

IBM WEBSPPHERE ADAPTER 7.0 – LAB EXERCISE

E-mail Adapter outbound lab

What this exercise is about	1
Lab requirements	1
What you should be able to do	2
Introduction	3
Exercise instructions	4
Part 1: Initialize the workspace and prepare for the lab.....	6
Part 2: Simple e-mail scenario	7
2.1. Configure simple e-mail using the external service wizard.....	8
2.2. Test simple e-mail scenario	15
Part 3: E-mail pass through scenario.....	20
3.1. Configure pass through using the external service wizard	21
3.2. Test e-mail pass through scenario.....	29
Part 4: E-mail content specific (non-pass through) scenario	33
4.1. Configure non-pass through using the external service wizard.....	34
4.2. Test E-mail non pass through scenario	44
Part 5: Fixed structure scenario	48
5.1. Configure fixed structure using the external service wizard	49
5.2. Test fixed e-mail scenario	61
Solution instructions	65
What you did in this exercise	67
Task: Adding remote server to the WebSphere Integration Developer test environment	68

What this exercise is about

The objective of this lab is to provide you with an understanding of the IBM WebSphere Adapter for E-mail outbound processing. In this lab you will deploy the WebSphere Adapter for E-mail, using WebSphere Integration Developer, and integrate it with an SCA application that processes outbound requests to the file system.

Lab requirements

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

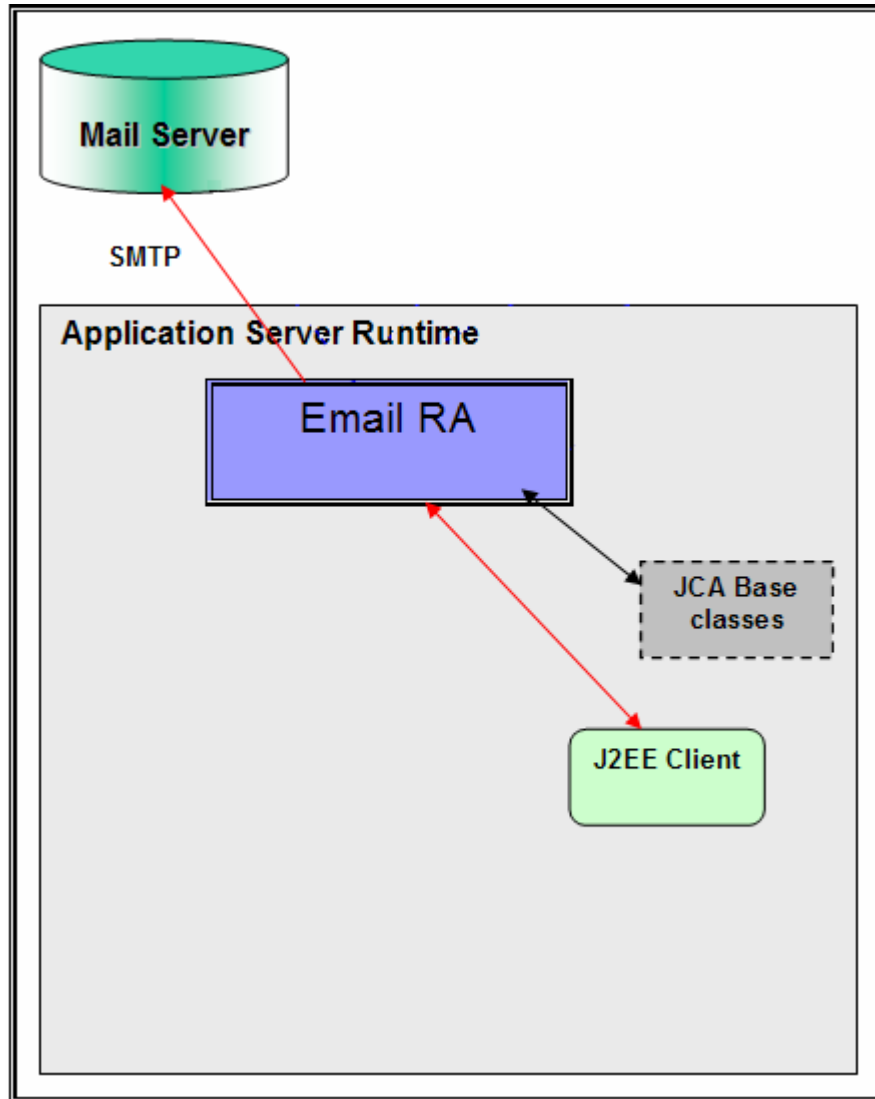
IBM WEBSHERE ADAPTER 7.0 – LAB EXERCISE

- WebSphere Integration Developer V7.0 installed and updated with latest fixes
- WebSphere Process Server V7.0 test environment installed and updated with latest fixes
- Install and configure the hMailServer (your e-mail server for this lab) and Mozilla Thunderbird (your e-mail client for this lab) by following the instructions in the lab: **Install and configure e-mail server and client lab**
- Extract Labfiles70.zip to your C:\ (your root) drive

What you should be able to do

- Import E-mail adapter RAR file into WebSphere Integration Developer
 - Use External Service wizard to configure the Managed Connection Factory Properties and Resource Adapter Properties to generate Business Objects and other artifacts
 - Deploy the adapter application onto the WebSphere Process Server test environment
 - Test the deployed application for simple e-mail, pass through, and non-pass through scenarios
 - Restore the server configuration
-

IBM WEBSPHERE ADAPTER 7.0 – LAB EXERCISE

Introduction

The adapter receives an E-mail business object instance from the Java™ EE Client during outbound. The request to the E-mail resource adapter from a Java EE client indicates information required for creating an e-mail and the same is contained in the E-mail business object. The information on the mail server to connect, and the authentication details to connect can be provided both in Connection Spec and MCF properties. As a part of the E-mail business object request, the Java EE client needs to send the e-mail header information, like the mail addresses to which the mail needs to be sent, e-mail attachments if any, location of any files that need to be attached to the e-mail, and so on.

The E-mail resource adapter transforms the E-mail business object into an E-mail. Based on all the provided information, the content within the mailContent attribute of the E-mail business object gets transformed into an e-mail with all specified attachments. You can optionally specify a set of files from the file system to be attached to the e-mail. The E-mail resource adapter then picks the files from the file system at paths specified by you, and attaches the files to the e-mail that is created as response. The E-mail resource adapter sends the created e-mail through SMTP to the configured server

IBM WEBSHERE ADAPTER 7.0 – LAB EXERCISE

Exercise instructions

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

Reference variable	Windows location	AIX® and UNIX® location
<WID_HOME>	C:\Program Files\IBM\WID70	
<WPS_HOME>	C:\<WID_HOME>\runtimes\bi_v70	
<EMAILADAPTER_HOME>	<WID_HOME>\ResourceAdapters\Email_7.0.0.0\deploy	
<LAB_FILES>	C:\Labfiles70	/tmp/Labfiles70
<WORKSPACE>	<LAB_FILES>\EmailOutbound\workspace	
<EMAILFILES>	<LAB_FILES>\EmailFiles	
<TEMP>	C:\temp	/tmp

Windows users: When directory locations are passed as parameters to a Java program such as EJBdeploy or wsadmin, you must replace the backslashes with forward slashes to follow the Java convention. For example, replace C:\Labfiles70\ with C:/Labfiles70/.

IBM WEBSHERE ADAPTER 7.0 – LAB EXERCISE

Instructions if using a remote server for testing

Note that the previous table is relative to where you are running WebSphere Integration Developer. The following table is related to where you are running the remote test environment:

Reference variable	Example: Remote Windows test server location	Example: Remote z/OS [®] test server location	Input your values for the remote location of the test server
<SERVER_NAME>	server1	sssr011	
<WAS_HOME>	C:\Program Files\IBM\WebSphere\AppServer	/etc/sscell/AppServer	
<HOSTNAME>	localhost	mvsxxx.rtp.raleigh.ibm.com	
<SOAP_PORT>	8880	8880	
<TELNET_PORT>	N/A	1023	
<PROFILE_NAME>	AppSrv01	default	
<USERID>	N/A	ssadmin	
<PASSWORD>	N/A	fr1day	

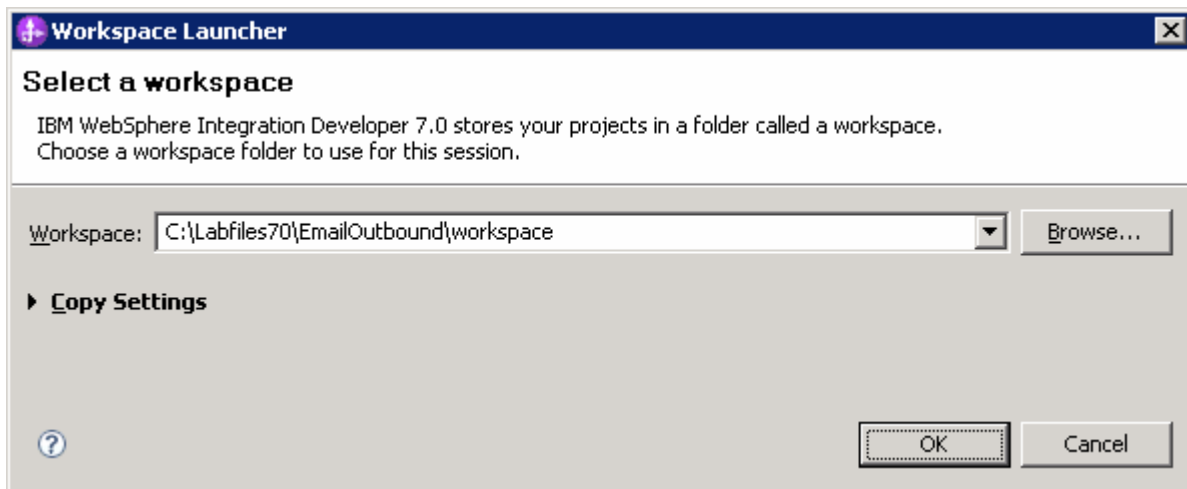
Instructions for using a remote testing environment, such as z/OS, AIX or Solaris, can be found at the end of this document, in the section [“Task: Adding remote server to WebSphere Integration Developer test environment”](#).


IBM WEBSHERE ADAPTER 7.0 – LAB EXERCISE

Part 1: Initialize the workspace and prepare for the lab

This part of the lab, you will start the WebSphere Integration Developer V7.0 with a new workspace and extract the lab files to your local system.

- ___ 1. Extract the provided Labfiles70.zip to your C:\ (root) drive, if you have not already done so. This will create the necessary subdirectory structure to complete the lab, and provides you with sample text files
- ___ 2. Start the WebSphere Integration Developer V7.0 with a new workspace
 - ___ a. Select **Start > All Programs > IBM WebSphere Integration Developer > IBM WebSphere Integration Developer V7.0 > WebSphere Integration Developer V7.0**
 - ___ b. From the Workspace Launcher window, enter **<WORKSPACE>** for the Workspace field



- ___ 3. Click the  button on the right corner to close the Welcome page and proceed with the workbench

IBM WEBSPHERE ADAPTER 7.0 – LAB EXERCISE

Part 2: Simple e-mail scenario

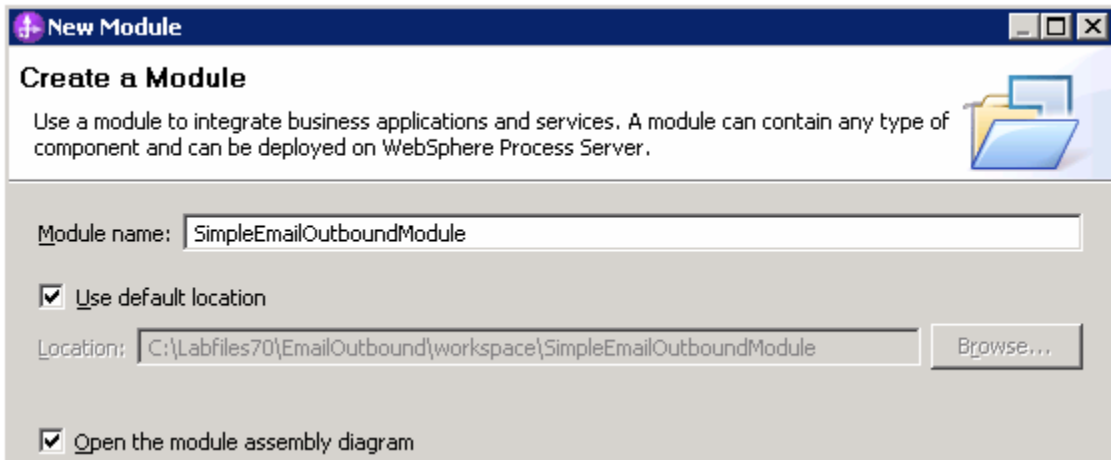
In this part, you will use this new External Service feature to create/configure the Data Binding, Operations, which generates the business objects and other artifacts for simple e-mail scenario and then test the configuration with some test e-mails.

IBM WEBSHERE ADAPTER 7.0 – LAB EXERCISE

2.1. Configure simple e-mail using the external service wizard

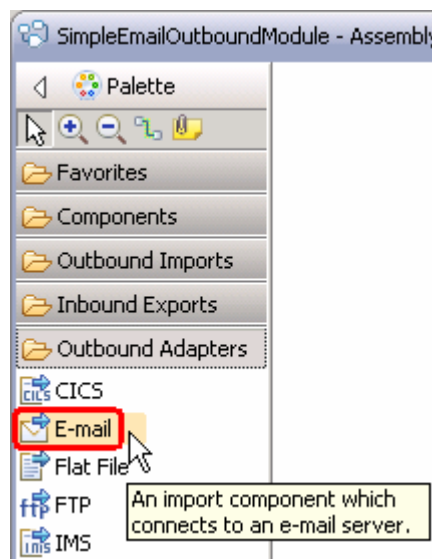
In this part, you will use this new External Service feature to create/configure the Data Binding, Operations, which generates the business objects and other artifacts.

- ___ 1. Create SimpleEmailOutboundModule
 - ___ a. From the Business Integration window, right-click and select **New > Module**
 - ___ b. From the New Module window, enter **SimpleEmailOutboundModule** for the Module Name
 - ___ c. Ensure that the box next to **Open module assembly diagram** is checked and then click **Finish**



You will now see a new module, SimpleEmailOutboundModule, created in your Business Integration window

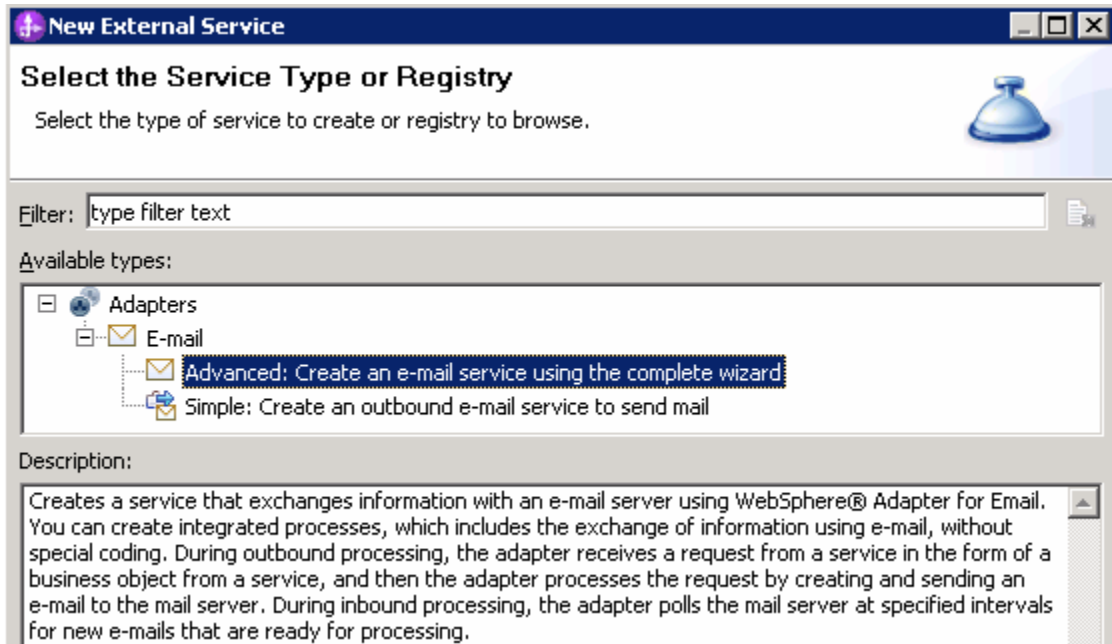
- ___ 2. To start External Service from the Palette:
 - ___ a. From the **Palette** on the left side of Assembly Diagram, click **Outbound Adapters**:



IBM WEBSPHERE ADAPTER 7.0 – LAB EXERCISE

___ b. Under Outbound Adapters, click the **E-mail** and then click the empty canvas of the assembly diagram. The New Flat File Service wizard is opened

___ 3. From the 'New External Service' window, select **Advanced: Create and e-mail service using the complete wizard**

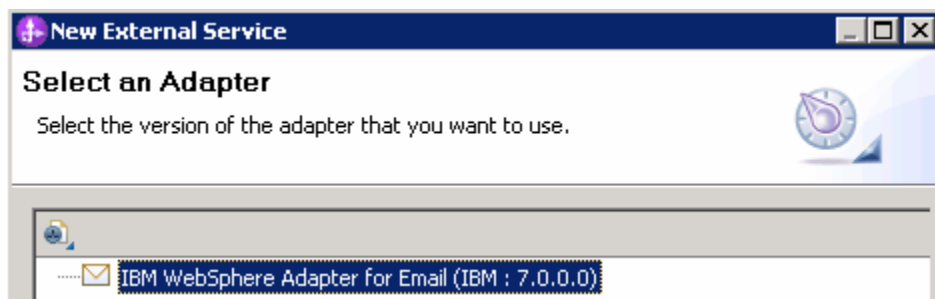


___ a. Click **Next**

Note: You can also start the External Service from the **File menu** option:

From the main menu, select **File > New > External Service**. This opens an External Service wizard that helps you obtain a service which establishes connectivity with other systems. Select **Adapters > Email** and click **Next**.

___ 4. On the Select an Adapter screen, select **IBM WebSphere Adapter for Email (IBM : 7.0.0.0)** and click **Next**



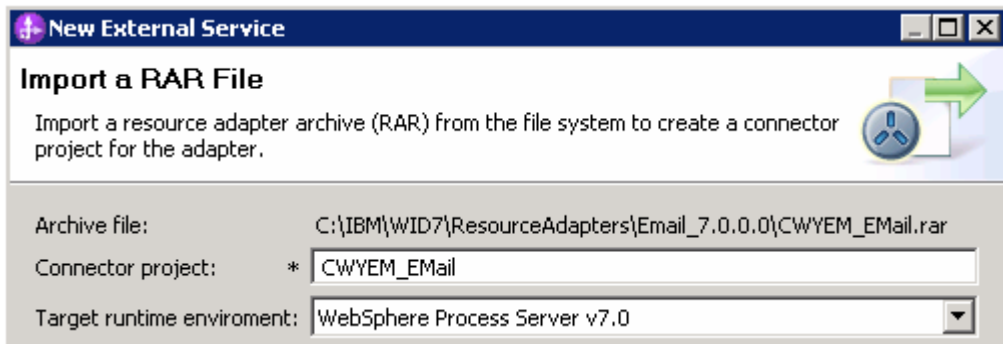
___ 5. Adapter Import screen:

In this step, you will import a connector resource adapter archive from the file system into your WebSphere Integration Developer workspace. The adapter RAR file already exists under **<EMAILADAPTER_HOME>**.

