

IBM WEBSPHERE ADAPTER 6.0.2 – LAB EXERCISE

Flat File Inbound Lab

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What this exercise is about

The objective of this lab is to provide you with an understanding of WebSphere® Adapter for Flat Files and inbound event processing. In this lab you will deploy the WebSphere Adapter for Flat Files, using WebSphere Integration Developer, and integrate it with an SCA application that polls for inbound events and processes those inbound requests from the file system.

Lab requirements

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

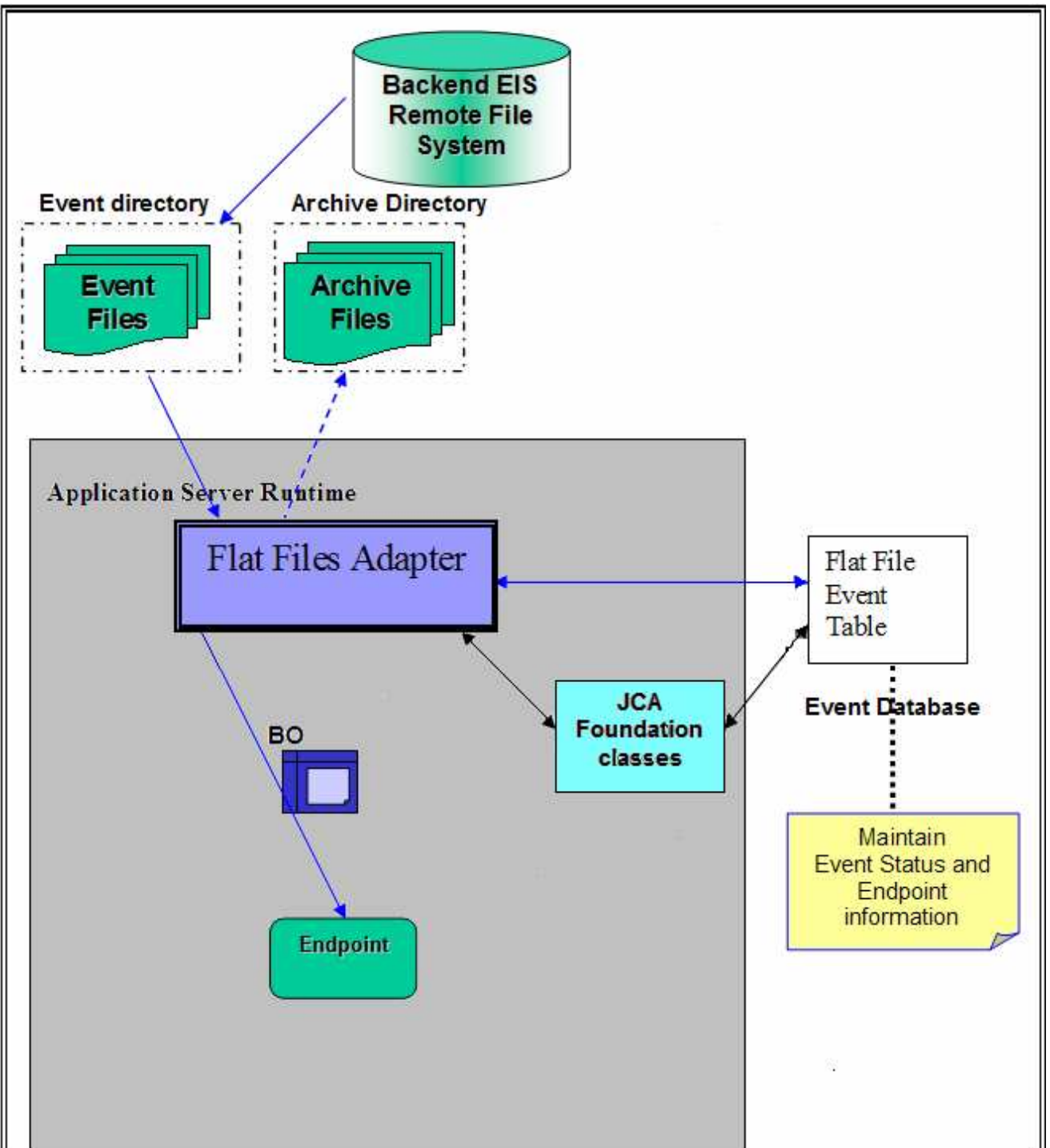
- WebSphere Integration Developer V6.0.2 installed
- WebSphere Process Server V6.0.2 Test Environment installed
- WebSphere Adapter for Flat File V6.0.2 installed
- Unzip LabFiles602.zip to your C:\ (your root) drive

What you should be able to do

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

- Create databases required in Cloudscape
- Import Flat File adapter RAR file into WebSphere Integration Developer
- Use WebSphere Process Server Administrative Console to create required JDBC provider and a Data source under it
- Use Enterprise Service Discovery (ESD) wizard to configure Activation Spec Properties and Resource Adapter Properties to generate Business Objects and other artifacts
- Deploy the adapter application onto WebSphere Process Server
- Test the deployed application using WebSphere Process Server test environment for both pass-through and non pass-through using four different scenarios
- Restore the server configuration

Introduction



The backend EIS is the source of events. When events are generated at the EIS, files would be created by the EIS in the file system at a specific directory location, which needs to be configured as the Event Directory for the adapter.

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The adapter polls event files from the multiple Event Directories periodically based on user-configured Event File Mask, Poll Quantity and Poll Period. Each file would form a fundamental unit of transfer to the adapter which can internally represent more than one backend events. The adapter sends the entire file content across to the endpoint in the form of a WebSphere Business Integration Business Object for further processing.

The event management framework takes care of delivering the event only once to the endpoint. FF RA (Flat File Resource Adapter) internally uses an event table, Flat Files event table, to log the status of the events that have been polled but not yet posted to the endpoint. Once an event is polled, the FF RA generates the Event ID and stores the event reference in the Flat Files event table with a NEW status. The base class functions call the adapter methods to process the events. The FF RA changes the status for the event in the Flat Files event table to an IN_PROGRESS status. It wraps the file content in a Record and posts the same across to the configured endpoint.

The base classes call the deleteEvent() method once the event BO is posted and the event entry is then deleted from the Flat Files event table. After the Business Objects are sent out of the adapter, the events are archived optionally, in a user-configured Archive Directory on the file system.

Exercise instructions

Some instructions in this lab may be Windows® operating-system specific. If you plan on running the lab on an operating-system other than Windows, you will need to run the appropriate commands, and use appropriate files (.sh vs. .bat) for your operating system. The directory locations are specified in the lab instructions using symbolic references, as follows:

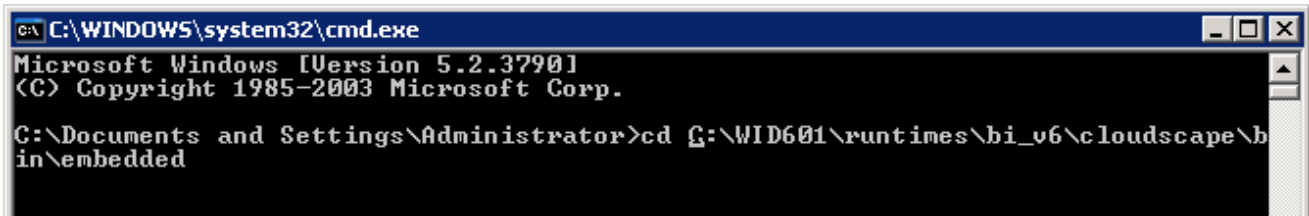
Reference Variable	Windows Location	AIX®/UNIX® Location
<WID_HOME>	C:\Program Files\IBM\ID\6.0	
<WPS_HOME>	<WID_HOME>\runtimes\bi_v6	
<FFADAPTER_HOME>	C:\Program Files\IBM\ResourceAdapters\FlatFiles\adapter\FlatFile	
<LAB_FILES>	C:\Labfiles602	/tmp/Labfiles602
<WORKSPACE>	<LAB_FILES>\FlatFileInbound\workspace	
<EVENT_DIR>	<LAB_FILES>\FlatFileInbound\eventdir	
<ARCHIVE_DIR>	<LAB_FILES>\FlatFileInbound\archivedir	
<TEMP>	C:\temp	/tmp

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

Part 1: Prepare database and subdirectory structure

This part of the lab, describes the steps for creating the **FFDATABASE** database in Cloudscape which will contain the Event Persistence Table, **FFTABLE**. The **FFTABLE** will be created automatically for you during the install and deployment of the application containing the Flat File adapter to the WebSphere Process Server.

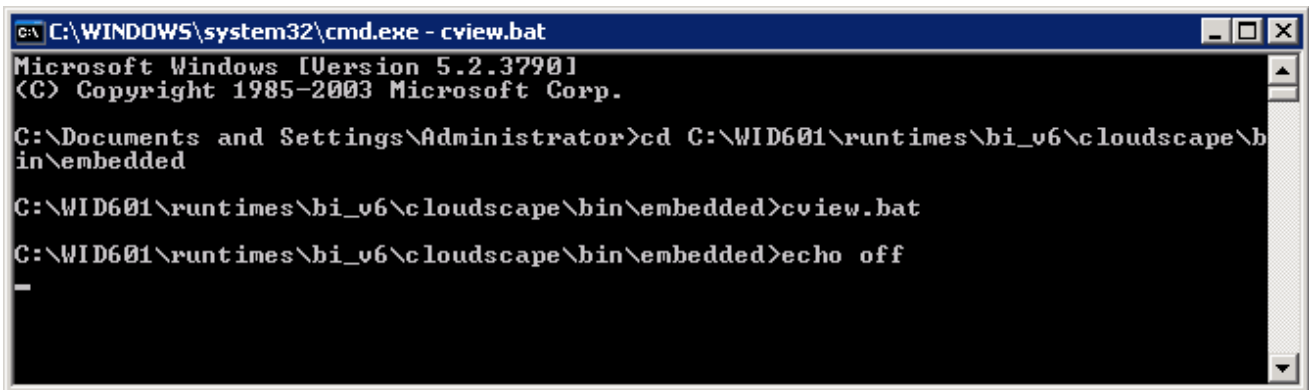
- ___ 1. Start the Cloudscape Cview Graphical User Interface (GUI) by executing the **cvview.bat** file
 - ___ a. Open a command prompt window, change to the following subdirectory
<WPS_HOME>\cloudscape\bin\embedded



```
C:\WINDOWS\system32\cmd.exe
Microsoft Windows [Version 5.2.3790]
(C) Copyright 1985-2003 Microsoft Corp.

C:\Documents and Settings\Administrator>cd C:\WID601\runtimes\bi_v6\cloudscape\bin\embedded
```

