

IBM WEBSPHERE ADAPTER 6.1 – LAB EXERCISE

E-mail Adapter outbound lab

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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

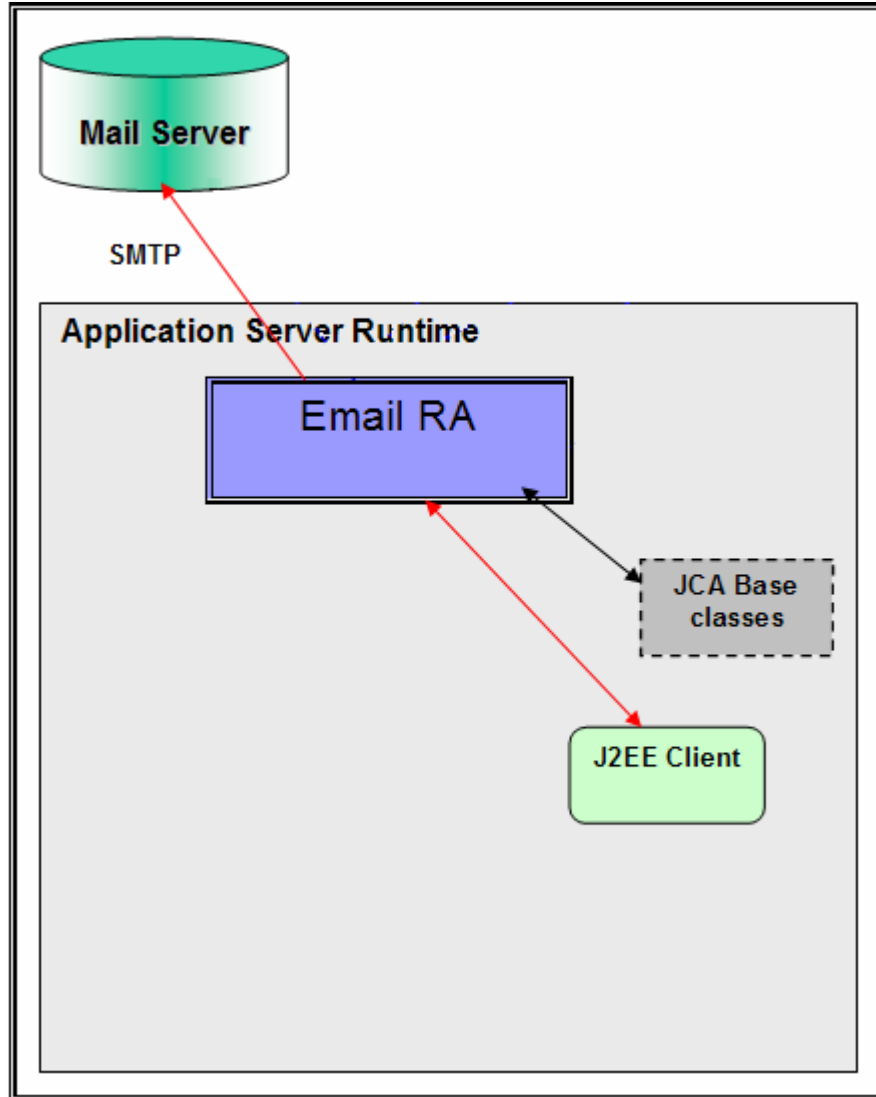
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- WebSphere Integration Developer V6.1 installed and updated with latest fixes
- WebSphere Process Server V6.1 test environment installed and updated with latest fixes
- Install and configure the hMailServer (your e-mail server for this lab) and Mozilla Thunderbird (your e-mail client for this lab) by following the instructions in the lab:
WBIV61_IEA_AdapterConfigureEMailServerAndClientLab
- Extract LabFiles61.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
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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

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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\WID61	
<WPS_HOME>	C:\<WID_HOME>\runtimes\bj_v6	
<EMAILADAPTER_HOME>	<WID_HOME>\ResourceAdapters\Email_6.1.0.0\deploy	
<LAB_FILES>	C:\Labfiles61	/tmp/Labfiles61
<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:\Labfiles61\ with C:/Labfiles61/.

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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	

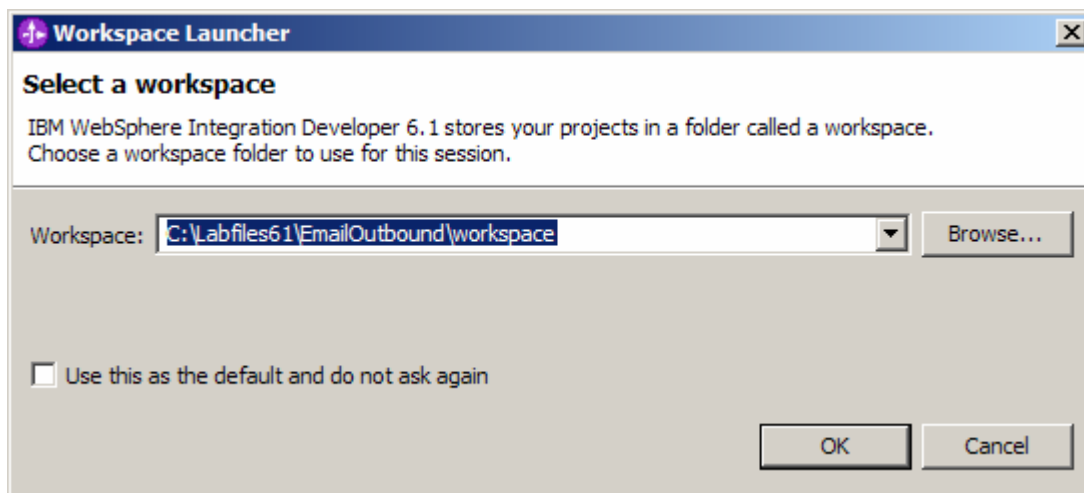
Instructions for using a remote testing environment, such as z/OS, AIX or Solaris, can be found at the end of this document, in the section [“Task: Adding remote server to WebSphere Integration Developer test environment”](#).


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Part 1: Initialize the workspace and prepare for the lab

This part of the lab, you will start the WebSphere Integration Developer V6.1 with a new workspace and extract the lab files to your local system.

- ___ 1. Extract the provided LabFiles61.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 V6.1 with a new workspace
 - ___ a. Select **Start > Programs > IBM Software Development Platform > IBM WebSphere Integration Developer > IBM WebSphere Integration Developer**
 - ___ b. From the Workspace Launcher window, enter **<WORKSPACE>** for the Workspace field



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

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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.

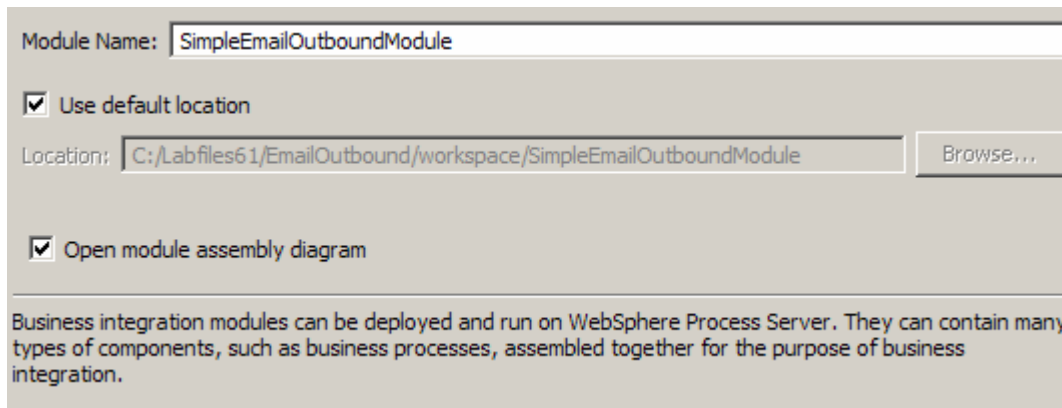
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2.1. Configure simple e-mail using the external service wizard

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

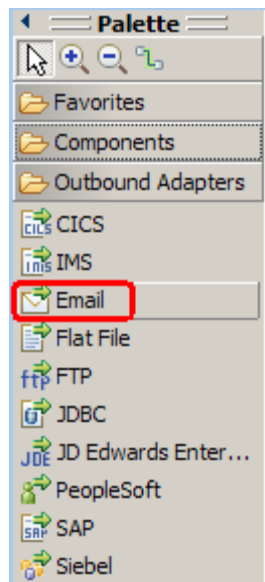
- ___ a. From the Business Integration window, right-click and select **New > Module**
- ___ b. From the New Module window, enter **SimpleEmailOutboundModule** for the Module Name
- ___ c. Ensure that the box next to **Open module assembly diagram** is checked and then click **Finish**



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

2. To start External Service from the Palette:

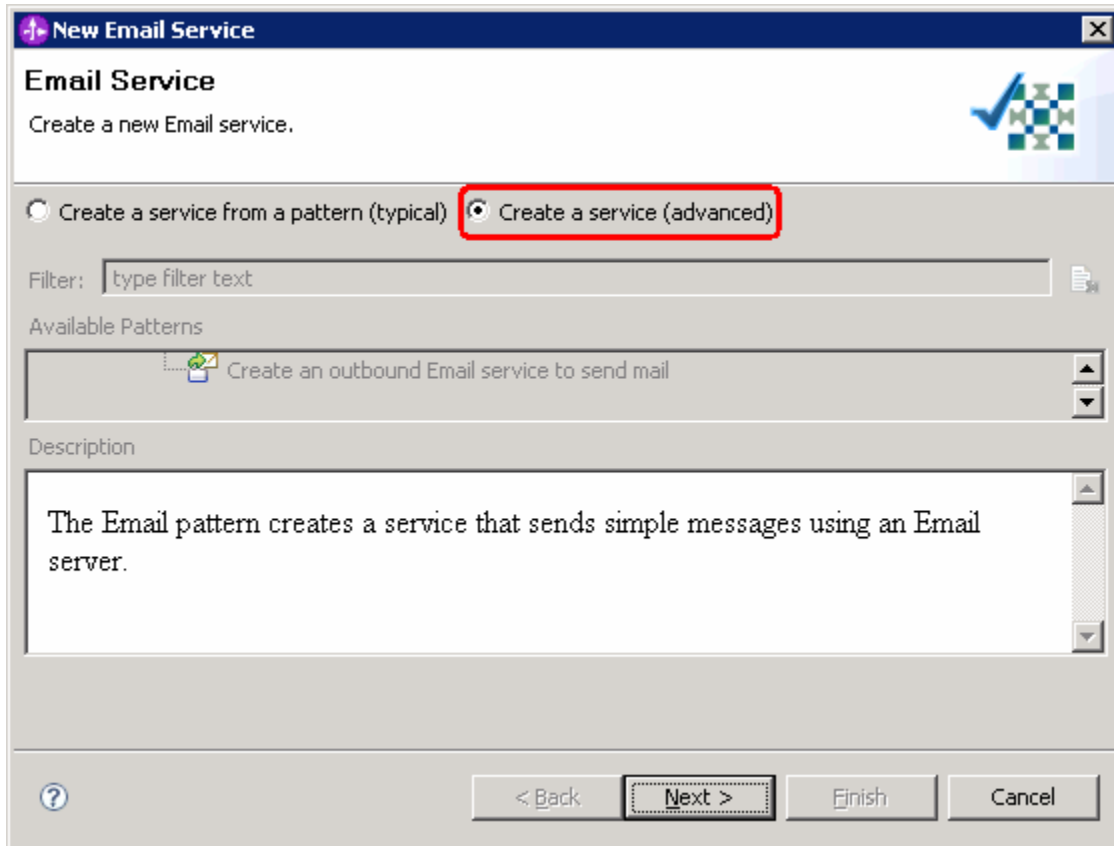
- ___ a. From the **Palette** on the left side of Assembly Diagram, click on **Outbound Adapters**:



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

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- ___ 3. From E-mail Service screen, select radio button next to **Create a service (advanced)**

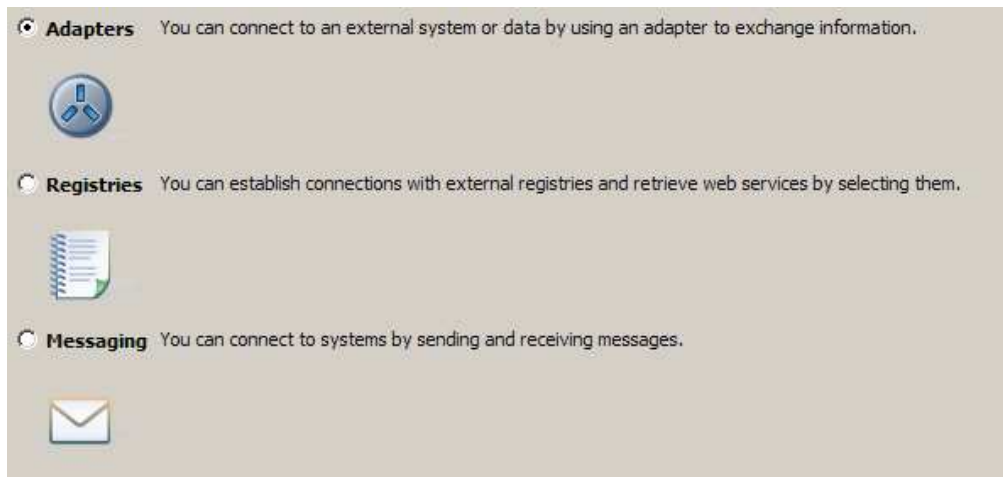


- ___ a. Click **Next**

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

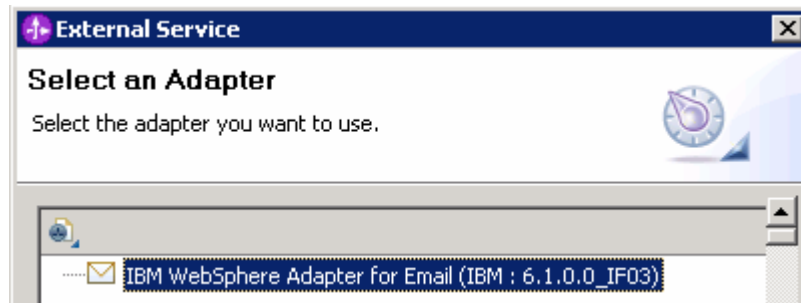
From the main menu, select **File > New > External Service**. This opens an External Service wizard that helps you obtain a service which establishes connectivity with other systems. The wizard provides three connectivity options – Adapters, Registers, and Messaging

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



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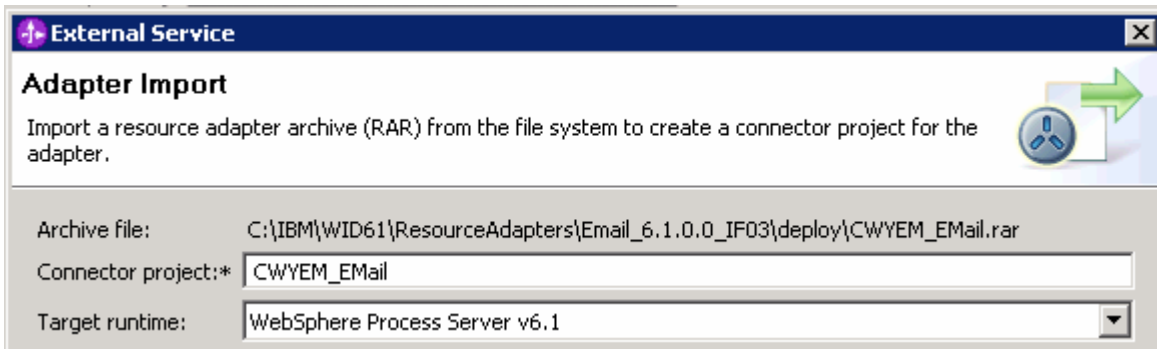
- ___ 4. On the Select an Adapter screen, select **IBM WebSphere Adapter for Email (IBM : 6.1.0.0_IF03)** and click **Next**



- ___ 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
- ___ 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 v6.1** 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:

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- 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 on **Advanced >>** to see the hidden advanced properties that can be configured:
- ___ d. Click on **Advanced properties** and enter these:
- 1) User name: **username using which you connect to your E-mail server** (for Ex: Emailuser1@aimcp101.austin.ibm.com)
 - 2) Password: **password for the above user to connect to your E-mail server**
- ___ e. For this lab, you are not going to use the J2C authentication. So, **uncheck** the box next to **Specify a Java Authentication and Authorization Services (JAAS) alias security credentials**
- ___ 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 is 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.