___ a. The default Connector file is selected which is shipped along with WebSphere Integration Developer

IBM WEBSHERE ADAPTER 7.0 – LAB EXERCISE

- ___ b. Accept the default name for Connector project, **CWYEM_Email**. You can change it to any other name, but for this lab, you can leave the default name.
- ___ c. For Target server, ensure that **WebSphere Process Server v7.0** is selected

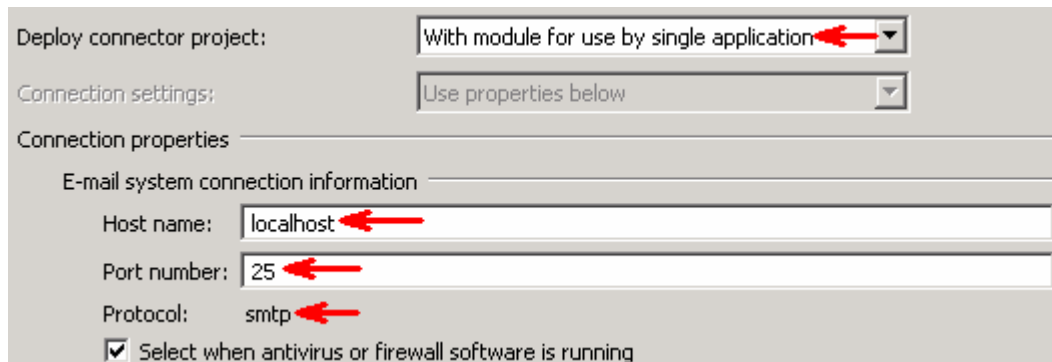


- ___ d. Click **Next**

Note: The resource adapter archive file is imported and a new connector project, **CWYEM_Email**, is listed under Business Integration view.

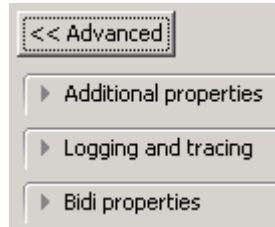
Note: If you are using the **File menu** option to start the External Service wizard, you need to select the **Processing Direction** at this point. Select the radio button next to **Outbound** and click **Next** to proceed to the next step.

- ___ 6. Service Configuration Properties:
 - ___ a. Deploy connector project: ensure that the default option **With module for use by single application** is selected
 - ___ b. Enter these for E-mail system connection information:
 - 1) Host name: **<EmailServer_HostName>** (or IP Address of the machine that has E-mail Server), for Ex: localhost
 - 2) Port number: **25** (default, you should change it to the correct port number if your E-mail server is running on a different port)



IBM WEBSPHERE ADAPTER 7.0 – LAB EXERCISE

__ c. Click **Advanced >>** to see the hidden advanced properties that can be configured:



__ d. Logging and tracing:

Note: Refer to 'Log and confidential trace lab' for more details on this **new** feature

__ e. For this lab, you are going to use security properties from the activation specification. So, select the radio button next to **Using security properties from the managed connection factory**

1) User name: **username using which you connect to your E-mail server**

Note: Use Emailuser1@aimcp101.austin.ibm.com, since it is configured as SMTP authentication user, if you followed the instructions in 'Install and configure e-mail server and client lab' to install and define users for hMailServer

2) Password: **password for the user to connect to your E-mail server**

A screenshot of a 'Service properties' dialog box. The title is 'Service properties'. The main question is 'How do you want to specify the security credentials?'. There are three radio button options: 'Using an existing JAAS alias (recommended)', 'Using security properties from the managed connection factory', and 'Other'. The second option is selected and highlighted with a red box. Below the selected option is a text field for 'J2C authentication data entry:'. Underneath, there are two text fields: 'User name:' containing 'Emailuser@aimcp101.austin.ibm.com' and 'Password:' containing '*****'. A 'Select...' button is visible at the bottom right.

__ f. From the dropdown menu next to Data binding, select **Specify a data binding for each operation**

Note: You can define data binding here. But, for this part of lab, you will define the data binding later in the Operations screen. To define the data binding in this screen (which is shown in the later parts of this lab), select the box next to **Specify a default data binding for all operations** and click **New** and then configure your data binding.

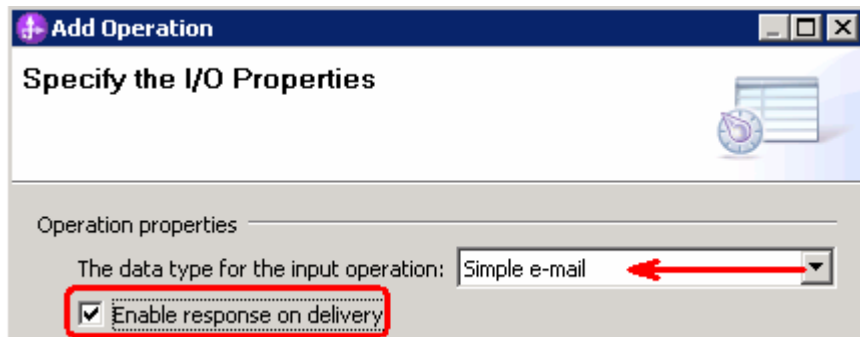
A screenshot of a 'Data format options' section. It features a dropdown menu with the text 'Specify a data format for each operation' and a red arrow pointing to it. Below the dropdown is a 'Data format:' label followed by '* Not defined' and a 'Select...' button.

IBM WEBSPHERE ADAPTER 7.0 – LAB EXERCISE

- ___ g. Check the box next to **Change logging properties for wizard** to view the output location of the log file and the logging level and click **Next**

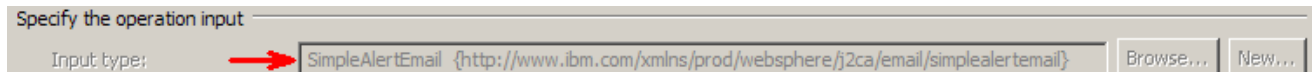
Define **createSimpleEmail** Operation:

- ___ 7. Click **Add...** to open Add Operation window
 - ___ a. For **The data type for the operation input**, select **Simple e-mail** from the drop down list
 - ___ b. **New in V7.0:** Select the check box next to **Enable response on delivery**

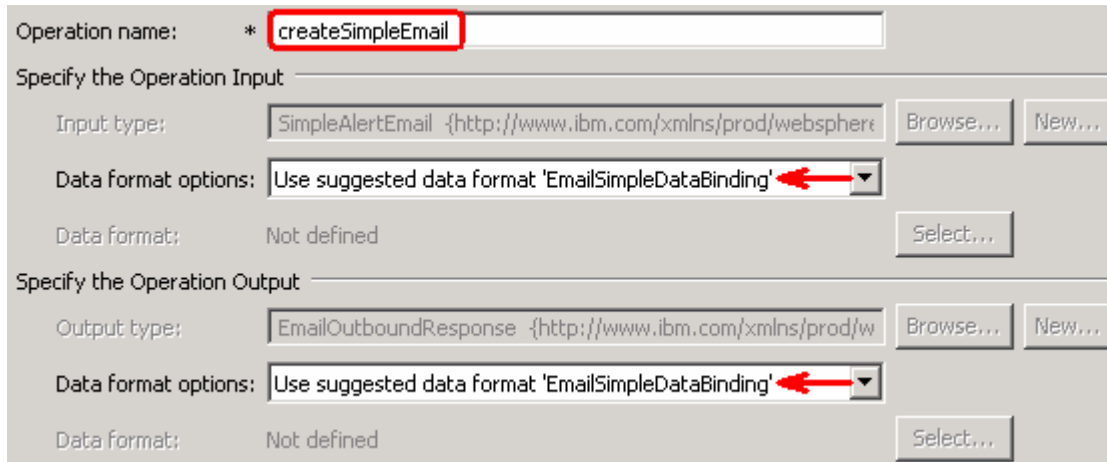


- ___ c. Click **Next**

The Input type is populated based on the selection of the Data type for the operation in the previous step. Since you have chosen Simple e-mail, the Input type is **SimpleAlertEmail**



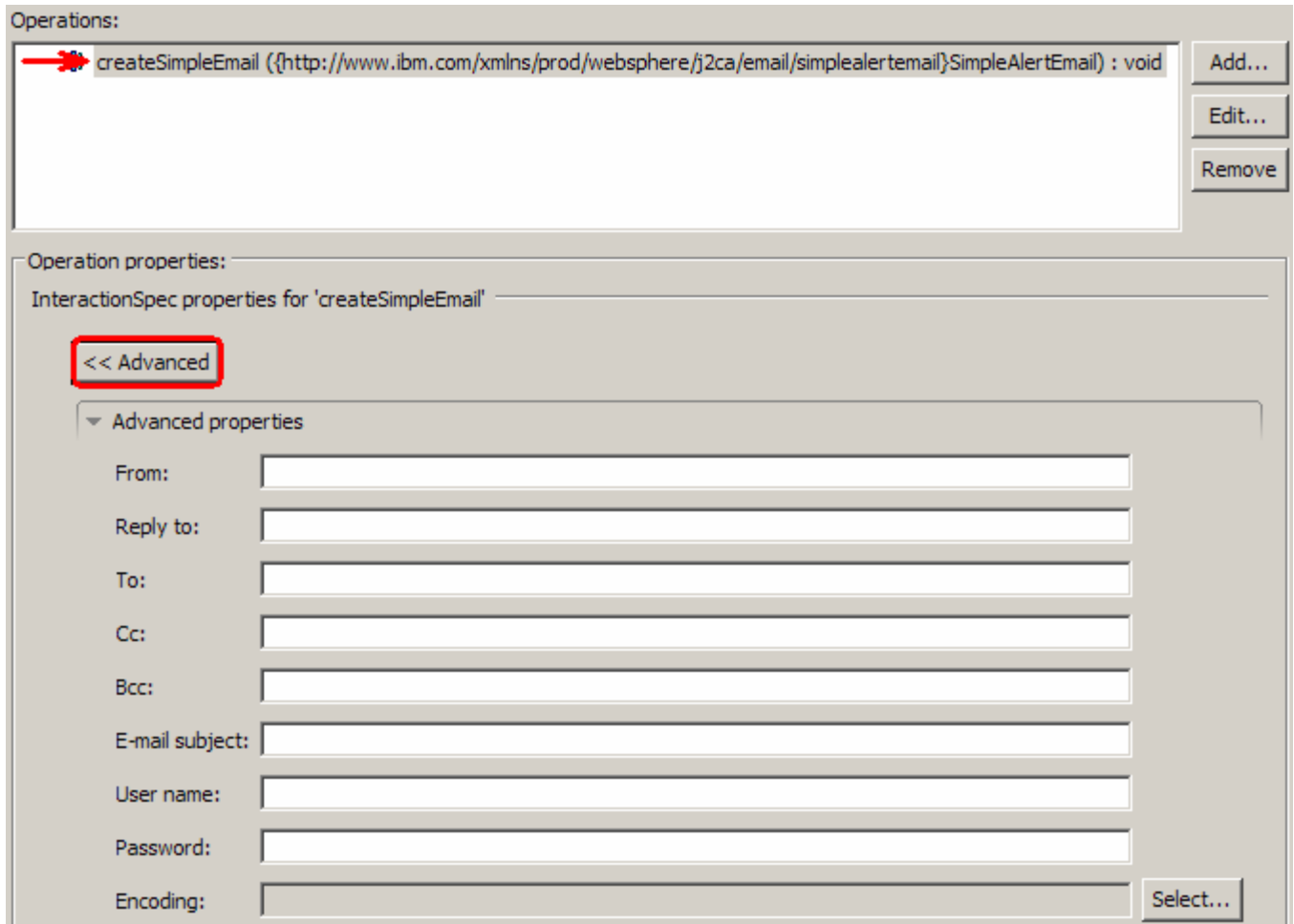
- ___ d. For Operation name, enter **createSimpleEmail**
- ___ e. Accept the default selection, **Use suggested data binding 'EmailSimpleDataBinding'**, for **Data format options** for both input and output



- ___ f. Click **Finish** from the Add Operation window

IBM WEBSPHERE ADAPTER 7.0 – LAB EXERCISE

- ___ 8. The operation, createSimpleEmail, will now be displayed under Operations list. You can click **Advanced >>** to open the advanced properties and review them



Note: The precedence of the parameters is as follows: WrapperBO, Interaction Spec, and Managed Connection Factory. The adapter will first search for the parameters passed in the WrapperBO; if it is not available there, it will then subsequently search in the Interaction Spec, and then the Managed Connection Factory instance. **In this lab, you will enter the values at the WrapperBO level in the later part using the WebSphere Process Server test client.**

- ___ a. Click **Next** from the Operations window

IBM WEBSPHERE ADAPTER 7.0 – LAB EXERCISE

___ 9. From the Generate Service screen, enter these:

___ a. For **Name**, enter **SimpleEmailOutboundInterface**

Properties for service

Module: SimpleEmailOutboundModule New...

Namespace: http://SimpleEmailOutboundModule/SimpleEmailOutboundInterface

Use default namespace

Name: * SimpleEmailOutboundInterface

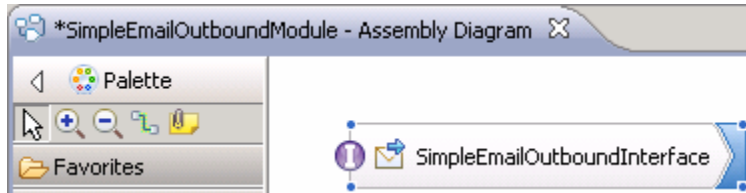
Save business objects to a library

Library: New...

Description:

___ b. Click **Finish**

___ 10. You will now see a new import component, **SimpleEmailOutboundInterface** in the assembly diagram of SimpleEmailOutboundModule

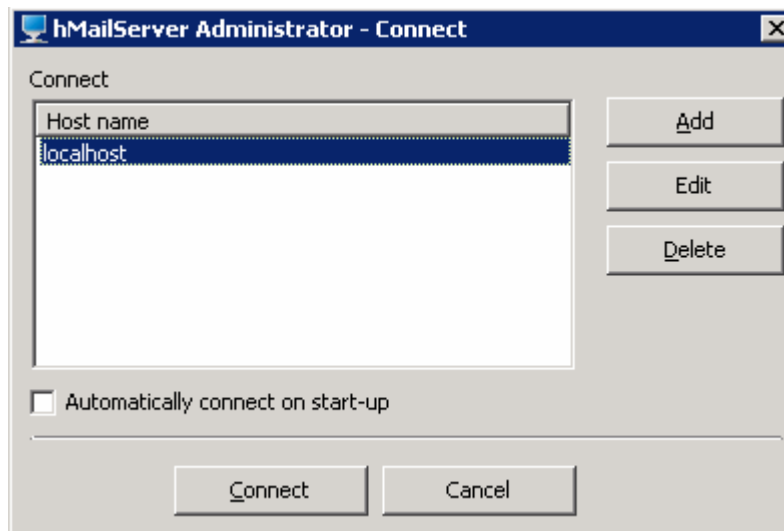


___ 11. Save (**Ctrl+S**) your changes to the assembly diagram

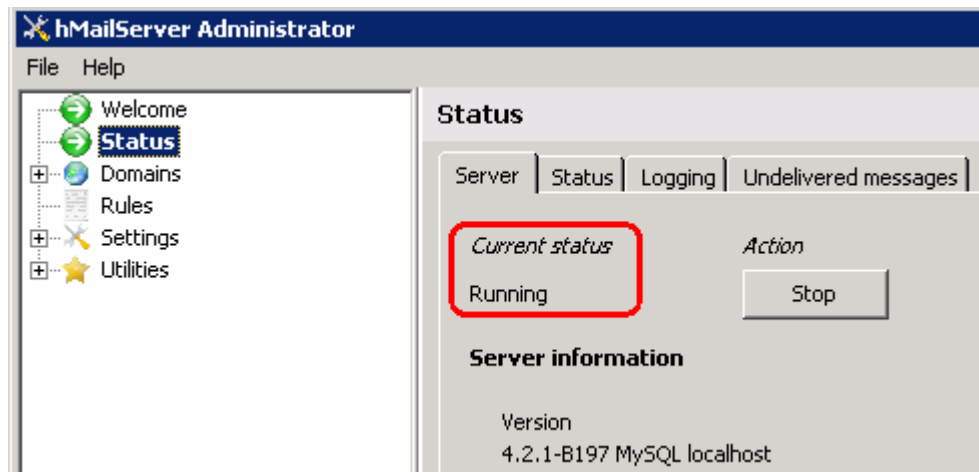
IBM WEBSHERE ADAPTER 7.0 – LAB EXERCISE

2.2. Test simple e-mail scenario

- ___ 1. Start your e-mail server (if not started already)
 - ___ a. Select **Start > hMailServer > hMailServerAdministrator**
 - ___ b. From the hMailServer Administrator – Connect window, ensure that **localhost** is selected and click **Connect**



- ___ c. The hMailServer Administrator window is opened and the Current status should show **Running**



- ___ 2. Start WebSphere Process Server (if not started already)
 - ___ a. From the **Servers** view of WebSphere Integration Developer, right click **WebSphere Process Server v7.0** and select **Start** from the pop-up menu
 - ___ b. Wait until the server status shows as **Started**
- ___ 3. Add the project to the WebSphere Process Server Test Environment

IBM WEBSPHERE ADAPTER 7.0 – LAB EXERCISE

- ___ a. Right-click **WebSphere Process Server v7.0** under the Servers view and select **Add and remove projects...** from the pop-up menu
- ___ b. In the Add and Remove Projects window, select the **SimpleEmailOutboundModuleApp** project from the Available projects panel
- ___ c. Click **Add >** to add it to the Configured projects panel
- ___ d. The project is now moved to Configured projects. Click **Finish**

Wait for the project to be published to the server and you can confirm this by seeing the application started message in the console messages.

