## WebSphere Lab Jam Connectivity WebSphere Message Broker

Lab Exercises





Catalog Number

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# Lab 1 Getting Started with IBM WebSphere Message Broker V7.0

### 1.1 Introduction to the Toolkit and Building Message Flows

In this lab you will build a simple message flow.

As a convention for these labs, a red box will be used to identify a particular area, and when information is to be entered and/or an action is to be taken, it will be in **bold** characters. Red lines may be used to indicate where nodes are to be placed when building your message flow.

Additional icons are provided in the quick launch area. These are:

- Desktop
- Internet Explorer
- Notepad
- Windows® Explorer
- Display Event Logs and Services
- IBM® DB2® Command Center
- Windows command window
- RfhUtil (from SupportPac<sup>™</sup> IH03)
- A link to NetTool (Open Source, also good for testing HTML and SOAP messages)

The system is Windows XP, Service Pack 2 (SP2). The IBM software includes IBM WebSphere® MQ V7.0.1, WebSphere Message Broker V7.0, DB2 V8.2 Fix Pack 14 (FP14), WebSphere Application Server V6.1 Fix Pack 19 (FP19) and WebSphere Service Registry and Repository V6.2. Other IBM software is also installed and will be described in the later labs.



The icon for the IBM WebSphere Message Broker Toolkit is located on the desktop. In later labs, you will also be using some of the icons that have been placed on the smart bar. **Double click on the icon** to start the WebSphere Message Broker Toolkit.



The above splash screen is displayed when starting the WebSphere Message Broker Toolkit

💠 Workspace Launcher	×
Select a workspace	
WebSphere Message Broker Toolkit - Message Broker stores your projects in a folder called a workspace. Choose a workspace folder to use for this session.	
Workspace: C:\student\workspace Browse	
Use this as the default and do not ask again	
OK Cancel	

You are prompted to select an Eclipse Workspace – you will take the default here but this is a nice facility to allow you switch between workspaces when starting the WebSphere Message Broker Toolkit

\_\_1. Click OK.



This is the WebSphere Message Broker V7.0 Toolkit. It is based on Eclipse and includes components from IBM Rational® Application Developer V7. It provides one Perspective specifically for WebSphere Message Broker as well as additional Perspectives from Rational Application Developer and Eclipse. This system is using the default installation. During the labs and lectures you will be learning more about the components in a typical development and runtime environment.

This is the **Broker Application Development** Perspective. It is divided into multiple views (or panes). Each view is identified by a tab at the top of the view. On the lower left is the Outline view

On the upper left is the Navigator view, which has tabs for projects (**Broker Development**) and patterns. It contains the projects that are available within the Eclipse workspace. There is a set of resources provided for your use during the labs.

The area below the navigator view is the summary area. The **Broker** tab will show all defined local brokers as well as connections to remote brokers that have been created.

The large area on the right is used by the resource editors. When an editor has opened a resource, it will also be represented by a tab. Below the editor view is a pair of views for Properties and Problems.

On the top right are tabs for the perspectives that have been opened. To change an open perspective, you can simply click on its tab.

A Broker Application Development - WebSphere Masses Product To U.S. Masses	
File Edit Navigate Search Project Run Windo	
🕞 Broker Development 🛛 🤻 Patterns Explorer 🦉 📄 🤹 🍸 🗖 🗖	
<all resources=""></all>	
Pattern Instances New P	
Projects Quick Starts.	V
Various Views	Properties 23 Problems Deployment Log E TO Property Value Property Value Properties and Problems
E Outline X Data Source Explorer Tasks & Brokers C	

Quick start wizards can be viewed using the drop down menu in the navigator pane on the **Broker Development** tab. The wizards do some of the initial work for creating various types of solutions.

The WebSphere Message Broker Toolkit provides seven quick start wizards plus a number of predefined patterns to assist in creating message flows and message sets. Two of these will be used in the later labs.

Eclipse is project oriented – artifacts are organized into projects. A project is typed. That is to say that a particular type of project can only contain a certain kinds of artifacts. For example, you now need to create a message flow. Before you can do that you must create a Message Flow Project to hold that artifact.

🗟 Broker Development 🛛 🖧 Pat	terns Explorer	👙 🗖 😓 🗸 🗖	' D) (
<all resources=""></all>			-
Pattern Instances		<u>New</u>	8
Projects		Quick Starts	8
<ul> <li>B 2 JKE_Client_</li> <li>B 2 JKE_Client_MessageSet</li> <li>B 2 JKE_EIS</li> </ul>	New		
E -	Copy	Message Flow Project	
	Delete	adapter Connection	
	Move	📬 Other	Ctrl+N
	Kename		_

- \_\_\_2. Right click in the white space of the Broker Development pane.
- \_\_3. Select New->Message Flow Project.

As an alternative, you can select File from the menu bar, then New, then Message Flow Project.

Note: These actions are also available as icons on the toolbar.

🕀 New Message Flow Project	
Create a new message flow project	
Enter the name for the new message flow project	
Project pame	
✓ Use default location	
Location: C:\student\workspace\IntroLab	Browse
? < Back Next > Einish	Cancel

You are prompted to enter a name for your Project.

\_\_\_4. Enter IntroLab for the Project name.

#### \_\_5. Click **Finish**.

🖥 Broker Deve	elopment 🕱 🧏 Patterns Explorer	🖑 🖻 🔄 🔽 🗖 🗍		
<all resource<="" th=""><th>25&gt;</th><th>-</th></all>	25>	-		
Pattern Insta	ances	<u>New</u> &		
Projects	K	Quick Starts 🗗		
E-E-IntroLa	New 🕨	Project		
E B B B B B B B B B B B B B B B B B B B	Go Into	📸 Message Flow Project		
Ē <sup>8</sup> JKE_EI Ē <sup>6</sup> JKE_EI	Add or Remove Project References	- 🎬 Message Set _ 📸 Adapter Connection		
E	Copy Paste Delete Move Rename Minport Export Open Project Class Pariast	Message Flow     Message Flow     Message Flow ESQL File     Database Definition     Broker Schema     Message Broker Archive     Other     Ctrl+N		
	Close Project			

Now you will create a new message flow.

- **\_\_6.** Right click on **IntroLab**.
- \_\_7. Select New->Message Flow.

The options for the New action will be different depending on how the request is made. For example, when using the File  $\rightarrow$  New from the Menu bar, all of the options will be listed. However, in this case, by starting from a Message Flow Project, the only options shown are those that are related to the selected project.

New Message Flow	<u>- 0 ×</u>
Create a new message flow Select a message flow project for the new message flow	
Message flow project: IntroLab	<u>N</u> ew
Flow organization	
Vise default broker schema	
Schema: (default broker schema)	<u> </u>
? Enish	Cancel

Here you are asked to name the message flow. A Message Flow Project may contain multiple message flows.

- \_\_8. Enter Intro\_MessageFlow in the Message flow name box.
- \_\_\_9. Click **Finish**.

E 1*Intro_MessageFlow.msgflow 🕱	- 8
A State And A State A	
Title of artifact being edited	
Connection	
Note	
Cy Favorites	
Ra WebSphere MQ	
Message flow nodes by category	
in drawers	
Web Service	
Q SCA	
Conception WebSphere Adapters	
Validation	
Properties of the flow or selected node	
Problems Problems tab	
Befault Values for Message Flow Depression	
Description	
Monitoring Version 1.0	
Short description Introduction to WebSphere Message Broker V7.0	
Long description	
This is my first lab	<b></b>

You are placed into the Message Flow Editor where you can compose the message flow. When you click on the Message Flow Editor, information about the message flow appears in the Properties pane.

- \_\_10. Select the **Properties** tab.
- \_\_\_11. Enter the following:

Enter **1.0** for the **Version** field; Enter Introduction to WebSphere Message Broker V7.0 for the Short description field; Your choice of information in the **Long description** field.



A message flow must begin with an Input node as this particular class of node establishes the environment for the flow. There is an Input node for each of the various protocols that Message Broker supports as well as a matching Output node. We will process a WebSphere MQ message with this flow so we need an MQInput node.

The **MQInput** node is in the WebSphere MQ drawer.

- \_\_\_12. Open the **WebSphere** MQ drawer by clicking on it. If a drawer is open it will close when clicked.
- \_\_\_13. Highlight the desired node (**MQInput**).
- \_\_\_14. Either drag it to the canvas or move the mouse to the canvas and click again.

When a node is initially added, its name can be changed immediately by over-keying the default name – or – by entering a new value in the Node name field in the Description tab of the Properties.

A "best practice" is to provide a new name for each node that is descriptive of the function that it provides. For most of the labs, you will be renaming the nodes. If you use the names as suggested it will make it easier to follow the lab guide. Another "naming convention" for MQInput and MQOutput nodes is to use the queue name that the node is accessing.

🕫 *Intro_MessageFlow.msg	flow 🛿
👌 😳 Palette	
Selection	
Connection	
🗓 Note	
🙀 Favorites	
😕 WebSphere MQ 🛛 👳	
🔂 MQInput	
🔊 MQOutput	
🔗 MQReply	MIL Toput
🛃 MQGet	Kinc_npdy
📷 MQHeader	
MQOptimizedFlow (Deprecated)	
Gins JMS	
💭 НТТР	
🧟 Web Services 🔤	
🗟 SCA	
WebSphere Adapters	
Cr Routing	
Transformation	
Graph User Defined Properti	ies
🔲 Properties 🛛 🖹 Pr	oblems
🕼 MQInput Node Pro	perties - XML_Input
Descriptio	
Basic	Queue name* LAB.IN
Input Message Parsing	
Parser Options	
Advanced	

\_\_\_15. Change the name of the node to **XML\_Input**.

You must also define the Queue name in the node properties. The Basic tab should be selected. A Queue name is required and this is indicated by a message in red.

\_\_\_16. Enter **LAB.IN** as the Queue name. Note that queue names are case sensitive. All queue names in the lab are upper case

🗖 Properties 🕺 🔝 Problems				
🕼 MQInput Node Properties - XML_Input				
Description				
Basic	Node name	XML_Input		
Input Message Parsing	Short description	Q:LAB.IN		
Parser Options	Long description	1		
Advanced	Getting Started	1		
Validation	decting Started			

- \_\_\_17. Select the **Description** tab. The purpose of this section is to encourage the developer to document the message flows and its nodes. In addition the name of the node may be changed. Note that XML\_Input is the node name.
- \_\_\_18. Enter **Q: LAB.IN** in the **Short description** field.
- \_\_\_19. Enter your choice of text for the **Long description** (Getting Started is shown in the screen shot).



\_\_\_\_20. Hover the mouse over the node name.

The information in the Short description field is displayed. When there are multiple nodes on the canvas, if you move from node to node with the mouse, the same tab in the Properties will be displayed.



The Trace node is in the Construction drawer.

- \_\_\_21. Open the **Construction** drawer by clicking it with the mouse.
- \_\_22. Select the Trace node and place it on the canvas to the right of the XML\_Input node. As shown in the example, when you place the cursor on a node name, a description is shown. You do not need to rename the Trace node.

Properties 2	🛛 🔝 Problems	s 📰 Deployment Log	~ - 8
🌵 Trace No	de Properties	- Trace	
Description	<u> </u>		
Basic 🦰	Destination	File	•
Monitoring	File path	C:\XML_Input_Trace.txt	
	Pattern	Here is some text \${Root}	<b></b>
		T	V
	Message est-la-		
	message catalog		
	Message number	3051	

- \_\_\_23. Use the pull down list on the Destination field and select **File**.
- \_\_\_24. In the File Path field, enter C:\XML\_Input\_Trace.txt.

The information in the Pattern box tells the node what information to produce in the trace output. If you type a line of raw text it is echoed to the output. Enter a line of your choice – no quotes are needed.

\_25. In the Pattern box, enter the string \${Root} exactly as indicated – this tells the trace node to dump out the entire contents of the message that enters the node. Important – the pattern uses curly braces, not parenthesis.



- \_\_\_26. Open the **WebSphere MQ** drawer.
- \_\_\_27. Select an **MQOutput** node from the drawer.
- \_\_\_\_28. Place it to the right of the **Trace** node.
- \_\_\_\_29. While the node name is highlighted, enter **Send\_As\_XML** as the new name.

Properties 🛿 🔝 Problems				
MQOutput Node Properties - Send_As_XML				
Description				
Basic 🦰	Queue manager name			
Advanced	Queue name	LAB.SEND.AS.XML		
Request	-			
Validation				

- \_\_\_30. If necessary, click the **Basic** tab.
- \_\_31. Set the **Queue name** to **LAB.SEND.AS.XML**. Queue names are case sensitive. It is a Best Practice to separate words in the queue name with a dot. Make sure you do not enter this information in the Queue manager name field!!

#### Background on Node Terminals:



As you work with the various nodes, you will also be working with their Input and Output terminals. Input terminals are typically named **In**. Most nodes have an Output terminal named **Out**. They may have several others. Some of these will have common names such as Failure or Catch and others will be unique to that particular node. Some nodes allow you to define the terminals. The terminals are given a name when they are defined. The lab instructions will identify the Output terminal to be used when connecting nodes together. If you hover the mouse pointer over a terminal, a small popup will appear that identifies the name of the terminal.



You will now wire the nodes together to create a logical path for the message to follow through the message flow. You want to wire the **Out** terminal of the XML\_Input node to the **In** terminal of the Trace node. There are two techniques:

**One** – position the mouse over the Out terminal (in the middle), click and drag to the target and click again.

**Two** – right click on a node and select **Create Connection**. This is an example of a Terminal Selection presented as a result of the Create Connection.

The rest of the Lab instructions show the first method for wiring.

- \_\_\_32. Right-click on the XML\_Input.
- \_\_33. Select Create Connection.



A list of the available Output terminals for this particular node type is shown

34.	Select Out.		
35.	Click OK.		
	XML_Inpul Out -> In	•D Trace	Send_As_XML

You now have a rubber-banded connector.

- \_\_\_36. Position the connector on the In terminal of the Trace node.
- \_\_\_37. Click to anchor it giving a connection between the two nodes. If you put your mouse pointer on the connection it will pop up a summary of "from-to" information.



The same steps will be used to make a connection from the **Trace** node to the **Send\_As\_XML** node.

- \_\_38. Right click on the **Trace** node.
- \_\_\_39. Select **Create Connection**. This time you immediately get a rubber-banded connector. No selection list of terminals is presented because there is only an **Out** terminal on the Trace node.
- \_\_\_40. Position the mouse pointer on the **In** terminal of the **Send\_As\_XML** node.

\_\_\_41. Click to anchor the connection.

Your message flow should now look like the above diagram.

\_\_42. It is time to save your work – hold down the **Ctrl** key and press the **S** key to save the message flow. You can also click on the "diskette" icon to do a save or use **File**  $\rightarrow$  **Save**.

The following graphic will be used as a reminder when it is time to save your work.



This is the end of lab 1.

### Lab 2 Deploying and Executing a Message Flow

#### 2.1 Overview

The message flow that was built in the previous lab will now be tested. The flow will be deployed to an Execution Group in a Broker where it will execute. It will then be available to begin processing messages. There is no need to restart the Broker or the Execution Group for the deployment of a new or changed message flow.

The unit of deployment is a Broker Archive file (BAR). Broker archive files have a file extension of "bar".

The Broker Archive file will hold the artifacts to be deployed to a specific Execution Group in a specific Broker. It may contain message flows, message sets, XSL Transformations (XSLT) Style Sheets, Java<sup>™</sup> Archive (JAR) and XSDZIP (schema) files. In addition, the related source files may also be included. When you add a message flow to the BAR file, additional validation of the message flow is performed. The BAR file is then deployed to the Broker. The final validation of the artifacts is done by the Broker. If errors are found by the Broker they will be reported back in the Event Log.



A Broker Archive file must be created to hold the resources to be deployed.

- \_\_1. Select the **IntroLab** project in the project navigator pane.
- \_\_\_2. Press the right mouse button.
- \_\_3. Select **New->Message Broker Archive** from the menu.

New Message Broker Archive	
Message Broker Archive	
Create a new message broker archive file resource	
Project: IntroLab	New
Folder: <a href="https://www.selfault.com"></a>	Browse
Name: Intro	
? Enish	Cancel

- \_\_\_4. The **IntroLab** project should already be selected as the project to store the archive file in.
- \_\_5. Enter **Intro** as the name for the bar file.
- \_\_6. Press the **Finish** button.

🖽 Intro_MessageFlow.msgflow 🕼 *Intro.bar 😣	
Prepare	
Select workspace deployable resources to build within the broker archive	
The tree below displays all of the deployable artifacts within the workspace.         Filter working set: <all resources="">         Itype filter text</all>	
Intro_MessageFlow.msgflow - /IntroLab/Intro_MessageFlow.msgflow         Intro_MessageFlow.msgflow - /JKE_client_jokE_clienc_jow.msgflow         Image: MessageSet.mset         Image: Message: MessageSet.mset      <	
(*)-A resource marked with * will be added automatically to the Broker Archive if a message flow that references it is added to the Broker Archive.	
▼ Build options	
Include source riles     Pemove contents of Broker Archive before building	
✓ Nonive configurable property values	
Build broker archive	
Prepare Manage User Log Service Log	

The BAR file editor will be launched. This is the **Prepare** tab. It lists the deployable assets that are available in your workspace. You are only interested in the **Intro\_MessageFlow** message flow at this time.

- \_\_\_7. Click the check box for the Intro\_MessageFlow.
- \_\_\_8. Click **Build broker archive**.

Adding to Broker Arch	nive File		8
Operation compl	leted successfully.		
			() <u></u>
	OK	Cancel	Details >>

\_9. You will receive a confirmation panel. Click **OK** to dismiss it. If any errors are found at this point, the status message will indicate that "some flows could not be added" and the Details tab will have specific information.

Intro_MessageFlow.msgflow	🚺 Intro.bar 🛛					
1anage abuild romaus adit add	built resources in t	uakan anabiya and	configure	a thair		ution
ebuliu, remove, euit, auu	Duilt resources in t	proker archive anu	comyur	e meir	prope	rues
💾 💼 🏀 🧃 Filter by: <	ype filter text>		•			
Name	Туре	Modified	Size	Path	V	Commen
🗄 🖽 Intro_MessageFlow.cmf	Compiled message fl	Oct 20, 2009 12:3	5719		1.0	
<b>_</b>						
	1					

\_\_10. Click the **Manage** tab at the bottom of the Intro.bar editor. This view will be shown.

There is now content in the BAR file, a compiled message flow (file type .cmf). The time stamp that shows when this particular item was modified can be a handy piece of reference information. Make this field larger so that the entire value is visible.

\_\_11. Save the BAR file with a **Ctrl S**.

🔚 Broker Development 🛛	Patterns Explorer	🍃 🖻 😤 🗸 🗖
<all resources=""></all>		-
Pattern Instances		<u>New</u> 8
Projects		Quick Starts 🗗
IntroLab Flows Group Gefault brows Intro_N Broker Archives Group Gefault brows	oker schema) MessageFlourinsgflow 5 oker sanema)	
Intro.b	New	1
Image: Strength of the streng	Open Open With	
E B JKE_LabMaterials	Copy Paste	
	Delete Move Rename	
	Add Bookmark	
	≧ Import ≧ Export	
	Refresh	
An outline is not available.	Deploy	

The next step is to "deploy" the Bar file using one of two methods. Both will be used in the exercises.

- \_\_\_12. Expand Broker Archives->(default broker schema).
- \_\_13. Select the Intro.bar broker archive file
- \_\_\_14. Press the right mouse button.
- \_\_15. Select **Deploy** from the menu.

Deploy	
<b>Deploy</b> Select execution group to deploy selected resources.	
? <u>Einish</u>	Cancel

\_\_\_16. Select the **default** execution group.

\_\_17. Press the **Finish** button to initiate the deployment operation.



When the deployment operation finishes the message flow is now running. It is waiting for a message to appear in the **LAB.IN** queue. The message flow should be visible under the **default** execution group on the **Broker** tab in the lower left pane.



The message flow is now ready to be tested. You need a tool that will allow you to place a message on the input queue that your message flow has done a "GET with Wait" on. RFHUtil is a very convenient utility that is provided via a SupportPac (IH03). The RFHUtil tool will be used during the first four labs, so it is not necessary to close it. There are some exercises when you will have multiple copies activated. You will discover that when the tool has a queue open, the tab in the action bar will show the name of the open queues.

\_\_\_18. Launch RFHUtil by clicking on the indicated icon in the quick launch tray.

RfhUtil e Edit	V7.0.1 Search	Read Write	e View	Ids MQ Helj	p								
lain	Data	MQMD	PS	Usr Prop	RFH	PubSub	pscr	jms	usr	other	CICS	IMS	DLQ
Qu Qu LA Re Sel	ieue Mana; B70MGR ieue Name AB.IN mote Queu lector	ger Name (to ue Manager M	connect t	o) ote queues only	)			•	Queue	Type Q	ueue depth Move Q Pur <u>ge</u> Q <u>D</u> isplay Q		
File 43 File	Read <u>Q</u> e Code Pag 37 e Name	<u>W</u> rite Q ge	<u>B</u> rowse (	Start Brow	vse Bro	wse <u>N</u> ext	Browse P <u>r</u> e	Size	User Pr	Close Q ops Queue	Cluster Op O As Qu O Bind (	en ieue Inen	
,	<u>)</u> pen File	<u>S</u> ave File	clear	Data Cle	ear All	Load Names	, Set Co	nn <u>I</u> d	C RFI C Cor	, H2 npat	O Not Fi	ixed	
	BOL Copy	Book File Na	ame					Put/Get	Options v Msg Id by Msg Id by Correlid	□ New □ Logi □ Com	) Correl Id cal Order plete Mso		
								☐ Get ☐ Set ☐ Set	by Group Id Iden Conte All Context	d 🗌 All A xt 🗍 Con 🗌 Alter	vail vert mate User I	d	
4							▼ ↓				E	xit	

- \_\_\_19. You must specify a Queue Manger and Queue name....**use the provided pull-downs** to select the **MB7QMGR** queue manager and the **LAB.IN** queue name.
- \_\_\_20. Click Open File.

Open		8	<u>?</u> ×
Look in: [	My Documents 💽 🗢 🖻 📸	•	
COBOL COLL Filer Intro_XML Lab_soluti	SOAP_InputMessages desktop.ini     Tools     WADDR     Message     Message     Morkspace     Mosec     WSEC     WSRR		
File name: Files of type:	Al (*.*)	Ope Canc	n iel

\_\_\_21. Navigate to the **C:\Student\Intro\_XML\_Message** directory. Note that in this Image My Document has been linked to C:\Student.

Open			8	? ×
Look in: 📔	) Intro XML Message		* 📰 •	
JKE_IN_R	equest.xml			
File name:	JKE_IN_Request.xml		Оре	n
Files of type:	All (*.*)	<b>_</b>	Cano	;el

- \_\_\_22. Select JKE\_IN\_Request.xml.
- \_\_\_23. Click Open.

ss Rfh	Util ¥7.0.1	
File E	Edit Search Read Write View Ids MQ Help	
Mair	n Data MQMD PS Usr Prop RFH Pu	bSub pscr jms
	Queue Manager Name (to connect to)	
	MB7QMGR	•
	, Queue Name	
	LAB.IN	•
	, Remote Queue Manager Name (remote queues only)	_
	······································	
	Selector	
	Read <u>U</u> <u>Write U</u> <u>Browse U</u> <u>Start Browse</u> Browse <u>N</u>	End Browse Prev End Br
	File Code Page	
	437	
	File Name	Data Size
	C:\student\Intro XML Message\IKE IN Request yml	1085
	]	

\_\_\_24. Click on the **Data** tab to see the information that will be used as the payload of the message....

fhUtil ¥7.0.1												
Edit Search	Read Write	View I	ids MQ Help	1								
ain Data	MQMD	PS	Usr Prop	RFH	PubSub	pscr	jms	usr	other	CICS	IMS	DLQ
Message Data	a (1085) from C:'	\student\l	Intro_XML_Mes	sageVJKE_	_IN_Request	.xml						
baaaaaa		· _		1	<u>,</u>					Data F	ormat	
000000000000000000000000000000000000000	xmi ve</td <th>rsion-</th> <th>"1.0" end</th> <th>oaing=</th> <th>"ut l.</th> <th></th> <td></td> <td></td> <td>-</td> <td>Cha</td> <td>aracter</td> <td></td>	rsion-	"1.0" end	oaing=	"ut l.				-	Cha	aracter	
00000032	1-0"?>	<018:0	KE_IN_REG	ob gow	m±n "						(	
00000004	s:ths- h	.ccp:// ="http	· //	ab.com	001					C YM		
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\_25. Since this is XML data, click on the **XML** radio button on the right to see a formatted display.



The XML structure is now formatted and much easier for a human to read.

\_\_\_26. Click on the Main tab.

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Main	Data MQMD PS Usr Prop RFH PubSu	ıb pscr jms
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0	C:\student\Intro_XML_Message\JKE_IN_Request.xml	1085
,		

\_\_27. Click on the **Write Q** button and your message will be placed on the LAB.IN queue. You now need to check the output queue to see if there is a message from the flow.



WebSphere MQ Explorer will now be started. The icon in the system tray can be used.

- \_\_\_\_28. Select the WebSphere MQ icon in the Windows tray as shown above.
- \_\_\_29. Press the right mouse button.
- \_\_\_30. Select **WebSphere MQ Explorer** from the menu.

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	COLL_EXPIRE2	Local	Predefined	0	0	0	5000	Allowed	Allow
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Cuere Manager Clusters	COLL_OUT	Local	Predefined	0	0	0	5000	Allowed	Allow
- IMS Administered Objects	DLQ	Local	Predefined	0	0	0	5000	Allowed	Allow
- Service Definition Repositories	FAILURE	Local	Predefined	0	0	0	5000	Allowed	Allow
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	LAB.ACCOUNTCLOSE	Local	Predefined	0	0	0	5000	Allowed	Allow
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Administration gaodo     Broker Archive Files	LAB.SEND.AS.XML	Local	Predefined	0	1	1	5000	Allowed	Allov
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	OUTPUT	Local	Predefined	0	0	0	5000	Allowed	Allov
	ROUTEDB.DEFAULT	Local	Predefined	0	0	0	5000	Allowed	Allow
	ROUTEDB.IN	Local	Predefined	0	0	0	5000	Allowed	Allov
	ROUTEDB.KEYNOTFOUND	Local	Predefined	0	0	0	5000	Allowed	Allov
	ROUTEDB.ORDERCLOCK	Local	Predefined	0	0	0	5000	Allowed	Allow
	ROUTEDB.SNRSTAFF	Local	Predefined	0	0	0	5000	Allowed	Allow
	SECUR_FAILED_AUTHORIZATION	Local	Predefined	0	0	0	5000	Allowed	Allow
	SECUR_LDAP_LOOKUP_OUTPUT	Local	Predefined	0	0	0	5000	Allowed	Allow
	SECUR_NO_PROPAGATION	Local	Predefined	0	0	0	5000	Allowed	Allow
	SECUR_PASSED_AUTHORIZATION	Local	Predefined	0	0	0	5000	Allowed	Allow
	SECUR_PROPAGATION	Local	Predefined	0	0	0	5000	Allowed	Allow

- \_\_\_31. Expand the **MB7QMGR** folder in the navigator pane.
- \_\_32. Click on **Queues.** A display is presented that shows various metrics for the queues including **Current queue depth** which is what you are interested in. The **LAB.SEND.AS.XML** queue contains a message....good news!

The order of information can be changed by altering the Scheme used to define the order in which properties are displayed.