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

External Service

Service Configuration Properties

For this service, specify security and connection configuration properties.

Deploy connector project: With module for use by single application

Connection properties: 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

<< Advanced

Advanced properties

User name: Emailuser1@aimcp101.austin.ibm.com

Password: *****

Enable transport security (SSL)

Bidi properties

Logging and tracing

Service properties

Specify a Java Authentication and Authorization Services (JAAS) alias security credential.

J2C authentication data entry:

Data binding: Specify a data binding for each operation

Data binding configuration: Browse... New...

Change logging properties for wizard

Log file output location: * C:\Labfiles61\EmailOutbound\workspace\metadata\EmailMet: Browse...

Logging level: SEVERE

< Back Next > Finish Cancel

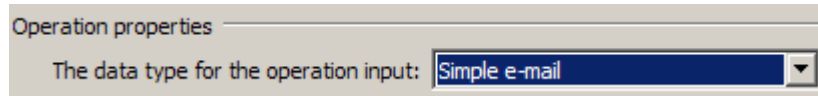
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___ h. Click **Next**

Define **createSimpleEmail** Operation:

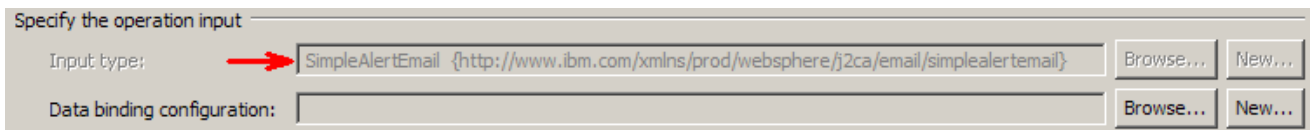
___ 7. Click on **Add...** to open Add Operation window

___ a. For **Data type for the operation input**, select **Simple e-mail** from the drop down list



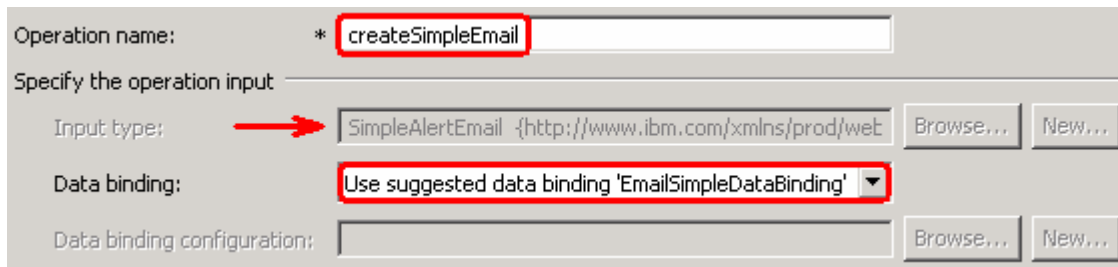
___ b. Click **Next**

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**



___ c. For Operation name, enter **createSimpleEmail**

___ d. Accept the default selection, **Use suggested data binding 'EmailSimpleDataBinding'**, for **Data binding**



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

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

The screenshot shows the 'Operations' window in the IBM WebSphere console. At the top, there is a list of operations. The first operation is 'createSimpleEmail ({http://www.ibm.com/xmlns/prod/websphere/j2ca/email/simplealertemail}SimpleAlertEmail) : void'. To the right of this list are three buttons: 'Add...', 'Edit...', and 'Remove'. Below the list is the 'Operation properties' section. Underneath, it says 'InteractionSpec properties for 'createSimpleEmail''. A button labeled '<< Advanced' is highlighted with a red box. Below this, there is a section for 'Advanced properties' which contains several input fields: 'From:', 'Reply to:', 'To:', 'Cc:', 'Bcc:', 'E-mail subject:', 'User name:', 'Password:', and 'Encoding:'. A 'Select...' button is located at the bottom right of the 'Advanced properties' section.

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

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___ 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

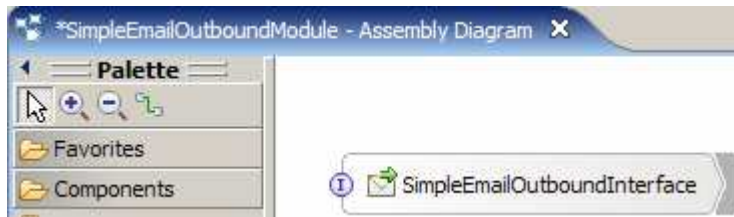
Save business objects to a library

Library: [New...]

Description:

___ b. Click **Finish**

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

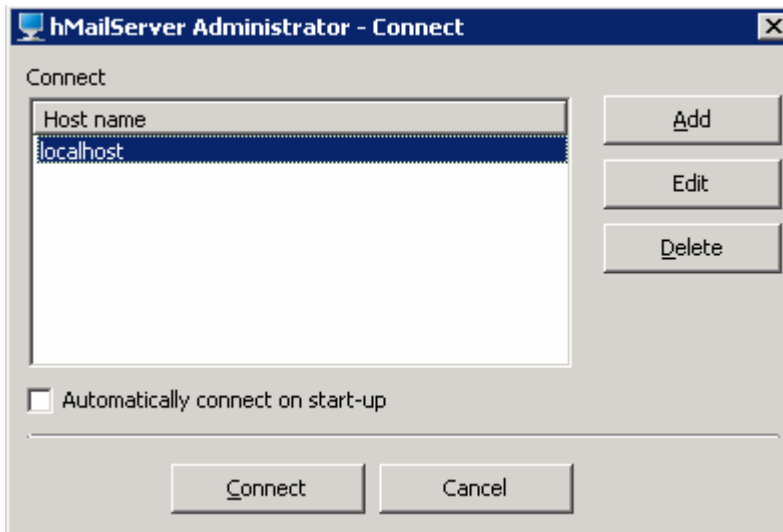


___ 11. Save (**Ctrl+S**) your changes to the assembly diagram

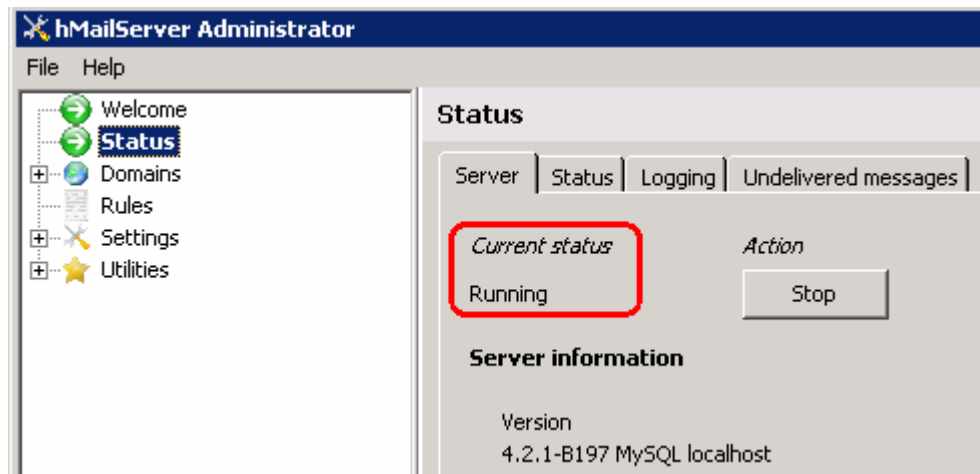
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2.2. Test simple e-mail scenario

- ___ 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 on **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 on **WebSphere Process Server v6.1** 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

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- ___ a. Right-click on **WebSphere Process Server v6.1** 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 on 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

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- ___ 6. 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**

▼ Detailed Properties

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

Initial request parameters

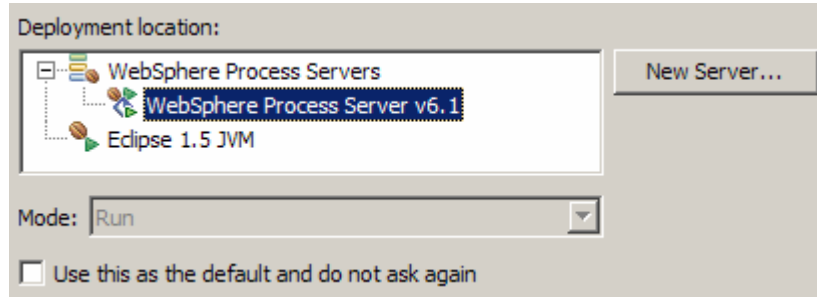
Name	Type	Value
createSimpleEmailInput	SimpleAlertEmail	✓
To	string	✓ Emailuser1@aimcp101.austin.ibm.com
From	string	✓ Emailuser2@aimcp101.austin.ibm.com
CC	string	✓
BCC	string	✓
Reply-To	string	✓
Subject	string	✓ Testing simple email pass through outbound
Encoding	string	✓
mailContent	string	✓ Simple email content

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



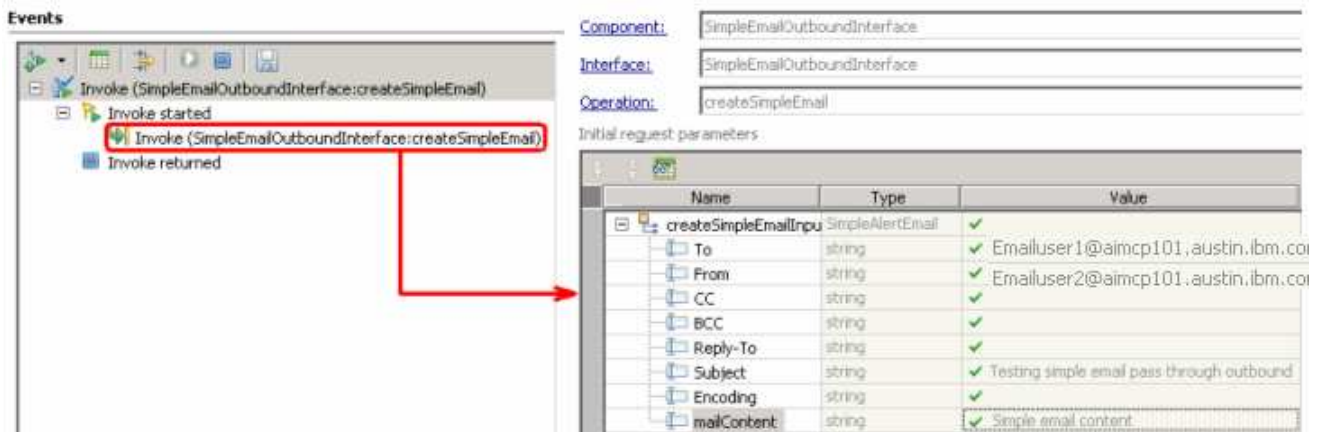
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- ___ f. From Deployment Location window, select **WebSphere Process Servers > WebSphere Process Server v6.1** and click **Finish**



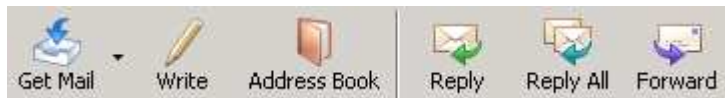
- ___ 7. Verify your results

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



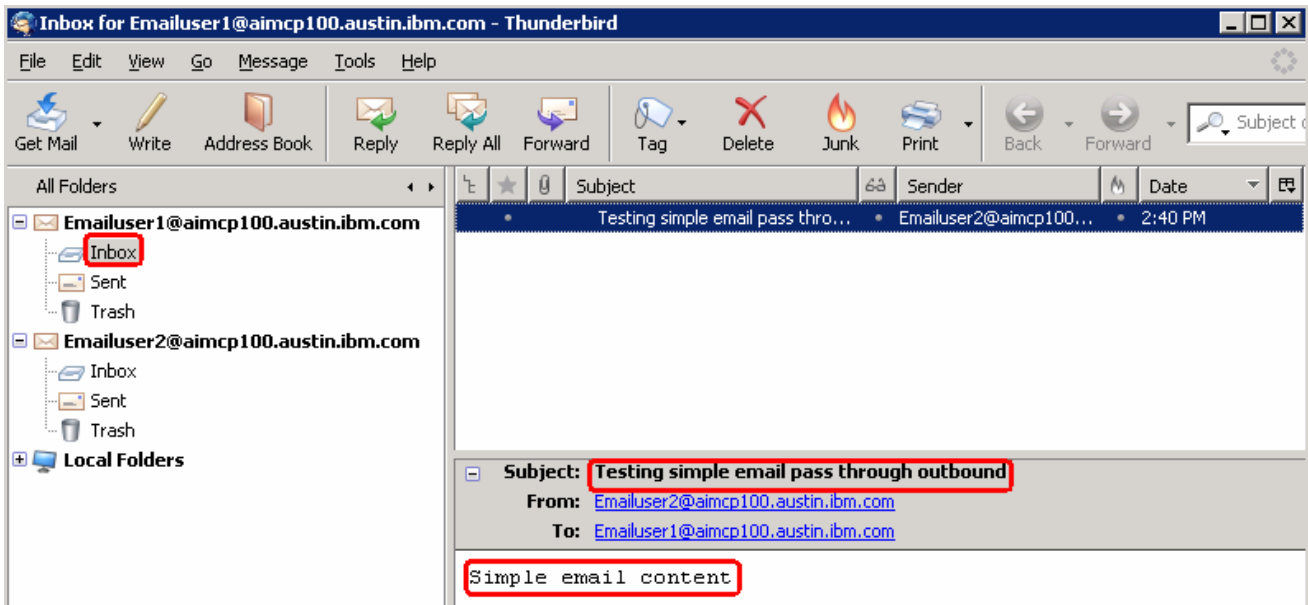
- ___ 8. You can also check your inbox for the mail received with the specified Subject and the contents

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



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- ___ 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:



___ 9. 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 on **WebSphere Process Server v6.1** 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

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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.