- ___ 4. Open the test client for the module
 - ___ a. From the Business Integration perspective, right-click the **SimpleEmailOutboundModule** and select **Test > Test Module**
 - ___ b. The **SimpleEmailOutboundModule_Test** window is opened in the Assembly editor
- ___ 5. Under **Detailed Properties**, for the **Operation** field, select **createSimpleEmail** from the drop down menu

General Properties
 Detailed Properties

Specify the component, interface, operation, and input parameter values for the Invoke event, then click the Continue icon in the Events area to run the test. [More...](#)

<u>Configuration:</u>	Default Module Test
<u>Module:</u>	SimpleEmailOutboundModule
<u>Component:</u>	SimpleEmailOutboundInterface
<u>Interface:</u>	SimpleEmailOutboundInterface
<u>Operation:</u>	createSimpleEmail

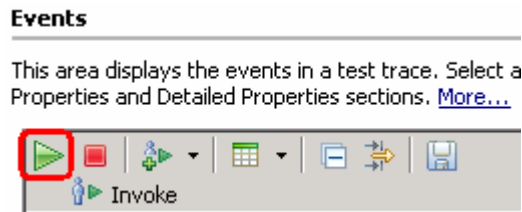
IBM WEBSHERE ADAPTER 7.0 – LAB EXERCISE

Enter these for 'Initial request parameters':

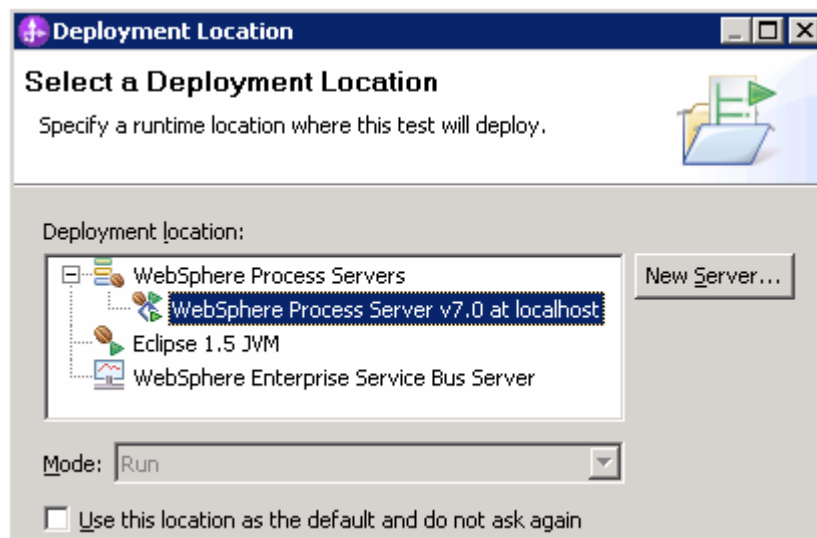
- __ a. To: Emailuser1@aimcp101.austin.ibm.com
- __ b. From: Emailuser2@aimcp101.austin.ibm.com
- __ c. Subject: **Testing simple e-mail pass through outbound**
- __ d. For mailContent, enter any data, for Ex: **Simple content**

Name	Type	Value
createSimpleEmailInput	SimpleAlertEmail	[ab]
To	string	[ab] Emailuser2@aimcp103.austin.ibm.com
From	string	[ab] Emailuser1@aimcp103.austin.ibm.com
CC	string	[ab]
BCC	string	[ab]
Reply-To	string	[ab]
Subject	string	[ab] Testing simple email pass through outbound
Encoding	string	[ab]
mailContent	string	[ab] Simple email content

- __ e. Click **Continue** button under Events



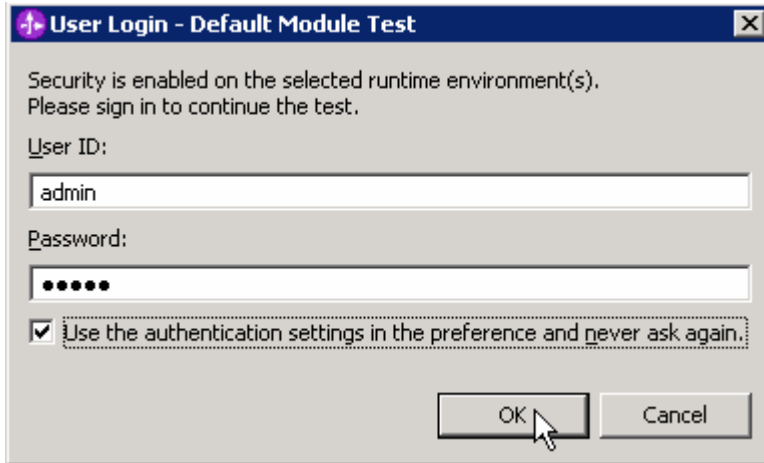
- __ f. From Deployment Location window, select **WebSphere Process Servers > WebSphere Process Server v7.0** and click **Finish**
- __ g. **Optionally**, select the check box for 'Use this location as the default and do not ask again' so that you the selected server is later when you use the same workspace



IBM WEBSPHERE ADAPTER 7.0 – LAB EXERCISE

___ h. Provide Administrator User ID and Password

- 1) Optionally, select the box 'Use the authentication settings in the preference and never ask again' so that you do not have to enter the credentials next time when you start the test client



___ 6. Verify your results

___ a. You will see the 'Invoke returned' in the test client:

Events

This area displays the events in a test trace. Select an event to display its properties in the General Properties and Detailed Properties sections. [More...](#)

General Properties

Detailed Properties

Module: [SimpleEmailOutboundModule](#)
 Component: [SimpleEmailOutboundInterface](#)
 Interface: [SimpleEmailOutboundInterface](#)
 Operation: [createSimpleEmail](#)

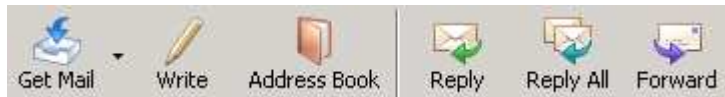
Return parameters:

Value Editor | XML Source

Name	Type	Value
createSimpleEmailOutput	EmailOutboundResponse	[abi]
DeliveredTo *	string	[abi] Emailuser2@aimcp103.austin.ibm...
UndeliveredTo *	string	[abi] null
Status *	string	[abi] MESSAGE DELIVERED SUCCESSF...
MessageID *	string	[abi] <96798149.71257376091734.Ja...

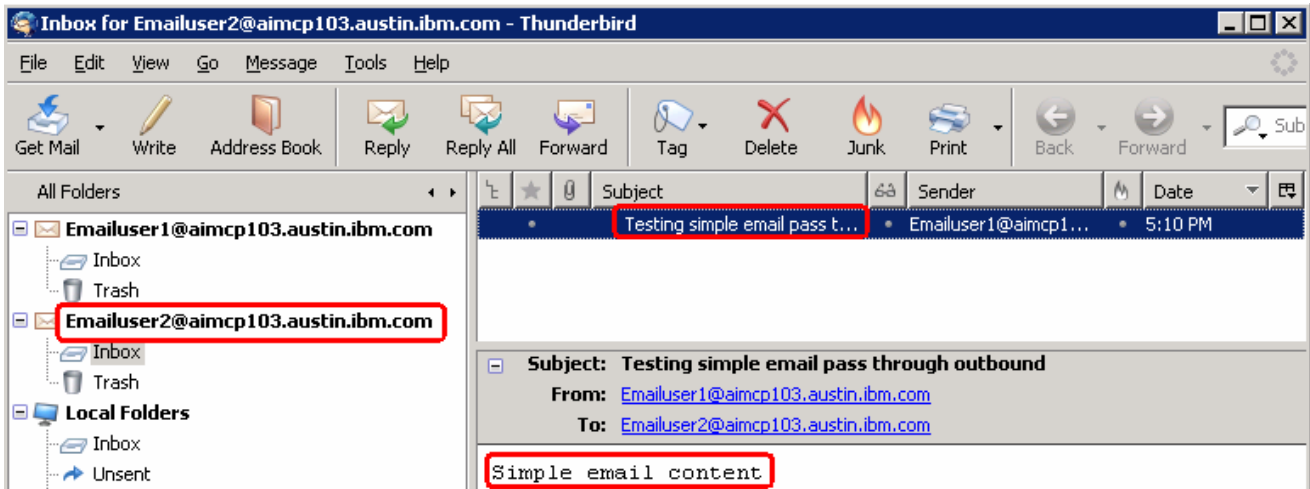
___ 7. You can also check your inbox for the mail received with the specified Subject and the contents

___ a. From your Mozilla thunderbird window, ensure that Emailuser1 is selected and then click **Get Mail**



IBM WEBSPHERE ADAPTER 7.0 – LAB EXERCISE

- ___ b. Check the inbox of the Emailuser1 and you should find a new e-mail with the subject, **Testing simple E-mail pass through outbound**. The contents of this e-mail are the contents you specified in the test client:



- ___ 8. Restore the server
- ___ a. You can also check your inbox for the mail received with the specified Subject and the contents in the previous steps
 - ___ b. Close the **SimpleEmailOutboundModule_Test** window and click **No** for the Save Resources window
 - ___ c. Right-click **WebSphere Process Server v7.0** under the Servers view and select **Add and remove projects...** from the pop-up menu
 - ___ d. Select **SimpleEmailOutboundModuleApp** under Configured projects and click **< Remove**
 - ___ e. Click **Finish** after you see the application moved to Available projects. Wait until the application is unpublished

IBM WEBSPHERE ADAPTER 7.0 – LAB EXERCISE

Part 3: E-mail pass through scenario

In this part, you will use this new External Service feature to create/configure the Data Binding, Operations, which generates the business objects and other artifacts for pass through scenario and then test the configuration with some test e-mails.

IBM WEBSPHERE ADAPTER 7.0 – LAB EXERCISE

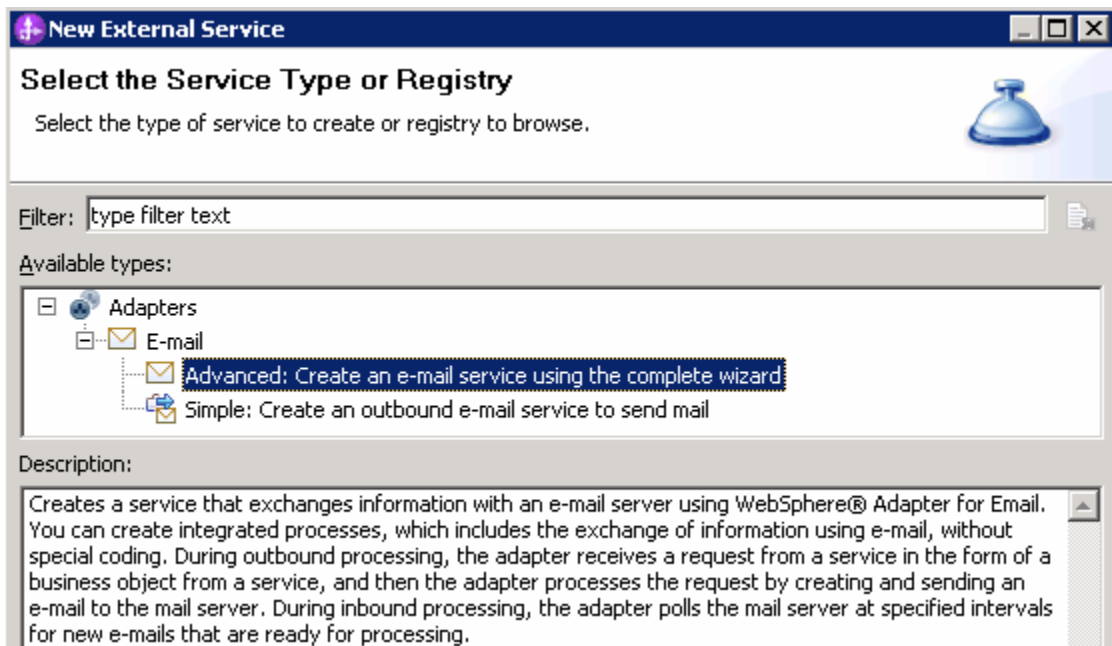
3.1. Configure pass through using the external service wizard

In this part, you will use this new External Service feature to create/configure the Data Binding, Operations, which generates the business objects and other artifacts.

- ___ 1. Create EmailPSOutboundModule
 - ___ a. From the Business Integration window, right-click and select **New > Module**
 - ___ b. From the New Module window, enter **EmailPSOutboundModule** for the Module Name
 - ___ c. Ensure that the box next to **Open module assembly diagram** is checked and then click **Finish**

You will now see a new module, EmailPSOutboundModule, created in your Business Integration window

- ___ 2. To start External Service from the Palette:
 - ___ a. From the **Palette** on the left side of Assembly Diagram, click **Outbound Adapters**:
 - ___ b. Under Outbound Adapters, click the **Email** and then click the empty canvas of the assembly diagram. The New Flat File Service wizard is opened
- ___ 3. From the 'New External Service' window, select **Advanced: Create and e-mail service using the complete wizard**



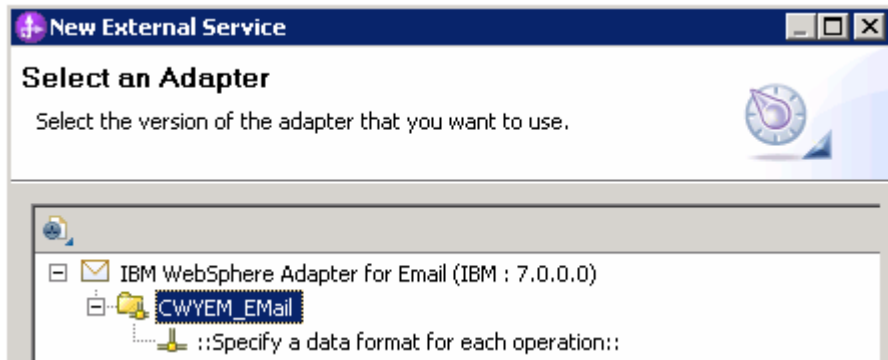
- ___ a. Click **Next**

Note: You can also start the External Service from the **File menu** option:

From the main menu, select **File > New > External Service**. This opens an External Service wizard that helps you obtain a service which establishes connectivity with other systems. Select **Adapters > EMail** and click **Next**

IBM WEBSHERE ADAPTER 7.0 – LAB EXERCISE

- ___ 4. On the Select an Adapter screen, expand **IBM WebSphere Adapter for Email (IBM : 7.0.0.0)** and select **CWYEM_Email**



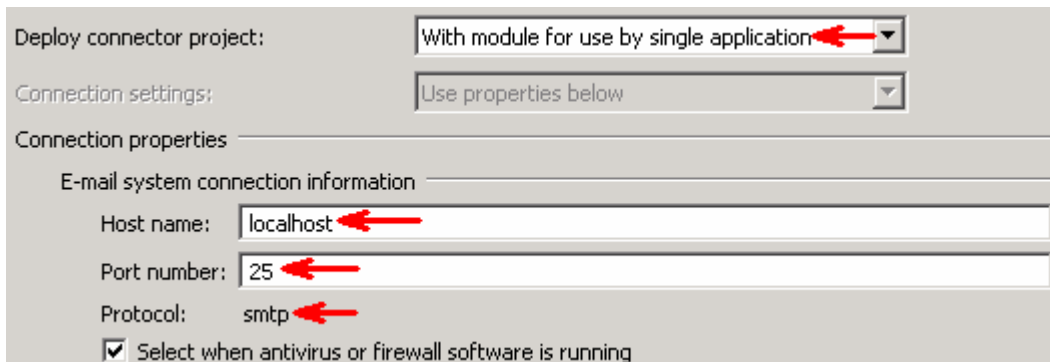
- ___ a. Click **Next**

- ___ 5. Service Configuration Properties:

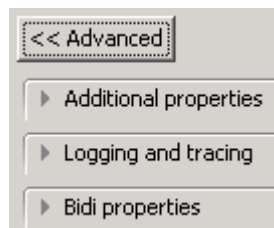
- ___ a. Deploy connector project: ensure that the default option **With module for use by single application** is selected

- ___ b. Enter these for E-mail system connection information:

- 1) Host name: **<EmailServer_HostName>** (or IP Address of the machine that has E-mail Server), for Ex: localhost
- 2) Port number: **25** (default, you should change it to the correct port number if your E-mail server is running on a different port)



- ___ c. Click **Advanced >>** to see the hidden advanced properties that can be configured:



- ___ d. Logging and tracing:

Note: Refer to '**Log and confidential trace lab**' for more details on this **new** feature

IBM WEBSPHERE ADAPTER 7.0 – LAB EXERCISE

- ___ e. For this lab, you are going to use security properties from the activation specification. So, select the radio button next to **Using security properties from the managed connection factory**

1) User name: **username using which you connect to your E-mail server**

Note: Use Emailuser1@aimcp101.austin.ibm.com, since it is configured as SMTP authentication user, if you followed the instructions in 'Install and configure e-mail server and client lab' to install and define users for hMailServer

2) Password: **password for the user to connect to your E-mail server**

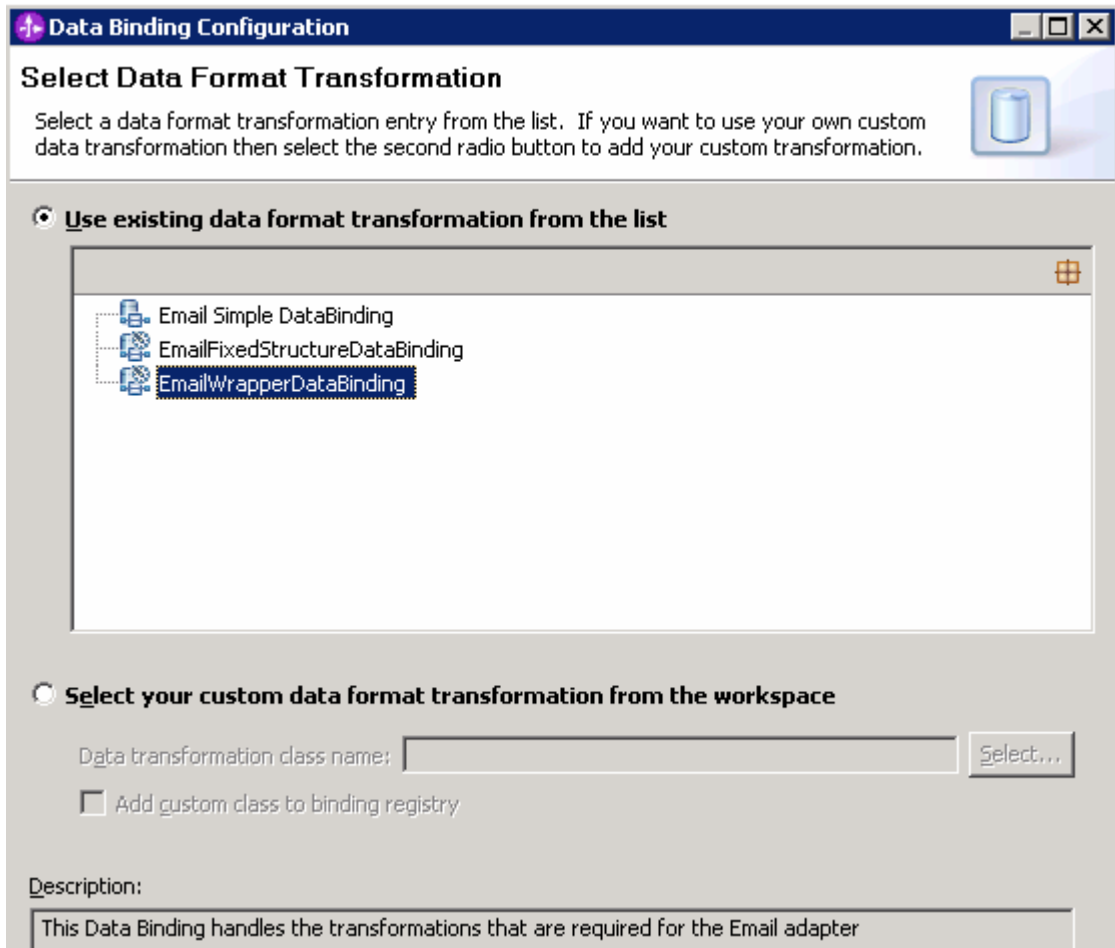
- ___ 6. You can define data binding in two places - service level (current screen of External Service wizard) or later at the method level (Operations screen of the External Service wizard). In this lab, you will define data binding at the service level (from the current screen)

- ___ a. From the dropdown menu next to Data format options, select '**Use a data binding configuration for all operations**'

- ___ b. Click **Select...** next to **Data format**. A Binding Resource Configuration window is opened

IBM WEBSPHERE ADAPTER 7.0 – LAB EXERCISE

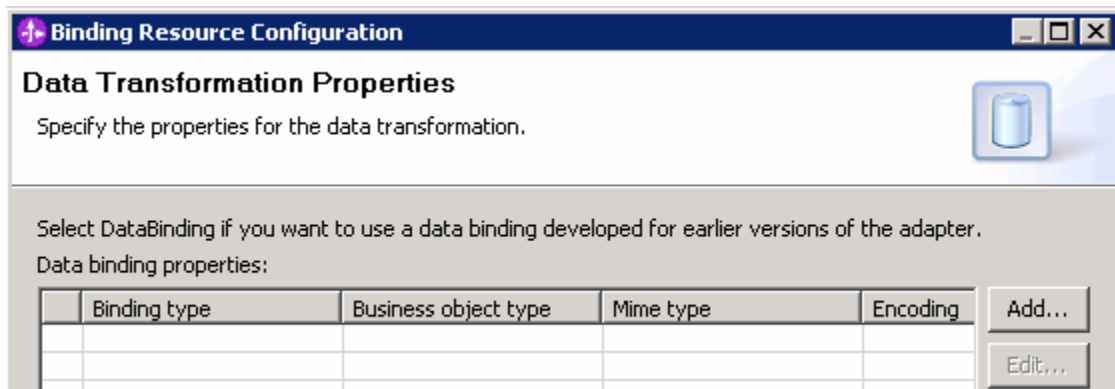
- c. Select the radio button for ‘Use existing data format transformation from the list’ and then select **EmailWrapperDataBinding**



- d. Click **Next**

Note: Data Handler Configuration: Since you are doing the pass through scenario, you do not need to configure any data handler.