Explorer - Eclipse SDK										- 8
File Edit Navigate Search Project Run Window Help										
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- Service Definition Repositories			Local	Predefined	0	0	0	5000	Allowed	Allowe
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		Clear Messages		Predefined	0	0	0	5000	Allowed	Allowe
		Put Test Message		Predefined	0	0	0	5000	Allowed	Allowe
	ROUTEDB IN	Browse Messages		Predefined	0	0	0	5000	Allowed	Allowe
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But, to be sure it is a recent message you should examine more details about it.

- \_\_\_33. Right click on the LAB.SEND.AS.XML queue.
- \_\_\_34. Select **Browse Messages** from the pull-down list.

	Put date/time	User identifier	Put application name	Format	Data length	Message data
a] 1	Nov 16, 2007 11:17:34 AM	admin	nt\Tools\rfhutil\rfhutil.exe		1085	xml version="1.0" encoding="utf-8"? □ □ <tns:jke_in_reque:< th=""></tns:jke_in_reque:<>

Here are some details about the message including its PUT date and time. Using this information you can be assured that this message came from your flow and it is working as you intended.

\_\_\_35. **Close** this window.
🏄 Start 🛛 🥌 🎯 舅		7	ф,	6	<b>C:\</b>	1.35	•	℗	۲	۲
f date.	-									

\_\_\_36. Bring up Windows Explorer. An icon has been provided. You need to examine the output from the Trace Node.

🚰 Local Disk (C:)								
File Edit View Favorites Tools Help								
Back - 🕑 - 🎓 Search 🔊 Folders 🕼 🌶 🗙 🗐 🏢 -								
Address 🖘 C:\								
Folders ×	Name 🔺	Size	Туре					
🕝 Desktop	C DB2		File Folder					
🗉 📋 My Documents	Documents and Settings		File Folder					
🖃 😼 My Computer	ibm [ibm]		File Folder					
🗉 🥯 Local Disk (C:)	idsinstinfo		File Folder					
🗄 🛅 DB2	idsslapd-Idapsrv1		File Folder					
🗉 🧰 Documents and Settings			File Folder					
🗉 🧰 IBM	DIVDI-Directory		File Folder					
🛅 idsinstinfo	DAPSRV1		File Folder					
🗉 🧰 idsslapd-ldapsrv1	META-INF		File Folder					
E 🛅 ITCAMDLA	OpenSSL		File Folder					
🛅 JNDI-Directory	D PKWARE		File Folder					
E 🛅 LDAPSRV1	Print_Key_2000		File Folder					
🛅 META-INF	Printkey		File Folder					
🗉 🧰 OpenSSL	🗀 Program Files		File Folder					
🗉 🧰 PKWARE	C SD_WORK		File Folder					
Print_Key_2000	i 🗀 student		File Folder					
Derintkey	i temp		File Folder					
🛨 🧰 Program Files	Duser		File Folder					
			File Folder					
🗉 🧰 student	Console1.msc	51 KB	Microsoft Common Console Document					
🕀 🧰 temp	Frents-Services.msc	54 KB	Microsoft Common Console Document					
🗄 🛅 user	🗐 XML_Input_Trace.txt	7 KB	Text Document					
	•		Þ					

\_\_\_37. Double click on XML\_Input\_Trace.txt

🖡 XML_Input_Trace.txt - Notepad	1×
File Edit Format View Help	
<pre>NML_Input_Inscrete Network Wew Hep Here is some text ( [MQROOT : Dxca2468] (Ox0100000:NameValue):MessageSt = ' (CHARACTER) (Dx0300000:NameValue):MessageType = ' (CHARACTER) (Dx0300000:NameValue):Transactional = TRUE (BOOLEAN) (Dx0300000:NameValue):CreationTime = -GMITIMESTAMP '2009-10-29 02:37:19.420' (GMTTIMESTAMP) (Dx0300000:NameValue):Priority = 0 (INTEGER) (Dx0300000:NameValue):Priority = 0 (INTEGER) (Dx0300000:NameValue):Replydentifier = ' (CHARACTER) (Dx0300000:NameValue):Replydentifier = ' (CHARACTER) (Dx0300000:NameValue):CreationTime = '' (CHARACTER) (Dx0300000:NameValue):Replydentifier = '' (CHARACTER) (Dx0300000:NameValue):Replydentifier = '' (CHARACTER) (Dx0300000:NameValue):CreationTime = '' (CHARACTER) (Dx0300000:NameValue):ReplydentifiySourceType = '' (CHARACTER) (Dx0300000:NameValue):CreationTime = '' (CHARACTER) (Dx0300000:NameValue):CreationType = '' (CHARACTER) (Dx0300000:NameValue):CreationTime '' (CHARACTER) (Dx0300000:NameValue):CreationTime '' (CHARACTER) (Dx0300000:NameValue):CreationType '' (CHARACTER) (Dx0300000:NameValue):CreationTimeCaressword = '' (CHARACTER) (Dx0300000:NameValue):C</pre>	
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Viewing the contents of the trace file you can see the line of raw text you configured for the Trace node to display, as well as some detailed information about the message. To see the actual payload or application data scroll down to the bottom.

Hmmmm.....what's going on here? The message is a BLOB – a Binary Large Object. Just a string of bits. What happened to the XML message? Where are the tags? What about the data! All to be resolved soon!

- \_\_\_38. Close the Notepad window.
- \_\_\_39. Minimize the Windows Explorer.

Each time that you test the message flow new data will be appended to the end of the trace file. In the next two labs, you will need to scroll down to the end of the file to see the latest information.

This is the end of Lab 2.

# Lab 3 Working with XML Messages

## 3.1 Overview

In this lab you will simply modify the Intro\_MessageFlow to identify the parser (XMLNSC) to be used to process the message.

The steps are very simple.

You will modify the properties of the Input node and then update the archive file and deploy it.

You will reuse your RfhUtil session and run another test.

You will view the trace file and see the difference.

📧 Intro_MessageFlow.msgflo	ow 🛛 🚺 Intro.bar	
Image: Selection         Image: Selection	Trace Send_As_XML	
Properties 🛛 🖹 Pro	blems) III Deployment Log	
MOInput Node Prop	nerties - XML Innut	
tel monipar node Prop		
Description		
Basic	Queue name*   LAB.IN	
Input Message Parsing		
Parser Options		

You need to modify the message flow so that it uses the XMLNSC parser to process the input message.

- \_\_\_1. Return to the WebSphere Message Broker toolkit.
- \_\_\_2. Click on the **Intro\_MessageFlow** tab to bring the message flow into view.
- \_\_3. Click on the **XML\_Input** node to bring its properties into view.

🔲 Properties 🔀 🔡 Pro	oblems 🔠 Deployi	ment Log
📴 MQInput Node Prop	perties - XML_)	Input
Description		
Basic	Message domain	
Input Message Parsing	Message set	
Parser Options		XMUNSC : For XML messages (namespace aware, validation, low memory use)
Advanced	Message type	XMLNS : For XML messages (namespace aware)
Validation	Message format	JMSStream : For JMS StreamMessage messages (XML)
Security		MIME : For MIME wrapped data including multipart
Instances		ILLOB : For messages with an unspecified format XML : For XML messages (deprecated - use XMLNSC)
Monitoring		IDOC : For SAP ALE IDocs from the WMQ Link for R/3 (deprecated - use MRM)

- \_\_4. Click the **Input Message Parsing** tab of the Properties view. Since nothing was specified when the node was added, the Message domain (i.e. the parser) defaults to BLOB which you saw in the trace. Without any information about the message format that is the only approach the broker can take.
- \_5. Click the pull-down for the Message domain. The various parsers are listed along with a short description. Depending on the Message domain selection, the other fields may be enabled or disabled.
- \_\_\_\_6. For this exercise, you will be using the **XMLNSC** parser. This tells the broker what parser to use for interpreting the message. In this case you are using an XML parser that supports Namespaces (the NS part) and builds a Compact tree (the C part).



💷 Intro_MessageFlow.msgflow	tro.bar 🛛 🔪								
Manage									
Rebuild, remove, edit, add b <mark>uilt</mark> i	Rebuild, remove, edit, add b <mark>uilt resources in broker archive and configure their properties</mark>								
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- \_\_\_8. Click on the **Intro.bar** tab to bring the editor into view.
- \_\_\_9. If necessary select the **Manage** tab.
- \_\_\_10. Click on the **Build** icon to rebuild the archive file.

🕀 Over	ride configurable properties.	×
?	You are about to override the configurable properties in the Broker Archive file. This option can be changed in the Prepare tab in the Broker Archive editor using the Override configurable property values option.	
	Would you like to continue?	
▼ Dor	not show this warning again. OK Cancel	

\_\_\_11. Click the **check box** to turn off this warning and click **OK** to dismiss this panel.

Adding to Broker Archive File
Operation completed successfully.
OK Cancel <u>D</u> etails >>

- \_\_\_12. Click **OK** to dismiss the confirmation panel for the Broker archive file build.
- \_\_\_13. When the rebuild is completed, save the BAR file **<Ctrl-S>**.

Projects	
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±™⁄ LocalProject	Refresh
	Generate Documentation
	Build and Save Broker Archive Team

- \_\_\_14. Select the **Intro.bar** message broker archive file in the navigator pane.
- \_\_15. Press the right mouse button.
- \_\_\_16. Select **Deploy** from the menu.

🕀 Deploy	
<b>Deploy</b> Select execution group to deploy selected resources.	
? Finish	Cancel

- \_\_17. Select the **default** Execution Group.
- \_\_\_18. Click Finish.

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File Edit Search Read Write View Id	s MQ Help									
Main Data MQMD PS	Usr Prop RFH	PubSub	pscr	jms	usr	other	cics	IMS	DLQ	
Queue Manager Name (to connect to)					Queue	Type Qu	ueue depth			
				<b>_</b>	Local	P				
				•			Move Q			
Remote Queue Manager Name (remote	e queues only)				Save	Q	Pur <u>ge</u> Q			
					Load	Q	Display Q			
Selector						-				
Read <u>Q</u> <u>W</u> rite Q <u>B</u> rowse Q File Code Page	Start Browse Brow	vse <u>N</u> ext E	irowse P <u>r</u> e	/ End Br	owse	Close Q				
437					User Pro	ops —				
File Name C:\student\Intro_XML_Message\JKE_ 	IN_Request.xml	Load Names	Data S 1085 Set Cor	Size	C As C C Non C Yes C RFF C Corr	Queue	Cluster Ope C As Que C Bind Op C Not Fix	en eue pen red		

- \_\_\_19. Bring RfhUtil back into view by clicking on the LAB.IN tab in the Windows Task Bar at the bottom of the screen.
- \_\_\_\_20. Click on the Write Q button to send another test message into the flow

🚰 Local Disk (C:)								
File Edit View Favorites Tools Help		🦧						
Back + 🕞 - 🏂 🔎 Search 🎼 Folders 🕼 🎲 🗙 🍫 💷 -								
Address 🖘 C:\		💌 ラ Go						
Folders ×	Name 🔺	Size Type						
🕝 Desktop	DB2	File Folder						
E C My Documents	Documents and Settings	File Folder						
🖃 🖳 My Computer	I 🛅 IBM	File Folder						
🗆 🥯 Local Disk (C;)	📄 idsinstinfo	File Folder						
E C DB2	📄 idsslapd-Idapsrv1	File Folder						
Documents and Settings	itcamdla	File Folder						
E DIBM	DIPERTORY DIPERTORY	File Folder						
idsinstinfo	Contraction Contractica Contra	File Folder						
🖅 🦳 idssland-ldapsrv1	ETA-INF	File Folder						
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Print Key 2000	📄 student	File Folder						
	📄 temp	File Folder						
T Corran Files	📄 🗀 user	File Folder						
		File Folder						
	The Commission	54 KB Microsoft Commo						
	XML_Input_Trace.txt	13 KB Text Document						
The comp								

- \_\_21. Bring up the Windows Explorer.
- \_\_\_22. Double click on XML\_Input\_trace.txt file.



Trace output is placed at the end of any existing content in a file so scroll down to the bottom of the file and view the results. Much more pleasing....here is a nicely formatted message tree that will allow you to conveniently access the fields in the XML message by name. Notice the **XMLNSC** Domain name.

- \_\_\_23. Scroll to the end of the file (**Ctrl + End** works).
- \_\_\_24. Close the Notepad window.
- \_\_25. Minimize the Windows Explorer and RFHUtil windows.

This is the end of lab 3.

# Lab 4 Working with Fixed Format (COBOL) Messages

### 4.1 Overview

In this lab you will first build a Message Set (JKE\_COBOL\_MessageSet) and then populate it by importing a COBOL copybook.

In the second part of the lab, you will modify the IntroLab message flow to parse a COBOL message.

The JKE\_COBOL\_MessageSet will be used again later in other labs.



You will now create a Message Set and a Message Set Project.

- \_\_\_1. **Right-click in the white space** in the **Broker Development** pane.
- \_\_2. Select New.
- \_\_3. Select Message Set.

New Message Set			
<b>reate a new message</b> Enter a name for the new me	e <b>set</b> ssage set		M
Message set name:	JKE_COBOL_MessageSet		
Message set project name: Project location Vuse default	JKE_COBOL_MessageSet		
Directory: C:\student\wor	kspace\JKE_COBOL_MessageSe	et	Browse
Copy message set content:	s from another message set		
Message set: <a></a>	ssage set with no message defir	itions>	

- \_\_4. Enter JKE\_COBOL\_MessageSet as the Message set name. The Message set project name will be set also. Be sure to enter this name correctly including case!! Other supplied artifacts depend on it.
- \_\_5. Click Next.



- \_\_6. Use the pull-down for the message data type and select **Binary data**.
- \_\_7. Click Next.

🕀 New Message Set				a ×
Create a new message Summary information	e set			
Supported message domains:	MRM (default)			
Wire formats to be created:	Binary1			
Schemas to be added:	None			
0	< Back	Next >	Finish	Cancel

This is a summary panel of the options chosen. A Confirmation panel is displayed and the new Message Set is opened automatically. There are no changes required for this lab.

\_\_\_8. Click Finish.

The next step will be to provide the message definition information by importing a COBOL copybook.

🐻 Broker Development 🛛 🤻 Patterns Exp	olorer 🗖 🗖	🖽 Intro_MessageFlow.msgflow	Intro.bar	iet 🗙		- 0
Ċ.	□ 🕏 🏹	messageSet.mset ( JKE_COBC	)L MessageSet )			
<all resources=""></all>						
Pattern Instances	<u>New</u> 8	Propendes Hierarchy	Details			
Projects Quic	k Starts 🗗	Message Set 	Default message domain	MRM : For binary,	, text or XML messages	(namespace aware, validat
E Broos Flows E the default broker schema)		- Custom Wire Formats - Binary1 - Tagged/Delimited String Formats	Supported message domains	MRM	SOAP	□ XMLNSC □ [ □ JMSStream □ [
Intro_MessageFlow.msgflow				XML (deprecal	ted) 🔲 IDOC (depreca	ated)
E G (default broker schema)			Use namespaces			
INTRO-DAR			- MRM domain			
BKE_COBOL_MessageSet		🕀 Tip		ult specif	fied>	
		The next step is to create some	message definitions in the new mess	sage set. inn2nn1		
Message Definitions		You can either create new messa	age definitions from scratch or creat	te them		
H Stranger JKE_Client_		Use wizards under File->New->"	"Message Definition File" or	ar secir	you use message idend	ty for embedded messages
		File->New->"Message Definition	File From" to accomplish this task.	al: set if ;	you use Message Path f	or embedded messages. Se
JKE_EIS_Outbound				gth		
⊕ 🗁 JKE_LabMaterials		Do not show this tip again				
				ОК		
			<u>र</u>			
📴 Outline 🙀 Data S 🕗 Tasks 🖧 Broker						
	🛋 🗄	Properties				

The new message set definition is opened automatically. A "Hint" is shown that identifies the next step.

\_\_\_9. Click **OK** to dismiss the "Hint".

Projects		Quick Starts 🗗	Properties Hierarchy	De
IntroLab Flows Flows Flows Intro_Me Flow Intro_Me Flow Intro_Me Flow Intro_Me Flow Intro_Me	er schema) ssageFlow.msgflow er schema)		Message Set 	Di Si
🛄 Intro.bar				Ŀ
	sageSet			⊢м
	New	Project		De
	Open	😭 Message Flow Project		M
E JKE_Client_Message	Open With	Message Set		M
	Сору	adapter Connection		M
HIME JKE_EIS_OUtbound	Paste	Message Definition File	I	Шę
E CocalProject	Delete	Message Definition File F	From 🔹 💽 XML Schema File	
	Move	🚔 Message Category File	🖂 IBM Supplied Message	
	Rename,	🎬 Message Broker Archive	🖸 🚺 XML DTD File	
	Add Bookmark	📬 Other	Ctrl+N	
	🚵 Import			
	🛃 Export		ILO, SCA Import or Export	
			Properties 2 2 WSDL File	

- \_\_\_10. Highlight the **messageSet.mset** under the **JKE\_COBOL\_MessageSet**
- \_\_\_11. Press the right mouse button.
- \_\_12. Select **New** from the menu.
- \_\_13. Select Message Definition File From->COBOL File.

New Message Definition	File				a ×
Create a new message Select a COBOL file.	definition file	from COB	DL file		
Message set:	/JKE_COBOL_Me	essageSet/JKI	E_COBOL_Messag	eSet	<b>_</b>
Target namespace:	<pre>no namespace</pre>	xsu e specified>			
• Select file from workspace:	,				
Copy source file into the 'in     Create an appropriate physical	und Is COBOL XML ission_Header Client Server kspace: uportFiles' director sical format if one	ry of the mess	sage set project		▼ Browse
COBOL file options:	ble names				
0		< Back	Next >	Finish	Cancel

This panel allows you to identify the location of the definition to be imported. There are two options: The default is to search the files in the workspace. The other option is to search the file system.

- \_\_\_14. Expand JKE\_LabMaterials->JKE\_COBOL.
- \_\_15. Select JKE\_ACCOUNT.cpy.
- \_\_\_16. Click Next.

Source structures	of 2	Imported struc	tures		
	ctures (complex types)		Select All	Deselect A	

A COBOL copybook may contain multiple record definitions. Each record definition is shown on the left side.

\_\_\_17. Highlight JKE-ACCOUNT-REQUEST.

\_\_18. Click the > symbol in the middle.

The second step is shown on the next page.

elect the structures to imp rructures to create messag	ge selec up in ort. Each imported struct les based on those compl	ure will cre lex types.	ate a complex l moorted s ruct I JK :-AC	ype, Check the ures COUNT-REQUES	T
	-	> < > > <b>&lt;</b>			
Optional prefix for importe	d structures (complex typ	pes)		Select All	Deselect All

- \_\_\_19. Click Select All
- \_\_\_20. Click Next.

🕀 New Message Defi	nition File				a ×
Import options Specify the physical prop	perties of the new m	essage definition			
Compiler information	r				
Source platform	Win32				
Codepage	1508859_1				
Floating point format	IEEE Non-Extended	1			
Byte order	• Little endian	O Big endian			
External decimal sign	🖲 ASCII 🔿 EBO	CDIC C EBCDIO	Custom		
TRUNC © STD NSYMBOL © DBCS © Create default valu © Create facets from	C OPT C BIN MATIONAL Mes from INITIAL VAL level 88 VALUE claus	UEs ses where possible	9		
Create null values	For all fields	Jull character SF	ACE		<u> </u>
Padding character for	r strings				
SPACE					-
0		< Back	Next >	Finish	Cancel

Many of the options presented on this panel are related to compiler options.

#### \_\_\_21. Select the check boxes for Create default values... and Create facets from ...

When dealing with fixed format definitions such as COBOL or C, every field in the structure must have some content. The Create default values options allows the Importer to create a default value automatically when it is part of the copybook. You may also provide such definitions by manually updating the message definition.

The Create facets option creates constants based on a level 88 definition which is used for the same purpose by a COBOL program.

These options are not actually used in the labs, but this is an important capability of the importer.

\_\_\_22. Click Finish.

🐻 Broker Development 🛛 👯 Patterns Explorer 🗖 🗖	🕫 Intro_MessageFlow.msgflow	📑 messageSet.mset 🛌	JKE_Account.mxsd 🛛	<u>_</u>
€ ⊑ 🤹 ▽	JKE_Account.mxsd	-		
<all resources=""></all>		1-	(	1
Pattern Instances New P	Structure	Туре	Min Occurs	Max Occurs
Projects Ouick Starts				
<u></u>		JKEACCOUNTREOUEST		
🖃 🕮 IntroLab		5.4.1.000011142(0001	1	1
🖻 🕮 Flows			1	1
📄 🛱 (default broker schema)	E CUSTOMER ACCOUNT NUMBER		1	1
🖓 🖓 🖓 🖓 🖓 🖓 🖓 🖓 🖓			1	1
🖻 🛅 Broker Archives		ikeaccountrequest custome	1	1
🖻 🛱 (default broker schema)	E ADDRESS1	,	1	1
Intro.bar			1	1
🚊 😂 JDK_COBOL_MessageSet			1	1
🔁 🖾 JDK_COBOL_MessageSet			1	1
messageSet.mset	E COUNTRY		1	1
🖻 😕 Message Definitions			1	1
🖻 🖶 (default namespace)	E CREDIT LIMIT		1	1
			1	1
🕀 🗁 importFiles	E CONTACT FIRST NAME		1	1
🗄 🗁 log	E CONTACT LAST NAME		1	1
🕀 🎏 JKE_Client_	E CONTACT_PHONE		1	1
🕀 😂 JKE_Client_MessageSet			1	1
🕀 🔁 JKE_EIS	E DECISION		1	1
🕀 😕 JKE_EIS_Outbound	🕀 📴 Types			
⊞ 🗁 JKE_LabMaterials	🖽 🤷 Groups			
📳 Outline 🕴 🙀 Data 5 🥒 Tasks 🕌 Broker 🖓 🗖	Elements and Attributes			
	Overview Properties	·	·	
🖃 🗁 JKE_Account.mxsa	a rormon rispondo			

The Message Set definition is opened automatically.

- \_\_\_23. Expand the definitions to see the field names and structure as shown.
- \_\_\_24. Close this editor and the message set editor.

🖶 Broke	r Development 🛛 🤻 Patterns Explore	er) = 🗆
	👙 E	5 ≤
<all res<="" th=""><th>ources&gt;</th><th>•</th></all>	ources>	•
Pattern	Instances <u>N</u>	lew 8
Project	s Quick Sta	arts 8
	······	
	New 🕨	
	Go Into	
(	Add or Remove Project References	
	Сору	
_ <u>~</u> @	Paste	
U	Delete	
	Move	
	Rename	
	Pag Import	
	Export	
+···(	Open Project	
. <u>.</u>	Close Project	
Ē. 🚰		
÷. 🔧 .	Refresh	
€€.	Generate Documentation	
. ⊟…' 🤁 .	Debug As	
📴 Outlin	Team 🕨	
	Compare With	
	Restore from Local History	
□ 💆 .	API 🔸	
	Source •	
	Properties	
÷	Attributes	

The message flow will now be changed to process a COBOL message rather than an XML message.

Before the message flow can use a message set, a relationship between the **IntroLab** message flow project and the message set must be defined. This is done by creating a **Project Reference**.

- \_\_\_25. In the **Broker Developer** navigator pane, highlight the **IntroLab** message flow project
- \_\_\_26. Press the right mouse button.
- \_\_\_27. Select **Properties.**

Properties for IntroLab		_ 🗆 🗙
type filter text Resource Project References Refactoring history Run/Debug Settings Task Tags ⊕- Validation	Project References Projects may refer to other projects in the workspace. Use this page to specify what other projects are referenced by the project. Project references for IntroLab:	
0	ок	Cancel

- \_\_\_28. Select **Project References**.
- \_\_\_\_29. Click the check box for the JKE\_COBOL\_MessageSet from the list of projects
- \_\_\_30. Click **OK.**

AS_XML Input Indue Send_AS_XML
s
blems) 🖽 Deployment Log) 🗸 🖓 🗖
erties - XML_Input
Message domain   MKM : For Dinary, text or XML messages (namespace aware, validation, low memory use)
Message set JKE_COBOL_MessageSet (K2KOLI8002001)
Message type msg_JKEACCOUNTREQUEST (default namespace)
Message format Binary1

- \_\_\_31. Return to your message flow and click on the XML\_Input node
- \_\_\_32. Click Input Message Parsing
- \_\_33. Use the pull-downs for each of the four selection entries, start at the top and select the following:

Message domain: MRM

- Message set: JKE\_COBOL\_MessageSet
- Message type: msg\_JKEACCOUNTREQUEST this name comes from the 01 level of the

COBOL copybook. The importer removes the dashes from the names.

Message format: Binary1



\_34. \_\_\_\_\_\_Save the message flow.

🖽 Intro_MessageFlow.msgflow 🛛 🚺 Intro.bar 🔀			
Manage			
Rebuild, remove, edit, add built resources in bro	ker archive and configure their prop	perties	
🔡 續 🚱 🍓 Filter by: <a>Type filter text&gt;</a>			
Name	Туре	Modified	Size Path
⊞ Intro_MessageFice smf	Compiled message flow	Nov 10, 2009 6:46:34 PM	5750
I ne Add io	con		
	1 		
Prepare Manage User Log Service Log			

\_\_35. Click on the tab for the **Intro.bar** bar file editor session.

\_\_\_36. Click the **Add** icon (the icon on the right) to add the JKE\_COBOL\_MessageSet.

