to the WebSphere Integration Developer test environment. The sample will use a z/OS machine.

Create a new remote server.

- ____1. Right click on the background of the Servers view to access the pop-up menu.
- 2. Select New \rightarrow Server.

Properties Problems 👫 Servers 🗙 Console		🌣 🕥 🖉	🍫 🔲 🕅 🗎 🗖
Server	Host name	Status	State
HebSphere ESB Server v6.0	localhost	🖥 Stopped	Synchronized
WebSphere Process Server v6.0	localhost	🖥 Stopped	Synchronized
New 🕨 🖹 Server			

- ____ 3. Specify host name to the remote server, <HOSTNAME>.
- 4. Ensure that 'WebSphere Process V6.0 Server' is highlighted in the server type list.



__ 5. Click Next.

6. On the WebSphere Server Settings page, select the radio button for RMI and change the ORB bootstrap port to the correct setting (<BOOTSTRAP_PORT>).

🚯 New Server				×
WebSphere Server Settin Input settings for the new V	-	erver]		
WebSphere profile name: Server connection type an RMI (Better performan ORB bootstrap port: SOAP (More firewall co SOAP connector port: Run server with resource Security is enabled on th Current active authentic	ce) 9131 mpatible) 8880 es within the v is server	workspace		
User ID:	ation settings	;;		
Password:				
	server1			
Server type BASE, Express or unma Network Deployment so Network Deployment so The server name is in to <cell name="">/<node For example, localhost Detect Click this but</node </cell>	erver erver name; the form of; a name>/ <se /localhost/ser</se 	rver name> ver1,	er	
	< Back	: Next >	Finish	Cancel

- _____7. Click Finish.
- 8. The new server should be seen in the Server view.

Properties Problems Servers X Console		🌣 🕥 🖉	🍫 🔳 🙌 📪 🗖
Server	Host name	Status	State
🛅 WebSphere ESB Server v6.0	localhost	🛅 Stopped	Synchronized
WebSphere Process Server v6.0	localhost	🖥 Stopped	Synchronized
WebSphere Process v6.0 Server @ mvsxxx.rtp.ral	mvsxxx.rtp.raleigh.ibm.com	Started	Synchronized
▼			

- 9. Start the remote server if it is not already started. WebSphere Integration Developer does not support starting remote servers from the Server View.
- ____ 10. From a command prompt, telnet to the remote system if needed:

'telnet <HOSTNAME> <TELNET_PORT>'

userid : <USERID>

pw: <PASSWORD>

____ 11. Navigate to the bin directory for the profile being used:

cd <WAS_HOME>/profiles/<PROFILE_NAME>/bin

- _____ 12. Run the command file to start the server: ./startServer.sh <SERVER_NAME>
- _____13. Wait for status message indicating server has started:

ADMU3200I: Server launched. Waiting for initialization status

ADMU3000I: Server cl1sr01 open for e-business; process id is 0000012000000002

Task: Connecting with the Visual Test Connector

This task describes how to create a Profile and start a connection with the Visual Test Connector (VTC).

- 1. Ensure the WebSphere Process Server is active (the server is the JMS Broker). The VTC requires an active JMS Broker for a successful connection
- ____ 2. Start the Visual Test Connector
 - _____a. From the start menu, select Programs > IBM WebSphere Business Integration Adapters > IBM WebSphere Business Integration Toolset > Visual Test Connector (VTC). This opens a command window in the background where the process runs and the Visual Test Connector Interface in the foreground. Do not close the command window as this will cause the VTC to exit.
- _____3. Create/Select a Profile
 - ____ a. From the main menu of the VTC interface, select Create/Select a Profile. The Connector Profile panel opens

📲 Test Connector				
File	Edit	Request	Help	
峇 Create/Select Profile Ctrl+N				
ିମ୍ବ Connect Ctrl+A				
E	xit			

___ b. If a profile doesn't exist, create a new PeopleSoft profile by selecting File → New Profile... from the main menu of the Connector Profile panel.