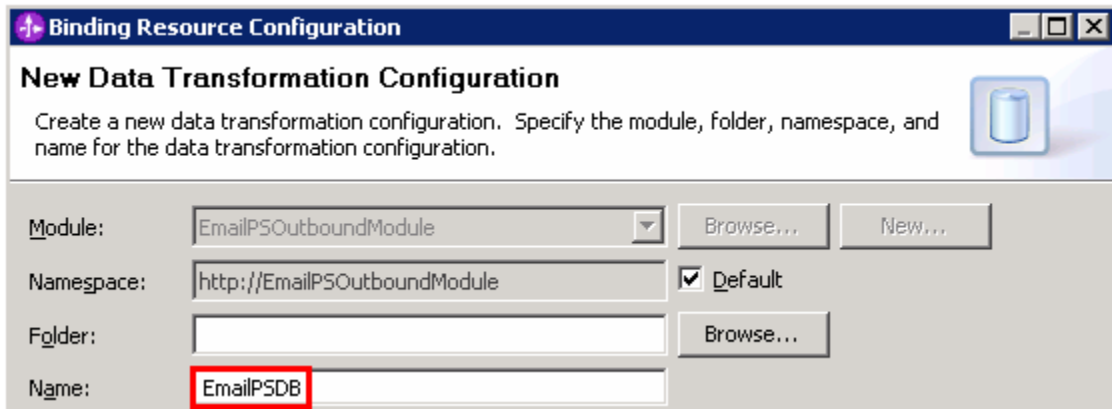
- e. Click **Next** from the Data Transformation Properties screen



IBM WEBSHERE ADAPTER 7.0 – LAB EXERCISE

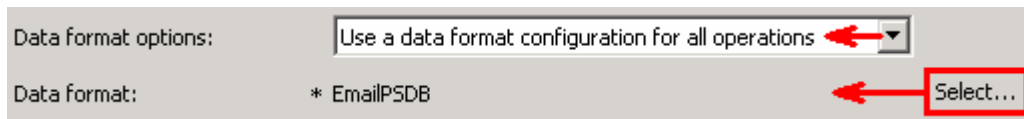
___ f. Note that the selected module is **EmailPSOutboundModule**

1) For the **Name**, enter **EmailPSDB**



2) Click **Finish**

___ g. Now the **EmailPSDB** should be displayed for Data format



___ 7. Check the box next to **Change logging properties for wizard** to view the output location of the log file and the logging level

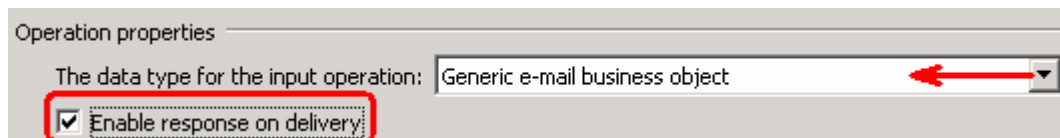
___ a. Click **Next**

Define **createGenericEmail** Operation:

___ 8. Click **Add...** to open Add Operation window

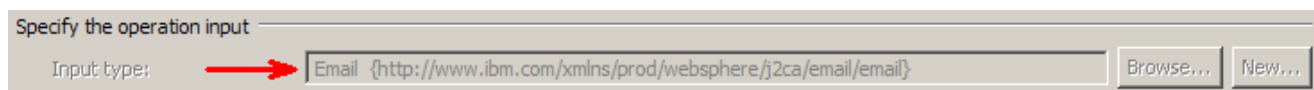
___ a. For **The data type for the operation input**, select **Generic e-mail business object with business graph** from the drop down list

___ b. **New in V7.0:** Select the check box next to **Enable response on delivery**



___ c. Click **Next**

The Input type is populated based on the selection of the Data type for the operation in the previous step. Since you have chosen option without business graph, the Input type is **Email**

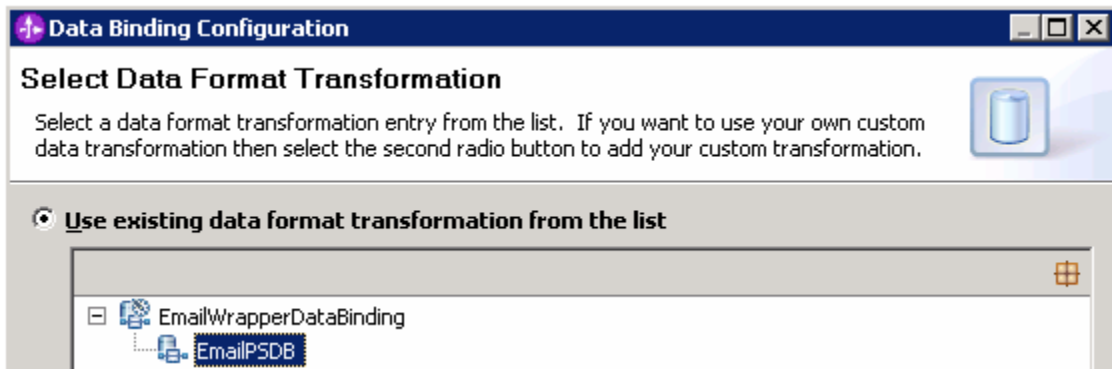


___ d. For Operation name, enter **createGenericEmail**

___ e. Select Data format for input:

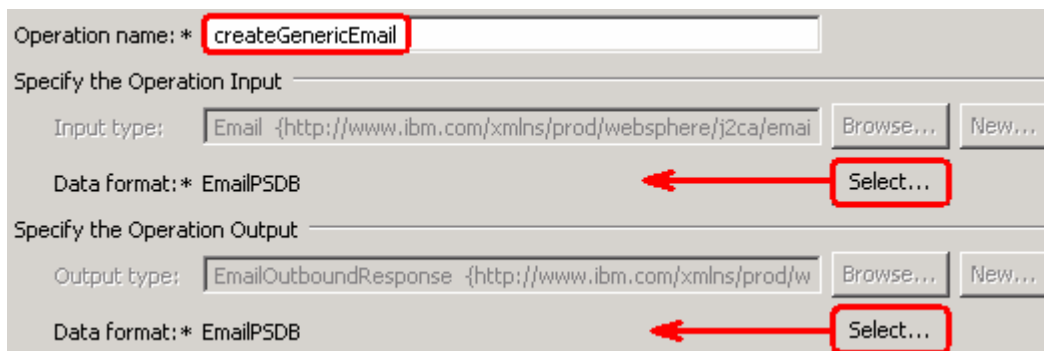
IBM WEBSHERE ADAPTER 7.0 – LAB EXERCISE

- 1) Click **Select...** next to **Data format**. A Binding Resource Configuration window is opened
- 2) Ensure that the radio button for 'Use existing data format transformation from the list' and then select **EmailWrapperDataBinding > EmailPSDB**



- 3) Click **Finish**. Now the **EmailPSDB** is displayed as the Data binding configuration in the Add Operation window

___ f. Similarly, select 'EmailPSDB' as the data format for output also



___ g. Click **Finish** from the Add Operation window

IBM WEBSHERE ADAPTER 7.0 – LAB EXERCISE

- ___ 9. The operation, createGenericEmail, will now be displayed under Operations list. You can click **Advanced >>** to open the advanced properties and review them

The screenshot shows the 'Operations' window in the IBM WebSphere Adapter. The 'Operations' list contains one entry: 'createGenericEmail ({http://www.ibm.com/xmlns/prod/websphere/j2ca/email/email}Email) : void'. A red arrow points to this entry. To the right of the list are buttons for 'Add...', 'Edit...', and 'Remove'. Below the list is the 'Operation properties' section, which is titled 'InteractionSpec properties for 'createGenericEmail''. A red box highlights this title. Below the title is a button labeled '<< Advanced'. Underneath is a section titled 'Advanced properties' with a dropdown arrow. This section contains several text input fields: 'From:', 'Reply to:', 'To:', 'Cc:', 'Bcc:', 'E-mail subject:', 'User name:', 'Password:', and 'Encoding:'. A 'Select...' button is located to the right of the 'Encoding:' field.

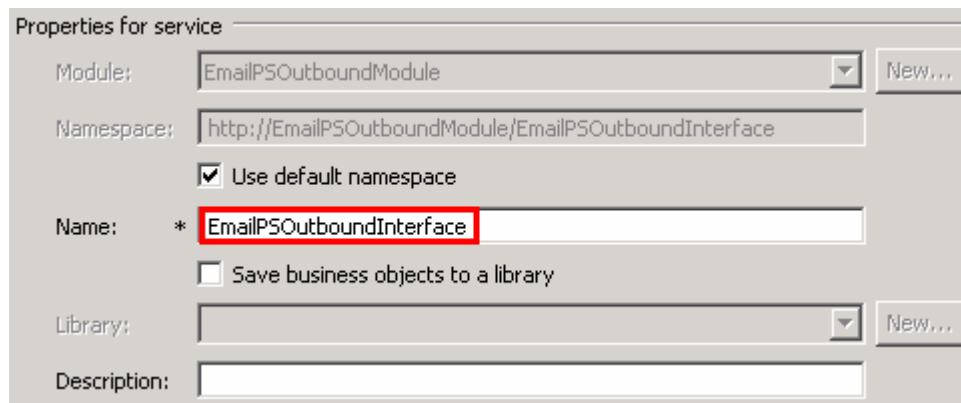
Note: The precedence of the parameters is as follows: WrapperBO, Interaction Spec, and Managed Connection Factory. The adapter will first search for the parameters passed in the WrapperBO; if it is not available there, it will then subsequently search in the Interaction Spec, and then the Managed Connection Factory instance. **In this lab, you will enter the values at the WrapperBO level in the later part using the WebSphere Process Server test client.**

- ___ 10. Click **Next** from the Operations window

IBM WEBSPHERE ADAPTER 7.0 – LAB EXERCISE

___ 11. From the Generate Artifacts screen, enter these:

___ a. For **Name**, enter **EmailPSOutboundInterface**



Properties for service

Module: EmailPSOutboundModule [New...]

Namespace: http://EmailPSOutboundModule/EmailPSOutboundInterface

Use default namespace

Name: * **EmailPSOutboundInterface**

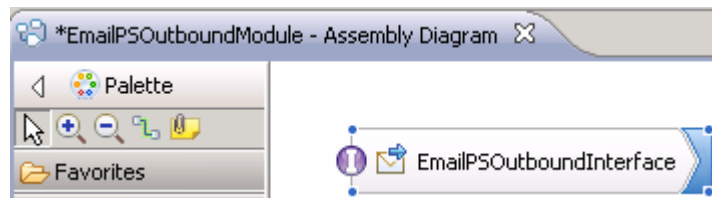
Save business objects to a library

Library: [New...]

Description:

___ b. Click **Finish**

___ 12. You will now see a new import component, **EmailPSOutboundInterface** in the assembly diagram of EmailPSOutboundModule



___ 13. Save (**Ctrl+S**) your changes to the assembly diagram

IBM WEBSHERE ADAPTER 7.0 – LAB EXERCISE

3.2. Test e-mail pass through scenario

- ___ 1. Start your e-mail server (if not started already)
 - ___ a. Select **Start > hMailServer >hMailServerAdministrator**
 - ___ b. From the hMailServer Administrator – Connect window, ensure that **localhost** is selected and click **Connect**
 - ___ c. hMailServer Administrator window is opened and the Current status should show **Running**
- ___ 2. Start WebSphere Process Server (if not started already)
 - ___ a. From the **Servers** view of WebSphere Integration Developer, right click **WebSphere Process Server v7.0** and select Start from the pop-up menu
 - ___ b. Wait until the server status shows as **Started**
- ___ 3. Add the project to the WebSphere Process Server Test Environment
 - ___ a. Right-click **WebSphere Process Server v7.0** under the Servers view and select **Add and remove projects...** from the pop-up menu
 - ___ b. In the Add and Remove Projects window, select the **EmailPSOutboundModuleApp** project from the Available projects panel
 - ___ c. Click **Add >** to add it to the Configured projects panel
 - ___ d. The project is now moved to Configured projects. Click **Finish**

Wait for the project to be published to the server and you can confirm this by seeing the 'application started' message in the console messages.

- ___ 4. Open the test client for the module
 - ___ a. From the Business Integration perspective, right-click the **EmailPSOutboundModule** and select **Test > Test Module**
 - ___ b. The **EmailPSOutboundModule_Test** window is opened in the Assembly editor
- ___ 5. Under **Detailed Properties**, for the **Operation** field, select **createGenericEmail** from the drop down menu

► **General Properties**

▼ **Detailed Properties**

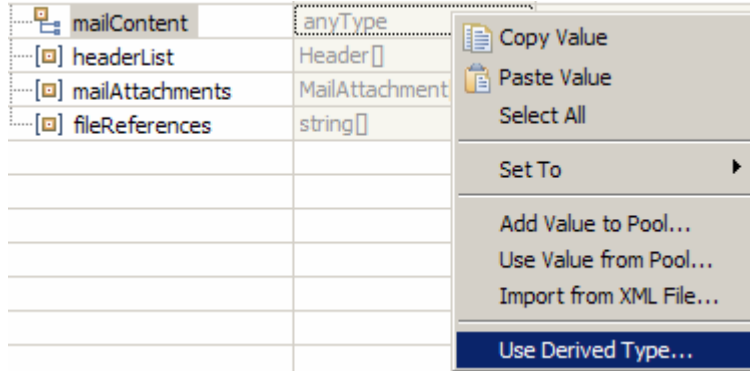
Specify the component, interface, operation, and input parameter values for the Invoke event, then click the Continue icon in the Events area to run the test. [More...](#)

Configuration:	Default Module Test
Module:	EmailPSOutboundModule
Component:	EmailPSOutboundInterface
Interface:	EmailPSOutboundInterface
Operation:	createGenericEmail

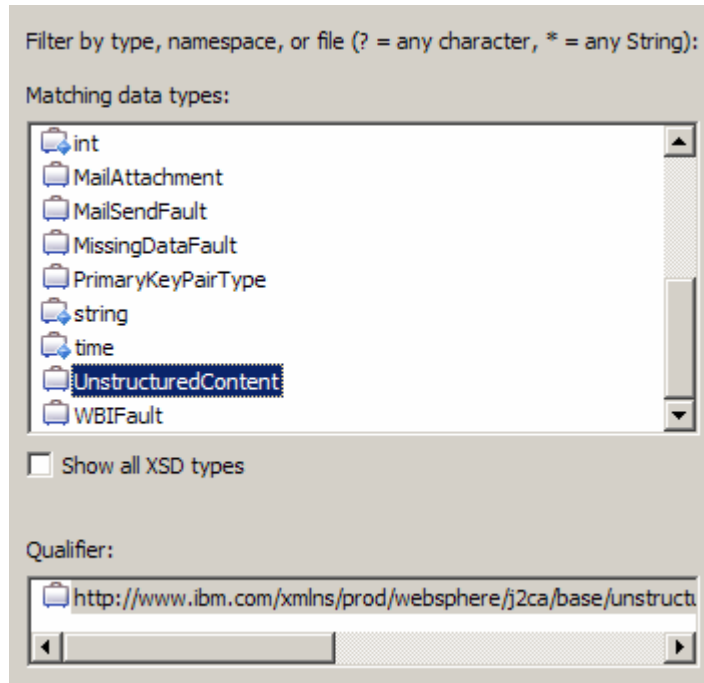
IBM WEBSHERE ADAPTER 7.0 – LAB EXERCISE

- ___ 6. Enter these for 'Initial request parameters':
- ___ a. To: Emailuser1@aimcp101.austin.ibm.com
 - ___ b. From: Emailuser2@aimcp101.austin.ibm.com
 - ___ c. Subject: **Testing e-mail pass through outbound**
 - ___ d. mailContent:

1) Right-click the row containing mailContent and select **Use Derived Type...** from the pop-up menu



2) From the Data Type Selection window, select **UnstructuredContent** and click **OK**



3) ContentType: **text/plain**

IBM WEBSHERE ADAPTER 7.0 – LAB EXERCISE

4) AsText: E-mail pass through content

Name	Type	Value
createGenericEmailInput	Email	
To	string	Emailuser2@aimcp101.austin.ibm.com
From	string	Emailuser1@aimcp101.austin.ibm.com
CC	string	
BCC	string	
Reply-To	string	
Subject	string	Testing e-mail pass through outbound
Encoding	string	
Date	string	
mailContent	UnstructuredContent	
ContentType	string	text/plain
ObjectName	string	
AsText	string	E-mail pass through content
AsBinary	hexBinary	00
headerList	Header[]	
mailAttachments	MailAttachment[]	
fileReferences	string[]	

___ e. Click **Continue** button under Events

Events

This area displays the events in a test trace. Select a Properties and Detailed Properties sections. [More...](#)



___ f. From Deployment Location window, select **WebSphere Process Servers > WebSphere Process Server v7.0 at localhost** and click **Finish**

___ 7. Verify your results

___ a. You will see 'Invoke returned' in the test client:

Events

This area displays the events in a test trace. Select an event to display its properties in the General Properties and Detailed Properties sections. [More...](#)

General Properties

Detailed Properties

Module: [EmailPSOutboundModule](#)
 Component: [EmailPSOutboundInterface](#)
 Interface: [EmailPSOutboundInterface](#)
 Operation: [createGenericEmail](#)

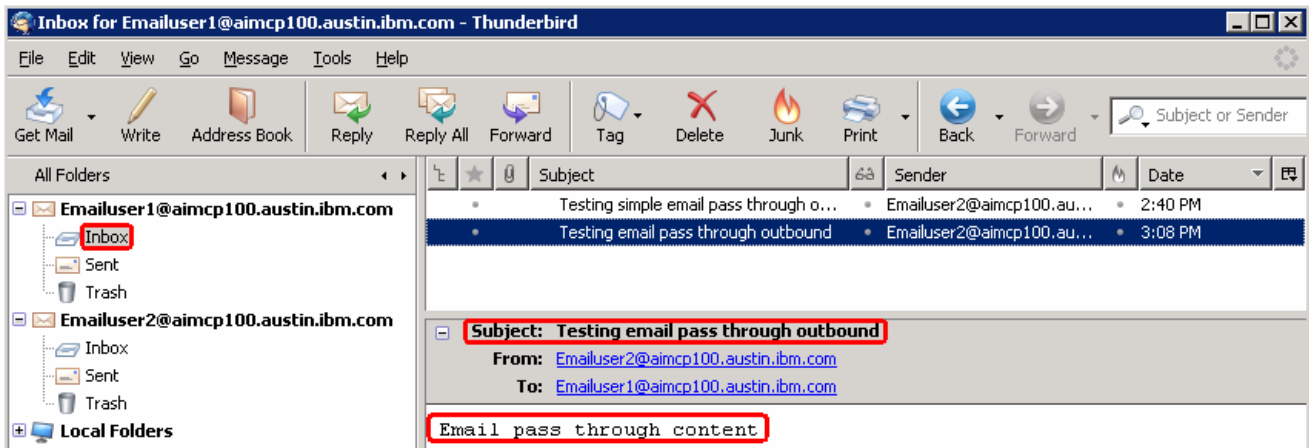
Return parameters:

Value Editor XML Source

Name	Type	Value
createGenericEmailOutput...	EmailOutboundResponse	
DeliveredTo *	string	Emailuser2@aimcp103.austin.ibm
UndeliveredTo *	string	null
Status *	string	MESSAGE DELIVERED SUCCESSFUL
MessageID *	string	<1469339540.111257542845968

IBM WEBSHERE ADAPTER 7.0 – LAB EXERCISE

- ___ 8. You can also check your inbox for the mail received with the specified Subject and the contents in the previous steps
- ___ a. From your Mozilla thunderbird window, ensure that Emailuser1 is selected and then click **Get Mail**
 - ___ b. Check the inbox of the Emailuser1 and you should find a new e-mail with the subject, **Testing e-mail pass through outbound**. The contents of this e-mail are the contents you specified in the test client:



- ___ 9. Restore the server
- ___ a. Close the **EmailPSOutboundModule_Test** window and click **No** for the Save Resources window
 - ___ b. Right-click **WebSphere Process Server v7.0** under the Servers view and select **Add and remove projects...** from the pop-up menu
 - ___ c. Select **EmailPSOutboundModuleApp** under Configured projects and click **< Remove**
 - ___ d. Click **Finish** after you see the application moved to Available projects. Wait until the application is unpublished

IBM WEBSPHERE ADAPTER 7.0 – LAB EXERCISE

Part 4: E-mail content specific (non-pass through) scenario

In this part, you will use this new External Service feature to create/configure the Data Binding, Data handler, Operations, which generates the business objects and other artifacts for non pass through scenario and then test the configuration with some test e-mails.

IBM WEBSPPHERE ADAPTER 7.0 – LAB EXERCISE

4.1. Configure non-pass through using the external service wizard

In this part, you will use this new External Service feature to create/configure the Data Binding, Operations, which generates the business objects and other artifacts.