Prepare         Select workspace deployable resources to build within the broker archive         The tree below dsplays all of the deployable artifacts within the workspace.         Filter working set:       (all resources) v [ype filter text         Image: Comparison of the deployable artifacts within the workspace.         Filter working set:       (all resources) v [ype filter text         Image: Comparison of the deployable artifacts within the workspace.         Filter working set:       (all resources) v [ype filter text         Image: Comparison of the deployable artifacts within the workspace.       (all resources) v [ype filter text         Image: Comparison of the deployable artifacts within the workspace.       (all resources) v [ype filter text         Image: Comparison of the deployable artifacts within the workspace.       (all resources) v [ype filter text         Image: Comparison of the deployable artifacts within the workspace.       (all resources) v [XE_Clent, ]XE_Clent, ]XE_Clent, ]XE_Clent, MaccageSet/MaccageSet/MaccageSet/MaccageSet/MaccageSet/MaccageSet/MaccageSet/MaccageSet/MaccageSet/MaccageSet/MaccageSet/MaccageSet/MaccageSet/MaccageSet/MaccageSet/MaccageSet/MaccageSet/MaccageSet/MaccageSet/MaccageSet/MaccageSet/MaccageSet/MaccageSet/MaccageSet/MaccageSet/MaccageSet/MaccageSet/MaccageSet/MaccageSet/MaccageSet/MaccageSet/MaccageSet/MaccageSet/MaccageSet/MaccageSet/MaccageSet/MaccageSet/MaccageSet/MaccageSet/MaccageSet/MaccageSet/MaccageSet/MaccageSet/MaccageSet/MaccageSet/MaccageSet/MaccageSet/MaccageSet/MaccageSet/MaccageSet/MaccageSet/MaccageSet/MaccageSet/MaccageSet/MaccageSet/MaccageSet/MaccageSet/MaccageSet/	💷 Intro_MessageFlow.msgflow 🛛 🕼 *Intro.bar 🔀		
Select workspace deployable resources to build within the broker archive         The tree below displays all of the deployable artifacts within the workspace.         Filter working set:       Call resources>         Image: Call resources>       Image: Image: Call resources>         Image: Call resources>       Image: Call resources>         Image: Call resources>       Image: Call resources>         Image: Call resources>       Image: Call resources         Image: Call resources       Image: Call resources         Image: Call resource       Image: Call resource         Im	Prepare	-	-
The tree below displays all of the deployable artifacts within the workspace.         Filter working set: <ali><ali><ali><ali><ali><ali><ali><ali< td=""><td>Select workspace deployable resources to build within the broker archive</td><td></td><td></td></ali<></ali></ali></ali></ali></ali></ali></ali>	Select workspace deployable resources to build within the broker archive		
The tree below displays all of the deployable artifacts within the workspace.  Fiter working set: Call resources >		_	
Filter working set: <all resources="">       type filter text         Image: Set:       Intro_MessageFlow.msgflow - /IntroLab/Intro_MessageFlow.msgflow         Image: Set:       Intro_MessageFlow.msgflow - /IXE_Client_JKE_Client_Flow.msgflow         Image: Set:       Image: Set:         Image: Set:       Image: Set:<td>The tree below displays all of the deployable artifacts within the workspace.</td><td></td><td></td></all>	The tree below displays all of the deployable artifacts within the workspace.		
Filter working set: <a href="citation-like-sage-flow.msgflow-like-client_flow.msgflow"></a> Image: Image-flow.msgflow-like-client_flow.msgflow         Image: Image-flow.msgflow-like-client_flow.msgflow-like-client_flow.msgflow         Image: Image-flow.msgflow-like-client_flow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.msgflow.ms			
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Intro_MessageFlow.msgflow - /IntroLab/Intro_MessageFlow.msgflow          Image: Intro_MessageFlow.msgflow - /IKE_Client_JKE_Client_Flow.msgflow         Image: Intro_MessageSet         Image: IntroMessageSet	🖻 - 🗖 🕮 Message Flows		
Image: State Stat	Intro_MessageFlow.msgflow - /IntroLab/Intro_MessageFlow.msgflow		
Wessage Sets          Image: Sets       Image: Sets         Image: Sets       Image: Sets         Image: Sets       Image: Sets         Image: Sets       Image: Sets         Image: Sets       Image: Sets         Image: Sets       Image: Sets         Image: Sets       Image: Sets         Image: Sets       Image: Sets         Image: Sets       Image: Sets         Image: Sets       Image: Sets         Image: Sets       Image: Sets         Image: Sets       Image: Sets         Image: Sets       Image: Sets         Image: Sets       Image: Sets         Image: Sets       Image: Sets         Image: Sets       Image: Sets         Image: Sets       Image: Sets         Image: Sets       Image: Sets         Image: Sets       Image: Sets         Image: Sets       Image: Sets         Image: Sets       Image: Sets         Image: Sets       Image: Sets         Image: Sets       Image: Sets         Image: Sets       Image: Sets         Image: Sets       Image: Sets         Image: Sets       Image: Sets         Image: Sets       Image: Sets         Image: Sets       <	Line Client_Flow.msgflow - /JKE_Client_Flow.msgflow		
<pre>(*)-A resource marked with * will be added automatically to the Broker Archive if a message flow that references it is added to the Broker Archive.</pre> Build options Include source files Remove contents of Broker Archive before building. Override configurable property values	En 🔤 📂 Message Sets		
Wild options          Include source files         Remove contents of Broker Archive before building.         Override configurable property values	□ I I I I I I I I I I I I I I I I I I I		
XSLT     XSLT     XK_IN_Request.xml - /JKE_LabMaterials/JKE_SampleXML/JKE_IN_Request.xml     XK_OUT_Response.xml - /JKE_LabMaterials/JKE_SampleXML/JKE_OUT_Response.xml     Java*     Java*     Adapters     K*-A resource marked with * will be added automatically to the Broker Archive if a message flow that references it is added to the Broker Archive.      Build options     Include source files     Remove contents of Broker Archive before building.     Override configurable property values Build broker archive			
W JKE_IN_Request.xml - /JKE_LabMaterials/JKE_SampleXML/JKE_IN_Request.xml     JKE_OUT_Response.xml - /JKE_LabMaterials/JKE_SampleXML/JKE_OUT_Response.xml     Java*     Java*     Adapters     Model and a source marked with * will be added automatically to the Broker Archive if a message flow that references it is added to the Broker Archive.      Build options     Include source files     Remove contents of Broker Archive before building.     Override configurable property values Build broker archive	🖻 🗖 🖉 XSLT		
J JAKE_OUT_Response.xml - /JKE_LabMaterials/JKE_SampleXML/JKE_OUT_Response.xml     Java*     Java*     Adapters     Adapters     Image: A resource marked with * will be added automatically to the Broker Archive if a message flow that references it is added to the Broker Archive.      Build options     Include source files     Remove contents of Broker Archive before building.     Override configurable property values     Build broker archive	III IIII IIIII IIIIIIIIIIIIIIIIIIIIIII		
<ul> <li>Java<sup>-</sup></li> <li>Java<sup>-</sup></li> <li>Adapters</li> <li>(*)-A resource marked with * will be added automatically to the Broker Archive if a message flow that references it is added to the Broker Archive.</li> <li><b>Build options</b></li> <li>Include source files</li> <li>Remove contents of Broker Archive before building.</li> <li>Override configurable property values</li> <li>Build broker archive</li> </ul>	IIII IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII		
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<ul> <li>(*)-A resource marked with * will be added automatically to the Broker Archive if a message flow that references it is added to the Broker Archive.</li> <li>Build options <ul> <li>Include source files</li> <li>Remove contents of Broker Archive before building.</li> <li>Override configurable property values</li> </ul> </li> <li>Build broker archive</li> </ul>		-	
<ul> <li>■ Build options</li> <li>□ Include source files</li> <li>☑ Remove contents of Broker Archive before building.</li> <li>☑ Override configurable property values</li> <li>■ Build broker archive</li> </ul>	(*)-A resource marked with * will be added automatically to the Broker Archive if a message flow that references it is added to the Broker Archive.		
<ul> <li>☐ Include source files</li> <li>☑ Remove contents of Broker Archive before building.</li> <li>☑ Override configurable property values</li> <li>Build broker archive</li> </ul>	▼ Build options		
<ul> <li>✓ Remove contents of Broker Archive before building.</li> <li>✓ Override configurable property values</li> <li>Build broker archive</li> </ul>	Include source files		
Override configurable property values     Build broker archive	Remove contents of Broker Archive before building.		
Build broker archive	Override configurable property values		
	Build broker archive	-	
	Manager Hannes I family for		-

The editor switches to the Prepare view.

- \_\_\_37. Click the check-box for **message.mset /JKE\_COBOL\_MessageSet** entry.
- \_\_\_38. Make sure the Intro\_MessageFlow is still checked as it has changed and needs to be refreshed in the BAR file.
- \_\_\_39. Click **Build broker archive**.

🖽 Intro_MessageFlow.msgflow 👔 *Intro.bar 🗙	
Prepare	
Select workspace deployable resources to build within the broker arc	hive
The tree below displays all of the deployable artifacts within the workspace.	
🕀 🖶 💯 Message Flows	
Adding to Broker Archive File	
Operation completed successfully.	igeSet.mset Set mset
~	betiniset
	nse.xml
OK Capcel Details >>	anter
	v that references it is added to the Broker Archive.
Build options	
Remove contents of Broker Archive before building.	
Override configurable property values	
Build broker archive	
Prepare Manage User Log Service Log	

The build progress panel is displayed. The Details option provides more information about the build process for the artifacts listed. This same information is available in the User Log tab at the bottom of the pane. This information is removed anytime the bar file is rebuilt.

\_\_40. Click **OK** to dismiss this panel.

💷 Intro_MessageFlow.msgflow	.bar 🛿											
Manage												
Rebuild, remove, edit, and built resources in broker archive and configure their properties												
금 월 월 Filter by: <type filter="" text=""></type>												
Name	Туре	Modified	Size	Path	Ve	Comment						
	Compiled message flow	Oct 29, 2009 12:36:21 PM	5868		1.0							
JKE_COBOL_MessageSet.dictionary	Dictionary file	Oct 29, 2009 12:36:22 PM	17726									
-												
Prepare Manage User Log Service Log												

\_\_41. Click on the Manage tab. There are now two items listed in the bar file.



- \_\_\_43. Select the **Intro.**bar file in the navigator pane.
- \_\_\_44. Press the right mouse button.
- \_\_\_45. Select **Deploy** from the menu.

🕀 Deplo <del>y</del>		
Deploy Select execution group to deploy selected reso	ources.	
0	Finish	Cancel

- \_\_\_46. Select the **default** Execution Group.
- \_\_\_47. Click Finish.

Sec Li	AB.IN									
File	Edit	Search	Read	Write View	Ids MQ	) Help				
Ma	in	Data	MQI	MD PS	Usr I	Prop RFH	PubSub	pscr	jms	usr
	_									
	ųu —	eue Mana	iger Nan	ne (to connec	it toj					Queue
	M	37QMGR							<b>–</b> 1	l ocal
	Qu	eue Name	•	Open						<u> </u>
		B.IN		Look in:	🚞 Intro_X	ML_Message	•	·] ← 🖻	) 📥 🖽	•
	Re	mote Que	ue Man	🔮 JKE_IN	_Request.x	ml		-		
			_							
	Sel	ector								- E
	Γ		_							
	F	Read <u>Q</u>	<u>W</u> rite							
	File	: Code Pa	ge	File name:					0	ben
	43	7								
	, File	Name		Files of type	::::   All (*.*)	)		<b>•</b>	La	ncel
	C:	\student\l	ntro_XM	L_Message\	JKE_IN_Re	equest.xml		1085		O Yes
		_			1		1			O RFF
	2	)pen File	<u>S</u> av	e File Cl	ear Data	Clear All	Load Names	Set Con	n <u>I</u> d	C Corr
	CO	BOL Copy	Book F	ile Name					-Put/Get	Options
									_	

- \_\_48. Click **LAB.IN** in the Windows taskbar to bring the RFHUtil window into focus.
- \_\_\_49. Click Open File.
- \_\_50. Click the **Up Arrow**. The COBOL message is in another directory.

Open			? ×
Look in: 📋 My Documer	its 💌	(÷ 🖻 🖻	* <b>III</b> •
COBOL DBROUTE Files	JKE_Client_MessageSet JKE_EIS JKE_EIS_Outbound JKE_LabMaterials Lab_Solutions	SAPFi SECU SOAP	les R _InputMessage: :pace
DKE_Client_		<sup>™</sup> SAE	DR
File name:		[	Open
Files of type: All (*.*)		•	Cancel

\_\_51. Select the **COBOL** directory.

open				8	? ×
Look in: 🔀	COBOL	🗢 (	1	•	
AccountUp	odate.msg				
JKE_Accou	unt.cpy				
			-		
File name:	AccountUpdate.msg			Oper	n

- \_\_52. Select AccountUpdate.msg.
- \_\_53. Click **Open**.

i in	AB.IN												
File	Edit	Search	Read	Write	View	Ids M	IQ Hel	P					
Ma	in	Data	MQ	MD	PS	Usr	Prop	RFI	н	PubS	ub	pscr	jms
		-		·									
	Qu	eue Mana	iger Nam	ne (to c	connect t	:o)							
	ME	37QMGR											-
	Qu	eue Name	e										_
	LA	B.IN							_		_		-
	Be	mote Que	ue Mana	ager Na	ame Írem	ote que	ues onli	a					
		mote que		igerni	ame (rem	iote que	ues only	0					
	Sel	ector											
	F	lead <u>Q</u>	<u>W</u> rite	Q	<u>B</u> rowse	Q S	art Brov	vse	Brow	se <u>N</u> ext	В	rowse P <u>r</u>	ev End I
	File	Code Pa	ge										
	43	7	-										
	File	Name										Data	Size
		- Nume	200011									274	- 5/26
	lr:	\student\l	LOBOL/	Accou	intUpdate	e.msg						274	

### \_\_54. Click the RfhUtil Data tab

5	a LAB.)	IN											
F	ile Ed	it Search	Read V	Vrite View	Ids MQ Help	D							
Γ	Main	Data	MQM	D PS	Usr Prop	RFH	PubSub	pscr	jms	usr	other	CICS	IMS
	Mı *	essage Data ****RFH ****No	a (274) from Util fo beginn	nC:\student\( ormat pr ing brac	COBOL\Accoun oblem - Da ket found	tUpdate.m: ata doe	sg s not ap	pear t	o be XM:	L	*	Data F C Cha C <u>H</u> ex C <u>B</u> otl C XMJ C PAF C COS C JS <u>C</u> C EIX	ormat rracter h SSED BOL IN

### \_\_55. The last time you were using an XML message. Click the radio button for COBOL

Sa LAB.	IN I												[
File Ed	it Search	Read Writ	e View :	Ids MQ Help	D								
Main	Data	MQMD	PS	Usr Prop	RFH	PubSub	pscr	jms	usr	other	cics	IMS	D
M	essage Data	a (274) from C	\student\C	OBOL/Account	tUpdate.ms	g							
*	****RFH ****No	Util for beginnin	mat pro g brack	oblem - Da cet found	ata doe	s not ap	pear to	) be XMI		<u>^</u>	Data F C Cha C <u>H</u> ex	ormat — arac <u>t</u> er (	
	L	BOL copy bo ook in: Coo JKE_Accour	ook file COBOL				<b>- *</b>	<u>?</u> ×			C Bot C XM C PAF C COI C JSC C FIX PC C HO: PC C HO: Packe C PC	h L SED BOL <u>)</u> N (Intel) ST (390) d <u>D</u> ec (Intel)	
	Fi	le name: les of type:	JKE_Acco All (*.*)	ount.cpy		<b>•</b>	Ope Can	en cel			C HO	ST (390) ormat (Alt) cii cdic	)

The location of the copybook must be specified.

- \_\_56. Select JKE\_Account.cpy
- \_\_57. Click **Open**.

100	AB.IN													
File	Edit S	earch R	ead W	/rite Vie	ew Ids	MQ Help	)							
Ma	ain C	ata	MQM	D   PS	Įι	Jsr Prop	RFH	PubSub	pscr	jms	usr	other	cics	IMS
	Messag 01 05 05 05 05 05	e Data (2 0 1 1 1 1 21 51	274) from 274) from 274 10 10 30 119	CHAR CHAR CHAR CHAR CHAR CHAR	ent\COB	OLVAccoun C Variak JKE-ACC ACTION- DATE-RH CUSTOME CUSTOME CUSTOME	tUpdate.ms ole Nam COUNT-R -REQUES GQUEST GR-ACCO SR-COMP. SR-DETA	9 EQUEST T UNT-NUMB ANY-NAME ILS	ER	Va. U 10/: 1 ACMI	lue 12/2007	<u> </u>	Data F C Cha C Hex C Bott C XMI C DAT	ormat racter n 30L
	10 10 10 10 10 10 10 10 10 05 05 05 05 05 05 05 05	51 51 81 111 133 153 163 168 170 185 205 223 273 book	30 30 20 20 10 5 20 15 20 18 50 18 size	CHAR CHAR CHAR CHAR CHAR PD INT CHAR CHAR CHAR CHAR 274,	Data	ADDRESS ADDRESS CITY STATE COUNTRY POSTALC CREDIT- CONTACT CONTACT CONTACT CONTACT CONTACT CONTACT CONTACT CONTACT CONTACT CONTACT	CODE -LIMIT -SCORE C-FIRST C-LAST- C-PHONE CS DN ize 274	-name Name		1254 Suit Dime TX USA 7654 0000 0082 Free Blog 555- Just Y	4 Main te 12 = Box 43 001200 2 1dy ggs -123-65 t a Com	St 43 ment	C JSU C EIX Integer O PC ( O HOS Packed O PC O HOS C HOS C HOS C Sim C Sim C Sim C Ira C Jap C That	Format - Intel) ST (390) H Dec

The message is now matched against the copybook. There are many other display options available as shown on the right side.

\_\_58. Click on the **Main** tab.

See LAB.	IN								
File Ec	lit Search	Read Writ	e View Io	is MQ I	Help				
Main	Data	MQMD	PS	Usr Pro	p RFH	PubSu	b pscr	jms	
	1				• •	1		1.	
Queue Manager Name (to connect to)									
	MP70MCP								
	Morginian	1						<u> </u>	
	Queue Nam	e							
	LAB.IN								
	Remote Queue Manager Name (remote queues only)								
	Selector								
						1		1.	
	Read Q         Write Q         Browse Q         Start Browse         Browse Next         Browse Prev         E								
	File Code Page								
	437								

\_59. Click **Write Q** to send the message.

🚟 RfhU	il ¥7.0.1												_ 🗆 🗙
File Edi	: Search	Read Write	View 1	(ds MQ Help	)								
Main	Data	MQMD	PS	Usr Prop	RFH	PubSub	pscr	jms	usr	other	CICS	IMS	DLQ
G	ueue Manaj	ger Name (to c	onnect to	)					Queue	Type Q	ueue depth	1	
	487QMGR							-		— r			
l 🗗	ueue Name											1	
[	AB.SEND.A	S.XML						•		_	Move ų	]	
- F	Remote Queue Manager Name (remote queues only) Save Q Purge Q												
l r													
s	Selector												
l r													
	Read Q         Write Q         Browse Q         Start Browse         Browse Next         Browse Prev         End Browse         Close Q												
F	File Code Page												

- \_\_60. Start another copy of RFHUtil.
- \_\_\_61. Use the Queue Name pull-down menu to select LAB.SEND.AS.XML as the Queue Name.
- \_\_\_62. Click **Read Q.** You may have multiple messages in the queue from prior executions of the flow so you may have to click the Read Q button multiple times. You are looking for a message that is 274 bytes in length.

	🔤 LAB.SEND.AS.XML											
F	File Edit Search Read Write View Ids MQ Help											
	Main	Data	MQMD PS	6 🛛 🗍 Usr Pro	RFH	PubSub	pscr	jms	usr	other	CICS	IMS
Message Data (274) from LAB.SEND.AS.XML												
		00000000 0000032 0000064 0000096 0000128 0000160 0000192 0000224 0000226	U10/12/200 TXUSA ,. ust a Comm	071 12 Suit Dime B Freddy 555-123- ment Y	ACME 54 Main ≘ 12 5x 7654 Blog 6543	St 3 gs J				*	Data F C Cha C Hex C Boti C XMI C PAF C COR C JSL C FIX Integer C PCI C HOS	Format (Intel) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1
											Packer PCI C HO:	1 <u>D</u> ec (Intel) 6T (390)

- \_\_63. Switch to the Data tab. Here is the raw, fixed format COBOL output message.
- \_\_\_64. If you click the COBOL radio button and select the JKE\_Account.cpy file the copybook will be used to format the data.
- \_\_65. Close both copies of RFHUtil.

Address 🖙 C:\				
Folders	× Name 4	•	Size	Туре
Pesktop	🔁 Beta	_Stuff		File I
My Documents	DB2			File I
🗆 👿 My Computer	Docu	iments and Settings		File I
🗆 🥪 Local Disk (C:)	📄 IBM			File I
🕀 🦳 Beta Stuff	idsin:	stinfo		File I
	idssla	apd-Idapsrv1		File I
	🗌 🚞 LDAF	PSRV1		File I
	🗌 🚞 Oper	hSSL		File I
idsinstinfo	📄 PKW.	ARE		File I
🗉 🫅 idsslapd-Idapsrv1	Prog	ram Files		File I
E DAPSRV1	i 🛅 stude	ent		File I
E 🛅 OpenSSL	i 🗀 temp	)		File I
E DE PKWARE	📄 💭 WINI	DOWS		File I
🗄 🫅 Program Files	🚺 🛅 Even	ts-Services.msc	55 KB	Micro
🗉 🫅 student	1 Intro	icabo,zip	1 KD	Ti Zi
🕀 🧰 temp	E XML_	_Input_Trace.txt	19 KB	Text
E A CD Drive (D:)				

\_\_\_66. Open Windows Explorer and open the XML\_Input\_Trace.txt file.



\_67. Scroll down to the bottom of the file and then scroll up to where you can see the Properties folder (**Ctrl + End** works.)

The first three items contain the information that you selected in the XML\_Input node.

At the bottom of the Properties folder there is information about additional userid verification that will be discussed on the last day of the Proof of Technology (PoT).

In Lab 9, you will be dealing with the MsgID and Correlld fields in the WebSphere MQ Message Descriptor (MQMD). These are also highlighted.



At the bottom of the file is the COBOL message. Note that the MRM parser is identified in the first line above the ACTION\_REQUEST field. Also, note that the 01 level name from the COBOL copybook is not present in the message tree. This was used to name the message definition.

- \_\_68. Close notepad editors.
- \_\_\_69. Close the Windows Explorer.
- \_\_\_70. Leave the WebSphere Message Broker Toolkit open.
- \_\_\_71. Close any open editors (message flow, bar file, etc) in the WebSphere Message Broker Toolkit but not the WebSphere Message Broker Toolkit itself.

This is the end of Lab 4 and the Introduction Labs.

## Lab 5 Building the JKE Server – Web Services

## 5.1 Lab Overview

This is the first of five labs where you will build the JKE\_Server Message Flow and its associated Message Sets. Each lab will build upon the prior lab and will be preceded by a set of lectures.

In this lab you will be using one of the wizards to build both a message set and a message flow based on a Web Services Description Language (WSDL) definition file that is provided.

You will also use a "drag and drop" wizard to build the basic message flow that uses the SOAP nodes to implement the message flow as a web service. You will then test the message flow using the Test Client.

The following is what you will build and test. This will be expanded in the next four Labs.



🕞 Broker Development 🛛 🖧 Patterns Explorer	🦉 📄 🚭 🎽 🗖
<all resources=""></all>	-
Pattern Instances	<u>New</u> 8
Projects	Quick Starts 🗗
IntroLab JKE_COBOL_MessageSet JKE_Client_ JKE_Client_MessageSet JKE_EIS JKE_EIS JKE_LabMaterials JKE_LabMaterials JKE_COBOL JKE_Sample_COBOL JKE_Sample_COBOL JKE_Transmission_Header JKE_WSDL_Server JKE_JKE_WSDL_Server JKE_JKE_WSDL_Server	
X JKE_WSDL_ServerService.wsdl	
E PubSub	
🗄 🗁 LocalProject	

- \_\_\_1. Expand the **JKE\_LabMaterials** folder.
- \_\_\_2. Expand the **JKE\_WSDL\_Server** folder. This is where the WSDL and associated schemas are stored. You may also use a WSDL and its schemas from the file system.
- \_\_3. Select the **Quick Starts** hot spot to display the quick starts menu.



\_\_4. Click on <u>Start from WSDL and/or XSD files</u>. This starts a wizard that will create a message set, import the WSDL to define any required messages and create a message flow project and message flow based on the names you provide to the wizard, as described in the following steps.
🕀 Quick Start	×
New Message Broker Application Set up the basic resources required to develop a Message Broker applica XSD files as a starting point.	ation using WSDL and
Message flow project name: JKE_Server	
Message set project name: JKE_Server_Mess_eSet	
Message set name: JKE_Server_MessageSet	
Message flow creation	
Create a new message flow in my flow project	Enter
Message flow name: JKE_Server_Flow	JKE_Server_
└─ Working set creation	
Create a new working set for these resources	
Working set name: JKE_Server_	
? < Back Next	> Finish Cancel

- \_\_5. Enter JKE\_Server\_ for the Message flow project name note that the last underscore in the name is intentional so please enter it. The names are tied together; the other fields will be populated based on this entry. You may change the other names as desired. However, the lab guides assume that the suggested names are used.
- \_\_6. Click **Next**.

🕀 Quick Start				×
Resource Selection				30
Select WSDL and/or XSD files to create initial	contents of mes	sage set.		3
$\odot$ Use resources from the workspace $\odot$ L	lse external res	ources		
Ē∎ 🚝 JKE_Client_	▲ □	X JKE_IN_Reque	st.xsd	
🗄 🗄 🗖 🚝 JKE_Client_MessageSet		X JKE_OUT_Res	oonse.xsd	_
🗄 🖻 🗖 🔛 JKE_EIS		🐰 JKE_WSDL_Se	rverService.wsdl	
🗄 🗖 🚝 JKE EIS Outbound				
🚊 🗁 JKE_LabMaterials				
JKE_COBOL				
	-			
🔲 Copy source file into the 'importFiles' dire	ctory of the me	sage set project		
(2)	< Pack	Next >	Cinich	Cancel
U	< back	Next >	rinish	Cancer

- \_\_\_7. A list of projects in the workspace is displayed. Expand the JKE\_LabMaterials folder
- \_\_8. Click on the **JKE\_WSDL\_Server** folder *NOT its check box*.
- \_\_\_9. Click the check box for the **JKE\_WSDLServerService.wsdl** on the right side. The two xsd files will be included automatically.
- \_\_10. Click Next.



- A WSDL may have multiple bindings. In this case there is only one.
- \_\_\_11. Click **Finish**.



When the wizard finishes several things have been done. A message set project has been created (JKE\_Server\_MessageSet). The message set project contains message definitions for all of the possible inputs to and outputs from the web service that are defined in the WSDL file. A message flow project (JKE\_Server\_) has been created. The new message flow project contains an empty message flow that is opened in the message flow editor. The message set is expanded and the WSDL file, under a folder called **Deployable WSDL**, is ready for a drag and drop operation to start building the message flow.



- \_\_\_12. Highlight the JKE\_WSDL\_ServerService.wsdl file.
- \_\_\_13. Drag it to the message flow canvas and drop it.

🕀 Configure New \	Web Service Usage				×
Configure web s	ervice usage				5
Specify the details of Only SOAP HTTP bin	f how the selected web dings are supported.	) service will be (	used in the messa	ge flow.	$\bigcirc$
Web service usage	ə ———				
Expose message	ge flow as web service				
C Invoke web se	rvice from message flo	W			
Web service parar	neters				
Port type:	BuildWSDL_ServerPor	tType		•	
Imported binding:	BuildWSDL_ServerSO	AP_HTTP_Bindir	g	•	
Service port:	SOAP_HTTP_Port			•	
Binding operations	:				
Operation1(J	KE_In_Request)				
Select All Dese	lect All				
				<b></b>	
0		< Back	Next >	Finish	Cancel

A new wizard is started.

The wizard allows the message flow to be exposed as a web service (the default and the action to take in this case) or to invoke a web service from the message flow. In this case no changes are required.

\_\_\_14. Click Next.

💠 Configure New Web Service Usage				×
Flow Generation Details				5
Select subflow file and node types (SOAP/H	ITTP) to general	te		
Flow Generation Details				
Filename: JKE_WSDL_ServerService_JKE	_Server_Flow.r	nsgflow		
Node type to be used by the Web service  SOAP nodes  HTTP nodes	flows			
0	< Back	Next >	Finish	Cancel

The wizard will build a sub-flow that extracts the Body of the message from the SOAP Envelope. This panel allows you to change the name of the sub-flow. You may also choose between the SOAP nodes and the HTTP nodes. In the lab, you will use the default options.

\_\_\_15. Click Finish.



Three nodes are generated by the drag and drop and placed on the canvas. A SOAPInput node is connected to a node representing a sub-flow. The sub flow node is connected to a SOAPReply node.



\_\_\_16. Double-click on the sub-flow node to open the sub-flow.

The SOAPExtract node removes the envelope from the SOAP message. It has a separate output path for each binding in the WSDL (there is only one in this case). The Extract node uses a Route To Label option to drive the output path for the appropriate binding.

\_\_\_17. **Close** the subflow.