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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

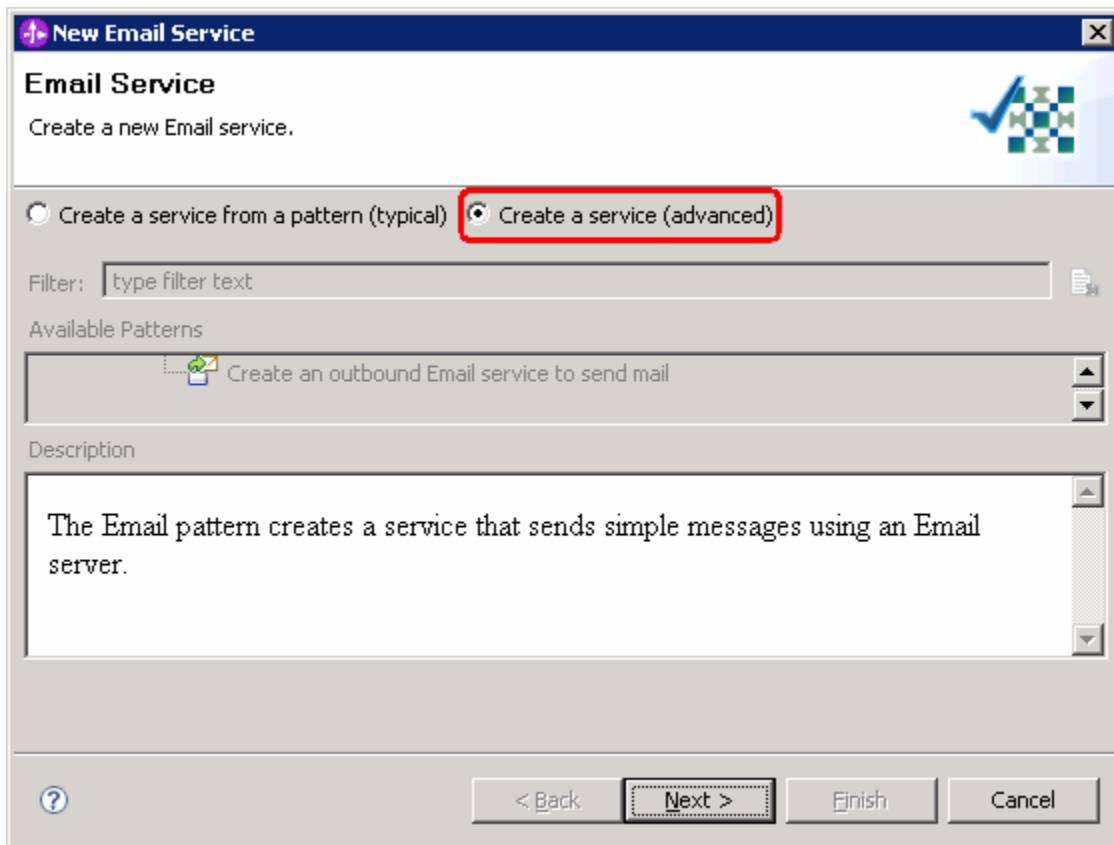
- ___ a. From the Business Integration window, right-click and select **New > Module**
- ___ b. From the New Module window, enter **EmailPSOutboundModule** for the Module Name
- ___ c. Ensure that the box next to **Open module assembly diagram** is checked and then click **Finish**

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

___ 3. From E-mail Service screen, select radio button next to **Create a service (advanced)**



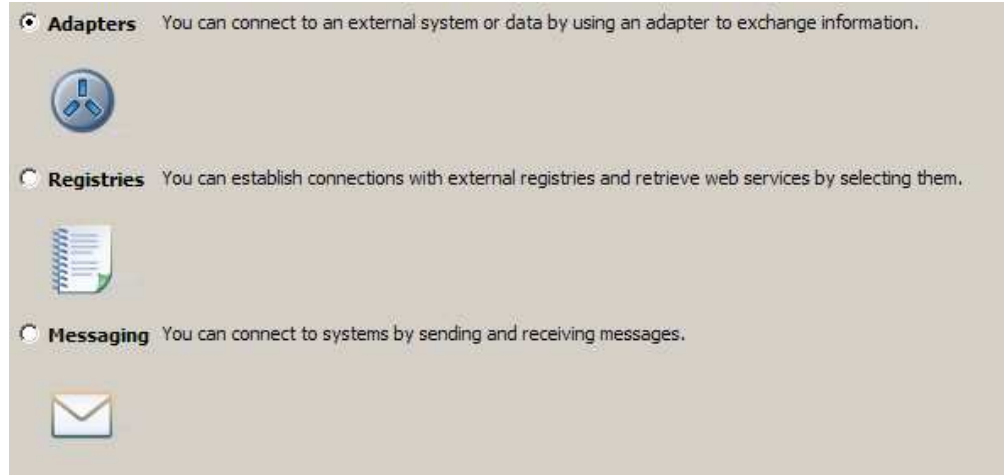
- ___ a. Click **Next**

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

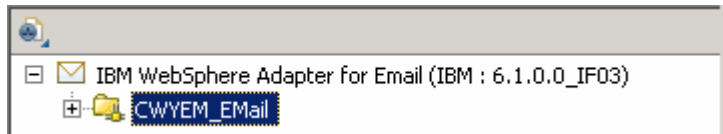
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From the main menu, select **File > New > External Service**. This opens an External Service wizard that helps you obtain a service which establishes connectivity with other systems. The wizard provides three connectivity options – Adapters, Registers,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

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



- ___ 4. On the Select an Adapter screen, expand **IBM WebSphere Adapter for Email (IBM : 6.1.0.0_IF03)** 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 on **Advanced >>** to see the hidden advanced properties that can be configured:

- ___ d. Click on **Advanced properties** and enter these:

- 1) User name: **username using which you connect to your E-mail server** (for Ex: Emailuser1@aimcp101.austin.ibm.com)
- 2) Password: **password for the above user to connect to your E-mail server**

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- ___ e. For this lab, you are not going to use the J2C authentication. So, **uncheck** the box next to **Specify a Java Authentication and Authorization Services (JAAS) alias security credentials**.

Deploy connector project: With module for use by single application

Connection properties: Use properties below

Connection properties

E-mail system connection information

Host name: localhost

Port number: 25

Protocol: smtp

Select when security software is running

<< Advanced

Advanced properties

User name: Emailuser1@aimcp101.autin.ibm.com

Password: *****

Enable transport security (SSL)

Bidi properties

Logging and tracing

Service properties

Specify a Java Authentication and Authorization Services (JAAS) alias security credential.

J2C authentication data entry:

- ___ 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 this screen)

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

Data binding: Use a data binding configuration for all operations

Data binding configuration: * Browse... New...

- ___ b. Click **New...** next to **Data binding configuration**. A Resource Configuration window is opened.

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__ c. Ensure that the selected module is **EmailPSOutboundModule**

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

Module:

Namespace:

Use default namespace

Folder:

Name: *

2) Click **Next**

__ d. Accept the selected Data binding class name
com.ibm.j2ca.email.emd.runtime.EmailWrapperDataBinding:

Data binding A data binding represents the mapping between a native data format and a business object.

Data handler A data handler is used by a data binding or function selector to transform data from one format to another.

Function selector A function selector assigns incoming messages or requests to the correct operation on the service.

Data binding class name:

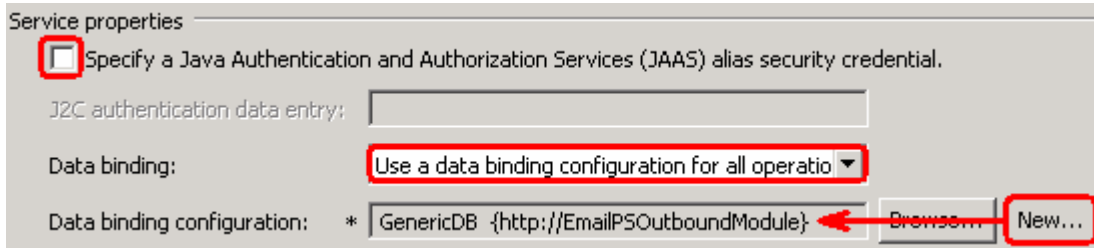
__ e. Click **Next**

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

__ f. Click **Finish** from the Data binding properties window

IBM WEBSPHERE ADAPTER 6.1 – LAB EXERCISE

__ g. Now the **GenericDB** is populated for Data binding configuration:



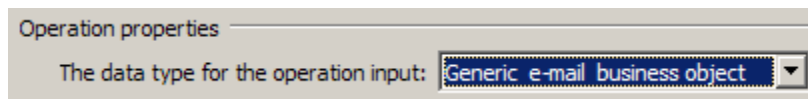
__ h. Check the box next to **Change logging properties for wizard** to view the output location of the log file and the logging level

__ i. Click **Next**

Define **createGenericEmail** Operation:

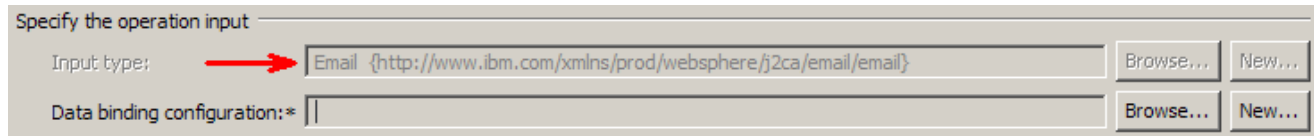
___ 7. Click on **Add...** to open Add Operation window

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



__ b. 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**



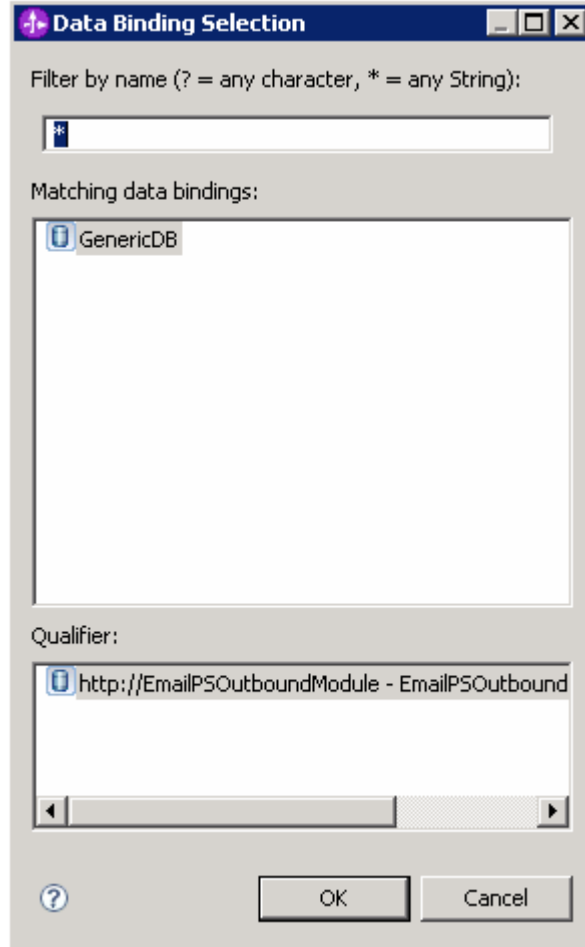
__ c. For Operation name, enter **createGenericEmail**

Define Data binding configuration:

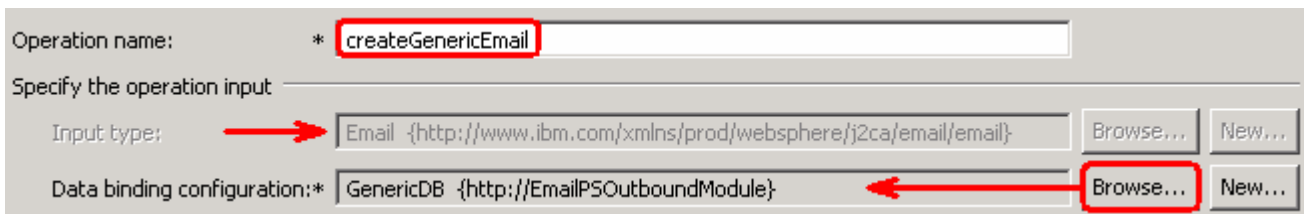
__ d. Under **Specify the operation input**, click **Browse...** next to **Data binding configuration**. A Data Binding Selection window is opened

IBM WEBSPHERE ADAPTER 6.1 – LAB EXERCISE

__ e. Select **GenericDB** from the Matching data bindings list and click **OK**



__ f. Now the **GenericDB** is displayed as the Data binding configuration in the Add Operation window:



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

IBM WEBSPPHERE ADAPTER 6.1 – LAB EXERCISE

8. The operation, createGenericEmail, will now be displayed under Operations list. You can click on **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 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.**

9. Click **Next** from the Operations window

IBM WEBSPHERE ADAPTER 6.1 – LAB EXERCISE

___ 10. From the Generate Artifacts screen, enter these:

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

Properties for service

Module:

Namespace:

Use default namespace

Folder:

Name:

Save business objects to a library

Library:

Description:

___ 11. 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 WEBSPPHERE ADAPTER 6.1 – 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 on **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 on **WebSphere Process Server v6.1** 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 on **WebSphere Process Server v6.1** 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**

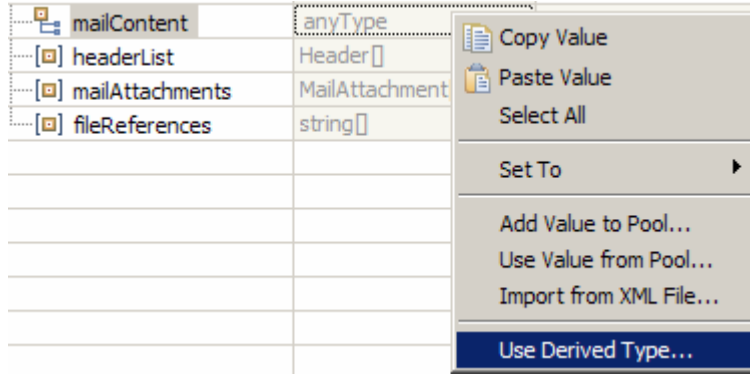
Wait for the project to be published to the server and you can confirm this by seeing the 'application started' message in the console messages.