- ___ 1. Create EmailCustomOutboundModule
 - ___ a. From the Business Integration window, right-click and select **New > Module**
 - ___ b. From the New Module window, enter **EmailCustomOutboundModule** for the Module Name
 - ___ c. Ensure that the box next to **Open module assembly diagram** is checked and then click **Finish**

You will now see a new module, EmailCustomOutboundModule, created in your Business Integration window

- ___ 2. Import required business objects
 - ___ a. Expand EmailCustomOutboundModule (if not already expanded), right-click **Data Types** and select **Import...** from the pop-up menu
 - ___ b. From the Import window, expand **General** and select **File System** and then click **Next**
 - ___ c. Enter From directory
 - 1) Click **Browse...** next to **From directory**
 - 2) From the Import from directory window, select **<EMAILFILES>** and click **OK**

Now, you will see EmailFiles folder added on the left side, and all the xsds and other files under that folder on the right side.

- ___ d. Select the box next to **Wbiaddress.xsd and Wbiphone.xsd**
- ___ e. Ensure that the **EmailCustomOutboundModule** is selected for Into folder
- ___ f. Click **Finish** from the Import window

The Business Integration window is updated with the imported business objects.

- ___ 3. Review the imported business objects:
 - ___ a. Expand **EmailCustomOutboundModule > Data Types** and you will now see a new data type **Wbiaddress** under it.
 - ___ b. Double-click **Wbiaddress** to open it in assembly editor and then expand Wbiphone from assembly editor to view its fields

IBM WEBSHERE ADAPTER 7.0 – LAB EXERCISE

The screenshot shows the IBM WebSphere Adapter 7.0 Assembly Editor interface. The top tab is labeled 'Wbiaddress'. Below the tab, there are two main sections: 'Business object' and 'Definition'.

Business object configuration:

Name	Wbiaddress	Refactor name
Namespace	http://www.ibm.com/xmlns/prod/websphere/j2ca/email/wbiaddress	Refactor namespace

Definition:

The 'Definition' section shows two business objects side-by-side. The left object is 'Wbiaddress' and the right object is 'Wbiphone'. An arrow points from the 'Wbiphone' property in the 'Wbiaddress' object to the 'Wbiphone' object definition.

Wbiaddress Definition:

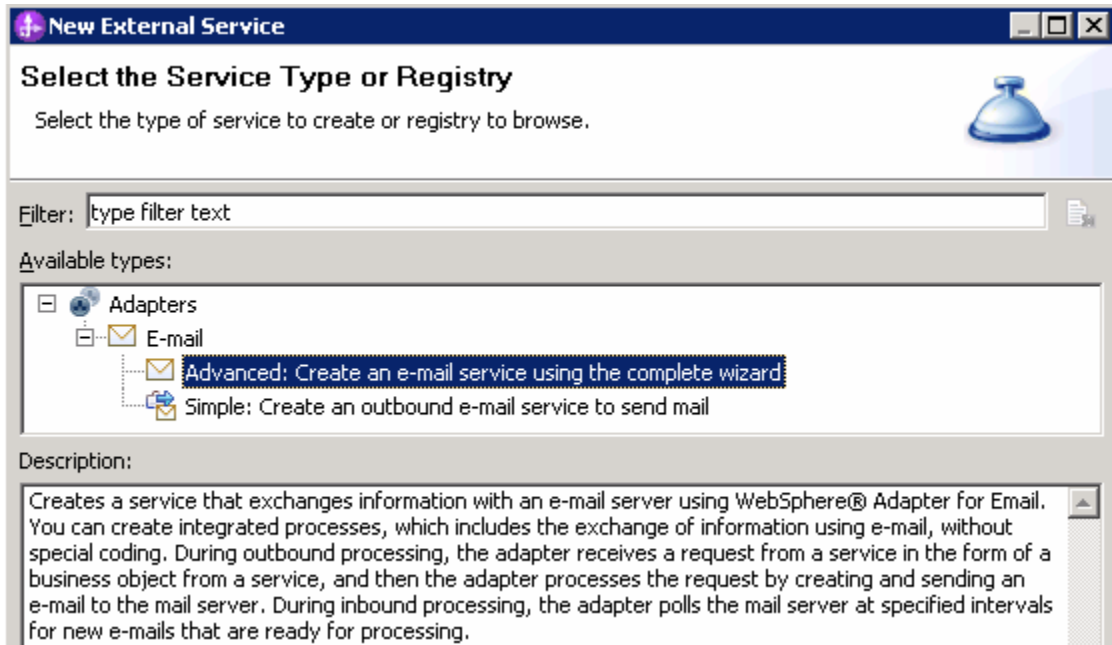
<Click to filter...>		
e	Addressid	integer
e	Addrline1	string
e	Addrline2	string
e	Customercity	string
e	Customerstate	string
e	Customerzip	string
e	Customercountry	string
e	Wbiphone	Wbiphone []

Wbiphone Definition:

<Click to filter...>		
e	Phoneid	integer
e	Phonenumber	string
e	Phonetype	string

- ___ 4. After reviewing, close the Customer business object from the Assembly editor
- ___ 5. To start External Service from the Palette:
 - ___ a. From the **Palette** on the left side of Assembly Diagram, click **Outbound Adapters**:
 - ___ b. Under Outbound Adapters, click the **E-mail** and then click the empty canvas of the assembly diagram. The New Flat File Service wizard is opened
- ___ 6. From the 'New External Service' window, select **Advanced: Create and e-mail service using the complete wizard**

IBM WEBSPHERE ADAPTER 7.0 – LAB EXERCISE



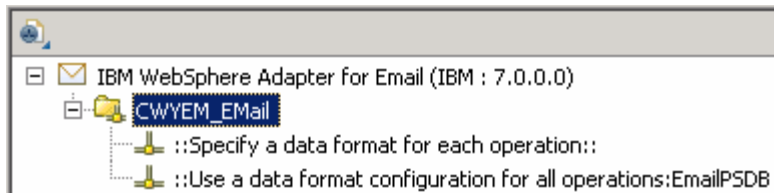
__ a. Click **Next**

Note: You can also start the External Service from the **File menu** option:

From the main menu, select **File > New > External Service**. This opens an External Service wizard that helps you obtain a service which establishes connectivity with other systems. The wizard provides three connectivity options – Adapters, Registers, and Messaging

Select the radio button next to **Adapters** and click **Next**

- ___ 7. On the Select an Adapter screen, expand **IBM WebSphere Adapter for Email (IBM : 7.0.0.0)** and select **CWYEM_Email**



__ a. Click **Next**

- ___ 8. Service Configuration Properties:

__ a. Deploy connector project: ensure that the default option **With module for use by single application** is selected

__ b. Enter these for E-mail system connection information:

- 1) Host name: **<EmailServer_HostName>** (or IP Address of the machine that has E-mail Server), for Ex: localhost
- 2) Port number: **25** (default, you should change it to the correct port number if your E-mail server is running on a different port)

IBM WEBSPHERE ADAPTER 7.0 – LAB EXERCISE

Deploy connector project: With module for use by single application

Connection settings: Use properties below

Connection properties

E-mail system connection information

Host name: localhost

Port number: 25

Protocol: smtp

Select when antivirus or firewall software is running

__ c. Click **Advanced >>** to see the hidden advanced properties that can be configured:

<< Advanced

▶ Additional properties

▶ Logging and tracing

▶ Bidi properties

__ d. Logging and tracing:

Note: Refer to 'Log and confidential trace lab' for more details on this new feature

__ e. For this lab, you are going to use security properties from the activation specification. So, select the radio button next to **Using security properties from the managed connection factory**

1) User name: **username using which you connect to your E-mail server**

Note: Use Emailuser1@aimcp101.austin.ibm.com, since it is configured as SMTP authentication user, if you followed the instructions in 'Install and configure e-mail server and client lab' to install and define users for hMailServer

2) Password: **password for the user to connect to your E-mail server**

Service properties

How do you want to specify the security credentials?

Using an existing JAAS alias (recommended)
A Java Authentication and Authorization Services (JAAS) alias is the preferred method.
J2C authentication data entry:

Using security properties from the managed connection factory
The properties will be stored as plain text; no encryption is used.

User name:

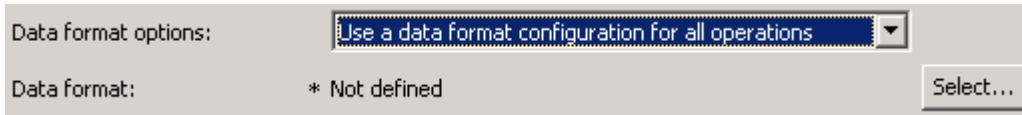
Password:

Other
Use if no security is required or will be handled by the EIS system, or the RAR will be deployed on the server and security will be specified by the properties in the JNDI lookup name.

IBM WEBSPHERE ADAPTER 7.0 – LAB EXERCISE

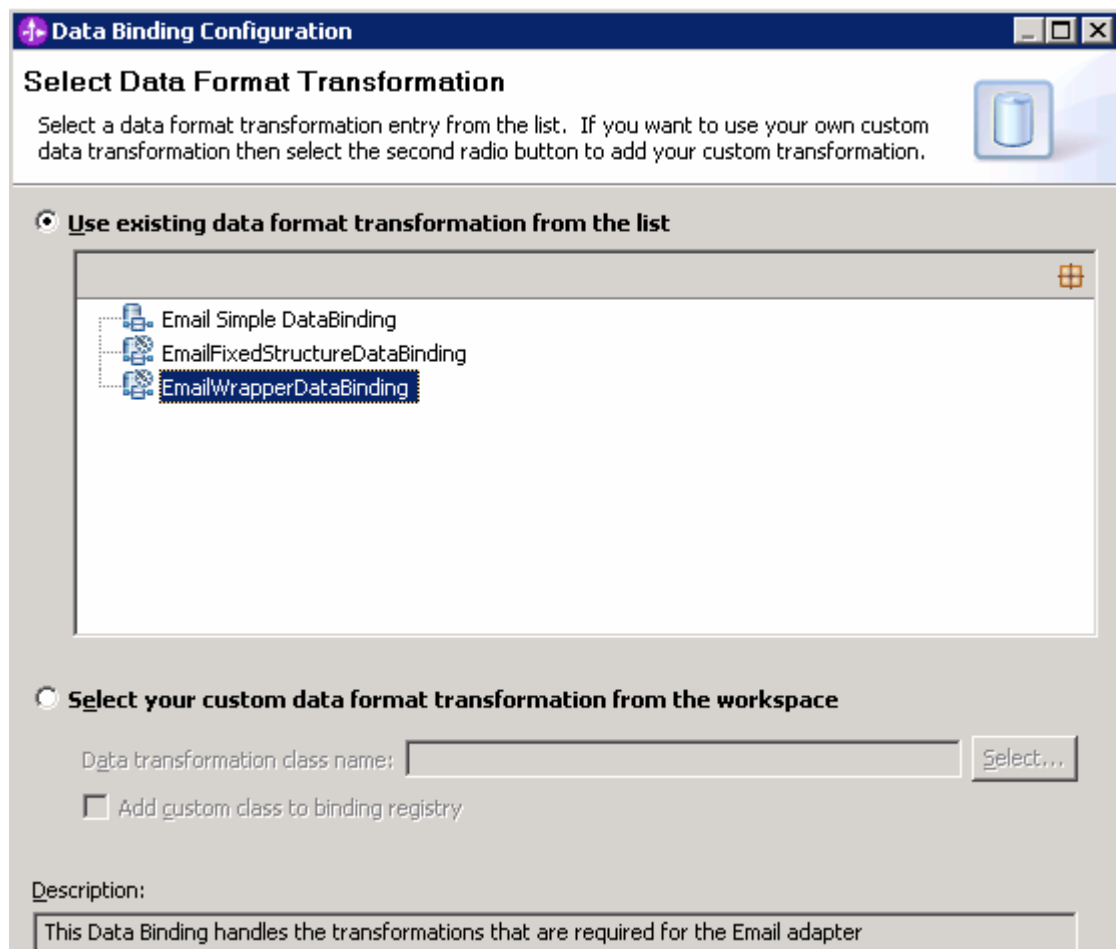
___ 9. You can define data binding in two places - service level (current screen of External Service wizard) or later at the method level (Operations screen of the External Service wizard). In this lab, you will define data binding at the service level (from the current screen)

___ a. From the dropdown menu next to Data format options, select '**Use a data binding configuration for all operations**'



___ b. Click **Select...** next to **Data format**. A Binding Resource Configuration window is opened

___ c. Select the radio button for '**Use existing data format transformation from the list**' and then select **EmailWrapperDataBinding**



___ d. Click **Next**

___ e. Click **Add...** from Data binding properties table. Add/Edit window is opened

___ f. For **Binding type**, ensure that **DataHandler** is selected

___ g. Click **Browse...** next to **Business object type**

1) From Data Type Selection window, select **Wbiaddress** and click **OK**

IBM WEBSPHERE ADAPTER 7.0 – LAB EXERCISE

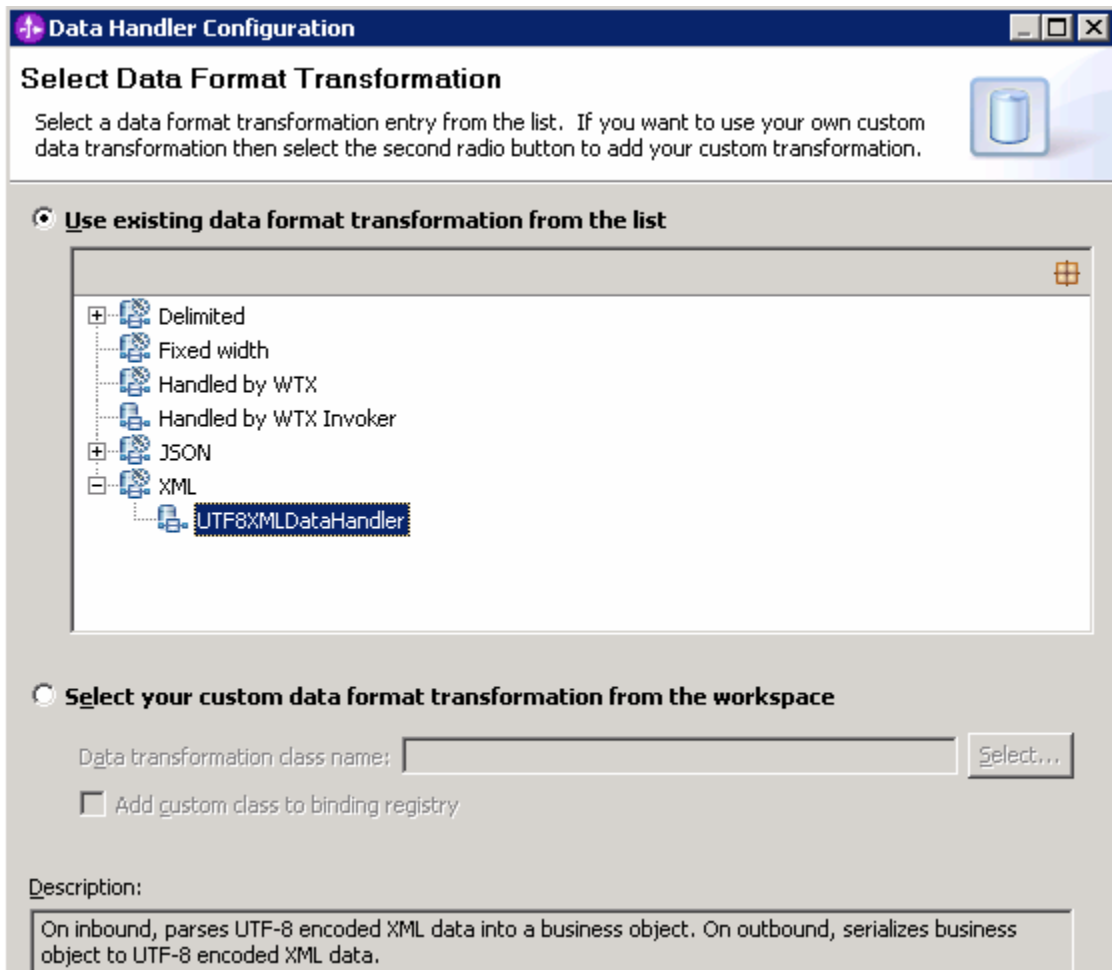
You are now back to the Add/Edit screen and the defined business object, Wbiaddress, is populated in this screen:

- __ h. For **Mime type**, select **text/xml** from the drop down list
- __ i. Encoding: **UTF-8** (default)



Data Handler Configuration:

- __ j. Click **Select** next to **Data handler configuration**. A Binding Resource Configuration window is opened for you to define the data handler
- __ k. Select **XML > UTF8XMLDataHandler** listed under **Use existing data format transformation from the list**



- __ l. Click **Finish**

IBM WEBSHERE ADAPTER 7.0 – LAB EXERCISE

__ m. You are now done with defining the data handler and back to Add/Edit properties screen. The Data handler configuration name, **UTF8XMLDataHandler** is populated in this screen

Binding type: DataHandler

Business object type: * Wbiaddress {http://www.ibm. Browse... New...

Mime type: * text/xml

Encoding: UTF-8 Select...

Data handler configuration: * UTF8XMLDataHandler **Select...**

Data binding configuration: Not defined Select...

__ n. Click **Finish** from the Add/Edit properties screen

__ o. You are now back to the Data binding properties screen with a new entry

Select DataBinding if you want to use a data binding developed for earlier versions of the adapter.

Data binding properties:

Binding type	Business object type	Mime type	Encoding	Data handler configur...	Data binding configur...	Add...
DataHandler	{http://www.ibm.com...	text/xml	UTF-8	{http://EmailNonPSIn...		Edit...

__ p. Click **Next** from Data binding properties screen

__ q. Note that the selected module is **EmailCustomOutboundModule**

1) For the **Name**, enter **EmailNonPSDB**

Binding Resource Configuration

New Data Transformation Configuration

Create a new data transformation configuration. Specify the module, folder, namespace, and name for the data transformation configuration.

Module: EmailCustomOutboundModule Browse... New...

Namespace: http://EmailCustomOutboundModule Default

Folder: Browse...