III *JKE_Server_Flow.msgflow	×		
	SOAP Input	JKE_WSDL_ServerService	SOAP Reply
Graph User Defined Properties	5		

\_\_18. Arrange the nodes similar to the example above, moving the SOAP Reply node to the right side to provide additional space between the nodes...



\_\_\_19. Wire the **JKE\_In\_Request** terminal to the **In** terminal of the SOAP Reply node. Note: if you place your mouse pointer on a connector, a bubble will pop up (as shown above) that will allow you to verify that you have properly connected the two nodes involved.

20.	SAVE!	Save the message flow <b><ctrl-s></ctrl-s></b> .
-----	-------	--------------------------------------------------

	5 <b></b>	
Ľ 4	) Undo Move	Ctrl+Z
	Redo	Ctrl+Y
	Create Connection	
	Open WSDL	
ot	Cut	Ctrl+X
	Сору	Ctrl+C
×	Delete	Delete
	Snap to Grid	
	Rotate	•
	Rename	
	Promote Property	
	Test	
- 1	Add Breakpoints After No	de
	Properties	Alt+Enter

The Test Client can be used to test flows that begin with MQInput, HTTPInput or SOAPInput nodes. In our first four labs we handled all of the tasks that are required to test a message flow ourselves. The Test Client will automate much of that process for us. It will create and populate a BAR file; deploy the BAR file to the Broker; submit a test message; monitor any output nodes for results and display the results.

- \_\_\_21. Right click on the **SOAP Input** node.
- \_\_\_22. Select **Test** from the menu. This starts the Test Client.

INE_Server_Flow.msgflow			
Events			
<ol> <li>Select the message flow you would like to test. Click Send Message to run.</li> </ol>			
Message Flow Test Events	General Properties		
🕨 🔲 🌆 💭 🖽 🖪 🕅	<ul> <li>Detailed Properties</li> </ul>		
	Massage flow //KE Server //KE Server Elow	maflow	
E. Invoke hessage now	Message now: [Skc_Server_Jokc_Server_10w.	nisgnow	
	Input node: SOAP Input		•
	Message		
	Soap operation Operation1 (in: Operation1_Ir	nput; out: Operation1_Output)	
	Paduu Edit ac VML structure		
	Edit as Aric structure		
	Name Edit as text		
	Envelope import from external file		
	Header	Redu	
	KE In Request	1KF In Request	
	ActionReguest	string	ActionReguest
	DateRequest	string	DateRequest
	customerNumber	string	customerNumber
	customerName	string	customerName
	<ul> <li>customerDetails</li> </ul>	anyType	
	customerAddress1	string	customerAddress1
	customerAddress2	string	customerAddress2
	customerCity	string	customerCity
	customerCouptry	string	customerCountry
	customerPostalCode	string	customerPostalCode
	customerCreditLimit	string	customerCreditLimit
	customerCreditScore	string	customerCreditScore
	<ul> <li>contactDetails</li> </ul>	anyType	
	contactFirstName	string	contactFirstName
	contactLastName	string	contactLastName
	contactPhoneinumber	string	contactPhoneNumber
	commonts	string	commonts
	•		Þ
		1	
	Saved Messages Show Generated Source		Send Message
I			
Events Configuration			

\_\_\_23. Use the **Body** pull-down menu to select the **Edit as text** option. The buttons at the bottom will change.

🕀 Swit	ch XML editor?	×
♪	Data in the original editor may be lost when switching to another ed	ditor. Continue?
	not show a warning when switching between XML structure editor an	id source editor
	<u>Y</u> es	No

\_\_\_24. A tip panel is displayed. You may want to click the check box before you click **Yes**.

BB JKE_Server_Flow.msgflow	□ □ [
Events i Select the message flow you would like to test. Click Send Message to r	un.
Message Flow Test Events	General Properties
	<ul> <li>Detailed Properties</li> </ul>
Invoke Message Flow	Macross flow
	Message
	Soap operation Operation1 (in: Operation1_Input; out: Operation1_Output)
	Body: Edit as text
	(2) while the region = #1 0# encoding = #UTE - 9#2 (cooperate Environment)
	<pre><soapenv:header></soapenv:header></pre>
	<soapenv:body></soapenv:body>
	<tns:jke_in_request></tns:jke_in_request>
	<actionrequest>actionRequest</actionrequest>
	<pre><daterequest>DateRequest</daterequest> </pre>
	<customername>customerName</customername>
	<customerdetails></customerdetails>
	$< \verb"customerAddress1> \verb"customerAddress1"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"customerAddress1>"cus$
	<customeraddress2>customerAddress2</customeraddress2>
	<pre><customercity>customerCity</customercity></pre>
	<pre><customerstate>customerstate</customerstate></pre>
	Import Source
1	
Eyents Configuration	

\_\_25. Click the **Import Source** button.

Open		8	? ×
Look in:	🗎 My Documents 💽 🔇 🌮 🖽 -		
My Recent Documents Desktop My Documents My Computer	COBOL COLL Files Intro_XML_Message Lab_Solutions SOAP_InputMessages SOAP_InputMessages WADDR WADDR Workspace WSEC WSRR desktop.ini		
My Network Places	File name:	Op Car	en <b>i</b> ncel

- \_\_\_26. If necessary, navigate to **My Documents**, which points to C:\student.
- \_\_\_27. Select **SOAP\_InputMessages**.

Open		8	? X
Look i	: 🔁 SOAP_InputMessages 💽 🕓 🖪	•	
My Recent Documents Desktop My Documents My Computer	IVE_Account_Close_Request.xml           IVE_Account_Open_Request.xml           IVE_Account_Update_Request.xml		
My Network Places	File name: JKE_Account_Open_Request.xml	0	pen
	Files of type:	C	ancel

- \_\_\_\_28. Highlight the JKE\_Account\_Open\_Request.xml file.
- \_\_\_29. Click Open.

IN JKE_Server_Flow.msgflow	- D
Events	
Events  i Select the message flow you would like to test. Click Send Message to run.  Message Flow Test Events  Comparison of the message flow  Message Flow	eneral Properties etailed Properties sage flow: [/JKE_Server_Flow.msgflow th node: SOAP Input SSAge ap operation [Operation1 [Input; out: Operation1_Output] (
	<customerstate>TX</customerstate>
I Events Configuration	

\_\_\_30. Click on the **Send Message** button.

Select Deployment Location	
Specify deployment details	
This server instance is currently running.	
Deployment location:	
🖂 🖳 WebSphere Message Broker v7.0	New Local Broker
	Connect to Remote Broker
Trace and debug	
$\square$ Stop at the beginning of the flow during debugging	
$\checkmark$ Always use the same deployment location for every test run	
O < Back Next >	Finish Cancel

- \_\_\_31. Highlight the **default** execution group.
- \_\_\_32. Click **Next** (this time only).

▶ 🗉 🎄 🞜 🔛 📰 🚍 🎢	<ul> <li>Detailed Properties</li> </ul>
Select Deployment Location	
Specify Test Settings	
_	
Seconds to wait for deployment completion	40
Seconds to wait after Test Client complete the deployment	0
Seconds to wait on launching the debugger for tracing purpo	se 40
$\square$ Show information dialog before disconnecting debugger.	_
Seconds to wait for test client to stop	40
Create queues of input and output podes of message flo	ws when bost name is localbost
Add or modify (but not clear) what has already been dep	loyed on the execution group
-	
?       < Back	Einish Cancel

- \_\_\_33. Click the **Add or modify** ... check box as shown if not already checked.
- \_\_\_34. Verify that you have a value of 40 in each of the non-zero fields as indicated above.
- \_\_\_35. Click Finish.



The Test Client is deploying the message flow and associated artifacts. The progress of these actions is detailed in the Troubleshooting log.

IN JKE_Server_Flow.msgflow			
Events			
Message Flow Test Events		JKE_Server	
Received HTTP Reply message for "SOAP Input"	Name	Value	
Stopped	soapenv:Envelope     xmins:soapenv     soapenv:Body     NS1:JKE_In_Request     xmins:NS1     ActionRequest     CustomerNumber     customerNumber     customerDetails     customerAddre     customerCounl     customerCounl     customerCredil     customerCredil     customerCredil     contactDetails     contactPinstNa     contactPinstNa	http://schemas.xmlsoap.org/soap/envelope/ http://www.ibm.lab.com O 10/12/2007 ACME 1254 Main St Suite 12 Dime Box TX USA 76543 1200 123 Freddy Bloggs 555-123-6543	
	comments	Just a Comment	•
I Events Configuration			y

\_\_\_36. When the response is received, it is displayed and the test stops.

e	JKE_Server_Flow.msgflow						
E	events						
	Message Flow Test Events	<u>}  </u>	Genera	Prope	rties		
	🕞 🗉 🎄 📲 📴 🔳 🖳 🎽	<b>*</b>	Detaile	l Prop	erties		
	🖃 📑 Invoke Message Flow	En	ndgoint U	RL: ht	p://localho	st:7800/.	JKE_Server
	<ul> <li>Message flows deployment successfully completed</li> </ul>		Message				
	🖃 隆 Starting		Body: 5	iew as	XML structu	ire	
	2. Sending Message to "SOAP Input"				in it bendete		
L	2 Received HTTP Reply message for "SOAP Input"		Name	_			Value
L	Stopped		<u>⊢</u> soa	penv:E	nvelope		
L				xmins:	soapenv		nttp://scnemas.xmisoap.org/soap/envelope/
L				Soaper In Mic	101000Y	loquoct	
L					vmlns/NS1	lequest	http://www.ibm.lab.com
L					ActionReg	uest	0
L					DateRequ	iest	10/12/2007
L					customer	Number	
					customer	Vame	ACME
L				Ξ	customer	Details	
	over the second				×	herAddre	1254 Main St
						herAddre	Suite 12
	'JKE_Server_Flow.mbtest' has been modified. Save	e cł	hanges?			herCity	Dime Box
	$\checkmark$					herState	TX
L						herCount	USA
	Var.	N				herPosta	76543
	Tes	IN	40			herCredil	1200
					contactDo	perCredil staile	123
	I		1	-	contactDe	tails	

- \_\_\_37. Close the Test Client.
- \_\_\_38. Select **Yes** to save the test. This will enable you to repeat this same test in later labs without needing to rebuild it.

🕀 Save Execution Trace	a ×
Save Execution Trace Save the execution trace and all test configurations of JKE_Server_Flow.mbtest in a file.	E
Enter or select the parent folder:	
JKE_Server_	
CollectorNodeSampleFlowProject IntroLab JKE_Client_ JKE_Client_MessageSet JKE_COBOL_MessageSet JKE_COBOL_MessageSet JKE_EIS JKE_EIS_ JKE_EIS_ JKE_EIS_ JKE_Server_ JKE_Server_ JKE_Server_ JKE_Server_MessageSet LocalProject SECURO1	
File name JKE_Server_Flow_Open.mbtest Advanced >>	
⑦	Cancel

- \_\_\_39. Highlight the **JKE\_Server\_** project.
- \_\_\_40. Add "**\_Open**" to the File name as shown above.
- \_\_\_41. Click **Finish** to save the test client configuration.

This Test Client configuration will be used in later labs. The configuration settings and the test messages will be saved.

The ability to save multiple configurations and messages can be used to build a "test suite". This could be used for regression testing in the future, for example.



The JKE\_Server\_Flow\_Open.mbtest is added to a new folder, Flow Tests, in the JKE\_Server\_ project.

This is the end of Lab 5.

## Lab 6 Building the JKE Server – Web Services Client

#### 6.1 Overview

In Lab 6, you will add a Web service request to the message flow. This will invoke another Web service (JKE\_Client) that is using a separate WSDL definition and Uniform Resource Identifier (URI). However the message structure is identical. This was done to simplify the message flow that you are building. The step by step details of how the WSDL definitions were created as well as how the JKE\_Client message flow was built are found in Appendix A and Appendix B.

You will add this request to the message flow by doing a drag and drop of the WSDL file that is associated with the JKE\_Client service. The JKE\_Client Web Service includes the use of a WebSphere enterprise information systems (EIS) adapter. In addition to the SAP, PeopleSoft and Siebel adapters that are included with WebSphere Message Broker, a test adapter called TwineBall is provided. The configuration and use of this adapter is very similar to the other adapters.

The lab is divided into two parts. In the first part you will deploy the JKE\_Client message flow and its associated artifacts. A JKE\_Client bar file is provided for this purpose.

In the second part,	you will add the Web	Service request and to	est the message flow.
· · · · ·	J		0

KE_Server_Flow.msgflow 🛛 🧧 🗖
SOAP Input XE_WSQL_ServerService Operation1_JKE_WSQL_ClemService COAP Reedy
n) User Defined Properties

#### 6.2 Deploying the JKE\_Client – Web Service Client Message Flow



Before testing the message flow, you need to deploy the JKE\_Client and its artifacts. A JKE\_Client.bar file has been provided for this purpose. The broker archive file is in the **JKE\_Client\_** project.

- \_\_1. Select the small triangle opposite the Working set tab.
- \_\_\_2. Select **<all resources>** from the menu.



- \_\_3. Expand JKE\_Client\_->Broker Archives->(default broker schema).
- \_\_\_4. Double-click on the **JKE\_Client.bar** broker archive. The archive editor should open.

🕫 JKE_Server_Flow.msgflow 🛛 🚺 JKE_	Client.bar 🛿					
Manage						
Rebuild, remove, edit, add built resources in broker archive and configure their properties						
🔲 🗣 😂 🗸 Silkay huu 🖉 Upa filka	or toxts					
H 🛯 🖉 🦉 Pilcer by: Crype filce						
Name	Туре	Modified	Size	Path		
	Compiled message flow	Feb 13, 2009 1:36:00 PM	121165			
📔 JKE_Client_MessageSet.xsdzip	XSDZIP file	Feb 13, 2009 1:36:02 PM	5590			
General Ske_EIS_Outbound.xsdzip	XSDZIP file	Feb 13, 2009 1:36:02 PM	3142			
KE_EIS.outadapter	OUTADAPTER file	Feb 13, 2009 1:36:00 PM	3204			

\_5. In the broker archive editor press the **Build** icon.

7.

Adding to Broker Archive File			
Operation completed successfully.			
	OK	Const 1	Debalance
	UK	Cancel	Details >>

\_\_6. Press the **OK** button to close the acknowledgement.

SAVE!! When finished, save the bar file. 🔚 Broker Development 🛛 🕅 👯 Patterns Explorer <all resources> Pattern Instances Projects 🗄 덀 IntroLab 🗄 🚰 JKE\_COBOL\_MessageSet 🗄 🞏 JKE\_Client\_4 🗄 🖑 Flows 🗄 😕 Maps 🗄 避 ESQLs 🗄 📲 Broker Archives 🗄 📲 (default broker scher 😼 JKE\_Clien New ۲ ⊕ 🚝 JKE\_Client\_MessageS 🗄 🐮 JKE\_EIS Open E ZEIS\_Outbound Open With 🗄 🗁 JKE\_LabMaterials 🗄 / 🔠 JKE\_Server\_ Сору E B JKE\_Server\_Message 🗄 🗁 LocalProject Delete 🗄 🗁 TestClientBarFiles Move... Rename... Add Bookmark... 놀 Import... 🛃 Export... Refresh Generate Documentation.... 🗟 Deploy... HH Build and Save Broker Archive

- \_\_8. Select the **JKE\_Client.bar** broker archive.
- \_\_9. Press the right mouse button.
- \_\_10. Select **Deploy** from the menu.

🕀 Deploy	
<b>Deploy</b> Select execution group to deploy selected resources.	1
Brokers      MB7BROKER      Gefault	
? Einish	Cancel

- \_\_\_11. Select the **default** execution group.
- \_\_12. Click Finish.



When the deploy operation is complete, additional items will be shown on the **Brokers** tab in the lower left pane. These include the JKE\_Client\_Flow, JKE\_Client\_MessageSet, JKE\_EIS (the adapter interface) and JKE\_EIS\_Outbound (the adapter message set and connector).

\_\_13. Close the bar file editor.



This is the JKE\_Client message flow that is described in Appendix B. Note that the **top sequence of nodes** implements the **Account Open Web service**. The bottom two sequences of nodes are for other purposes that will be described in later labs.

### 6.3 Adding a Web Service Request to the JKE\_Server Message Flow



\_\_\_1. If the **JKE\_Server\_Flow.msgflow** is not in focus, click its tab and bring it into focus.

The connector between the **JKE\_WSDL\_ServerService** node and the **SOAP Reply** node will now be removed.

- \_\_\_2. Click on the connector to select it.
- \_\_3. Press the right mouse button.
- \_\_\_4. Select **Delete** from the menu.



- \_\_5. Expand the JKE\_Client\_MessageSet folders until you can see the JKE\_WSDL\_ClientService WSDL file. Make sure you are viewing the Client WSDL and not the Server WSDL!!
- \_\_6. Drag and drop the JKE\_WSDL\_ClientService.wsdl file onto the canvas as shown.

This will start the same wizard as used in the prior lab. This time a Web Service request will be created.

Configure New \	eb Service Usage			8
onfigure web s	ervice usage			A
pecify the details of Only SOAP HTTP bin	how the selected web service lings are supported.	will be used in th	e message flow.	
-Web service usage				
C Expose messa	e flow as web service	1		
<ul> <li>Invoke web se</li> </ul>	vice from message flow			
-Web service parar	eters			
Port type:	BuildWSDL_ServerPortType		•	
Imported binding:	BuildWSDL_ServerSOAP_HTT	P_Binding	-	
Service port:	SOAP_HTTP_Port		-	
Binding operations				
Operation1(J	(E_In_Request)			
Select All Dese	ert All			
(?)	< 8	ack Next	> Finis	h Cancel

- \_\_\_7. Select the **Invoke web service from message flow** radio button.
- \_\_8. Click Next.

😫 Configure New Web Serv	ice Usage			<u>a</u> ×
low Generation Details				5
Select subflow file and node ty	pes (SOAP/HTTP) to genera	ite		
-Flow Generation Details				
Location: JKE_Server_/gen/				
Filename: Operation1_JKE_V	WSDL_ClientService_JKE_Se	erver_Flow.msgflow		
C Overwrite existing file				
Node type to be used by the	Web service flows			
C HTTP nodes				
0	r Dada		Field	Crew 1
0	< Back	Next >	FINISN	

\_\_\_9. Click **Finish**.

SOAP Input JKE_WSDL_ServerService Operation1_JKE_WSDL_ClientService	SOAP Reply
---------------------------------------------------------------------	------------

The wizard creates a sub-flow to invoke the Web service and return the response.

\_\_\_10. **Double-click** on the sub-flow node to open the sub-flow.

Operation1_J	_WSDL_ClientService_JKE_Server_Flow.msgflow 🛛	
in	Request fault	
	Extract failure	
		>
	JKE_Out_Re	esponse

The sub-flow invokes the Web service with a SOAPRequest node. When a response is received it is passed to a SOAPExtract to remove the envelope from the SOAP message which is then passed to the message flow via the JKE\_Out\_Response path. SOAP Faults or other failures are also handled.

IN *JKE_Server_Flow.msgflow	Operation1_JKE	_WSDL_ClentService_JKE_Server_Flow.msgflow 🛛	- 0)
👌 🔮 Palette			
Selection	•> =		
Connection	in	Request	
🖉 Note			
🙀 Favorites			
🕞 WebSphere MQ		Extract railure	
Ging DMS			
💭 HTTP		JKE Out Response	
🙀 Web Services			
😡 SCA			
WebSphere Adapters			
G Routing			
Transformation			
Construction			
Database			
🐼 File			
🔜 Email			
🖓 TCPIP			
🕞 IMS			
C> Validation			
Co Timer			
Graph User Defined Properties			
🔲 Properties 🛛  🦹 Proble	ms 🔲 🖽 Deployment Log	C Progress	~ - 0
👏 SOAP Request Node F	Properties - Reque	st	
Description			
Basic	WSDL Properties		
HTTP Transport	WSDL file name*	JKE_Client_MessageSet/com/lab/bm/www/JKE_WSDL_ClientService.wsdl         Bn	owse
Advanced	Port type*	BuildWSDL_ServerPortType	~
WS Extensions	Imported binding*	BuildWSDL ServerSOAP HTTP Binding	~
Response Message Parsing	Pinding operation*		
Parser Uptions	binding operation"	Obsident .	<u> </u>
Monitoring	Service port*	SOAP_HTTP_Port	×
noniconing	Target namespace:	http://www.ibm.lab.com	

\_\_11. Click on the **Request** node and review the Properties. These are set automatically based on the WSDL.

🔲 Properties 🛛 🖹 Problem	Properties 23 👔 Problems			
👏 SDAP Request Node Pr	operties - Request			
Description				
Basic	Web service URL*	http://localhost:7800/JKE_Client		
HTTP Transport 🦰		e.g. http://server/path/to/service		
Advanced	Request timeout (in seconds)	120		
WS Extensions	HTTP(S) proxy location	<enter (if="" anv)="" proxy="" server="" vour=""></enter>	i I	
Response Message Parsing				
Parser Options	Protocol (if using SSL)	TIS		
Validation	Allowed SSL ciphers (if using SSL)	<enter any="" ciphers="" specific="" ssl="" to="" use="" wish="" you=""></enter>		
Monitoring				

\_\_\_12. Click on the HTTP Transport tab. This contains the URI used to invoke the Web service

Properties 🕄 🕑 Problems			
👏 SOAP Request Node Pr	roperties - Rec	uest	
Description	-		
Basic	Message domain	SOAP : For SOAP Web Services (WS-Standards support)	
HTTP Transport	Message set	JKE_Client_MessageSet (NEBDSIC002001)	
Advanced	Mercade hype		
WS Extensions	message cype		
Response Message Parsing	Message format		
Parser Options	K		
Validation			
Monitoring			

- \_\_\_13. Click on the **Response Message Parsing** tab. This identifies the Parser. A specific message definition is built automatically to process the SOAP message using the XMLNSC parser.
- \_\_\_14. After examining the properties **close** the sub flow editor session.

III *JKE_Server_Flow.msgflow	×				- E
👌 😳 Palette					
Selection					
🔪 Connection					
🐠 Note					
🙀 Favorites					
院 WebSphere MQ					
🕞 JMS					
💭 HTTP					
强 Web Services	<b>S</b> B—				
👰 SCA			Б. <u>Б. Б. – – – – – – – – – – – – – – – – – </u>	┛━━━	
🖓 WebSphere Adapters	SOAP Input	JKE_WODL_ServerService	Operation1_JKE_WSDL_ClientService	50AP Reply	
🕞 Routing					
🕞 Transformation					
Construction					

- \_\_15. Return to the parent flow.
- \_\_\_16. Wire in the subflow by connecting the **JKE\_In\_Request** terminal of the **JKE\_WSDL\_ServerService** to the **In** terminal of the subflow.
- \_\_\_17. Wire the **JKE\_Out\_Response** terminal of the subflow to the **In** terminal of the SOAP Reply node.

	SAVE!!	
18.	<u> </u>	Save

Save the message flow <Ctrl-S>.

🕞 Broker Development 🗙 🥰 Patterns Explorer	🖉 💆 💆 💆 🗖
<all resources=""></all>	
Pattern Instances	JKE_Server
Projects	New Working Set

- \_\_\_19. Select the small triangle opposite the Working set tab.
- \_\_\_20. Select **JKE\_Server\_** from the menu.

You are now ready to test your updated message flow. You will do this by reusing the Test Client configuration you saved at the end of Lab 5.



- \_\_21. In the Broker Development pane, expand the JKE\_Server\_->Flow Tests->(default broker schema) folders.
- \_\_\_22. Locate the JKE\_Server\_Flow\_Open.mbtest test that was saved earlier.
- \_\_23. Double-click on **JKE\_Server\_Flow\_Open.mbtest** to launch the Test Client using the saved configuration.



- \_\_\_24. When the Test Client has started, right-click on Invoke Message Flow.
- \_\_25. Select **Re-run**. This will rerun the same test you did at the end of Lab 5.

BI JKE_Server_Flow.msgflow		- 8
Events		
Message Flow Test Events	General Properties	
🕨 🗉 🎄 🚚 😰 🗐 🖻 🕅	<ul> <li>Detailed Properties</li> </ul>	
Invoke Message Flow	Progress:	
<ul> <li>Message flows deployment successfully completed</li> </ul>		Cancel deployment
Starting     Sending Message to "SOAP Input"		
Seroling Wessage to SOAP Input     Sopped     Stopped     Invoke Message Flow     Deploying message flows	□ Troubleshooting log: [Info] Begin deploying message flows □[Info] Deploying the message flow application □[Info] Going to rebuild and deploy broker archive □[Info] Cleaning Broker Archive □[Info] Rebuilding broker archive □[Info] Initializing test message monitors □[Info] Deploying broker archive to execution group	K
	3	×
	Troubleshooting tasks:	
	View the trace message from Message Broker Console	
	Configure seconds to wait for deployment completion	
Events Configuration		

The Test Client deploys the message flow. You may observe the build and deploy process in the Progress window.

IN JKE_Server_Flow.msgflow		
Events		
Message Flow Test Events	General Properties	
	<ul> <li>Detailed Properties</li> </ul>	
	Epidepipt LIPL: http://localboct:7800/1KE_Serve	*
Message flows deployment successfully completed	<pre></pre>	•
Residence in the second state of the second	hosage	
Sending Message to "SOAP Input"	Body: View as XML structure	
Received HTTP Reply message for "SOAP Input"	Name	Value
Stopped	soapeny:Envelope	
🖃 🛃 Invoke Message Flow	xmlns:soapenv	http://schemas.xmlsoap.org/soap/envelope/
Message flows deployment successfully completed	soapenv:Body	
🖃 隆 Starting	NS1:JKE_Out_Response	
2. Sending Message to "SOAP Input"	×mlns:N51	http://www.ibm.lab.com
🊀 Received HTTP Reply message for "SOAP Input"	ActionRequest	0
Stopped	DateRequest	2009-11-17
	customerNumber	1
	customenvame	ACME
	customerDetails	
	customerAddress1	1254 Main St
	customerAddress2	Suite 12
	customerCity	Dime Box
	customerstate	1X UCA
	customerCountry sustemerPostalCode	UDA 74540
	customerPostalCode	1200
	customerCreditScore	130
		100
	contactEirstName	Freddy
	contactLastName	Bloggs
	contactPhoneNumber	555-123-6543
	requestDecision	v
	comments	Request Approved
Events Configuration		

A response is received. This test has invoked both your message flow as well as the JKE\_Client message flow that implements the Account Open Web service. JKE\_Client also invokes the TwineBall EIS via an integrated WebSphere adapter. As you run additional tests using the Account Open message, observe the value of customerNumber. TwineBall is doing inserts to a Derby database and returning a unique sequential key that is used as the customer number. Your values may not match the pictures in the Lab Guide, but it should increment with repeated invocations.

The JKE\_Client flow has changed the comments field from the input message to Request Approved .

The Test Client has a Configuration tab at the bottom of its panel that provides for additional flexibility. For example, if you want to manage the building and deployment of the bar file, that option is available via the configuration tab.

💠 Save Resource	X
'JKE_Server_Flow_Open' has been modified. Save changes?	
<u>Yes</u>	Cancel

\_\_\_26. **Close**, but do not save, the Test Client.

This is the end of Lab 6.