- ___ b. Type **cvview.bat**



```
C:\WINDOWS\system32\cmd.exe - cvview.bat
Microsoft Windows [Version 5.2.3790]
(C) Copyright 1985-2003 Microsoft Corp.

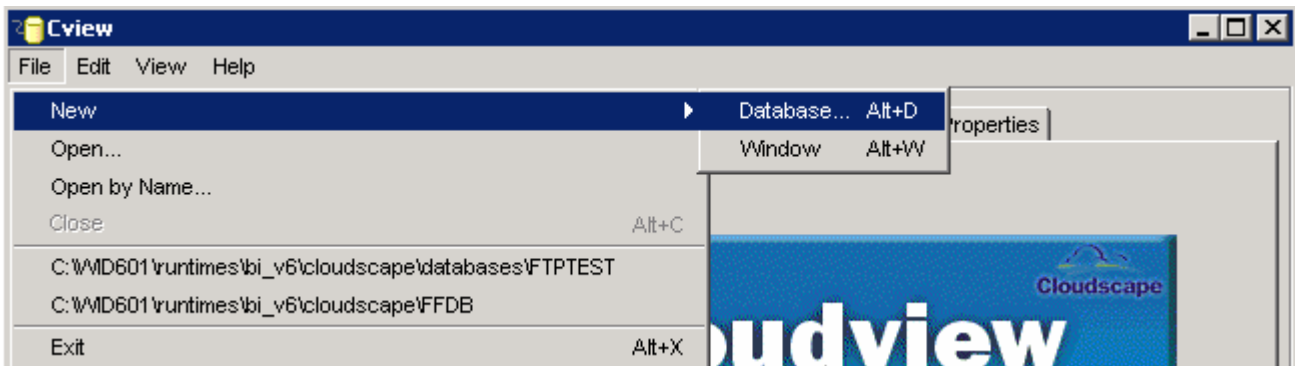
C:\Documents and Settings\Administrator>cd C:\WID601\runtimes\bi_v6\cloudscape\bin\embedded

C:\WID601\runtimes\bi_v6\cloudscape\bin\embedded>cvview.bat

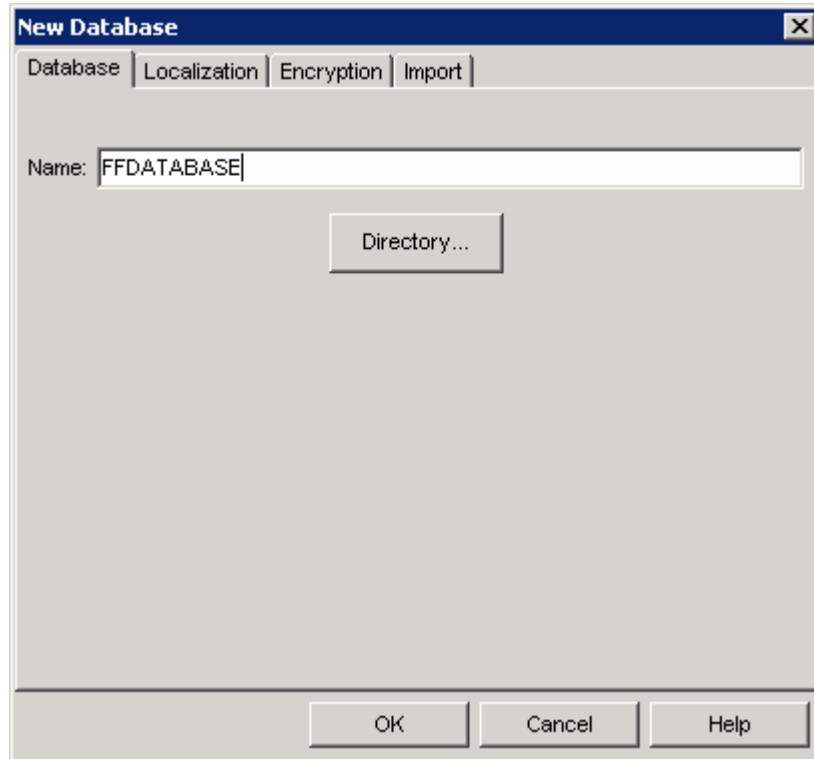
C:\WID601\runtimes\bi_v6\cloudscape\bin\embedded>echo off

-
```

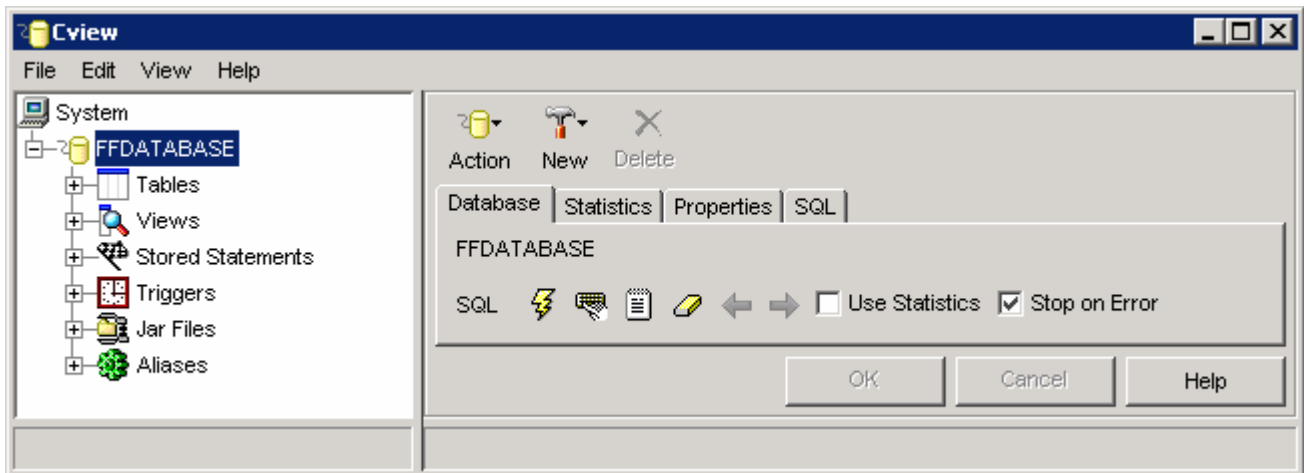
- ___ c. The Cview window will be opened. From that window, select **File > New > Database...**



__ d. Enter **FFDATABASE** in the Name field and click **OK**



You will see the **FFDATABASE** created in the left pane of the Cview window:



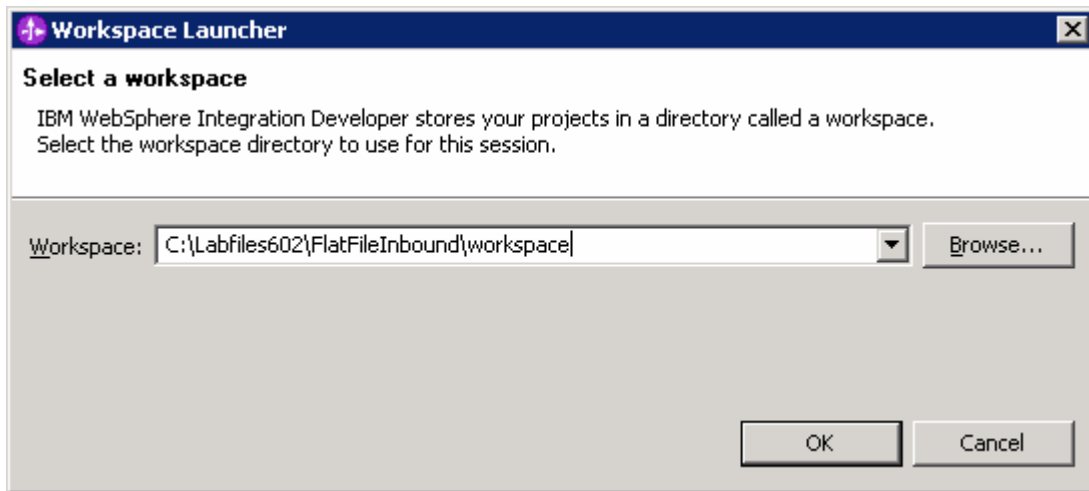
__ e. Select **File > Exit** to close the Cview GUI


2. Unzip the provided LabFiles602.zip to your C:\ (root) drive, if you have not already done so. This will create the necessary subdirectory structure to complete the lab, as well as provide you with sample text files.

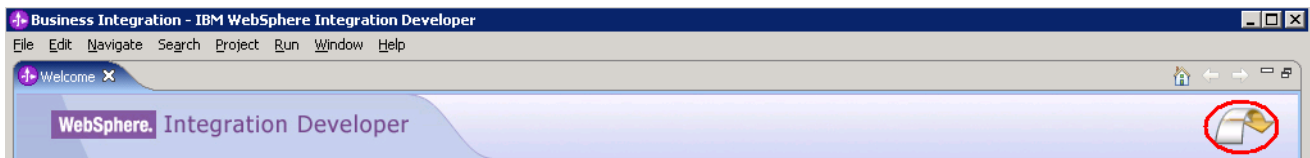
Part 2: Initialize workspace and import RAR into WebSphere Integration Developer

This part of the lab will guide you through the steps for starting WebSphere Integration Developer with a new workspace, and then import the connector file **CWYFF_FlatFile.rar** into your new workspace.

- ___ 1. Start the WebSphere Integration Developer V6.0.2 with a new workspace
 - ___ a. Select **Start > Programs > IBM WebSphere > Integration Developer V6.0.2 > WebSphere Integration Developer V6.0.2**
 - ___ b. From the Workspace Launcher window, enter **<WORKSPACE>** for the Workspace field

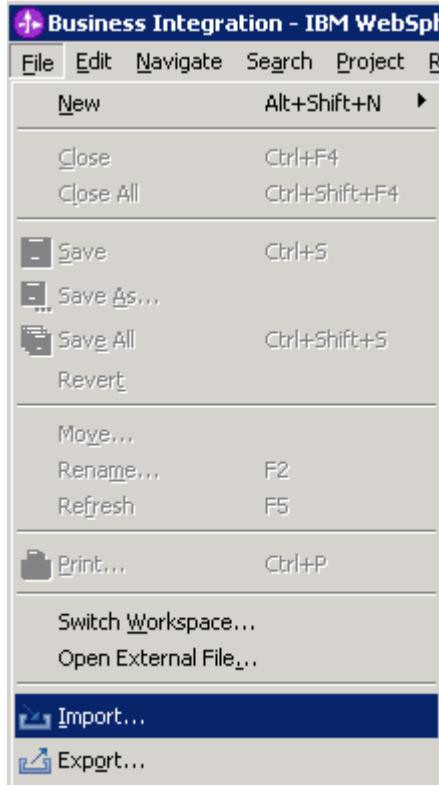


- ___ c. Click on the  button on the right hand corner to close the Welcome page and proceed with the workbench