- ___ 4. Open the test client for the module
 - ___ a. From the Business Integration perspective, right-click on 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
- ___ 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**

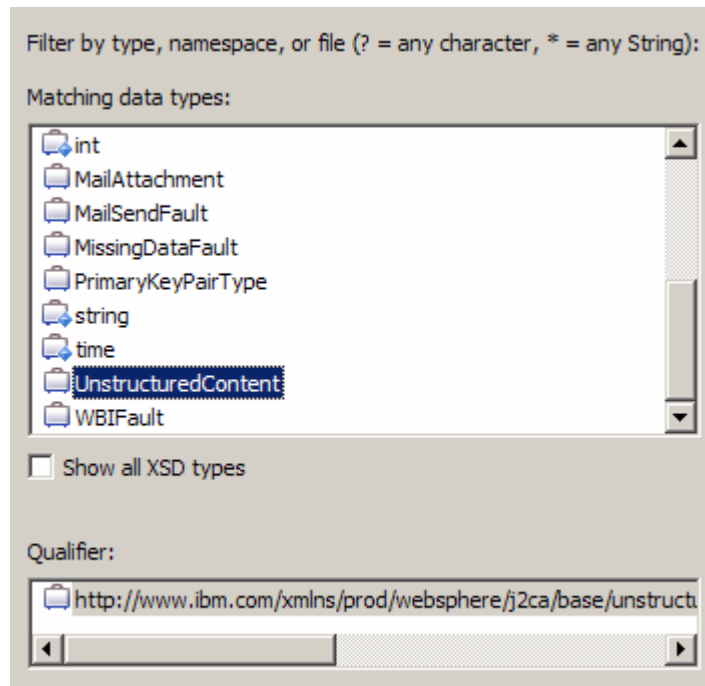
IBM WEBSPHERE ADAPTER 6.1 – LAB EXERCISE

___ d. mailContent:

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

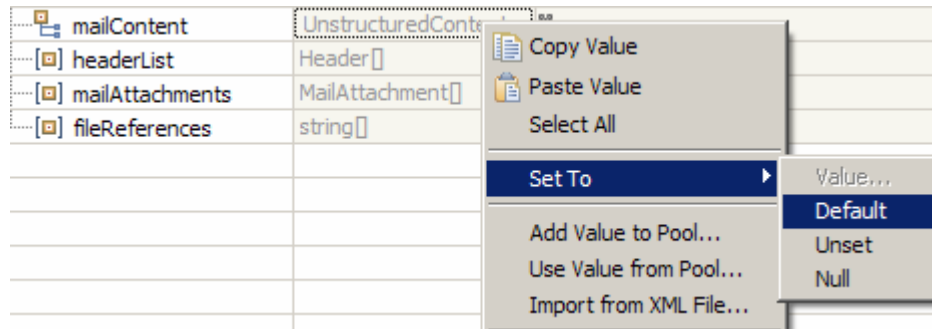


- 2) From the Data Type Selection window, select **UnstructuredContent** and click **OK**



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3) Right-click on the row containing mailContent and select **Set To > Default** from the pop-up menu



4) ContentType: **text/plain**

5) AsText: **E-mail pass through content**

Detailed Properties

Configuration: Default Module Test

Module: EmailPSOutboundModule

Component: EmailPSOutboundInterface

Interface: EmailPSOutboundInterface

Operation: **createGenericEmail**

Initial request parameters

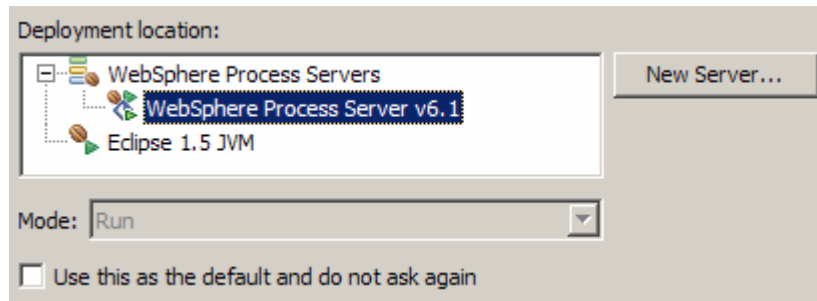
Name	Type	Value
createGenericEmailInput	Email	✓
To	string	✓ Emailuser1@aimcp101.austin.ibm.com
From	string	✓ Emailuser2@aimcp101.austin.ibm.com
CC	string	✓
BCC	string	✓
Reply-To	string	✓
Subject	string	✓ Testing email pass through outbound
Encoding	string	✓
Date	string	✓
mailContent	UnstructuredContent	✓
ContentType	string	✓ text/plain
ObjectName	string	✓
AsText	string	✓ Email pass through content
AsBinary	hexBinary	✓ 0
headerList	Header []	60
mailAttachments	MailAttachment []	60
fileReferences	string []	60

IBM WEBSHERE ADAPTER 6.1 – LAB EXERCISE

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

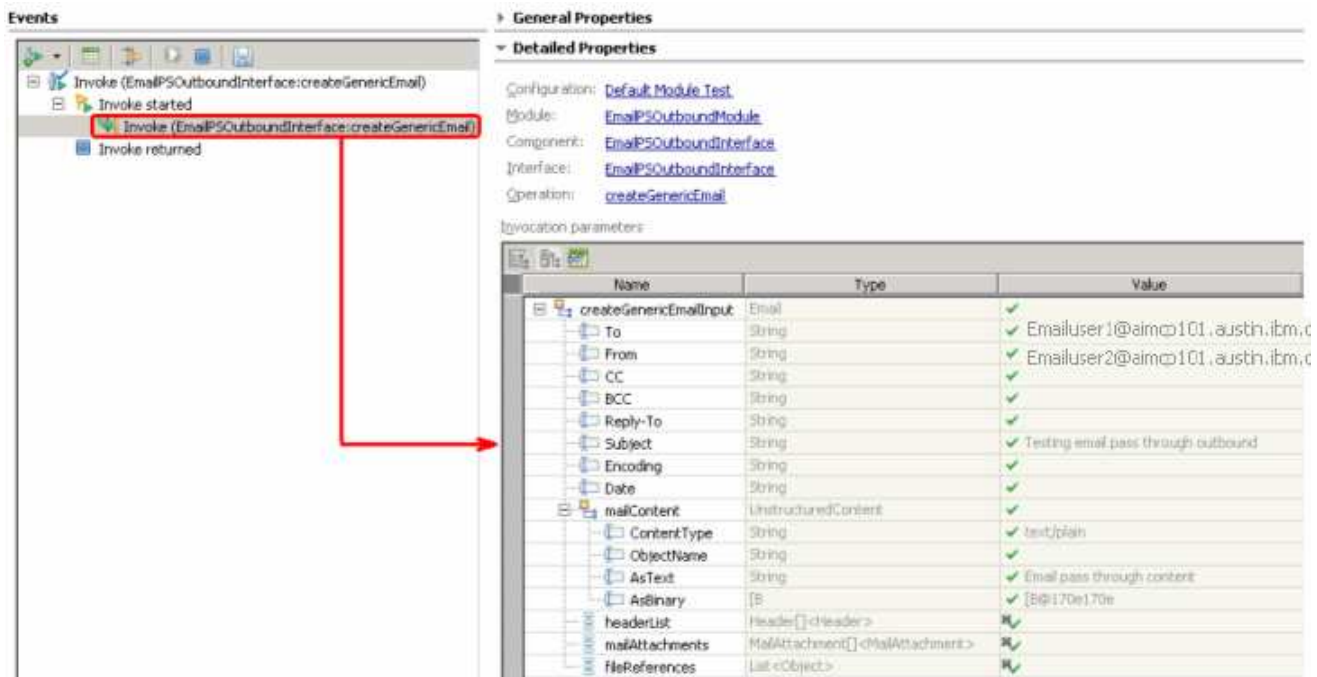


___ f. From Deployment Location window, select **WebSphere Process Servers > WebSphere Process Server v6.1** and click **Finish**



___ 7. Verify your results

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

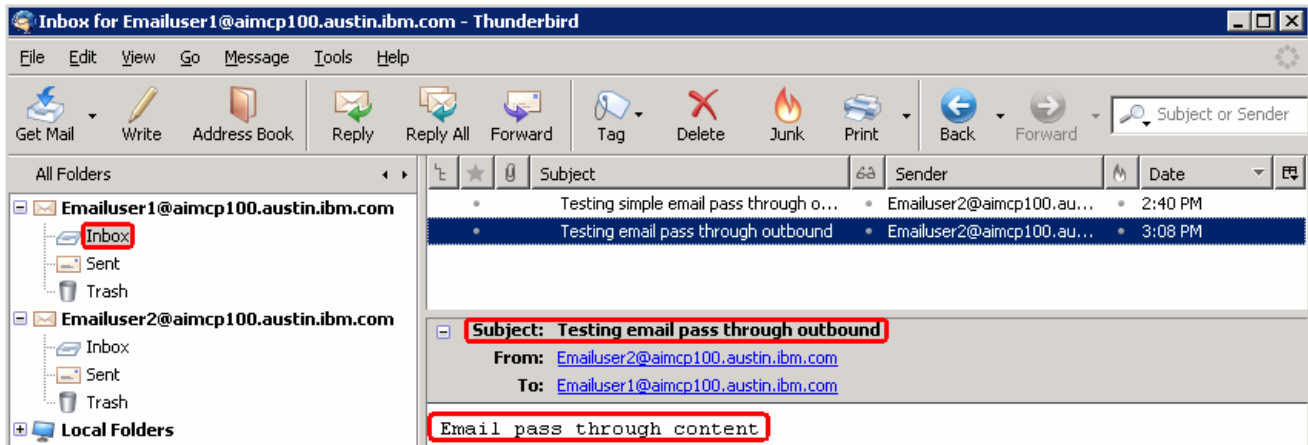


___ 8. You can also check your inbox for the mail received with the specified Subject and the contents in the previous steps

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

IBM WEBSHERE ADAPTER 6.1 – LAB EXERCISE

- ___ 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 on **WebSphere Process Server v6.1** 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

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.

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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 on **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 on **Browse...** next to **From directory**
 - 2) From the Import from directory window, select **<EMAILFILES>** and click **OK**

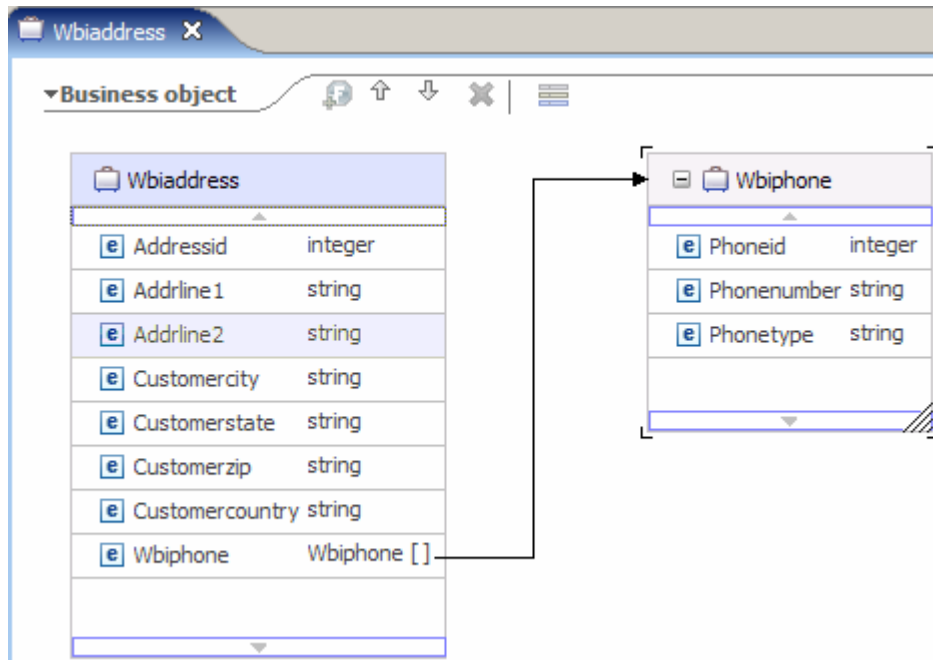
Now, you will see EmailFiles folder added on the left side, and all the xsds and other files under that folder on the right side.

- ___ 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 on **Wbiaddress** to open it in assembly editor and then expand Wbiphone from assembly editor to view its fields

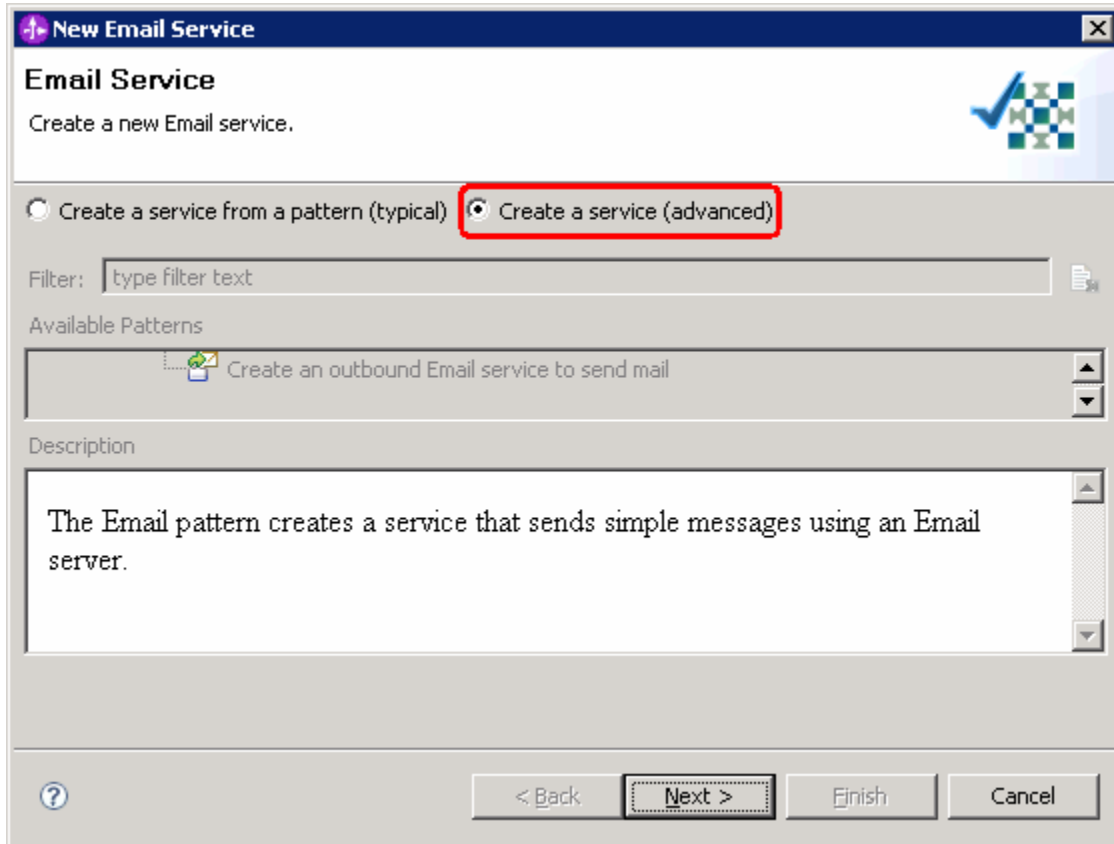
IBM WEBSPHERE ADAPTER 6.1 – LAB EXERCISE



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

IBM WEBSPHERE ADAPTER 6.1 – LAB EXERCISE

- ___ 6. From E-mail Service screen, select radio button next to **Create a service (advanced)**



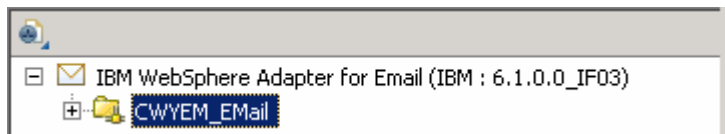
- ___ a. Click **Next**

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 : 6.1.0.0_IF03)** 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

IBM WEBSPHERE ADAPTER 6.1 – LAB EXERCISE

___ 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 on **Advanced >>** to see the hidden advanced properties that can be configured:

___ d. Click on **Advanced properties** and enter these:

- 1) User name: **username using which you connect to your E-mail server** (for Ex: Emailuser1@aimcp101.austin.ibm.com)
- 2) Password: **password for the above user to connect to your E-mail server**

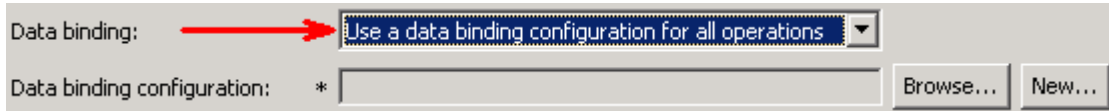
___ e. For this lab, you are not going to use the J2C authentication. So, **uncheck** the box next to **Specify a Java Authentication and Authorization Services (JAAS) alias security credentials**.