# Lab 7 Building the JKE Server – Routing

### 7.1 Lab Overview

The JKE Server Web service must be able to handle three types of requests: Account\_Open, Account\_Update and Account\_Close. In this lab you will build the routing infrastructure to send the request down the appropriate path. The Account\_Open path will invoke the JKE Client message flow that implements the Account Open Web service. The Account\_Update path will be completed in a later lab and will invoke an IBM CICS® back-end system. The Account\_Close path will invoke a WebSphere MQ application that is not part of this scenario.

You will then test each of the three paths.

A Route node will be used in this lab. The Route node is capable of handling many routing decisions using logical tests. These tests are configured with XML Path Language (XPath) expressions that may refer to a part of the message, a part of the SOAP Envelope or another location. At this stage of flow development the Account\_Update path will use a Trace node to verify a message has been routed down this path.





- \_\_1. Expand the **Routing** drawer.
- \_\_\_2. Drag and drop the **Route** node above the connector as shown.

		PĽ¢	Undo Add Terminal	Ctrl+Z	
		🛛 Roi 🦌	• Redo	Ctrl+Y	
<b>X</b> B	P 💷 F	_	Croate Connection	-	
SOAP Input	JKE_WSDL_ServerService		Add Output Terminal		SOAR Page
			Remove Output Terri	nnal	JOAP Rep
			Rename Output Tern	ninal	
		of	Cut	Ctrl+X	
			Сору	Ctrl+C	
		×	Delete	Delete	
		IN	Snap to Grid		
			Rotate	•	
			Rename		
			Promote Property		
			Test		
			Properties	Alt+Enter	

- \_\_3. Right-click the **Route** node.
- \_\_\_4. Select **Add Output Terminal**. Note: You will be adding three of these in the next series of steps.



- \_\_5. Enter **Account\_Open** for the name of the new output terminal.
- \_\_6. Click **OK**.



- \_\_\_7. Again, right-click the Route node.
- \_\_8. Select Add Output Terminal.

		⊂ <mark>‡</mark> ⊠ (Route	Enter name of the new Account_Update	v output terminal		
SOAP Input	JKE_WSDL_ServerService		ок	Cancel	WSDL_ClientService	

- \_\_9. Enter **Account\_Update** for the name of the new output terminal.
- \_\_\_10. Click **OK**



- \_\_\_11. Again, right-click the Route node.
- \_\_12. Select Add Output Terminal.



- \_\_\_13. Enter **Account\_Close** for the name of the new output terminal.
- \_\_\_14. Click **OK**.

Froperties 🗴 👔 Problems		<u> </u>
🗯 Route Node Properties - Route	💠 Add Filter table entry	
Description 😵 Filter table: A value must be set	Filter pattern* 3	
Basic Filter table* Filter pattern	Edt	Add
Monicoring	Routing output terminal	Edit
	Account_Open	Delete
	2	
	OK Carrel 1	
		$\Box$
·· · · · · · · · · · · · · · · · · · ·	· ··· · ·· · · · - · · ·	Ľ

You have now completed the definition of the output terminals for the Route node.

You now will define the decision criteria that will be used to route a message through the flow. This will require a logic statement that will identify a message type for each of the three output terminals. So the next several steps will be repeated three times.

- \_\_15. In the Properties pane, click the **Add** button. It will display the Add Filter table entry panel.
- \_\_\_16. Click the **Routing output terminal** pull-down.
- \_\_17. Select Account\_Open.
- \_\_\_18. Click **Edit** to start the XPath Expression Builder.

🕀 XPath Expression Builder			
XPath Expression Builder Select the target from the Schema viewer, Function	n viewer or Operator viewer and drag and drop th	e nodes in the source viewer below.	55
Data Types Viewer	XPath Functions String Boolean Mumeric NodeSet Axes	Operators	4
Show XML Schema groups XPath Expression Namespace settings			×
0		Einish	Cancel

The XPath Expression Builder is very versatile. It allows you to easily build an XPath expression for making a routing decision.

\_\_\_19. Expand the **\$Root** entry.

\_\_\_20. Select Add Data Type.



- \_\_\_21. Select JKE\_In\_Request.
- \_\_\_22. Use the drop down menu to select the **XMLNSC** domain.
- \_\_\_23. Press the **OK** button.

Note that the list contains all of the message definitions that are known to the workspace.
🕀 XPath Expression Builder			
XPath Expression Builder Select the target from the Schema viewer, Function viewer	or Operator viewer and drag and drop the no	des in the source viewer below.	55
Data Types Viewer	XPath Functions String Boolean Numeric NodeSet Axes	Operators	
Namespace settings		Einish	Cancel

- \_\_\_24. Expand the tns:JKE\_In\_Request.
- \_\_25. Select the ActionRequest field.
- \_\_\_26. Drag it down to the **XPath Expression** area.

loce the target non-the benefits wewer, i a	ication mower of operator mower and arag and arop a	
)ata Types Viewer	XPath Functions	Operators
← ↔ = \$Root     ← ↔ (Add Data Type)     ← € tns:JKE_In_Request : _JKE_     ← € ActionRequest : string     ← € DateRequest : string     ← € customerNumber : string     ← € customerName : string     ← € customerDetails     ← € contactDetails     ← € contactDetails	In_Reque	
Root/XMLNSC/tns:JKE_In_Request/ActionR	equest	

This is the result. On the next page you will be adding a comparison value. On the right side is a list of Operators which can also be used in a drag and drop fashion. In the middle section is a list of potential XPath functions that could also be used. However, the tests you will be using are very simple. The ActionRequest is a single character. An '**O**' is for Account\_Open, a '**U**' is for Account\_Update and a '**C**' is for Account\_Close.

Note! Be sure to enter the above ActionRequest characters in uppercase!

💠 XPath Expression Builder			<u>_ 0 ×</u>
XPath Expression Builder Select the target from the Schema viewer, Funct	ion viewer or Operator viewer and drag and drop	the nodes in the source viewer below.	55
Data Types Viewer (Add Data Type) (Add Data Type) (Data Type) (Construction Construction (Construction Construction (Construction Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction) (Construction)	Reque       Image: String         Image: String       Image: String         Image: String	Operators	
0		Einish	Cancel

- \_\_\_27. Add the following: = 'O' to the XPath Expression.
- \_\_\_28. Click Finish.

🕀 Edit Filter table en	try	×
Filter pattern*		
\$Root/XMLNSC/tns:JKE	_In_Request/Act	ionRe Edit
Routing output terminal		
Account_Open		•
1	ок	Cancel

\_\_\_29. Click **OK** to complete this entry.

Properties Σ	3 👔 Problems	III Deployment Log		~		
쳐 Route No	de Properties	Route				
Description						
Basic	Filter table*	Filter pattern	Routing output terminal	Add		
Monitoring		\$Root/XMLN5C/tns:JKE_In_Request/ActionRequest = '0'	Account_Open	Edit		
				Delete		
				2		
	Distribution mode All					

\_\_30. As each entry is completed, it is shown in the Properties. You may make the Filter pattern area wider to see the entire expression. If you make a mistake, you can highlight the entry and use the Edit button to change it.

💷 Properties 🗙   🔡 Problems	💠 Add Filter table entry	
Route Node Properties	- Rot Filter pattern*	
Description	Edit.	3 1
Basic Filter table*	Routing output terminal	tput terminal Add
Monitoring	Account_Update	Edit,
		2 Delete
	OK Cancel	

Repeat the process for Account\_Update.

- \_\_31. Click the **Add** button.
- \_\_\_32. Use the pull-down to select **Account\_Update** as the output terminal name.
- \_\_33. Click the **Edit** button.



- \_\_\_34. Expand **\$Root**.
- \_\_35. Click Add Data Type.
- \_\_\_36. Select JKE\_In\_Request.
- \_\_\_37. Use the drop down menu to select the **XMLNSC** domain.
- \_\_\_38. Press the **OK** button to add the data type to the viewer.



- \_\_\_39. Expand tns:JKE\_In\_Request.
- \_\_\_40. Drag **Action\_Request** to the XPath Expression area.

Data Types Viewer	XPath Functions	Operators
<ul> <li>(Add Data Type)</li> <li>(Add Data Type)</li> <li>(E tns:)KE_In_Request : _JKE_</li> <li>(E data Type)</li> <li>(E</li></ul>	In_Reque	
andod Anima Character Tri Trocha Schedoning		
Namespace settings		

- \_\_\_41. Complete the XPath statement by entering: = 'U'.
- \_\_\_42. Press the **Finish** button.

💠 Edit Filter table entry	×
Filter pattern*	
\$Root/XMLNSC/tns:JKE_In_Request/ActionRe	Edit
Routing output terminal	
Account_Update	•
OK Can	cel
the second se	

\_\_\_43. Click **OK.** 

Properties 8	3 👔 Problems		🕸 Add Filter table entry	
쳐 Route No	de Properties	•	Filter pattern*	
Description			Edt	3 1
Basic	Filter table*	П	Routing output terminal	a output terminal Add
Monitoring			Account_Close	t_Open
		Ы		Edit
		E		2 Delete
			OK Cancel	

- \_\_\_44. For the third filter expression, click **Add**.
- \_\_\_45. Change the output terminal to **Account\_Close** (using the pull-down)
- \_\_\_46. Click the **Edit** button.

🕀 XPath Expression Builder			_ 🗆 🗙
XPath Expression Builder			
Select the target from the schema viewer, Function viewer	or operator ·	viewer and drag and drop the hodes in the source viewer below	
Data Types Viewer 🛛 🦯	XPath Fi	Type Selection	
Data Types     (Add Data Type)     (Add Data Type)	E K St E	Choose a type (? = any character, * = any string): Matching types: (a) actor (c) Body (a) encodingStyle (c) Envelope (c) Fault (c) Mador (c) JKE_In_Request (c) JKE_In_Request (	•
XPath Expression		Qualifier:	A
		the http://www.ibm.lab.com	<b>v</b>
Namespace settings			
		Ommain: ISOAP       XMLNSC       SUMP       OK       Cancel	
0			Cancel

- \_\_\_47. Expand **\$Root**.
- \_\_\_48. Click Add Data Type.
- \_\_\_49. Select JKE\_In\_Request.

- \_\_\_50. Use the drop down menu to select the XMLNSC domain.
- \_\_51. Press the **OK** button to add the data type to the viewer.



- \_\_52. Expand tns:JKE\_In\_Request.
- \_\_53. Drag Action\_Request to the XPath Expression area.

E∞ sRoot		
(Add Data Type) (Add Data Type) (e) tns: JKE_In_Request : _JKE_In_Request : string (f) Control	Image: String       Image: Strin	
Show XML Schema groups		
\$Root/XMLNSC/tns:JKE_In_Request/ActionRequest	= 'C'	

- \_\_54. Complete the entry by adding an = 'C' to the end.....make sure the C is in caps!
- \_\_55. Click the **Finish** button



\_\_\_56. Click **OK**.

III Deployment Log							
🗯 Route Node Properties - Route							
Filter pattern	Routing output terminal						
<pre>\$Root/XMLNSC/tns:JKE_In_Request/ActionRequest = '0'</pre>	Account_Open						
\$Root/XMLNSC/tns:JKE_In_Request/ActionRequest = 'U'	Account_Update						
\$Root/XMLNSC/tns:JKE_In_Request/ActionRequest = 'C'	Account_Close						
	s E Deployment Log Filter pattern \$Root/XMLNSC/tns:JKE_In_Request/ActionRequest = '0' \$Root/XMLNSC/tns:JKE_In_Request/ActionRequest = 'U' \$Root/XMLNSC/tns:JKE_In_Request/ActionRequest = 'C'						

\_\_57. Verify that all three Filter expressions are correct and that they match the Output Terminals.

The JKE\_WSDL\_ServerService now must be wired to the Route node.



Delete the connector between JKE\_WSDL\_ServerService and Operation1\_JKE\_WSDL\_ClientService

- \_\_58. Right-click on the connector.
- \_\_\_59. Select **Delete** from the menu.



\_\_60. Connect the JKE\_In\_Request terminal of the JKE\_WSDL\_ServerService node to the In terminal of the Route node.



The wiring for the first of the three output terminals of the Route node will now be completed.

\_\_61. On the Route node, click on the cluster of output terminals as shown above.

ilter terminal names	(? = any ch	aracter, *	* = any String):
alact terminal			
D Failure			
D Default			
D Match			
Account_Open			
Account_Close			
	and personal statements		

The Terminal Selection panel will be displayed.

- \_\_62. Select Account\_Open.
- \_\_\_63. Click **OK**.



\_\_64. The resulting connector for the Account\_Open output terminal should be connected to the **In** terminal of the **Operation1\_JKE\_WSDL\_ClientService** subflow.



The path for the Account\_Close request will be built next.

- \_\_65. Expand the **HTTP** drawer.
- \_\_66. Drag and drop an **HTTPHeader** node as shown.

K HTTPHeader Node Properties - HTTPHeader
HTTPInput Header Options C Carry forward header 💿 Delete header

This node will be used to remove the HTTP Input header from the message tree. This will allow the JKE\_In\_Request message to be sent to a WebSphere MQ based application for additional processing.

- \_\_\_67. Select the **HTTPInput** tab.
- \_\_\_68. Click the radio button for **Delete header**.



- \_\_\_69. Expand the WebSphere MQ drawer.
- \_\_\_\_70. Drag and drop an **MQOutput** node as shown.



\_\_\_71. Rename the node to **Send\_To\_AccountClose**.

Description	MQOutput	Node Properties - Ser	nd_To_AccountClose
Basic			
Advanced			
Request	Queue manager nar	me	
Validation	Queue name	LAB.ACCOUNTCLOSE	

There are two Properties entries that must be set.

- \_\_\_72. Select the **Basic** tab.
- \_\_\_73. Enter LAB.ACCOUNTCLOSE as the queue name.

Properties X	Problems		4 <b>0 0</b>
Description	NQOutput Nod	le Properties - Send_To_AccountClose	
Basic			
Request	Destination mode	Queue Name	-
Validation	Transaction mode	Automatic	-
Monitoring	Persistence mode	Automatic	•
	New message ID		
	New correlation ID		
	Segmentation allowed		_
	Message context	Pass Al	
	Alternate user authority	Pass All Pass Identity Set Al	Ĩ
		Let out	

- \_\_\_74. Select the **Advanced** tab.
- \_\_\_\_75. Use the pull-down for **Message context** and select **Default**. **This option is required** because the message that initiated this flow used the HTTP protocol. Pass All tells the MQOutput node to pass the WebSphere MQ context in the message flowing into the node. However there is no context in the input message to pass since it did not originate as a WebSphere MQ message. Default will create a default MQMD in the message tree.



- \_\_\_\_76. For the last node on this path, Open the **Web Services** drawer.
- \_\_\_77. Drag and drop a **SOAPReply** node as shown.

A second SOAPReply node is added here as a convenience. This will avoid connectors crossing each other in later labs. The existing SOAPReply node could have been used.



Here is the completed Account\_Close path. The nodes will be wired together next.

Terminal Sele	ection les (? = any chara	acter, * = any Str	×ing):
, Select terminal:			
<ul> <li>Failure</li> <li>Default</li> <li>Match</li> <li>Account_Upc</li> <li>Account_Close</li> <li>Account_Opc</li> </ul>	iete Se		
(?)	ОК	Cance	

- \_\_\_78. Start with the Route node. Click on the cluster of output terminals. Note that when the Terminal Selection panel is displayed, the Account\_Open entry has a different color for its icon indicating that it has already been connected.
- \_\_\_79. Select Account\_Close
- \_\_\_80. Click **OK**.



\_81. Anchor the connector to the HTTPHeader node, as shown above.



\_\_82. Connect the **out** terminal of the **HTTPHeader** node to the **Send\_to\_AccountClose** node.



\_\_83. Connect the **out** terminal of the **Send\_to\_AccountClose** node to the **SOAP Reply1** node.



A temporary path for Account\_Update path will now be constructed.

- \_\_\_84. Open the **Construction** drawer.
- \_\_85. Drag and drop a **Trace** node as shown.

H *JKE_Server	Flow.msgflow			
Palette     Selection				
V Connectio	n			
Favorites     WebSphere I     Gas JMS     HTTP     Web Service:     SCA     WebSphere I     Gas SCA     WebSphere I     Favorites     Transformati	1Q s Adapters on	SOAP Input JKE_WSDL_ServerService Rout	HTTPHeader Send_To_AccountClose SOAP Reply1	
Construction Input Output Construction Input Output Construction Throw Trace Input FlowOrder Passthrou	∞		Account_Update	
Graph User Def	ined Properties		~	
Trace No	de Properties	- Account_Update		
Basic	Destination	File		•
Monitoring	File path	, C:\AccountUpdate.txt		-
	Pattern	Message: \${Root} LocalEnv: \${LocalEnvironment}		
86. Re	ename the t	race node to <b>AccountUpdate</b> .		

- \_\_\_87. In the Properties, use the Destination pull-down and select **File**.
- \_\_88. Enter c:\AccountUpdate.txt for the file path.
- \_\_\_89. Enter the following two lines for the Pattern:

Be sure to type the info in the curly braces accurately including case!

- Message: \${Root}
- LocalEnv: \${LocalEnvironment}

Terminal Selection	<u>a</u>	×
Filter terminal names (? = any cha	racter, * = any S	tring):
 5elect terminal:		
<ul> <li>Failure</li> <li>Default</li> <li>Match</li> <li>Account_Update</li> <li>Account_Open</li> <li>Account_Close</li> </ul>		
?	Canc	el

- \_\_90. Click on the **Route** node output terminal cluster.
- \_\_\_91. Select the Account\_Update terminal.
- \_\_\_92. Wire the terminal to the In terminal of the AccountUpdate trace node



\_\_93. Finally, connect the **AccountUpdate** node to the **SOAP Reply** node. All three paths have been completed for this lab. The three paths will now be tested.



#### IBM Software

	<b>b</b>	
FOAD	💛 Undo Create Connection	Ctrl+Z
	🗣 Redo	Ctrl+Y
T	Create Connection	
1	Open WSDL	
	of Cut	Ctrl+X
	Copy	Ctrl+C
	💢 Delete	Delete
	🇱 Snap to Grid	
	Rotate	
	Rename	
	Promote Property	
	Test	
	Add Breakpoints After Nod	le
	Properties	Alt+Enter

The testing process should be familiar by now.

While the existing Test Client configuration could be used it cannot be saved with a different name. When this set of tests is complete the test configuration will be saved with a different name. It will contain three messages, one for each path. This configuration will be reused in the next two labs.

\_\_95. Right-click on the **SOAP Input** node.

#### \_\_\_96. Select Test.

ents			
Select the message flow you would like to test. Click Send Message to	run.		
sage flow Test Events	General Properties		
	- Detailed Properties		
	u a liter com int com	ri	
[2] Invoke Message How	Message How: [JKE_Server_J.KE_Server	_How.msgriow	
	Input node: SOAP Input		
	Message		
	Scan coaration Operation1 (pr Operation	on1 locut: out: Operation	n1. Output)
	Soap operation operation operation	out_stood, out, obeloop	ur_oathat)
	Body: Edit as XML structure		
	Mana ture ture		
	Edit as text		
	oustomer#ddress2	, dvina	customerAddress?
	customer City	string	customerCity
	oustomer State	string	customerState
	customerCountry	string	customerCountry
	oustomerPostaKod	e string	customerPostaCode
	customerCreditLimit	string	customerCreditLimit
	customerCreditScor	e string	customerCreditScore
	contactDetails	anyType	
	contactFirstName	string	contactFirstName
	contactLastName	string	contactLastName
	contactPhoneNumb	e string	contactPhoneNumber
	requestDecision	string	requestDecision
	comments	string	comments
	@encodingStyle	anyURI	cunset>
	Saved Marranar Show Generated Sov		Frend M
	saveu messages Show Generated Sou	i cenn	Send Pre

\_\_97. Use the **Body** pull-down to select **Edit as text** from the menu.

IXE_Server_Flow.msgflow		- 0)
Events Select the message flow you would like to test. Click Send Message to run.		
Message Flow Test Events	General Properties	
	* Detailed Properties	
E tronke Messare Flow	Marrana Ross / WE Sarvar / WE Sarvar Flow monflow	
	Prové node: SOAP Total	
	r Messane	
	Soan constitute Onerations (in: Operations) Insult with Operations (subset)	
	Sole denies ( Chanter (r. Seneen jake, ex. Seneen jorder)	
	Body: Edit as text	
Events Configuration	<pre></pre> </td <td>&gt;/ er</td>	>/ er

\_\_98. Click the **Import Source** button.

Open		8	? ×
Look in:	🔁 SOAP_InputMessages 💽 🌀 🌮 🖽 🗸		
	JKE_Account_Close_Request.xml		
My Recent	TKE_Account_Update_Request.xml		
Desktop			
My Documents			
My Computer			
My Network Places	File name: JKE_Account_Close_Request.xml	Op	ien
	Files of type:	Car	ncel

- \_\_\_99. Select JKE\_Account\_Close\_Request.xml.
- \_\_100. Click Open.

General Properties



#### \_\_101. Click Send Message



The deployment information has not changed.

- \_\_102. Select the **default** execution group.
- \_\_103. Press the **Finish** button.

#### Events

Message Flow Test Events	General Properties	
> 🗆 🏇 🚚 🔛 📰 🗉 🔐	<ul> <li>Detailed Properties</li> </ul>	
	Host:         localhost           Port:         0           Queue manager:         IMBZOMGR           Queue:         LAB.ACCOUNTCL	OSE
Sending Message to "SOAP Input" President HITTP Deply message for "SOAP Input" MQ Queue Monitor "LAB.ACCOUNTCLOSE"	Header     Body: View as XML structure	
E), scopped listening for response	Name	Value
Stopped	None	Valac
	xmlps:NS1	http://www.ibm.lab.com
	ActionRequest	C
	DateRequest	11/19/2007
	customerNumber	1
	customerName	ACME
	customerDetails	
	customerAddress1	1254 Main St
	customerAddress2	Suite 12
	customerCity	Dime Box
	customerState	TX
	customerCountry	USA
	customerPostalCode	76543
	customerCreditLimit	1200
	customerCreditScore	123
	contactDetails	
	contactFirstName	Freddy
	contactLastName	Bloggs
	contactPhoneNumbe	555-123-6543

Note that there are two output events. One is from the SOAP reply and the other is from the LAB.ACCOUNTCLOSE queue, which is displayed using the Queue name as a label.

• Detailed Properties  Message flow: [JRE_Server_JKE_Server_Flow.mogflow  Incut node: SOAP Input
Massage Rose, [JRE_Server_JRE_Server_Flow.mcgflow Incut node: SOAP Input
- Marcana
Scap operation Operation1 (in: Operation1_Input; out: Operation1_Output)
Body: Edit as text
<pre><?xwl version="1.0" encoding="utf=0">&gt; cacapenv:Evelope xmlns:scapenv="http://achemas.xmlscap.org/scaper" <cacacapenv:evelope <cacacapenv:evelope="" xmlns:scapenv="http://achemas.xmlscap.org/scaper">&gt;&gt; cacacapenv:Evelope xmlns:scapenv="http://achemas.xmlscap.org/scaper"&gt;&gt;&gt; cacapenv:Evelope xmlns:scapenv="http://achemas.xmlscap.org/scaper"&gt;&gt;&gt; cacapenv:Evelope xmlns:scapenv="http://achemas.xmlscap.org/scaper"&gt;&gt;&gt; cacapenv:Evelope xmlns:scapenv="http://achemas.xmlscap.org/scaper"&gt;&gt;&gt; cacapenv:Evelope xmlscapenv="http://achemas.xmlscap.org/scaper"&gt;&gt;&gt; cacapenv:Evelope xmlscapenv="http://achemas.xmlscap.org/scaper"&gt;&gt;&gt; cacapenv:Evelope xmlscapenv="http://achemas.xmlscap.org/scaper"&gt;&gt;&gt; cacapenv:Evelope xmlscapenv="http://achemas.xmlscap.org/scaper"&gt;&gt;&gt; cacapenv:Evelope xmlscapenv="http://achemas.xmlscap.org/scaper"&gt;&gt;&gt; cacapenv:Evelope xmlscapenv=&gt;&gt;&gt; cacapenv:Evelope xmlscapenv=&gt;&gt;&gt; cacapenv:Evelope xmlscape=&gt;&gt;&gt; cacapenv:Evelope xmlscape=&gt;&gt;&gt;&gt;&gt;&gt;&gt;&gt;&gt;&gt;&gt;&gt;&gt;&gt;&gt;&gt;&gt;&gt;&gt;&gt;&gt;&gt;&gt;&gt;&gt;&gt;&gt;&gt;&gt;&gt;&gt;&gt;&gt;&gt;&gt;&gt;</cacacapenv:evelope></pre>

- \_\_104. You now need to test the Account\_Open path.
- \_\_105. Select Invoke Message Flow.
- \_\_\_106. Press the right mouse button.

\_\_107. Select Duplicate.



\_\_108. Click Import Source.

Open		? ×
Look in:	r: 🔁 SOAP_InputMessages 🚽 💽 🕜 🥬 🕬	
My Recent Documents	Branchard Class Described IKE_Account_Open_Request.xml	
Desktop		
My Documents		
My Computer		
My Network Places	File name: JKE_Account_Open_Request.xml	Open
	Files of type:	Cancel

- \_\_109. Select JKE\_Account\_Open\_Request.xml.
- \_\_\_110. Click **Open**.



### \_\_111. Click Send Message.

Events			
Message Flow Test Events    Message Flow Test Events    Message Flow   Message flows deployment successfully completed    Starting    Starting    Received HTTP Reply message for "SOAP Input"	General Properties     Detailed Properties     Endpoint URL: http://localhost:780     Message     Body: View as XML structure     Name     soapenv:Envelope     xmbr:soapenv	00/JKE_Server	<b>x</b>
Stopped Stopped Stopped Invoke Message Flow  Message flows deployment successfully completed  Starting  Starting  Received HTTP Reply message for "SOAP Input"  Received HTTP Reply message for "SOAP Input"  Listening for response	Soapenv:Body Soapenv:Body NS1:JKE_Out_Resp. xmlns:NS1 ActionRequest DateRequest customerName CustomerName CustomerAd customerAd customerAd customerCit customerSta	http://www.ibm.lab.com O 2009-10-23 4 ACME 1254 Main St Suite 12 Dime Box TX USA	
Events Configuration	customerCrc customerCrc customerCrr contactDetails contactFist contactLast contactPhor requestDecision comments	76543 1200 130 Freddy Bloggs 555-123-6543 Y Request Approved	

Europha

Since the message flow now has an MQOutput node, which is monitored by the Test Client for output, a Stopped line will not appear since the Account Open path does not write to this queue. Note that the Test Events pane indicates that the Test Client is "Listening for response". We configured the Test Client to time out in 40 seconds so if that period of time expires a Timeout message will appear and the Test will stop. The Stop icon in the upper left could also be used.

ssage Flow Test Events	General Properties		
<ul> <li>Image: Image: Image</li> </ul>	<ul> <li>Detailed Properties</li> </ul>		
E Invoke Message Flow	Endpoint URL: http://localhost:78	B00/JKE_Server	
<ul> <li>Message flows deployment successfully completed</li> </ul>	Message		
🖃 Ъ Starting			
% Sending Message to "SOAP Input"	Body: View as XML structure		
Received HTTP Reply message for "SOAP Input"	Name	Value	
MQ Queue Monitor "LAB.ACCOUNTCLOSE"	soapenv:Envelope		
Stopped listening for response	xmlns:soapenv	http://schemas.xmlsoap.org/soap/envelope/	
Stopped	soapenv:Body		
Invoke Message Flow	NS1:JKE_Out_Res	p	
Message flows deployment successfully completed	×mlns:NS1	http://www.ibm.lab.com	
🖃 隆 Starting	ActionRequest	: O	
Sending Message to "SOAP Input"	DateRequest	2009-10-23	
Received HTTP Reply message for "SOAP Input"	customerNumb	e 4	
Stopped listening for response	customerName	ACME	
Stopped interning for response	customerDetai	ls	
	customerA	d 1254 Main St	
	customerA	d Suite 12	
	customerC	iit Dime Box	
	customerS	ta TX	
	customerC	o USA	
	customerP	0: 76543	
	customer	re 1200	
	customero	130	
		t Freddy	
	contacting	tl Bloggs	
	contactBb	n 555.123.6543	
	requestDecisio	n Y	
	comments	Pequect Approved	

\_\_112. Make sure the test has stopped either via a timeout or by using the Stop icon.