Name: **EmailNonPSDB**

2) Click **Finish**

__ r. Now the **EmailNonPSDB** should be displayed for Data binding configuration

Data format options: Use a data format configuration for all operations

Data format: * EmailNonPSDB **Select...**

___ 10. You can check the box next to **Change logging properties for wizard** to view the output location of the log file and the logging level

IBM WEBSPHERE ADAPTER 7.0 – LAB EXERCISE

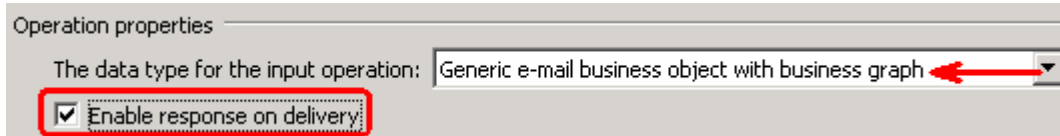
__ a. Click **Next**

Define **createCustomEmail** Operation:

___ 11. Click **Add...** to open Add Operation window

__ a. For **The data type for the operation input**, select **Generic e-mail business object with business graph** from the drop down list

__ b. **New in V7.0:** Select the check box next to **Enable response on delivery**



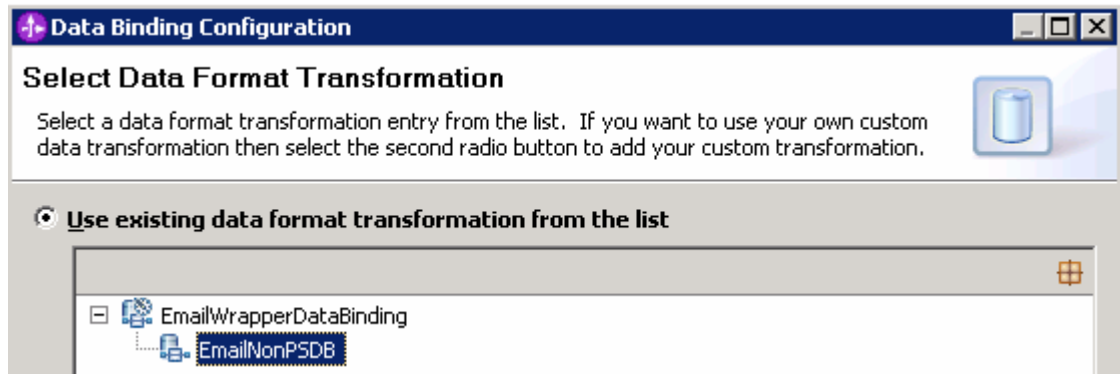
__ c. Click **Next**

The Input type is populated based on the selection of the Data type for the operation in the previous step. Since you have chosen Generic e-mail business object with business graph, the Input type is **EmailBG**

__ d. For Operation name, enter **createCustomEmail**

__ e. Select the Data format for input:

- 1) Click **Select...** next to **Data format**. A Binding Resource Configuration window is opened
- 2) Ensure that the radio button for 'Use existing data format transformation from the list' and then select **EmailWrapperDataBinding > EmailNonPSDB**



__ f. Click **Finish**. Now the **EmailNonPSDB** is displayed for Data binding configuration in the Add Operation window

__ g. Similarly, select '**EmailNonPSDB**' as the data format for **output** also

IBM WEBSPHERE ADAPTER 7.0 – LAB EXERCISE

__ h. Click **Finish**

___ 12. The defined operation, **createCustomEmail**, is populated under Operations list:

Note: The precedence of the parameters is as follows: WrapperBO, Interaction Spec, and Managed Connection Factory. The adapter will first search for the parameters passed in the WrapperBO; if it is not available there, it will then subsequently search in the Interaction Spec, and then the Managed Connection Factory instance. **In this lab, you will enter the values at the WrapperBO level in the later part using the WebSphere Process Server test client.**

__ a. Click **Next** from the Operations window

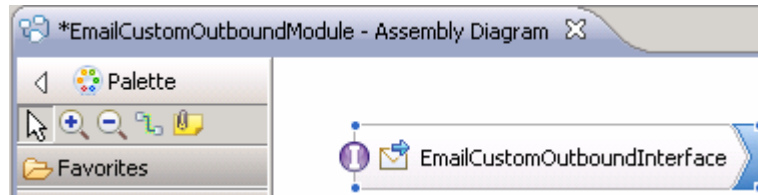
___ 13. From the Generate Service screen, enter these:

__ a. For **Name**, enter **EmailCustomOutboundInterface**

__ b. Click **Finish**

IBM WEBSHERE ADAPTER 7.0 – LAB EXERCISE

- ____ 14. You will now see a new import component, **EmailCustomOutboundInterface** in the assembly diagram of EmailCustomOutboundModule



- ____ 15. Save (**Ctrl+S**) your changes to the assembly diagram

IBM WEBSHERE ADAPTER 7.0 – LAB EXERCISE

4.2. Test E-mail non pass through scenario

- ___ 1. Start your e-mail server (if not started already)
 - ___ a. Select **Start > hMailServer >hMailServerAdministrator**
 - ___ b. From the hMailServer Administrator – Connect window, ensure that **localhost** is selected and click **Connect**
 - ___ c. hMailServer Administrator window is opened and the Current status should show **Running**
- ___ 2. Start WebSphere Process Server (if not started already)
 - ___ a. From the **Servers** view of WebSphere Integration Developer, right click **WebSphere Process Server v7.0** and select Start from the pop-up menu
 - ___ b. Wait until the server status shows as **Started**
- ___ 3. Add the project to the WebSphere Process Server Test Environment
 - ___ a. Right-click **WebSphere Process Server v7.0** under the Servers view and select **Add and remove projects...** from the pop-up menu
 - ___ b. In the Add and Remove Projects window, select the **EmailCustomOutboundModuleApp** project from the Available projects panel
 - ___ c. Click **Add >** to add it to the Configured projects panel
 - ___ d. The project is now moved to Configured projects. Click **Finish**

Wait for the project to be published to the server and you can confirm this by seeing 'application started' message in the console messages.

- ___ 4. Open the test client for the module
 - ___ a. From the Business Integration perspective, right-click the **EmailCustomOutboundModule** and select **Test > Test Module**
 - ___ b. The **EmailCustomOutboundModule_Test** window is opened in the Assembly editor
- ___ 5. Under **Detailed Properties**, for the **Operation** field, select **createCustomEmail** from the drop down menu

General Properties
 Detailed Properties

Specify the component, interface, operation, and input parameter values for the Invoke event, then click the Continue icon in the Events area to run the test. [More...](#)

Configuration:

Module:

Component:

Interface:

Operation:

IBM WEBSHERE ADAPTER 7.0 – LAB EXERCISE

- ___ 6. Enter these for 'Initial request parameters':
- ___ a. To: Emailuser1@aimcp101.austin.ibm.com
 - ___ b. From: Emailuser2@aimcp101.austin.ibm.com
 - ___ c. Subject: **Testing e-mail non pass through outbound**
 - ___ d. mailContent:
 - 1) Right-click the row containing mailContent and select **Use Derived Type...** from the pop-up menu
 - 2) From the Data Type Selection window, select **Wbiaddress** and click **OK**
 - 3) Right-click the row containing mailContent and select **Set To > Default** from the pop-up menu
 - 4) Enter any data for the Wbiaddress fields under mailContent:

Name	Type	Value
createCustomEmailInput	Email	[ab]
To	string	[ab] Emailuser2@aimcp103.austin.ibm.com
From	string	[ab] Emailuser1@aimcp103.austin.ibm.com
CC	string	[ab]
BCC	string	[ab]
Reply-To	string	[ab]
Subject	string	[ab] Testing e-mail non pass through outbound
Encoding	string	[ab]
Date	string	[ab]
mailContent	Wbiaddress	[ab]
Addressid	integer	[ab] 123
Addrline1	string	[ab] 11901
Addrline2	string	[ab] Burnet Rd
Customercity	string	[ab] Austin
Customerstate	string	[ab] TX
Customerzip	string	[ab] 78758
Customercountry	string	[ab] USA
Wbiphone	Wbiphone[]	66
headerList	Header[]	66
mailAttachments	MailAttachment[]	66
fileReferences	string[]	66

- ___ e. Click **Continue** button under Events
- ___ f. From Deployment Location window (if opens), select **WebSphere Process Servers > WebSphere Process Server v7.0 at localhost** and click **Finish**

IBM WEBSHERE ADAPTER 7.0 – LAB EXERCISE

- ___ 7. Verify your results
 - ___ a. You will see 'Invoke returned' in the test client:

Events

This area displays the events in a test trace. Select an event to display its properties in the General Properties and Detailed Properties sections. [More...](#)

General Properties

Detailed Properties

Module: [EmailCustomOutboundModule](#)
 Component: [EmailCustomOutboundInterface](#)
 Interface: [EmailCustomOutboundInterface](#)
 Operation: [createCustomEmail](#)

Return parameters:

Value Editor | XML Source

Name	Type	Value
createCustomEmailOutput	EmailOutboundResponse	[abi]
DeliveredTo *	string	[abi] Emailuser2@aimcp103.austin.
UndeliveredTo *	string	[abi] null
Status *	string	[abi] MESSAGE DELIVERED SUCCESS
MessageID *	string	[abi] <1227376936.151257544591

- ___ 8. You can also check your inbox for the mail received with the specified Subject and the contents in the previous steps
 - ___ a. From your Mozilla thunderbird window, ensure that Emailuser1 is selected and then click **Get Mail**
 - ___ b. Check the inbox of the Emailuser1 and you should find a new e-mail with the subject, **Testing e-mail non pass through outbound**. The contents of this e-mail are the contents you specified in the test client

Inbox for Emailuser1@aimcp100.austin.ibm.com - Thunderbird

File Edit View Go Message Tools Help

Get Mail Write Address Book Reply Reply All Forward Tag Delete Junk Print Back Forward Subject or Sender

All Folders

- Emailuser1@aimcp100.austin.ibm.com
 - Inbox**
 - Sent
 - Trash
- Emailuser2@aimcp100.austin.ibm.com
 - Inbox
 - Sent
 - Trash
- Local Folders

Subject	Sender	Date
Testing simple email pass through o...	Emailuser2@aimcp100.au...	2:40 PM
Testing email pass through outbound	Emailuser2@aimcp100.au...	3:08 PM
Testing email non pass through outb...	Emailuser2@aimcp100.au...	4:07 PM

Subject: Testing email non pass through outbound

From: [Emailuser2@aimcp100.austin.ibm.com](#)

To: [Emailuser1@aimcp100.austin.ibm.com](#)

```
<?xml version="1.0" encoding="UTF-8"?>
<p:Wbiaddress xsi:type="p:Wbiaddress"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xmlns:p="http://www.ibm.com/xmlns/prod/websphere/j2ca/email/wbiaddress"
  <Addressid>123</Addressid>
  <Addrline1>11901</Addrline1>
  <Addrline2>Burnet Rd</Addrline2>
  <Customercity>Austin</Customercity>
  <Customerstate>TX</Customerstate>
  <Customerzip>78758</Customerzip>
  <Customercountry>USA</Customercountry>
</p:Wbiaddress>
```

IBM WEBSHERE ADAPTER 7.0 – LAB EXERCISE

- ___ 9. Restore the server
- ___ a. Close the **EmailCustomOutboundModule_Test** window and click **No** for the Save Resources window
 - ___ b. Right-click **WebSphere Process Server v7.0** under the Servers view and select **Add and remove projects...** from the pop-up menu
 - ___ c. Select **EmailCustomOutboundModuleApp** under Configured projects and click **< Remove**
 - ___ d. Click **Finish** after you see the application moved to Available projects. Wait until the application is unpublished

Part 5: Fixed structure scenario

In this part, you will use this new External Service feature to create/configure the Data Binding, Data handler, Operations, which generates the business objects and other artifacts for fixed structure non pass through scenario and then test the configuration with some test e-mails.

IBM WEBSPHERE ADAPTER 7.0 – LAB EXERCISE

5.1. Configure fixed structure using the external service wizard

In this part, you will use this new External Service feature to create/configure the Data Binding, Operations, which generates the business objects and other artifacts.

- ___ 1. Create EmailFixedOutboundModule
 - ___ a. From the Business Integration window, right-click and select **New > Module**
 - ___ b. From the New Module window, enter **EmailFixedOutboundModule** for the Module Name
 - ___ c. Ensure that the box next to **Open module assembly diagram** is checked and then click **Finish**

You will now see a new module, EmailFixedOutboundModule, created in your Business Integration window

- ___ 2. Import required business objects
 - ___ a. Expand EmailFixedOutboundModule (if not already expanded), right-click **Data Types** and select **Import...** from the pop-up menu
 - ___ b. From the Import window, expand **General** and select **File System** and then click **Next**
 - ___ c. Enter From directory
 - 1) Click **Browse...** next to **From directory**
 - 2) From the Import from directory window, select **<EMAILFILES>** and click **OK**

Now, you will see EmailFiles folder added on the left side, and all the xsds and other files under that folder on the right side.

- ___ d. Select the box next to **Customer.xsd and Order.xsd**
- ___ e. Ensure that the **EmailFixedOutboundModule** is selected for Into folder
- ___ f. Click **Finish** from the Import window

The Business Integration window is updated with the imported business objects.

- ___ 3. Review the imported business objects:
 - ___ a. Expand **EmailFixedOutboundModule > Data Types** and you will now see two new data types '**Customer**' and '**Order**' under it.
 - ___ b. Double-click **Customer** review the fields inside the object:

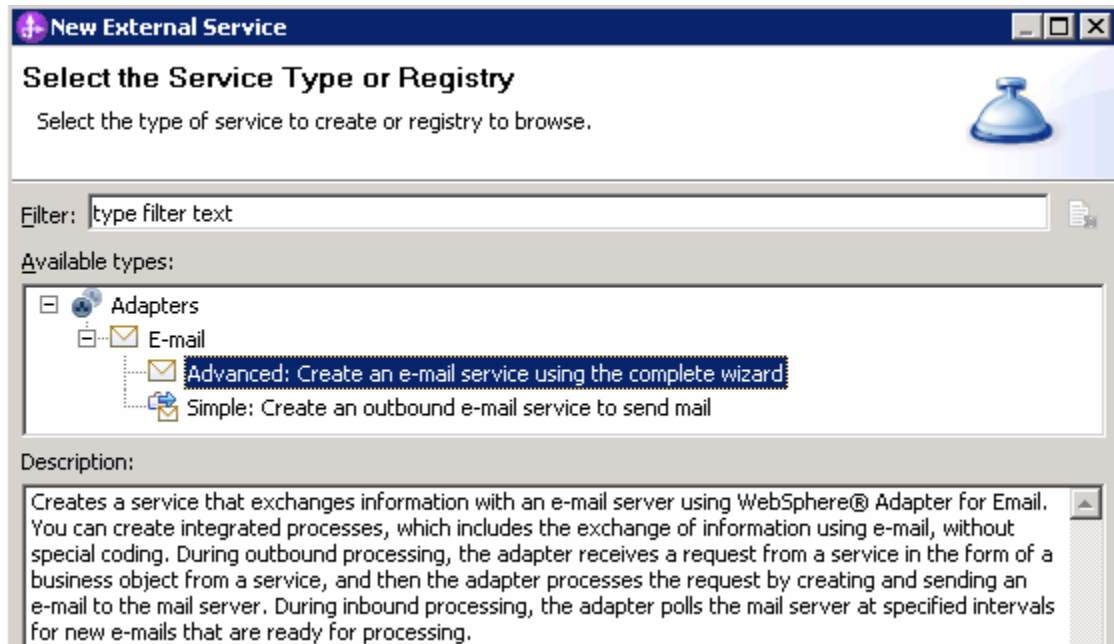
Customer	
<Click to filter...>	
CustomerName	string
Address	string
City	string
State	string

IBM WEBSPHERE ADAPTER 7.0 – LAB EXERCISE

___ c. Now, double-click **Order** and review the fields inside the object:

Order	
<Click to filter...>	
OrderNumber	string
OrderType	string
Quantity	string
Price	string

- ___ 4. After reviewing, close the Customer business object from the Assembly editor
- ___ 5. To start External Service from the Palette:
 - ___ a. From the **Palette** on the left side of Assembly Diagram, click **Outbound Adapters**:
 - ___ b. Under Outbound Adapters, click the **E-mail** and then click the empty canvas of the assembly diagram. The New Flat File Service wizard is opened
- ___ 6. From the 'New External Service' window, select **Advanced: Create and e-mail service using the complete wizard**



___ a. Click **Next**

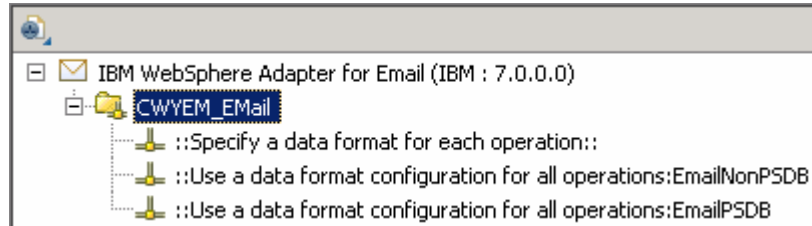
Note: You can also start the External Service from the **File menu** option:

From the main menu, select **File > New > External Service**. This opens an External Service wizard that helps you obtain a service which establishes connectivity with other systems. The wizard provides three connectivity options – Adapters, Registers, and Messaging

Select the radio button next to **Adapters** and click **Next**

IBM WEBSHERE ADAPTER 7.0 – LAB EXERCISE

- ___ 7. On the Select an Adapter screen, expand **IBM WebSphere Adapter for Email (IBM : 7.0.0.0)** and select **CWYEM_Email**



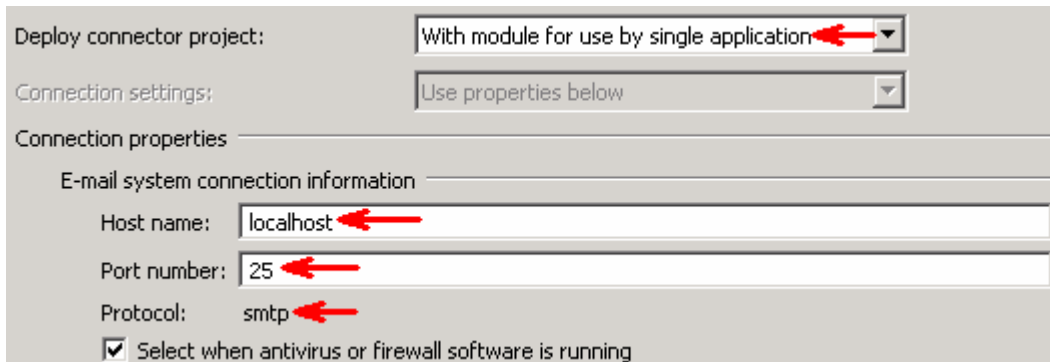
- ___ a. Click **Next**

- ___ 8. Service Configuration Properties:

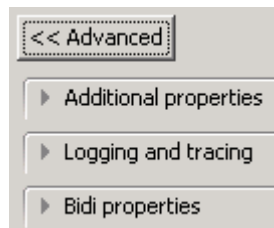
- ___ a. Deploy connector project: ensure that the default option **With module for use by single application** is selected

- ___ b. Enter these for E-mail system connection information:

- 1) Host name: **<EmailServer_HostName>** (or IP Address of the machine that has E-mail Server), for Ex: localhost
- 2) Port number: **25** (default, you should change it to the correct port number if your E-mail server is running on a different port)



- ___ c. Click **Advanced >>** to see the hidden advanced properties that can be configured:



- ___ d. Logging and tracing:

Note: Refer to '**Log and confidential trace lab**' for more details on this **new** feature

- ___ e. For this lab, you are going to use security properties from the activation specification. So, select the radio button next to **Using security properties from the managed connection factory**

IBM WEBSPHERE ADAPTER 7.0 – LAB EXERCISE

1) User name: **username using which you connect to your E-mail server**

Note: Use Emailuser1@aimcp101.austin.ibm.com, since it is configured as SMTP authentication user, if you followed the instructions in 'Install and configure e-mail server and client lab' to install and define users for hMailServer

2) Password: **password for the user to connect to your E-mail server**

Service properties

How do you want to specify the security credentials?

Using an existing JAAS alias (recommended)
A Java Authentication and Authorization Services (JAAS) alias is the preferred method.
J2C authentication data entry:

Using security properties from the managed connection factory
The properties will be stored as plain text; no encryption is used.

User name:

Password:

Other
Use if no security is required or will be handled by the EIS system, or the RAR will be deployed on the server and security will be specified by the properties in the JNDI lookup name.