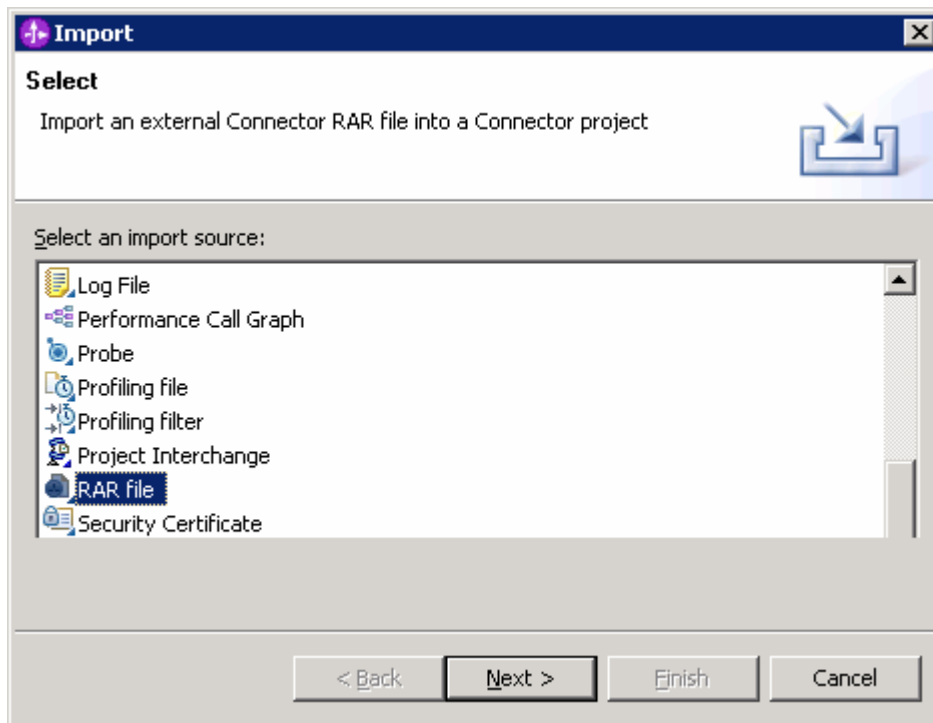


___ 2. Import Flat File Adapter RAR file

___ a. From main menu, select **File > Import...**

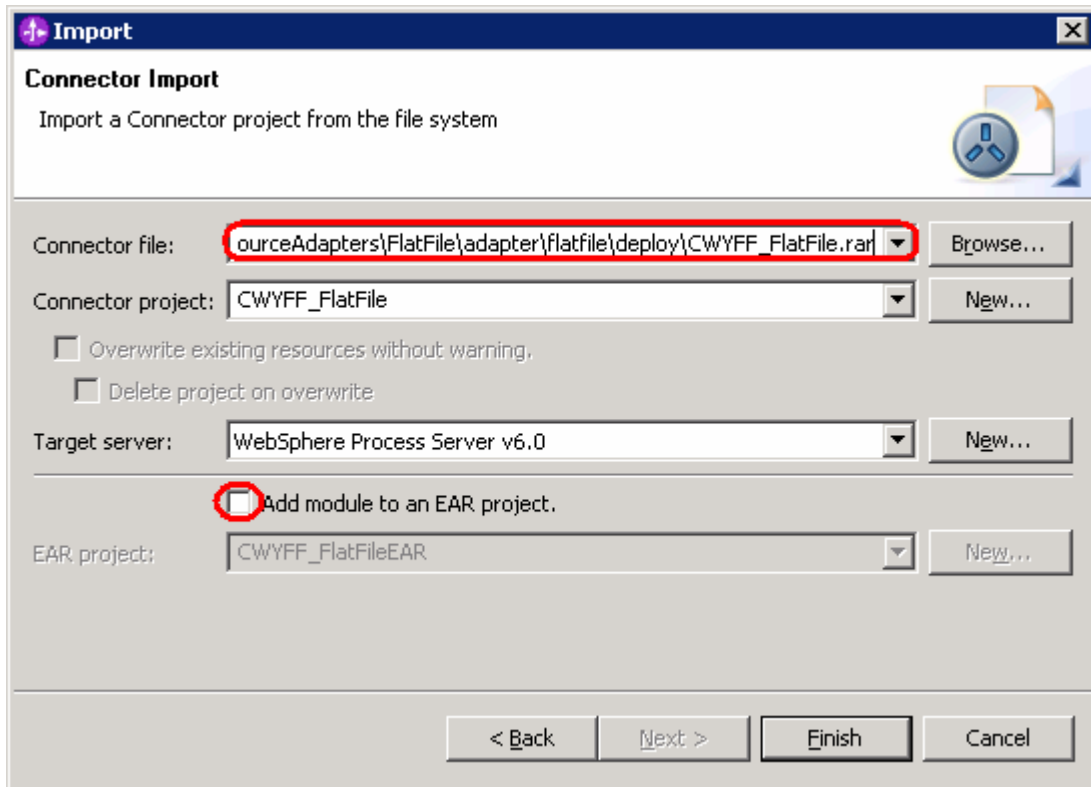


___ b. Select **RAR file** from the Import window and then click **Next**

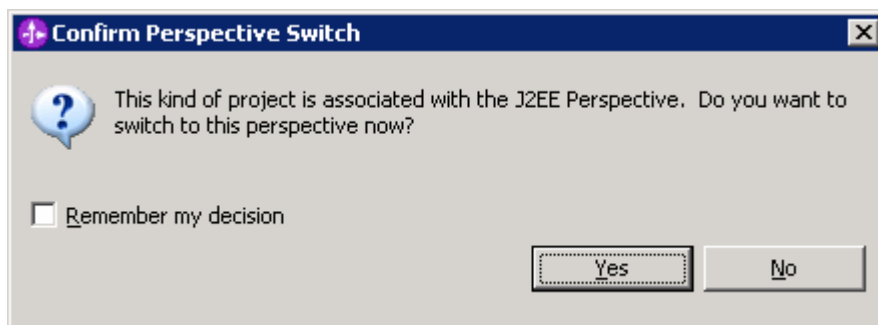


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- ___ c. Click on the **Browse...** button next to the **Connector file** field to select **CWYFF_FlatFile.rar**
- ___ d. Uncheck the check box next to **Add module to and EAR project** and click **Finish**



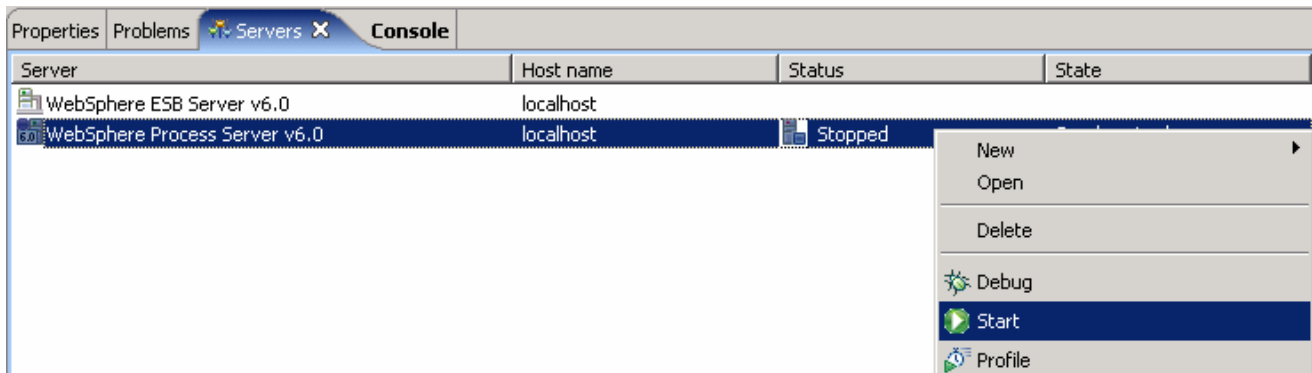
- ___ e. Click on **No** from Confirm Perspective Switch window to continue with the Business Integration perspective



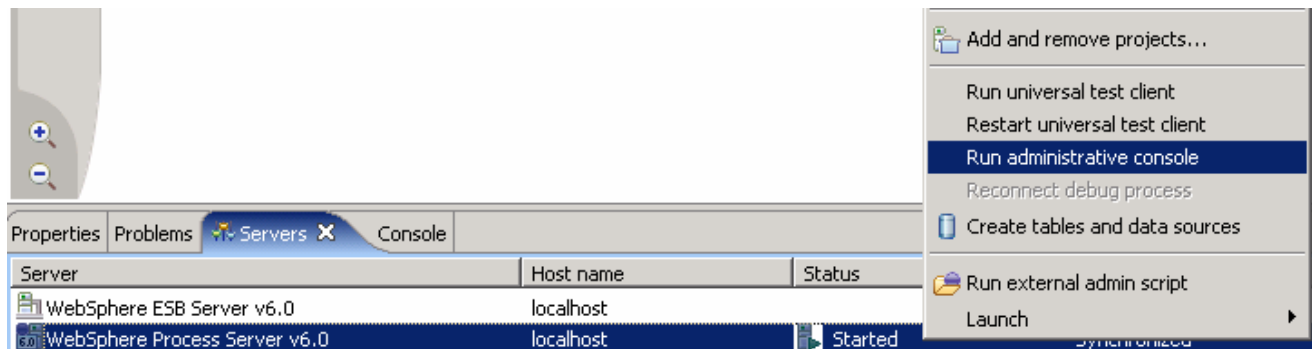
Part 3: Use WebSphere Process Server Administrative Console to configure data sources

In this part of the lab, you will make use of WebSphere Process Server Administrative Console to create the required JDBC Provider and the Data source that will be used by the Adapter to configure itself to the end point.

- ___ 1. Start the WebSphere Process Server
 - ___ a. Select the **Servers** view
 - ___ b. Right-click on the row that contains **WebSphere Process Server v6.0** and select **Start** from the context menu



- ___ c. Wait until the server status shows as **Started**
- ___ 2. Right-click on the row that contains WebSphere Process Server v6.0 and select **Run administrative console** from the context menu



- ___ 3. From the Administrative Console, enter any **User ID** and click on **Log In**

Welcome, please enter your information.

User ID:

___ 4. Expand **Resources** on the left pane and select **JDBC Providers**



___ 5. Accept the default scope and click on **New**

___ 6. In the following screen, for General Properties, select the following from the dropdown list:

___ a. Step 1: **Cloudscape**

___ b. Step 2: **Cloudscape JDBC Provider**

___ c. Step 3: **XA data source**

___ 7. Click **Next**

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JDBC providers

[JDBC providers](#) > **New**

Choose a type of JDBC provider to create.

Configuration

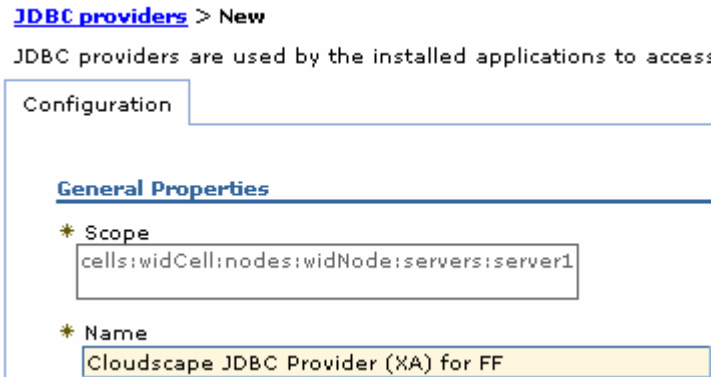
General Properties

Step 1: Select the database type
Cloudscape ▼

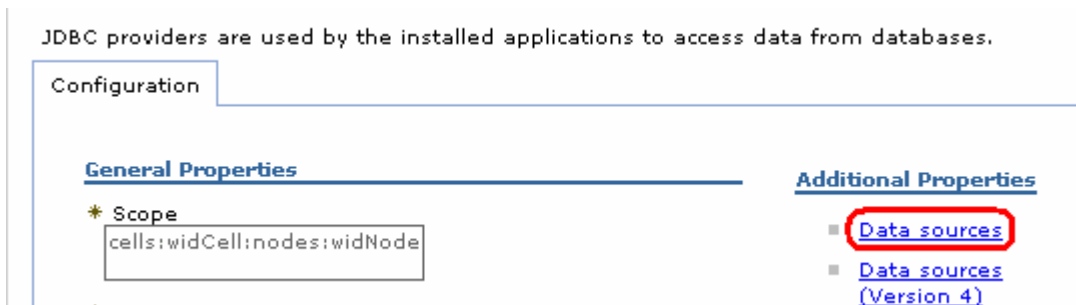
Step 2: Select the provider type
Cloudscape JDBC Provider ▼

Step 3: Select the implementation type
XA data source ▼

- ___ 8. Enter **Cloudscape JDBC Provider (XA) for FF** in the **Name** field and then click **OK**



- ___ 9. Click **Save** on the top of the window, and then click on **Save** from the following screen
- ___ 10. Click **Cloudscape JDBC Provider (XA) for FF** from the following screen to create a new DataSource
- ___ 11. Select **Data Sources** under **Additional Properties** on the right hand side



- ___ 12. Create the required JNDI Data source
- ___ a. Click **New**
 - ___ b. Enter these values:
 - a) Name: **Cloudscape JDBC Driver XA DataSource for FF**
 - b) JNDI Name: **jdbc/Cloudscape JDBC Driver XA DataSource for FF**
 - c) Database name: **FFDATABASE**

__ c. Click **OK**

* Name
Cloudscape JDBC Driver XA DataSource for FF

JNDI name
jdbc/Cloudscape JDBC Driver XA DataSource for FF

Use this Data Source in container managed persistence (CMP)

Description
New JDBC Datasource

Category

Data store helper class name

Select a data store helper class
Data store helper classes provided by WebSphere Application Server

Cloudscape data store helper
(com.ibm.websphere.rsadapter.CloudscapeDataStoreHelper)

Specify a user-defined data store helper
Enter a package-qualified data store helper class name

Component-managed authentication alias

Component-managed authentication alias
(none)

Authentication alias for XA recovery

Use component-managed authentication alias

Specify:

Container-managed authentication

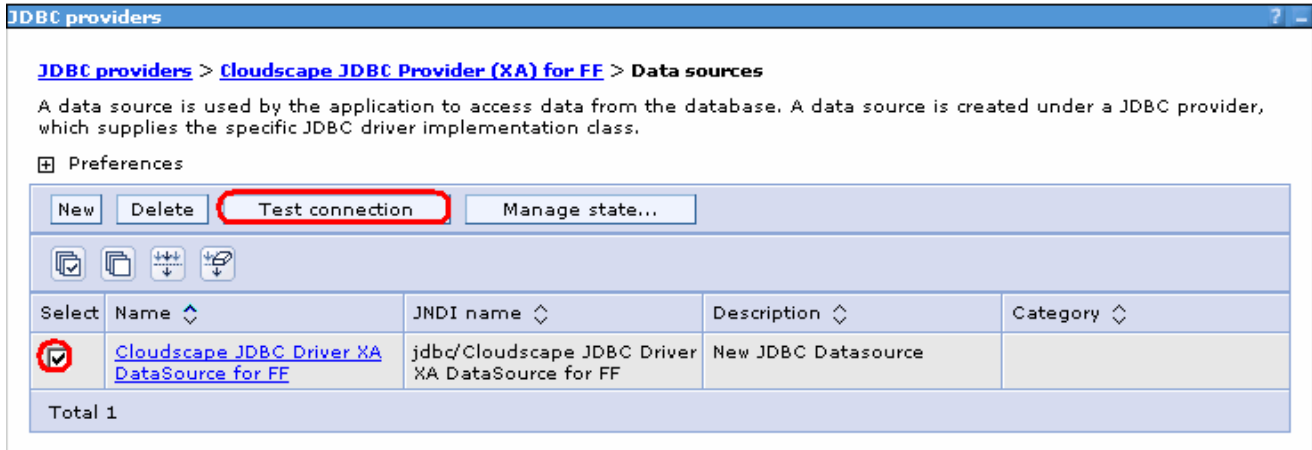
Container-managed authentication alias (deprecated in V6.0, use resource reference authentication settings instead)
(none)

Mapping-configuration alias (deprecated in V6.0, use resource reference authentication settings instead)
(none)

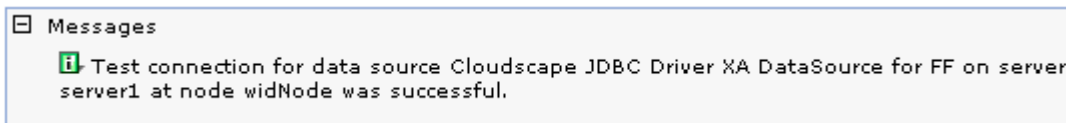
Cloudscape data source properties

* Database name
FFDATABASE

- ___ 13. Click on **Save** and then **Save** from the following screens
- ___ 14. Test the Data Source connection
 - ___ a. Check the box next to **Cloudscape JDBC Driver XA DataSource for FF** and click on **Test connection** from the top of the screen



- ___ b. You should see the following success message on the top of the screen:



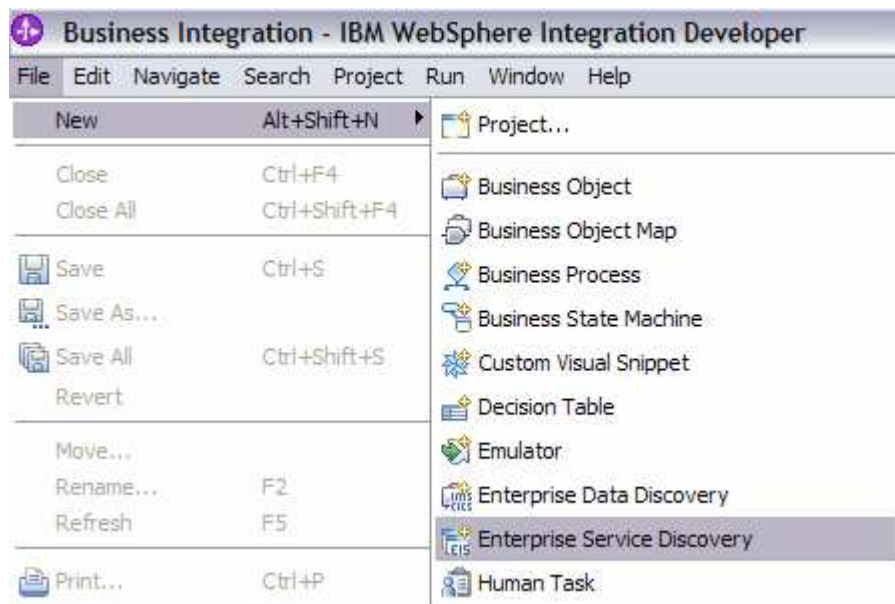
- ___ 15. Log out of the Administrative Console and close it.

Part 4: Use Enterprise Service Discovery Wizard to generate business objects and other artifacts

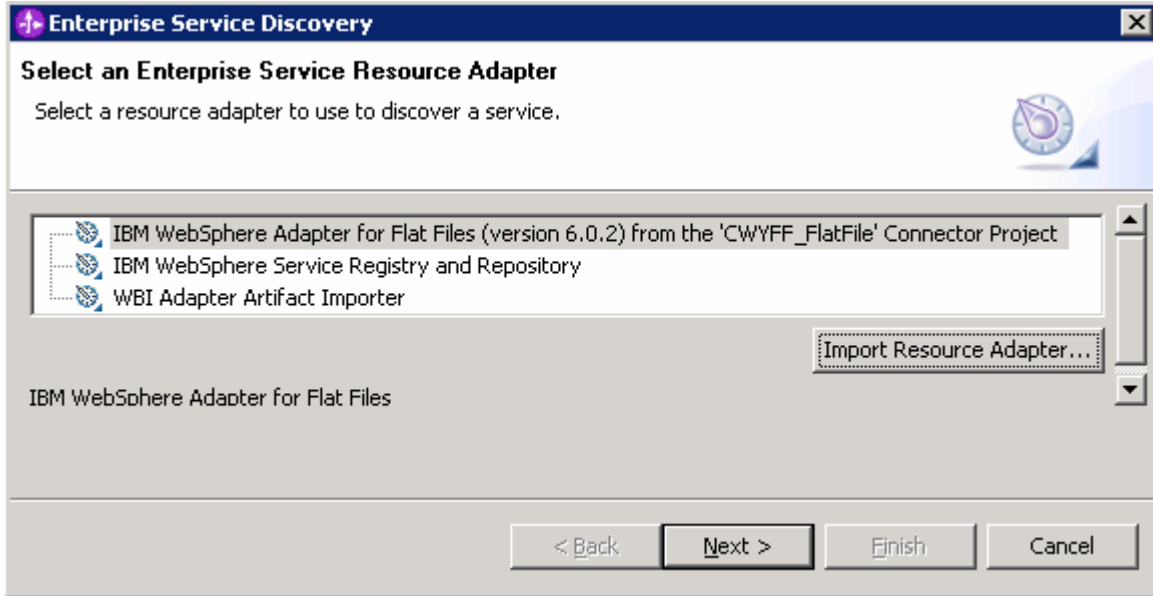
Enterprise Service Discovery (ESD) or Enterprise Metadata Discovery (EMD) is a component within adapter that enables the generation of business object definition and other artifacts required by SCA.

The instances of Activation Spec and the Resource Adapter from EMD translate to the section on SCA export files. During runtime, the adapter component that exposes the adapter as SCA uses these export files to create instances of Activation Spec and Resource Adapter and fills in values from the SCA files that were created with EMD.

- ___ 1. Launch the Enterprise Service Discovery wizard
 - ___ a. From the top Menu bar, select **File > New > Enterprise Service Discovery**



- ___ 2. Select **IBM WebSphere Adapter for Flat Files (version 6.0.2)** from the 'CWYFF_FlatFile' Connector Project and click **Next**



___ 3. Configure settings for the Discovery agent

You will specify the properties to initialize the Resource Adapter and Enterprise Service Discovery agent.

- ___ a. Click on the **Browse...** button next to the **Folder Name** field and select the folder **<FFADAPTER_HOME>\samples** that contains the XSD file for **Customer** Business Object

Note: For your convenience, the **Customer.xsd** is also placed under **<LAB_FILES>\FFFiles**.

- ___ b. Select **text/xml** for the **Content Type** field. Once the content type is selected, the **DataBinding Type** will be automatically set to **XMLBOSerializerDataBinding**
- ___ c. Click the **Show Advanced >>** button to see the Log file location and Logging level options for the discovery log and click **Next** leaving the default log file location

Enterprise Service Discovery

Configure Settings for Discovery Agent

Specify the properties to initialize the resource adapter and the enterprise service discovery agent.

Connection Configuration

Folder Name: Browse...

Charater Set:

Content Type:

DataBinding Type:

Specify BO Properties

BiDi Properties

BiDi transformation

Bidi ordering schema:

Text direction:

BiDi SymmetricSwapping

Bidi shaping:

Bidi numeric shaping:

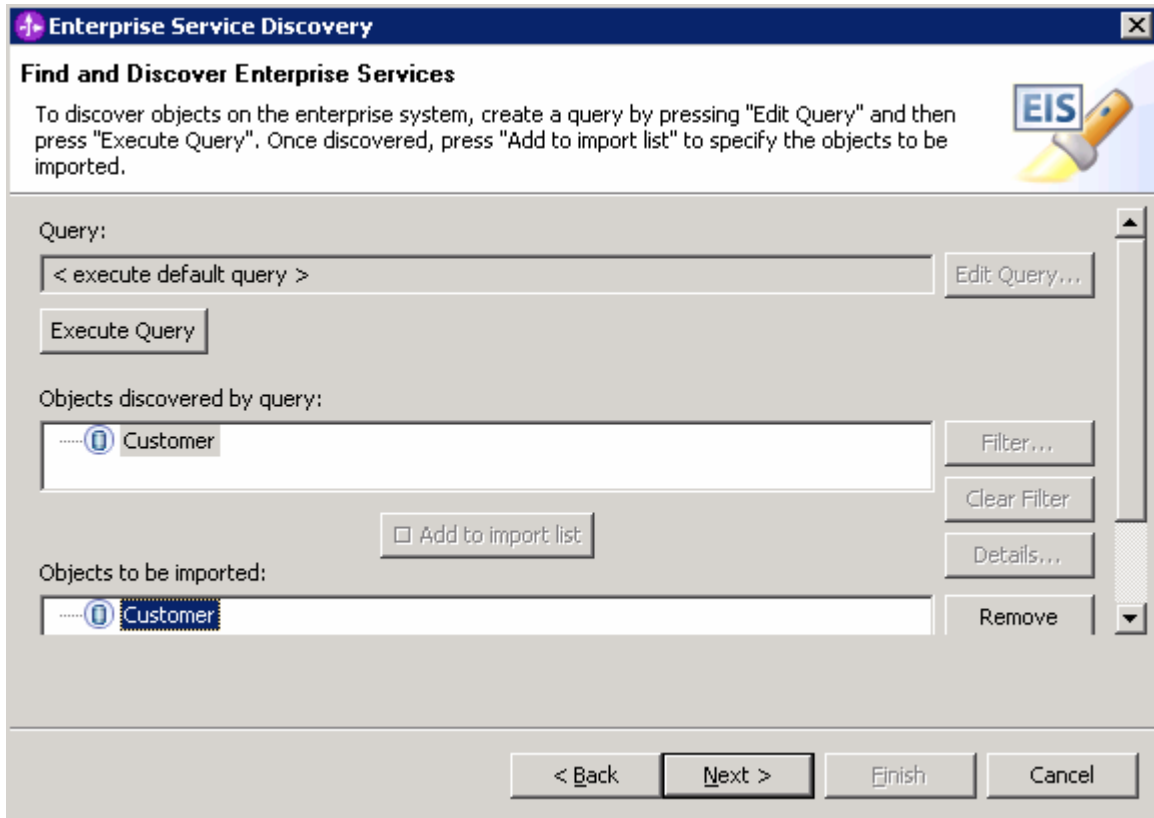
Logging options

Log file output location:* Browse...