You now need to test the Account\_Update path.

- \_\_\_113. Select Invoke Message Flow
- \_\_114. Press the right mouse button.
- \_\_\_115. Select **Duplicate** from the menu.



\_\_\_116. Click Import Source.

Open		<u>? ×</u>
Look in:	🔁 SOAP_InputMessages 🗸	G 🦻 📂 🎟•
	JKE_Account_Close_Request.xml     JKE_Account_Open_Request_xml	
My Recent Documents	IKE_Account_Update_Request.xml	
Desktop		
My Network	File name: JKE_Account_Update_Request.xi	ml 💌 Open
Places	Files of type: .*.*	Cancel

- \_\_\_117. Select the JKE\_Account\_Update\_Request.xml file.
- \_\_118. Click Open.



## \_\_119. Click Send Message

Events			
Message Flow Test Events	<ul> <li>General Properties</li> <li>Detailed Properties</li> </ul>		
Invoke Message Flow     Message flows deployment successfully completed     Starting     Sending Message to "SOAP Input"	Endpoint URL: http://localhost:78 Message Body: View as XML structure	00/JKE_Server	T
Received HTTP Reply message for "SOAP Input"	Name	Value	-
A MQ Queue Monitor "LAB.ACCOUNTCLOSE"	soapenv:Envelope		
Stopped listening for response	xmlns:soapenv	http://schemas.xmlsoap.org/soap/envelope/	
Stopped	soapenv:Body		
E E Invoke Message Flow	NS1:JKE_In_Reque	4	
Message flows deployment successfully completed	×mlns:NS1	http://www.ibm.lab.com	
E & Starting	ActionRequest	U	
Sending Message to "SOAR Input"	DateRequest	10/12/2007	
Bereived HTTP Benky message for "SOAP Input"	customerNumbe	1	
Channed listening for versions	customerName	ACME	
Channed	customerDetails	5	
	customerAc	1254 Main St	
	customerAc	Suite 12	
<ul> <li>Message flows deployment successfully completed</li> </ul>	customerCi	Dime Box	
🖃 🌇 Starting	customerSt	a TX	
Sending Message to "SOAP Input"	customerCo	USA	
2. Received UTTP Reply message for "SOAP Input"	customerPo	76543	
Listening for response	customerCr	e 1200	
	customerCr	e 123	
	contactDetails		
	contactFirs	Freddy	
	contactLast	Bloggs	
	contactPho	555-123-6543	
	requestDecision	Y	
	comments	Just a Comment	

Again, a Stopped line is not shown. The Test Client is monitoring both the WebSphere MQ queue and the Web service response. Since the Account\_Update path does not use the queue, the Test Client will continue to listen for a response until the 40 second timeout occurs or the test is manually halted using the Stop icon in the upper left.

ssage Flow Test Events	General Properties		
> = 1 🌆 🚚 🔯 🗰 🖪 🎀	<ul> <li>Detailed Properties</li> </ul>		
Invoke Message Flow     Message flows deployment successfully completed     Starting	Endpoint URL: http://localhost:78	00/JKE_Server	
Sending Message to "SOAP Input"	Body: View as XML structure		
Received HTTP Reply message for "SOAP Input"     Monitor "I AB ACCOUNTCLOSE"	Name	Value	
Stopped listening for response     Stopped	xmlns:soapenv	http://schemas.xmlsoap.org/soap/envelope/	
□ Invoke Message Flow ✓ Message flows deployment successfully completed	NS1:JKE_In_Reque     xmlns:NS1	f http://www.ibm.lab.com	
First Starting Starting Sending Message to "SOAP Input"	ActionRequest DateRequest	U 10/12/2007	
Received HTTP Reply message for "SOAP Input" , stopped listening for response	customerNumbe customerName	a 1 ACME	
<ul> <li>Stopped</li> <li>Invoke Message Flow</li> </ul>	customerAc	, 1 1254 Main St 1 Suite 12	
<ul> <li>Message flows deployment successfully completed</li> <li>R Starting</li> </ul>	customerCit	t Dime Box	
2. Sending Message to "SOAP Input" 2. Received HTTP Reply message for "SOAP Input"	customerCo	2 USA 2 76543	
<ul> <li>Stopped listening for response</li> <li>Stopped </li> </ul>	customerCr customerCr	( 1200 ( 123	
	<ul> <li>contactDetails</li> <li>contactFirst</li> </ul>	t Freddy	
	contactLast contactPho	Bloggs 555-123-6543	
	requestDecision	Y Just a Comment	

\_\_120. Make sure that the test has stopped, either via a timeout or from using the Stop icon.

This test will be used again in later labs so the configuration will be saved under a new name.

\_\_121. Close the Test Client.



\_\_122. Click **Yes** to save the test client configuration and use cases.

🕀 Save Execution Trace	
Save Execution Trace Save the execution trace and all test configurations JKE_Server_Flow.mbtest in a file.	s of
Enter or select the parent folder:	
JKE_Server_	
<ul> <li>IntroLab</li> <li>JKE_Client_</li> <li>JKE_Client_MessageSet</li> <li>JKE_COBOL_MessageSet</li> <li>JKE_EIS</li> <li>JKE_EIS_Outbound</li> <li>JKE_LabMaterials</li> <li>JKE_Server_</li> <li>JKE_Server_</li> <li>JKE_Server_</li> <li>TestClientBarFiles</li> </ul>	
File name: JKE_Server_Flow_all.mbtest	
<u>A</u> dvanced >>	
0	<u>Einish</u> Cancel

- \_\_\_123. Highlight the **JKE\_Server\_** entry.
- \_\_\_124. Add "\_All" to the File name as shown above.
- \_\_\_125. Click **Finish** to save the test.

🔤 Local Disk (C:)			
File Edit View Favorites Tools Help 🥂			
🛛 🚱 Back 🔹 🕥 - 🏂 🔎 Search 🔀 Folders 🕼 🔅 😿 🗙	<b>9</b>		
Address 🖙 C:\		💌 🄁 Go	
Folders ×	Name 🔺	Size Type	
🚱 Desktop	🚺 🚞 DB2	File Folder	
(a) My Documents	Documents and Settings	File Folder	
🖃 👰 My Computer	IBM	File Folder	
🗆 🧼 Local Disk (C;)	📔 🚞 idsinstinfo	File Folder	
⊞ □ DB2     □	📔 🚞 idsslapd-ldapsrv1	File Folder	
Documents and Settings	ITCAMDLA	File Folder	
E 🦰 IBM	DIPLOTE INDI-Directory	File Folder	
idsinstinfo	LDAPSRV1	File Folder	
T idsslapd-idapsrv1	META-INF	File Folder	
	DpenSSL	File Folder	
Directory	PKWARE	File Folder	
T C LDAPSRV1	Print_Key_2000	File Folder	
	Printkey	File Folder	
	📄 Program Files	File Folder	
	D SD_WORK	File Folder	
	📄 student	File Folder	
	temp	File Folder	
El Constant Files	user 🗋	File Folder	
		File Folder	
	AccountUpdate.txt	7 KB Text Document	
	Console1.msc	51 KB Microsoft Commo	
E Carp	Events-Services.msc	54 KB Microsoft Commo	
	ML Input.txt	18 KB Text Document	
E Shared on ' boct' (Si)			
E Control David			
E gr Control Panel			
🗄 🧰 a short admin's Documents 📃			

- \_\_\_126. Open the **Windows Explorer** using the icon in the Quick Launch area.
- \_\_\_127. Double click the AccountUpdate.txt file to open it.



\_\_128. Scroll down to the HTTPInput header entry. This is the information that is available to the message flow when the SOAP Input node is used.

\_\_\_129. Close the Notepad window.

\_\_\_130. Minimize the Windows Explorer session.

You have completed Lab 7.

# Lab 8 Building the JKE Server - Mapping

# 8.1 Overview

Before the message flow can send a request to CICS it must be transformed from XML to COBOL. Once a response has been received from CICS, it must then be transformed back into XML and placed in a SOAP Envelope and returned to the requesting client application.

The Account\_Open Web service will return a Web service response, defined as JKE\_Out\_Response. This will also need to be transformed to COBOL. The TwineBall EIS application holds the master account information. In addition the CICS system also has a copy of the Account information as well as additional information used for other purposes. This is why an Account\_Open request takes both paths.

The Account\_Update path has been designed to support changes to other systems that do not involve the EIS system.

In this lab you will be building the transformations using the graphical Mapping node. You will also use another HTTPHeader node to remove two types of HTTP headers.



Real Patterns Explorer 🕞 Broker Development 🛛	_	' 🗆
	👙 🖪 😫	
Working set: JKE_Server_		-
Pattern Instances	New	8
Projects	Quick Starts	8

\_\_1. Select the small triangle in the upper right corner or the **JKE\_Server\_** working set.



\_\_\_2. Select the **Edit Active Working Set** option from the menu.

💠 Edit Working Set	
Broker Working Set Enter a working set name and select the working set elements.	
Working set name: JKE_Server_ Working set content: Automatically include dependent projects in this working set	
Image: Set	
7 Finish	Cancel

- \_\_3. Select the JKE\_COBOL\_MessageSet and JKE\_Client\_MessageSet check boxes.
- \_\_\_4. Press the **Finish** button to add the projects to the working set.



- \_\_5. Open the **Transformation** drawer.
- \_\_6. Drag a **Mapping** node to the upper right side, just above the connector line.
- \_\_7. Rename the Mapping node to JKE\_Out\_to\_JKE\_COBOL. The purpose of this node is to transform the SOAP response received from the JKE\_Client Web service to a COBOL structure that will be sent to CICS in Lab 9.



- \_\_\_8. Drag another **Mapping** node to the lower left side as shown.
- \_\_9. Rename the Mapping node to JKE\_In\_to\_JKE\_COBOL. The purpose of this node is to transform the JKE\_In\_Request received from the Web service client that invokes this flow to a COBOL structure that will be sent to CICS in Lab 9.



- \_\_10. Drag a third **Mapping** node to the lower right as shown.
- \_\_11. Rename the node to **JKE\_COBOL\_to\_JKE\_Out**. This node will transform the response from CICS from COBOL to XML so it can be returned to the Web service caller.

In the next series of steps, you will create maps for the three mapping nodes. The steps are the same, but the results will be different based on the source and target structures. You will define these maps in the same order as the nodes were added to the message flow. The Mapping wizard is started by double-clicking on a Mapping node.



\_\_12. **Double-click** the **JKE\_Out\_to\_JKE\_COBOL** node to start the wizard.
🕀 New Message Map for Mapping Node	<u>_ 🗆 ×</u>
Creates a map for a Mapping node. Properties, and optionally headers and the LocalEnvironment can be mapped.	
Select map sources	
Envelope [http://schemas.xmlsoap.org/soap/envelope/, JKE_Client_MessageSet, JKE_Client_MessageSet]	
Envelope [nttp://schemas.xmisoap.org/soap/envelope/, Jkt_Server_MessageSet, Jkt_Server_MessageSet]      Envelope [nttp://schemas.xmisoap.org/soap/envelope/, Jkt_Client_MessageSet, Jkt_Client_MessageSet]	
Construction of the second secon	
JKE_In_Request [http://www.ibm.lab.com, JKE_Client_MessageSet, JKE_Client_MessageSet]	
IL IVE In Dequast [http://www.ibm.lab.com, IVE_Sarwar_MaccageSat, IVE_Sarwar_MaccageSat]	
SOAP_Domain_Msg [", JKE_Client_MessageSet, JKE_Client_MessageSet]	
SOAP_Domain_Msg [", JKE_Server_MessageSet, JKE_Server_MessageSet]	
I Loo msg_JKEACCOUNTREQUEST [", JKE_COBOL_MessageSet, JKE_COBOL_MessageSet]	
E → Data Sources	
J	
Select map targets	
Emelone [http://cchemac.ym/coan.org/coan/envelope/_IVE_Client_MessageSet_IVE_Client_MessageSet]	
Envelope [http://schemas.xmlsoap.org/soap/envelope/, JKE_Server_MessageSet, JKE_Server_MessageSet]	
🗖 🛃 Fault [http://schemas.xmlsoap.org/soap/envelope/, JKE_Client_MessageSet, JKE_Client_MessageSet]	
Eault [http://schemas.xmlsoap.org/soap/envelope/, JKE_Server_MessageSet, JKE_Server_MessageSet]	
KE_In_Request [http://www.ibm.iab.com, JKE_Client_MessageSet, JKE_Client_MessageSet]      KE_In_Request [http://www.ibm.iab.com, JKE_Server_MessageSet, JKE_Server_MessageSet]	
E SkE_arg (kdpssk (kdp), (kdp)	
CAP_Domain_Msg [", JKE_Client_MessageSet, JKE_Client_MessageSet]	
Mag JKEACCOUNTREOUEST [", JKE COBOL MessageSet, JKE COBOL MessageSet]	
🗄 – 🔲 🗁 Data Targets	
Apply working set filtering to artifact selections on this page	
ок	ancel

A panel is displayed where you identify the source and targets for the mapping operation. It can be expanded until all items are shown or scrolling can be used to see the message definitions.

- \_\_13. Click the check box for JKE\_Out\_Response[JKE\_Client\_MessageSet] for the map source.
- \_\_14. Click the check box for msg\_JKEACCOUNTREQUEST[JKE\_COBOL\_MessageSet] for the map target.
- \_\_\_15. Make sure you have selected the correct items. There are **JKE\_Out\_Response** items for both the Client and Server message sets. The **Client** version should be used in this map.
- \_\_\_16. Click **OK**.



- \_\_\_17. A tip box is displayed. You may want to click the check box for the **Do not show this tip again**.
- \_\_\_18. Click **OK.**



The Mapping Panel is divided into three areas. The top area is used for drag and drop mapping. The middle area is used when editing a particular entry. The lower area contains the XPath statements for each mapping of source to target where the target is on the left side. The source information can also be edited in place.

Note that the Properties folder has already been mapped. You can tell this because of the line connecting the Source and Target representations of that folder.

Map Script	
E Properties	
e MessageSet	"JKE_COBOL_MessageSet"
e MessageType	"{}:msg_JKEACCOUNTREQUEST"
e MessageFormat	"Binary1"
e Encoding	\$source/Properties/Encoding
CodedCharSetId	\$source/Hoperces/codedcharpecta
e Transactional	\$source/Properties/Transactional
Persistence	<pre>\$source/Properties/Persistence</pre>

\_\_\_19. Expand the **\$target** and **Properties** folders in the Map Script area.

The individual mappings that have been done for the Properties folder can now be viewed. Note that the Mapping node has filled in the information about the target message set for you....everything has been set up to serialize this message into a COBOL bit stream when an output node is encountered. It is possible at this point to also make other changes in the Properties folder. For example, if you were sending this message to a real CICS running on IBM z/OS®, you could set the Encoding and CodedCharSetId fields to match what is needed by CICS and remove any requirement for code set conversions on the message by the transport or the receiver.

\_\_\_20. Collapse the **Properties** folder.

<ul> <li>☐ the sponse</li> <li>☐ \$source - Message "tns:JKE_Out_Response"</li> <li>☐ Properties (PropertiesType tns:JKE_Out Response)</li> <li>☐ Content of the sponse (tns:_JKE_Out_Response)</li> </ul>	Undo Redo Revert	·⊡ tie \$target - Message "msc i e Properties (Proper i e	3_JKEACCOUNTREQUEST", Parser "MRM" tiesType_msg_JKEACCOUNTREQUEST)
	Map From Source Map by Name Enter Expression Accumulate Create New Su	Alt+C, M           Alt+C, N           Sn           Alt+C, T           Alt+C, T           Alt+C, L           Alt+C, L           Alt+C, L           Alt+C, L	

- \_\_\_21. Highlight the tns:JKE\_Out\_Response in the source.
- \_\_\_22. Right-click on the msg\_JKEACCOUNTREQUEST for the target.
- \_\_\_23. Select **Map by Name** from the menu.

As an alternative you can also do a drag and drop of the source element to the target element in which case the same option panel will appear. In addition to the **Map by Name** option there are other options such as **Create a Submap**, **Map from Source** and **Call Existing Submap**. This capability is very useful when there is a structure or part of a structure that is used multiple times.

🕀 Map By Name		
Select how to map from source to target		
Choose from the following options to map from selected source to selected target. Click "Next" to select mappings to be created, or click "Finish" to create all mappings satisfying the chosen options.		
Mapping Scope		
Map leaves of the selected nodes		
C Map immediate children of the selected nodes		
Name Matching Options		
Case sensitive		
Alphanumeric characters (Letters and digits only)		
Mapping Criteria		
Press E1 for more information when source and target names sasilfy more than one criterion		
Create mappings between sources and targets with the same name		
Create mappings when source and target names are more similar than	N 50 W match	Default
Create mappings between source and target names defined as synonyms in file		
		Browse
(V)	< Back Next > Finish	Cancel

This mapping operation is between messages of different formats – XML for the source, COBOL for the target. The field names are different, the order of fields is different in some cases and in two cases data that is a string in the source becomes Packed Decimal (for one field) or Binary (for another field).

- \_\_\_24. Select the **check** the box for **Create mappings when source and target names are more similar than**.
- \_\_25. Set the % match to 50 using the slider bar or by overtyping the value.
- \_\_\_26. **Uncheck** the box for Alphanumeric characters.
- \_\_\_27. Click Next.

A comparison of the names will be performed and the results shown on the next screen.

ectable Mapping Targets	Selectable Mapping Sources for Target	Source co
ACTION_REQUEST	ActionRequest	1
	DataBaquast	━━━━━━━
	customerCountry (customerDetails), customerNumber	2
	customerName	1
🖃 🔽 🛄 įkeaccountrequest_customerdetails		
ADDRESS1	customerAddress1 (customerDetails)	1
ADDRESS2	customerAddress2 (customerDetails)	1
🗹 🖻 STATE	customerState (customerDetails)	1
🗹 🖻 POSTALCODE	customerPostalCode (customerDetails)	1
🗹 🖻 CREDIT_LIMIT	customerCreditLimit (customerDetails)	1
CREDIT_SCORE	customerCreditScore (customerDetails)	1
CONTACT_FIRST_NAME	contactFirstName (contactDetails)	1
CONTACT_LAST_NAME	contactLastName (contactDetails)	1
	contactPhoneNumber (contactDetails)	1
	comments	1
	requestDecision	1

A preview of the results of the Map by Name operation using the parameters supplied on the previous panel is displayed. If the results are not satisfactory then the **Back** button can be used to return to the previous panel. This panel allows for incorrect or duplicate mappings to be removed.

In this case the **CUSTOMER\_ACCOUNT\_NUMBER** target has two sources. This is not correct so it will now be corrected.

- \_\_\_\_28. **Select** the line with two sources.
- \_\_\_29. Click on the **Edit** button.

Select Mapping Source	
customerCountry (customerDetails)	
Select All Deselect All	
0	OK Cancel

- \_\_\_30. **Uncheck** the box for **customerCountry** as this is not the proper source for this target.
- \_\_\_31. Click **OK** to remove the incorrect mapping.

🍄 Map By Name			
Select mappings to be created			
All source and target names satisfying previously chosen options are listed. clicking the Edit button.	De-select a target by unchecking the box. De-select a source by	y selecting a row then	
Selectable Mapping Targets	Selectable Mapping Sources for Target	Source co	
CTION_REQUEST	ActionRequest	1	-
	DateRequest	-	Edit
	customerNumber	1	
	customenname	1	
🖃 🗹 🛄 jkeaccountrequest_customerdetails			
ADDRESS1	customerAddress1 (customerDetails)	1	
ADDRES52	customerAddress2 (customerDetails)	1	
STATE	customerState (customerDetails)	1	
POSTALCODE	customerPostalCode (customerDetails)	1	
CREDIT_LIMIT	customerCreditLimit (customerDetails)	1	
CREDIT_SCORE	customerCreditScore (customerDetails)	1	
CONTACT_FIRST_NAME	contactFirstName (contactDetails)	1	
CONTACT_LAST_NAME	contactLastName (contactDetails)	1	
CONTACT_PHONE	contactPhoneNumber (contactDetails)	1	
	comments	1	
DECISION	requestDecision	1	
	ashahara farina d		
Number of mappings selected   15 Number of name n	natches selected   15		
()	< Back Nex	d > Finish C	ancel

**CUSTOMER\_ACCOUNT\_NUMBER** now has a single correct source.

\_\_\_32. Click the **Finish** button to perform the mapping.



Take a few minutes and look at the results. In the **Source** and **Target** area blue lines show the connections between the items. If there is a mapping that is incorrect, you can click on the blue line in the middle section and remove the incorrect mapping.

In this case we have the opposite condition. If you look closely you will see that there are two target fields, **CITY** and **COUNTRY**, that the Map by name algorithm was not able to establish a match for. At a 50% matching criteria the shorter names missed a match because of the "customer" prefix in front of those fields in the source names. These two elements will be mapped manually.

Map Script	Value 🚤	
🗆 👯 JKE_Server_Flow_JKE_In_to_JKE_COBOL		
Parameters		
🖃 🖾 \$target		
Properties		
🖃 🛃 msg_JKEACCOUNTREQUEST		
ACTION_REQUEST	<pre>\$source/tns:JKE_Out_Response/ActionRequest</pre>	
DATE_REQUEST	<pre>\$source/tns:JKE_Out_Response/DateRequest</pre>	
CUSTOMER_ACCOUNT_NUMBER	<pre>\$source/tns:JKE_Out_Response/customerNumber</pre>	
CUSTOMER_COMPANY_NAME	<pre>\$source/tns:JKE_Out_Response/customerName</pre>	
CUSTOMER_DETAILS		
e ADDRESS1	<pre>\$source/tns:JKE_Out_Response/customerDetails/customerAddress1</pre>	
e ADDRESS2	\$cource/tns:JKE_Out_Response/customerDetails/customerAddress2	
CITY		
C STATE	<pre>\$source/tns:JKE_Out_Response/customerDetails/customerState</pre>	
COUNTRY		
POSTALCODE	<pre>\$source/tns:JKE_Out_Response/customerDetails/customerPostalCode</pre>	
CREDIT_LIMIT	<pre>\$source/tns:JKE_Out_Response/customerDetails/customerCreditLimit</pre>	
CREDIT_SCORE	<pre>\$source/tns:JKE_Out_Response/customerDetails/customerCreditScore</pre>	
CONTACT_FIRST_NAME	<pre>\$source/tns:JKE_Out_Response/contactDetails/contactFirstName</pre>	
CONTACT_LAST_NAME	<pre>\$source/tns:JKE_Out_Response/contactDetails/contactLastName</pre>	
CONTACT PHONE	<pre>\$source/tns:JKE Out Response/contactDetails/contactPhoneNumber</pre>	

Here is a view from the Map Script area. Here we can spot the unmapped elements by looking for a lack of a **\$source** XPath statement in the Value cell for that particular target.

🖅 🛗 \$source - Message "tns:JKE_Out_Response"		🖅 🛗 \$target - Message "msg_JKEACCOUNTREQUEST", Parser "MRM"
Properties (PropertiesType_tns: JKE_Out_Response)		Properties (PropertiesType_msg_JKEACCOUNTREQUEST)
😑 🛃 tns:JKE_Out_Response (tns:_JKE_Out_Response)		🗄 🖳 msg_JKEACCOUNTREQUEST (JKEACCOUNTREQUEST)
Contract (xsd:string)	-	ACTION_REQUEST (xsd:string -)
DateRequest (xsd:string)	-	DATE_REQUEST (xsd:string -)
customerNumber (xsd:string)		CUSTOMER_ACCOUNT_NUMBER (xsd:string -)
eff customerName (xsd:string)	-	CUSTOMER_COMPANY_NAME (xsd:string -)
🚊 - e customerDetails (anonymous)		CUSTOMER_DETAILS (jkeaccountrequest_customerdetails)
customerAddress1 (xsd:string)		🖹 🗍 jkeaccountrequest_customerdetails
e estenen dd esse (nad string)		ADDRESS1 (xsd:string -)
customerCity (xsd:string)		e ≥ appers52 (xsd:string -)
e customerstate (xsutstring)		CITY (X / Man by Name
<ul> <li>customerCountry (xsd:string)</li> </ul>		
customerPostalCode (xsd:string)		COUNTR' Kedo
et customerCreditLimit (xsd:string)	-	POSTALC Revert
ef customerCreditScore (xsd:string)	-	CREDIT Man from Source Alt+C. M
🗈 🖻 contactDetails (anonymous)		CREDIT_
e <sup>4</sup> requestDecision (xsd:string)		CONTACT_FIRST_N Enter Every Alt+C_T
e comments (xsd:string)		CONTACT LAST N

- \_\_\_33. Click on **customerCity** in the Source pane.
- \_\_\_34. Right click on **CITY** in the Target pane.
- \_\_35. Select **Map from Source** (drag and drop also works).



- \_\_\_36. Click on **customerCountry** in the Source pane.
- \_\_\_37. Right click on **COUNTRY** in the Target pane.
- \_\_\_38. Select Map from Source (drag and drop also works).