___ 9. You can define data binding in two places - service level (current screen of External Service wizard) or later at the method level (Operations screen of the External Service wizard). In this lab, you will define data binding at the service level (from the current screen)

___ a. From the dropdown menu next to Data format options, select '**Use a data binding configuration for all operations**'

Data format options:

Data format: * Not defined

Data binding configuration:

___ b. Click **Select...** next to **Data format**. A Binding Resource Configuration window is opened

IBM WEBSPHERE ADAPTER 7.0 – LAB EXERCISE

- ___ c. Select the radio button for '**Use existing data format transformation from the list**' and then select **EmailFixedStructureDataBinding**

Use existing data format transformation from the list

- Email Simple DataBinding
- EmailFixedStructureDataBinding**
- EmailWrapperDataBinding

Select your custom data format transformation from the workspace

Data transformation class name:

Add custom class to binding registry

Description:
This Data Binding handles the transformations that are required for the Email adapter

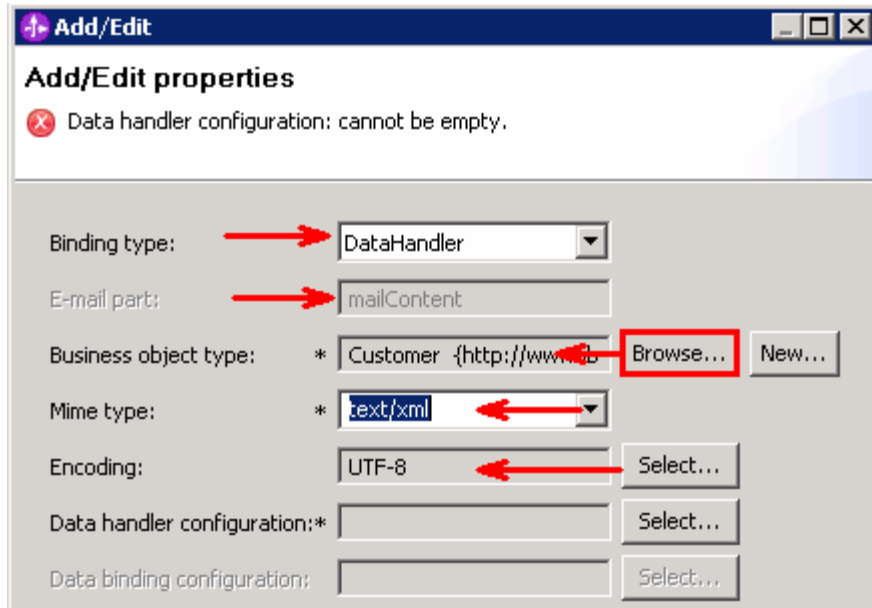
- ___ d. Click **Next**

___ 10. From **Data Transformation Properties** screen, Define **mailContent**:

- 1) Click **Add...** next to the table. Add/Edit window is opened
- 2) Note that the **E-mail part** is **mailContent**
- 3) Click **Browse...** next to **Business object type**. Data Type Selection window is opened
 - a) Select **Customer** from the **Matching data types** list and click **OK**
- 4) For **Mime type**, select **text/xml** from the drop down list

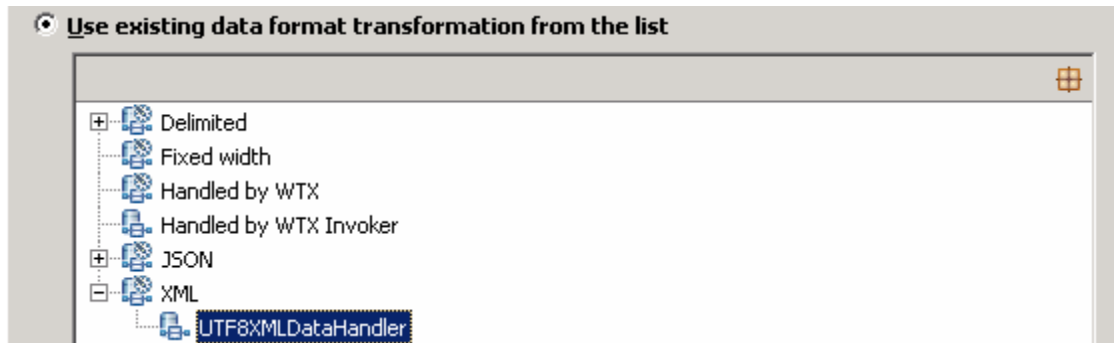
IBM WEBSPHERE ADAPTER 7.0 – LAB EXERCISE

- 5) For **Encoding**, accept the default **UTF-8** (Optionally, you can click Select and then select any encoding from the available list)



Data Handler Configuration:

- ___ b. Click **Select** next to **Data handler configuration**. A Binding Resource Configuration window is opened for you to define the data handler
- ___ c. Select **XML > UTF8XMLDataHandler** listed under **Use existing data format transformation from the list**



- ___ d. Click **Finish**
- ___ e. You are now done with defining the data handler and back to Add/Edit properties screen. The Data handler configuration name, **UTF8XMLDataHandler** is populated in this screen

IBM WEBSHERE ADAPTER 7.0 – LAB EXERCISE

- ___ f. Click **Finish** from the Add/Edit properties screen
- ___ g. You are back to the Data binding properties screen with a new entry. You have so far defined the Business object type for the mailContent which is populated in this window:

Select DataBinding if you want to use a data binding developed for earlier versions of the adapter.

Data binding properties:

Binding type	E-mail part	Business object type	Mime type	Encoding	Data handler configuration	Data binding configu	Add...
DataHandler	mailContent	{http://www.ibm.com/x...	text/xml	UTF-8	{http://EmailFixedInboun...		Edit...

- ___ 11. Define **attachment** part:
- ___ a. Click **Add...** next to the 'Data binding properties' table. This will open an Add/Edit window
- ___ b. Note that the **E-mail part** is **attachment1**
- ___ c. Click **Browse...** next to **Business object type**. Data Type Selection window is opened
- 1) Select **Order** from the Matching data types list and click **OK**
- ___ d. For **Mime type**, select **text/xml** from the drop down list
- ___ e. For **Encoding**, accept the default **UTF-8** (Optionally, you can click Select and then select any encoding from the available list)
- ___ f. Click **Select...** next to **Data handler configuration**
- 1) From the Binding Resource Configuration window, select **XML > UTF8XMLDataHandler** under 'Use existing data format transformation from the list' and click **Finish**

IBM WEBSPHERE ADAPTER 7.0 – LAB EXERCISE

__ g. The data handler is populated in Add/Edit window:

__ h. Click **Finish** from the Add/Edit window

__ i. You are back to the Binding Resource Configuration window and the defined Business object type and the Email-part are displayed in the table format in this screen:

Select DataBinding if you want to use a data binding developed for earlier versions of the adapter.
Data binding properties:

Binding type	E-mail part	Business object type	Mime type	Encoding	Data handler configuration	Data binding configu	Add...
DataHandler	attachment1	{http://www.ibm.com/x...	text/xml	UTF-8	{http://EmailFixedInboun...		
DataHandler	mailContent	{http://www.ibm.com/x...	text/xml	UTF-8	{http://EmailFixedInboun...		Edit...

__ j. Click **Next** from the Data Binding Properties screen

__ k. Note that the selected module is **EmailFixedOutboundModule**

1) For the **Name**, enter **EmailFixedDB**

2) Click **Finish**

__ l. Now the **EmailFixedDB** should be displayed for Data format

___ 12. Check the box next to **Change logging properties for wizard** to view the output location of the log file and the logging level. You can change the logging level using the drop down menu

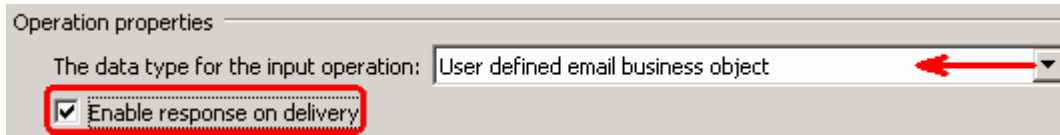
__ a. Click **Next**

Define **createFixedEmail** Operation:

___ 13. Click **Add...** to open Add Operation window

IBM WEBSPHERE ADAPTER 7.0 – LAB EXERCISE

- ___ a. For **The data type for the operation input**, select **User defined Email business object** from the drop down list
- ___ b. **New in V7.0:** Select the check box next to **Enable response on delivery**



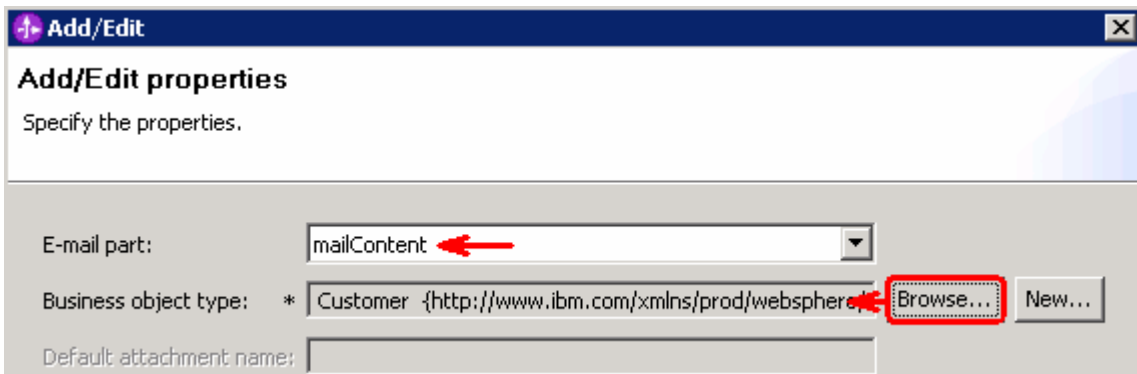
- ___ c. Click **Next**

The Input type is populated based on the selection of the Data type for the operation in the previous step. Since you have chosen User defined type, the Input type is blank

- ___ d. For Operation name, enter **createFixedEmail**

Define Input type:

- ___ e. Click **New...** next to **Input type**. New Business Object is opened
- ___ f. Ensure that the selected Module is **EmailFixedOutboundModule** and click **Next**
- ___ g. For **Business object name**, enter **MyFixedEmail** (you can enter any name here)
- ___ h. **Select** the box next to **Generate a business graph for the business object**
- ___ i. Click **Add...** next to the 'Properties for e-mail type' table. This will open an Add/Edit window
- ___ j. Define **mailContent**:
 - 1) Note that the **E-mail part** is entered with **mailContent**
 - 2) Click **Browse...** next to Business object type. Data Type Selection window is opened
 - 3) Select **Customer** from the Matching data types list and click **OK**
- ___ k. Now, back to Add/Edit window. You have so far defined the Business object type for the mailContent which is populated in this window:



- ___ l. Click **Finish** from the Add/Edit window
- ___ m. You are back to the New Business Object window and the defined Business object type and the Email-part are displayed in the table format in this screen:

IBM WEBSPHERE ADAPTER 7.0 – LAB EXERCISE

Business object name: * MyFixedEmail

Business object namespace: http://www.ibm.com/xmlns/prod/websphere/j2ca/email/fixedstructureemail

Generate a business graph for the business object

Properties for e-mail type:

E-mail part	Business object type	Default attachment name
mailContent	{http://www.ibm.com/xmlns/prod/websphere/j2ca/email/customer}Customer	

Buttons: Add..., Edit..., Remove

__ n. Define **attachment** part:

- 1) Click **Add...** next to the 'Properties for e-mail type' table. This will open an Add/Edit window
- 2) Note that the **E-mail part** is entered with **attachment1**
- 3) Click **Browse...** next to Business object type. Data Type Selection window is opened
- 4) Select **Order** from the Matching data types list and click **OK**

__ o. Now, back to Add/Edit window. You have so far defined the Business object type for the mailContent which is populated in this window:

E-mail part: attachment1

Business object type: * Order {http://www.ibm.com/xmlns/prod/websph... **Browse...** New...

Default attachment name:

__ p. Click **Finish** from the Add/Edit window

__ q. You are back to New Business Object window and the defined Business object type and the Email-part are displayed in the table format in this screen:

Business object name: * MyFixedEmail

Business object namespace: http://www.ibm.com/xmlns/prod/websphere/j2ca/email/fixedstructureemail

Generate a business graph for the business object

Properties for e-mail type:

E-mail part	Business object type	Default attachment name
attachment1	{http://www.ibm.com/xmlns/prod/websphere/j2ca/email/order}Order	
mailContent	{http://www.ibm.com/xmlns/prod/websphere/j2ca/email/customer}Customer	

Buttons: Add..., Edit...

__ r. Click **Finish**. You are now back to the Add operation window and the Data type you have defined in the previous steps is displayed here for the Input type

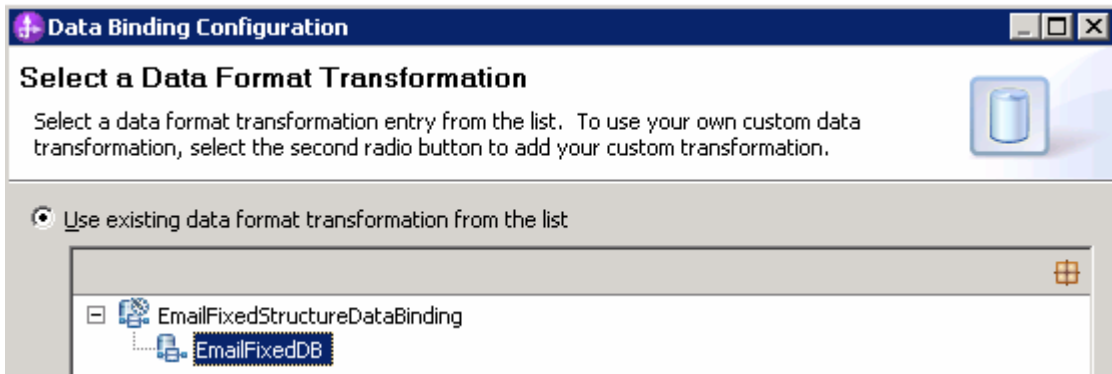
__ s. Select Data format for input: Accept the default selection, **Use data format configuration 'EmailFixedDB'**, for Data format options under 'Specify the Operation input'

__ t. Select Data format for output:

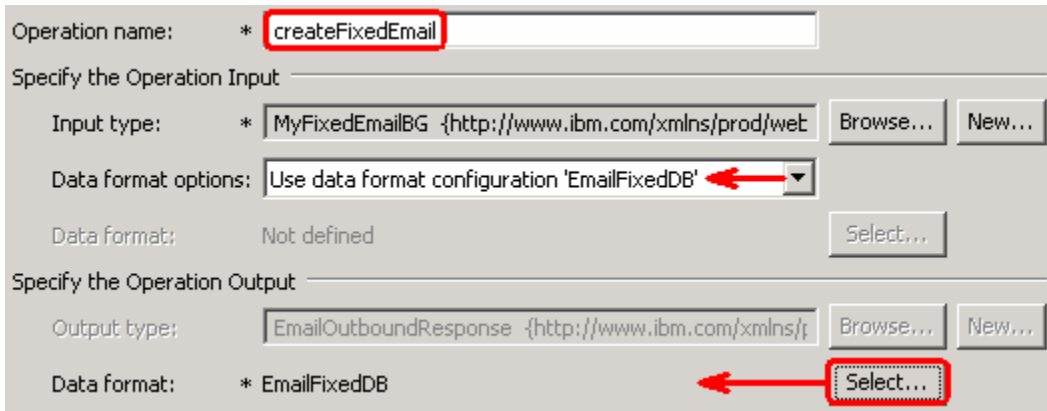
- 1) Click **Select** next to Data format under 'Specify the Operation output'

IBM WEBSHERE ADAPTER 7.0 – LAB EXERCISE

- 2) In the 'Data Binding Configuration' pop-up, select **EmailFixedStructureDataBinding > EmailFixedDB**

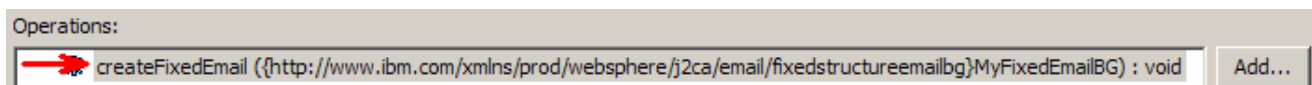


- 3) Click **Finish**. Add Operation window should have the below values:



- ___ u. Click **Finish** from the Operation screen

- ___ 14. The operation, createFixedEmail, will now be displayed under Operations list. You can click **Advanced >>** to open the advanced properties and review them



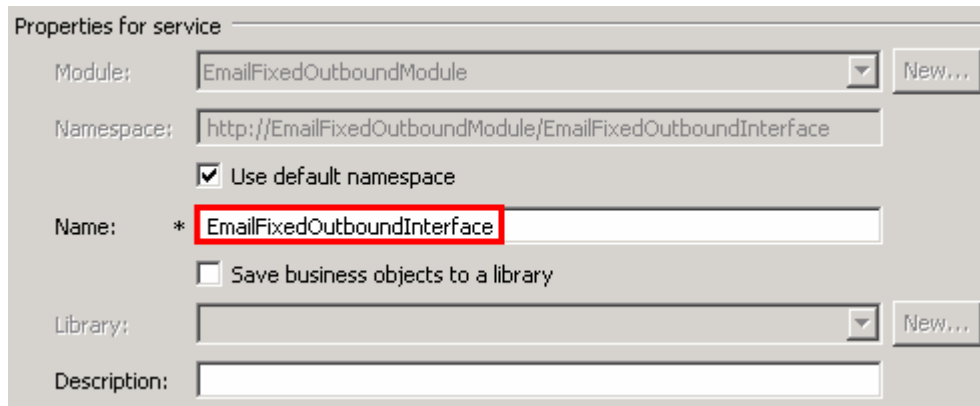
Note: The precedence of the parameters is as follows: WrapperBO, Interaction Spec, and Managed Connection Factory. The adapter will first search for the parameters passed in the WrapperBO; if it is not available there, it will then subsequently search in the Interaction Spec, and then the Managed Connection Factory instance. **In this lab, you will enter the values at the WrapperBO level in the later part using the WebSphere Process Server test client.**

- ___ 15. Click **Next** from the Operations window

IBM WEBSHERE ADAPTER 7.0 – LAB EXERCISE

___ 16. From the Generate Artifacts screen, enter these:

__ a. For **Name**, enter **EmailFixedOutboundInterface**



Properties for service

Module: EmailFixedOutboundModule [New...]

Namespace: http://EmailFixedOutboundModule/EmailFixedOutboundInterface

Use default namespace

Name: * EmailFixedOutboundInterface

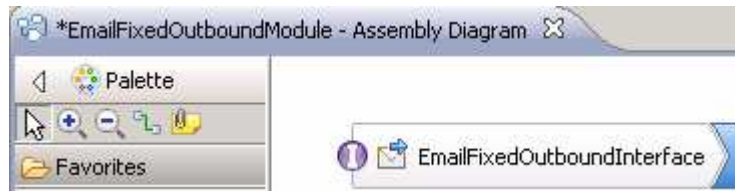
Save business objects to a library

Library: [New...]