Logging Level:

< Back Next > Finish Cancel

4. Find and discover the enterprise services. In this step you will select the business objects and services to be used with the adapter
- a. From the Enterprise Service Discovery window, click on **Execute Query** button. You will see a **Customer** business object under **Objects discovered by query**
 - b. Select **Customer** business object and click **Add to import list** button. The Customer business object will now be displayed under the **Objects to be imported**



__ c. Click **Next**

___ 5. Configure the objects that will be imported by the discovery agent

__ a. From the Configure objects window, select **Inbound** from the dropdown menu for the **Service Type**.

___ b. Enter **FFInBO** for the **BO Location** field and click **Next**

Enterprise Service Discovery

Configure Objects

Specify the properties for the objects that will be imported by the discovery agent.

ServiceType: Inbound

NameSpace: * http://www.ibm.com/xmlns/prod/websphere/j2ca/flatfile

Operations:

- CREATE
- APPEND
- OVERWRITE
- DELETE
- RETRIEVE
- LIST
- EXISTS

BO Location: FFInBO

Function Selector:* WBIFunctionSelector

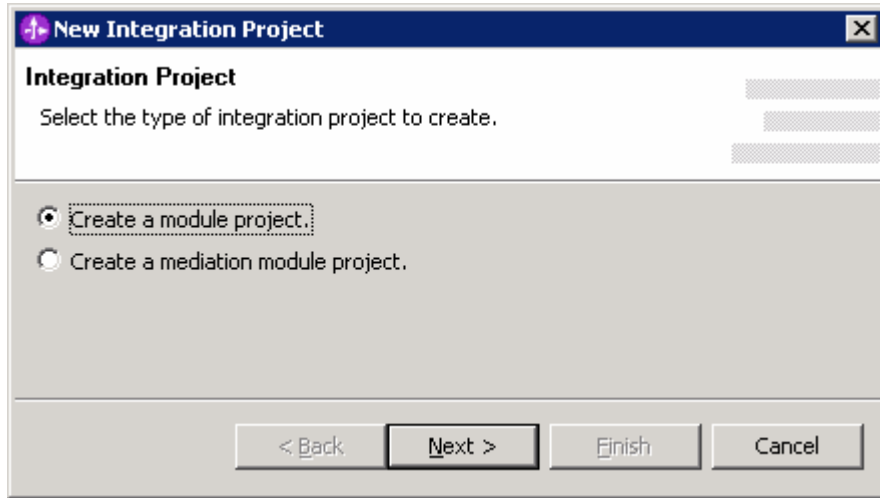
< Back Next > Finish Cancel

___ 6. Specify the properties for the artifacts that will be generated in your workspace

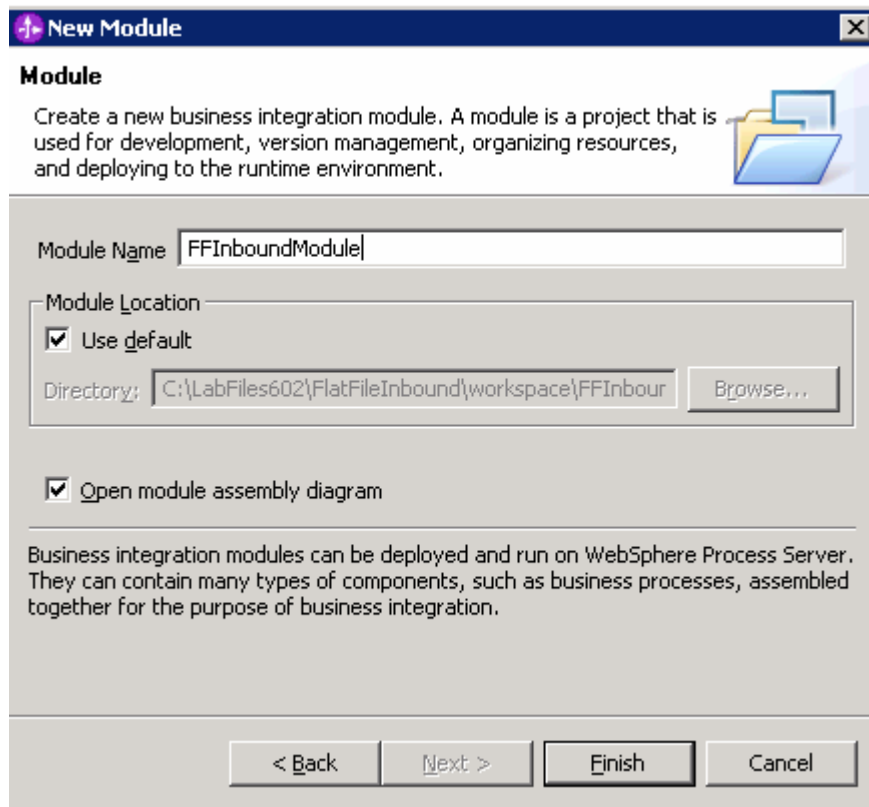
___ a. Create a new module

1) Click on the **New...** button next to **Module** field

- 2) From the New Integration Project window, ensure that the radio button next to **Create a module project** is selected and click **Next**



- 3) Enter **FFInboundModule** for the **Module Name** field and click **Finish**. The assembly diagram for FFInboundModule will be opened for you.



- ___ b. The module which is created above will appear under the **Module** field of the Generate Artifacts window
- ___ c. From Generate Artifacts window, select the radio button next to **Use discovered connection properties**.

This will make the Properties for Activation Spec and Resource Adapter Properties visible

Properties for Interface

Module: **FFInBoundModule**

Namespace: Use Default Namespace

Folder:

Name: *

Description:

Deploy connector with module

Specify the connection properties which will be used to connect to the Enterprise Information System at runtime:

Use connection properties specified on server

Use discovered connection properties

J2C Authentication Data Entry:

Properties for Activation Spec

BONamespace:

Delivery Mode and Polling Info

DeliveryType:

PollPeriod: *

PollQuantity: *

Retry Interval:

Retry limit [Integer]:

Stop polling on error [Boolean]

Assured once delivery [Boolean]

Filter future events [Boolean]

Event Type filter [String]:

___ d. Enter the following for **FlatFile Properties** of Activation Spec Properties:

- 1) EventDirectory: **<EVENT_DIR>**
- 2) ArchiveDirectory: **<ARCHIVE_DIR>**
- 3) EPDataSourceJNDIName: **jdbc/Cloudscape JDBC Driver XA DataSource for FF**
- 4) EPEventTableName: **FFTABLE**

___ e. Enter the following for the **Logging and Tracing** of Resource Adapter Properties:

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1) LogFilename: C:\FFRA\Inlog.txt

2) TraceFilename: C:\FFRA\Intrace.txt

Event Type filter [String]:	
FlatFile Properties	
EventDirectory:	* C:\Labfiles602\FlatFileInbound\eventdir
<input checked="" type="checkbox"/> ArchivingProcessed	
ArchiveDirectory:	* C:\Labfiles602\FlatFileInbound\archivedir
FailedArchiveExt:	fail
OriginalArchiveExt:	original
SuccessArchiveExt:	success
EventFileMask:	* *.*
<input type="checkbox"/> FilePassByReference	
EPDataSourceJNDIName:	* jdbc/Cloudscape JDBC Driver XA DataSource for FF
EPEventTableName:	* FFTABLE
EPDatabaseSchemaName:	
EPDatabaseUsername:	
EPDatabasePassword:	
SortEventFiles:	
SplitCriteria:	
SplittingFunctionClassName:	
EventContentType:	
FileContentEncoding:	
DefaultObjectName:	
ResourceAdapterProperties	
Logging and Tracing	
AdapterID:	* ResourceAdapter
LogFileSize:	0
LogFilename:	C:\FFRA\Inlog.txt
LogNumberOfFiles:	1
TraceFileSize:	0
TraceFilename:	C:\FFRA\Intrace.txt
TraceNumberOfFiles:	1

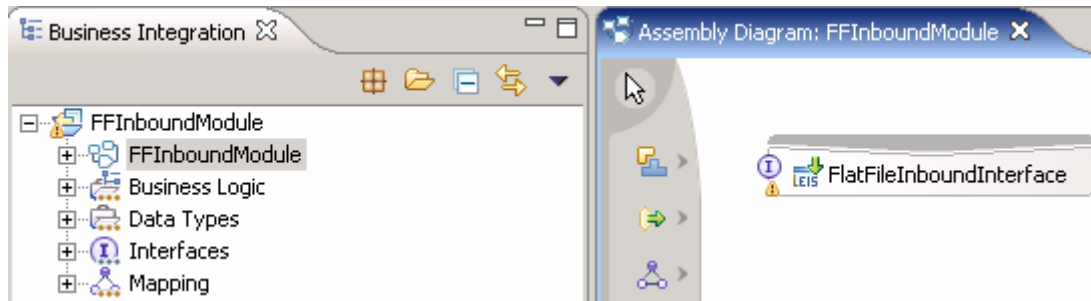
___ f. Click **Finish**

___ 7. Create a Java Component and wire it to the **FlatFileInboundInterface**.

___ a. Open the assembly diagram for FFIInboundModule (if it is not opened already)

1) From the Business Integration perspective, expand the **FFInboundModule** folder

2) Double-click the **FFInboundModule** module to open it in Assembly editor



___ b. From the palette, click the **Component (with no implementation type)** icon, and select **Java** component from the context menu icon and then click in the Assembly Diagram's empty space to drop it there

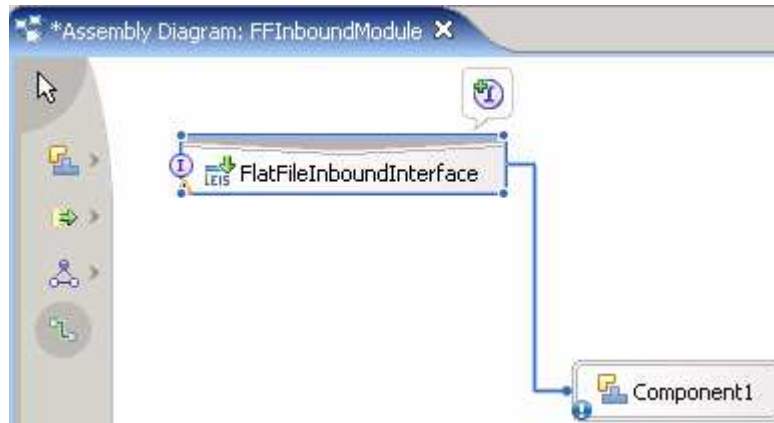


___ c. Wire the **FlatFileInboundInterface** to the **Component1**

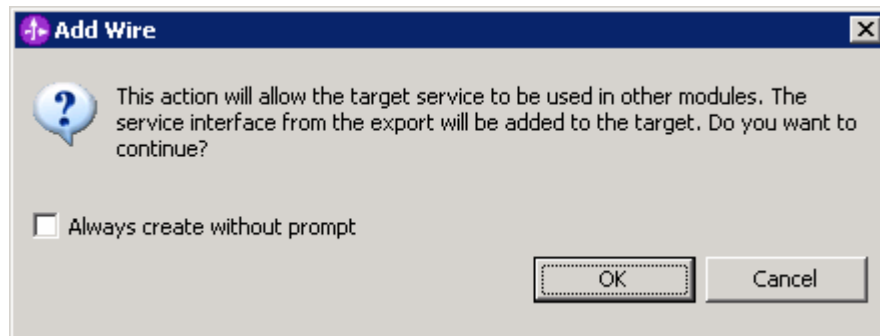
1) Select the **wire** icon from the palette



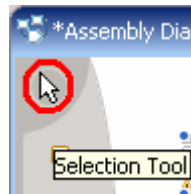
2) Click on **FlatFileInboundInterface** and then click on **Component1** to wire them together



3) Select **OK** for the Add Wire popup window



4) Click on the **Selection Tool** to get back to the normal cursor mode



- ___ d. Right-click on **Component1** and select **Generate Implementation** from the context menu
- ___ e. On the **Generate Implementation** panel, select the **FFInBO** package, and click **OK**
- ___ f. Component1Impl.java will be opened in Assembly editor. Scroll down to the method **emitFlatFile(DataObject emitFlatFileInput)** and **emitFlatFile(DataObject emitCustomerWrapperInput)** that needs to be implemented and add the code as shown below for each of those methods:

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```
public void emitCustomerWrapper(DataObject emitCustomerWrapperInput) {
    //TODO Needs to be implemented.
    System.out.println("*****Reached End Point For NON PASS-THROUGH: CUSTOMER*****");
}

/**
 * Method generated to support implementation of operation "emitFlatFile" defined for WSDL port type
 * named "interface.FlatFileInboundInterface".
 *
 * The presence of commonj.sdo.DataObject as the return type and/or as a parameter
 * type conveys that its a complex type. Please refer to the WSDL Definition for more information
 * on the type of input, output and fault(s).
 */
public void emitFlatFile(DataObject emitFlatFileInput) {
    //TODO Needs to be implemented.
    System.out.println("*****Reached End Point For PASS-THROUGH: FLATFILE*****");
}
```

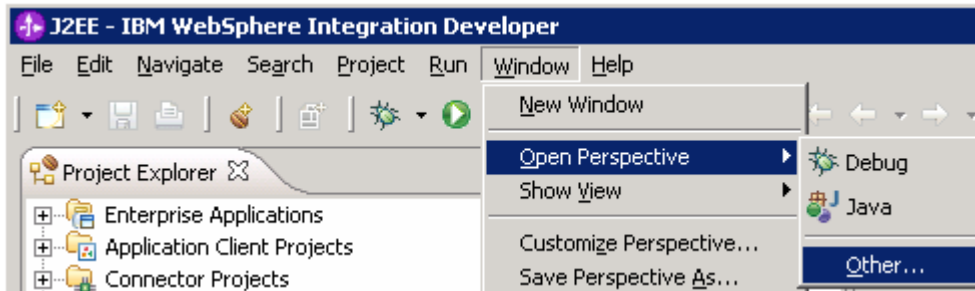
__ g. Save (**Ctrl + S**) and close Component1Impl.java

__ h. Save (**Ctrl + S**) and close Assembly diagram: FFInboundModule

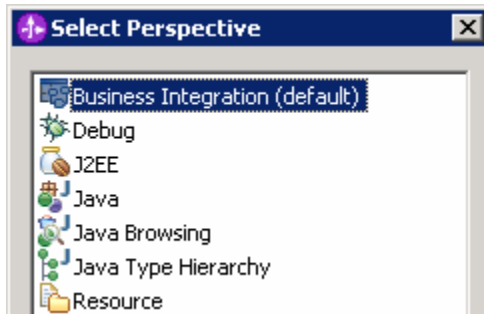
___ 8. You can also configure/change the adapter properties using Assembly Editor

__ a. Change to Business Integration perspective if you are in a different perspective

1) Select **Window > Open Perspective > Other....**



2) From the Select Perspective window, select **Business Integration (default)** and click **OK**



__ b. Expand **FFInboundModule** and double-click **FFInboundModule** to open it in Assembly Editor

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- ___ c. Click on **FlatFileInboundInterface** from the Assembly Editor and select **Properties** tab from the bottom

- ___ d. Select **Binding** under Properties and select **Endpoint Configuration** under Binding itself and then select the **Connection** tab

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- e. Ensure the radio button next to **Specify properties for pre-configured new J2EE Connector Architecture resource** is selected and then click on **Activation Spec Properties** to expand them. You can change the properties, which you entered using the ESD wizard in the previous steps, and make sure that you save those changes before you deploy the application onto the server

The screenshot displays the configuration page for the 'Export: FlatFileInboundInterface (EIS Binding)'. The left-hand navigation pane shows the 'Binding' section expanded to 'Endpoint configuration'. In the main content area, the 'Connection' tab is selected, and the 'Specify properties for configuring new J2EE Connector Architecture resource' radio button is chosen. The 'Activation Spec Properties' section is expanded, revealing the following configuration details:

- Activation Spec:** com.ibm.j2ca.flatfile.FlatFileActivationSpec
- BO Namespace:** http://www.ibm.com/xmlns/prod/websphere/j2ca/flatfile
- Delivery Mode and Polling Information:**
 - Delivery Type: ORDERED
 - Poll period [Int]: 2000
 - Poll quantity [Int]: 10
 - Retry interval [Integer]: 60000
 - Retry limit [Integer]: 0
 - Stop polling on error [Boolean]:
 - Assured once delivery [Boolean]:
 - Filter future events [Boolean]:
 - Event Type filter [String]:
- FlatFile Properties:**
 - EventDirectory: C:\LabFiles602\FlatFileInbound\eventdir
 - ArchivingProcessed:
 - ArchiveDirectory: C:\LabFiles602\FlatFileInbound\archivedir
 - FailedArchiveExt: fail
 - OriginalArchiveExt: original
 - SuccessArchiveExt: success
 - EventFileMask: *.*
 - FilePassByReference:
 - EPDataSourceJNDIName: jdbc/Cloudscape JDBC Driver XA DataSource for FF
 - EPEventTableName: FFTABLE
 - EPDatabaseSchemaName:
 - EPDatabaseUsername:
 - EPDatabasePassword:
 - SortEventFiles:
 - SplitCriteria:
 - SplittingFunctionClassName:
 - EventContentType:
 - FileContentEncoding:
 - DefaultObjectName:

Red arrows in the original image point to the selected radio button, the 'Activation Spec Properties' section header, and several fields in the FlatFile Properties section (EventDirectory, ArchiveDirectory, EPDataSourceJNDIName, and EPEventTableName).

___ f. You can also select **Resource Adapter** tab and review/change those properties

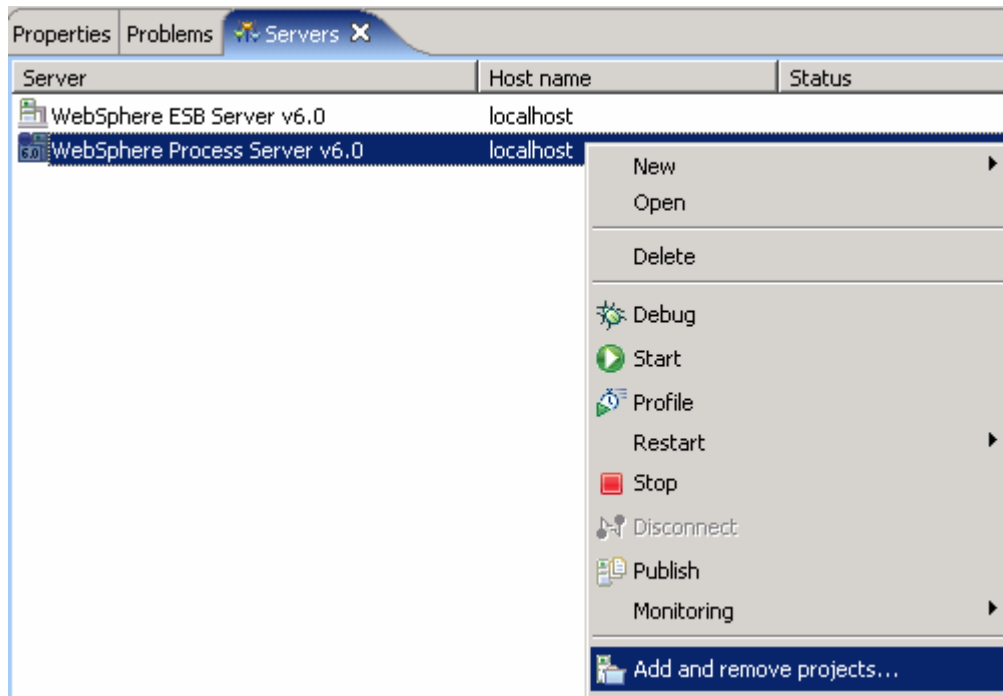
The screenshot shows the IBM WebSphere Admin Console interface. The left-hand navigation pane is expanded to the 'Binding' section, with 'Endpoint configuration' highlighted. The main content area displays the configuration for the 'Export: FlatFileInboundInterface (EIS Binding)'. The 'Connection' tab is selected, and the 'Resource Adapter' sub-tab is active. The configuration includes the following fields:

- Resource Adapter Name: `FFInboundModuleApp.IBM WebSphere Adapter for Flat Files`
- Resource Adapter Class: `com.ibm.j2ca.flatfile.FlatFileResourceAdapter`
- Resource Adapter Bean Properties:
 - Logging and Tracing
 - Adapter ID [String]: * `ResourceAdapter`
 - Log file size [Integer]: `0`
 - Log file name [String]: `C:\FFRA\inlog.txt` (indicated by a red arrow)
 - Log Files [Integer]: `1`
 - Trace file size [Integer]: `0`
 - Trace file name [String]: `C:\FFRA\intrace.txt` (indicated by a red arrow)
 - Trace files [Integer]: `1`

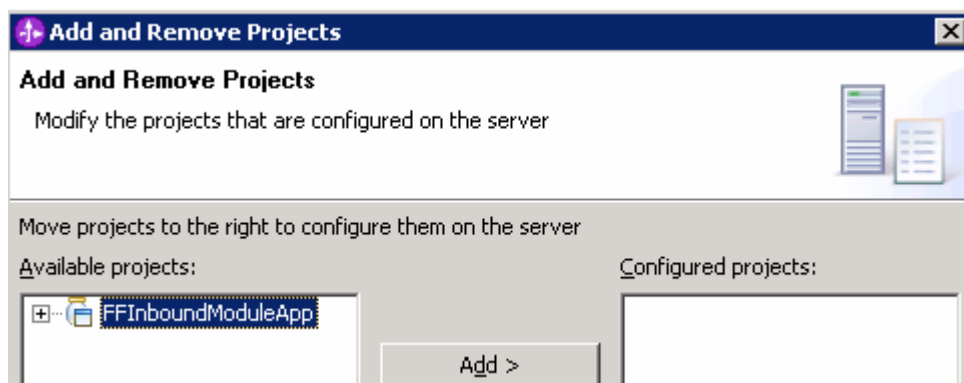
Part 5: Test scenario: Simple pass-through

In this part of the lab, you will use the WebSphere Process Server Test Environment to test the SCA application Inbound processing for the PassThrough Scenario.

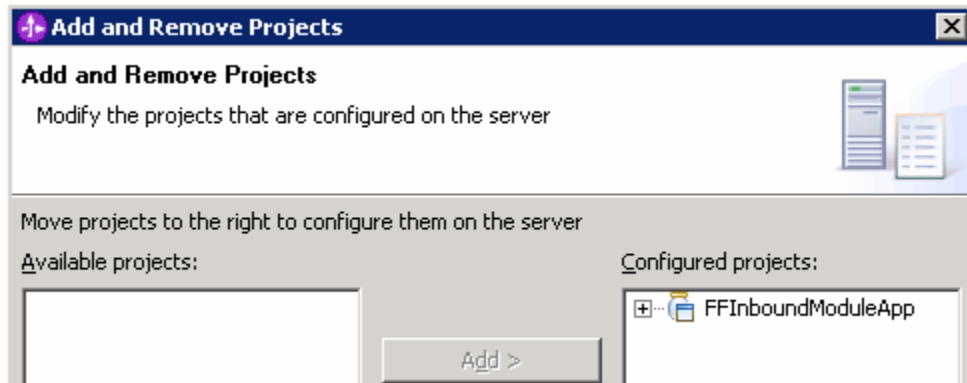
- ___ 1. Add the project to the WebSphere Test Environment server
 - ___ a. Right-click on **WebSphere Process Server v6.0** under the Servers view and select **Add and remove projects...** from the context menu



- ___ b. From the Add and Remove Projects window, select **FFInboundModuleApp** under Available projects panel and click **Add >**



__ c. You will now see the **FFInboundModuleApp** added to the **Configured projects**



__ d. Click **Finish** and wait until the project is being published onto the server. The server will be started in Debug mode if it is not already started before

___ 2. Test the adapter application

__ a. Copy a test file to the **<EVENT_DIR>**. As the file is copied to the event directory, the same will be picked up and processed by the adapter and will be moved to the **<ARCHIVE_DIR>**

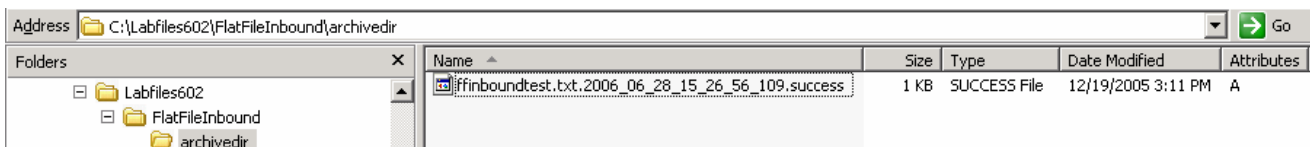
Note: For your convenience, a test file named **SplitBySize.txt** file can be found in **<LAB_FILES>**.

___ 3. Verify your test results

__ a. Check your test environment console (or Systemout.log file) for the following successful message:

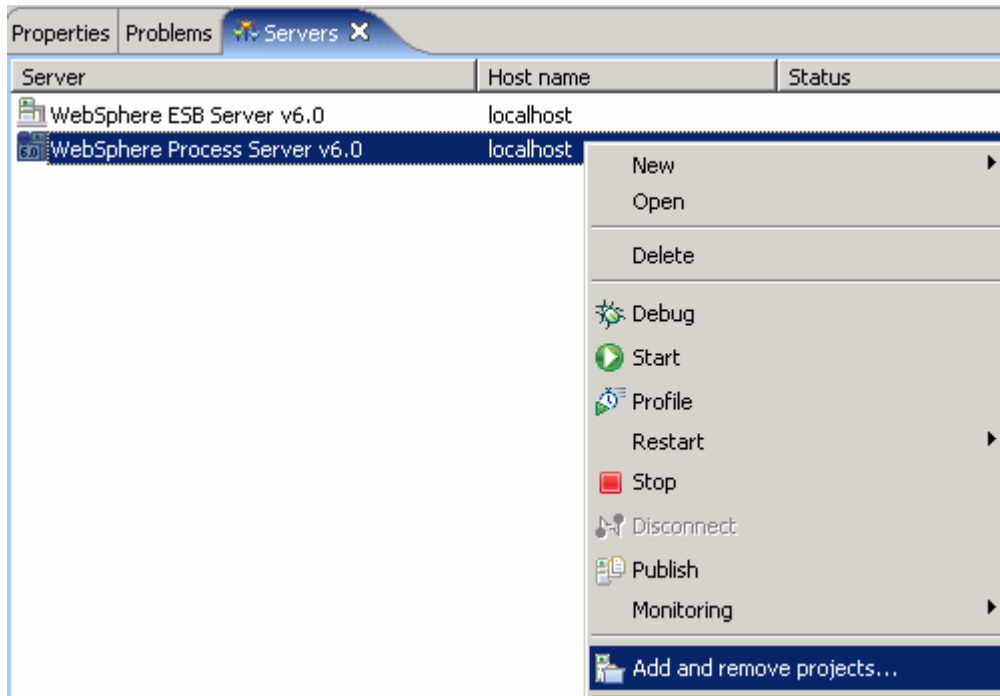
```
ResourceAdapt A com.ibm.j2ca.extension.eventmanagement.internal.EventSender deliverEvent() CWYBS0505I: The event has been delivered.
SystemOut      O *****Reached End Point For PASS-THROUGH: FLATFILE*****
```

__ b. Now, check the **<ARCHIVE_DIR>** subdirectory which should contain an archive of the event file, with the same file name appended with year, month, date, system time, and success

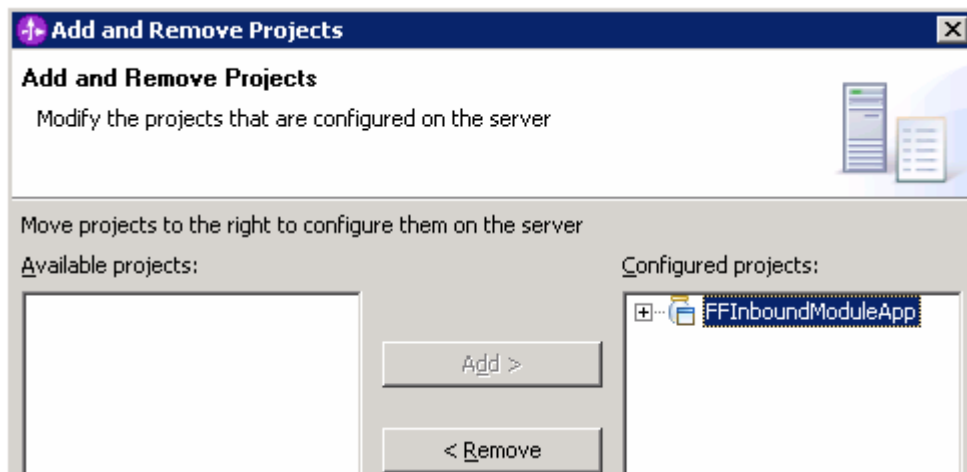


___ 4. Restore the Sever Configuration

- ___ a. Right-click on **WebSphere Process Server v6.0** under the Servers view and select **Add and remove projects...** from the context menu



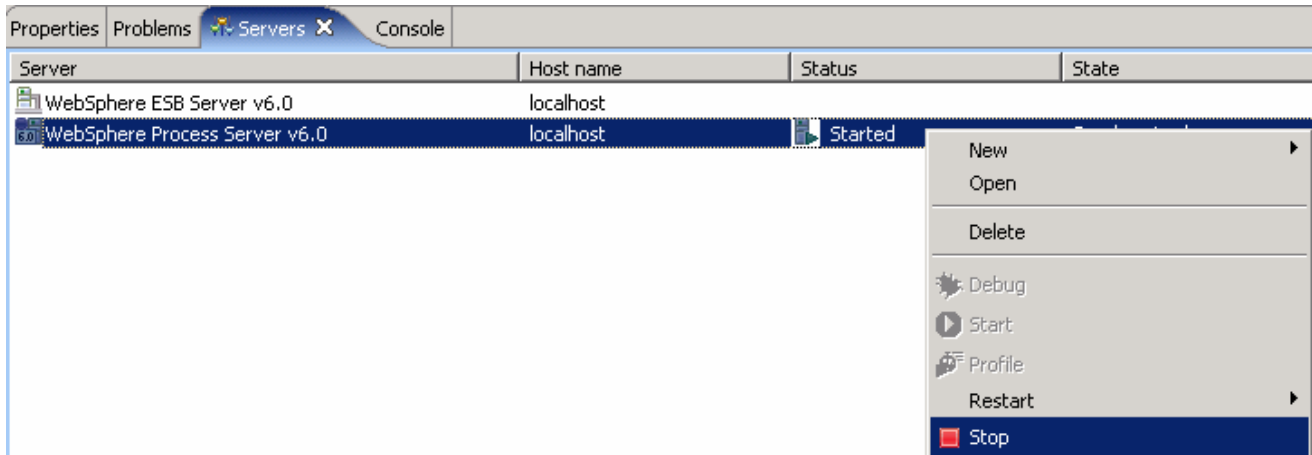
- ___ b. Select **FFInboundModuleApp** under Configured projects and click **< Remove**



- ___ c. Click **Finish** after you see the application moved to Available projects. Wait until the application is being unpublished

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- ___ d. If you are continuing to the next part, you may leave the server running. If not, right-click on **WebSphere Process Server v6.0** from the Servers view and select **Stop** from the context menu.



Part 6: Test scenario: Simple data transformation (non pass-through)

In this part of the lab, you will edit the Activation Spec Properties to see how a simple Data Transformation works for an Inbound operation.

- ___ 1. Open the Activation Spec Properties from the Attributes View
 - ___ a. Click on **FlatFileInboundInterface** from the Assembly Editor and select **Properties** tab from the bottom
 - ___ b. Select **Binding** under Properties and select **Endpoint Configuration** under Binding itself and then select the **Connection** tab
 - ___ c. Ensure the radio button next to **Specify properties for pre-configured new J2EE Connector Architecture recourse** is selected and then click on **Activation Spec Properties** to expand them and enter the following fields:
 - 1) EventContentType: **text/xml**

2) FileContentEncoding: **UTF-8** (or any other valid encoding)

The screenshot shows the configuration page for 'Export: FlatFileInboundInterface (EIS Binding)'. The 'Connection' tab is active. Under 'Binding', 'Endpoint configuration' is selected. In the 'Activation Spec Properties' section, the 'Activation Spec' is set to 'com.ibm.j2ca.flatfile.FlatFileActivationSpec'. The 'BO Namespace' is 'http://www.ibm.com/xmlns/prod/websphere/j2ca/flatfile'. Under 'Delivery Mode and Polling Information', 'Delivery Type' is 'ORDERED', 'Poll period [int]' is '2000', 'Poll quantity [int]' is '10', 'Retry interval [Integer]' is '60000', and 'Retry limit [Integer]' is '0'. Under 'FlatFile Properties', 'EventDirectory' is 'C:\Labfiles602\FlatFileInbound\eventdir', 'ArchiveDirectory' is 'C:\Labfiles602\FlatFileInbound\archivedir', 'FailedArchiveExt' is 'fail', 'OriginalArchiveExt' is 'original', 'SuccessArchiveExt' is 'success', and 'EventFileMask' is '*.*'. The 'FileContentEncoding' property is set to 'UTF-8'.

___ d. Save (**Ctrl +S**) your changes

- ___ 2. Follow step 1 of Part 5 to add the modified **FFInboundModuleApp** to the server
- ___ 3. Test the adapter

Note: For your convenience, a test file **SimpleDTF.xml** is placed in **<LAB_FILES>FFFiles**. The file contains one Business Object.

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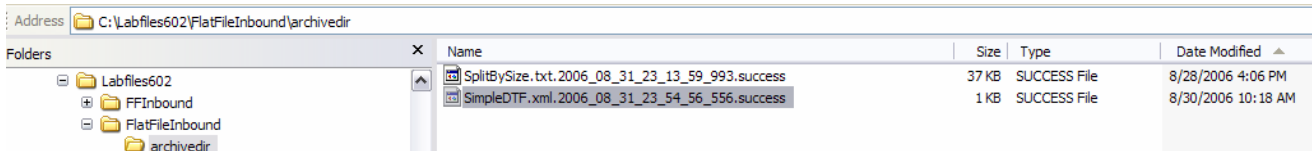
___ a. Copy the **SimpleDTF.xml** file from <LAB_FILES>\FFFFiles to <EVENT_DIR>. The adapter will poll the copied xml file from the event directory and will transform it to the archive directory

___ 4. Verify your results

___ a. Check your test environment console (or Systemout.log file) for the following successful message:

```
ResourceAdapt A com.ibm.j2ca.extension.eventmanagement.internal.EventSender deliverEvent() CWYBS0505I: The event has been delivered.  
SystemOut O *****Reached End Point For NON PASS-THROUGH: CUSTOMER*****
```

___ b. Check your <ARCHIVE_DIR> which should contain an archive of the event file, with the same file name appended with year, month, date, system time, and success



___ 5. Repeat Step 4 of Part 5 to restore server Configuration

Part 7: Test scenario: SplitByDelimiter for data transformation

In this part of the lab, you will edit the Activation Spec Properties to see how SplitByDelimiter works with Data Transformation for an Inbound operation.

- ___ 1. Open the Activation Spec Properties from the Attributes View
 - ___ a. Click on **FlatFileInboundInterface** from the Assembly Editor and select **Properties** tab from the bottom
 - ___ b. Select **Binding** under Properties and select **Endpoint Configuration** under Binding itself and then select the **Connection** tab
 - ___ c. Ensure the radio button next to **Specify properties for pre-configured new J2EE Connector Architecture recourse** is selected and then click on **Activation Spec Properties** to expand them and enter the following fields:
 - 1) SplitCriteria: #####;\n

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2) SplittingFunctionClassName: **com.ibm.j2ca.utils.filesplit.SplitByDelimiter**

3) EventContentType: **text/xml**

The screenshot shows the configuration page for 'Export: FlatFileInboundInterface (EIS Binding)'. The left sidebar has 'Endpoint configuration' selected. The main area shows the following configuration:

- Connection:** Resource Adapter
- Select configuration view option:**
 - Specify JNDI name for pre-configured J2EE Connector Architecture resource
 - Specify properties for configuring new J2EE Connector Architecture resource
- Activation Spec Properties:**
 - Activation Spec:** com.ibm.j2ca.flatfile.FlatFileActivationSpec
 - BO Namespace:** http://www.ibm.com/xmlns/prod/websphere/j2ca/flatfile
 - Delivery Mode and Polling Information:**
 - Delivery Type:** ORDERED
 - Poll period [Int]:** * 2000
 - Poll quantity [Int]:** * 10
 - Retry interval [Integer]:** 60000
 - Retry limit [Integer]:** 0
 - Stop polling on error [Boolean]
 - Assured once delivery [Boolean]
 - Filter future events [Boolean]
 - Event Type filter [String]:**
 - FlatFile Properties:**
 - EventDirectory:** * C:\Labfiles602\FlatFileInbound\eventdir
 - ArchivingProcessed
 - ArchiveDirectory:** * C:\Labfiles602\FlatFileInbound\archivedir
 - FailedArchiveExt:** fail
 - OriginalArchiveExt:** original
 - SuccessArchiveExt:** success
 - EventFileMask:** *.*
 - FilePassByReference
 - IncludeEndBODelimiter
 - EPCreateTable
 - EPDataSource.JNDIName:** * jdbc/Cloudscape JDBC Driver XA DataSource for FF
 - EPEventTableName:** * FFTABLE1
 - EPDatabaseSchemaName:**
 - EPDatabaseUsername:**
 - EPDatabasePassword:**
 - SortEventFiles:**
 - SplitCriteria:** ####;\n
 - SplittingFunctionClassName:** com.ibm.j2ca.utils.filesplit.SplitByDelimiter
 - EventContentType:** text/xml
 - FileContentEncoding:**
 - DefaultObjectName:**

___ d. Save (**Ctrl +S**) your changes

___ 2. Follow step 1 of Part 5 to add the modified **FFInboundModuleApp** to the server

___ 3. Test the adapter

Note: For your convenience, a test file **SplitByDelimiter.xml** is placed in **<LAB_FILES>\FFFFiles**. The file contains two Business Objects separated by the delimiter **##### followed by a new line**.

- ___ a. Copy the SplitByDelimiter.xml file from **<LAB_FILES>\FFFFiles** to **<EVENT_DIR>**. The adapter will poll the copied xml file from the event directory and will transform it to the archive directory

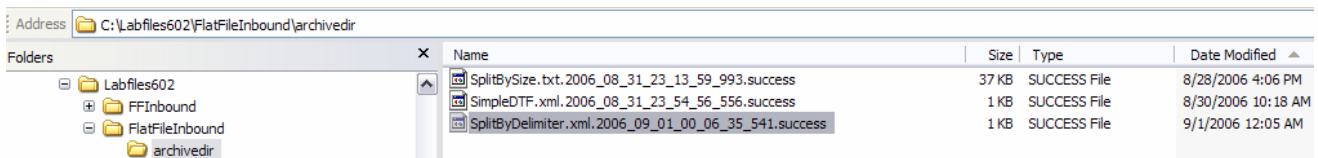
___ 4. Verify your results

- ___ a. Check your test environment console (or Systemout.log file) for the following successful message:

Note: You will see the successful event delivery message twice as there were two Business Objects present in the event file separated by the delimiter **##### followed by a new line**.