🕮 *JKE_Server_Flow.msgflow 🛛 🛄 JKE_Server_Flow_JKE_Out_to_JKE_COBOL.msgmap 🗙	
E Source - Message "tns: JKE Out Response"	🖂 🔂 starget - Message "msg_JKEACCOUNTREOUEST", Parser "MRM"
Properties (PropertiesType tns: JKE Out Response)	Properties (Properties Type msg. JKEACCOUNTREOUEST)
E 🚱 ths: IKE Out Response (ths: IKE Out Response)	
e ActionRequest (xsd:string)	ACTION REOUEST (xsd:string -)
DateRequest (xsd:stripn)	DATE REQUEST (xsd:string -)
(ustomerNumber (vsd:string)	CINTER ACCOUNT NUMBER (vsr)string -)
customerName (volistring)	CONTINUE CONTRACT, CO
customerhanic (xsustanig)	CONTONED DETAILS (descriptions details)
Casciner Decais (anonymous)	
Customer Address1 (xsd.string)	Jean Contraction of Page 20 Contractions
CustomerAddress2 (Xsd:string)	ADDRESS (xststring -)
Customercuty (xsussring)	
customerstate (xsd:string)	
customerCountry (xsd:string)	STATE (xsostring-)
CustomerPostalCode (xsd:string)	COUNTRY (xsastring -)
customerCreditLimit (xsd:string)	POSTALCODE (xsd:string -)
e ' customerCreditScore (xsd:string)	CREDIT_LIMIT (xsdiint -)
contactDetails (anonymous)	CREDIT_SCORE (xsdishort -)
requestDecision (xsd:string)	CONTACT_FIRST_NAME (xsd:string -)
Comments (xsd:string)	CONTACT_LAST_NAME (xsd:string -)
	e CONTACT_PHONE (xsd:string -)
	COMMENTS (xsd:string -)
	DECISION (xsd:string -)
	· · · · · · · · · · · · · · · · · · ·
Map Script	Value
Map Script	Value
Map Script. □ ₩ XE_Server_Flow_XE_Out_to_XE_COBOL ⊕	Value
Map Script.       □     □       WE_Server_Flow_JKE_Out_to_XE_COBOL       WE     □       Parameters       □     Starget	Value
Map Script           Image Script	Value
Map Script.           Image Script. </td <td>Value</td>	Value
Map Script           Image Script <td>Value Value Source/tns::XE_Out_Response/ActionRequest</td>	Value Value Source/tns::XE_Out_Response/ActionRequest
Map Script           Image Script <td>Value Value Source/tns:XE_Out_Response/ActionRequest Source/tns:XE_Out_Response/DateRequest Source/tns:XE_Out_Response/DateRequest</td>	Value Value Source/tns:XE_Out_Response/ActionRequest Source/tns:XE_Out_Response/DateRequest Source/tns:XE_Out_Response/DateRequest
Map Script           Image Script <td>Value Value  Source/Ins:XE_Out_Response/ActionRequest Source/Ins:XE_Out_Response/ActionRequest Source/Ins:XE_Out_Response/DateRequest Source/Ins:XE_OUT_Response/DateRequest</td>	Value Value  Source/Ins:XE_Out_Response/ActionRequest Source/Ins:XE_Out_Response/ActionRequest Source/Ins:XE_Out_Response/DateRequest
Map Script           Image Script <td>Value Value Source/tns:XE_Out_Response/ActionRequest Source/tns:XE_Out_Response/DateRequest Sour</td>	Value Value Source/tns:XE_Out_Response/ActionRequest Source/tns:XE_Out_Response/DateRequest Sour
Map Script           Image Script <td>Value           \$source/tns:XE_Out_Response/ActionRequest           \$source/tns:XE_Out_Response/JobeRequest           \$source/tns:XE_Out_Response/JobeRequest           \$source/tns:XE_Out_Response/usberefunder           \$source/tns:XE_Out_Response/customerNumber           \$source/tns:XE_Out_Response/customerNumber</td>	Value           \$source/tns:XE_Out_Response/ActionRequest           \$source/tns:XE_Out_Response/JobeRequest           \$source/tns:XE_Out_Response/JobeRequest           \$source/tns:XE_Out_Response/usberefunder           \$source/tns:XE_Out_Response/customerNumber           \$source/tns:XE_Out_Response/customerNumber
Map Script           Image Script <td>Value           \$source/Ins:XE_Out_Response/ActionRequest           \$source/Ins:XE_Out_Response/DeteRequest           \$source/Ins:XE_Out_Response/DeteRequest           \$source/Ins:XE_Out_Response/customerNumber           \$source/Ins:XE_Out_Response/customerNumber           \$source/Ins:XE_Out_Response/customerNumber           \$source/Ins:XE_Out_Response/customerNumber           \$source/Ins:XE_Out_Response/customerNumber</td>	Value           \$source/Ins:XE_Out_Response/ActionRequest           \$source/Ins:XE_Out_Response/DeteRequest           \$source/Ins:XE_Out_Response/DeteRequest           \$source/Ins:XE_Out_Response/customerNumber           \$source/Ins:XE_Out_Response/customerNumber           \$source/Ins:XE_Out_Response/customerNumber           \$source/Ins:XE_Out_Response/customerNumber           \$source/Ins:XE_Out_Response/customerNumber
Map Script           Image Script <td>Value           4           4           5           5           5           5           5           5           5           5           5           5           5           5           5           5           5           5           5           5           5           5           5           5           5           5           5           5           5           5           5           5           5           5           5           5           5           5           5           5           5           5           5           5           5           5           5           5           5           5           5           5           5</td>	Value           4           4           5           5           5           5           5           5           5           5           5           5           5           5           5           5           5           5           5           5           5           5           5           5           5           5           5           5           5           5           5           5           5           5           5           5           5           5           5           5           5           5           5           5           5           5           5           5           5           5           5           5           5
Map Script           Image Script <td>Value           \$source/trs:XE_Out_Response/ActionRequest           \$source/trs:XE_Out_Response/ActionRequest           \$source/trs:XE_Out_Response/DateRoquest           \$source/trs:XE_Out_Response/LastomerMunder           \$source/trs:XE_Out_Response/LastomerMunder           \$source/trs:XE_Out_Response/LastomerAddress1           \$source/trs:XE_Out_Response/LustomerAddress1           \$source/trs:XE_Out_Response/LustomerAddress2           \$source/trs:XE_Out_Response/LustomerAddress2           \$source/trs:XE_Out_Response/LustomerAddress2</td>	Value           \$source/trs:XE_Out_Response/ActionRequest           \$source/trs:XE_Out_Response/ActionRequest           \$source/trs:XE_Out_Response/DateRoquest           \$source/trs:XE_Out_Response/LastomerMunder           \$source/trs:XE_Out_Response/LastomerMunder           \$source/trs:XE_Out_Response/LastomerAddress1           \$source/trs:XE_Out_Response/LustomerAddress1           \$source/trs:XE_Out_Response/LustomerAddress2           \$source/trs:XE_Out_Response/LustomerAddress2           \$source/trs:XE_Out_Response/LustomerAddress2
Map Script           Image Scrit           Image Scrit	Value           \$source/trs:XE_Out_Response/ActionRequest           \$source/trs:XE_Out_Response/DateRequest           \$source/trs:XE_Out_Response/LoateRequest
Map Script           Image Script <td>Value           \$source/trs:XE_Out_Response/ActionRequest           \$source/trs:XE_Out_Response/DateRequest           \$source/trs:XE_Out_Response/DateRequest           \$source/trs:XE_Out_Response/customerNamer           \$source/trs:XE_Out_Response/customerAddress1           \$source/trs:XE_Out_Response/customerAddress1           \$source/trs:XE_Out_Response/customerAddress1           \$source/trs:XE_Out_Response/customerAddress1           \$source/trs:XE_Out_Response/customerCtyl           \$source/trs:XE_Out_Response/customerCtyl           \$source/trs:XE_Out_Response/customerCtyl           \$source/trs:XE_Out_Response/customerCtyl</td>	Value           \$source/trs:XE_Out_Response/ActionRequest           \$source/trs:XE_Out_Response/DateRequest           \$source/trs:XE_Out_Response/DateRequest           \$source/trs:XE_Out_Response/customerNamer           \$source/trs:XE_Out_Response/customerAddress1           \$source/trs:XE_Out_Response/customerAddress1           \$source/trs:XE_Out_Response/customerAddress1           \$source/trs:XE_Out_Response/customerAddress1           \$source/trs:XE_Out_Response/customerCtyl           \$source/trs:XE_Out_Response/customerCtyl           \$source/trs:XE_Out_Response/customerCtyl           \$source/trs:XE_Out_Response/customerCtyl
Map Script           Image Script <td>Value           Source/Ins:XE_Out_Response/ActionRequest           Source/Ins:XE_Out_Response/DateRequest           Source/Ins:XE_Out_Response/DateRequest</td>	Value           Source/Ins:XE_Out_Response/ActionRequest           Source/Ins:XE_Out_Response/DateRequest
Map Script         Image: Server, Flow_XKE_OUL_to_XKE_COBOL         Image: Server, Flow_XKE_OUL_To_XKE_COB         Image: Server, Flow_XKE_OUL_TO_XKE_COB         Image: Server, Flow_XKE_COUNTREQUEST         Image: Server, Server, Se	Value           \$source/tris:XE_Out_Response/ActionRequest
Map Script           Image Script <td>Value           \$source/trs:XE_Out_Response/ActionRequest           \$source/trs:XE_Out_Response/LationRequest           \$source/trs:XE_Out_Response/LationRequest           \$source/trs:XE_Out_Response/LationerNumber           \$source/trs:XE_Out_Response/LationerNumber           \$source/trs:XE_Out_Response/LationerNumber           \$source/trs:XE_Out_Response/LationerNumber           \$source/trs:XE_Out_Response/LationerName           \$source/trs:XE_Out_Response/LationerDetails/LationerAddress1           \$source/trs:XE_Out_Response/LationerDetails/LationerAddress2           \$source/trs:XE_Out_Response/LationerDetails/LationerState           \$source/trs:XE_Out_Response/LationerDetails/LationerState           \$source/trs:XE_Out_Response/LationerDetails/LationerState</td>	Value           \$source/trs:XE_Out_Response/ActionRequest           \$source/trs:XE_Out_Response/LationRequest           \$source/trs:XE_Out_Response/LationRequest           \$source/trs:XE_Out_Response/LationerNumber           \$source/trs:XE_Out_Response/LationerNumber           \$source/trs:XE_Out_Response/LationerNumber           \$source/trs:XE_Out_Response/LationerNumber           \$source/trs:XE_Out_Response/LationerName           \$source/trs:XE_Out_Response/LationerDetails/LationerAddress1           \$source/trs:XE_Out_Response/LationerDetails/LationerAddress2           \$source/trs:XE_Out_Response/LationerDetails/LationerState           \$source/trs:XE_Out_Response/LationerDetails/LationerState           \$source/trs:XE_Out_Response/LationerDetails/LationerState
Map Script           Image Script <td>Value           \$source/Ins:XE_Out_Response/ActionRequest        </td>	Value           \$source/Ins:XE_Out_Response/ActionRequest
Map Script           Image Script <td>Value           \$source/trs:XE_Out_Response/ActionRequest           \$source/trs:XE_Out_Response/LactionRequest           \$source/trs:XE_Out_Response/LactionRequest           \$source/trs:XE_Out_Response/LactioneHame           \$source/trs:XE_Out_Response/LactioneHame           \$source/trs:XE_Out_Response/LactioneHame           \$source/trs:XE_Out_Response/LactioneHame           \$source/trs:XE_Out_Response/LactioneHame           \$source/trs:XE_Out_Response/LactioneHame           \$source/trs:XE_Out_Response/LactioneHame           \$source/trs:XE_Out_Response/LactioneHame           \$source/trs:XE_Out_Response/LactioneHame           \$source/trs:XE_Out_Response/LactionerAddress1           \$source/trs:XE_Out_Response/LactionerAddress2           \$source/trs:XE_Out_Response/LactionerDetais/LactionerAddress2           \$source/trs:XE_Out_Response/LactionerDetais/LactionerCity           \$source/trs:XE_Out_Response/LactionerDetais/LactionerCity           \$source/trs:XE_Out_Response/LactionerDetais/LactionerCity           \$source/trs:XE_Out_Response/LactionerDetais/LactionerCity           \$source/trs:XE_Out_Response/LactionerDetais/LactionerCity           \$source/trs:XE_Out_Response/LactionerDetais/LactionerCity           \$source/trs:XE_Out_Response/LactionerDetais/LactionerCity           \$source/trs:XE_Out_Response/LactionerDetais/LactionerCity  </td>	Value           \$source/trs:XE_Out_Response/ActionRequest           \$source/trs:XE_Out_Response/LactionRequest           \$source/trs:XE_Out_Response/LactionRequest           \$source/trs:XE_Out_Response/LactioneHame           \$source/trs:XE_Out_Response/LactioneHame           \$source/trs:XE_Out_Response/LactioneHame           \$source/trs:XE_Out_Response/LactioneHame           \$source/trs:XE_Out_Response/LactioneHame           \$source/trs:XE_Out_Response/LactioneHame           \$source/trs:XE_Out_Response/LactioneHame           \$source/trs:XE_Out_Response/LactioneHame           \$source/trs:XE_Out_Response/LactioneHame           \$source/trs:XE_Out_Response/LactionerAddress1           \$source/trs:XE_Out_Response/LactionerAddress2           \$source/trs:XE_Out_Response/LactionerDetais/LactionerAddress2           \$source/trs:XE_Out_Response/LactionerDetais/LactionerCity           \$source/trs:XE_Out_Response/LactionerDetais/LactionerCity           \$source/trs:XE_Out_Response/LactionerDetais/LactionerCity           \$source/trs:XE_Out_Response/LactionerDetais/LactionerCity           \$source/trs:XE_Out_Response/LactionerDetais/LactionerCity           \$source/trs:XE_Out_Response/LactionerDetais/LactionerCity           \$source/trs:XE_Out_Response/LactionerDetais/LactionerCity           \$source/trs:XE_Out_Response/LactionerDetais/LactionerCity
Map Script           Image Script <td>Value           \$source[tns:XE_Out_Response]ActionRequest        </td>	Value           \$source[tns:XE_Out_Response]ActionRequest
Map Script           Image Script <td>Value           \$source[tns:XE_Out_Response]ActionRequest           \$source[tns:XE_Out_Response]ActionRequest</td>	Value           \$source[tns:XE_Out_Response]ActionRequest
Map Script           Image Script <td>Value           Source/Ins:XE_Out_Response/ActionRequest           Source/Ins:XE_Out_Response/DateRequest           Source/Ins:XE_Out_Response/DateRequest           Source/Ins:XE_Out_Response/DateRequest           Source/Ins:XE_Out_Response/DateRequest           Source/Ins:XE_Out_Response/DateRequest           Source/Ins:XE_Out_Response/DateRequest           Source/Ins:XE_Out_Response/CustomerMamber           Source/Ins:XE_Out_Response/CustomerDetails/CustomerAddress1           Source/Ins:XE_Out_Response/CustomerDetails/CustomerAddress2           Source/Ins:XE_Out_Response/CustomerDetails/CustomerAddress2           Source/Ins:XE_Out_Response/CustomerDetails/CustomerCN           Source/Ins:XE_Out_Response/CustomerDetails/CustomerCN           Source/Ins:XE_Out_Response/CustomerDetails/CustomerCreditSore           Source/Ins:XE_Out_Response/CustomerDetails/CustomerCreditSore           Source/Ins:XE_Out_Response/CustomerDetails/CustomerCreditSore           Source/Ins:XE_Out_Response/CustomerDetails/CustomerCreditSore           Source/Ins:XE_Out_Response/CustomerDetails/CustomerCreditSore           Source/Ins:XE_Out_Response/CustomerDetails/CustomerCreditSore           Source/Ins:XE_Out_Response/CustomerDetails/CustomerCreditSore           Source/Ins:XE_Out_Response/CustomerCreditSore           Source/Ins:XE_Out_Response/CustomerCreditSore           Source/Ins:XE_Out_Response/CustomerCreditSore     </td>	Value           Source/Ins:XE_Out_Response/ActionRequest           Source/Ins:XE_Out_Response/DateRequest           Source/Ins:XE_Out_Response/DateRequest           Source/Ins:XE_Out_Response/DateRequest           Source/Ins:XE_Out_Response/DateRequest           Source/Ins:XE_Out_Response/DateRequest           Source/Ins:XE_Out_Response/DateRequest           Source/Ins:XE_Out_Response/CustomerMamber           Source/Ins:XE_Out_Response/CustomerDetails/CustomerAddress1           Source/Ins:XE_Out_Response/CustomerDetails/CustomerAddress2           Source/Ins:XE_Out_Response/CustomerDetails/CustomerAddress2           Source/Ins:XE_Out_Response/CustomerDetails/CustomerCN           Source/Ins:XE_Out_Response/CustomerDetails/CustomerCN           Source/Ins:XE_Out_Response/CustomerDetails/CustomerCreditSore           Source/Ins:XE_Out_Response/CustomerDetails/CustomerCreditSore           Source/Ins:XE_Out_Response/CustomerDetails/CustomerCreditSore           Source/Ins:XE_Out_Response/CustomerDetails/CustomerCreditSore           Source/Ins:XE_Out_Response/CustomerDetails/CustomerCreditSore           Source/Ins:XE_Out_Response/CustomerDetails/CustomerCreditSore           Source/Ins:XE_Out_Response/CustomerDetails/CustomerCreditSore           Source/Ins:XE_Out_Response/CustomerCreditSore           Source/Ins:XE_Out_Response/CustomerCreditSore           Source/Ins:XE_Out_Response/CustomerCreditSore

Here is the end result with all fields properly mapped.

\_\_39. When you are finished examining the results, save the map.
\_\_40. Close the mapping editor.



The next map to be built is on the left side of the message flow.

\_\_\_41. Double-click on the JKE\_In\_to\_JKE\_Cobol node.

🕀 New Message Map for Mapping Node	<u>_ 🗆 ×</u>
Creates a map for a Mapping node. Properties, and optionally headers and the LocalEnvironment can be mapped.	
Select map sources	
Messages     Messages	
🗄 🖷 🗖 🗁 Data Sources	
Select map targets	
<ul> <li>Messages</li> <li>Messages</li> <li>Envelope [http://schemas.xmlsoap.org/soap/envelope/, JKE_Client_MessageSet, JKE_Client_MessageSet]</li> <li>Fault [http://schemas.xmlsoap.org/soap/envelope/, JKE_Client_MessageSet, JKE_Server_MessageSet]</li> <li>Fault [http://schemas.xmlsoap.org/soap/envelope/, JKE_Client_MessageSet, JKE_Client_MessageSet]</li> <li>Fault [http://schemas.xmlsoap.org/soap/envelope/, JKE_Server_MessageSet, JKE_Server_MessageSet]</li> <li>Fault [http://schemas.xmlsoap.org/soap/envelope/, JKE_Server_MessageSet, JKE_Server_MessageSet]</li> <li>Fault [http://schemas.xmlsoap.org/soap/envelope/, JKE_Server_MessageSet, JKE_Server_MessageSet]</li> <li>JKE_In_Request [http://www.ibm.lab.com, JKE_Client_MessageSet, JKE_Server_MessageSet]</li> <li>JKE_Out_Response [http://www.ibm.lab.com, JKE_Server_MessageSet, JKE_Client_MessageSet]</li> <li>JKE_Out_Response [http://www.ibm.lab.com, JKE_Server_MessageSet, JKE_Server_MessageSet]</li> <li>JKE_Out_Response [http://www.ibm.lab.com, JKE_Server_MessageSet, JKE_Server_MessageSet]</li> <li>JKE_Out_Response [http://www.ibm.lab.com, JKE_Server_MessageSet, JKE_Server_MessageSet]</li> <li>JKE_Out_Response [http://www.ibm.lab.com, JKE_Server_MessageSet, JKE_Server_MessageSet]</li> <li>JKE_Out_Response [http://www.ibm.lab.com, JKE_Server_MessageSet]</li> <li>SOAP_Domain_Msg [", JKE_Client_MessageSet, JKE_Client_MessageSet]</li> <li>SOAP_Domain_Msg [", JKE_COBOL_MessageSet, JKE_COBOL_MessageSet]</li> <li>MessageSet JKE_COUNTREQUEST [", JKE_COBOL_MessageSet, JKE_COBOL_MessageSet]</li> <li>MessageSet JKE_COBOL_MessageSet, JKE_COBOL_MessageSet]</li> </ul>	
Apply working set filtering to artifact selections on this page	
ок	Cancel

The mapping wizard presents the source and target options. You may be wondering about where all of this information comes from. Message definitions from all message sets in the Workspace are presented. (Note that BLOB is supported.)

- \_\_\_42. Click the check box for JKE\_In\_Request[JKE\_Server\_MessageSet] for the map source.
- \_\_\_43. Click the check box for msg\_JKEACCOUNTREQUEST[JKE\_COBOL\_MessageSet] for the map target.
- \_\_\_44. Make sure you have selected the correct items. There are JKE\_In\_Request items for both the Client and Server message sets (the Server one is correct).
- \_\_\_45. Click **OK**.



- \_\_\_46. Click on tns:JKE\_In\_Request in the source pane.
- \_\_\_47. Right-click on msg\_JKEACCOUNTREQUEST in the target pane.
- \_\_\_48. Select **Map by Name** from the menu.

Map By Name		_ 🗆 ×
lect how to map from source to target		
hoose from the following options to map from selected source to selected target. lick "Next" to select mappings to be created, or click "Finish" to create all mappings satisfying the chosen options.		
Mapping Scope		
• Map leaves of the selected nodes		
C Map immediate children of the selected nodes		
Name Matching Options		
Alphanumeric characters (Letters and digits only)		
Mapping Criteria		
Press F1 for more information when source and target names sasitfy more than one criterion.		
Create mappings between sources and targets with the same name		
Create mannings when source and target names are more similar than		
Clock insperies when source and carget names are more similar than	( makeh	Default
	 - materi	Deradic
Create mappings between source and target names defined as synonyms in file		
	 	Browse,
,		

- \_\_\_49. Check the box for Create mappings when source and target names are more similar than.
- \_\_\_50. Set the % match to **50** using the slider bar or by overtyping.
- \_\_51. **Uncheck** the box for Alphanumeric characters.
- \_\_52. Click Next.

ig the Edit Battom		
ectable Mapping Targets	Selectable Mapping Sources for Target	Source co
ACTION_REQUEST	ActionRequest	1
	DateBoquect	
	customerNumber, customerCountry (customerDetails)	2
	Lustomenname	
ADDRESS1	customerAddress1 (customerDetails)	1
ADDRESS2	customerAddress2 (customerDetails)	1
	customerState (customerDetails)	1
	customerPostalCode (customerDetails)	1
	customerCreditScore (sustemerDetails)	1
	costartFirstName (costartDetails)	1
	contact instrumine (contactDetails)	1
	contactPhoneNumber (contactDetails)	1
	comments	1
	requestDecision	1
ber of mappings found   15 Number of r	name matches found   16	
ber of mappings selected 15 Number of r	name matches selected 16	

Note that the **CUSTOMER\_ACCOUNT\_NUMBER** target has two sources.

- \_\_53. **Select** the line with two sources.
- \_\_54. Click on the **Edit** button.

🖶 Select Mapping Source	
customerCountry (customerDetails)	
Select All Deselect All	
0	OK Cancel

- \_\_55. Uncheck the box for **customerCountry** as this is not the proper source for this target.
- \_\_\_56. Click **OK**.

lectable Mapping Targets	Selectable Mapping Sources for Target	Source co
ACTION_REQUEST	ActionRequest	1
DATE_REQUEST	DateRequest	1
CUSTOMER_ACCOUNT_NUMBER	customerNumber	1
CUSTOMER_COMPANY_NAME	customerName	1
CUSTOMER_DETAILS		
🖃 🗹 🛄 jkeaccountrequest_customerdetails		
🗹 🖻 ADDRESS1	customerAddress1 (customerDetails)	1
🗹 🖻 ADDRESS2	customerAddress2 (customerDetails)	1
🗹 🖻 STATE	customerState (customerDetails)	1
POSTALCODE	customerPostalCode (customerDetails)	1
🗹 🖻 CREDIT_LIMIT	customerCreditLimit (customerDetails)	1
🗹 🖻 CREDIT_SCORE	customerCreditScore (customerDetails)	1
CONTACT_FIRST_NAME	contactFirstName (contactDetails)	1
CONTACT_LAST_NAME	contactLastName (contactDetails)	1
CONTACT_PHONE	contactPhoneNumber (contactDetails)	1
COMMENTS	comments	1
DECISION	requestDecision	1

**CUSTOMER\_ACCOUNT\_NUMBER** now has a single correct source.

\_\_57. Click on the **Finish** button to perform the map by name operation.

Source - Message "ths:JKE_In_Request"     Second State (Properties (Prope	Image: Starget - Message         Image: St	msg_KEACCOUNTREQUEST", Parser "MRM" pertiesType_msg_KEACCOUNTREQUEST) UNTREQUEST (kEACCOUNTREQUEST) QUEST (ksd:string -) QUEST (ksd:string -) R_COMPANY_NAME (xsd:string -) R_COMPANY_NAME (xsd:string -) R_COMPANY_NAME (xsd:string -) R_COTMPANE_(xsd:string -) COUTRY (xsd:string -) STATE (xsd:string -) STATE (xsd:string -) COUTRY (xsd:string -) COUTRY (xsd:string -) CREDIT_SCORE (xsd:string -) CREDIT_SCORE (xsd:string -) [_HAST_NAME (xsd:string -) HAST_NAME (xsd:string -) 
Map Script	Value	
JKE_Server_Flow_JKE_In_to_JKE_COBOL		
Parameters		
E 🗠 \$target		
	freuwee/teeuWE_Te_Deguest/ActionDeguest	
	\$source/ths: IKE_In_Request/DateRequest	
CUSTOMER ACCOUNT NUMBER	\$source/tns:JKE In Request/customerNumber	
CUSTOMER_COMPANY_NAME	\$source/tns:JKE_In_Request/customerName	
CUSTOMER_DETAILS		
e ADDRESS1	<pre>\$source/tns:JKE_In_Request/customerDetails/customerAddress1</pre>	
ADDRESS2	\$source/tns:JKE_In_Request/customerDetails/customerAddress2	
CITY	• • • •	
C STATE	\$source/tns:JKE_In_Request/customerDetails/customerState	
COUNTRY		
POSTALCODE	\$source/tns:JKE_In_Request/customerDetails/customerPostalCode	
	I feeuwee(the) WE Te Dequest(sustemerDetails(sustemerCredit) init	

As in the last mapping, two elements did not get mapped, namely CITY and COUNTRY.



- \_\_58. Click on **customerCity** in the Source pane.
- \_\_\_59. Right click on **CITY** in the Target pane.
- \_\_\_60. Select **Map from Source** from the menu.

🖅 🛗 \$source - Message "tns:JKE_In_Request"	🖅 🛗 \$target - Message "msg_JKEACCOUNTREQUEST", Parser "MRM"
🗄 🖻 Properties (PropertiesType_tns: JKE_In_Request)	Properties (Properties Type_msg_JKEACCOUNTREQUEST)
🖃 🖳 tns:JKE_In_Request (tns:_JKE_In_Request)	
ActionRequest (xsd:string)	← · · · · · · · · · · · · · · · · · · ·
DateRequest (xsd:string)	— ■ DATE_REQUEST (xsd:string -)
eff customerNumber (xsd:string)	CUSTOMER_ACCOUNT_NUMBER (xsd:string -)
customerName (xsd:string)	CUSTOMER_COMPANY_NAME (×sd:string -)
🗄 🖳 eustomerDetails (anonymous)	CUSTOMER_DETAILS (jkeaccountrequest_customerdetails)
e 4 customerAddress1 (xsd:string)	🖨 🖓 🛄 jkeaccountrequest_customerdetails
el customerAddress2 (xsd:string)	■ ■ ADDRESS1 (xsd:string -)
et stomerCity (xsd:string)	→ ADDRES52 (xsd:string -)
e customerState (xsd:string)	□ ITY (xsd:string -)
customerCountry (xsd:string)	E STATE (xsd:string -)
customerPostalCode (xsd:string)	
else customerCreditLimit (xsd:string)	POS O Undo Map from Source
eff customerCreditScore (xsd:string)	CREL Redo
🕂 🖳 contactDetails (anonymous)	CREI Revert
eff requestDecision (xsd:string)	CONTACT_FIR
eff comments (xsd:string)	CONTACT_LAS     Map from Source     Atc+c, M
	CONTACT_PHC REPCONTACT_PHC Alt#C, N
	COMMENTS (x* Enter Expression Alt+C, T

- \_\_61. Click on **customerCountry** in the Source pane.
- \_\_\_62. Right click on **COUNTRY** in the Target pane.
- \_\_63. Select **Map from Source** from the menu.