Description:

__ b. Click **Finish**

___ 17. You will now see a new import component, **EmailFixedOutboundInterface** in the assembly diagram of EmailFixedOutboundModule



___ 18. Save (**Ctrl+S**) your changes to the assembly diagram

IBM WEBSHERE ADAPTER 7.0 – LAB EXERCISE

5.2. Test fixed e-mail scenario

- ___ 1. Start your e-mail server (if not started already)
 - ___ a. Select **Start > hMailServer > hMailServerAdministrator**
 - ___ b. From the hMailServer Administrator – Connect window, ensure that **localhost** is selected and click **Connect**
 - ___ c. hMailServer Administrator window is opened and the Current status should show **Running**
- ___ 2. Start WebSphere Process Server (if not started already)
 - ___ a. From the **Servers** view of WebSphere Integration Developer, right click **WebSphere Process Server v7.0** and select Start from the pop-up menu
 - ___ b. Wait until the server status shows as **Started**
- ___ 3. Add the project to the WebSphere Process Server Test Environment
 - ___ a. Right-click **WebSphere Process Server v7.0** under the Servers view and select **Add and remove projects...** from the pop-up menu
 - ___ b. In the Add and Remove Projects window, select the **EmailFixedOutboundModuleApp** project from the Available projects panel
 - ___ c. Click **Add >** to add it to the Configured projects panel
 - ___ d. The project is now moved to Configured projects. Click **Finish**

Wait for the project to be published to the server and you can confirm this by seeing 'application started' message in the console messages:

- ___ 4. Open the test client for the module
 - ___ a. From the Business Integration perspective, right-click the **EmailFixedOutboundModule** and select **Test > Test Module**
 - ___ b. The **EmailFixedOutboundModule_Test** window is opened in the Assembly editor
- ___ 5. Under **Detailed Properties**, for the **Operation** field, select **createFixedEmail** from the drop down menu

► **General Properties**

▼ **Detailed Properties**

Specify the component, interface, operation, and input parameter values for the Invoke event, then click the Continue icon in the Events area to run the test. [More...](#)

Configuration:	Default Module Test
Module:	EmailFixedOutboundModule
Component:	EmailFixedOutboundInterface
Interface:	EmailFixedOutboundInterface
Operation:	createFixedEmail

IBM WEBSHERE ADAPTER 7.0 – LAB EXERCISE

Enter these for 'Initial request parameters':

- ___ a. To: Emailuser1@aimcp101.austin.ibm.com
- ___ b. From: Emailuser2@aimcp101.austin.ibm.com
- ___ c. Subject: **Testing content specific Fixed type outbound**
- ___ d. Enter any data for the **Order** fields under **attachment1**
- ___ e. Enter any data for the **Customer** fields under **mailContent**

Name	Type	Value
createFixedEmailInput	MyFixedEmailBG	
verb	verb <string>	CREATE
MyFixedEmail *	MyFixedEmail	
To	string	Emailuser2@aimcp101.austin.ibm.com
From	string	Emailuser1@aimcp101.austin.ibm.com
CC	string	
BCC	string	
Reply-To	string	
Subject	string	Testing content specific Fixed type outbound
Encoding	string	
Date	string	
HeaderList	Header[]	
attachment1	Order	
OrderNumber	string	A123
OrderType	string	Large
Quantity	string	500
Price	string	250.0
attachment1Name	string	EmailFixed.xml
mailContent	Customer	
CustomerName	string	ABC
Address	string	11901 Burnet Rd
City	string	Austin
State	string	TX

- ___ f. Click **Continue** button under Events
- ___ g. From Deployment Location window (if opens), select **WebSphere Process Servers > WebSphere Process Server v7.0 at localhost** and click **Finish**

IBM WEBSPHERE ADAPTER 7.0 – LAB EXERCISE

- ___ 6. Verify your results
 - ___ a. You will see 'Invoke returned' in the test client:

Events

This area displays the events in a test trace. Select an event to display its properties in the General Properties and Detailed Properties sections. [More...](#)

General Properties

Detailed Properties

Module: [EmailFixedOutboundModule](#)
Component: [EmailFixedOutboundInterface](#)
Interface: [EmailFixedOutboundInterface](#)
Operation: [createFixedEmail](#)

Return parameters:

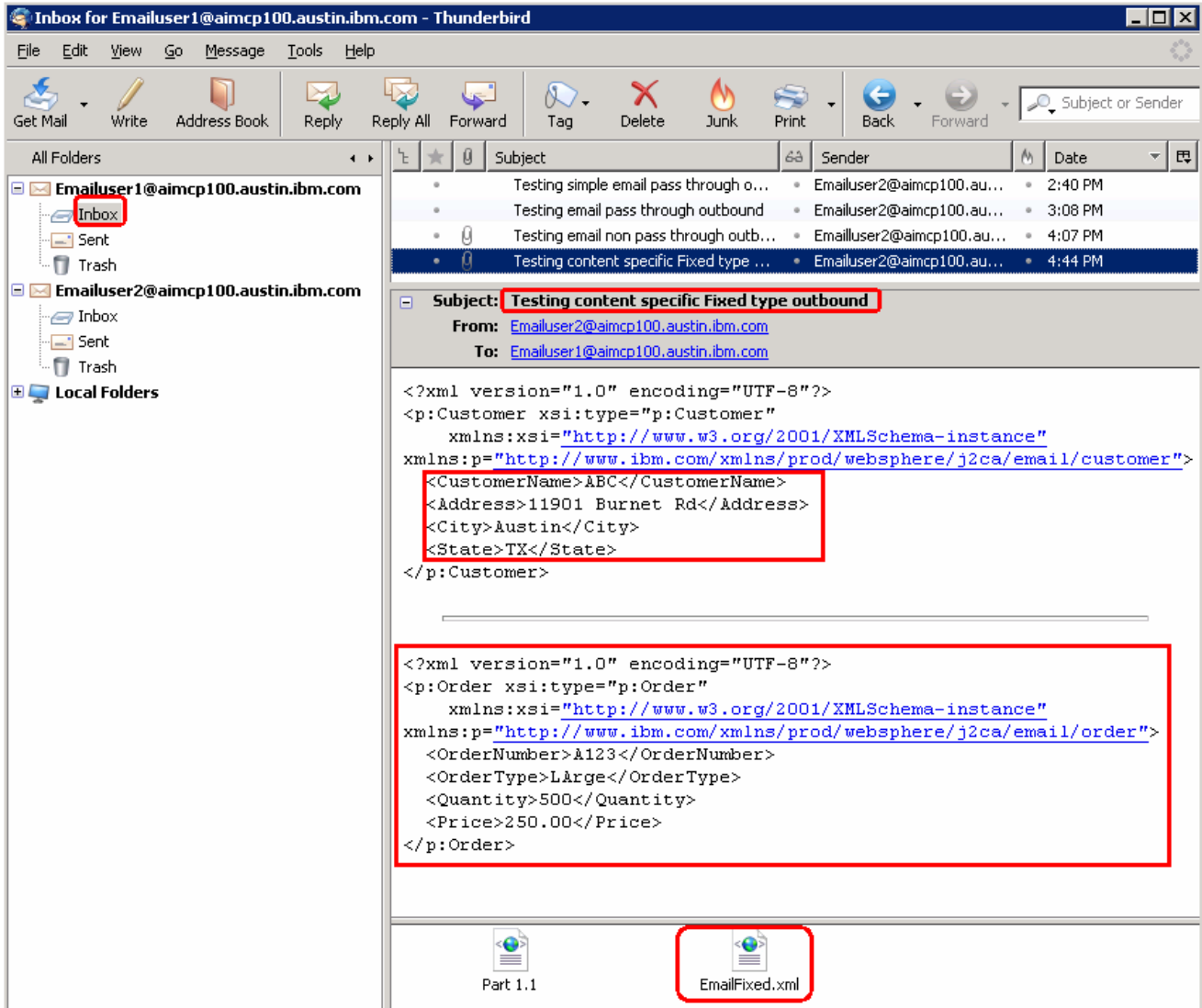
Value Editor: XML Source

Name	Type	Value
createFixedEmailOutput	EmailOutboundResponse	
DeliveredTo *	string	Emailuser2@aimcp103.austin.ibm
UndeliveredTo *	string	null
Status *	string	MESSAGE DELIVERED SUCCESSFUL
MessageID *	string	<438311456.191257545936187

- ___ 7. You can also check your inbox for the mail received with the specified Subject and the contents in the previous steps
 - ___ a. From your Mozilla thunderbird window, ensure that Emailuser1 is selected and then click **Get Mail**

IBM WEBSPHERE ADAPTER 7.0 – LAB EXERCISE

- ___ b. Check the inbox of 'user1' and you should find a new e-mail with the subject, **Testing content specific Fixed type outbound**. The contents of this e-mail are the contents you specified in the test client.

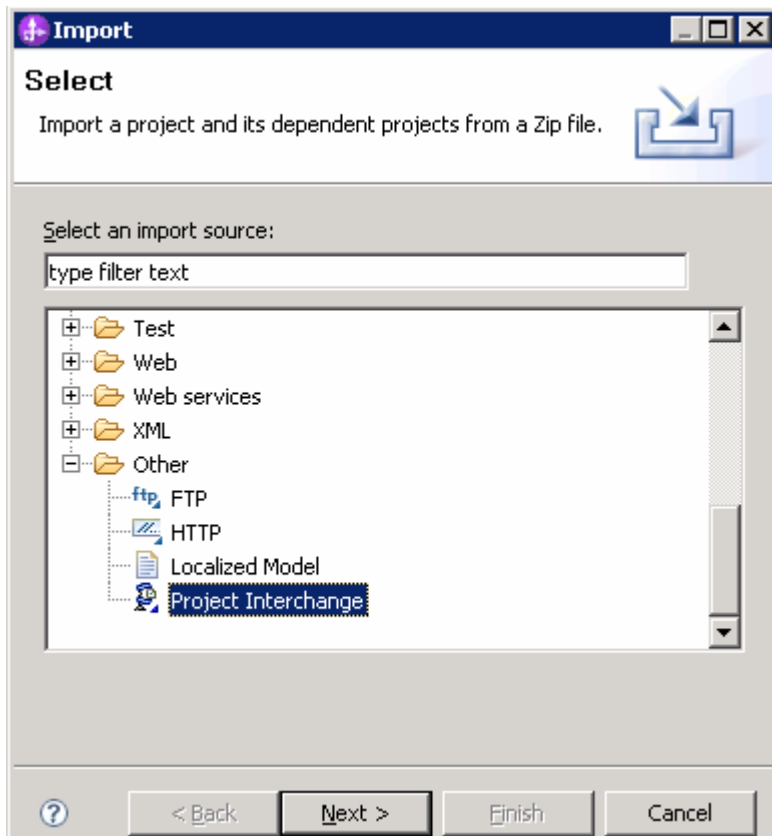


- ___ 8. Restore server configuration
 - ___ a. Close the **EmailFixedOutboundModule_Test** window and click **No** for the Save Resources window
 - ___ b. Right-click **WebSphere Process Server v7.0** under the Servers view and select **Add and remove projects...** from the pop-up menu
 - ___ c. Select **EmailFixedOutboundModuleApp** under Configured projects and click **< Remove**
 - ___ d. Click **Finish** after you see the application moved to Available projects. Wait until the application is unpublished

IBM WEBSHERE ADAPTER 7.0 – LAB EXERCISE

Solution instructions

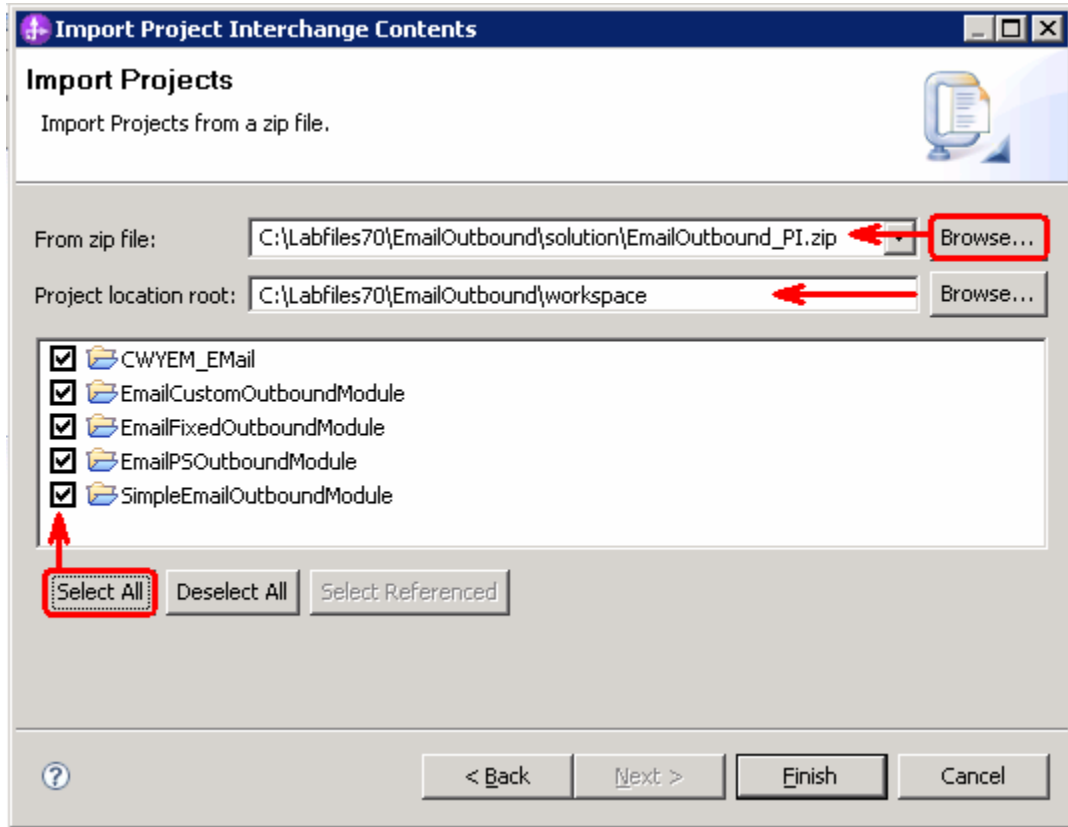
- ___ 1. Start WebSphere Integration Developer V7.0 with a new workspace
 - ___ a. Follow the instructions outlined in **Part 1** of this exercise
- ___ 2. Import the solution Project Interchange
 - ___ a. Import the project interchange file **EmailOutbound_Pi.zip** from **<LAB_FILES>\EmailOutbound\solution** directory
 - ___ b. Select **File → Import** from the menu
 - ___ c. Select **Other → Project Interchange** in the **Import** dialog and click **Next**



- ___ d. For the **From zip file**, click on the **Browse** button and select the **EmailOutbound_Pi.zip** in the **<LAB_FILES>\EmailOutbound\solution** directory
- ___ e. Enter **<LAB_FILES>\EmailOutbound\workspace** for the **Project location root**

IBM WEBSHERE ADAPTER 7.0 – LAB EXERCISE

- ___ f. Click the **Select All** button. This will select all modules: **CWYEM_Email**, **EmailCustomOutboundModule**, **EmailFixedOutboundModule**, **EmailPSOutboundModule** and **SimpleEmailOutboundModule**



- ___ g. Click **Finish**

- ___ 3. Test simple outbound scenario: Continue with **Part 2.2** of this lab
- ___ 4. Test outbound pass through scenario: Continue with **Part 3.2** of this lab
- ___ 5. Test outbound non pass through scenario: Continue with **Part 4.2** of this lab
- ___ 6. Test outbound user defined (fixed structure e-mail) scenario: Continue with **Part 5.2** of this lab

IBM WEBSPPHERE ADAPTER 7.0 – LAB EXERCISE

What you did in this exercise

In this lab, you imported the E-mail Adapter RAR file into your WebSphere Integration Developer workspace and integrated it into an SCA application that creates a file to the file system.

You made use of External Service wizard available in WebSphere Integration Developer to specify Managed Connection Factory Properties and Resource Adapter Properties which, after deploying onto the server will generate Business Objects and other artifacts.

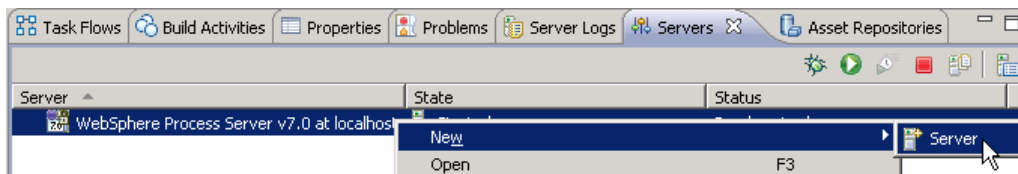
In the end you deployed and then tested the adapter application for simple, pass through, non-pass through, and fixed structure e-mail scenarios.

IBM WEBSHERE ADAPTER 7.0 – LAB EXERCISE

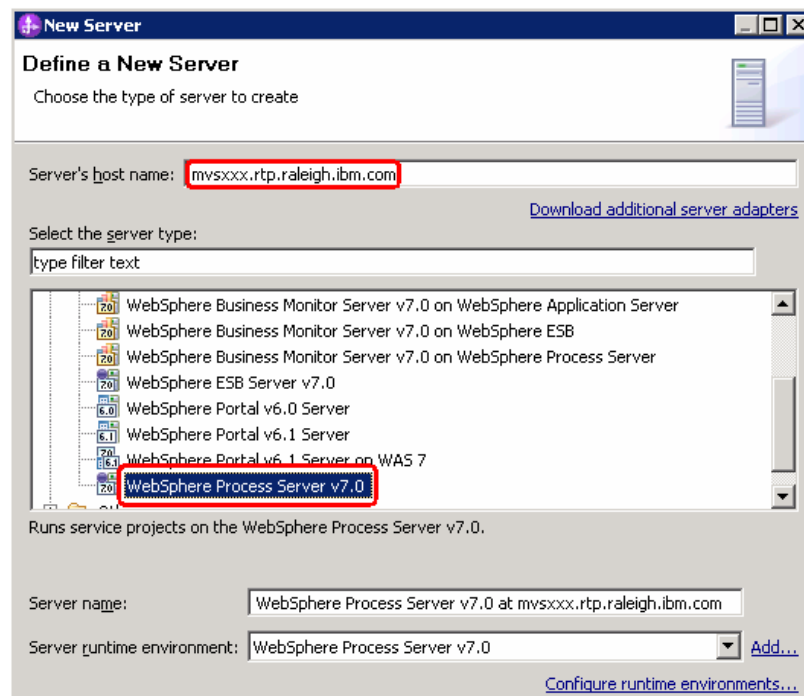
Task: Adding remote server to the WebSphere Integration Developer test environment

This task describes how to add a remote server to the WebSphere Integration Developer Test environment. This example uses a z/OS machine.

- ___ 1. Define a new remote server to WebSphere Integration Developer.
 - ___ a. Right click the background of the Servers view to access the pop-up menu.
 - ___ b. Select **New → Server**.



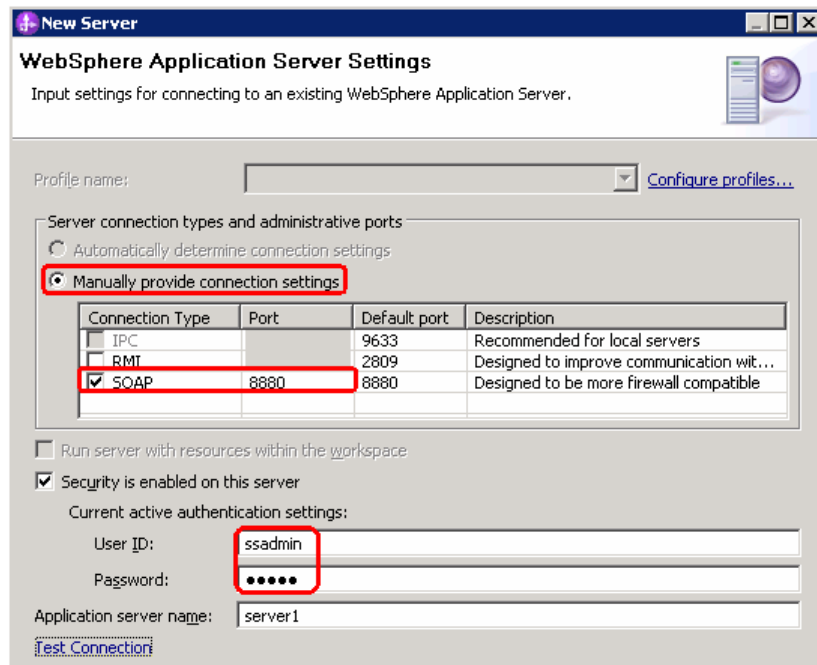
- ___ c. In the New Server dialog, specify the remote server's host name, **<HOSTNAME>**.
- ___ d. Ensure that the appropriate server type, **'WebSphere Process Server v7.0'** or **'WebSphere ESB Server v7.0'**, is highlighted in the server type list



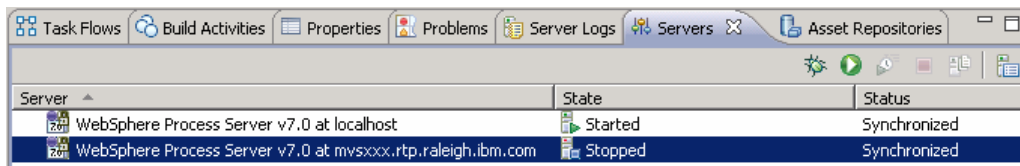
- ___ e. Click **Next**

IBM WEBSHERE ADAPTER 7.0 – LAB EXERCISE

- ___ f. On the WebSphere Server Settings page, leave the radio button for **Manually provide connection settings** selected, and select the box for SOAP
- ___ g. Enter the correct setting (<SOAP_PORT>) for **Port** column
- ___ h. If security is enabled on your server, select the box for ‘**Security is enabled on this server**’ and enter <USERID> for the user ID and <PASSWORD> for the password.



- ___ i. Click **Finish**.
- ___ j. The new server should be seen in the Server view.



- ___ 2. Start the remote server if it is not already started. WebSphere Integration Developer does not support starting remote servers from the Server view.
- ___ a. From a command prompt, telnet to the remote system if needed:

'telnet <HOSTNAME> <TELNET_PORT>'

User ID : <USERID>

Password : <PASSWORD>

IBM WEBSHERE ADAPTER 7.0 – LAB EXERCISE

__ b. Navigate to the bin directory for the profile being used:

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

__ c. Run the command file to start the server: **./startServer.sh <SERVER_NAME>**

__ d. Wait for status message indicating server has started:

```
ADMU3200I: Server launched. Waiting for initialization status
```

```
ADMU3000I: Server sssr01 open for e-business; process id is 0000012000000002
```

IBM WEBSHERE ADAPTER 7.0 – LAB EXERCISE

This page is left intentionally blank.