```
ResourceAdapt A com.ibm.j2ca.extension.eventmanagement.internal.EventSender deliverEvent() CWYBS0505I: The event has been delivered.
ResourceAdapt A com.ibm.j2ca.extension.eventmanagement.internal.EventSender deliverEvent() CWYBS0505I: The event has been delivered.
SystemOut O *****Reached End Point For NON PASS-THROUGH: CUSTOMER*****
SystemOut O *****Reached End Point For NON PASS-THROUGH: CUSTOMER*****
```

- ___ b. Check your **<ARCHIVE_DIR>** which should contain an archive of the event file, with the same file name appended with year, month, date, system time, and success



___ 5. Repeat Step 4 of Part 5 to restore server configuration

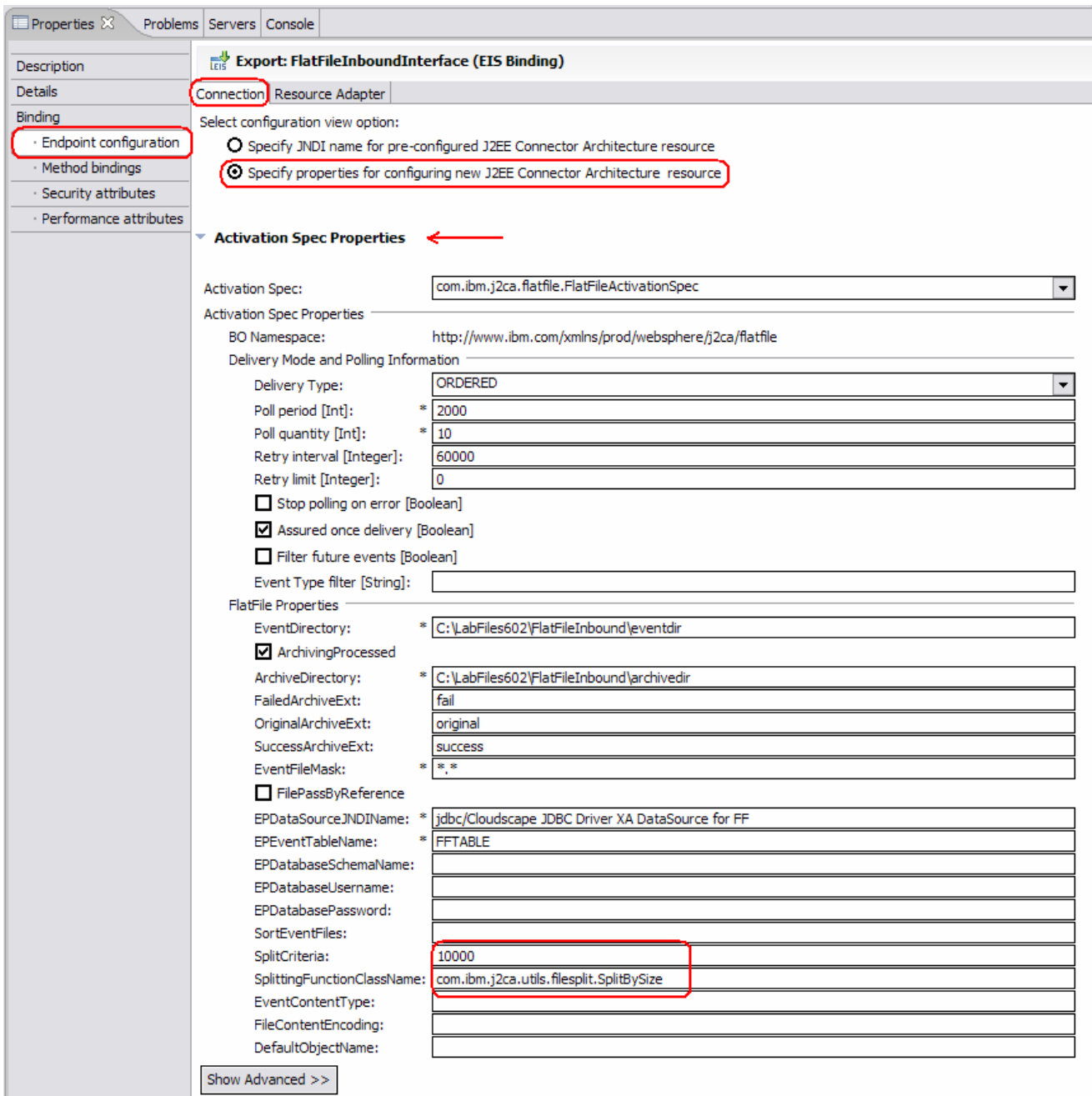
Part 8: Test scenario: SplitBySize for pass through

In this part of the lab, you will edit the Activation Spec Properties to see how SplitBySize works for an Inbound operation.

- ___ 1. Open the Activation Spec Properties from the Attributes View
 - ___ a. Click on **FlatFileInboundInterface** from the Assembly Editor and select **Properties** tab from the bottom
 - ___ b. Select **Binding** under Properties and select **Endpoint Configuration** under Binding itself and then select the **Connection** tab

__ c. Ensure the radio button next to **Specify properties for pre-configured new J2EE Connector Architecture resource** is selected and then click on **Activation Spec Properties** to expand them and enter the following fields:

- 1) SplitCriteria: **10000**
- 2) SplittingFunctionClassName: **com.ibm.j2ca.utils.filesplit.SplitBySize**
- 3) Make sure that you delete any values you have for **FileContentEncoding** and **EventContentType** fields



__ d. Save (**Ctrl +S**) your changes

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- ___ 2. Follow step 1 of Part 5 to add the modified FFIInboundModuleApp to the server
- ___ 3. Test the adapter

Note: For your convenience, a test file **SplitBySize.txt** is placed in <LAB_FILES>. Note the size of the file.

- ___ a. Copy the **SplitBySize.txt** file from <LAB_FILES> to <EVENT_DIR>. Adapter will poll the copied txt file from the event directory and will transform it to the archive directory
- ___ 4. Verify your results
- ___ a. Check your WebSphere Process Server console (or Systemout.log file) for the following successful message:

Note: You will see the successful event delivery message for four times as the file size is 37KB and the split criteria has 10KB, which means it splits the file into four part and delivers to the endpoint.

```
ResourceAdapt A com.ibm.j2ca.extension.eventmanagement.internal.EventSender deliverEvent() CWYBS0505I: The event has been delivered.
ResourceAdapt A com.ibm.j2ca.extension.eventmanagement.internal.EventSender deliverEvent() CWYBS0505I: The event has been delivered.
SystemOut O *****Reached End Point For PASS-THROUGH: FLATFILE*****
SystemOut O *****Reached End Point For PASS-THROUGH: FLATFILE*****
ResourceAdapt A com.ibm.j2ca.extension.eventmanagement.internal.EventSender deliverEvent() CWYBS0505I: The event has been delivered.
SystemOut O *****Reached End Point For PASS-THROUGH: FLATFILE*****
ResourceAdapt A com.ibm.j2ca.extension.eventmanagement.internal.EventSender deliverEvent() CWYBS0505I: The event has been delivered.
SystemOut O *****Reached End Point For PASS-THROUGH: FLATFILE*****
```

Note: The same SplitBySize.txt file was delivered as one event file to the end point when you did not specify the SplitCriteria in part 5 while configuring ESD. Here, in this part, you will see the successful event delivery message for four times for the same file (with the file size being 37KB) because of the split criteria that has been given as 10KB, which means it splits the file into four part and delivers to the endpoint.

- ___ b. Check your <ARCHIVE_DIR> which should contain an archive of the event file, with the same file name appended with year, month, date, system time, and success

Name	Size	Type	Date Modified
SplitBySize.txt.2006_08_31_23_13_59_993.success	37 KB	SUCCESS File	8/28/2006 4:06 PM
SplitBySize.txt.2006_09_01_00_16_49_193.success	37 KB	SUCCESS File	8/28/2006 4:06 PM
SimpleDTF.xml.2006_08_31_23_54_56_556.success	1 KB	SUCCESS File	8/30/2006 10:18 AM
SplitByDelimiter.xml.2006_09_01_00_06_35_541.success	1 KB	SUCCESS File	9/1/2006 12:05 AM

- ___ 5. Repeat Step 4 of Part 5 to restore the server configuration

What you did in this exercise

In this lab, you created the database in Cloudscape required for this lab. You continued with importing the Flat File Adapter RAR file into your WebSphere Integration Developer workspace. Then, used your WebSphere Process Server administrative console and configured it to create the Data source required to complete this lab.

You made use of the Enterprise Service Wizard available in WebSphere Integration Developer to specify Activation Spec 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 two pass-through test scenarios – simple pass through and split by size and two data transformation test scenarios – simple data transformation and split by delimiter.

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