III *JKE_Server_Flow.msgflow	
😑 🛗 \$source - Message "tns: JKE_In_Request"	😑 😼 \$target - Message "msg_JKEACCOUNTREQUEST", Parser "MRM"
Properties (PropertiesType_tns:JKE_In_Request)	B     C     Properties (PropertiesType_msg_IKEACCOUNTREQUEST)
- 😓 tns:JKE_In_Request (tns:_JKE_In_Request)	
ContractionRequest (xsd:string)	ACTION_REQUEST (xsd:string -)
DateRequest (xsd:string)	DATE_REQUEST (xsd:string -)
customerNumber (xsd:string)	CUSTOMER_ACCOUNT_NUMBER (xsd:string -)
CustomerName (xsd:string)	CUSTOMER_COMPANY_NAME (xsd:string -)
😑 🖻 customerDetails (anonymous)	CUSTOMER_DETAILS (jkeaccountrequest_customerdetails)
customerAddress1 (xsd:string)	🖻 🖳 🛄 jkeaccountrequest_customerdetails
customerAddress2 (xsd:string)	Contract (xsd:string -)
customerCity (xsd:string)	ADDRES52 (xsd:string -)
customerState (xsd:string)	CITY (xsd:string -)
customerCountry (xsd:string)	STATE (xsd:string -)
customerPostalCode (xsd:string)	COUNTRY (xsd:string -)
customerCreditLimit (xsd:string)	POSTALCODE (xsd:string -)
e customerCreditScore (xsd:string)	CREDIT_LIMIT (xsd:int -)
contactDetails (anonymous)	CREDIT_SCORE (xsd:short -)
contactFirstName (xsd:string)	CONTACT_FIRST_NAME (×sd:string -)
ContactLastName (xsd:string)	CONTACT_LAST_NAME (xsd:string -)
ContactPhoneNumber (xsd:string)	CONTACT_PHONE (xsd:string -)
Contract (contract (contract))	COMMENTS (xsd:string -)
	DECISION (xsd:string -)

\_\_64. Verify that all items have been mapped. The lower section is not shown.

When dealing with fixed format messages, such as COBOL, every field must be mapped unless that field has been defined with a default value. It is also worth noting that the COBOL items do have a max length associated with each field. When mapping from variable length fields, such as XML, if a source field is too long it will be truncated in the target. With the sample messages provided with the lab, this is not the case.



\_\_\_66. Close the mapping editor.



\_\_\_67. **Double click** on the third Mapping node, **JKE\_COBOL\_to\_JKE\_Out** (lower right). This time the source will be COBOL.

PNew Message Map for Mapping Node	
Creates a map for a Mapping node. Properties, and optionally headers and the LocalEnvironment can be mapped. Select map sources	
<ul> <li>Messages</li> <li>Envelope [http://schemas.xmlsoap.org/soap/envelope/, JKE_Client_MessageSet, JKE_Client_MessageSet]</li> <li>Envelope [http://schemas.xmlsoap.org/soap/envelope/, JKE_Server_MessageSet, JKE_Server_MessageSet]</li> <li>Fault [http://schemas.xmlsoap.org/soap/envelope/, JKE_Client_MessageSet, JKE_Server_MessageSet]</li> <li>Fault [http://schemas.xmlsoap.org/soap/envelope/, JKE_Server_MessageSet, JKE_Server_MessageSet]</li> <li>Fault [http://schemas.xmlsoap.org/soap/envelope/, JKE_Server_MessageSet, JKE_Server_MessageSet]</li> <li>JKE_In_Request [http://www.ibm.lab.com, JKE_Client_MessageSet, JKE_Server_MessageSet]</li> <li>JKE_Out_Response [http://www.ibm.lab.com, JKE_Server_MessageSet, JKE_Server_MessageSet]</li> <li>JKE_Out_Response [http://www.ibm.lab.com, JKE_Server_MessageSet]</li> <li>JKE_Out_Response [http://www.ibm.lab.com, JKE_Server_MessageSet]</li> <li>Mage_Server_MessageSet, JKE_Client_MessageSet]</li> <li>JKE_Out_Response [http://www.ibm.lab.com, JKE_Server_MessageSet]</li> <li>JKE_OUt_Response [http://www.ibm.lab.com, JKE_Server_MessageSet]</li> <li>JKE_OUt_Response [http://www.ibm.lab.com, JKE_Client_MessageSet]</li> <li>Mage_Server_MessageSet, JKE_Client_MessageSet]</li> <li>JKE_OUt_Response [http://www.ibm.lab.com, JKE_Server_MessageSet]</li> <li>JKE_OUT_Response [http://www.ibm.lab.com, JKE_Client_MessageSet]</li> <li>JKE_Server_MessageSet]</li> <li>JKE_Server_MessageSet]</li> <li>JKE_Server_MessageSet]</li> <li>JKE_Server_MessageSet]</li> <li>JKE_Server_MessageSet]</li> <li>JKE_Server</li></ul>	
Select map targets	
<ul> <li>Messages</li> <li>Envelope [http://schemas.xmlsoap.org/soap/envelope/, JKE_Client_MessageSet, JKE_Client_MessageSet]</li> <li>Envelope [http://schemas.xmlsoap.org/soap/envelope/, JKE_Server_MessageSet, JKE_Client_MessageSet]</li> <li>Fault [http://schemas.xmlsoap.org/soap/envelope/, JKE_Client_MessageSet, JKE_Client_MessageSet]</li> <li>Fault [http://schemas.xmlsoap.org/soap/envelope/, JKE_Client_MessageSet, JKE_Client_MessageSet]</li> <li>KE_In_Request [http://www.ibm.lab.com, JKE_Client_MessageSet, JKE_Server_MessageSet]</li> <li>JKE_In_Request [http://www.ibm.lab.com, JKE_Server_MessageSet, JKE_Server_MessageSet]</li> <li>JKE_Out_Despece [http://www.ibm.lab.com, JKE_Server_MessageSet, JKE_Server_MessageSet]</li> <li>JKE_Out_Response [http://www.ibm.lab.com, JKE_Server_MessageSet]</li> <li>JKE_OUT_Response [http://www.ibm.lab.com]</li> <li>JKE_OUT_Response [http://www.ibm.</li></ul>	
Apply working set filtering to artifact selections on this page	
ОК	Cancel

- \_\_68. Click the check box for msg\_JKEACCOUNTREQUEST[JKE\_COBOL\_MessageSet] for the map source.
- \_\_\_69. Click the check box for JKE\_Out\_Response[JKE\_Server\_MessageSet] for the map target.
- \_\_\_70. Make sure you have selected the correct items. There are JKE\_Out\_Response items for both the Client and Server message sets (the server one is correct.)
- \_\_\_71. Double check you selections to make sure they are accurate.
- \_\_\_72. Click **OK.**

	urce - Message "msg_IKEACCOUNTREQUEST" Properties (Properties Type, msg_IKEACCOUNTREQUEST) msg_IKEACCOUNTREQUEST (IKEACCOUNTREQUEST)	transformer - Message "tns:JKE_Out_Response", Parser "XMLNSC"      For Properties (PropertiesType_tns:JKE_Out_Response)      trs:JKE_Out_Response      Undo Map from Source     Redo     Revert
		Map from Source         Alt+C, M           Map by Name         Alt+C, N           Enter Expression         Alt+C, T           Accumulate         Alt+C, I
73.	Highlight msg_JKEACCOUNTREQUEST in	n the <b>sourc</b> e pane.
74.	Right-click on tns:JKE_Out_Response in t	he <b>target</b> pane.

\_\_\_75. Select **Map by Name** from the menu.

Map By Name		
ect how to map from source to target		
noose from the following options to map from selected source to selected target. ck "Next" to select mappings to be created, or click "Finish" to create all mappings satisfying the chosen options.		
lapping Scope		
Map leaves of the selected nodes		
C Map immediate children of the selected nodes		
ame Matching Options		
Case sensitive Alphanumeric characters (Letters and digits only)		
lapping Criteria Press F1 for more information when source and target names sasitfy more than one criterion. Create mappings between sources and targets with the same name		
Create mappings when source and target names are more similar than	▶ 50 % match	Default
		Browse

- \_\_\_76. Check the box for Create mappings when source and target names are more similar than.
- \_\_\_77. Set the % match to 50 using the slider bar or by overtyping.
- \_\_\_78. **Uncheck** the box for **Alphanumeric** characters.
- \_\_\_79. Click **Next**. Remember that this time you are mapping from COBOL to XML.

ectable Mapping Targets	Selectable Mapping Sources for Target	Joure co
🔽 🖻 ActionRequest	ACTION_REQUEST	1
🗹 🖻 DateRequest	DATE_REQUEST	1
🗹 🖻 customerNumber	CUSTOMER_ACCOUNT_NUMBER	1
🗹 🖻 customerName	CUSTOMER_COMPANY_NAME	1
🗹 🖻 customerDetails		
🗹 🖻 customerAddress1	ADDRESS1 (CUSTOMER_DETAILS)	1
🗹 🖻 customerAddress2	ADDRESS2 (CUSTOMER_DETAILS)	1
🗹 🖻 customerState	STATE (CUSTOMER_DETAILS)	1
🗹 🖻 customerCountry	COUNTRY (CUSTOMER_DETAILS)	1
🗹 🖻 customerPostalCode	POSTALCODE (CUSTOMER_DETAILS)	1
🗹 🖻 customerCreditLimit	CREDIT_LIMIT (CUSTOMER_DETAILS)	1
🗹 🖻 customerCreditScore	CREDIT_SCORE (CUSTOMER_DETAILS)	1
🗹 🖻 contactDetails		
🗹 🖻 contactFirstName	CONTACT_FIRST_NAME	1
🗹 🖻 contactLastName	CONTACT_LAST_NAME	1
🗹 🖻 contactPhoneNumber	CONTACT_PHONE	1
🗹 🖻 requestDecision	DECISION	1
🗹 🖻 comments	COMMENTS	1
ber of mappings found 16 Nu	mber of name matches found 16	
have all an and a share of the	where of a construction and where a large start of the	

Mapping in this direction does not create any targets that have more than one source.

\_\_\_80. Click the **Finish** button

Image: Space - Message "msg_KEACCOUNTREQUEST"         Image: REACCOUNTREQUEST (MEACCOUNTREQUEST)         Image: REACCOUNT_NUMBER (Meastring -)         Image: REACCOUNT_NUMBER (Meastring -)         Image: REACCOUNTREQUEST (Meaccountrequest_customer_details)         Image: REACCOUNTREQUEST (Meastring -)         Image: REACCOUNTREQUEST (Meastring -)         Image: REACCOUNTREQUEST (Meastring -)         Image: REACCOUNTREQUEST (Meastring -)         Image: REACCOUNTCT_HONE (Meastring -)         Image: REACCOUNTCT_HONE (Meastring -)         Image: REACCOUNTCT_HONE (Meastring -)         Image: REACCOUNTCT_MEANE (Meastring -)         Image: REACCOUNTCT_HONE (Meastring -)         Image: REACCOUNTCT_MAINE (Meastring -)         Image: Reaccountereaction (Meastring -)      <	Image: Starget - Message "trs::KE_Out_Response", Parser "XMLNSC"         Image: Starget - Message "trs::KE_Out_Response)         Image: Starget - Message (trs:::ME_Out_Response)         Image: S
Map Script	Value
E 🐺 JKE_Server_Flow_JKE_COBOL_To_JKE_Out	
Parameters	
🖃 🖾 \$target	
Properties	
E Lo ths: JKE_Out_Response	
e ActionRequest	<pre>\$source/msg_JKEACCOUNTREQUEST/ACTION_REQUEST</pre>
DateRequest	<pre>\$source/msg_IKEACCOUNTREQUEST/DATE_REQUEST</pre>
customerNumber	\$source/msg_JKEACCOUNTREQUEST/CUSTOMER_ACCOUNT_NUMBER
e customerName	<pre>\$source/msg_3KEACCOUNTREQUEST/CUSTOMER_COMPANY_NAME</pre>
customerDetails	
contactDetails	
e requestDecision	<pre>\$source/msg_JKEACCOUNTREQUEST/DECISION</pre>
e comments	\$source/msg_IKEACCOUNTREQUEST/COMMENTS

A single Target did not get mapped, namely **customerCity**.

🖅 🏙 \$source - Message "msg_JKEACCOUNTREQUEST"	🖂 😼 \$target - Message "tns:JKE_Out_Re	esponse", Parser '
Properties (PropertiesType_msg_JKEACCOUNTREQUEST)	🕂 🖳 🖻 Properties (Properties Type_tn	is:JKE_Out_Respc
🗄 🖳 🛃 msg_JKEACCOUNTREQUEST (JKEACCOUNTREQUEST)	🗄 🖳 🔂 ths: JKE_Out_Response (ths: _	JKE_Out_Respon:
ACTION_REQUEST (xsd:string -)	Contraction Contr	ig)
DATE_REQUEST (xsd:string -)	e ▶ DateRequest (xsd:string)	)
CUSTOMER_ACCOUNT_NUMBER (xsd:string -)	CustomerNumber (×sd:str	ring)
CUSTOMER_COMPANY_NAME (xsd:string -)	customerName (xsd:strin	ig)
CUSTOMER_DETAILS (jkeaccountrequest_customerdetails)	customerDetails (anonym	ious)
🖻 🖳 jkeaccountrequest_customerdetails	customerAddress1 (	(xsd:string)
e ADDRESS1 (xsd:string -)	customerAddress2 (	(xsd:string)
elaponeses (veductring -)	N Lindo Map hu Namo	2
CITY (xsd:string -)		ng)
	Kedo	tring)
COUNTRY (xsd:string -)	Revert	d:string)
POSTALCODE (xsd:string -)	Map from Source Alt+C. M	string)
CREDIT_LIMIT (xsd:int -)	Albert Million Albert Million	d:string)
CREDIT_SCORE (xsd:short -)	Enter Expression 01t+C T	
CONTACT_FIRST_NAME (xsd:string -)	Enter Expression Altere, i	tring)

- \_\_\_81. Click on **CITY** in the **Source** pane.
- \_\_\_82. Right click on **customerCity** in the **Target** pane.
- \_\_\_83. Select **Map from Source** from the menu.

COL *JKE_Server_Flow.msgflow	
🖅 🛗 \$source - Message "msg_JKEACCOUNTREQUEST"	🖅 😼 \$target - Message "tns:JKE_Out_Response", Parser "XMLNSC"
Properties (PropertiesType_msg_3KEACCOUNTREQUEST)	🗄 🖻 Properties (Properties Type_tns: JKE_Out_Response)
📄 🖳 msg_JKEACCOUNTREQUEST (JKEACCOUNTREQUEST)	E- L ths: JKE_Out_Response (ths: _JKE_Out_Response)
CTION_REQUEST (xsd:string -)	■ Contract (xsd:string)
DATE_REQUEST (xsd:string -)	DateRequest (xsd:string)
CUSTOMER_ACCOUNT_NUMBER (xsd:string -)	eustomerNumber (xsd:string)
CUSTOMER_COMPANY_NAME (xsd:string -)	e customerName (xsd:string)
CUSTOMER_DETAILS (jkeaccountrequest_customerdetails)	customerDetails (anonymous)
📄 📋 jkeaccountrequest_customerdetails	e customerAddress1 (xsd:string)
ADDRESS1 (xsd:string -)	e customerAddress2 (xsd:string)
ADDRESS2 (xsd:string -)	e customerCity (xsd:string)
CITY (xsd:string -)	CustomerState (xsd:string)
STATE (xsd:string -)	e customerCountry (xsd:string)
COUNTRY (xsd:string -)	e customerPostalCode (xsd:string)
POSTALCODE (xsd:string -)	customerCreditLimit (xsd:string)
CREDIT_LIMIT (xsd:int -)	CustomerCreditScore (xsd:string)
CREDIT_SCORE (xsd:short -)	e contactDetails (anonymous)
CONTACT_FIRST_NAME (xsd:string -)	contactFirstName (xsd:string)
CONTACT_LAST_NAME (xsd:string -)	ContactLastName (xsd:string)
CONTACT_PHONE (xsd:string -)	ContactPhoneNumber (xsd:string)
COMMENTS (xsd:string -)	e requestDecision (xsd:string)
DECISION (xsd:string -)	e comments (xsd:string)

All the fields are now mapped. This completes the mapping portion of this lab.



\_\_85. Close the mapping editor.



There is one final task before testing the message flow. The COBOL message will be sent to a back-end (simulated) CICS system in the next lab. Since the message originated as a SOAP Web service, it does not have a WebSphere MQ Message Descriptor (MQMD) header but it does have the HTTPInput header that was shown in the AccountUpdate.txt trace file. The HTTPInput header must be removed before sending the message to CICS via an MQOutput node. An MQMD will be added automatically.

- \_\_\_86. Open the **HTTP** drawer.
- \_\_\_87. Drag an **HTTPHeader** node to the message flow placing it after the **JKE\_In\_to\_JKE\_COBOL** mapping node.



- \_\_88. Select the **HTTPInput** tab.
- \_\_\_89. Click the radio button for **Delete header**.



- \_\_90. Select the HTTPResponse tab.
- \_\_\_91. Click the radio button for **Delete header**.



Remove the existing connection between the **Operation1\_JKE\_WSDL\_ClientService** node and the **SOAP Reply** node.

- \_\_92. Right click on the existing connection between the **Route** and **AccountUpdate** nodes.
- \_\_93. Select **Delete** from the menu.
- \_\_\_94. Right click on the existing connection between the **AccountUpdate** and **SOAP Reply** nodes.
- \_\_95. Select **Delete** from the menu.



Wire the new nodes as shown.

- \_\_96. The JKE\_Out\_Reponse terminal of the Operation1\_JKE\_WSDL\_ClientService node is connected to the JKE\_Out\_to\_JKE\_COBOL node.
- \_\_97. Verify that the **Account\_Update** path from the Route node is connected to the **JKE\_In\_to\_JKE\_COBOL** node, which is then connected to the **HTTPHeader1** node.
- \_\_98. The JKE\_Out\_to\_JKE\_COBOL node is also connected to the HTTPHeader1 node.
- \_\_\_99. The **HTTPHeader1** is connected to the **AccountUpdate** Trace node. This will allow us to see the message tree after it has been transformed by the Mapping nodes from XML to COBOL.
- \_\_100. The AccountUpdate Trace node is connected to the JKE\_COBOL\_to\_JKE\_Out node which is then connected to the SOAP Reply node.
- \_\_101. Verify that the connections are correct.



It is now time to test the Account\_Open and Account\_Update paths using the saved test configuration from the previous lab.

- \_\_103. Select the JKE\_Server\_Flow\_All.mbtest test configuration in the Flow Tests folder under the JKE\_Server\_ project.
- \_\_104. Double-click on the file to launch the Test Client.



You want to rerun the second test, which was Account Open. You can validate that the test is for Account Open by highlighting the second **Sending Message to "Input"** line and looking at the **Action Request** field in the message to verify that it contains an **'O**'.



- \_\_105. Right-click on the second Invoke Message Flow entry.
- \_\_106. Select Re-run.

sage Flow Test Events	General Properties		
	<ul> <li>Detailed Properties</li> </ul>		
Toyoke Message Flow	Endpoint LIBL: http://localbost:7800/	1KE Server	
Message flows deployment successfully completed		342_331101	
E & Starting	Message		
Sending Message to "SOAP Input"	Body: View as XML structure		
Received HTTP Reply message for "SOAP Input"	Name	Value	
MO Queue Monitor "LAB. ACCOUNTCLOSE"	Soapeny:Envelope	1000	
Stopped listening for response	xmins:soapeny	http://schemas.xmlsoap.org/soap/envelope/	
	☐ soapenv:Body	······································	
The second secon	NS1:JKE_Out_Respor		
Message flows deployment successfully completed	xmlns:NS1	http://www.ibm.lab.com	
E & Starting	ActionRequest	0	
Sending Message to "SOAP Input"	DateRequest	2009-10-16	
Received HTTP Reply message for "SOAP Input"	customerNumber	3	
Stopped listening for response	customerName	ACME	
	customerDetails		
	customerAddr	1254 Main St	
Message flows deployment successfully completed	customerAddr	Suite 12	
E & Starting	customerCity	Dime Box	
Sending Message to "SOAP Input"	customerStati	18 LICA	
Received HTTP Reply message for "SOAP Input"	customerCour	76543	
Stopped listening for response	customerCred	1200	
	customerCred	130	
Toyoke Message Flow	contactDetails	100	
Message flows deployment successfully completed	contactFirstN	Freddy	
E & Starting	contactLastNa	Bloggs	
	contactPhone	555-123-6543	
Received HTTP Reply message for "SOAP Input"	requestDecision	Y	
	comments	Request Approved	

A response is returned to the Web Services client and the Test Client continues to wait for a response on the LAB.ACCOUNTCLOSE queue.

E_Server_Flow.msgflow			
sage Flow Test Events	General Properties		
	<ul> <li>Detailed Properties</li> </ul>		
I E, Invoke Message Flow	Endpoint URL: http://localhost:7800	)/JKE Server	
Message flows deployment successfully completed	r Message	·	
E 🍾 Starting			
🕺 Sending Message to "SOAP Input"	Body: View as XML structure		_
Received HTTP Reply message for "SOAP Input"	Name	Value	
A MQ Queue Monitor "LAB.ACCOUNTCLOSE"	soapenv:Envelope		
3 Stopped listening for response	xmlns:soapenv	http://schemas.xmlsoap.org/soap/envelope/	
	soapenv:Body		
] 🖹 Invoke Message Flow	NS1:JKE_Out_Responses	r i i i i i i i i i i i i i i i i i i i	
✓ Message flows deployment successfully completed	×mlns:NS1	http://www.ibm.lab.com	
E 🧏 Starting	ActionRequest	0	
Sending Message to "SOAP Input"	DateRequest	2009-10-16	
Received HTTP Reply message for "SOAP Input"	customerNumber	3	
Stopped listening for response	customerName	ACME	
	<ul> <li>customerDetails</li> </ul>		
E Inveke Message Flow	customerAdd	r 1254 Main St	
Message flows dealerment sussessfully sempleted	customerAdd	r Suite 12	
<ul> <li>Message nows deployment successibility completed</li> <li>Charting</li> </ul>	customerCity	Dime Box	
	customerStat	i TX	
2 Sending Message to "SOAP Input"	customerCou	r USA	
Received HTTP Reply message for "SOAP Input"	customerPost	76543	
big Stopped listening for response	customerCrea	1200	
Stopped	customerCrea	130	
E Invoke Message Flow	contactDetails		
<ul> <li>Message flows deployment successfully completed</li> </ul>	contactFirstN	Freddy	
E 🌇 Starting	contactLastN	a Bloggs	
💹 Sending Message to "SOAP Input"		0 000-123-0043	
🥂 Received HTTP Reply message for "SOAP Input"	requestDecision	Y Democratic Account of	
Stopped listening for response	comments	Request Approved	

\_\_107. Press the small square icon to stop the test. The flow test is waiting for a message to arrive on the account close queue, which will not happen for an open request.

\_\_108. Ensure the test has stopped......



- \_\_109. Click on the third **Sending Message to "Input"** entry.
- \_\_110. Verify that it is for the Account Update request, as shown above.



- \_\_111. Right-click on the third **Invoke Message Flow** entry.
- \_\_\_112. Select **Re-run**.



A response is returned to the Web Services client and the Test Client continues to wait for a response on the LAB.ACCOUNTCLOSE queue.

\_\_113. Either allow the test Client to timeout or use the Stop icon in the upper left.

Events		
Message Flow Test Events	General Properties	
> 🗉 🕼 🚚 🔛 🔲 🖼 🖄	<ul> <li>Detailed Properties</li> </ul>	
E Invoke Message Flow	Endpoint URL: http://localhost:7800/JKE_Serv	er
Message flows deployment successfully completed	- Message	
🖃 💦 Starting		
🕺 Sending Message to "SOAP Input"	Body: Wiew as XML structure	
Received HTTP Reply message for "SOAP Input"	Name	Value
A MQ Queue Monitor "LAB.ACCOUNTCLOSE"	<ul> <li>soapenv:Envelope</li> </ul>	
E), Stopped listening for response	xmlns:soapenv	http://schemas.xmlsoap.org/soap/envelope/
Stopped	soapenv:Body	
🖃 📑 Invoke Message Flow	NS1:JKE_Out_Response	
Message flows deployment successfully completed	×mins:N51	http://www.ibm.lab.com
🖂 💦 Starting	ActionRequest	U
👮 Sending Message to "SOAP Input"	DateRequest	10/12/2007
Received HTTP Reply message for "SOAP Input"	customerNumber	1
E) Stopped listening for response	customerName	ACME
Stopped	☐ customerDetails	1054 Male Ch
🖃 📑 Invoke Message Flow	customerAddress1	1254 Main St
Message flows deployment successfully completed	customerAddress2	Suite 12
E 隆 Starting	customercity	Diffe Box
Sending Message to "SOAP Input"	customerCountry	10
Received HTTP Reply message for "SOAP Input"	customer Country	76543
Stopped listening for response	customerCreditLimit	1200
Stopped	customerCreditScore	123
E E Invoke Message Flow	E contactDetails	
Message flows deployment successfully completed	contactFirstName	Freddy
Starting	contactLastName	Bloggs
Sending Message to "SOAP Input"	contactPhoneNumber	555-123-6543
Perceived HTTP Perly message for "SOAP Input"	requestDecision	Y
Stopped listening for response	comments	Just a Comment
E P Invoke Mercane Flow		
Mercane flows deployment successfully completed		
Pressage nows deployment successibility completed      Pressage nows deployment successibility completed      Pressage nows deployment successibility completed		
Sending Message to "SOOP Input"		
Deceived HTTP Deply message for "SOAP Toput"		
Koterved in the kepty message for BOAP input		
Channed Extension for response		
a prohhen		

\_\_114. Ensure that the test has stopped.



\_\_115. Close, but do not save, the Test Client.

Address 🖘 C:\				
Folders ×	Name 🔺	Size Type		
🚱 Desktop	DB2	File Folder		
🗉 📋 My Documents	Documents and Settings	File Folder		
🗉 👮 My Computer	i IBM	File Folder		
E Selecal Disk (C;)	🗀 idsinstinfo	File Folder		
E DB2	🔁 idsslapd-Idapsrv1	File Folder		
Documents and Settings	itcamdla 🔁	File Folder		
	DIVDI-Directory	File Folder		
idsinstinfo	Caldapsrv1	File Folder		
Identified to a stand dansrv1	ETA-INF	File Folder		
	DpenSSL	File Folder		
	C PKWARE	File Folder		
E C LDAPSRV1	Print_Key_2000	File Folder		
	🗀 Printkey	File Folder		
	📄 Program Files	File Folder		
	C SD_WORK	File Folder		
Print Key 2000	🗀 student	File Folder		
Printkey	i 🗀 temp	File Folder		
🛨 🦳 Program Files	🗀 user	File Folder		
		File Folder		
	🗐 AccountUpdate.txt	23 KB Text Document		
		51 KB Microsoft Common Console Document		
	📔 🛅 Events-Services.msc	54 KB Microsoft Common Console Document		
	🔲 🖺 XML Ioput Trace.txt	18 KB Text Document		

\_\_\_116. Double-click the **AccountUpdate.txt** trace file.

There should be two additional entries, one for Account\_Open and one for Account\_Update. The new entries should be at the end of the trace file.



Here is a trace view of the message tree after it has been "reshaped" for the output COBOL message. The element names reflect those of the COBOL copybook that was imported to define the message. This message tree is now ready to be serialized into a COBOL bit stream. But it is important to understand that the data is still physical neutral here in the message tree.

- \_\_117. Close the Notepad session.
- \_\_\_118. Minimize the Windows Explorer session.



This is the completed message flow. In the next lab, nodes will be added to allow the message flow to pass an Account\_Open and an Account\_Update message to CICS.

This is the end of Lab 8

## Appendix A. Notices

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