The screenshot shows the configuration wizard for the IBM WebSphere Adapter. The 'Deploy connector project' dropdown is set to 'With module for use by single application'. The 'Connection properties' dropdown is set to 'Use properties below'. Under 'E-mail system connection information', the 'Host name' is 'localhost', the 'Port number' is '25', and the 'Protocol' is 'smtp'. The checkbox 'Select when security software is running' is checked. A red box highlights the '<< Advanced' button. Below it, the 'Advanced properties' section is expanded, showing 'User name' as 'Emailuser1@aimcp101.austin.ibm.com' and 'Password' as '*****'. The 'Enable transport security (SSL)' checkbox is unchecked. There are also sections for 'Bidi properties' and 'Logging and tracing'. At the bottom, under 'Service properties', the checkbox 'Specify a Java Authentication and Authorization Services (JAAS) alias security credential.' is unchecked, and the 'J2C authentication data entry' field is empty.

___ 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 this screen)

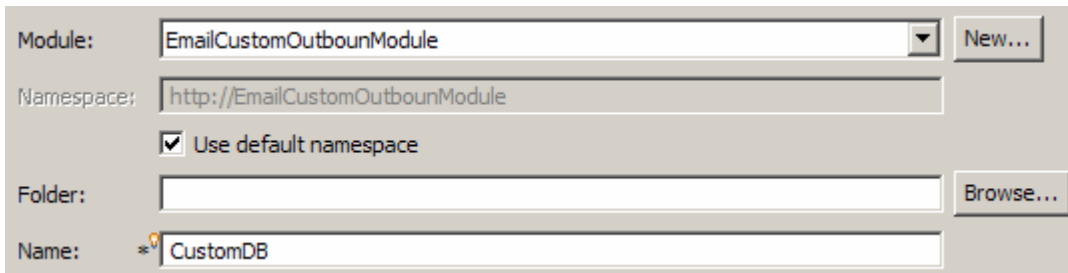
IBM WEBSHERE ADAPTER 6.1 – LAB EXERCISE

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



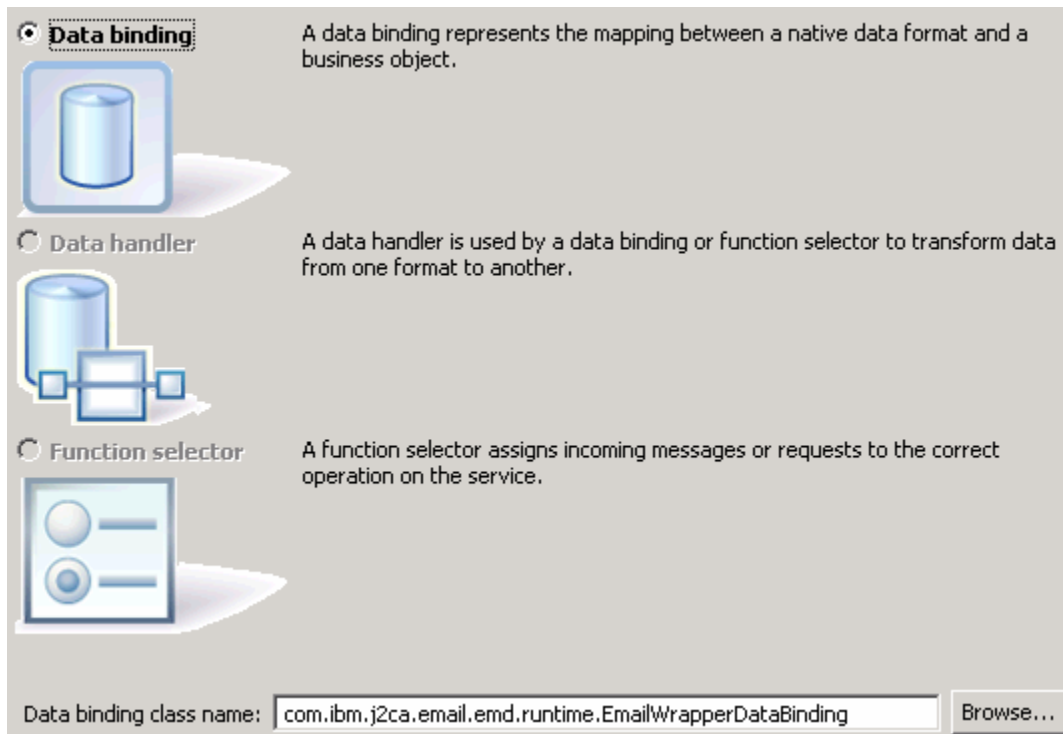
- ___ b. Click **New...** next to **Data binding configuration**. A Resource Configuration window is opened.
- ___ c. Ensure that the selected module is **EmailCustomOutboundModule**

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



2) Click **Next**

- ___ d. Accept the selected Data binding class name **com.ibm.j2ca.email.emd.runtime.EmailWrapperDataBinding:**



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

IBM WEBSPHERE ADAPTER 6.1 – LAB EXERCISE

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

___ h. Click on **Browse...** next to **Business object type**

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

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

___ i. For **Mime type**, select **text/xml** from the drop down list

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

Binding type: **DataHandler**

Business object type: * Wbiaddress {http://www.ibm.com/xmlns/prod/websphere/j2ca/email/wbiaddress} **Browse...** **New...**

Mime type: * **text/xml**

Configured data handler: * **Browse...** **New...**

Configured data binding: **Browse...** **New...**

Data Handler Configuration:

___ j. Click on **New...** next to Configured data handler. A new Resource Configuration window is opened for you to define the data handler

___ k. Ensure that the module selected is **EmailCustomOutboundModule** and enter **CustomDH** for the Name of the data handler that is created.

___ l. Click **Next**

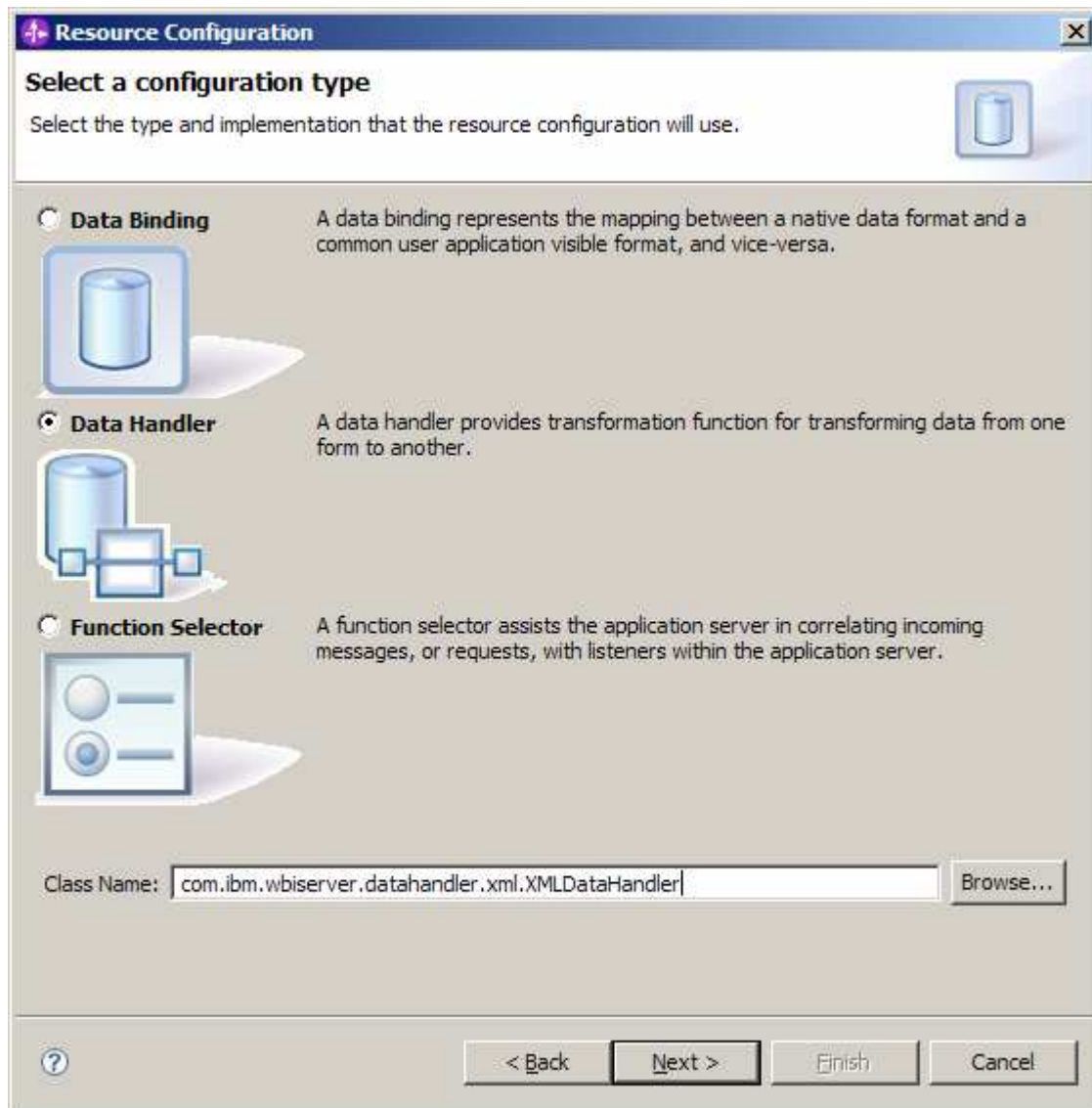
By default, the radio button next to **Data Handler** is selected

___ m. Click on **Browse...** next to Data handler class name. Data Handler Selection window is opened.

___ n. Select **XML Data Handler** from the Data Handlers list and then click **OK**

IBM WEBSHERE ADAPTER 6.1 – LAB EXERCISE

- ___ o. You are now back to Binding Resource Configuration window and the above selected data handler, **com.ibm.wbiserver.datahandler.xml.XMLDataHandler**, is displayed for the Data handler class name:



- ___ p. Click **Next**

- ___ q. Accept the default selection 'UTF-8' for encoding and click **Finish**

IBM WEBSHERE ADAPTER 6.1 – LAB EXERCISE

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

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

Binding type: DataHandler

Business object type: * Wbiaddress {http://www.ibm.com/xmlns/prod/websphere/j2ca/email/wbiaddress} Browse... New...

Mime type: * text/xml

Configured data handler: * CustomDH {http://EmailNonPSOutboundModule} Browse... New...

Configured data binding: Browse... New...

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

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

Data binding properties:

BindingTypeLabel	Binding type	Business object type	Mime type	Configured data handler	Configured data binding	Add...
Select DataBindin...	DataHandler	{http://www.ibm.com/xmlns/prod/websphere/j2ca/email/wbiaddress}Wbiaddress	text/xml	{http://EmailNonPSInboundModule}EmailNonPSDH		Edit...

__ u. Click **Finish**

__ v. Now the **CustomDB** is populated for Data binding configuration:

Service properties

Specify a Java Authentication and Authorization Services (JAAS) alias security credential.

J2C authentication data entry:

Data binding: Use a data binding configuration for all operations

Data binding configuration: * CustomDB {http://EmailCustomOutboundModule} Browse... New...

__ w. 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

__ x. Click **Next**

Define **createCustomEmail** Operation:

___ 10. Click on **Add...** to open Add Operation window

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

Operation properties

The data type for the operation input: Generic e-mail business object with business graph

__ b. 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**

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

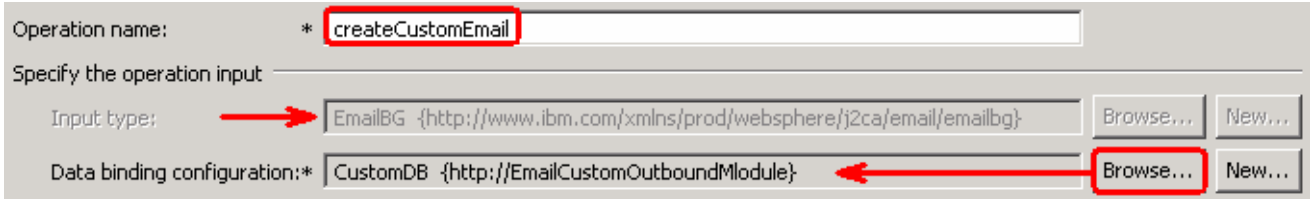
IBM WEBSPHERE ADAPTER 6.1 – LAB EXERCISE

Define Data binding configuration:

___ d. Click on **Browse...** next to **Data binding configuration**. Data Binding Selection window is opened

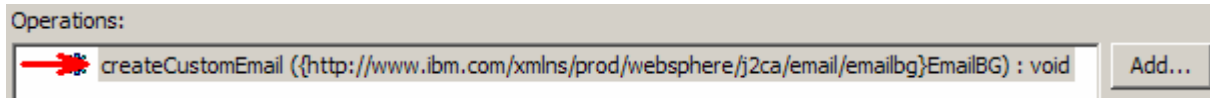
___ e. Select **CustomDB** form the Matching data bindings list and click **OK**

___ f. Now the **CustomDB** is displayed for Data binding configuration in the Add Operation window:



___ g. Click **Finish**.

___ 11. The above 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.**

___ 12. Click **Next** from the Operations window

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

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

___ b. Click **Finish**

___ 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 WEBSPHERE ADAPTER 6.1 – 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 on **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 on **WebSphere Process Server v6.1** 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 on **WebSphere Process Server v6.1** 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 on 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
- ___ 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 on 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**

IBM WEBSHERE ADAPTER 6.1 – LAB EXERCISE

- 3) Right-click on the row containing mailContent and select **Set To > Default** from the pop-up menu
- 4) Enter any data for the Wbiaddress fields under mailContent:

▼ Detailed Properties

Configuration:	Default Module Test
Module:	EmailCustomOutbounModule
Component:	EmailCustomOutboundInterface
Interface:	EmailCustomOutboundInterface
Operation:	createCustomEmail

Initial request parameters

Name	Type	Value
createCustomEmailInput	EmailBG	✓
verb	verb <string>	✓
Email	Email	✓
To	string	✓ Emailuser1@aimcp101.austin.ibm.com
From	string	✓ Emailuser2@aimcp101.austin.ibm.com
CC	string	✓
BCC	string	✓
Reply-To	string	✓
Subject	string	✓ Testing non pass through outbound
Encoding	string	✓
Date	string	✓
mailContent	Wbiaddress	✓
Addressid	integer	✓ 123
Addrline1	string	✓ 11901
Addrline2	string	✓ Burnet Rd
Customercity	string	✓ Austin
Customerstate	string	✓ TX
Customerzip	string	✓ 78758
Customercountry	string	✓ USA
Wbiphone	Wbiphone []	60
headerList	Header []	60
mailAttachments	MailAttachment []	60
fileReferences	string []	60

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



___ f. From Deployment Location window (if opens), select **WebSphere Process Servers > WebSphere Process Server v6.1** and click **Finish**

___ 7. Verify your results

IBM WEBSPHERE ADAPTER 6.1 – LAB EXERCISE

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

The screenshot displays the IBM WebSphere Adapter test client interface. On the left, the 'Events' pane shows a sequence of events: 'Invoke (EmailCustomOutboundInterface:createCustomEmail)', 'Invoke started', 'Invoke (EmailCustomOutboundInterface:createCustomEmail)' (highlighted with a red box), and 'Invoke returned'. A red arrow points from the highlighted event to the 'Detailed Properties' pane on the right. The 'Detailed Properties' pane shows the configuration for the 'createCustomEmail' operation, including the module, component, interface, and operation. Below this, the 'Initial request parameters' are listed in a table:

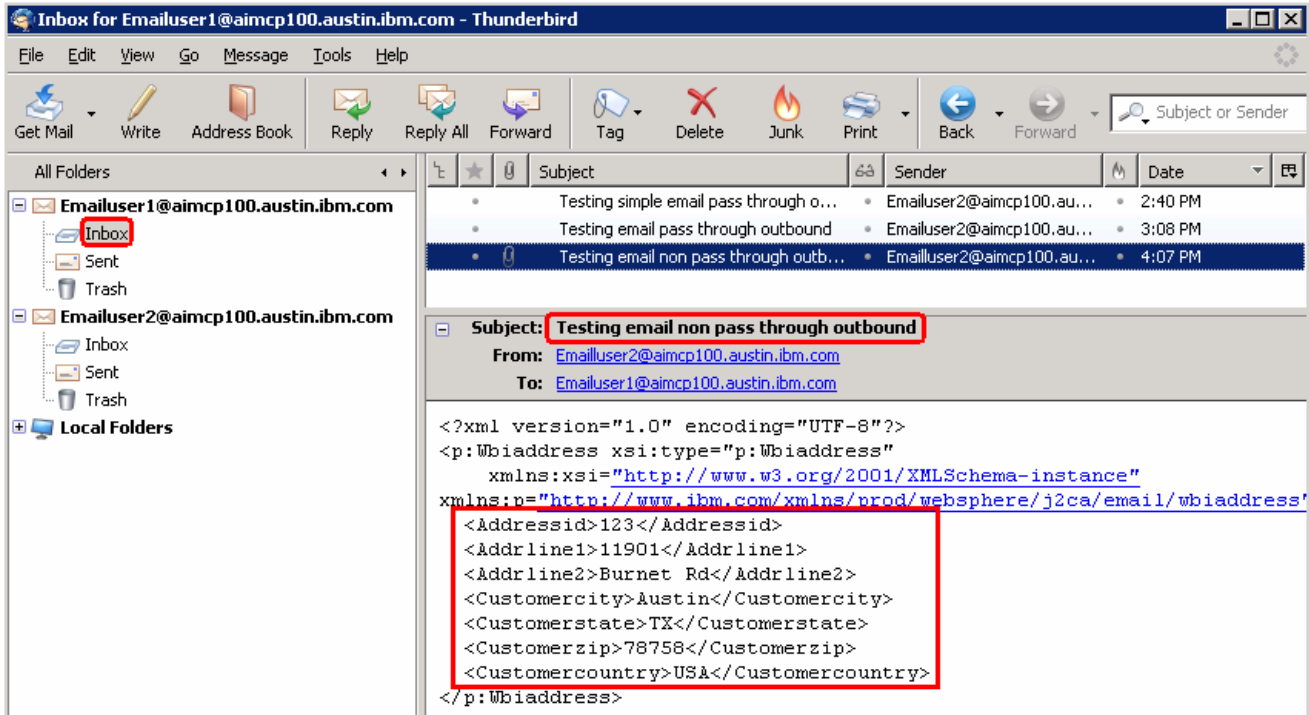
Name	Type	Value
createCustomEmailInput	EmailIS	✓
verb	verb<string>	✓
Email	Email	✓
To	string	✓ Emailuser1@aimco101.austn.ibm.c
From	string	✓ Emailuser2@aimco101.austn.ibm.c
CC	string	✓
BCC	string	✓
Reply-To	string	✓
Subject	string	✓ Testing non pass through outbound
Encoding	string	✓
Date	string	✓
mailContent	Wbaddress	✓
Addressid	integer	✓ 123
Addrline1	string	✓ 11901
Addrline2	string	✓ Burnet Rd
Customercity	string	✓ Austin
Customerstate	string	✓ TX
Customerzip	string	✓ 78758
Customercountry	string	✓ USA
Wbphone	Wbphone[]	✗
headerList	Header[]	✗
mailAttachments	MailAttachment[]	✗
fileReferences	string[]	✗

___ 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 on **Get Mail**

IBM WEBSHERE ADAPTER 6.1 – LAB EXERCISE

- ___ 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



- ___ 9. Restore the server
 - ___ a. Close the **EmailCustomOutboundModule_Test** window and click **No** for the Save Resources window
 - ___ b. Right-click on **WebSphere Process Server v6.1** 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 6.1 – 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 on **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 on **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.

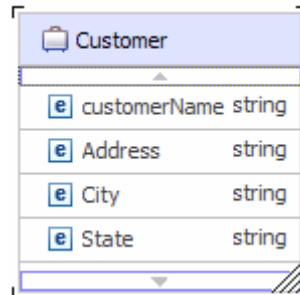
- ___ d. Select the box next to **Customer.xsd and Order.xsd**
- ___ e. Ensure that the **EmailFixedOutboundModule** is selected for Into folder
- ___ f. Click **Finish** from the Import window

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

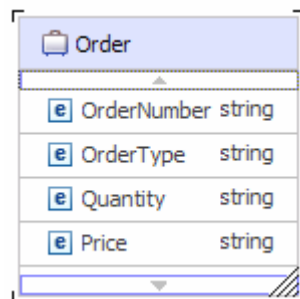
- ___ 3. Review the imported business objects:
 - ___ a. Expand **EmailFixedOutboundModule > Data Types** and you will now see two new data types '**Customer**' and '**Order**' under it.

IBM WEBSPHERE ADAPTER 6.1 – LAB EXERCISE

___ b. Double-click on **Customer** review the fields inside the object:



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



___ 4. After reviewing, close the Customer business object from the Assembly editor

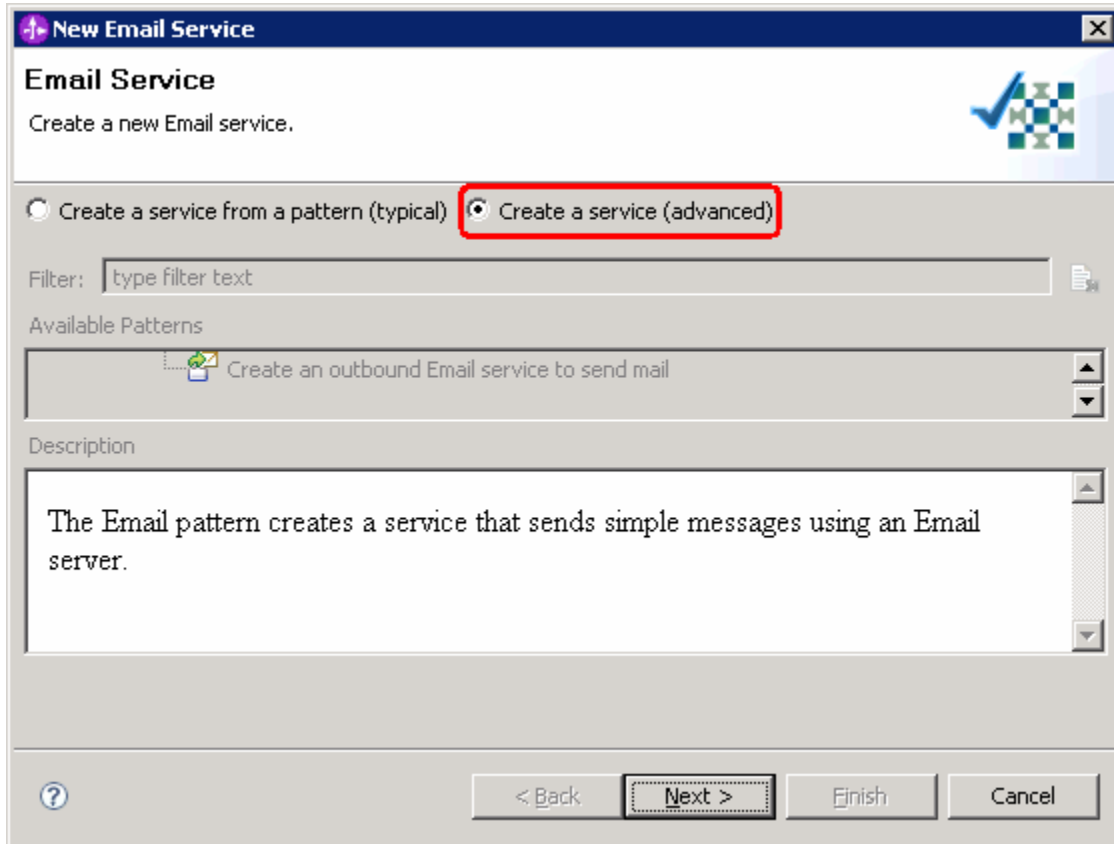
___ 5. To start External Service from the Palette:

___ a. From the **Palette** on the left side of Assembly Diagram, click on **Outbound Adapters**:

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

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- ___ 6. From E-mail Service screen, select radio button next to **Create a service (advanced)**



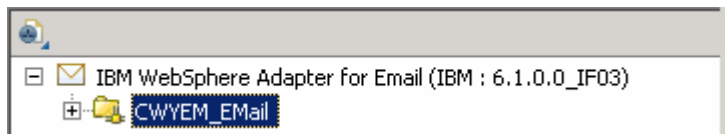
- ___ a. Click **Next**

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 : 6.1.0.0_IF03)** 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

IBM WEBSPHERE ADAPTER 6.1 – LAB EXERCISE

___ 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 on **Advanced >>** to see the hidden advanced properties that can be configured:

___ d. Click on **Advanced properties** and enter these:

- 1) User name: **username using which you connect to your E-mail server** (for Ex: Emailuser1@aimcp101.austin.ibm.com)
- 2) Password: **password for the above user to connect to your E-mail server**

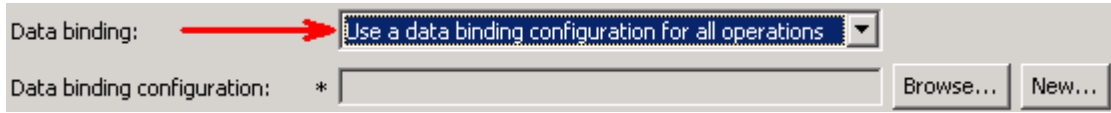
___ e. For this lab, you are not going to use the J2C authentication. So, **uncheck** the box next to **Specify a Java Authentication and Authorization Services (JAAS) alias security credentials**.

The screenshot shows the configuration wizard for the IBM WebSphere Adapter. The 'Deploy connector project' dropdown is set to 'With module for use by single application'. The 'Connection properties' dropdown is set to 'Use properties below'. Under 'E-mail system connection information', the 'Host name' is 'localhost', the 'Port number' is '25', and the 'Protocol' is 'smtp'. The checkbox 'Select when security software is running' is checked. A red box highlights the '<< Advanced' button. Under 'Advanced properties', the 'User name' is 'Emailuser1@aimcp101.austin.ibm.com' and the 'Password' is masked with '*****'. The 'Enable transport security (SSL)' checkbox is unchecked. There are expandable sections for 'Bidi properties' and 'Logging and tracing'. Under 'Service properties', the checkbox 'Specify a Java Authentication and Authorization Services (JAAS) alias security credential.' is unchecked. The 'J2C authentication data entry' field is empty.