- ____ c. Enter the following information in the New Profile panel:
 - 1) Click the **Browse** button for "Select the connector configuration file:" filed and select <LAB_FILES>\eXchange\PeopleSoft\ASBOs\PsftConnectorWPS.cfg file
 - 2) Connector Name : PeopleSoft
 - 3) Broker Type : WAS

New Profile		×
Select the connecto	or configuration file:	
C:\Labfiles602\eX	change\PeopleSoft\ASBOs\PsftConnectorWP	Browse
Connector		
Connector Name	PeopleSoft	
Broker Type	WAS	•
Server		
Server]
User ID		
Password		1
	OK Cancel	

- ___ d. Click OK
- ____e. Select the PeopleSoft profile you had created as shown below:

Connector F	Profile		×
File Edit			
* 🛛 🗶			
Connector	Server	User ID	Configuration File
PeopleSoft			C:\Labfiles602\eXchange\P
•			•
		OK Cancel	

- ___ f. Click **OK**
- ____g. Now in the Test Connector interface, select File → Connect from the main menu

📲 T	est Co	onnector	-[WAS] - [People	5oft]
File	Edit	Request	Help		
<u> </u>	Ireate	/Select Pro	file	Ctrl+N	×
<mark>۹</mark> . (Ionneo	:t		Ctrl+A	
E	Exit				

____h. Ensure that a successful connection is made. You can confirm this by watching the trace messages displayed at the bottom frame of the Test Connector interface as shown below:

🗽 Test Connector -[WAS] - [PeopleSoft]	_ 🗆 🗙
File Edit Request Help	
Business Object Type	
Business Object Instance Create	
Business Object Editor	
Verb: Business Object Locale: en	
Name Type Value	
Connecting to WAS Thursday, March 22, 2007 9:22:54 AM CST PeopleSoft Ready Thursday, March 22, 2007 9:22:56 AM CST	A
<u> </u>	▶
PeopleSoft Ready	

- ____4. Follow the above steps to create a new Siebel profile as follows:
 - ____a. From the main menu of the VTC interface, select **Create/Select a Profile**. The Connector Profile panel opens
 - ____ b. Create a new Seibel profile by selecting File → New Profile... from the main menu of the Connector Profile panel
 - ____ c. Enter the following information in the New Profile panel:
 - 1) Click the **Browse** button for "Select the connector configuration file:" filed and select <LAB_FILES>\eXchange\Siebel\ASBOs\SiebelConnectorWPS.cfg file
 - 2) Connector Name : Siebel
 - 3) Broker Type : WAS

New Profile		×
Select the connecto	r configuration file:	
C:\Labfiles602\eX	change\Siebel\ASBOs\SiebelConnectorWPS.c	Browse
Connector		
Connector Name	Seibel	
Broker Type	WAS	•
Server		
Server]
User ID]
Password]
	OK Cancel	

- ___ d. Click OK
- ____e. Select the Seibel profile you had created as shown below:

Connector Pro	ofile		×
File Edit			
* 🛛 🗶			
Connector	Server	User ID	Configuration File
PeopleSoft			C:\Labfiles602\eXchange\PeopleSof
Siebel			C:\Labfiles602\eXchange\Siebel\ASB
		OK Cancel]

- ___ f. Click OK
- ____ g. Now in the Test Connector interface, select File \rightarrow Connect from the main menu
- ____h. Ensure that a successful connection is made. You can confirm this by watching the trace messages displayed at the bottom frame of the Test Connector interface as shown below:

🐙 Test Connector -[WAS] - [Seibel]	_ 🗆 🗵
File Edit Request Help	
Business Object Type	
Business Object Instance Create	
Business Object Editor	
Verb: Business Object Locale: en	
Name Type Value	
Connecting to WAS Thursday, March 22, 2007 10:43:17 AM CST	*
Seibel Ready Thursday, March 22, 2007 10:43:19 AM CST	
	T
1	Þ
Seibel Ready	