___ 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 this screen)

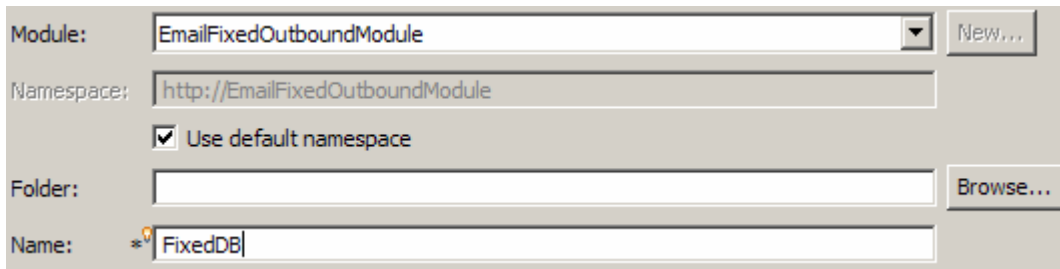
IBM WEBSHERE ADAPTER 6.1 – LAB EXERCISE

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



- ___ b. Click **New...** next to **Data binding configuration**. A Resource Configuration window is opened.
- ___ c. Ensure that the selected module is **EmailFixedOutboundModule**

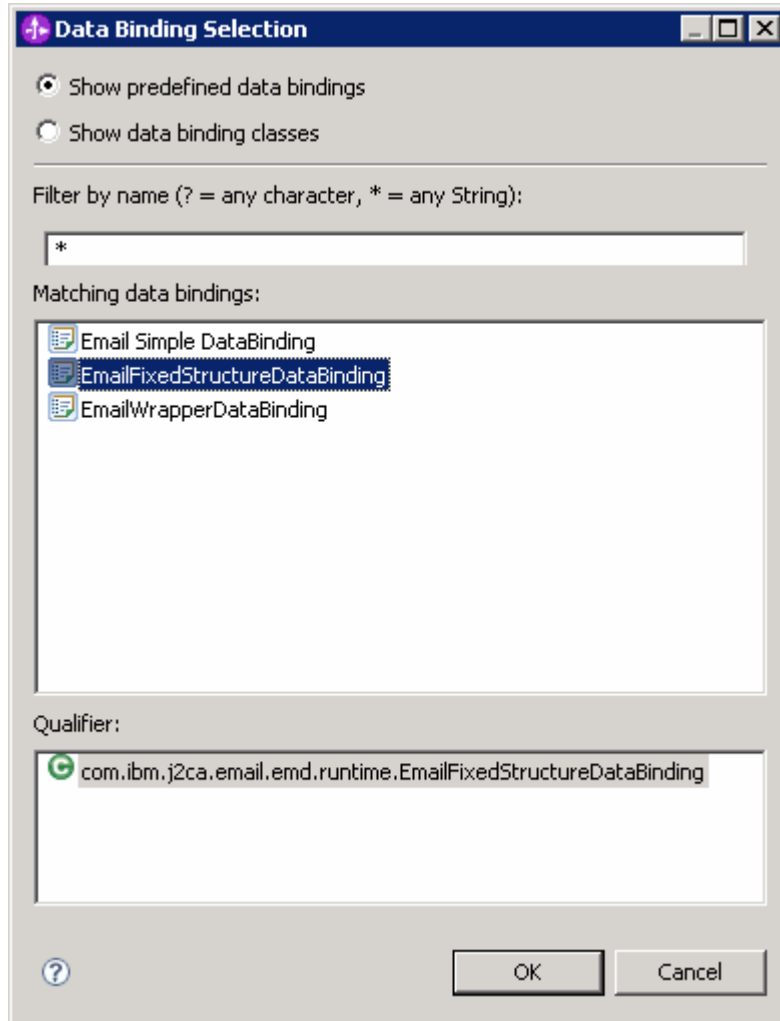
1) For the **Name**, enter **FixedDB**



- ___ d. From the Select a Configuration Type screen, click on **Browse...** next to **Data binding class name**. A Data Binding Selection window is opened

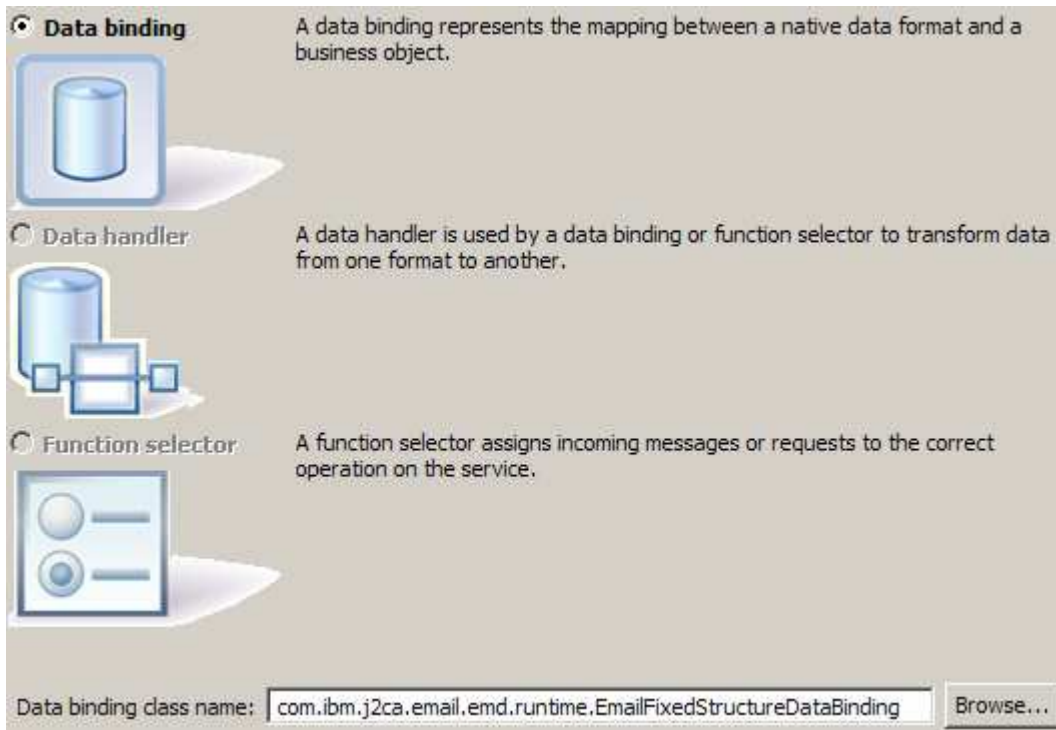
IBM WEBSHERE ADAPTER 6.1 – LAB EXERCISE

__ e. Select **EmailFixedStructureDataBinding** under Matching data bindings and click **OK**



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- ___ f. Above selected data binding,
com.ibm.j2ca.email.emd.runtime.EmailFixedStructureDataBinding, is populated:



- ___ g. Click **Next**

- ___ 10. From **Data Binding Properties** screen,

- ___ a. Define **mailContent**:

- 1) Click **Add...** next to the table. Add/Edit window is opened
- 2) Note that the **E-mail part** is selected with **mailContent**
- 3) Click on **Browse...** next to **Business object type**. Data Type Selection window is opened
- 4) Select **Customer** from the **Matching data types** list and click **OK**

- ___ b. For **Mime type**, select **text/xml** from the drop down list

Data Handler Configuration:

- ___ c. Click **New...** next to **Configured data handler**. A new Resource Configuration window is opened for you to define the data handler

- ___ d. Ensure that the module selected is **EmailFixedOutboundModule** and enter **FixedDH** for the **Name** of the data handler that is created

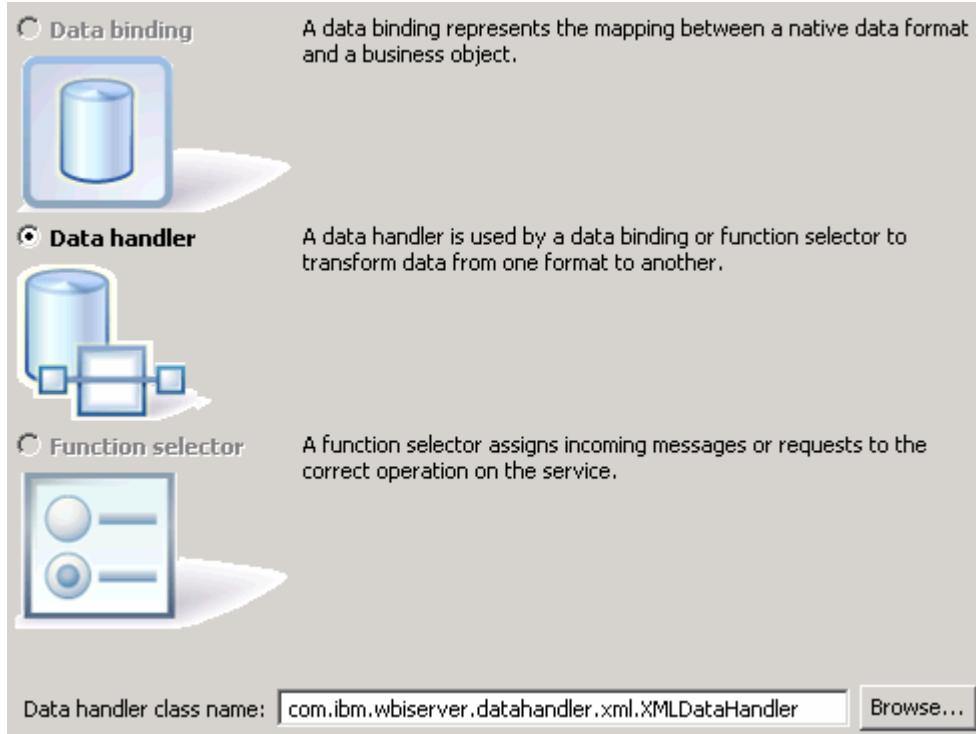
- ___ e. Click **Next**

By default, the radio button next to **Data Handler** is selected

- ___ f. Click on **Browse...** next to **Data handler class name**. Data Handler Selection window is opened.

IBM WEBSHERE ADAPTER 6.1 – LAB EXERCISE

- ___ g. Select **XML Data Handler** from the Data Handlers list and click **OK**
- ___ h. You are now back to Binding Resource Configuration window and the above selected data handler, **com.ibm.wbiserver.datahandler.xml.XMLDataHandler**, is displayed as the Class Name of data handler:



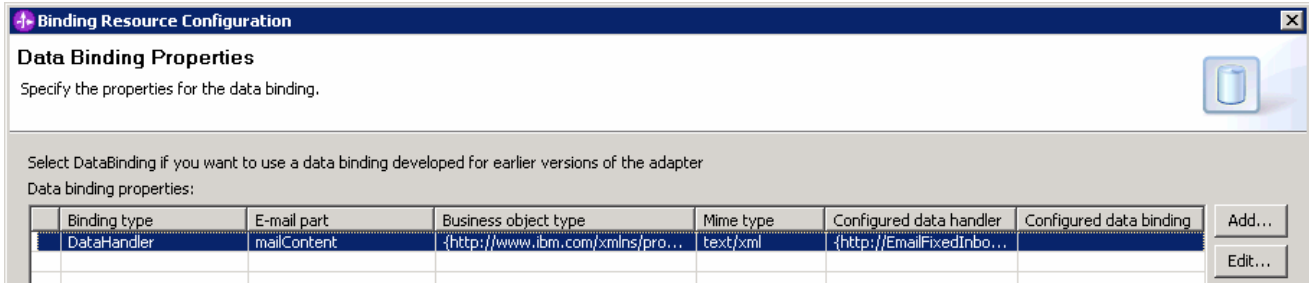
- ___ i. Click **Next**
- ___ j. Accept the default selection '**UTF-8**' for encoding and click **Finish**
- ___ k. You are now done with defining the data handler and back to Add/Edit properties screen. The Data handler configuration name, **FixedDH** is populated in this screen



- ___ l. Click **Finish** from the Add/Edit properties screen

IBM WEBSHERE ADAPTER 6.1 – LAB EXERCISE

__ m. Now, back to Binding Resource Configuration window. You have so far defined the Business object type for the mailContent which is populated in this window:



__ n. Define **attachment** part:

- 1) Click on **Add...** next to the 'Data binding properties' table. This will open an Add/Edit window
- 2) Note that the **E-mail part** is selected with **attachment1**
- 3) Click on **Browse...** next to **Business object type**. Data Type Selection window is opened

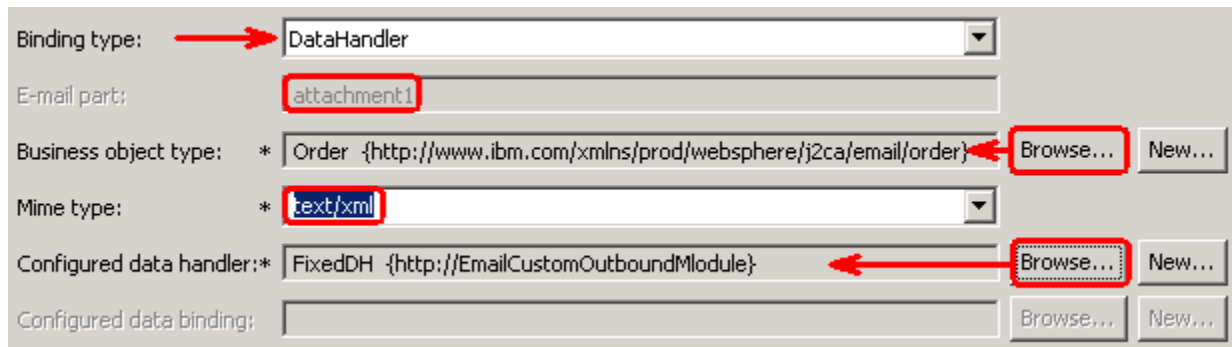
__ o. Select **Order** from the Matching data types list and click **OK**

__ p. For **Mime type**, select **text/xml** from the drop down list

__ q. Click **Browse...** next to **Configured data handler**

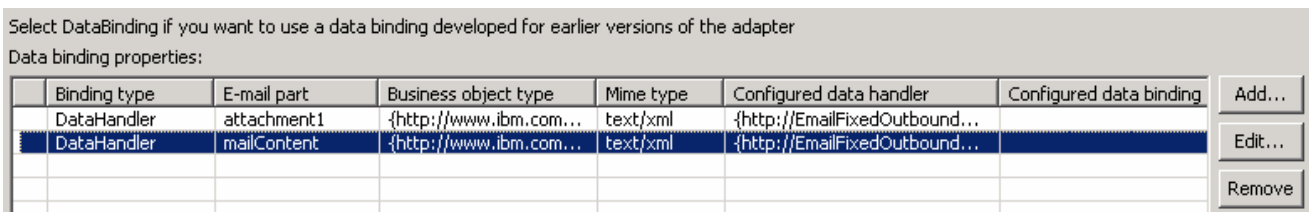
- 1) From the Data Handler Selection window, select **FixedDH** and click **OK**

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



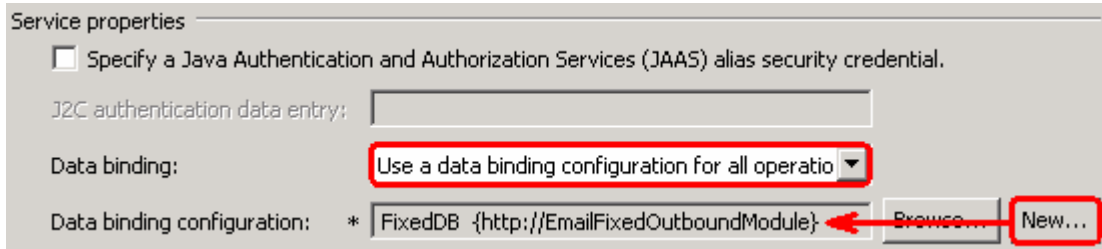
__ s. Click **Finish** from the Add/Edit window

__ t. 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:



IBM WEBSPHERE ADAPTER 6.1 – LAB EXERCISE

- __ u. Click **Finish** from the Data Binding Properties screen
- __ v. Now the **FixedDB** is displayed for Data binding configuration



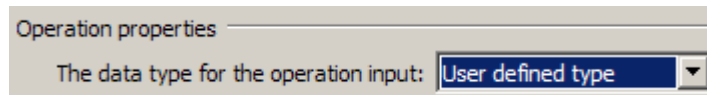
- ___ 11. Check the box next to **Change logging properties for wizard** to view the output location of the log file and the logging level. You can change the logging level using the drop down menu

- __ a. Click **Next**

Define **createFixedEmail** Operation:

- ___ 12. Click on **Add...** to open Add Operation window

- __ a. For **Data type for the operation input**, select **User defined type** from the drop down list



- __ b. 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

- __ c. For Operation name, enter **createFixedEmail**

Define Input type:

- __ d. Click on **New...** next to **Input type**. New Business Object is opened
- __ e. Ensure that the selected Module is **EmailFixedOutboundModule** and click **Next**
- __ f. For **Business object name**, enter **MyFixedEmail** (you can enter any name here)
- __ g. **Select** the box next to **Generate a business graph for the business object**
- __ h. Click on **Add...** next to the 'Properties for e-mail type' table. This will open an Add/Edit window
- __ i. Define **mailContent**:

- 1) Note that the **E-mail part** is entered with **mailContent**
- 2) Click on **Browse...** next to Business object type. Data Type Selection window is opened
- 3) Select **Customer** from the Matching data types list and click **OK**

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___ j. 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: ←

Business object type: * ←

___ k. Click **Finish** from the Add/Edit window

___ l. 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:

Business object name: *

Business object namespace:

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	←

___ m. Define **attachment** part:

- 1) Click on **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 on **Browse...** next to Business object type. Data Type Selection window is opened
- 4) Select **Order** from the Matching data types list and click **OK**

___ n. 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: ←

Business object type: * ←

Default attachment name:

___ o. Click **Finish** from the Add/Edit window

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___ p. 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	←	Add...
mailContent	{http://www.ibm.com/xmlns/prod/websphere/j2ca/email/customer}Customer		Edit...

___ q. Click **Finish**

___ r. 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:

Operation name: * createFixedEmail

Specify the operation input

Input type: * MyFixedEmailBG {http://www.ibm.com/xmlns/prod/websphere/j2ca/email/fixedstructureemailbg} ← Browse... New...

___ s. For **Data binding**, accept the default selection, **Use data binding configuration 'FixedDB'**

Operation name: * createFixedEmail

Specify the operation input

Input type: * MyFixedEmailBG {http://www.ibm.com/xmlns/prod/web} Browse... New...

Data binding: Use data binding configuration 'FixedDB' ▼

Data binding configuration: Browse... New...

___ t. Click **Finish**.

___ 13. The operation, createFixedEmail, will now be displayed under Operations list. You can click on **Advanced >>** to open the advanced properties and review them

Operations:

← createFixedEmail ({http://www.ibm.com/xmlns/prod/websphere/j2ca/email/fixedstructureemailbg}MyFixedEmailBG) : void Add...

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.**

___ 14. Click **Next** from the Operations window

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___ 15. From the Generate Artifacts screen, enter these:

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

Properties for service

Module:

Namespace:

Use default namespace

Folder:

Name:

Save business objects to a library

Library:

Description:

___ 16. 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

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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 on **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 on **WebSphere Process Server v6.1** 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 on **WebSphere Process Server v6.1** 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 on 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

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- ___ 6. 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 **Customer** fields under **mailContent**
 - ___ e. Enter any data for the **Order** fields under **attachment1**

▼ Detailed Properties

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

Invoke export using binding

Initial request parameters

Name	Type	Value
createFixedEmailInput	MyFixedEmailBG	✓
verb	verb <string>	✓ CREATE
MyFixedEmail	MyFixedEmail	✓
To	string	✓ Emailuser1@aimcp101.austin.ibm.com
From	string	✓ Emailuser2@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[]	68
mailContent →	Customer	✓
CustomerName	string	✓ ABC
Address	string	✓ 11901 Burnet Rd
City	string	✓ Austin
State	string	✓ TX
attachment1 →	Order	✓
OrderNumber	string	✓ A123
OrderType	string	✓ Large
Quantity	string	✓ 500
Price	string	✓ 250.00
attachment1Name →	string	✓ EmailFixed.xml

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



___ g. From Deployment Location window (if opens), select **WebSphere Process Servers > WebSphere Process Server v6.1** and click **Finish**

___ 7. Verify your results

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

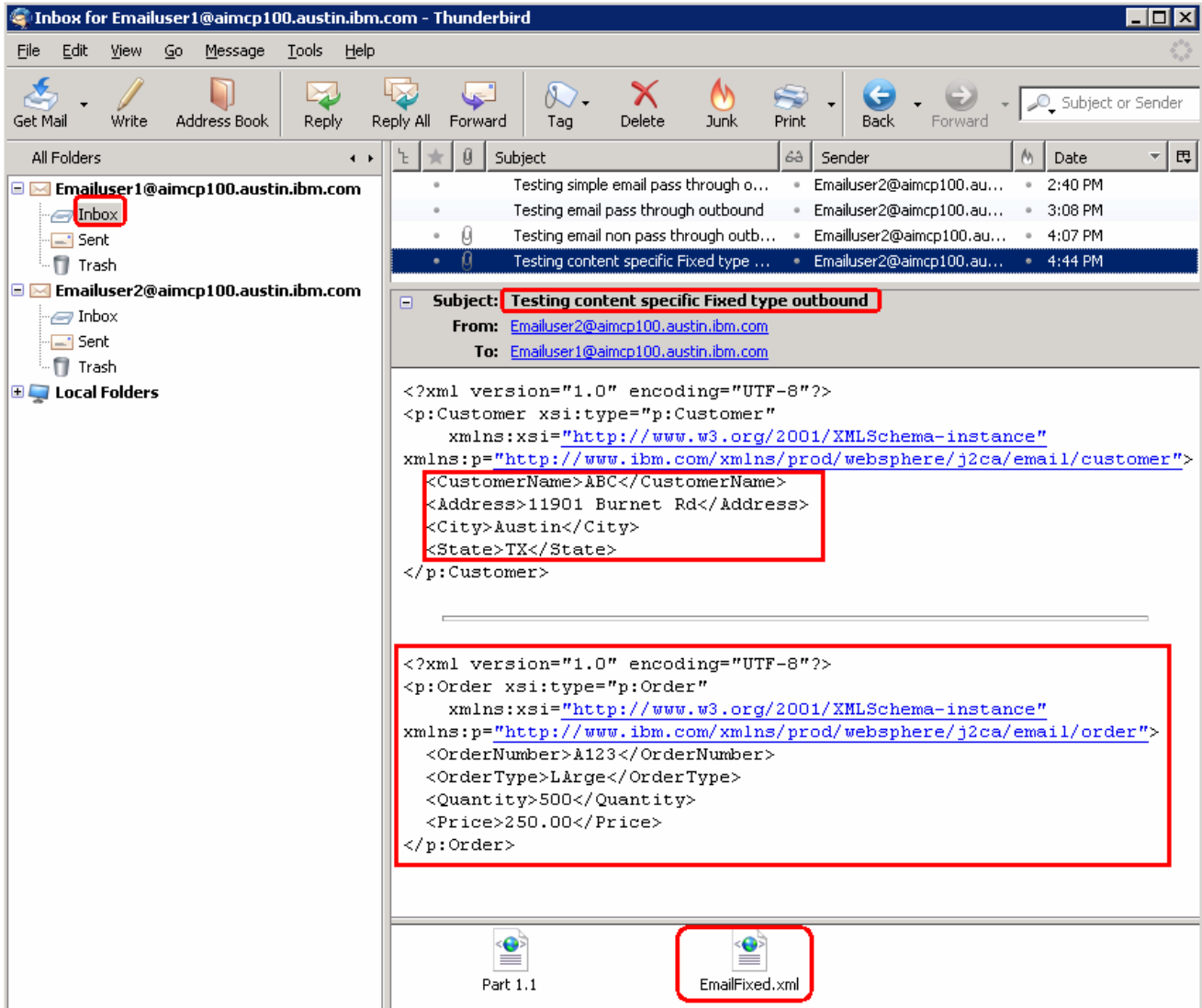
Name	Type	Value
createFixedEmailInput	MyFixedEmailBG	✓
verb	verb<string>	✓ CREATE
MyFixedEmail	MyFixedEmail	✓
To	string	✓ Emailuser1@rdyavana.austin.ibm.com
From	string	✓ Emailuser2@rdyavana.austin.ibm.com
CC	string	✓
BCC	string	✓
Reply-To	string	✓
Subject	string	✓ Testing content specific Fixed type outbound
Encoding	string	✓
Date	string	✓
HeaderList	Header[]	✓
mailContent	Customer	✓
CustomerName	string	✓ ABC
Address	string	✓ 11911 Burnet Rd
City	string	✓ Austin
State	string	✓ TX
attachment1	Order	✓
OrderNumber	string	✓ A123
OrderType	string	✓ Large
Quantity	string	✓ 500
Price	string	✓ 250.00
attachment1Name	string	✓ FixedEmail.xml

___ 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 on **Get Mail**

IBM WEBSPHERE ADAPTER 6.1 – LAB EXERCISE

- ___ b. Check the inbox of the 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.



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5.3. Restore server configuration

- ____ 1. Close the **EmailFixedOutboundModule_Test** window and click **No** for the Save Resources window
- ____ 2. Right-click on **WebSphere Process Server v6.1** under the Servers view and select **Add and remove projects...** from the pop-up menu
- ____ 3. Select **EmailFixedOutboundModuleApp** under Configured projects and click **< Remove**
- ____ 4. Click **Finish** after you see the application moved to Available projects. Wait until the application is unpublished

IBM WEBSPHERE ADAPTER 6.1 – 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 e-mail, pass through, non-pass through and fixed structure e-mail scenarios.

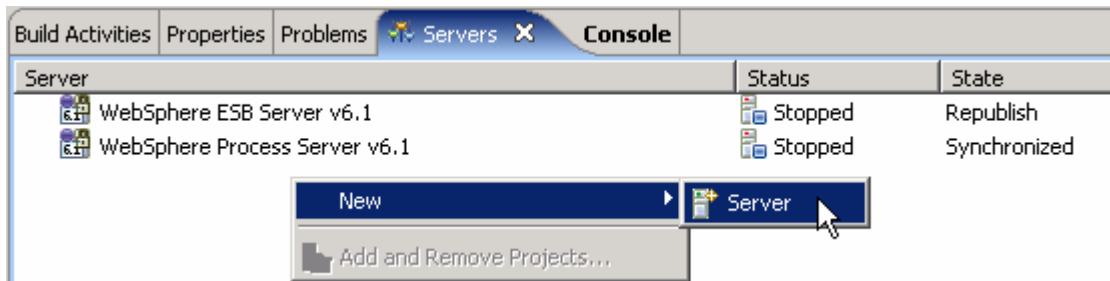
IBM WEBSHERE ADAPTER 6.1 – LAB EXERCISE

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.

Create a new remote server.

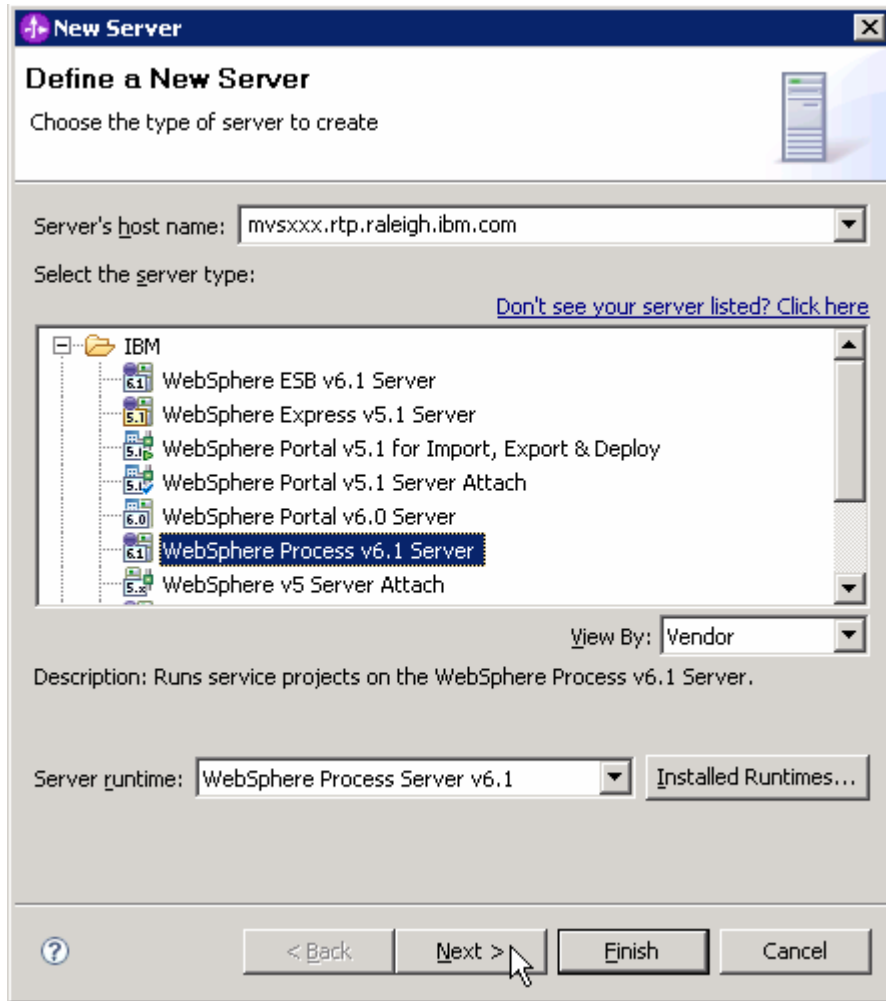
- ___ 1. Right click on the background of the Servers view to access the pop-up menu.
 - ___ a. Select **New > Server**.



- ___ 2. Enter these from New Server window:
 - ___ a. In the New Server dialog, specify the remote server's host name, **<HOSTNAME>**

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- ___ b. Ensure that the appropriate server type, **'WebSphere Process v6.1 Server'** or **'WebSphere ESB v6.1 Server'**, is highlighted in the server type list



- ___ c. Click **Next**.

___ 3.

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4. On the WebSphere Server Settings page, leave the radio button for **SOAP** selected, changing the **SOAP connector port** to the correct setting (<SOAP_PORT>). If security is on in your server, check the box for '**Security is enabled on this server**' and input <USERID> for the user ID and <PASSWORD> for the password.

New Server

WebSphere Server Settings
Input settings for the new WebSphere server.

WebSphere profile name:

Server connection type and admin port

RMI (Designed to improve communication with the server)
ORB bootstrap port:

SOAP (Designed to be more firewall compatible)
SOAP connector port:

Run server with resources within the workspace

Security is enabled on this server

Current active authentication settings:

User ID:

Password:

Server name:

Server type

BASE, Express or unmanaged Network Deployment server

Network Deployment server

Network Deployment server name:

The server name is in the form of:
<cell name>/<node name>/<server name>
For example, localhost/localhost/server1. In a cluster environment,
the server name is in the form of:
<cell name>/<cluster name>

Click this button to detect the server type.

- a. Click **Finish**.

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___ 5. The new server should be seen in the Server view.

Server	Status	State
WebSphere ESB Server v6.1	Stopped	Republish
WebSphere Process Server v6.1	Stopped	Synchronized
WebSphere Process v6.1 Server @ mvsxxx.rtp.raleigh.ibm.com	Stopped	Republish

___ 6. Start the remote server if it is not already started.

Note: WebSphere Integration Developer V6.1 does not support starting remote servers from the Server View. So, you should start the remote server from the remote machine where the server is installed.

___ a. From a command prompt, telnet to the remote system if needed (for z/OS or i5/OS):

'telnet <HOSTNAME> <TELNET_PORT>'

user ID : <USERID>

password : <PASSWORD>

___ 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 cllsr01 open for e-business; process id is 00000120000000002
```